Terms of Reference

Market Scoping for Rooftop Rainwater Harvesting System, and Implementing Actions to Support Further Uptake in Uganda

1. Background on the TEMARIN Project

The TEMARIN project (see here for more) is a three-year, DANIDA (Danish Development Agency) funded project covering the countries of Kenya and Uganda with the overall aim to support countries in accelerating the transfer, diffusion and uptake of specific climate technologies. The project focus is on strengthening domestic markets for climate technologies, removing bottlenecks for domestic firms operating in these markets and increasing cooperation among private actors, public actors and international actors to build global and national partnerships for upscaling implementation.

The overall TEMARIN project has three key components

1. Generate relevant market knowledge and highlight successful cases of market-led diffusion of climate technologies including small-scale irrigation, rooftop rainwater harvesting, captive solar PV, and ICT based agricultural extension services (in Kenya and Uganda).
2. Generate a better understanding of the role and growth of domestic solar PV companies, profiling them, and identifying critical challenges (in Kenya and Uganda), and co-creating ideas and their implementation to strengthen support for domestic PV industry
3. Facilitating and enabling partnerships and/or implementing actions to further increase the uptake of select climate mitigation and adaptation technologies (in Uganda)

This TOR concerns work in Uganda in relation to TEMARIN's activities relating to adaptation and specifically the selected target technology of Rooftop Rainwater Harvesting.

2. Linkages with TNA Uganda and NDC Action Support

The TEMARIN project builds on the Technology Needs Assessment (TNA) project https://tech-action.unepdtu.org/, currently being implemented by UNEP-DTU Partnership (UDP) in Uganda. The TNA project, supported by UNEP and UNFCCC, helps developing countries determine their technology priorities for mitigating and adapting to climate change. In Uganda, the national stakeholders have prioritized water, agriculture and forestry sectors within climate adaptation. The TNA project first phase (of technology prioritisation) and the second phase (of barrier analysis) have been completed in Uganda. The TNA consultants are currently developing the technology action plans (TAPs) to identify measures and actions that would address the barriers, with the expected date of completion in June 2021. The TNA process is aimed at strengthening countries' ability to analyse and prioritize climate technologies, guiding them towards implementation of the UNFCCC Paris Agreement.

In parallel to this, Uganda has also communicated and committed its Nationally Determined Contributions (NDC) to reduce greenhouse gas (GHG) emissions in support of the Paris Agreement. Uganda has a NDC plan that spells out clearly their priority sectors and mitigation and adaptation actions that supports its low-carbon development pathway. The NDC project https://unepdtu.org/project/ndc-action/ supports efforts of 10 countries including Uganda, to translate NDCs into strategies and actions ready for financing and implementation. The Ugandan NDC prioritises water and agriculture sector. The NDC Project is coordinated by UNEP and implemented with the UNEP DTU Partnership (UDP) providing technical and expert support.

The TEMARIN Project complements the work of the TNA and NDC projects implemented in Uganda, diving deeper into barriers facing one of the TNA's priority technologies in the water sector: rooftop rainwater harvesting (RRWH) for domestic use.

3. Objective of this Assignment

As indicated above, the main objective of the TEMARIN project as it relates to adaptation in Uganda is to provide a focused push, through an analytical deep dive, to one specific technology prioritized in the water sector: rooftop rainwater harvesting (RRWH). The purpose of this is two-fold: 1. To improve the deployment and take up of that technology in Uganda as per the expressed priority of national stakeholders, and 2. To generate global lessons on modalities and approaches for more effective implementation of technologies from TNA and NDC processes.

TEMARIN's deep dive on the RRWH technology will build on existing insights generated from the TNA project in Uganda, including in particular through the TNA report, the Barrier Analysis and Enabling Framework (BAEF) report and the Technology Action Plan (TAP) - due in June 2021. The analytical deep dive will consist of: 1. Supplementary barrier analysis for the RRWH technology, building on work in the BAEF report, 2. Detailed mapping of, and interviews/consultation with, key stakeholders and 3. An in-depth market assessment for the RRWH in Uganda.

In combination these three elements will enable a fuller understanding of the barriers and issues preventing the full deployment of the RRWH technology in Uganda. Building on this in-depth understanding, TEMARIN will develop and implement (to the extent possible) specific activities/actions aimed at increasing overcoming barriers and increase the uptake and development of RRWH in Uganda, as well as identifying potential partnership and collaboration opportunities for enhancing support to RRWH.

These implementation actions/activities could be of various kinds, examples include - increasing private sector engagement in RRWH, strengthening technical capacity, increasing consumer awareness and more data on the RRWH options/cost/financing etc., and/or strengthen policy coordination and support etc.

A local consultant, with good knowledge of the water sector in Uganda, strong research and analytical experience on technology uptake and the application areas, along with strong links to the relevant policy making fora and Ministries is being sought to support the agenda of advancing technology diffusion and market strengthening in Uganda.

3.1. Technological Focus - Rationale for RRWH

As part of the TNA project in Uganda (see Section 2), rooftop rain water harvesting (RRWH) was prioritized as one of the technologies to contribute towards climate change adaptation in the water sector through consultations with relevant stakeholders, climate response document review and using a multi-criteria analysis based on some of the advantages and disadvantages identified below. The full TNA report for Uganda can be found here.

The TNA fact sheet developed for RRWH (see Annex 1 to the TNA report) presents the rationale for prioritizing RRWH using roof catchments. Part of it, is that it is being promoted by the water sector in Uganda and has a long tradition being used as a water supply as it can mitigate water shortages; provide additional water for households, gardens and personal needs. In addition, it is affordable and manageable by communities especially in water stressed areas both at household and institutional levels. Although RRWH has been promoted for domestic use, it is not utilized to its full potential, contributing only 0.4% of water sources in rural areas, and on a national scale 1% of the population was served by rainwater tanks.

During the second phase of the TNA project, a barrier analysis to the transfer and diffusion of RRWH was conducted, as well as potential measures to identify address these barriers presented. The full Barrier Analysis and Enabling report for Uganda can be found here. The table below presents barriers and measures identified:

Barrier category	Barrier	Measure
Financial	Low private investment in rooftop rainwater harvesting	Enable function private sector engagement in RWH
		Improve household access to financing for RWH
Non-financial barrier	Inadequate extension advisory capacity for supporting RWH	Develop a catalogue or database of information on RWH technology
		Demonstrate the value of RWH under different climate scenarios
		Strengthen technical capacity of RWH
	Low social culture of RWH	Strengthen community organization for RWH
	Inadequate policy and legal support for RWH	Strengthen coordination for implementation of RWH policy provisions

Source: TNA BAEF Report, Uganda, 2020.

The enabling framework analysis showed that the common barriers for RRWH and the broader water sector were high cost of installation, inadequate capacity of extension officers in terms of advising, land tenure insecurity, low community extension support and low private sector investment. Although the Government of Uganda has put a number of measures in place already including private sector partnerships, subsidising equipment for RRWH systems, partnering with NGOs for extension, support to water user associations, and investment in construction & installation of water infrastructure and community organisation.

As presented in section 2, the next phase of TNA, which is to develop the Technology Action Plan, is currently underway and we expect the report to be available in June 2021.

4. Scope of work

Activity 1 - Supplementary barrier analysis, stakeholder mapping and consultation and market analysis for Rooftop Rainwater Harvesting technologies in Uganda

1.1. Detailed analysis of the RRWH market and diving deeper into the needs and barriers - including mapping actors, users, types of systems (low-cost, high-cost), types of storage and materials used (roofs, storage units, pipes), main issues for uptake, policy and regulations, providing recommendations, and identifying potential opportunities (April-June, 2021)

Deliverable 1.1. Summary report on key barriers, stakeholders and market analysis for RRWH in Uganda.

The analysis should include at a minimum:

1.1.1. Review Uganda's TNA and BAEF and (when available) TAP reports - with special attention to sections related to RRWH. Bilateral consultations with the lead TNA consultant to clarify questions is also possible.

1.1.2. Review of RRWH based on latest reports and grey literature to capture the state-of-the-art in RWH and RRWH, what is the current uptake of RRWH

1.1.3. Mapping and review of existing projects, models, incentives, support structures that are in place for RRWH in Uganda

1.1.4. Building on the work done in the TNA project, mapping of all the key actors actively supporting or involved in RRWH, including: types of consumers (urban, peri-urban, rural), water authorities, private sector/companies, material suppliers, donors, NGOs, relevant Govt. bodies, research institutes etc. -

1.1.5. Interviews and consultations with primary stakeholders identified in 1.1.4 to capture their perspectives and insights on the status of RRWH deployment in Uganda and barriers limiting the further scaling up of this technology in the national context. Consultations should be targeted towards identifying feasible avenues of engagement for TEMARIN to support the further implementation of the RRWH technology and may include questions such as: 'Is RRWH mostly incentivised by the government? Is there a market per se (regulated or informal) for RRWH? How do the domestic users/households (urban or rural) navigate setting up RRWH? etc.

1.1.6. Detailed market screening for identifying which private sector companies - suppliers, installers (market actors/innovation system actors), intermediaries, are at the forefront? Where are they located in the value chain? What are the established business models?

1.1.7. Building on insights generated in the TNA project's BAEF report as well as those generated in 1.1.4 and 1.1.5 above, mapping of the key barriers/issues for the further uptake of the RRWH technology including e.g.: policy level, consumer awareness, specific skills gap, end-

user financing, private sector engagement etc. Are the challenges more at the supply-end or demand-end?

1.1.8. Description of the nature of employment this creates - the value chain of local suppliers, materials, high-cost, low-cost systems - what kind of demand exists?

1.1.9. Undertaking a structured or semi-structured survey with select users to capture various demand dimensions

Based on the above analysis, the consultant should prepare a summary report identifying and analysing key barriers to RRWH in Uganda, key stakeholders involved and their roles, interests and responsibilities, as well as a detailed market analysis for RRWH. The report should make general recommendations on type of strategies and activities expected to lead to an increase in the uptake of RRWH in Uganda, potential partnership/collaboration opportunities, potential for general awareness and capacity development, and financing modalities (loans/grants, public/private) etc.

Activity 2 - Developing and Implementing Specific Actions for RRWH Uptake

2.1. Identify, design, and implement activities for increasing RRWH uptake and enhancing local capacities (July-November, 2021)

Deliverable 2.1. Short list of activities and avenues for further supporting RRWH (as an annex to Deliverable 1.1)

This deliverable would build on the analysis and consultations done in activity 1 to propose a short list of specific activities (or suite of activities) that can help overcome the identified key barriers to RRWH in Uganda. E.g. this could be through business collaboration, through investment collaboration, through access to climate funds, increasing private sector engagement in RRWH, strengthening technical capacity, increasing consumer awareness, providing more data on the RRWH options/cost/financing, strengthening policy coordination and support etc. The short list should be ordered by expected potential for overcoming the identified barriers and should also highlight specific elements/steps of these activities that could be implemented immediately and feasibly within the timeframe and available budget of the TEMARIN.

Deliverable 2.2. Stakeholder Networking event for key RRWH stakeholders

The outcome of the analysis done in deliverable 1.1 and preliminary findings from deliverable 2.1 is presented in an interactive webinar (potentially with mixed online and face to face interaction as logistics allow) delivered to the key national stakeholders identified in the analysis. The main purpose of this webinar is to validate the concluding findings of the report in deliverable 1.1. and present draft ideas developed for deliverable 2.1 above to help bring forward discussions on a specific action plan to address the issues identified. The webinar would thus primarily target key national stakeholders identified in the analysis.

This deliverable would also set up as a stakeholder networking event with the intention of establishing a formal process/platform for ongoing coordination of efforts to improve diffusion of RRWH in Uganda - including through the proposed activities in deliverable 2.1.

The specific setup for the networking event and the proposed platform/process may be different based on the type of actions proposed in deliverable 2.1. The modalities for the platform/partnership will be designed and implemented, with the aim that such partnership building will concretely lead to increased technology diffusion.

Deliverable 2.3. Implementation report for RRWH diffusion in Uganda

Carry out 2-3 specific actions (identified in deliverable 2.1 and coordinated with the platform established in 2.2) that will help kick start the overall strategy and activities proposed to overcome RRWH barriers. This could include e.g. capacity enhancement for specific stakeholders, designing end-user incentives, streamlining the supplier network, improved data and knowledge on RRWH types for various consumer types, raising some of the points at policy level, or plugging them into upcoming policy plans etc.

5. Deliverables

Deliverable 1.1. Summary report on key barriers, stakeholders and market analysis for RRWH in Uganda (June, 2021)

Deliverable 2.1. Short list of activities and avenues, with detailed description and rationale, for further supporting RRWH (documented through an annex to deliverable 1.1). (June/July, 2021)

Deliverable 2.2. Stakeholder event for key RRWH stakeholders and establishment of formal coordination mechanism (documented through minutes and agreed action points) (July 2021)

Deliverable 2.3. Implementation report for RRWH diffusion in Uganda (December, 2021)

6. Timing and budget

The contract period is 8 months from 21 April 2021 to 30 December 2021.

The Consultant is expected to liaise with TEMARIN Team and consult widely with local institutions, private companies and other international institutions etc.

The total budget for this consultancy contract is 20,000 USD.

7. Qualifications and Skills

The qualified candidate would have the following qualifications and skills:

1. Possess a post graduate degree in a related field of the assignment.
2. Have good knowledge and general overview of the water sector in Uganda, including relevant technologies, and currently active policies and frameworks. Specific experience and knowledge on RRWH is a clear advantage.
3. Have strong research and analytical experience on technology uptake in the water sector.
4. Have a good overview of key stakeholders involved in the water sector in Uganda, including relevant policy making fora, Ministries, and private and financial sectors. Documented past engagements with stakeholders an added plus.
5. Have a working understanding of climate change and climate change adaptation - in particular in the Ugandan context. in particular
6. Have good coordination and facilitation skills.
7. Possess excellent English writing skills

8. Application Procedure

Interested consultants should submit their application to the Lucy Ellen Gregersen lugr@dtu.dk, with copy to Lars Christiansen lachr@dtu.dk and Lakshmi Bhamidipati at lakpa@dtu.dk. Please make sure to include the following information:

- A cover letter demonstrating experience and knowledge in the water sector, market research/advisory, including knowhow of the relevant stakeholders.
- Detailed CV including summary of relevant projects and initiatives you have been a part of and your specific role within them.
- 1/2 to 1 page write-up on preliminary ideas, reflections, and thoughts on your approach to this work and activities indicated in this ToR.

The deadline for submitting the application is 6th April 2021.