Government of Sierra Leone
Ministry of Technical and Higher Education

NATIONAL SCIENCE TECHNOLOGY AND INNOVATION COUNCIL (NSTIC)

CALL FOR FULL PROPOSALS TO FUND A PROJECT THAT PROMOTES FOOD SECURITY AND MODERN AGRICULTURE:

DEADLINE FOR SUBMISSIONS: 1ST NOVEMBER 2023 2023

Deadline for submission of application: Wednesday, 1st November 2023 at 11:59 PM (GMT)

CONTENTS

1. INTRODUCTION

The National Science and Technology Council (NSTIC) is statutory body attached to the Ministry of Technical and Higher Education of Sierra Leone. Its main function is to promote Science and Technology so as to improve the quality of life of the people of Sierra Leone. The Council is furthermore mandated to promote, regulate and coordinate research and innovation, mobilize resources for science, technology and innovation (STI) and advise Government on STI matters, among other functions.

The National Science, Technology, and Innovation Council (NSTIC) was established by the National Science Technology Innovation Policy, approved by the Government of Sierra Leone Ref No. CP (2023)65. It is a statutory body attached to the Ministry of Technical and Higher Education through which the Government of Sierra Leone directs the implementation and supervision of planned activities on the development and application of Science Technology and Innovation. The Council's Vision is "To ensure sustainable growth and development that is led by Science and Technology" and its Mission is "strengthening advocacy and management of STI interventions in Sierra Leone".

The main function of the Council as prescribed in the STI policy is to promote science and technology so as to improve the quality of life of the people of Sierra Leone. The Council is furthermore mandated to promote, regulate and coordinate research and innovation, mobilize resources for science, technology and innovation (STI) and advise Government on STI matters, among other functions.

In order to execute its mandates effectively, the Council is part of the Science Granting Council's one of the Science Granting Councils (SGCs) participating in the Science Granting Councils Initiative (SGCI) for Sub Saharan Africa which seeks to strengthen the capacities of the participating SGCs in supporting research and evidence-based policies that will contribute to socio-economic development of the countries.

NSTIC is one of the Science Granting Councils (SGCs) participating in the Science Granting Councils Initiative (SGCI) for Sub Saharan Africa which seeks to strengthen the capacities of the participating SGCs in supporting research and evidence-based policies that will contribute to socio-economic development of the countries. SGCI is jointly funded by the United Kinddom's Foreign , Commonwealth and Development Office (FCDO) , Canada's International Development Research Centre (IDRC), South Africa's National Research Foundation (NRF), the Swedish International Development CO-operation Agency (SIDA), the German Research

Foundation (DFG), and the Norwegian Agency for Development Agencies (CTAs) , one of which is the African Centre for Technology Studies (ACTS) led Consortium comprising of the African Universities and the Universite Cheick Anta Diop. The ACTS-led consortium's overall objective is to Support Science Granting Councils to Fund and Manage Research and Innovation Projects in areas aligned with their national development plans and priorities

2. OBJECTIVES OF THE CALL:

The main goal of this grant is to provide funding to researchers and innovators to implement research that fosters innovative ways of solving the most critical development challenges in Sierra Leone. Specifically, the call is:

- To promote development and commercialization of indigenous technology and adaptation of imported technology for wider domestic application.
- To promote Public-Private-Partnership and collaboration in research and innovation.
- To promote and increase female and inclusive participation in research.
- To promote Job Creation and Social impact.

3. RATIONALE AND SCOPE

Sierra Leone is endowed with a favorable agricultural environment, with arable land, abundant rainfall and several rivers significant for irrigation purposes. These environmental conditions have the potential to support massive food production to meet local consumption and for export [GoSL, 2019]. Agriculture remains the backbone of the economy of Sierra Leone contributing an average of 58.32% of GDP from 2018-2021 Baseline figures, and it is the greatest employer.

Despite the large acreage of arable land, favorable agricultural environment conditions, and huge human resource investment, Sierra Leone continues to be a net importer of agricultural produce especially rice which is the nation's staple food. The Global Hunger Index ranking underscores the need for urgency in establishing instruments and technologies to raise Sierra Leone and several nations with comparable economies out of hunger.

The main reason for the poor yield, and low quality of produce that does not meet export standards is due to lack of mechanize farming, over reliance on rain-fed agriculture, weak and vulnerable value chain for agricultural products is as a result of low levels of agro-processing

and limited downstream integration due to limited access to electricity and water utilities. Most farmers in Sierra Leone practice subsistence farming. Thus, promoting sustainable agricultural production as inputs to industrial processes, value-added exports, and the eradication of hunger, poverty and malnutrition is imperative.

The projects under this area should focus on any or some of the following goals:

1. Development of indigenous technologies for value addition to agricultural produce; (e.g Value Additions to Cassava processing, Palm Oil Production, Coffee, Tea, Egg, Fish and other indigenous products like weaving ('Kontri cloth' weaving, gara tie-dying (batik) etc).
2. Promoting the development of agro processing and preservation industries that enhance value addition for the local market and exports;
3. Developing appropriate and innovative technologies for breeding, feeding, health, and management of livestock and poultry;
4. Enhancing agricultural productivity through the cultivation of improved crop varieties, smart farming, livestock and fisheries;
5. Use of smart systems to improve traditional irrigation practices and increase productivity.
6. Local Production of Concentrates for Animal Feeds
7. Provide techniques for agricultural waste management and utilization
8. Innovations to Control Crop/livestock Pests and Diseases.
9. Local Production and Commercialization of Organic Pesticides and Fertilizers
10. Use of climate-smart STI solutions for precision agriculture and early warning systems to mitigate food instability
11. Use of climate Smart technologies and techniques for Post-harvest losses handling and management

THEME AND SUB THEMES

The main and sub themes for this call are listed below;

Main theme: Food Security, Technology and Agriculture

The sub themes for the proposed research should focus on:

i. Agriculture,
ii. Innovative Technologies
iii. Agro-processing
iv. Smart Technologies

Eligibility: This call is open to researchers in public and private science and technology Research and Development (R&D) Institutions/Centres and Institutions of Higher Learning in Sierra Leone. Consortia of young researchers are also encouraged to apply.

Project Cost: The maximum funding amount is $**45,000,** wherein all costs should be within the eligible funding scope.

Duration: 21 months

4. ELIGIBILITY CRITERIA

All applicants should adhere to the following set of criteria:

i. Must be researchers who are citizens of the Republic of Sierra Leone.
ii. The Principal Investigator (PI) must be an active researcher with preferably a maximum of PhD degree or a minimum of Masters, working as employee in higher learning Institutions/University or Research and Development Institutions (R&D institutions);
iii. The PI must demonstrate a strong and realistic practical linkage between intended research idea to practical implementation and project sustainability; and
iv. The PI is eligible to submit one application only.
v. Each research proposal must have a research team, led by a Principal Investigator. The Principal Investigator shall be the main applicant and will bear the overall responsibility for the project including its technical and administrative co-ordination as well as the timely delivery of scientific and financial reports;

5. APPLICATION REQUIREMENTS

Project proposals shall meet the following criteria:

i. Must be written in English;
ii. Must be in line with the call theme;
iii. Must demonstrate great impact on the achievement of the objectives of the call
iv. Must indicate future market opportunities with a competitive advantage;
v. Must include the capacity building components (e.g. MSc and/or partial PhD support);
vi. Must articulate clearly Intellectual Property Rights (IPR) plans and how will it be handled;
vii. Must include evidence of collaboration with other HLIs and or R&DIs in project phases or in the project team;
viii. Must include an official endorsement letter(s) from the PI's institution of affiliation and/or implementing institution; and
ix. Must articulate clearly how the research ethical issues will be addressed, if possible, to provide an ethical clearance certificate from relevant bodies or authorities as need required. Innovators/Researchers must be affiliated to an

institution (academia/research centre) or legally registered entities in Sierra Leone.

x. An innovator/researcher must not be a lead applicant on more than one application but can be part of at most 2 applications.

xi. All research teams should have adequate representation of female researchers.

xii. Deliberate efforts should be made to promote diversity in the formulation and implementation of projects.

xiii. Staff or Council members of NSTIC and MTHE are not eligible to apply

xiv. The proposed project must include early career researchers and contribute to human capital development in research and innovation.

xv. The proposed research project should have the potential to lead to product or service development, and the potential for commercialization of products or services.

xvi. The project may have a Private Sector partner(s) and a collaboration confirmation letter from these partner(s) must be submitted.

6. SUBMISSION PROCEDURES

a) Abstract (max 400 words)

b) Scientific background and state of the art: Scientific background, including an overview of the field of research around the world, noting the relative advantage of the proposed research;

c) Research objectives and specific aims: The purpose of the research;

d) Detailed description of the proposed research: Working hypothesis, research programme and methods;

e) Significance, importance, innovation, and potential benefits of the proposed research;

f) Applicability: Expected uses and future technological development;

g) Work plan and Gantt: The work plan will be summarized in a schedule diagram. A verbal description of the work steps must be included. Each stage should be defined by a start time and an end time.

h) The Full proposal should not exceed 10 pages , including figures (not including bibliography) and should include the following sections:

i) Budget

j) Sustainability Plan

Full proposals must be submitted through the NSTIC Online Grants Management System https://grants.sgci.aau.org/ . The application process requires the PI to create an application account, and provide details on project title, project team, project background information, project approach, budget, project results, project management, project follow-up, and attachments of a compressed proposal, team member CVs, budget and official letter of

endorsement. Applicants are therefore advised to give the application process ample time to be able to complete the application process.

7. EVALUATION CRITERIA

The proposals shall be assessed based on the following set of criteria:

i. Relevance to the call;
ii. Strength/ merit of the Principal Investigator and the research team members.
iii. Scientific quality of the proposal.
iv. Potential impact of the project to Sierra Leone society;
v. Feasibility of the proposed project.
vi. Evidence of Capacity building.
vii. Linkage with private sectors
viii. Sustainability plan

8. PROCESSING OF PROPOSALS

a) Proposals will be screened for completeness by both NSTIC and AAU before a rigorous review by an independent panel of reviewers.
b) All attachments uploaded on the Online Grants Management System must be in PDF format. A guide on how to use the OGMS is available on the AAU - https://aau.org/ and MTHE website.
c) Application must be uploaded to the Online Grants Management System with this link: https://grants.sgci.aau.org/
d) All applications will be received and processed in confidentiality with acknowledgment of intellectual property rights of the applicants.

e) All research proposals will be evaluated and reviewed by independent experts and selected based on their quality and merit, taking into consideration their potential for high impact at grassroot level, feasibility within the project timeline and at a reasonable cost.
f) The deadline for submission of proposals is **17th October 2023.** Applications received after the deadline will not be considered. Application documents uploaded on the Online Grant Management System must include full proposal; project team CVs; work plan; and budget. All attachments must be in PDF.

g) The review, selection of proposals and communication to applicants to applicants is expected to be completed by **6th November 2023.**

Note:

- The decision of AAU and NSTIC will be final.

9. ELEMENTS TO BE CONSIDERED IN PROPOSAL PREPARATION

a. **Research Proposals** must fall within the broad research thematic areas and subtopics. Research projects that show potential for high impact at grass root within the project time line at a reasonable cost will be given high priority.

b.

c. **Proposal formulation** should bring out clearly Expected outcomes with defined and tangible benchmarks within target timelines, Details of Technology to be developed or deployed, why it is important, what are the expected impacts of the proposed work, clear articulation of methodology and delineation of roles and responsibilities of various partners and collaborators.

d. **Team composition from applicant organizations** - All individuals who make a significant contribution to the intellectual direction of the research, and who may have some responsibility for financial aspects of the project should be listed. Team members from applicant organizations should be included. It is important to include the field of expertise of each individual, as well as the percentage of their professional time committed to the project. Do not include CVs of the entire research team but include a one or two paged CV for the Principal Investigator/Co-Principal Investigator. Letters of support from the institutions of the PI or Co-PIs should be included.

e. **Female Principal Investigators** are strongly encouraged, and the review and selection process will prioritize projects with female PIs or Co-investigators.

f. **Cross-cutting considerations** - The proposal should clearly demonstrate how the project will address issues of diversity, gender equality and inclusivity, public-private partnerships, risk management and intellectual property.

g. **The proposed research** should be applied research, practical and focused towards problem solving in the identified priority area and must be innovative, with strong potential for utilization and or commercialization.

h. **Results and Dissemination** - Applicants should clearly define the major outputs expected from the research project and describe how the research findings will be disseminated or used. The applicants must also expressly state the following: a) Who are the target audience/ beneficiaries? b) How will the findings be used to influence policy and practice? C) What media engagements plans are envisaged? d) Indicate how open access will be fostered.

i. **Project Governance** - Explain how the project will be governed; the composition of the research team, their qualifications, field of expertise and specific roles in the proposed project. What is the role of the university's/institution's management (if any) and how might this governance structure influence the success of the project?

j. **Partnerships** - where partnership exists, describe the planned partnerships with other universities/ research institutes or private sector. How will the private sector or beneficiaries be involved in the design/management/execution of the project?

10. BUDGET

Funding is provided as per research budget proposals, subject to verification of the transparency, rationality and justifiability of costing of the research processes and deliverables. Funding will be disbursed in USD.

Note:

- The budget will not cover research salaries and institutional overheads.
- The costs for traveling and per-diems should not exceed 15% of the total budget.

The project funds will be disbursed in installments following comprehensive achievement of phase outputs. The PI through their head of the affiliated Institution will be responsible for both the technical and financial reporting of the projects during implementation.

11. SCOPE OF FUNDING

i. The maximum funding amount per research project is as associated with each call in section 4.

ii. The funding Eligible costs:
   - Research materials and consumables directly linked to the research project;
   - Small research equipment and accessories directly linked to the research project;
   - Implementation and development of prototypes, models, pilot productions, testing and trial of prototypes etc.;
   - Local travel;
   - Transportation and shipment of research materials
   - Specialized services;
   - Post-graduate student research support;
   - Workshops, seminars, conferences including networking activities directly associated with the funded research;
   - Dissemination of results including publication cost;
   - Costs related to intellectual property, patent extension etc.

12. ATTACHMENTS

Attachment will be required at the end of the process of application on the RCZ Online Grants Management Process. Required attachments will include:

i. Detailed Project Work Plan;
ii. Curriculum Vitae of PI and the team; and
iii. Endorsement letters from the head of PI Institution or implementing institution

13. KEY TIMELINES

SN	ACTIVITY	DATES
1.	Call opening and advertisement	15 September 2023
2.	Call closing	17 October 2023
3.	Screening of proposals	17 – 18 October 2023
4.	Review of proposals	19-27 October 2023
5.	Approval of fundable proposals	30 October 2023
6.	Feedback to the applicants and contracting	1-6 November 2023
7.	Fund disbursement	15 November 2023
8.	Monitoring of progress	Throughout
9.	Final Dissemination Meeting	1 – 25/10/2025

ANNEX 1: PROPOSAL FORMAT/TEMPLATE

The full proposal in any of the priority areas should be prepared in the following format and address elements therein.

1. EXECUTIVE SUMMARY

This section provides a succinct high-level summary of the proposed project. The summary should be in plain English, avoiding the use of jargon and acronyms. Please note that this summary will be published in the SGCI Virtual Hub and partner institutions websites. The summary should be short but detailed enough to stand alone. It must not be more than one page long.

2. BACKGROUND AND RATIONALE

Describe the problem that is to be investigated and the questions that will guide the research process. Provide a brief overview of the body of knowledge related to the problem and indicate the knowledge gaps that the proposed research will fill. To show the importance of the problem, this section should discuss: how the research relates to the country's development priorities; the scientific importance of the problem; the urgency and magnitude of the problem and how the research results will contribute to its solution; the special importance of the project for the private sector; and the need to build up research capacity in the proposed area of research.

3. PROJECT GOAL AND SPECIFIC OBJECTIVES

The overall goal should state the development goal being pursued by the research. The specific objectives should indicate the specific types of knowledge (or other outputs) to be produced/realized, the audiences to be reached, the forms of capacity to be reinforced, and the partnerships to be established. These are the objectives against which the success of the project will be judged.

4. PROJECT METHODOLOGY/ APPROACH

Explain how each specific objective will be achieved in sufficient detail to enable an independent scientific assessment of the proposal. This section should show how the research questions will be answered in the most rigorous way possible. You must be clear about the activities envisaged to achieve each objective. The methodology (which should be justified) should discuss the following details as appropriate:

- **Conceptual and theoretical framework**. Define the frame of reference that will guide the research (for more on this see section on innovation systems).

- **User participation**. Indicate whether (and if so, how) the ultimate users of the research findings (in this case, the private sector) were involved in the design of the project and how they will participate in the execution of the project or implementation of the results.

- **Data collection.** Indicate the approaches and methods that will be used to collect data as well as how the research instruments will be developed. If the research includes studies on human populations, indicate how ethical questions relating to confidentiality will be achieved (see below). Where applicable, details must be provided with regard to the collection and handling of biological samples, and all laboratory procedures and protocols must be stipulated.

- **Data analysis.** Describe the methods of data analysis and modeling to be used, if any. This should include any statistical processes/ softwares (if necessary) as well as how the data will be secured, accessed, shared, stored and archived.

5. ANTICIPATED OUTPUTS AND OUTCOMES

- Define the major outputs (e.g., publications, policy briefs, books, technologies, protocols, guidelines, etc.) expected from the research (please be **specific**.). Based on these outputs, define the outcomes expected. Outcomes are defined as changes in actions, behaviours, and relationships of the users and target audiences. What is likely to change as a result of research findings, to whom, when and where? Describe whether the project findings are likely to influence policy and at what levels (national, regional?) How will the project engage with policy and decision actors at these levels?

6. KNOWLEDGE UTILIZATION AND DISSEMINATION PLAN

Describe how the research findings will be disseminated or used. Who are the target audience/ beneficiaries? How will the findings be used to influence policy and practice? What media engagements plans are envisaged? Is open access (OA) part of your university's/institute's policy? Relate the specific dissemination method/approach to the target audience and briefly explain the rationale for the choice of the approach.

7. PROJECT GOVERNANCE

Briefly explain how the project will be governed. Describe whether the project plans to incorporate advisors to provide overall oversight. What is the composition of the research team, their qualifications and specific roles in the proposed project? Is any partnership planned with other universities/ research institutes in your country (if the focus is national); or in other countries (if the focus is regional)? How will the private sector and other beneficiaries be involved in the design/ management/ execution of the project? What is the role of the university's/institute's management (if any) and how might this governance structure influence the success of the programme?

8. SUITABILITY OF THE HOST INSTUTUION

Describe the suitability of your institution in coordinating this project by highlighting the specific factors that make it uniquely qualified. Provide an overview of the technical infrastructure, human capacity, and other resource endowments that demonstrate the existing capacity to undertake the proposed research. Explain the institution's previous/ current activities,

outreach and impact in the proposed area. Describe any existing or anticipated links with the **private sector** and other actors in the country/national system. Briefly demonstrate how this project will fit into the overall design of the university's/institute's overall research strategy

9. CAPACITY BUILDING

Describe how the project plans to contribute towards both individual and organizational capacity building. How might post-graduate students (MSc. and PhD) be involved in the project? What other training activities are envisaged under the project? Are their plans to enhance the capacity of project partners (and if so, in what areas)?

10. MONITORING AND EVALUATION STRATEGY

Describe the monitoring and evaluation strategy approach that the research team will use for monitoring and evaluation of the research project.

11. GENDER, ETHICS AND SUSTAINABILITY

Describe how ethical approval will be obtained, if applicable. All projects that include human subjects must ensure that their privacy, dignity, and integrity are protected. Projects that will collect corporate or personal information must detail how informed consent will be obtained and confidentiality maintained.

Carefully describe the links of the proposed project to ongoing projects within the institution (regardless of whether these projects are undertaken by the PI). If the project builds on other funded projects then provide accurate and verifiable information about the funding sources and whether the proposed activities are new. Explain how the project will be sustained beyond the project support. Are any donor partnerships anticipated, and if so, which ones? Provide details of any ongoing discussions with other funders, if applicable.

Identify the key risks that may arise during the implementation of the proposed research and how each will be addressed. For each potential risk, outline the key assumptions and a mitigation plan.

12. PROPOSED PROJECT TIMELINE

Provide a chart of key activities and timelines as below

Project Activities	Year 1				Year 2			
	Q1	Q2	Q3	Q4	QI	Q2	Q3	Q4

13. LITERATURE CITED

Include key literature/references that have been cited in the proposal