

**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.

<b>Requesting country or countries:</b>	Mozambique
<b>Request title:</b>	<i>Please reflect the objective of the technical assistance in the title (maximum 200 characters).</i>  <b>Mapping potential areas for implementing Rainwater harvesting and conservation systems</b>
<b>NDE</b>	<i>Please add name of organisation, name of individual, position, email and address.</i>  Mr. Antonio Jorge Raul Uaissone Ministry for Science and Technology Email: <a href="mailto:antonio.uaissone@mctes.gov.mz">antonio.uaissone@mctes.gov.mz</a> Phone: +258 843097592 770 Av. Patrice Lumumba, Maputo, Mozambique
<b>Request Applicant:</b>	<i>Please add name of organisation, contact person, position, email and address of the organisation requesting assistance from the CTCN.</i>  National Irrigation Institute / Instituto Nacional de Irrigaç�o (INIR) Paiva Doge Alexandre Munguambe Director -General Email: <a href="mailto:kensydoge@yahoo.com">kensydoge@yahoo.com</a> or <a href="mailto:pmunguambe@inir.gov.mz">pmunguambe@inir.gov.mz</a> Cellular: +258844777693 Bairro da Maxaquene "C", Rua 3253, N.� 134 Maputo-Mozambique

**Climate objective:**

- Adaptation to climate change
- Mitigation of climate change
- Combination of adaptation and mitigation of climate change

**Geographical scope:**

- Community level
- Sub-national (provinces of Maputo, Gaza, Inhambane, Manica and Tete)
- 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 summarise the problem related to climate change and/or the negative impacts of climate change in the country that the request aims to address.*

Mozambique has been strongly affected by droughts and floods, with El Niño having caused the worst drought in 35 years, and in 201/2016, the Cyclone Dineo damaged crops and destroyed infrastructure in 2017. Intensive and highly variable rainfall events and cyclones as well as unforeseeable periods of droughts are predicted to increase in the coming decades causing livelihood insecurity. A poor distribution and inadequate management of water resources has severe impacts on agricultural productivity and food security. Yield performance under conservation agriculture in first three (3) years is low compared to conventional agriculture which makes people not to appreciate conservation agriculture. Therefore, it is important to test and promote the techniques and practices of rainwater harvesting and conservation in areas where the technology does not exist and to massify it in areas where their practice is already known but less adopted.

Rainwater harvesting and conservation (RWHC) is a technology with potential to increase resilience to drought and intense rainfall events because on one hand it can make use of rainwater that has fallen in a short period of time causing flooding and on the other water can be stored and used for agriculture and livestock watering during dry periods. The technology has already been implemented at a small scale for water harvesting for human consumption in some areas of Mozambique. However, the level of acceptance and adoption is still low especially for farming and livestock watering. Factors that limit the massive adoption of rainwater harvesting and conservation are mainly the lack of knowledge about potential areas for its implementation, the socio-cultural factors, the limited technical and financial capacity to adopt the technology.

The planned activity will map potential areas for implementing rainwater harvesting and conservation

systems in five provinces, namely, Maputo, Gaza, Inhambane, Manica and Tete, to promote the implementation of RWHC in Mozambique.

**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.*

Rainwater harvesting and conservation is a technology that already exists in various parts of Mozambique as a solution for collecting, storing and conserving water from roof top and surface runoff for household consumption and agriculture in arid and semi-arid regions. Several large scale RWHC systems such as dams have been implemented in collaboration with development agencies. Smaller scale systems have usually been set up by farmers at a local level.

The Technology Needs Assessment (TNA) from 2016 and Technology Action Plan (TAP) from 2018 on agriculture have prioritized the introduction and massification of rainwater harvesting and conservation systems as the level of acceptance and adoption is still very low especially for farming and livestock watering livestock.

**Specific technology<sup>1</sup> 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 technology(ies) 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).*

The level of acceptance and adoption of rainwater harvesting and conservation techniques is still low especially for farming and livestock watering. Specific technology barriers that limit the massive adoption of RWHC are linked to the economic and financial factors, human capacities/ knowledge, lack of information and awareness, as well as institutional collaboration and organisational capacities.

**Economic and financial barriers for RWHC**

The barriers limiting the transfer and diffusion of large RWHC are related to the high costs of preparation, installation and maintenance while for small systems are related to high costs of installation and maintenance. The high costs associated to the limited financial capacity of government to promote the transfer and diffusion as well as of farmers to implement the systems hinders the transfer of RWHC. The cost of installation and maintenance of tarpaulins, sheets, and cement in some

<sup>1</sup> *“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)*

cases, taps and piping pipes, panels for pumping water can be high for farmers limiting the adoption of the technology by farmers. The government in most cases depends on development agencies to conduct mapping, survey/detailed studies and projects, construction and maintenance for the large systems which also depend of the objectives and interest of the development agencies. The limited aliment of private sector in this technology, due to a lack of incentives, is also a major contributing barrier to limited adoption by farmers.

### Human capacities

To conduct mapping, survey, construction and maintenance of large RWHC systems requires highly skilled and qualified people which are not presently available in the country. The limited number of skilled human resources is due to the fact that very few national institutions are offering training containing these skills. In addition, at the implementation sites there are no skilled personnel for management and maintenance of these systems. Even for construction and maintenance of small RWHC, there are still limited human resources skilled.

### Lack of information and awareness

In Mozambique, awareness campaigns about climate related issues and possible solutions to address climate change have been limited to floods and tropical cyclones. Hence, different groups and farmers are not well informed or aware about the RWHC as possible solution to adapt to drought. Other reason leading to lack of information and awareness has been the lack of community involvement in decision-making. In addition, the involvement of mass media in dissemination of this type of technologies is another reason for the lack of information and awareness of RWHC technology.

### Institutional collaboration and organisational capacity

The lack of joint planning and community involvement has been limiting the adoption of this type of technology. The lack of community involvement limits the community's appropriation of technology. The other barrier that hinders the transfer and diffusion of this technology in Mozambique is limited investment by the private sector.

### Sectors:

Please indicate the main sectors related to the request:

- |   |   |                                       |  |
|---|---|---------------------------------------|--|
| <input checked="" type="checkbox"/> Coastal zones | <input type="checkbox"/> Early Warning and Environmental Assessment | <input type="checkbox"/> Human Health | <input type="checkbox"/> Infrastructure and Urban planning |
| <input type="checkbox"/> Marine and Fisheries     | <input type="checkbox"/> Water                                      | <input type="checkbox"/> Agriculture  | <input type="checkbox"/> Carbon fixation                   |



- |  |   |                                   |   |
|--|---|-----------------------------------|---|
| <input type="checkbox"/> Energy Efficiency | <input type="checkbox"/> Forestry         | <input type="checkbox"/> Industry | <input type="checkbox"/> Renewable energy |
| <input type="checkbox"/> Transport         | <input type="checkbox"/> Waste management |                                   |   |

Please add other relevant sectors:

### Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

- |  |   |   |  |
|--|---|---|--|
| <input type="checkbox"/> Communication and awareness | <input checked="" type="checkbox"/> Economics and financial decision-making | <input checked="" type="checkbox"/> Governance and planning | <input type="checkbox"/> Community based |
| <input type="checkbox"/> Disaster risk reduction     | <input checked="" type="checkbox"/> Ecosystems and biodiversity             | <input type="checkbox"/> Gender                             |  |

### 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.*

### Objectives

The overall objective of this technical assistance is to promote the implementation of rainwater harvesting and conservation systems for an increased resilience to drought and intense rainfall events by identifying and mapping areas with high potential for the implementation of different sizes of RWHC. This objective will be achieved through the assessment of the suitability and feasibility for implementing RWHC systems, through capacity building amongst local communities and farmers about RWHC, and through the development of a financing mechanism for a supported technology uptake.

### Anticipated groups of activities

Activity 1: Analysis of past and ongoing activities in the area of RWHC



Activity 2: Identification of appropriate RWHC systems and definition of ideal factors for areas where RWHC systems of different types can be built

Activity 3: Identification and mapping of areas with high potential for RWHC systems in five provinces

Activity 4: Development of RWHC maps and schemata

Activity 5: Development of financing mechanisms for the implementation of RWHC systems

Activity 6: Delivery of a capacity building and awareness raising workshop with community and farming representatives of each province

### Anticipated products

1. Technology sheets of appropriate RWHC systems and their application conditions
2. Map of areas with high potential for RWHC systems as well as schemata in five provinces
3. Implementation and financing plan
4. Capacity building and awareness raising workshops with representatives of each province

### 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.*

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>

The potential benefits of RWHC reach from gender benefits and household water security to an improved agricultural production and thereby secured livelihoods.

**Gender benefits:** RWHC practices provide an opportunity for improved access and/or availability of water for both domestic and agricultural production. As women are mainly responsible for agricultural production, this may have positive impacts on their activities and techniques.

**Household water security:** With RWHC practices, water security can be improved at a local level, securing the livelihoods of local populations and as well as improving health.

**Improved agricultural production:** RWHC practices have a positive impact on agricultural productivity with a more secure water availability, leading to food security.

**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  Ministry for Science and Technology	Focal Point
Request Applicant	National Irrigation Institute
Ministry of Agriculture and Rural Development	The National Irrigation Institute will be responsible for hosting the Technical Assistance including the availability of information and junior staff for the field survey. The University Eduardo Mondlane / Faculty of Agronomy and Forestry Engineering will also be involved, the local agricultural authorities at the five (5) provinces including the respective communities to be identified.
Municipalities	

**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 number, etc.).
Nationally Determined Contribution (NDC)	<i>Direct alignment and contribution to NDC implementation is required for all CTCN technical assistances. Please include a direct reference to the INDC/NDC document (chapter, page number, etc.).</i>  The NDC from 2015 lays out current and planned activities to increase the effectiveness of land use and spatial planning, including the reduction of flooding (page 6), to improve the capacity for integrated water resources management (page 6) and to increase resilience of agriculture to guarantee food security and nutrition. It further refers to the foreseen development of the TNA on agriculture that has been published in 2017 (page 10).
Technology Needs Assessment	The TNA from 2016 and TAP from 2018 on agriculture have identified the mapping of potential areas for implementing RWHC as one of the key projects to be implemented (page 61f.).



National Adaptation Plans	
Nationally Appropriate Mitigation Actions	
Add others here as relevant	

**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.*

The request for technical assistance on rainwater harvesting and conservation is based on the Technology Needs Assessment (TNA) from 2016 and the Technology Action Plan (TAP) from 2018 on agriculture in which RWHC as a technology and a project on "Mapping potential areas for implementing RWHC systems" has been prioritized. The NDE Antonio Jorge Raul Uaisone has confirmed the ongoing relevance and interest for this project with the Ministry of Land, Environment and Rural Development Mozambique and other key stakeholders. The TA request was developed with support from the CTCN.

**Background documents and other information relevant for the request:**

- Please list all relevant documents that will help the CTCN analyse 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.

INDC (2015):

[https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Mozambique%20First/MOZ\\_INDC\\_Final\\_Version.pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Mozambique%20First/MOZ_INDC_Final_Version.pdf)

TNA Agriculture (2016):

[https://unfccc.int/ttclear/misc/StaticFiles/gnwoerk\\_static/TNA\\_key\\_doc/77a930f6e1644d7c828c03a3abdc129a/761b429db3124dcbb5ec6c01df401b9d.pdf](https://unfccc.int/ttclear/misc/StaticFiles/gnwoerk_static/TNA_key_doc/77a930f6e1644d7c828c03a3abdc129a/761b429db3124dcbb5ec6c01df401b9d.pdf)

TAP Agriculture (2018):

[https://unfccc.int/ttclear/misc/StaticFiles/gnwoerk\\_static/TNA\\_key\\_doc/c0538c63479143f387e3596d544e5e06/e6941b092b014c96b5c3fe2a18b8b632.pdf](https://unfccc.int/ttclear/misc/StaticFiles/gnwoerk_static/TNA_key_doc/c0538c63479143f387e3596d544e5e06/e6941b092b014c96b5c3fe2a18b8b632.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<sup>2</sup>.

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 preliminarily 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: Paiva Doge Alexandre Mungambe

Date: 12.03.2021

Signature: *Paiva Mungambe*



**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.

**Signature:**

NDE name: António Jorge Raul Uaisone

Date: 12.03.2021

Signature:

*António Jorge Raul Uaisone*



**THE COMPLETED FORM SHALL BE SENT TO THE [CTCN@UNEP.ORG](mailto:CTCN@UNEP.ORG)**

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

<sup>2</sup> Please see:

[https://unfccc.int/files/meetings/marrakech\\_nov\\_2016/application/pdf/auv\\_cop22\\_i8b\\_tm\\_fm.pdf](https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf)