



Call for Expressions of Interest:

**Managing Organization (Hub) for
Responsible Artificial Intelligence for
Climate Action Innovation Research
Network in Africa**

Date issued: March 01, 2021

Deadline for expressions of interest: April 05, 2021 (23:59 EST).

Canada's International Development Research Centre (IDRC) and the Swedish International Development Agency (Sida) invite expressions of interest from organizations to design and implement an innovation research network on Artificial Intelligence (AI) for Climate Action. The call is open to individual organizations based in lower and lower-middle income countries (LLMIC) in sub-Saharan Africa (SSA), or consortia of up to three organizations with the lead organization based in an LLMIC in SSA. This call for expressions of interest is not open to individuals or government ministries and agencies.

The goal of this initiative is to advance the responsible development and deployment of home-grown AI innovations to tackle pressing challenges emerging from climate change in Africa.

This call is part of the four-year [Artificial Intelligence for Development in Africa](#) (AI4D Africa) program and is being developed in collaboration with [Climate Change AI](#).

The **AI4D Africa program** is a four-year program dedicated to accelerating the realization of Africa's Artificial Intelligence innovations towards achieving continental, and global development goals. AI4D Africa partners with African AI communities to support the responsible, home-grown development and deployment of AI through investments in innovation, policy research, and capacity. For investments in innovation, AI4D Africa will support four, pan-African innovation research networks focused on climate change, agriculture, education, and gender/inclusion. This call is for a managing organization (henceforth the **Hub**) for the climate change innovation research network.

We encourage all applicants to have a look at the original [AI4D Program Proposal](#) as well as the [AI4D Africa website](#).

[Climate Change AI](#) is a volunteer initiative that aims to catalyze impactful work at the intersection of climate change and artificial intelligence by providing education and infrastructure, building a community, and advancing discourse. Since it was founded in June 2019, Climate Change AI has published a foundational (60-page) report offering recommendations for where AI can have high leverage in addressing climate change; organized conferences and events at top artificial intelligence learning venues and the UN Climate Change Conference; and led the creation of a global network of researchers, engineers, entrepreneurs, investors, policymakers, companies, and NGOs.

More background on these two initiatives can be found in *Appendix A* below.

The selected Hub will design and implement an innovation research network of researchers and innovators applying responsible AI techniques to advance climate action in Africa and participate in and contribute to the global movement on climate change and AI. The selected organization will also be responsible for the following non-exhaustive set of activities:

- Supporting the competitive selection of high-quality research projects from African innovators and researchers at the intersection of Artificial Intelligence and Climate Action;
- Providing conceptual and technical support and guidance to the research network members;
- Building synergies and collaborate where appropriate with other AI4D and Climate Change networks and communities;
- Contributing to the strategic guidance of the AI4D Africa program; and
- Coordinating and collaborating with the Climate Change AI initiative for global impact and learning.

The deadline for submission of expressions of interest is April 05, 2021 (23:59 EST).

Artificial Intelligence and Climate Action

Climate change is one of the greatest challenges of our time, with widespread implications for society. Already, we have seen an increase in the frequency and intensity of fires, droughts, floods, storms, and other extreme events, and global food systems and ecosystems have come under threat. Compounding this problem, the most severe impacts of climate change are likely to be felt by the world's most disadvantaged populations. As a result, it is critical that society take strong action within the next few decades to both reduce greenhouse gas emissions and adapt to the consequences of a changing climate.

While no silver bullet, artificial intelligence learning can be a powerful tool in helping to tackle climate change by both in reducing greenhouse gas emissions and in helping society adapt to the effects of climate change. As outlined in the report, "[Tackling Climate Change with Machine Learning](#)," machine learning, one branch of artificial intelligence, can help facilitate climate change mitigation and adaptation strategies in many different areas, such as energy, industry, agriculture, forestry, and disaster response. For instance, machine learning can be used to help gather decision-relevant information from geospatial imagery and text documents, forecast important quantities such as solar power production and extreme events, improve operational efficiency through smart equipment control and predictive maintenance, and accelerate the discovery of next-generation batteries and clean technologies.

Approach

The general objective of this innovation research network is to advance climate action in Africa through the responsible development and deployment of artificial intelligence innovations.

Specific objectives are to:

- (1) Deepen understanding of how to develop and scale responsible AI innovations for climate action in sub-Saharan Africa;
- (2) Build the capacity of African innovators and researchers to develop, deploy and scale responsible AI applications in climate action; and
- (3) Facilitate the contribution of African research to international AI policy and practice conversations.

To achieve these objectives, the proposed approach is to implement an innovation research network, managed by the Hub, which will bring together (~6-10) African innovators and researchers working on or researching AI for Climate Action innovations through an open call. The selected innovators and researchers will receive funding and support for a research project of at least 18 months on their innovation. It is expected that the selected projects will represent linguistic, gender, and geographic diversity across Africa; diversity across relevant areas of application of AI to climate action; and diversity of relevant involved stakeholders, e.g., university researchers, start-ups,

research-oriented think-tanks, consultancies, labs. The Hub will play a critical role in establishing, managing, and supporting the innovation research network. Critical to this is the role of the hub in:

- Supporting researchers across the various geographies and in at least two languages (English and French), and to facilitate equitable engagement of women in research and leadership roles.
- Ensuring that each research project is multi-disciplinary, engaging researchers with different skillsets and expertise working together to advance new innovations (e.g., ensuring a combination of AI-related expertise, such as computer science, data science, and statistics; and climate action expertise relating to energy, ecology, agriculture, etc., as well as in relevant frameworks such as rights and law, sociology, or gender studies).

The exact nature of the role of the Hub is not fully determined and the proposing organization(s) should provide information on how they propose to add value to the network to ensure that its outputs and outcomes are greater than the simple sum of the individual research projects.

The Hub will also play an important role as a key AI4D Africa implementing organization. This includes working with other innovation research Hubs to find potential points of collaboration. For example, we anticipate the need for Hubs to collectively think about critical issues such as approaches to human rights and equity assessment of and scaling of AI innovations from early on the project cycle.¹ The Hub is expected to participate in AI4D Africa strategic learning, monitoring and evaluation activities, helping to provide strategic direction to the program and maximize program synergies.

This network will also play an active role in the larger global initiative on climate change and artificial intelligence learning, in collaboration with Climate Change AI. The scope of this collaboration is to be determined. It is anticipated that the Hub will help design the nature of this collaboration.

A key element of this process will involve the development of an African-led responsible artificial intelligence and climate action innovation research agenda. By responsible, we are referring to AI innovations that are ethical, respect human rights, inclusive, and contribute to environmental sustainability.

Indicative Scope of Work for Network Hub

The following are *indicative* activities that *could* be performed by the AI4D Climate Action Hub:

Set up and manage the network

- Develop and run a call for proposals for AI for climate Action innovation research;

¹ See for example the Responsible AI Design Assistant: <https://oproma.github.io/rai-trustindex/> as well as [Responsible Innovation in Canada and Beyond](#)

- Develop and manage a call review committee, made up of multi-disciplinary experts and ensuring equal engagement of men and women;
- Sub-grant to successful research teams to become members of the network and implement their innovation research projects (ensuring equity and participation of different researchers in projects);
- Manage sub-grants to winning institutions (henceforth sub-grantees), including sub-grantee monitoring and evaluation; and
- Interim and final technical and financial reporting to IDRC.

Support to network members

- Provide technical and methodological assistance to sub-grantees as required;
- Ensure network members engage in responsible AI practices and approaches – ensuring that interventions contribute to rights, inclusion, ethics and sustainability practices;
- Plan and run network workshops and other network support activities designed to collectively tackle common issues and/or facilitate cross-project collaboration where appropriate;
- Support network members in finding engagement opportunities with climate change initiatives that may benefit from their research results and methods;
- Facilitate sub-grantee reporting;
- Connect sub-grantees to other resources (knowledge, financial) as required.

International Collaboration and Engagement

- Coordinate with other tracks within a broader grant program organized by Climate Change AI on this topic, to facilitate cross-project communication and collaboration where appropriate.
- Coordinate with Climate Change AI and the broader Climate Change AI network to engage in global and multi-disciplinary exchange, organize joint initiatives and events as appropriate, and otherwise enable the impactful and responsible development of work at the intersection of climate change and artificial intelligence.

Contributing to advancing knowledge and policy dialogues

- Produce a baseline scanning document of AI for climate action innovations in Africa;
- Produce report(s) on the state of AI innovations in climate action in Africa;
- Design a framework for facilitating the synthesis of lessons learned from across the different innovation projects supported by the network;
- Support uptake and scaling of research for policy or practice change;
- Require that all grantees openly release any data sets that are generated by the research project;
- Facilitate the production, communication and marketing of research outputs stemming from the network and ensure research publication in appropriate venues in accordance with IDRC's Open Access Policy.

Contribute to the overall AI4DAfrica program strategy

- Participate in the implementation steering committee of AI4D; and
- Participate in the AI4D Africa learning, monitoring, and evaluation activities.

Funding and Duration

AI4D Africa will allocate up to CA\$1.2 million to perform the duties of the Hub. The project can be up to 32 months in duration. For a consortium, IDRC will enter into a funding agreement only with the lead organization.

Eligibility

This call for expressions of interest is open to individual organizations or groups of organizations that:

- Have their headquarters based in lower and lower-middle income countries in Sub-Saharan Africa with preference given for organizations in low- and medium-income countries (see Annex II for complete list).
- Have a proven record of working in Africa and supporting the design, development, and scaling of climate change and AI innovations in these contexts.
- Internal expertise in AI and climate change mitigation or adaptation;
- Ability to work in both English and French at a minimum. Other languages a plus.

Transdisciplinary consortia are encouraged to apply. Consortia may consist of up to three (3) organizations. In case of a consortium, the expression of interest needs to provide a rationale explaining why the consortium has come together to implement this innovation research network and describe the role and added value provided by each member organization. Consortia must describe the governance and coordination arrangements they will use to produce high quality work and support fair and equitable partnerships.

NB: *This call for expressions of interest is not open to individuals or government ministries and agencies, but it is open to public research institutes and public university centers, labs and departments. It is also open to private sector actors.*

In case of a consortium application, individual members can be based in different countries and the non-leading members may be based in countries other than the list of Annex II. However, the leading member can only be based in an eligible country (see Annex II). IDRC will get into contractual agreement with the lead member only. The other members will be considered as subcontractors.

Expression of Interest Requirements

The applicant organization (or, in the case of consortium, the lead organization) should submit an expression of interest **of no more than 3,500 words** that clearly addresses the following:

- The organization's (or consortium's) interest in becoming the Hub and how this role aligns with their organizational mandate.
- The organization's (or consortium's) experience running innovation and/or research networks.
- The key areas where leveraging AI in support of African climate action innovations can bring the biggest benefit, and the challenges to achieving those benefits.
- How the organization engages in the climate action space and/or artificial intelligence/ data science for development.
- How the organization would build an innovation research network that (1) secures diverse participation across Africa, (2) supports responsible innovation, and (3) provides innovation and research support.
- How the organization will ensure gender equity and the inclusion of other marginalized groups research design, implementation, and outcomes.
- Experience with research synthesis and knowledge mobilization.
- The team composition and resources deemed necessary to successfully implement the network, including its evaluation and governance processes (in the case of consortium, outline the roles each member would play, which organization would lead, how partners would coordinate equitable and effective partnerships).
- What major challenges the organization (or consortium) foresees in implementing the network and what actions it will take to address them.
- Indicative budget. We expect that a minimum 55% of the total budget goes towards network research projects.

In addition, please include:

- Contact information of the lead applicant and members of the consortium if applicable.
- Abridged CVs of the lead applicant with relevant experience and key contact individuals from other organizations in the case of the consortium (CVs should be no longer than two pages).

Evaluation Criteria of Expression of Interest

Knowledge and expertise on Climate Action, AI innovations, and research (20%)

- Demonstrated experience engaging in climate action research and AI innovations in Africa (expertise can be shared among different consortium members), or strong experience in one with proven track record of collaborations in the other domains;
- Experience and learning about scaling pathways in AI innovations for climate action innovations within Africa.
- Connections with research and policy communities relating to climate action and AI.

Knowledge and expertise in supporting research and/or innovations networks (20%)

- Demonstrated experience running collaborative research activities and/or networks.

- Proven ability to support and guide researchers and technologists
- Ability to facilitate knowledge exchange through participatory mechanisms both virtually and face-to-face.
- Experience managing calls for proposals processes.

Innovation Research Network Plan (20%)

- Logical network plan that funds and supports responsible AI for Climate Action innovations
- Approach ensures inclusion and equity of both genders and other vulnerable groups
- High impact knowledge synthesis and sharing activities
- Reasonable and feasible budget

Expertise in synthesis, learning facilitation, and knowledge mobilization (15%)

- Ability to facilitate cross-grantee learning and synthesis.
- Experience in designing and developing products that support knowledge sharing and use: high quality practitioner-oriented outputs, toolkits, rapid knowledge syntheses, supporting resources, and policy briefs.
- Experience in knowledge mobilization for policy and practice improvement.

Organizational performance (20%)

Evidence that the organization has the basic systems, resources, and management capacities to succeed in setting up and running a Pan African research network. Capacity to work in English and French (other languages would be an asset).

Organizational motivation (5%)

Evidence that the organization's programmatic strategy, institutional mandate, and previous experience align with and are relevant to the role of the Hub.

Submission and Review Process

The expression of interest and all requested supporting materials must be sent by email to AI4DAfrica@idrc.ca, with a timestamp **no later than 23:59 EDT on April 05, 2021**.

The review process will consist of the following steps:

- (1) Verification of eligibility requirements and expression of interest completeness: IDRC will review all submitted expressions of interest to ensure they meet eligibility requirements and all necessary materials. Incomplete expressions of interest or those that do not meet the requirements will not be considered further.
- (2) Review and ranking of expressions of interest: members of IDRC and Climate Change AI will review eligible expressions of interest using the evaluation criteria. Each expression of interest will be reviewed by at least two reviewers. Expressions of interest will be ranked based on scoring and subsequent IDRC discussion.

- (3) Shortlisting expressions of interest: On the basis of scoring and internal discussion, IDRC and Climate Change AI will shortlist high-quality expressions of interest and will invite at most 5 applicants to submit a full proposal. The full proposals will be assessed by an external expert review panel, who will recommend a shortlist to IDRC and Sida.
- (4) Proposal feedback will only be provided to those that are requested to submit a full proposal.

Call Timeline

Activity	Date
Expression of interest release date	March 1
Deadline for submission of questions	March 22
Answers to questions posted	March 26
Submission deadline	April 05
Selected Eols invited to submit proposals	April 19
Submission of proposals	May 17
Final selection	May 31

Inquiries

If you have any questions about this call for expressions of interest, please contact IDRC at AI4DAfrica@idrc.ca.

Any inquiries that affect all applicants will be posted anonymously online when the answers to questions are posted. Applicants are strongly encouraged to monitor this website (ai4d.ai) for any updates regarding the call.

Annex I: AI4D Africa and Climate Change AI

AI4D Africa

Artificial intelligence (AI) applications are profoundly impacting our world. AI is a set of technologies upon which applications are being built and applied in almost every domain of social and economic life. Fuelled by the increasing availability of computational power, improved connectivity, and data, AI offers innovative ways to promote human development by spurring new start-ups, improving food systems, enabling higher quality education systems and tackling pressing health and climate challenges for many low- and middle-income countries in Africa. The resulting impact stands to be massive, if not revolutionary.

Across the continent, Africa has a burgeoning community of data scientists, AI specialists, and researchers who are exploring how AI can contribute to tackling local challenges. For instance, Agrix Tech, a Cameroon start-up rolling out in 2020, aims to help African farmers detect plant diseases and offer both chemical and physical treatments as well as prevention measures. And M-Shule in Kenya uses AI and SMS to deliver personalized, accessible education to primary school students across Africa. The enthusiasm and breadth of applications are witnessed in the highly popular [Deep Learning Indaba](#) and [Data Science Africa](#) events that bring together hundreds of practitioners from across the continent to learn and share.

To address these challenges, the AI4D Africa program has a responsible AI innovation stream which will consist of four innovation research networks in the areas of climate action, education, agriculture, and gender and inclusion. This call responds to the innovation research network focused on climate action innovations.

We encourage all applicants to read the original [AI4D Program Proposal](#).

Climate Change AI

[Climate Change AI](#) (CCAI) is an initiative composed of volunteers from academia and industry that aims to catalyze impactful work at the intersection of climate change and machine learning. Since it was founded in June 2019, CCAI has led the creation of a global movement in climate change and machine learning, encompassing researchers, engineers, entrepreneurs, investors, policymakers, companies, and NGOs.

CCAI's major activities to date include:

- The paper: The CCAI team wrote the foundational 60-page [report](#) "Tackling Climate Change with Machine Learning," offering recommendations for where AI and machine learning can have high leverage in addressing climate change — in battery design, methane leak detection, flood mapping, and hundreds of other applications. In the weeks after our report appeared, it was the most read new computer science paper on any subject and was

covered by dozens of news outlets including the MIT Technology Review, National Geographic, and NPR.

- Workshops and events: CCAI has organized workshops at the top machine learning conferences such as ICML and NeurIPS, as well as a panel at the UN Climate Change Conference (COP25). These events, which have drawn hundreds of attendees from around the world, aim to facilitate team building, promote the exchange of ideas, and mobilize action.
- Digital resources and capacity building: CCAI has created a host of resources aimed at disseminating knowledge and building an active community in climate change and machine learning, including an interactive database of applications, lists of background readings and relevant datasets, and a digital discussion forum. CCAI also regularly organizes programs to facilitate capacity building, such as mentorship programs to match individuals with complementary expertise.

Annex II. List of eligible countries

The lead organization must be headquartered in a low and lower-middle income countries in sub-Saharan Africa, as per the country classification of the World Bank. Eligible countries include the following:

Benin Burkina Faso Burundi Cameroon Central African Republic Chad Comoros Congo, Rep Côte d'Ivoire Democratic Republic of the Congo Djibouti Eritrea Eswatini Ethiopia Ghana Guinea Kenya Lesotho Liberia Madagascar	Malawi Mali Mauritania Mozambique Niger Nigeria Rwanda Senegal Sierra Leone Somalia South Sudan Sudan Swaziland Tanzania The Gambia Togo Uganda Zambia Zimbabwe
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The following SSA countries **are not** eligible for this call:

Botswana
Equatorial Guinea
South Africa
Seychelles