

Terms of Reference

WASH Officer (Hydrogeologist)– P3 – Gbadolite, Democratic Republic of the Congo (DRC)

MISSION LOCATION

Gbadolite, DRC

DURATION

3-month

OPERATIONAL CONTEXT

In early 2021, the provinces of Bas-Uele, North-Ubangi, and South-Ubangi in the Democratic Republic of Congo (DRC) received over 73,000 new refugees from the Central African Republic, who fled the armed conflict that followed the presidential and legislative elections in the country.

Since March 2021, UNHCR and its partners have been working with the DRC government to provide multi-sectorial international protection and assistance to the refugees.

The three provinces are vast in size with significant logistical challenges that negatively impact the humanitarian response. These challenges also make staff support to the response action problematic. Moreover, in line with UNHCR's alternative to camps policy, its position on social economic inclusion and the need to promote social cohesion, the current country level capacity is not sufficient to meet the needs of the Sub Office. As such, the DRC Operation requires substantive personnel stationed in Gbadolite to support the operating areas at Sub Office Gbadolite, as well as in the Bili, Libenge and Yakoma field offices. This will ensure increase access to data and information given the absence of essential government infrastructure and services in these areas.

The siting and drilling of productivity boreholes based on authoritative hydrogeological survey and report is critical considering the high rate of non-functionality due to seasonal fluctuation in water level as well as the need to shift to long term environmental low-cost water supply systems, which harness solar pumping opportunities. The solar radiation potential presented by the DRC is yet to be harnessed toward sustainably low-cost water supply as evident by the use of generators for water supply. The water supply infrastructure in most camps/sites are emergency-like with high operation and maintenance cost as well as unaccounted for water, frequent breakdown and long downtime.

With a shift to 'alternative to camps, in particular and the adoption of the poles des developpement", UNHCR and partners are focused on ensuring sustainable groundwater exploitation, supply, and management.

In Modale site where immediate support is required, there are 4,632 refugees and an estimated 7,000 host community members. Relocation of refugees to the Modale site is ongoing and is expected to brin the total number of refugees to 10,000 by year end.

In addition to the immediate water supply needs for the total population, the water supply system is also expected to serve a health facility, schools, as well as a market. It would therefore be critical to consider climate change impacts, aquifer depletion, as well as pollution by human activities in any hydrogeological model. Drilling attempts

in Modale have largely been unsuccessful (average of 26 meters) due to the lack of hammer to drill past a bedrock formation.

AIM OF THE MISSION

The WASH Officer (Hydrogeologist) will support the UNHCR WASH response in DRC, with a strong focus on developing guidelines and framework for sustainable groundwater extraction and solar pumping.

MISSION OBJECTIVES

The main objectives are:

- i. enhance sustainable groundwater management, through expertise in the specific fields of geophysical investigations, well-siting, borehole drilling supervision and solarisation and groundwater monitoring.
- ii. Design low cost-efficient solar distribution water supply systems.

RESPONSIBILITIES

Under the supervision of Assistant Representative-Programme, the WASH Officer will:

1. General hydrogeological site description and well siting

- Establish rough regional conceptual hydrogeological models for the sites of interest to be summarized and schematized on a 2-pager, to be used as vulgarized hydrogeological 'ID card' of the camp setting: spatial distribution (map and section) of aquifer type(s), identifying recharge/discharge areas and processes, probable groundwater flow directions and water balance estimations
- Establish, a RGWPM (rapid groundwater potential map), a methodology developed by UNHCR for the areas of interest, where applicable (basement-regolithe contexts)
- Support siting of boreholes, if applicable based on RGWPM and contribute to defining TORs for geophysical campaigns
- Review geophysical and hydrogeological survey reports and assess the interpretations of proposed well sites

2. Well construction, testing and exploitation scheme design (solarisation)

- Contribute to the technical specifications for drilling contracts (i.e. well design)
- Supervise and monitor of drilling and pump test campaigns carried out by UNHCR implementing Wash partners and operational WASH agencies
- Review well construction documentation and pump test interpretations and proposed exploitation schemes, considering conventional, hybrid and solar exploitations schemes

PROFILE

Experience

- At least 5 years' experience in operational hydrogeology
- Experience in establishing conceptual hydrogeological models and water balances
- Experience and professional training in geophysical methods.
- Experience in well construction and well design
- Experience in implementation of groundwater monitoring networks: from field implementation to data interpretation

Essential requirements

- University Degree in Hydrogeology/geology or Civil Engineering/Water Resources Engineering.



- Ability to coordinate a range of diverse actors and drilling activities to achieve a common objective in the area of groundwater development and production.
- Proven ability to deal with multiple tasks in a courteous and service-oriented manner in a demanding working condition that often has short deadlines.
- Exposure to UNHCR mandate, its priorities and principles

Personal Characteristics

- Good communicator with strong interpersonal and negotiations skills to deal with persons of various cultural and educational backgrounds.
- Ability towards analytical and creative thinking for rapid solutions
- High ethical and professional standards
- Team player with service-oriented attitudes.



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