



Frequently Asked Questions: Call for Expression of Interest in Sub-Saharan African: Artificial Intelligence for Agriculture and Food Systems

This document answers questions about the Artificial Intelligence for Agriculture and Food Systems call for expression of interest, whose deadline is 10 May 2022 at 2359 East African Time.

Please refer to the [Detailed Call Document](#) for comprehensive information about the call for concept notes and their requirements.

For more answers to questions relating to the call, please join us for an informational webinar on 26 April, 2022.

1. What do you mean by "Artificial Intelligence for Agriculture and Food Systems"?

With the current geometric rise in Africa's population estimated to reach about 2.6 billion by 2050 and a growth rate of more than 2.5% p.a., it becomes imperative that agriculture and food systems (AFS) are reviewed to embrace innovative approaches for sustaining and improving the system from production to utilization. One of the most promising ways to achieve this target is through science, technology and innovation (STI). STI is recognized as a means for achieving the sustainable development goal (SDG) 2 (End hunger). Artificial Intelligence (AI), which is the capacity of a machine to perform cognitive functions associated with human minds, such as perceiving, reasoning, learning, interacting with the environment, solving problems, and even exercising creativity, stands out as one of the emerging technologies with a great potential to transform the AFS and ensure that all aspects of food security including food availability, access, utilization and stability are achieved even for small-scale farm enterprises in Africa. The introduction of AI for AFS is enabled by other technological advances such as big data, robotics, machine learning (ML), Internet of Things (IoT), availability of affordable sensors and cameras, drone technology, and even wide-scale internet coverage on geographically dispersed fields. Hence ATPS and Partners are looking for unique solutions utilizing AI in leapfrogging Africa's Agriculture and Food System, thus building the capacity and Capability of African Researchers in developing and deploying home grown solutions fundamental economic growth and development.

It is against this background that the [African Technology Policy Studies Network](#) (ATPS) is partnering with the [International Centre of Insect Physiology and Ecology](#) (*icipe*) and [Kumasi Hive](#) as a consortium to manage an innovation research network (Hub) on AI for AFS in Africa (AI4AFS).



This project is part of the innovation stream of the Artificial Intelligence for Development Africa (AI4D Africa) program dedicated to a future where Africans across all regions create and use artificial intelligence to lead healthier, happier, and greener lives. AI4D Africa is co-funded by the Swedish International Development Agency and Canada's International Development Research Centre. The specific objectives of this project include:

1. Deepening the understanding of how to develop and scale sustainable African agriculture and food system AI innovations;
2. Building the capacity of African innovators and researchers to develop, deploy and scale such AI applications; and
3. Facilitate the contribution of African research to relevant international AI policy and practice conversations.

2. What are the specific thematic areas of interest?

This research fund will support research projects and innovations for up to 18 months duration in the following four priority focus areas in Agriculture and Food Systems:

- a) **Availability**, the thematic areas may include: **Prediction of crop yields** (tools to help farmers make ideal decisions in crop yield forecasting and improve smart farming practices that lead to higher yields); **Prediction of soil management properties** (tools for understanding soil conditions and how to boost its performance to support productivity); **Farm management systems** (tools for precision agriculture to detect and perform farm management operations such as planting, irrigation, pollination, weeding, fertilizer application, harvesting, etc.); **Pest and disease detection** (early detection of pests and diseases in the farm and eventual prevention or control); **Smart mechanization** (tools to reduce drudgery in agriculture and minimize inputs, high autonomous and intelligent machines and agribots); and **Livestock surveillance** (for monitoring illnesses, injuries, and even pregnancies).
- b) **Access**, priority will be given to **Food demand monitoring** (tools for real-time monitoring and control of changes in food demand); **Supply chain management** (tools for monitoring food origin, quality, and safety that affords transparency, trust, certification, and traceability of food product supply chain from farm to fork); **Food retailing** (tools for predicting consumer demands, perceptions, and buying behaviour); and **Transportation and storage** (preservation of food product quality, to ensure safe food products and to minimize the product damage); **Inventory management** (prediction of daily food demand and to ensure that there are no inventory-related problems).
- c) **Utilization**, thematic areas include: **Modern processing techniques** (software algorithms for enhancing heating, cooling, milling, smoking, cooking and drying to ensure high quality and quantity of agrifood products and, at the same time, avoiding overutilization of resources and wastages); **Minimizing postharvest losses** (tools for preservation, processing, safe storage of foods); **Societal impacts** (ecology, infrastructure, livelihoods, nutrition, social systems, crisis and cultural practices of the food systems);

- d) **Stability**, some of the thematic priority areas will include: **Climate and weather prediction** (to help farmers increase yields and profits without risking the crops or livestock from climate vagaries); **Decision support** (support systems to enhance farmers' choices in crop cultivation, consumer preferences, fashion and trends); **Yield prediction** (prediction of gaps between food production, supply and consumption to inform national agricultural policies, tracking and tracing agricultural commodities along transportation routes); **Disaster prediction** (able to identify impending disasters such as pests and diseases invasions, locust invasion, etc. and enable farmers mitigate them); **Collective decisions** (modeling social interactions, informing policy, and designing markets); **Training, education and knowledge exchange** (enhancing extension service delivery and information sharing); and **Access to production factors** (enhancing access to factors of production such as land, inputs, capital, labour etc. especially for marginalized groups like women, youth and persons with disabilities [PWDs]).

3. Which countries are the focus of this Call?

Lead Applicants/Organizations must be legally founded and registered in one of the countries in Sub-Saharan Africa. The project must be implemented in at least one or more of the Sub-Saharan African Countries. However, Co-Applicants and Third-Party Applicants can be located outside of Sub-Saharan African countries, including low- and middle-income countries (LMIC)/territories, if they are deemed necessary for the project's success. All Lead Applicants/Organizations must recognize that where a partnership with co-applicants or organizations outside of Sub-Saharan Africa exists, the project developed must be homegrown to develop the capacity and capability of Sub-Saharan African Researchers.

4. Can an organization submit more than one proposal as a Lead applicant?

No. An organization can submit a maximum of one application as a Lead Applicant. For large organizations (e.g., universities), different departments or faculties within the same institution may be considered different as Lead Applicant Organizations. An organization may apply as a Co-Applicant Organization on multiple applications.

5. Is there a limit on the number of applications that an individual can participate in?

An individual can be listed as a team member on a maximum of two applications and can only be a Nominated Principal Applicant in one application. The Nominated Principal Applicant must be an [independent researcher](#) or a [knowledge user](#) affiliated with the Lead Applicant Organization at the time of funding. If the Nominated Principal Applicant is a [knowledge user](#), there **must** be at least one Co-Principal Applicant who is an [independent researcher](#). Third-party applicants are excluded from this limit.

6. Can individuals apply to this Call for EOI, or are they required to apply as part of an institution?

Project funds can only be released to institutions and not directly to individuals. The relationship of the Nominated Principal Applicant with the Lead Applicant Organization must be clearly explained in the project proposal/concept.



7. Can an organization based outside Sub-Saharan Africa apply as a Lead Applicant?

No. This Call is targeted to eligible Lead Applicant Organizations that are legally founded and registered in Sub-Saharan Africa (SSA) as independent entities, can receive and administer funds and be allowed to conduct or coordinate proposed project activities. Any organization outside SSA may apply to this Call as a Co-Applicant Organization but implement the project in one of the SSA countries.

8. What is a Lead Applicant Organization?

Definition: The Lead Applicant Organization will assume responsibility for the administration of grant funds and will take the overall lead in coordinating the research activities. The Lead Applicant Organization is responsible for developing and administering sub-grant agreements with their project partners (such as Co-Applicant Organizations, Third Party Organizations or project consultants).

9. What is an Eligible Lead Applicant Organization?

To be eligible to receive this funding, Lead Applicant Organizations must be legally founded and registered in Sub-Saharan Africa as independent entities, can receive and administer funds and be allowed to conduct or coordinate proposed project activities.

Eligible Lead Applicant Organizations include Sub-Saharan African Research /Knowledge institutions and/or their affiliated institutions (including research institutes and other non-profit organizations with a mandate for scientific research in Agriculture and/or related discipline) OR Sub-Saharan African non-governmental organizations (including Indigenous-led community organizations) with a research or knowledge mobilization mandate.

10. What is a Co-Applicant Organization?

Definition: Co-Applicant Organizations are direct partners in the research and jointly share the intellectual responsibility and ownership of the knowledge and outputs produced with the Lead Applicant Organization. It is either a private sector actor, research institution or a civil society organization.

11. What is an Eligible Co-Applicant Organization?

Co-Applicant Organizations can be private (e.g., non-governmental organizations, cooperatives, unions, civil society organizations, non-profit foundations or divisions of for-profit organizations) or public research organizations (e.g., governmental departments, agencies or ministries).

12. What is a Third-Party Organization?

Definition: Third-Party Organizations are sub-contracted by the Lead Applicant Organizations for specific services.

Eligible third-party organizations:

- Are not required to be located in Sub-Saharan Africa;
- May include experts in the role of advisors or consultants to the project, but not as principal or co-principal investigators; and
- May not receive more than 10 percent of the total budget of the proposed project.



13. Can Co-Applicant Organizations or Third-Party Organizations receive funding directly from IDRC?

No. The Hub will only negotiate funding agreements with the Lead Applicant Organizations of the selected projects. These Lead Applicant Organizations can then develop and administer sub-grant agreements with Co-Applicants, Third-Party Organizations, or consultants. In exceptional cases, if sub-grant agreements are not possible within the consortium, the Hub may consider administering separate grant agreements with co-applicants.

14. Do applicants in a consortium need to be from different countries?

No. It is not required that applicants in a consortium be from different countries.

15. Is co-funding required?

No. Co-funding is not required for this call. Nevertheless, in-kind contributions may include regular staff salaries, equipment, infrastructure, and overhead costs for applicants selected to receive a grant. Cash and/or in-kind contributions should be reflected in the project budget.

16. How should the project budget be distributed between the Lead Applicant Organization, the Co-Applicant Organization and Third-Party Organizations?

There are no restrictions on the portion of the total budget allocated to Co-Applicant Organizations. Third-Party Organizations are restricted to a maximum of 10% of the total budget. The proposed budget must fit with the stated project activities of each consortium member.

17. Can a for-profit Organization lead the project?

Any organization can lead the project. The organization and the project should be based in Sub-Saharan Africa.

18. Is there a specific format for applying to the Call?

Please read the following instructions for preparing your application (also found in the Call document).

The font should be **Times New Romans** and size of the font is **11**.

Each application should have the following sections:

- Cover page (contact information of the lead applicant and the other partner organizations)
- Abstract (no more than 250 words)
- Research Problem(s) and Rationale (800 words)
- Objectives (general and specific) (250 words)
- Methods (1500 words)
- Project schedule (800 Words)
- Responsible AI, Gender equality, Support and inclusion (GESI), and Carbon Footprint reporting statements. (450 words)
- Budget Summary (800 words)
- Institutions and personnel (800 words)

The applicant should describe the institutions/SMEs/ organizations, including their history and objectives. List key personnel, their qualifications, roles, and time commitments. Describe any administrative



arrangements that may include third parties. Clearly state how each partner's expertise will contribute to the proposed project's success.

As part of the application process, applicants will also be required to submit the following documents as Annexes:

Additional materials in the appendix to your EOI, you are allowed to include any further documentation that supports your proposal. This should include:

- Abridged CVs of key project members;
- Letters of affiliation to an institution;
- Support letters from the participating partners/organizations;
- Relevant experiences/project references from previous projects;
- Certificate of incorporation or registration for the Lead Institution. Institutions and personnel:

19. Should the budget currency be in United States dollars?

Yes. The amount of funding being requested by the Lead Applicant Organization should be presented in United States dollars.

20. When will applicants be informed of the outcome?

Applicants will be notified of whether their application was successful no later than June 10, 2022.

21. What is the budget range and the amount of overall funding available?

Between **USD 40,000** to **USD 60,000** is available for one grant. This amount is also the overall funding available for one application. Indirect cost should not exceed

22. Who owns the project products/technologies/innovations in terms of IPR

The project products will not be individually owned. The donor will jointly own them. However, there will be negotiations be done between the Hub and the donors for specific products and innovations that will be up for commercialization. Otherwise all the project products will be public goods.

23. What is the definition of the consortium, and must a project research team have all consortium components?

A consortium comprises a research institution, private sector, and civil society organizations. Yes, research teams **must** have all three components of a consortium.

For more information, view the informational [Webinar recording](#) on the AI4AFS call for Expression of Interest that was held on 26 April 2022.

