

DRC
Terms of Reference (TOR)
Design and Optimization of Solar Powered Water Systems Training, Gedaref

1. Who is the Danish Refugee Council?

Founded in 1956, the Danish Refugee Council (DRC) is a leading international NGO and one of the few with a specific expertise in forced displacement. Active in 40 countries with 9,000 employees and supported by 7,500 volunteers, DRC protects, advocates, and builds sustainable futures for refugees and other displacement affected people and communities. DRC works during displacement at all stages: In the acute crisis, in displacement, when settling and integrating in a new place, or upon return. DRC provides protection and life-saving humanitarian assistance; supports displaced persons in becoming self-reliant and included into hosting societies; and works with civil society and responsible authorities to promote protection of rights and peaceful coexistence.

DRC operates across 10 countries in the East Africa and Great Lakes (EAGL) region, with regional support based in Nairobi, Kenya. The regional office supports country offices with programming and operations expertise as well as support service functions.

In Sudan, the Danish Refugee Council (DRC) is a leading protection agency with a mandate i to promote and protect durable solutions to conflict and displacement affected populations on the basis of humanitarian principles and human rights. DRC is implementing a multi-sector response including Protection, Economic Recovery and Livelihoods, and Humanitarian Demining and Peacebuilding projects. DRC supports Sudanese IDPs, refugees and host populations with projects and activities tailored to the needs and gaps in the local contexts. DRC has operational bases in Gedaref, White Nile, South Kordofan, Central Darfur, and Khartoum and is supported by a country-office in Port Sudan, while working through partners in other parts of Sudan.

DRC currently operates with a full team based in Gedaref Office, providing essential services across multiple sectors, including Shelter and Non-Food Items (NFI); Water, Sanitation, and Hygiene Promotion (WASH); Livelihoods and Food Security; CCCM; and Protection services to address critical humanitarian needs.

DRC in Gedaref is actively working towards sustainable water and sanitation solutions, engaging with over other partners, including national and international NGOs, as well as UN agencies, to support the delivery of clean water, sanitation facilities, and hygiene promotion interventions.

To date, critical challenges related to system design, operation, and maintenance have been identified, with ongoing efforts to address these gaps through targeted capacity-building initiatives.

2. Purpose of the consultancy:

This Terms of Reference (ToR) seeks to enhance the capacity of the Gedaref WASH DRC and extension partners (UN, INGO, Government) by building the technical capacity

3. Objective of the consultancy:

- Provide training on the Design and optimization of solar-powered water systems.
- Deliver practical, field-based training sessions for local government staff and DRC WASH team.
- Develop guidance materials and tools to support sustainable water system operations.

DRC, through SHF (Sudan Humanitarian Fund) and the WASH cluster in Gedaref State, is committed to rolling out this Design and optimization of Solar-Powered Water Systems Consultancy to strengthen local capacity and improve water service delivery for displaced and host communities alike.

4. Duration, timeline, and payment:

Duration: Consultancy is expected to start in mid-May 2025, with each activity leading to the main event which is a 5-day workshop training (8hours/day), paid for as delivered throughout the period of the consultancy days are flexible and based on the weekly priorities rather than fixed days.

Timeline: Beginning on 6 April 2025 through 5 July 2025

5. Deliverables

1. **Detailed problem analysis of current designs:** Conduct field visits in Gedaref state to selected locations where solar-powered systems have been implemented. Major issues have been identified on gaps in current solar designs, these need further stakeholder engagement to ensure the trickle-down effect on field locations.
2. **Stakeholder engagement through an in-person workshop/training;** DRC has identified a few agencies and government counterparts who would need a round table that would ensure renewed capacity building while also ensuring the engagement would facilitate decision making and a potential plan for rolling out the activity. This will look into;
 - a. Social issues: Beneficiaries complaint about lack of adequate water due to solar installations
 - b. Technical Challenges: Inadequate designs and maintenance
 - c. Possible solutions for surface water pumping/booster stations with solar
 - d. In-line Chlorination of water (mechanical options)
 - e. Analysis of capacity gaps and technology, e.g. use of Epanet and design software, use of Water and GIS.
3. **Detailed final report and tools:** to support the rollout and implementation of checks on new water systems and trigger the long term implementation of quality water systems.

The consultant (s) will be engaged for a period of 2 weeks with field travel to Gedaref State, including providing training and workshop modules, and technical support which will be supervised and guided through the WASH Sector NE Nigeria and support of the Water Technical Working Group

Desired deliverables of the work:

- A. **Assessment tools for field visits to various water systems in Gedaref state.** The consultant will provide soft/hard copies of tools which will be used for the assessment of water systems, the tools will take into consideration during the desk study of existing capacities and tools already in place.
- B. **Development of training/workshop modules;** This will be based on field findings and desk reviews from previous training and field reports. The consultant shall provide soft/hard copies of training material and relevant literature aligned with the ToR.
- C. **Final report – Design and Optimization of Solar Powered Water Systems;** a detailed report including tools which will be used to plan for engagement of the sector with improved capacity after deliverables above.
- D. **DRC will engage 25-30 participants in the hybrid workshop training.** This will ensure smaller groups which will be easy to train and coordinate. The consultant will have to show proof of the availability of training materials.

Duties of the consultant

- 1- The consultant will work closely with the WASH Team Leader and the WASH/Shelter and CCCM coordinators, with internal support of DRC staff at regular and agreed times during the period of the consultancy. The consultant is required to retain flexibility on engagement for the activities as stipulated in the ToR including training and travelling dates and respond to the feedback received to facilitate successful engagement.

- 2- DRC will determine the acceptability of final deliverables after the engagement, which will be conducted by the quality of report including the monitoring team attending the engagements throughout the consultancy. The soft copy materials will be provided to DRC and participants to enable ease of reference during/before each training module.
- 3- *All the material used and developed throughout the consultancy should be in English, with slides, and documents which should include all technical considerations. All materials should be freely available for use by DRC and WASH partners attending the pieces of the training workshop.*

The Consultant with the support of the DRC Team will produce training certificates (or design) that will be availed to participants at the end of each training.

Duties of DRC

DRC Will :

- 1- Provide training venues and organise for space including accommodation, and other transport arrangements
- 2- Support with invites of training participants and local coordination before and during the workshop
- 3- Support in flight, local transport and any other movement considerations
- 4- Provide timely feedback to the consultant on any changes in contract or training schedules

6. Eligibility, qualification, and experience required

- Extensive demonstrated experience in the design, construction, and modelling of solar-powered water systems.
- Extensive knowledge of WASH and respective training topics
- Demonstrable experience in developing training and capacity-building in solar water-powered systems
- Knowledge of working in WASH Humanitarian programmes and systems is an advantage
- *Fluency in English and Arabic is an advantage both written and verbal.*

Submission of interest:

Interested applicants should submit the following:

- An up-to-date curriculum vitae of the consultant and his/her team
- Cover letter and description of the consultancy, including a breakdown of total cost per deliverable no more than 4 pages maximum. Please include:
 - Overview of the entire 2 weeks engagement including the capacity-building exercise. Should the reporting period exceed the three weeks engagement, indicate consider including it in the proposal.
 - Work plan for the engagement
- Examples of relevant experience in capacity building in the field of solar-powered water systems

Please include a proposed budget, including the number of days of work and rate.