CTCN Technical Assistance

Request Submission Form

Guidelines:

- This Request Submission Form should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question
- The Form must be signed by the NDE. Please see updated contact list of NDEs here: http://unfccc.int/ttclear/support/national-designated-entity.html
- The Form can be submitted as a Word file containing a digital signature or as a signed and scanned PDF file in combination with an un-signed Word file
- For requests submitted by multiple countries, all the NDEs of the respective countries shall sign identical Forms before official submission to the CTCN
- NDEs have the opportunity to submit CTCN requests in collaboration with National Designated Authorities (NDAs) for the Green Climate Fund (GCF) if targeting the GCF Readiness Programme.

Requesting country or countries:	Mozambique
Request title:	Development of a Framework and Roadmap for a National Innovation System to foster low-carbon and climate resilient economic development in Mozambique
NDE	Ministry of Science, Technology and Higher Education, Department of Technology and Innovation António Jorge Raul Uaissone Tonyraul13@hotmail.com; tonyraul23@gmail.com; antonio.uaissone@mctes.gov.mz
Request Applicant:	Ministry of Science, Technology and Higher Education, Directorate of Science, Technology and Innovation Profª. Eugenia Cossa eugenia.cossa@mctes.gov.mz; eugeniacossa@gmail.com

Climate objective:

- ☐ Adaptation to climate change
- ☐ Mitigation of climate change
- ☒ X Combination of adaptation and mitigation of climate change

Geographical scope:

- ☐ Community level
- ☐ Sub-national
- ☒ X National
- ☐ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Problem statement related to climate change (up to one page):

This section should answer the question "what is the problem?" Please summarize the problem related to climate change and/or the negative impacts of climate change in the country that the request aims to address.

Mozambique is a coastal country with a coastline of approximately 2,700 kilometers and a population of around 30,000,000 inhabitants. Due to its geographical location, it is exposed to extreme weather events. It should be noted that climate change is a serious matter, as in recent years, it has tended to increase in frequency, which is why it has become a major threat to sustainable development.

Innovation is seen as a relevant tool with a double benefit, to respond to the adverse impacts of climate change, and to generate economic growth. As a structured approach to fostering innovation is required, the concept of national innovation systems (NIS) has been introduced and widely adopted. The concept is defined as a "network of institutions in the public and private sectors, civil society, NGO's innovators and researchers whose activities and interactions initiate, import, modify and diffuse new technologies". At the core of the concept is the understanding that innovation, technical and economic progress are the result of a complex set of relationships among actors producing, distributing and applying various kinds of knowledge.

Mozambique requires a structured national innovation system to effectively foster innovation for a low-carbon and climate resilient economic development. This technical assistance aims to develop a framework and roadmap for the introduction of a national innovation system by including key stakeholders in the development process and creating platforms for continuous engagement.

Past and on-going efforts to address the problem (up to half a page):

This section should answer the question "what has been done or is currently being done to address the problem?" Please describe past and on-going processes, projects or initiatives implemented in the country or region to tackle the climate problem as described above.

In order to enhance the importance that innovation plays in the social and economic development, the Government of Mozambique approved two programmatic instruments, namely, the national science and technology policy in 2003 and the science and technology strategy in 2006, for a period of 10 years. In these instruments, there was more focus on science and technology and the innovation component was not adequately covered, hence, the need to review these instruments. It should be noted that the review process of the policy and its strategy is in its final phase and more focus is given on innovation. The country has been implementing the National Research Fund (FNI) since 2009. However, the challenge remains to mobilize more funds to cover the innovation sector in order to absorb the increased number of innovators trying to access the funds provided by FNI. On the other hand, the country already has a national science and technology park company that aims to support the development of prototypes as well as the incubation of ideas and companies. Some universities are already developing their own incubators, some private companies as well as some organizations non-governmental. The Science, Technology and Innovation (ST&I) sector in Mozambique has faced a multitude of challenges in breaking ground of acceptance. While the science and technology components have made strides in being adopted, the innovation component has not been as fortunate. However, for the country to record any meaningful socio-economic development, the three components (S, T & I) have to be equally adopted and harnessed into the development agenda of the country. Of the three components, the innovation component is the one that is equally represented by both the formal and informal sector. Therefore, the development of the National Innovation System will help to define the road map that will guide the enhancement and massive use of the innovation

space in the country.

Specific technology[1] barriers (up to one page):

This section should answer the questions "what are the technology barriers that hinder national efforts described above" and "how will the CTCN technical assistance complement these efforts?" Building upon the problem statement and taking into consideration the existing efforts described above, please describe the specific technology barriers encountered by the requesting applicant to identify, assess or deploy climate technologies in an effort to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).

Countries of Southern Africa including Mozambique, are increasingly becoming aware of the role of Science, Technology and Innovation (STI) in lifting the region from the stagnation of poverty. This is necessary as the region aims to add value to its raw material in order to remain competitive in the global market and at the same time diversify the structure of its economies. The science and technology policy and its strategy are under review in a bid to enhance the effectiveness of the innovation system in the country. The National System of Innovation is one platform that would integrate the innovation resources, which are present in enterprises, universities and Research and Development (R&D) institutions, NGO´s, government agencies as well as the platform guides the concentration of factors of innovation in enterprises. It is a supporting program that mainly promotes application-oriented innovation of a sector nationwide. The innovation system is a system for generating and diffusing new technologies; every country has such a system, even if it is weak or low in capacity but the system needs the infrastructure or the platform to succeed. The following are some of the technology barriers that hinders effective implementation of the National System of Innovation:

Orientation-related barriers:

1. University research is not oriented to respond to the concerns of the productive sector;
2. The productive sector does not have the culture of presenting its concerns to academia;
3. Lower sense of urgency of R&D researchers compared to University researchers; and
4. Mutual lack of understanding about expectations and working practices.

Transaction-related barriers:

5. Potential conflicts with university regarding royalty payments from patents or other intellectual property rights and concerns about confidentiality; and
6. Rules and regulations imposed by universities or government funding agencies thereby disadvantaging the researchers.

Relationship drivers:

7. Absence of a bridge between academia and the productive sector;
8. Duplication of research work, this leads to little understanding of common interest by different stakeholders (e.g. universities, businesses, individuals, students, industry and R&D institutions);
9. Weak collaboration of Universities, Industry, R&D institutions and government.

[1] *"**any equipment, techniques, practical knowledge and skills** needed for reducing greenhouse gas emissions and adapting to climate change" (Special Report on Technology Transfer, IPCC, 2000)*

Business drivers:

10. Low interest to turn the scientific knowledge generated from universities, R&D institutions into business enterprises. This is because there is a lack of a technology transfer office in most universities, R&D institutions; and
11. Low industrial attachment of university students leading into graduates not being fully exposed to the technologies being used in the industry. This leads into costs to industries in terms of retraining of graduates once employed. Further, this also leads into a mismatch of required experience and graduates being channeled out by the Universities.

Limited Technology Incubation Facilities

12. The country has very limited technology incubation centres leading into challenges for upcoming innovators to access incubation facilities, thereby limiting their potential to be independent; and
13. Over dependence on the Central Government for the establishment and funding of incubation facilities

Limited State of the Art Scientific and Innovation Infrastructure Barriers;

14. Low advanced or cutting-edge R&D products being produced by R&D institutions;

    Over dependence of R&D funds for infrastructure on central government.

Sectors:

Please indicate the main sectors related to the request:

☐ Coastal zones	☐ Early Warning and Environmental Assessment	☐ Human Health	☐ Infrastructure and Urban planning
☐ Marine and Fisheries	☐ Water	☐ Agriculture	☐ Carbon fixation
☐ Energy Efficiency	☐ Forestry	☐ Industry	☐ Renewable energy
☐ Transport	☐ Waste management		

Please add other relevant sectors: All sectors

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

X☐ Communication and awareness	X☐ Economics and financial decision-making	X☐ Governance and planning	X☐ Community based
☐ Disaster risk	☐ Ecosystems and	X☐ Gender	

reduction	biodiversity

Technical assistance requested (up to one page):

Founded on the problem statement, past/on-going efforts and technology barriers, please describe the requested technical assistance. The technical assistance should clearly contribute to mitigation or adaptation to climate change as described in the problem statement and contribute to overcome the specific technology barriers.

Within a clearly defined scope, the description of technical assistance should be structured into the following:

- Overall objective
- Anticipated groups of activities to be performed by the technical assistance
- Anticipated products to be delivered by the technical assistance.

Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.

The overall objective of this technical assistance is to develop a framework and roadmap for a National Innovation System (NIS) in Mozambique to foster innovation across institutions and industries for low-carbon and climate resilient economic development.

Activity 1: Analysis of the science, technology and innovation environment in Mozambique

- Mapping and analysis of policies and regulations related to science, technology and innovation, with direct and indirect impacts on climate change and sustainable development;
- Identification, classification and mapping of organizations and initiatives in science, technology and innovation, as well as their interactions with specific focus on climate change;
- Evaluation of the economic and STI performance of Mozambique, including key industries, companies (national or foreign), exports/imports, funding (science, corporate R&D, venture capital, etc.), scientific articles, patents, number of new SMEs/start-ups, gender and youth aspects, competitiveness index, innovation index, etc.;
- Comparison of national activities / performance with those of countries at a similar level of maturity;
- Identification of strengths, weaknesses, opportunities and challenges for innovation in Mozambique, with a linkage to climate innovation and technology, as well as gender and youth.

Activity 2: Development of a framework and roadmap for the establishment of a National Innovation System

- Creation of a NIS Working Group;
- Identification of expectations and requirements towards an NIS in Mozambique (2-day workshop);
- Development of a NIS framework, including the definition of objectives, targets and activities of the NIS, as well as the design of the NIS on a macro (innovation policy), meso (institutional innovation support) and micro (innovation capacity) level. The NIS framework should be focused on climate innovation and technology, whilst integrating aspects of gender and youth
- Development of a NIS roadmap including planned policies, activities, stakeholders involved, and performance/impact indicators.

Activity 3: Introduction of STI platforms for continuous engagement and exchange specifically focusing on climate change

- Introduction and delivery of a bi-annual STI forum to create ongoing exchange and foster

partnerships;
- Development of a web-based platform on STI in Mozambique for information dissemination and capacity building.

Activity 4: Development of schemes for incentivising and promoting innovations through incubators and accelerators
- Formulation of schemes targeting focus areas having climate impacts through participatory approach;
- Identification of forms of financing these incubators and development of concept notes for access of funds;
- Discussion and finalization in workshop.

Anticipated products to be delivered by the technical assistance

1. STI Environment Report;
2. NIS Framework and Roadmap;
3. Organization of Innovation Forum and technology transfer;
4. Development of web-based STI information platform;
5. Schemes for incentivising and promoting innovations through incubators and accelerators and concept notes to access funding;
6. Guide for classifying environmental friendly technologies and rules for technology transfer

Expected timeframe:

Please indicate the expected duration period for the requested technical assistance. Please note CTCN technical assistance is limited to a maximum duration of 12 months.
Duration of the technical assistance: 12 months.

Anticipated gender and other co-benefits from the technical assistance:

Please describe the activities with gender linkages as well as the anticipated gender and other co-benefits (e.g. biodiversity, economic, social, cultural, etc.) that are likely to be generated as a result of the technical assistance.

For more information you can find guidelines on the CTCN's website here:
https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development

Further reading on gender can be found on the CTCN website here:
https://www.ctc-n.org/technology-sectors/gender

Throughout the implementation of the CTCN technical assistance, gender and youth aspects will be integrated across all activities. Activity 1, will include a specific consideration of gender and youth within the analysis of the status quo of innovative capacities in Mozambique, identifying opportunities, weaknesses and barriers for women and youth in participating in innovative activities. Activity 2, will specifically consider gender and youth in the objectives, targets and activities of the NIS framework to ensure that the future national innovation system will foster gender and youth participation in innovation. Furthermore, a fair gender balance will be expected for stakeholder consultations under Activity 1 and within the NIS Working Group under Activity 2.

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
National Designated Entity	Project coordination
Request Applicant Ministry of Science, Technology and Higher Education	Project coordination, chair of the NIS Working Group, facilitation of data collection and stakeholder meetings
Ministry of Land and Environment	Participation in NIS Working Group, provision of information on innovation related to climate
• Other ministries: • Industry and Commerce • Education and Human Development • Economic and Finance • Gender and Social Action • State Secretary of Youth and Employment • State Secretary of Technical Education	Participation in NIS Working Group, provision of sectoral information related to STI
Universities	Participation in NIS Working Group, provision of information related to STI
Innovation support institutions (incl. innovation hubs and centres)	Participation in NIS Working Group, provision of information related to STI support
Industry Organizations	Participation in NIS Working Group, provision of information related to industry STI
Innovation support institutions (incl. innovation hubs and centres)	Participation in NIS Working Group, provision of information related to STI support
Financial institutions	Participation in NIS Working Group, provision of financial information related to STI
Civil Society	Participation in NIS Working Group

Alignment with national priorities (up to 2000 characters including spaces):

Please describe how the technical assistance is consistent with national climate priorities such as: Nationally Determined Contribution, national development plans, poverty reduction plans, technology needs assessments, Low Emission Development Strategies, Nationally Appropriate Mitigation Actions, Technology Action Plans, National Adaptation Plans, sectorial strategies and plans, etc.

Reference document (please include date of document)	**Extract** (please include chapter, page, etc.).
Nationally Determined Contribution (NDC)	Direct alignment and contribution to NDC implementation is required for all CTCN technical assistance. Please include a direct reference to the INDC/NDC document (page 54 (i) Domestic institutional arrangements, public participation and engagement with local communities and people indigenous people, in a gender-sensitive manner).
Mozambique Second National Communication to the United Nations Framework Convention on Climate Change	Page 27, 1.13. Institutional Arrangements Page 208, 5.1. Technology transfer Page 295, 6.2. Capacity development needs
National Adaptation Plan	Chapter 7, Page 143: Gaps and Needs for Greater Climate Resilience
Science, Technology and Innovation Policy and Strategy	Pillar 3.3, Page 27, Strengthening the Innovation Ecosystem.
National Adaptation and Mitigation Strategy Climate Change	Page 20, 4.6.1.4.1 Increase the adaptive capacity of vulnerable people; Page 23, 4.6.2 Mitigation and low carbon development; Page 30, 4.6.3.3.2 Promote the transfer and adoption of clean and MC-resilient technologies.

Development of the request (up to 2000 characters including spaces):

Please describe how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles?) and describe any consultations or other meetings that took place to develop and select this request, etc.

This request for technical assistance was developed by the National Directorate of Science, Technology and Innovation, and in consultation with some of the stakeholders indicated above.

Background documents and other information relevant for the request:

- Please list all relevant documents that will help the CTCN analyze the context of the request and national priorities. Please note that all documents listed/provided should be mentioned in this request in the relevant section(s), and that their linkages with the request should be clearly indicated. For each document, please provide web-links (if available) or attach to the submission form. Please add any other relevant information as required.
- Please indicate if this request has been developed with the support of the CTCN Request Incubator.
  Updated NDC, 2021:
  https://unfccc.int/sites/default/files/NDC/2022-06/NDC_EN_Final.pdf

  Mozambique Second National Communication to the United Nations Framework Convention on Climate Change:
  https://unfccc.int/sites/default/files/resource/Mozambique%20Second%20National%20Communication.pdf

National Adaptation and Mitigation Strategy Climate Change:
https://www.mta.gov.mz/wp-content/uploads/2023/09/Estrategia-Nacional-de-Adaptacao-e-Mitigacao-as-Mudancas-Climaticas-PT.pdf

National Adaptation Plan
https://www.mta.gov.mz/wp-content/uploads/2023/09/Plano-Nacional-de-Adaptacao-de-Mocambique_EN-1.pdf

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The CTCN is collaborating with the GCF in order to facilitate access to environmentally sound technologies that address climate change and its effects, including through the provision of readiness and preparatory support delivered directly to countries through their GCF NDA. These actions are in line with the guidance of the GCF Board (Decision B.14/02) and the UNFCCC, particularly paragraphs 4 and 7 of 14/CP.22 that addresses Linkages between the Technology and the Financial Mechanisms[2].

The CTCN is therefore implementing some of its technical assistance using GCF readiness funds accessed via the country's NDA. Any application for GCF support, including the amount of support provided, is subject to the terms and conditions of the GCF and should be developed in conjunction with the NDA.

Please indicate whether this request has been identified as preliminary eligible by the NDA to be considered for readiness support from the GCF.

☐ Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.

☐ Advanced engagement (preferred): The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name:

Date:

Signature:

Monitoring and impact of the assistance:

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures.
I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

[2] Please see:
https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

Signature:	
NDE name:	António Jorge Raul Uaissone
Date:	29/12/2023
Signature:	

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

The CTCN is available to answer all questions and provide guidance on the application process.