FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Feed the Future
Food Systems for Nutrition Innovation Lab

Call for Expressions of Interest (EOI)

Demonstrating the Cost-Effectiveness of Innovation Bundles to support food systems transformation for nutrition, food safety and reduced food loss and waste

This call for Expressions of Interest (EOI) titled "**Demonstrating the Cost-Effectiveness of Innovation Bundles to support food systems transformation for nutrition, food safety, and reduced food loss and waste**" is issued by the Feed the Future Innovation Lab for Food Systems for Nutrition (FSN-IL). The FSN-IL is a five-year collaborative research program implemented by Tufts University and funded by the United States Agency for International Development (USAID) under Cooperative Agreement Award No. 7200AA19LE00003.

Target Countries: Bangladesh, Malawi, Mozambique, Nepal.

Application Submission Process and Timeline

Activity	Date
Issue date	February 6, 2024
Deadline for submission of written questions	February 20, 2024
Posting of responses to written questions on Piestar RFx	February 27, 2024
Deadline for submission of EOIs	March 5, 2024
Invitations sent for co-creation	March 25, 2024
Co-creation process	April 2024
Submission of full proposal	May 30, 2024
Anticipated award notifications	July 1, 2024
Anticipated start date of awards	August 1, 2024
Anticipated inception Workshop	August 1, 2024

All EOIs must be submitted through the application portal Piestar RFx before **5:00pm EST (GMT-4:00)** on the date indicated above. Please allow plenty of time for internet delays and submit prior to 5:00pm. Written questions regarding this solicitation must be submitted through Piestar RFx by 5:00pm EST on the date indicated above.

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Tufts UNIVERSITY | GERALD J. AND DOROTHY R. Friedman School of Nutrition Science and Policy

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Acronyms

AO	Agreement Officer
AOR	Agreement Officer's Representative
F&A	Facilities and Administrative Costs
FS	Food System
FSN-IL	Food Systems for Nutrition Innovation Lab
FTE	Full-time Equivalent
GAP	Good Agricultural Practices
GFSS	Global Food Security Strategy
HICD	Human and Institutional Capacity Development
IDC	Indirect Costs
IPM	Integrated Pest Management
MSI	Minority-Serving Institution
MTDC	Modified Total Direct Cost
NFNSP	National Food and Nutrition Security Policy
NICRA	Negotiated Indirect Cost Rate Agreement
NGO	Non-governmental Organization
OMB	Office of Management and Budget
PI	Principal Investigator
R4D	Research for Development
RFA	Request for Applications
RFS	Resilience and Food Security
SAM	System for Award Management
SDG	Sustainable Development Goals
SME	Small and Medium-sized Enterprises
UEI	Universal Entity Identification
US	United States
USAID	United States Agency for International Development

1. Introduction

The Food Systems for Nutrition Innovation Lab (FSN-IL) is a five-year activity managed by Tufts University and supported by the United States Agency for International Development (USAID), Bureau for Resilience and Food Security (RFS). FSN-IL is seeking expressions of interest (EOI) from eligible institutions to collaborate on applied research that demonstrates that bundles of innovations can support food systems transformation *for nutrition* in target geographies at scale. The bundle of innovations (to be implemented and/or tested will reduce loss and waste of nutrient-dense perishable foods while ensuring food safety in Malawi, Mozambique, Nepal, or Bangladesh. The final study design will be developed through a process of co-creation with the ME and its consortium partners and will require concurrence of the USAID mission in the target country.

While it has been widely acknowledged that, "responsible investments in food security, food systems, and nutrition are essential,[1]" there continue to be many obstacles in mainstreaming nutrition-sensitive food system (FS) solutions. A background document prepared for the United Nations Food Systems Summit in September 2021 noted that "it is vital to reduce the delay in translating research outputs to innovation, public policy, and practice.[2]" Thus the FSN-IL seeks to generate evidence-based support to innovations (products, technologies, practices, policies, and processes) that enhance nutrient density, reduce food loss, and waste, and ensure food safety.

FSN-IL recognizes that innovations can encompass products, technologies, practices, and/or processes (policies, standards, techno social bundling of innovations). A scoping review, conducted by the FSN-IL management entity and consortium partners, assessed the innovation landscape across the product life cycle from production to post harvest handling and processing to marketing and infrastructure, the food environment and, finally, consumer behaviors regarding seeking healthy and sustainable diets.

Thus FSN-IL focuses on all parts of the value chain, with particular emphasis on downstream (post-farm gate) innovations that include processing, storage, packaging, cooling, transformation, retail, and consumer domains. This also includes critical cross-cutting innovations that improve nutritional status of vulnerable populations, with a specific emphasis on gender and youth as well as enhancing resilience.

In this competition, FSN-IL will use a co-creation process to select partners to implement and/or test bundles of innovations that increase the availability of, and access to, nutrient-dense foods, by enhancing food safety and cut food loss and waste.

[1] The White House. 2021. Carbis Bay G7 Summit Communiqué. https://www.mofa.go.jp/mofaj/files/100200010.pdf

[2] Fears R and Canales C. 2021. The Role of Science, Technology and Innovation for Transforming Food Systems Globally. Food Systems Summit Brief No. 1. https://sc-fss2021.org/wp-content/uploads/2021/06/FSS_Brief_IAP_Global.pdf

2. About FSN-IL

The FSN-IL's goal is to generate new evidence and disseminate promising technologies and practices supporting the uptake of food system innovations at scale (for details see https://foodsystemsnutrition.org). FSN-IL integrates efforts across three domains to i) generate new research for development (R4D) while also effectively disseminating existing, but under-used, ready-to-use, pipeline-ready innovations; ii) support human and institutional capacity development (HICD) in partner countries and in the United States aimed at advancing the capacity to understand R4D and promotion of innovations; and iii) engage widely across public and private sectors to catalyze uptake of innovations, share lessons on discovery-to-commercialization processes, and build expert resources, networks and partnerships to support local solutions and critical development outcomes. Supported actions aim to increase availability of nutrient-dense foods, ensure food safety, and prevent food and water loss and waste, thus contributing to reductions in poverty and improved diet quality, nutrition, and resilience in focus countries, including Bangladesh, Malawi, Mozambique, and Nepal. The FSN-IL aligns with the U.S Government's Global Food Security Strategy (GFSS) and the Global Food Security Research Strategy.[3]

3. Focus Areas

The objective of this EOI is to identify partners with experience and expertise in implementing, testing and/or assessing innovations in Bangladesh, Nepal, Malawi, or Mozambique. Each country is of course unique in its food systems and challenges. That said, FSN-IL research through this EOI will focus on potentially generalizable innovations in perishable food value chains from the post-farm gate, ideally on a combination of innovations from processing to storage, packaging, cooling, transformation, market infrastructure improvements, market access improvements, food retail and environment modifications, as well as demand generation and social behavior change communication to influence consumer perceptions and, subsequently, consumer choice. Perishable nutrient-dense foods include fish and other aquaculture products, dairy, poultry, eggs, meat, dark green leafy vegetables, Vitamin A rich fruits and vegetables, and other fruits and vegetables.

FSN-IL aligns with locally and country led priorities and utilizes the food systems transformation pathways outlined by each country as a guide in developing its in-country portfolio.

Food Systems Transformation Pathways by Country

In 2021, many countries defined their own national pathways aimed at transforming local food systems, and in all cases, there was attention to the need for innovations along food value chains, improved partnerships between public and private sector stakeholders, and enhanced attention to demonstrating successes. Some of the key elements of national pathways defined by FSN-IL's target countries are as follows:

- *Bangladesh*: Use forward and backward linkages across the food systems value chain to improve access to local produce to wider markets through private investments in inputs, processing, storage, packaging, transportation and marketing of agri-food products and digital services, with special attention in hard-to-reach areas. Address substantial food and nutrient quality are lost along the agri-food system value chain arising from harvest and postharvest losses due to inadequate infrastructure

[3] https://www.usaid.gov/what-we-do/agriculture-and-food-security/us-government-global-food-security-strategy

and technologies.

- *Malawi*: Low productivity, poor farming practices, inadequate diet diversification, consumption of unsafe foods, inadequate capacity in agro-processing, poor food waste management (industrial and domestic), lack of and poor infrastructure, transport systems and logistics hubs for market linkages to facilitate processing, storage, local trade, and consumption of nutrient-rich foods, especially perishable are key challenges and priorities identified by the country.[4]
- *Mozambique*: The food systems value chain identifies key priority actions to its pathway towards food systems transformation that include, but are not limited to enhanced access to farm inputs, adequate financing to agriculture, livestock and fishery sectors, enhanced marketing linkages through infrastructure development and transportation, establishment and expansion of processing and storage units, implementation of and compliance with quality standards and practices, enhanced technical capacity of small and medium enterprises, and research to improve the business environment in the agrarian sector.
- *Nepal*: Focus on addressing low competitiveness of the food trade system, inadequate infrastructure and transportation, insufficient financing and extension services, gender inequity to support Nepal's transition to a sustainable food system.[5] This would be through encouraging youth in the agriculture sector, improving access to farming inputs, limiting post-harvest losses, optimizing processing, storage, and marketing practices and strategies (policies, standards) to reduce food loss and waste and chemical residues in foods, developing entrepreneurship skills of SMEs to raise livelihoods, ensuring longer-term investments in resilient food systems to withstand shocks and stresses, and implementing food governance throughout the value chain to ensure safe and nutritious food for all and ensure policy implementation in line with the Right to Food and Food Sovereignty Act.

Examples of Innovation Bundles to be Rigorously Tested

1. Post-harvest supply innovations bundled with demand innovations that test the effectiveness of technological and social-behavioral change innovations in the food environment in reducing food loss and waste
2. Supply and demand innovation bundling transportation, market storage/cooling innovations with demand creation activities, including innovations in the food environment to improve access to nutrient dense commodities
3. Climate smart supply side innovations bundled with demand side innovations that test innovation bundles to enhance storage, packaging, or cooling of perishable foods

Innovation bundles being tested will focus on the following food groups:

1. Fish and other aquaculture products
2. Dairy, poultry, eggs
3. Dark green leafy vegetables
4. Vitamin A rich fruits and vegetables

[4] https://summitdialogues.org/wp-content/uploads/2021/09/National-Pathway-Report-Malawi.pdf
[5] https://www.fao.org/3/cb7653en/cb7653en.pdf

Overarching Research Questions to be Addressed:

1. What is the effectiveness of implementation of specific innovation bundles?
2. What is the cost-effectiveness of specific innovation bundles?
3. How was the innovation or innovations implemented, what was the process of implementation, what were the barriers and facilitators of success?
4. What is the potential of commercialization and scalability of tested innovation bundles?
5. What is the cost of delivery of tested innovation bundles to potential adopters/users, and the potential measurable impact if implemented at scale.
6. What are the economic benefits of scaled delivery of tested innovation bundles?
7. What are the measurable benefits to nutrition of innovation(s)/bundles(s), articulated in terms of cost of adoption and use versus cost of delivery, in relation to measurable outcomes in 'nutrition' (diet quality, nutrient sufficiency, reduced inequality in access to nutrient-dense foods).

Definitions of Innovation and Innovation Bundling

FSN-IL considers innovations as products/technologies, practices, and processes (policies, standards, socio-technological bundling of innovations). Proposed innovations can be single or a combination (or bundles) of innovations that addresses critical challenges across the food system value chain (socio-technological bundling).[6] Innovation bundling, either social and/or technological, that is context specific either at the systems level or at different points in the supply chain has been identified as a way forward in supporting agri-food systems transformation. However, it remains necessary to couple technical advances with social and policy change in socio-technical innovation bundles (Barrett et al 2022).[7] Testing of the concepts and/or the implementation of innovation bundles is also critical, as is assessment of the effectiveness of benefits and costs. In this topical area, we will consider research to test and validate new innovations in storage, packaging, and cooling. The questions here will focus on the potential for such innovations to work within the context of the target geographies, if they can be commercialized, and, if so, whether they are cost effective.

4. EOI Content

All EOIs must include the following for at least one of the focus countries (Nepal, Bangladesh, Mozambique, Malawi):

1. Present a summary of the problems and challenges posed when implementing solutions/ideas presented in the national food systems transformation pathways.
2. Using the provided background, present their view of the research opportunities and outline critical research questions and proposed study type to answer those questions in one of the focus countries. The potential of the proposed study to have a significant impact should be provided.
3. The EOI should provide a justification/rationale for selecting the specific innovation (or bundle of innovations) topic and how the research would increase local and global knowledge.
4. Applicants are encouraged to consider the potential of testing bundles of innovations in more than one country.

[6] https://www.nature.com/documents/Bundles_agrifood_transformation.pdf
[7] https://link.springer.com/book/10.1007/978-3-030-88802-2

5. Applicants are encouraged to consider proposing ideas that leverage on either existing or new funding sources that can be leveraged for amplifying the research activity. One example could be an existing program or initiative that would be an opportunity for testing bundles of innovations. Another could be linking with other resources for a more extensive evaluation.
6. Demonstrate how the research around the innovation influences the drivers of consumption choice in vulnerable populations, such as women and children, and how that is likely to translate to increased intake of safe, diverse, and nutritious foods and thus improved nutrition outcomes.
7. Outline the applicant and its proposed partners' expertise in implementing and testing innovations including cost effectiveness and development of business models that are focused on enhancing availability of nutrient-dense foods or ensuring food safety of nutrient dense foods and/or supported the prevention of food loss and waste specifically of perishable commodities.
8. Highlight the experience of all listed entities in the selected focus countries and indicate the background and expertise of all these organizations involved including the technical and managerial staff or team proposed for engagement.
9. In addition, demonstrate their experience in addressing one or more cross-cutting themes of gender and youth, and climate smart and resilient food systems. Describe their experience in incorporating gender and youth in their research. Applicants are encouraged to review USAID's 2012 Gender and Female Empowerment Policy[8] and 2012 Youth in Development Policy.[9] Applicants are encouraged to leverage the findings of the "Gender Integration in USAID's Agricultural Research Investments: A Synthesis of Key Findings and Best Practices."[10] If expertise lies in climate smart and resilient food systems, applications must demonstrate how their research has contributed to the evidence base. For instance, activities focused on applied pro-resilience studies should support investments in storage, packaging, and cooling of nutrient dense perishable foods, ensuring food safety and minimizing food loss and waste under the most extreme environmental conditions.

5. Eligibility and Allowable Costs

All applications must include at least one U.S. based academic institution and should identify at least one partner from the selected focus country. There is no restriction on who can apply as the lead (prime) if criteria for being the lead of a USAID project are met and documented.

Applicants and their partners must have a Universal Entity Identification (UEI) from the System for Award Management (SAM)[11] and an active SAM registration at the time of award. Awards will only be made to institutions with active SAM registrations and UEIs, so if an institution does not have a SAM UEI, it is recommended that the process for obtaining the UEI and registration be started as soon as possible. Invited applicants should note their UEIs and registration expiration date in their application documents. If they do not have a UEI and/or do not have an active registration at the time of application, please state so and provide new UEIs and registration expiration dates when they are received.

[8] https://www.usaid.gov/policy/gender-equality
[9] https://www.usaid.gov/policy/youth
[10] https://www.agrilinks.org/gender-research
[11] Check SAM status or request UEI at https://www.sam.gov/SAM

If awarded, the lead institution will serve as the primary sub-awardee, issuing lower-tier subawards to other institutions as necessary. Lower-tier subawardees are subject to all of the same eligibility requirements as the lead (applicant) institution. Applicants are required to demonstrate their own past performance as well as the history of collaboration with the proposed partner(s).

The applicant is responsible for ensuring that no individual or organization proposed as part of the activity is excluded from U.S. Government assistance and acquisition awards. If selected, the applicant will be required to provide a letter of assurance confirming eligibility. The U.S. Government's excluded parties list is now maintained in SAM.[12]

The FSN-IL strongly encourages applications from qualified Minority-Serving Institutions (MSIs) in the United States including, but not limited to, Historically Black Colleges and Universities, Predominantly Black Institutions, Hispanic-Serving Institutions, Tribal Colleges, and Universities, and Asian American, Native Alaskan and Pacific Islander Serving Institutions.

FSN-IL supports private sector engagement as a critical component in the food system to promote scale-up and sustainability. Applicants are strongly encouraged to identify private sector partner(s) as appropriate. For guidance, applicants are encouraged to read and apply USAID's Private Sector Engagement Policy.[13] However, any award originating from this EOI cannot support any costs associated with construction and/or building. None of the funds can be used for infrastructure development including development of agricultural facilities such as irrigation systems, markets, warehouses, other types of buildings, roads, bridges, and collection sites.

Awards under this EOI will be subject to the cost principles detailed in the Office of Management and Budget's (OMB) Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (commonly called "Uniform Guidance"), codified as 2 CFR Part 200. Applicants and any proposed sub-awardees will, additionally be subject to the appropriate USAID Standard Provisions ADS Chapter 303, Standard Provisions for U.S. Nongovernmental Organizations;[14] ADS Chapter 303, A Mandatory Reference for ADS Chapter 303, Standard Provisions for Non-U.S. Nongovernmental Organizations;[15] and ADS Chapter 308, Standard Provisions for Cost-Type Agreements with Public International Organizations (PIOs).[16]

6. Application Information and Process

The application process will consist of three stages: submissions of expressions of interest, co-creation process, and assessment and development and submission of a full proposal. Only selected EOIs will be invited for co-creation with FSN-IL. Co-creation may involve FSN-IL leads, technical experts at Tufts and/or consortium partner representatives. Following co-creation assessments by independent review, those selected will be asked to develop and submit a full proposal. Full proposals will include both the technical and budget

[12] https://sam.gov/content/exclusions
[13] https://www.usaid.gov/work-usaid/private-sector-engagement
[14] https://www.usaid.gov/ads/policy/300/303maa
[15] https://www.usaid.gov/ads/policy/300/303mab
[16] https://www.usaid.gov/ads/policy/300/308mab

components. Details and instructions on preparation of the full proposal will be provided to those that are selected in the co-creation assessment.

EOIs must be submitted through Piestar RFx. Late submissions will not be reviewed. Additions or modifications must be received in the system by 5:00 pm EST on the specified deadline (i.e., be sure to allow time for internet delays, as late applications will not be accepted). The FSN-IL is not responsible for late or incomplete submissions.

6.1. Format

The EOI must be written in English and typed on standard 8 ½ x 11-inch paper with one-inch margins on all sides, using Times New Roman font no smaller than 12 points and single line spacing. All file names should include the PI's last name and institution (e.g., CN-PI Last Name_ Institution.pdf).

6.2. Expression of Interest Submission package

Expression of Interest Submission Summary Table

Expression of Interest	
Section	**Description**
Title Page *(1 page maximum)*	Project title Target country Title PI (include name, title, institutional address, phone, fax, and email) List of proposed collaborating institutions and organizations Universal Entity Identification (UEI) from the System for Award Management (SAM) Contact information for authorized official from the lead institution
Narrative *(4-page maximum)*	The technical narrative should include the following: 1. A clear problem statement aligned with country priorities outlined for one of the focus countries. challenges in implementing solutions/ideas presented in the national food systems transformation pathways 2. Using the provided background, present their view of the research opportunities and outline critical research questions and proposed study type to answer those questions in one of the focus countries. The potential of the proposed study to have a significant impact should be provided. 3. The EOI should provide a justification/rationale for selecting the specific innovation (or bundle of innovations) topic and how the research would increase local and global knowledge. 4. Demonstrate how the research around the innovation influences the drivers of consumption choice in vulnerable populations, such as women and children, and how that is likely to translate to increased intake of safe, diverse, and nutritious foods and thus improved nutrition

	outcomes. 5. A demonstration of expertise in addressing one or more cross-cutting themes of gender and youth and climate smart and resilient food systems. Applicants are encouraged to review USAID's 2012 Gender and Female Empowerment Policy[17] and 2012 Youth in Development Policy[18] and are encouraged to leverage the findings of the "Gender Integration in USAID's Agricultural Research Investments: A Synthesis of Key Findings and Best Practices."[19] If expertise lies in climate smart and resilient food systems, applications must demonstrate how their research has contributed to the evidence base. For instance, activities focused on applied pro-resilience studies should support investments in storage, packaging, and cooling of nutrient dense perishable foods, ensuring food safety and minimizing food loss and waste under the most extreme environmental conditions.
PI Qualifications *(2 pages per CV; 4 pages maximum)*	Required: CV of PI (maximum of 2 pages) Optional: CV of any other relevant investigators/collaborators (maximum of 2 pages).
Past Performance Narrative *(4-page maximum)*	1. Outline the applicant and its proposed partners expertise in implementing and testing innovations including cost effectiveness and development of business models that are focused on enhancing availability of nutrient-dense foods or ensuring food safety of nutrient dense foods and/or supported the prevention of food loss and waste specifically of perishable commodities. 2. Highlight the experience of all listed entities in the selected focus countries and indicate the background and expertise of all these organizations involved including the technical and managerial staff or team proposed for engagement.
Citations/References	List of references relevant to describe the EOI expertise

6.3. Number of Awards and Award Ceiling

The FSN-IL aims for one award per country with resource allocation across all awards for a two-year period being $ 7,000,000 USD.

7. Review and Selection

7.1. Review Criteria

All EOIs submitted will be evaluated according to the following criteria:

[17] https://www.usaid.gov/policy/gender-equality
[18] https://www.usaid.gov/policy/youth
[19] https://www.agrilinks.org/gender-research

Criteria	Weight (%)
Technical merit (e.g., problem statement and identification of appropriate innovations)	20
Alignment with focus country priorities	15
Alignment with FSN-IL research priorities	15
Integration of cross-cutting themes	20
Past Performance Narrative and Institutional qualifications	30

7.2. EOI Evaluation

The FSN-IL management entity will conduct an initial review of EOIs to ensure they are complete and compliant with the submission instructions. EOIs deemed acceptable will then be reviewed and scored according to the criteria above. The review panel will be comprised of the FSN-IL's Director and Associate Director, Technical Experts at Tufts, and USAID AOR. The USAID Agreement Officer's Representative (AOR) may circulate EOIs within USAID for comment.

7.3. Selection Process

When selecting EOIs for advancement, the FSN-IL management entity reserves the right to balance review panel scores with FSN-IL research portfolio needs. Final decisions will be made in consultation with the USAID AOR and with final approval from the USAID Agreement Officer (AO).

The FSN-IL management entity may request modifications to selected full proposals in alignment with FSN-IL portfolio needs and/or feedback from relevant USAID Missions. These requests will be discussed collaboratively with the applicant, though refusal of modification requests may result in rejection of the application.