



BioInnovate Africa Programme Phase II

First open call for concept notes for creating value for smallholder farming communities through sustainable bioinnovations

Date of Issue: 3rd April 2017

Closing date: 2nd June 2017

Summary:

Grant categories: Category 1 - developing and piloting economically viable biobased technologies and products, and Category 2 - technology business incubation.

Thematic focus areas: a) Value addition to agroproduce; and, b) agro/biowaste conversion;

Eligible applicants: Scientists, researchers and innovators resident in one of the eastern African countries of Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda.

Partners per project: Minimum 3 and maximum 7 from at least two of the eligible countries.

Grant period: Up to 3 years (2017-2020)

Grant amount per project: US\$ 750,000 for Category 1 grant; and US\$ 250,000 for Category 2 grant.

Total budgetary allocation: US\$ 5 million

Call deadline: 2nd June 2017.

Shortlist of finalists: Expected last week of June 2017

Final selection and publication of the award decisions: Last week of September 2017

1. Background

The Bioresources Innovations Network for Eastern Africa Development (BioInnovate Africa) Programme is a regional initiative established in 2010 with support from the Swedish International Development Cooperation Agency (Sida) to assist countries in eastern Africa benefit from the revolutionary advances in biosciences, by converting biobased technologies into innovations for inclusive growth and sustainable development. It evolved from the East African Regional Programme and Research Network for Biotechnology, Biosafety and Biotechnology Policy Development (BioEARN) founded in 1999, to its current form, where it supports scientists, researchers and innovators in the region's universities, research institutes and firms to link biobased research ideas and technologies to business and the market. Such links do not only facilitate the translation of bioscience research outputs into goods and services for beneficial societal use, but also expand opportunities for creating new jobs, increasing household incomes and reducing poverty in a more environmentally sustainable way. BioInnovate Africa is based at the International Centre of Insect Physiology and Ecology (*icipe*) in Nairobi, Kenya, and operates in six eastern African countries, namely **Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda**.

The Programme envisions a modern bioeconomy in eastern Africa, where economic growth and development is spurred by scientific research and innovation utilising the region's rich renewable bioresources, whilst ensuring

environmental and social sustainability. In this respect, the Programme, in cooperation with the New Partnership for Africa's Development (NEPAD), the Councils, Commissions and Ministries of Science and Technology in eastern Africa and other actors in the bioscience innovation ecosystem, contributes to regional, continental and global development agendas. This includes addressing two priority areas of NEPAD's Science, Technology and Innovation Strategy for Africa (STISA) 2024¹, i.e. priority area 1 (ensuring food and nutrition security) and priority area 6 (wealth creation through innovation). The Programme is aligned to the Comprehensive African Agricultural Development Programme (CAADP) Results Framework (2015–2025)², and the priorities set out in the Science Agenda for Agriculture in Africa (S3A)³. In effect, the Programme directly contributes to the UN Sustainable Development Goal (SDG) 9 (promoting sustainable industrialization and fostering innovation) as well as SDG 2 (end hunger, achieve food security and improved nutrition, and promote sustainable agriculture)⁴, and is one of the initiatives accelerating the region's realisation of the African Union's aspirations (Agenda 2063)⁵ of a prosperous Africa based on inclusive growth and sustainable development.

In Phase I (2010–2015), the Programme focused on building innovation consortia/platforms on crop improvement technologies, value added products from millet and sorghum, sustainable utilisation of agroindustrial waste and bioscience innovation policies. These consortia/platforms demonstrated the value of a regional collaborative effort, where scientists work together with the private sector and policy actors to generate products and technologies of regional benefit. Some of the technologies and products included new disease-resistant and drought-tolerant crop varieties of cassava, millet, sorghum and beans, non-alcoholic malt drinks, and integrated systems of waste water treatment. The Programme continues to build on these previous efforts to create a stronger innovation-driven, user-oriented platform in Phase II (2016 – 2021). More emphasis is placed on linking biobased research ideas and technologies to business and the market.

2. BioInnovate Africa Programme goal and objectives

2.1. Goal

The goal of BioInnovate Africa Programme is to improve the productivity (and hence living standards) of smallholder farming communities in eastern Africa by making agro/bio processing enterprises more competitive and environmentally sustainable. With BioInnovate Africa's support, the scientists, researchers and innovators based at the region's universities and research institutes work together with private sector firms to contribute to this goal. It is expected that the capacity of the scientists, researchers and innovators, and their institutions, to link biobased research ideas and technologies to business and the market, will increase during the period of the Programme's support.

2.2 Objectives

The Programme has the following main objectives:

¹ <https://www.au.int/en/documents/29957/science-technology-and-innovation-strategy-africa-2024>

² <http://www.nepad.org/resource/caadp-results-framework-2015-2025>

³ <http://faraafrica.org/programs/frameworks/science-agenda/>

⁴ <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

⁵ http://au.int/en2/sites/default/files/pages/3657-file-agenda2063_popular_version_en.pdf

a. To generate bioscience innovations that address the needs of smallholder farmers and agroprocessors in eastern Africa.

The Programme supports scientists, researchers and innovators from universities and public research institutes to work jointly with private sector firms and other social entrepreneurs in carrying out high quality bioscience research, and translating the research outputs into bioinnovations for societal use. Such collaborative work involves adding value to agricultural produce, agro/biowaste and related bioresources. The key activities in this regard may include developing, testing, piloting and demonstrating new or improved technologies or products and designing their distribution systems together with end users and market actors. Furthermore, the Programme supports incubation of innovative biobased technologies, including bioproducts into business enterprises.

b. To engage with policy makers and evaluate relevant policy options that support bioscience innovations.

The Programme supports the identification, analysis and evaluation of policy issues, regulations and incentives for bioscience innovations. Part of this policy analysis and evaluation includes techno-economic assessments and market feasibility studies for the technologies or products developed or transferred through the Programme. The Programme engages with policy makers and supports policy initiatives aimed at creating an enabling environment for bioscience innovations in eastern Africa.

2.3 Programme Design

BioInnovate Africa is designed as a regional bioscience innovation platform, where scientists, researchers, innovators, entrepreneurs and government officials collaborate in the process of developing and commercialising biobased research ideas and technologies. This collaboration is implemented through several activities, including technology development, technology business incubation and active engagement with policy makers. While the Programme adds value to national efforts, it primarily seeks to expand the horizon of local innovative efforts to have a regional and global impact. Projects in BioInnovate Africa are selected competitively through open calls for proposals.

Postgraduate students at MSc and PhD levels are embedded in the project teams, not only to provide research support, but also to gain relevant skills of linking scientific ideas and technologies to business and the market. Students register at local universities or other higher institutions of learning in the region, where they take their courses, but can find opportunities to carry out research within the BioInnovate Africa projects. Students can also be supported to utilise facilities at advanced research institutions, centres and laboratories in the region. BioInnovate Africa, however, does not offer degrees. The formal academic responsibility for degrees lies with the universities and/or other higher institutions of learning where the students are registered. Targeted short courses in new techniques and processes of value addition, entrepreneurship, intellectual property rights management, business development and other related topics may be offered to project teams in collaboration with persons, agencies or institutions that provide these courses.

To assist projects progress towards business and the market, stage-gates are applied along each projects' life cycle. Stage-gates are management instruments that enable development of successful projects and adjustment or termination of projects that do not show any promising business or market prospects. Each stage is designed to gather information needed to assess progress and to move the project forward to the next gate or decision point.

3.0 Guidelines for Applicants

3.1 Thematic focus of this call

The thematic focus of this call is in two areas:

- a. Value addition to agroproduce creating agribusiness opportunities for smallholder farmers.

Eastern Africa is rich in agricultural resources and biomass, whose value can be enhanced to derive more economic and social benefits. Scientists, researchers and innovators have the skills and can find the knowledge required to improve the quality and quantity of agroproduce or utilise the produce and related bioresources as renewable raw materials to produce higher value products. This includes improving food and beverages as well as value addition to make products such as industrial green chemicals, biofuels, or diagnostic tools, but excluding drug trials. Value addition also includes new ways of producing feed for livestock and fish, and using insects for food. Emphasis is placed on crops of great importance to smallholder farming communities both for domestic consumption and for marketing at regional and global levels.

- b. Agro/biowaste conversion in support of climate change mitigation and environmental sustainability while linked to business and the market.

Eastern Africa faces an increasing challenge of environmental pollution control. Both agrowaste and other biowaste from industries and urban settlements pollute the land and water resources, which are increasingly in short supply. Agroprocessing as well as domestic consumption practices also generate wastes such as peel, kernels and pulp, which are normally discarded, creating local pollution problems. It is possible to extract useful materials from these waste streams that could find important uses in industry. Additionally, converting agro and biowaste and other feedstock into useful products (including clean energy) reduces dependence on fossil fuel and lessens the carbon footprint. Thus, transforming the agro-processing sector so that it adds value to primary production and converts waste into valuable products is key to improving agricultural productivity in the region. Creative ideas and technologies that convert agro/biowaste and other feedstock into more useful renewable products or services include product recovery from solid waste, wastewater treatment and reuse, and insects as feed or biowaste converters. Other useful products may include improved feed from waste, bioprocessing reagents with selective catalysts/enzymes, or safe green chemicals, as well as the development of community-based biorefineries.

3.2 Category of grants you can apply for, grant size, and duration

Total funding available for this first open call is US\$ 5.0 million for a period of three years⁶. The funds are allocated in two categories of grants as follows:

⁶ BioInnovate Africa Programme will explore opportunities for building greater synergy with Sida bilateral research and innovation programmes in Ethiopia, Rwanda, Tanzania and Uganda as well as other Sida-supported regional initiatives such as the BecA-ILRI Hub (<http://hub.africabiosciences.org>) and AfricaLics (<http://www.africalics.org>) during this funding period. This may include sharing knowledge, and, where applicable, facilities, and leveraging additional resources from the bilateral programmes to support certain country-specific components of a regional project that receives BioInnovate grant funding.

a. Category 1 Grants: To develop and pilot economically viable biobased technologies and products (US\$ 3.75 million)

This grant category supports the development of new or improved biobased technologies in any of the above-mentioned call thematic focus areas (i.e. value addition to agroproduce and agro/biowaste conversion). This includes developing prototypes, products, production and delivery systems, and piloting or demonstrating technologies, which show promising prospects for business and the market. Policy, technoeconomic and market analyses should be an integral part of the project activities, to assess the likelihood of success, market penetration and uptake.

If you intend to apply for this category of grant, your team must comprise researchers, scientists or innovators from a university or public research organisation, and at least one private sector firm or group of firms. Where applicable, your team may also include non-governmental organisations and/or smallholder farmer groups that are legally registered. The private sector partner(s) in your team must commit to, and be actively involved in, the design of the project and in taking the technology or product further towards commercialisation, e.g. through direct use of the technology, production or marketing of the product.

Each project under this category of grant will be funded up to US\$ 750,000 for a maximum period of three years.

b. Category 2 Grants: For biobased technology business incubation (US\$ 1.25 million)

This grant category supports biobased technology business incubation in any of the above-mentioned call thematic focus areas (i.e. value addition to agroproduce and agro/biowaste conversion). It supports creation of spinoffs or startup enterprises as an alternative route to commercialising biobased research ideas or technologies that have already passed proof-of-concept and have successfully undergone piloting or testing. The business incubation process involves developing inclusive business models, environmental impact assessments, value chain and market analyses and testing, business and financial support, assistance in networking with various partners along the value chain, skills training (business and entrepreneurship), branding, licensing and registration (including intellectual property management), coaching and/or mentorship, business plan development, and where necessary, minor product refinements/reformulations and pilot production. The result of the incubation process should, as much as possible, aim at establishing a fully operational and formally registered enterprise that can attract local and foreign investment based on the product's potential for being used or disseminated at a commercial scale.

If you intend to apply for this category of grant, your team should include at least one biobased business idea bearer from a university, public research institute or private sector firm. The idea bearer may not necessarily be at the forefront of the business, but remains vital in providing the required scientific and technical knowledge and support. Further, there may be more than one idea bearer from the different BioInnovate countries, e.g. scientists who have worked on a regional project and through collaboration, have developed a technology or product that now needs to be incubated into a business at a regional scale. A technology business incubator in one or more of the BioInnovate countries should also be part of your team, provided it has adequate facilities and personnel/expertise and there is a commitment to continue operating the business incubator after BioInnovate support is ended. Where necessary, your proposal for funding should articulate additional capacity needs for the incubator to meet the professional business incubation requirements of BioInnovate projects. You and your team should, therefore, have strong links

with the university or public research institute, and you must demonstrate interest in, and commitment to, starting up an enterprise.

Each project under this category of grant will be funded up to US\$ 250,000 for a maximum period of three years.

Note that you can make only one application per grant category. The BioInnovate Programme Advisory Committee (PAC) reserves the right to disqualify you and your team should you make more than one application in one category of grant. However, you can be a co-applicant in both category 1 and category 2 grants. If you are a Project Leader in one category of grant, then you cannot lead a project in the other grant category.

3.3 Matching fund support

You must demonstrate that your host institution supports the proposed project, and is willing and committed to providing matching funds. These matching funds may be from social impact investors, your relevant government institution or from the private sector and donors. The mode of matching funds may be based on either provision of actual funds and/or in-kind contribution of staff, infrastructure and other institutional support. Private sector partners involved in your project are expected to contribute 25% of the total budget as complementary matching funds. A clear mechanism for matching funds is important.

3.4 Eligibility

You are eligible to apply for these grants if you are a scientist, researcher, innovator or entrepreneur who is resident in any of the six eastern African countries, namely **Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda**. You must be formally affiliated with a university, public research organisation or private firm, e.g. as a full-time employee. For this call, firms include legally registered smallholder farmer based or community organisations or groups. Scientists, researchers and innovators from research centres and organisations in other regions of Africa and around the world are also eligible to participate, but only as collaborators in your project. Postgraduate students who are already registered in local universities in the region for Master's degree or PhD (and have sources of funds to support their tuition fees) can be attached to your project team, but not as co-applicants. Students can only be supported through operational costs to do their research within your project.

3.5 Selection criteria and evaluation of the concept notes

3.5.1 General principle

Following a key principle in the Programme, you and your team must demonstrate a strong and realistic practical linkage between your biobased research idea or technology and business and the market in any of the thematic areas mentioned above (i.e. value addition to agroproduce and agro/biowaste conversion). You should articulate what you see as the business potential of your biobased research ideas or technologies. Additionally, your proposed projects should state how and whether smallholder farming communities and agro/bio processing firms in eastern Africa are likely to benefit from the results of your project or advance the market development of the technological innovation.

3.5.2 Key features of the application

Your concept note should clearly include the following key features, which will also be used as the basis for evaluation:

a. Regional benefit.

Your concept note should address a challenge that is of significant regional or even global relevance. You should demonstrate the added value of a regional, but not merely multi-country approach, over a national approach. Ensure that your team members come from separate independent organisations with a shared interest in the innovation at hand. For clarity, a regional or multinational organisation with legally established bases in the eligible countries is taken as one and the same organisation.

b. Scientific/technological solution or challenge

Your concept note should clearly define the scientific or technological intervention or solution it is promoting or challenge it is addressing. This includes a bioscience research product developed in the region or a technology existing elsewhere in the world that can be transferred to the region as a business opportunity for agroprocessors and smallholder farmers. *Please, indicate whether the product/technology is patented or has other forms of intellectual property (IP) tied to it, and if there is possibility to use the IP for the proposed project.*

c. Linkage to business, uptake and potential for competitiveness

Explain the linkage between your biobased research idea or technology and creation of business and market opportunities. You and your team should demonstrate that you understand the potential markets for the suggested bioinnovation. You should illustrate and/or show the extent to which you think your proposed project will be competitive and viable from a business and market perspective.

d. Contribution to the SDGs: Economic, environment and societal impact

Describe how your proposed project contributes to achieving the UN Sustainable Development Goals. Explain the envisaged wider economic and societal impact in terms of creating new employment opportunities and increasing incomes. Describe the positive impact to smallholder farmers and/or to agro and bioprocess enterprises in the region. In certain cases, your proposed project outputs may have value as public goods, benefitting a community or society (such as environmental sustainability and overall wellbeing of the people), but with low profitability. In such cases, you should demonstrate this potential societal impact and long term financial sustainability. You should also describe how the proposed project contributes to environmental goals such as water and sanitation, climate change mitigation and adaptation, land use or ecosystems health⁷.

e. Gender considerations

Describe the gender issues your proposed project might present and the potential impact of the results on women

⁷http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

and girls. The role of women and youth in the project should be clear or there should be a clear strategy to ensure gender inclusion, both in the design and implementation of your project.

f. Team qualification and composition

Please ensure that your team is a multidisciplinary team of at least three (3) and not more than seven (7) partners from at least two (2) eligible BioInnovate countries applying for the grant. This excludes students. Your team must meet the compositional requirements of the category of grant you are applying for (see 3.2.a & 3.2.b above). Your team must be led by a well-qualified person, with a good track record in the field of the biobased research idea or technology proposed. The project leader must be a resident of one of the BioInnovate countries, and must be willing and able to allocate sufficient time to the project. He/She must also be affiliated to a university, public research organisation or a recognised private sector firm.

4.0 How to apply

4.1 Use the application form:

Please, make your application in English using the application form available at: <http://grants.bioinnovate-africa.org/forms/concept.php>

4.2 Submit your concept note online

Complete your application (in English) and submit online via: <http://grants.bioinnovate-africa.org/forms/concept.php>. Do not include photos or images. Attach a one page abridged version of CVs of the project leader and partners separately. The uploadable copy of your concept note should not exceed 7 pages, including references. Use Times New Roman font, size 12, margins normal (2.54 cm for top, bottom, left and right margins), orientation portrait. Please note that once submitted, no changes can be made to the concept note.

Please, note the deadline for receiving all concept notes is **Friday 2nd June 2017, no later than 23:59 hours, Nairobi Time**. Access to the online submission system will be closed for applicants after the deadline.

4.3 Conditions for submission

By submitting your concept note you agree to the following:

- a. You accept all rules for participating in this call process as outlined in the call and related documents. You also agree that the decision of the BioInnovate PAC is final.
- b. If successful, you agree that your name, contact information and that of your project partners, title and objectives of the proposal and total budget can be shared on the BioInnovate Africa web page. *N.B. Notify us of any proprietary and confidential business information, which should not be openly shared.*

c. That the names of external peer reviewers are confidential and will not be released to you under any circumstances. However, feedback based on the comments of reviewers and the BioInnovate PAC will be provided.

5.0 What next?

When the concept notes are received, they will be automatically assigned registration numbers. The concept notes will be screened by the BioInnovate Programme Management Office, to ensure that they are complete and meet the eligibility requirements. Incomplete concept notes and those that fail the eligibility check will be disqualified. Thereafter, the BioInnovate PAC and independent reviewers will review the submissions that meet the eligibility criteria and convene to make a short list. You will be notified if you have been shortlisted or not. Shortlisted applicants will be invited to proceed to the next stage of developing their concept notes into full proposals in June and July. A full proposal development workshop and informational session will be offered to the shortlisted applicants (team leaders only) in late June or early July. The workshop is intended to explain the requirements for the full proposals, and will specifically cover aspects of entrepreneurship and business development, results based management, societal impact analysis (including gender perspectives), intellectual property management and other relevant areas. Each full proposal developed will be reviewed by three independent experts in August and early September. Afterwards, the PAC, using the experts' comments, will meet to review and make a final selection and announcement of successful proposals in late September 2017. Initial disbursement of funds to successful projects will be made in November 2017.

6.0 Further information

For more information about the BioInnovate Africa Programme and this call, please, visit our website: <http://bioinnovate-africa.org> or contact the Programme Management Office on email: bioinnovate@icipe.org.