United Nations Development Programme

TERM OF REFERENCE (ToR)
FOR THE RECRUITMENT OF A CONSULTING FIRM

1. GENERAL INFORMAION

Services/Work Description:	Data Collection for the Hydrological Study of Wadi Tuban in Yemen
Project/Program Title:	Integrated Water Resources Management to Enhance Resilience of Agriculture (ERA) and Food Security
Post Title:	Consulting Firm
Duration:	Two Months
Expected Start Date:	Beginning of August / Immediately after Concluding Contract Agreement

2. BACKGROUND / PROJECT DESCRIPTION

Water resources management is a pressing issue in Yemen due to its arid climate and limited water availability. Yemen faces significant challenges in this regard, including limited agricultural productivity, high levels of malnutrition, and vulnerability to natural disasters.

With BMZ funding through the German Development Bank (KFW), UNDP Yemen and KfW have established a partnership focused on enhancing water resources management and food security in the country. This collaboration aims to address the critical challenges faced by Yemen in these areas and contribute to sustainable development. In addition, KFW and UNDP Yemen acknowledge the importance of addressing food security concerns in the country. To tackle these issues, the KFW-UNDP partnership focuses on promoting sustainable agricultural practices, supporting small-scale farmers, and strengthening local food systems. By enhancing agricultural productivity and ensuring access to nutritious food, these initiatives contribute to reducing hunger and poverty in Yemen.

Recognizing the urgent need to address these challenges, KfW and UNDP have joined forces to implement an integrated water resources management project that aims to enhance the resilience of agriculture and food security in Yemen. The project (Integrated Water Resources Management to Enhance Resilience of Agriculture (ERA) and Food Security) includes the construction and rehabilitation of water infrastructure to increase agricultural production, promoting access to markets, and empowering women in agriculture value chain in Yemen.

The overall objective of the project is for Poor Yemenis whose livelihoods depend on primary water sources for productive uses to be able to enhance their livelihood resilience through the development and rehabilitation of water infrastructure enhancing water availability in support of sustainable agriculture, implemented at key priority areas within a catchment.

The project will conduct a catchment water balance assessment for Tuban and will include hydrological assessments for water resources of Tuban primary catchment at a reconnaissance level and detailed assessments for the four sub catchments located in the target districts in Taiz and Lahj governorates respectively. The importance of these envisaged assessments is to ensure sustainability of interventions and to monitor impact related to enhanced water sources, improvement in groundwater recharge, reduced sectoral conflicts between upstream and downstream governorates, demonstrated coordinated planning between districts (Al-Mawaset and Al-Selw- upstream and Al-Mosaymer and Tuban downstream) and enhance social cohesion from demonstrated co-dependency of beneficiaries through participatory planning.

3. OBJECTIVE OF THE ASSIGNMENT

The objective of this assignment is to carry out a comprehensive data collection, focusing on mapping and collecting available information and data (primary, secondary) regarding the hydro-meteorological characteristics for Wadi Tuban and the four sub-catchments within the targeted districts. The collected data will be used to develop a hydrological model of Tuban primary catchment at a reconnaissance level and detailed models (distributed/semi-distributed) for the four sub catchments focusing on landuse and landcover characteristics. Additionally, the assignment involves the data collection and analysis for water balance assessment of Wadi Tuban, with a focus on the impact of upstream development on the downstream flow regime. This phase, referred to as the (Inception Phase), serves as the foundation for the subsequent hydrological modelling and water balance assessment phase.

4. SCOPE OF WORK

Data Collection for the Hydrological Study will cover Wadi Tuban and will be conducted by the firm, which is expected to coordinate with assigned national technical expertise from MoWE and MoAIF.

In particular, the consultancy firm will:

1. Conduct desk work to understand the project; its area and targeted communities; identification and collection of relevant data from primary and secondary sources; including existing water studies conducted in the project area by different organizations such as UN-Habitat, World Bank, UNICEF, Oxfam, Mercy Corps, CARE and the Yemen Humanitarian Fund. In addition, recent studies by UNDP: "Water Availability in Yemen" as well as UNDP's strategic framework "A Holistic Approach to Addressing Water Resources Challenges in Yemen" should be considered.
2. Collect hydro-meteorological data, landuse and landcover data, as well as information on water balance assessment focusing on upstream/downstream dynamics.
3. Assess the quality and completeness of the data collected, identifying any inconsistencies or gaps, and propose alternative data sources and methods to obtain the missing data (on-site field measurements, radar, satellite, etc.). In addition, cost estimate for the proposed alternative data sources should be provided.
4. Evaluate and select the most appropriate hydrological model and water balance assessment methodology for the intended purpose of the study.
5. Identify the potential limitations of the selected hydrological model.
6. Propose a workplan and methodology to conduct the hydrological study (modelling and water balance assessment) for Wadi Tuban and its four sub-catchments within the targeted districts, including the mechanism for delivering the participatory workshops (one workshop/district).

5. EXPECTED DELIVERABLES

1. Inception report outlining the detailed methodology for conducting the assignment, including the workplan and the timeline. The inception report will be reviewed by UNDP and comments will be reflected by the consulting firm.
2. Draft final report including data analysis, proposed alternatives for missing data, hydrological model selection and limitations, water balance assessment methodology selection and a workplan for the subsequent phases.
3. Final report incorporating comments from UNDP and key stakeholders.
4. Soft copies of all data sets both quantitative and qualitative.

6. QUALIFICATIONS OF THE SUCCESSFUL CONSULTANCY FIRM

The consulting firm is required to have the following professional and technical qualifications. Only those who hold these qualifications will be shortlisted and contacted.

The service will be delivered by a consulting firm with key experts with the following qualifications:

1. Team Leader/Hydrology Expert: a) At least MSc. in Hydrology, Water Resources Management/ Engineering or any other related field. b) At least Seven (10) years proven experience in conducting and interpreting hydrological modelling and water balance assessment using diverse techniques. c) Conversant with at least one hydrological modelling/water evaluation/water accounting software.
2. GIS Expert/Surveyor: a) At least MSc. in Geo-Information Science with a bachelor's degree in surveying engineering. b) At least Seven (7) years proven experience in mapping, rendering, visualization and simulation of catchment processes and models results. c) Experience in creating inventories and databases for planning and decision making.
3. Hydrogeologist/Geophysics: a) At least MSc. in Hydrogeology, geophysics or any other related field. b) At least Seven (7) years proven experience in conducting and interpreting hydrogeological/geophysical survey using diverse techniques and proven experience. c) Conversant with at least one groundwater modelling software.

General qualification and experience for the firm:

1. The consulting firm must have at least 10 years of experience in hydrological modelling, water balance assessment
2. The consulting firm should have a proven track record of successful delivery of projects including participatory planning and stakeholders' engagement in the field of water resources.
3. A proven track record of conducting research on water scare and conflict countries is a distinct asset.
4. Ability to coordinate and manage associated national staff or partners.

7. IMPLEMENTATION ARRANGEMENT / REPORTING RELATIONSHIPS

The successful consulting firm will report directly to the Project Team Leader within the Climate Change, Water, Energy, and Environment Portfolio, UNDP Yemen Country Office. The consulting firm will closely liaise with the government officials at the national, governorate and districts level.

The selected consulting firm is required to assign the necessary experts for the data collection under this assignment. UNDP's Climate Change, Environment and Energy Unit and UNDP Sub-office in Aden will be the primary focal point and as such it will manage the overall financial and contractual arrangement with the consulting firm.

8. KEY DELIVERABLES INCLUDING PAYMENT AND TIMEFRAME FOR THE STUDY

Deliverables / Outputs	Timeframe	% of payment	Approving Officer
1. Inception Report: The inception report should be developed following and based on preliminary discussions with UNDP and initial documents' reviews and it should outline the methodology, and the work plan for the assignment.	10 Days from the commencement date	25%	Project Team Leader
2. Draft Final Report: Including data analysis, proposed alternatives sources for the missing data and approximate costs, hydrological model selection and limitations, water balance assessment methodology selection and a workplan for the subsequent phase of the assignment.	5 Weeks from the commencement date	35%	Project Team Leader
3. Final Report: Incorporating comments from UNDP and the key stakeholders. The final report should also include all datasets collected during the course of the assignment.	8 Weeks from the commencement date	40%	Project Team Leader
Total	**(2 Months)**	**100%**	**Project Team Leader**

9. Approval

This TOR is:

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Date: 28-Jul-2024