



CALL FOR APPLICATIONS FOR RESEARCH GRANT PROPOSALS RELATED TO CLIMATE CHANGE ADAPTATION AND ECOSYSTEM- BASED ADAPTION APPROACH

1. Introduction and background

As part of a strategy to realize its vision of becoming a research-led university, the University of Rwanda closely collaborates with different stakeholders to ensure the optimization of support from members of its research ecosystem. As a result of such collaborative working relationships, the University of Rwanda has received a research grant from the Rwanda Environment Management Authority (REMA) through a project named *“Building the capacity of Rwanda’s government to advance the National Adaptation Planning process (NAP)”* financed by the Global Environment Facility (GEF) through United Nations Environment Programme (UNEP).

The grant aims at establishing Long-Term Research Program (LTRP) to inform long-term Climate Change Adaptation (CCA) planning and implementation in Rwanda. The LTRP will bridge the knowledge gap to identify the appropriate CCA interventions and design an adaptation strategy. In addition to improving the understanding of adaptation strategies, the LTRP will support research that enhances the understanding of Ecosystem-based Adaptation (EbA) strategies, which are meant to address challenges in both ecosystems and livelihoods by building resilience to climate change.

Benefits of the LTRP include:

- a) Forging long-term partnerships between government, academic, and research institutions. This allows for effective participation in climate-resilient development.
- b) Informing policymaking through the generation of extensive socio-economic and ecological data.
- c) Build the human capacity and skills in conducting research in the area of environment and climate change adaptation.

2. Focal areas for the call for research proposal applications

Given the important role of ecosystem services in supporting livelihoods and understanding that the provision of ecosystem services depends on the functioning of ecosystems, it is pivotal to consider the climate impacts on ecosystems as an essential step in vulnerability assessments. Healthy ecosystems and their goods and services are critical for reducing vulnerability and enhancing community resilience. The potential impacts of climate change on ecosystems would compromise ecosystem services and thus directly affect human livelihoods, therefore, ecosystem conservation should be an integral part of climate



change adaptation. Examples of such ecosystem services include climate and water regulation, protection from natural hazards such as floods and landslides, water and air purification, and disease and pest regulation. These services determine the central role of ecosystem management in climate change adaptation and disaster risk reduction.

Therefore, the conservation, sustainable management and restoration of ecosystems can help people adapt to climate change.

Research in the natural and social sciences has evolved based on observational, lab-based, and site-specific disciplinary analysis of relationships among systems, which has led to highly connected interdisciplinary and transdisciplinary efforts highlighting linkages among

bio-geophysical, human, and social systems. Research on ecosystem services has grown into a major academic field, based on various academic disciplines, perspectives, and research approaches. Therefore, both natural and social science capacities are needed for conducting EbA research.

Natural science is necessary to understand the limits or boundaries of the ecosystem to be managed, to understand basic facts about its functioning, to describe linkages between and within ecosystems, and to understand vulnerability to climate change and potential impacts. On the other hand, social sciences allow the researchers to understand the values, attitudes, societal structures, customs, and laws that underlie human behaviours and effects, to place a value on ecosystems and their services, and to understand their importance for adaptation. A combination of natural and social sciences can help better understand ecosystem vulnerabilities, the threats they face, and the extent to which management addresses those threats effectively. Such mutual interdependencies require specific interdisciplinary and transdisciplinary research (Haberl et al., 2015). Respectively, this research grant will focus on interdisciplinary, transdisciplinary, as well as multidisciplinary research.

Research funded under this call for applications will generate knowledge in priority areas of Climate Change Adaptation (CCA) and the Ecosystem-based Adaptation (EbA) approach to contribute to evidence-based and well-informed policymaking. The program will focus on important CCA and EbA-related research areas including:

- a) The relationship between biodiversity, ecosystem services, and benefits to local communities livelihoods.
- b) Spatial and temporal assessments of vulnerability to climate change.
- c) Climate change adaptation strategies, including natural and social systems.
- d) Strategies that use natural processes to help communities adapt to climate change.
- e) Documentation of ways that biodiversity contributes to resilience to climate change.
- f) Business models for engagement of the private sector in EbA strategies.
- g) Ecosystem-based adaptation and disaster risk reduction.
- h) The relationship between ecosystem restoration approaches and resilience to climate change.

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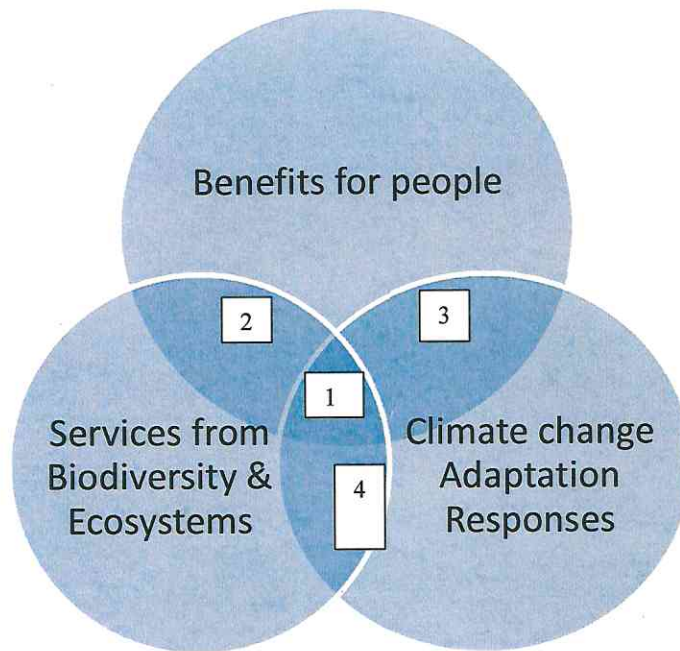


Figure 1: Important conceptual areas for research to support EbA of greatest priority are indicated by the numbers. The meaning of the number 1 - 4 is indicated in the table below.

Table 1 below provides potential research questions

Research Area		Research questions
a) Multidisciplinary topics linking all 3 cornerstones	Valuation and economic issues	What are the economic values of improved natural resource/ecosystem service provision resulting from EbA activities?
		What are the benefits and costs of EbA interventions (see Section 4)?
		What are the incentives that can help drive EbA implementation in the long term? Are the adaptation interventions cost-effective in the long-term?
	Implementation	How can non-EbA projects best be converted into EbA?
		Which circumstances yield the best or most reliable outcomes?
		How can projects be made sustainable in the long term? (Including themes such as values around stewardship; legacy impacts; ownership and maintenance).





		How can the adaptation interventions be better designed and implemented under different conditions? What factors influence the success of the interventions?
	Monitoring and Evaluation	What are the key indicators to measure EbA effectiveness? Development of an evidence base on the outcomes of EbA initiatives. What are the livelihood benefits of EbA?
	Policy and Planning	How to integrate EbA into different sectors e.g., urban, agriculture, health & biodiversity. How to best integrate EbA across scales of governance, including a specific focus on local municipalities and how EbA considerations may be mainstreamed and/or operationalised into development planning at this scale? Specific studies of cross-sectoral EbA, e.g., involving food security; pest management; drought or flood mitigation; invasive alien species control, etc. Alignment between EbA and existing policies. How can EbA projects contribute to poverty alleviation and job creation? How best to integrate EbA with insurance considerations? Liability for outcomes of EbA projects.
	Capacity building	What are the key capacity gaps for implementing EbA? What learning materials are needed (formal or informal)? How can the value of biodiversity and ecosystem services be better communicated? How can different types of knowledge (including indigenous knowledge, local ecological knowledge, citizen science) that engage/originate from non-scientists be [better] utilised to help address EbA research and practice needs?
	Synergies and between co-benefits	Integrating EbA with Ecosystem-based mitigation. How can trade-offs management be optimised?
2. Biodiversity benefits for people		What are the ecosystem services provided by targeted ecosystems? What are the impacts of EbA interventions on the quantity and quality of ground and surface water sources? How does improvement in natural resources management through EbA impact agricultural productivity? What are the impacts of biodiversity and agroforestry on crop productivity under climate change conditions?



	<p>What are the main adaptation benefits of improved natural resource management? Which stakeholders benefit or are negatively affected by the adaptation interventions? Are there any unintended impacts of the climate change adaptation interventions (positive or negative)?</p>
<p>3. Climate change adaptation strategies for people</p>	<p>How is climate change impacting livelihoods and what are the projected scenarios? How is climate change impacting land use? What factors ensure adaptation interventions are sustainable? How can interventions be gender sensitive?</p>
<p>4. Biodiversity resilience to climate change</p>	<p>How is biodiversity impacted by the EbA intervention? If negative, what mitigation measures are necessary? What changes to the design of the intervention can be made to maximise the biodiversity benefits? What adaptation impacts do the biodiversity benefits have for local communities, including farmers? What socio-economic opportunities are provided by the biodiversity benefits of the interventions? Have the interventions resulted in the spread of invasive alien plant species? Development of a framework to assess the relationship between biodiversity and ecosystem resilience to climate change. What are the limits of ecosystem resilience to climate change impacts? What are the impacts of changes in water supply to biodiversity? What are approaches or strategies to build resilience of wetland ecosystems to climate change? Identification of desired future states of ecosystems and the circumstances under which they are preferred, with appropriate 'back casting' to identify strategies for achieving those states. What are conservation strategies that build resilience, e.g. corridors? What are best practices for the restoration of ecosystems and the services they provide? Do natural or near natural systems produce different benefits from artificial systems? Are EbA activities successful in reducing encroachment and degradation of ecosystems? In restoration interventions, which species are the most productive under climate change conditions, and which species are unsuitable? Are there any unintended environmental impacts (positive or negative) of restoration activities? To what extent is soil erosion reduced by EbA or restoration interventions? Do EbA interventions improve soil quality? What are the impacts of agroforestry on soil biomass? How much water is being used as a result of restoration as a form of EbA?</p>



Note: Research must be conducted at one or more of the following EbA intervention sites that were restored NAP, LDCF II and LDCF I Projects EbA

NAP Project: Ibanda Makera Natural Forest in Kirehe District; Umuvumba River in Nyagatare District; Eastern Savannas in Nyagatare District; Shagasha Tea Estate in Rusizi District, Western Province and Nyandungu Wetland in the City of Kigali.

LDCF II Project: Ibanda Makera natural forest and Mushongi agroforestry in Kirehe District; Kibare Lakeshore and Rwinkwavu ecosystem in Kayonza District; Murago wetland and Lake Cyohoha North in Bugesera District; Nyandungu wetland in the City of Kigali, Sanza natural forest and Nyiramuhondi watershed in Ngororero District; and Kiguhu wetland in Musanze District.

LDCF I Project: Bitenga riverbank and watershed in Rutsiro District; Lake Karago buffer zone and watershed and Bihungora riverbank and watershed in Nyabihu District; and Bihembe riverbank and watershed in Ngororero District.

3. Grant categories

For the purpose of ensuring that each category of people is given an opportunity to benefit from this fund, proposals are invited from the University of Rwanda Academic staff as follows:

- a) Competitive research grants are open to all academics.
- b) Research grants for academics who have completed PhD in the last 3 years.
- c) Research grants for interdisciplinary or transdisciplinary research linking all three EbA cornerstones (i.e. the team consists of colleagues from different disciplines who perform different, specialized functions).

Note: *A researcher cannot be a PI in more than one proposal during the same period.
Female academics are encouraged to apply.*

4. Eligibility for funding

- a) Full-time lecturers/researchers from the University of Rwanda or a person affiliated to one of the research centres of the University of Rwanda (appointment letter as a justification is required) and have skills in research and publication (at least one publication).
- b) A PI must be a holder of a PhD degree, and where the PI does not have a PhD degree but has a master's degree, the Co-Investigator (Co-I) must have a PhD degree. The PI must have a proven evidence of research activeness based on research publications.
- c) Whenever possible, each research team must include at least one postgraduate student.
- d) Whenever possible, each research team must have at least 1/3 of the opposite sex of the PI. In this regard, 30% of female team members should be respected whenever possible.
- e) Having skills in Ecosystem-based Adaptation (EbA) research is an additional value.
- f) The research proposal should be aligned with at least one of the provided areas.



5. Non-eligibility:

A PI who has an abandoned research project funded through UR is not eligible.

6. Project duration

The duration for the funded research project will be 18 months, beginning from the date on which the PI or researcher receives the first installment of the fund.

7. Budget

- a) Interdisciplinary, transdisciplinary, and multidisciplinary research without laboratory tests will be funded at a maximum of Fw 18,000,000.
- b) Interdisciplinary, transdisciplinary, and multidisciplinary research with/including laboratory tests will be funded at a maximum of Fw 21,000,000.

The budget can include but not limited to the following broad areas of research activities:

- a) **Purchase of minor equipment and consumables** (e.g, chemicals and reagents, stationery and other necessary gear). While the PI will keep the laptop for future research activities after registration in the UR asset register, other remaining consumables such as lab equipment, reagents and chemicals will remain in the laboratory.
- b) **Data collection and analysis:** Laboratory and/or field work, data access and analysis will be done professionally.
- c) **Preparatory meetings** with the stakeholders meant to build rapport and enhance ownership which is a foundation for research uptake.
- d) **Research dissemination:** printing, production of brochures, feedback to the stakeholders' events, publication etc.
- e) Meetings for managerial implications/policy brief presentation and discussion.
- f) Other approved operational activities

8. Number of Research grants available for different research categories

- a) Interdisciplinary, transdisciplinary and multidisciplinary researches without laboratory tests three (3).
- b) Interdisciplinary, transdisciplinary and multidisciplinary researches with/including laboratory tests three (3).

9. Application requirements

- a) The grant application will be channelled through the PIs' Head of Department or Centre, and endorsed by the College Director of Research and Innovation of the concerned college and submitted to the Deputy Vice Chancellor for Academic Affairs and Research using the following

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email address: advisor.dvcaar@ur.ac.rw and advisor.dvcaar.ur@gmail.com with copies to the University director of Research and Innovation, Prof Bideri Ishuheri Nyamulinda (urresearch.directorate@gmail.com), the UR Research and Innovation Officer Mr Rudasingwa Janvier (research.kaminuza@gmail.com) the Dean of the School and the College Principal.

- b) Research proposal template (<https://ur.ac.rw/?APPENDIX-3-PROPOSAL-TEMPLATE>). All applications must follow the format of the given template above.
- c) Deadline for the submission of the grant proposals is 31st March 2023

10. Include the following in your application:

- a) A letter to the DVCAAR.
- b) The completed application template.
- c) Current CVs of the PI and all Co-PIs or team members that include a list of current peer reviewed publications.
- d) List of all research projects in which investigators on the team have been involved in (if any).

Done at Kigali, February,, 2023

Dr. KAYIHURA Muganga Didas, PhD
Acting Vice Chancellor

