

# Terms of Reference

## Backstopping Technical Services

This assignment is part of the Abaar-Tir Project in Somaliland, a groundwater and capacity development project under the Horn of Africa Groundwater for Resilience (GW4R) program of the World Bank



Ministry of Water Resources Development  
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## 1 Introduction

The Horn of Africa (HoA) is one of the most vulnerable regions of the world, characterized by complex development challenges and varying degrees of conflict and fragility, food crises, and social, political, and economic disturbances. The highest poverty levels are found in northern parts of Kenya, Somalia and

Somaliland, although a large portion of households remain vulnerable to poverty in all the countries, with consumption levels only marginally exceeding the poverty line. Food crises remain ubiquitous across the region, with pockets of famine across the region. Food insecurity is primarily driven by armed conflict and ethnic violence, economic shocks, and macroeconomic challenges, and by climate change-induced erratic or below-average rainfall and desert locust. Some of the countries suffer from protracted conflict, political strife and forced displacement, which exacerbate challenges of underdevelopment, resource scarcity, economic shocks, food insecurity, and increasingly, challenges posed by climate change.

The GW4R program aims to increase sustainable access and management of groundwater as a key contribution to strengthen the climate resilience of targeted communities in the Horn of Africa region. The Republic of Somaliland (“Somaliland”), Federal Republic of Somalia, Federal Democratic Republic of Ethiopia, the Republic of Kenya, and the Intergovernmental Authority on Development (IGAD), are included in the program. The Somaliland component of the regional program is the focus of this document.

## 2 The Project

### 2.1 Objectives

The Somaliland component of the regional GW4R program is called Abaar-Tir (or “the project”). It is aligned with the SL National Development Plan 1, the Rural Resilience Framework, the National Water Resources Strategy, and the World Bank Country Partnership Framework. The project development objective (PDO) is to *increase the sustainable access and management of groundwater in the Horn of Africa’s borderlands*. The objective is translated into three components as outlined further below.

The project gives emphasis to six priority areas:

- Addressing extreme poverty and vulnerability;
- Regional integration and cooperation;
- Gender equity and community development;
- Sustainable groundwater development;
- Climate resilient water resources development
- Long-Term learning by doing and by training;

Achievement of the PDO will be measured using the following three outcome indicators:

- Beneficiaries provided with access to improved water supply (number and percentage of women)
- Water points constructed or rehabilitated under the Program that are functioning (percentage of water points)

- Regional groundwater institutions with increased access to improved information critical for sustainable GW management (number)

The project has a long-term focus. An initial 18-months phase will prepare the project for the main implementation period. Activities will include to engage staff, arrange capacity development, develop internal work and governance procedures, map groundwater resources, methodology development, establish cooperation across borders, and invest in and learn from a few new or rehabilitated water points in Somaliland. Learning by doing will be an important approach in project development. The main thrust of investing in water points will take place in the subsequent 4.5 years, thus making the project a 6-year endeavor in total.

## 2.2 Project geographic coverage

Due to the regional character of the GW4R program, and benefitting from regional cooperation, Abaar-Tir is designed to initially focus on borderland needs for improved water supply and trans-boundary cooperation, before addressing the many urgent needs that exist for improved water supply in other areas and as identified by member state governments and project management. Investments in borderland areas, having a potential trans-boundary effect on groundwater, requires careful discussions and cooperation across borders. Shallow groundwater, however, its local water and as such lacks similar hydrological implications and can thus be developed across a larger area. The project's strong regional focus is shown in the map (Figure 1), where deep wells are located in borderlands (green) and shallow wells and sand dams are mainly located in border districts (blue and yellow), albeit, as mentioned above, carrying less trans-boundary implication.

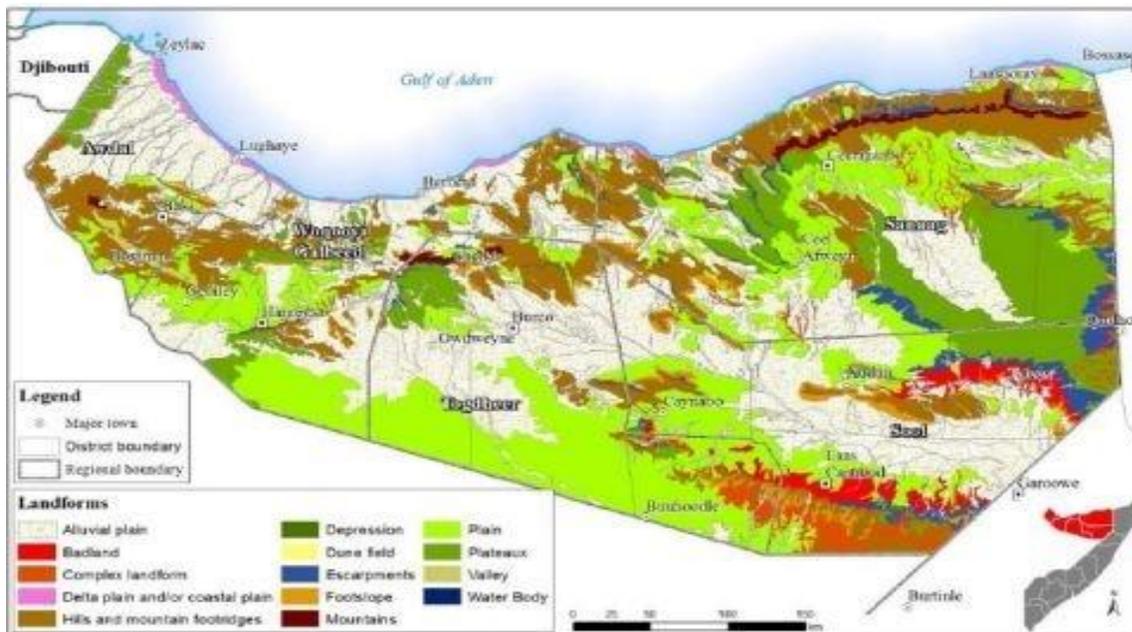


Figure 1: Project locations for the first 18 months

## 2.3 A Somaliland focus

Project implementation will take place in locations along borderlands, addressing urgent needs for improved water supply. How investments in improved water supply develop will depend on their location (districts, communities) in terms of borderland areas and geohydrological and landscape conditions, and their readiness to manage and initiate project activities. The project's definition of 'borderlands' is flexible, as is reflected in the program's PAD.

A set of criteria determines where investments will be made. In the list below, the first three determine whether or not an investment can be made, while the remaining six depends on the context.

1. Geographic location / borderlands
2. Donor Coordination [to ensure that project investments address gaps, not duplicating efforts]
3. Geological and landscape (physical) viability – adequate water of good quality exists and is feasible to develop
4. Sensitivity to drought
5. Long term sustainability (risk of over extracting)
6. Trans boundary effects on water supply and groundwater systems
7. Community demand
8. Community engagement and response to manage and operate investment well
9. Inclusion of different groups - cooperation or conflict?
10. Strategic locations (e.g. providing a line of water points supporting livestock export to the coast, and along livestock migratory routes)

## 2.4 Project Components and Subcomponents

Based on the Project Appraisal Document (PAD), the project consists of three components and a large number of sub-components. Each sub-component in turns consists of many activities. Components and sub-components are briefly outlined below. Activities are implemented by the Somaliland MoWRD and the SPIU, and funded from the linked Somaliland budget. A few cross-cutting and general activities are delivered as a service from the national budget.

### Component 1: Delivering inclusive groundwater services to critical areas.

**Component 1** delivers the investments in groundwater development, community management, and enhanced use of groundwater for human consumption and livelihood development. It builds new wells and rehabilitates old wells, improves the distribution, and use of water, and establishes community water management mechanisms.

**Subcomponent 1.1:** Hydrogeological surveys and research, aquifers' assessment, and identification and assessment of potential water point locations. The sub-component undertakes geological, hydrogeological, and geophysical surveys in order to identify the location of promising aquifers and water points for development. Through the conduction of robust, professionally undertaken surveys, the likelihood to

identify good groundwater resources and functioning water points increases considerably. This is a critical step in the project process.

**Subcomponent 1.2:** Infrastructure development and community-level management and use of groundwater. This sub-component delivers new water points to communities in need for improved water supply. It consists of a pilot stage followed by a main implementation phase. Implementation is carried out as (i) deep wells; (ii) shallow wells/rainfall-runoff schemes; and (iii) rehabilitation of old installations, plus investments in local water distribution and WASH services, as based on community preferences.

**Subcomponent 1.3:** Preparations for groundwater development in focus areas. This is linked to sub-component 1.2 where potential water point locations are assessed, and feasibility studies undertaken. This sub-component focuses on studies for investments in particular areas, like peri-urban/urban areas, refugee camps, or improved water services to commercial needs.

## Component 2: Establish a uniform system for groundwater development and management across Somaliland

**Component 2** focuses on groundwater institutional governance and information. It includes both required short-term project governance components and the development and delivery to government of a proposed comprehensive groundwater governance system. The component also includes a strong focus on capacity development, establishing a groundwater office in the Ministries of Water Resources Development, arranging access to required data and management, and conducting background studies.

**Subcomponent 2.1:** Develop a groundwater governance system and arrange cooperation between government and civil society. This sub-component seeks to lay the foundation for a uniform and functioning groundwater governance system across Somaliland, including arrangements for cooperation and coordination between different actors. In terms of the groundwater governance system, standards, and regulations, the project places focus on (1) arranging an interim water governance system designed to serve the project itself, and (2) preparing and submitting a country-wide groundwater governance system for approval.

**Subcomponent 2.2** Establish and operationalize a groundwater office – SPIU – at the Ministry of Water Resources Development. That includes arranging (i) suitable premises, equipment, computer software, and internet access, (ii) establishing an appropriate organizational structure, with clear positions, roles, responsibilities, work plans, and guidelines, and (iii) identifying and staffing required positions.

**Subcomponent 2.3:** Capacity development in groundwater development, management, and monitoring. This is where the main thrust in capacity development and training is located. All levels and needs are addressed, from academic education to vocational training and community mobilization. Activities are managed by the SPIU, with various professional support mechanisms added. The perspective adopted for capacity building is long term, and includes professional career plans for staff.

**Subcomponent 2.4:** Groundwater data and information management. Within MoWRD a groundwater data and information management section will be established, including office space, staff, equipment, and work orders. The upcoming IGAD focus for regional groundwater information sharing and capacity development (established as part of the project) will provide additional data and information.

**Sub-component 2.5:** Piloting Trans boundary groundwater management and development. A suitable aquifer could be identified and together with similar cases in the region be promoted as a case for regional cooperation and development, testing and developing ways of working together.

### Component 3: Project Management and M&E and Internalized Knowledge Management and Learning

**Component 3** finance the establishment and operational costs of a Somaliland Project Implementation Unit (SPIU) at MoWRD. The component will also be responsible for M&E, knowledge management and learning, and evidence-based policy input.

**Subcomponent 3.1:** Project management and structure. The sub-component includes all the operational costs of the SPIUs. That includes staff salaries, allowances, and some initial capacity development on internal project management.

**Subcomponent 3.2:** Monitoring and evaluation (M&E), knowledge management, and internal learning. The project places emphasis on M&E of activities and results, on how knowledge in groundwater development is enhanced in Somaliland, and on the collection and sharing of such knowledge among all actors involved. Learning around these areas will contribute to enhance the HoA GW4R Program's Learning Agenda, aiming at capturing knowledge and helps inform future Program phases.

## 2.5 Roles and responsibilities

In the process of establishing new and rehabilitated water points, different actors have different roles and responsibilities. These are summarized below.

- **MoWRD/SPIU:**
  - Implementing Ministry and principal responsibility
  - Responsible for the project's overall planning, implementation, and delivery;
  - Contracting responsibility for backstopping engineers;
  - Provides capacity development, knowledge management, monitoring, and standards and guidelines;
  - Supports implementation with project management, technical services, and trans-boundary and other studies and work;
- **Communities:**
  - Provide insight into site selection;
  - Engage in required training in water point operations and maintenance (O&M);
  - Over time, increasingly take responsibility for water point operations and maintenance and deliver sustainable usage of available water resources. This responsibility can be arranged in cooperation with an NGO, private firm, or local government. Conditions differ and arrangement must reflect that and the complexity of installations;
  - As agreed with project, ensure equitable and fair sharing of water resources made available through the project, benefitting all groups in society, with a particular focus on poor and under-served groups;
- **Construction firm:**

- Based on a contract arranged by the PIU, builds (constructs) new and rehabilitated water points. This may include the drilling of deep wells, rehabilitation of shallow wells, and rainfall harvesting schemes, and water use/WASH facilities;
- **Backstopping technical services:**
  - Provides technical support to the PIU and communities in site selection, construction, monitoring, and community operations and maintenance of new and rehabilitated water points;
  - Supports training and capacity development of institutions and staff engaged in The Ministry of Planning is implementing the Somaliland Water for Agro-Pastoral Productivity and Resilience Project, locally known as Biyoole and much can be learned about implementation procedures, how to build capacity, and difficulties to avoid. The two project's PIUs will cooperate closely. Lessons learned from Biyoole include the following:

## 2.6 Lessons learned from the Biyoole project

The World Bank supports the Water for Agro-Pastoral Productivity and Resilience Project, locally known as Biyoole, and much can be learned about implementation procedures, how to build capacity, and difficulties to avoid. The GW4R and Biyoole (now Bawaaqo) project PCUs in Somaliland can cooperate closely. Lessons learned from Biyoole include the following:

- Implementation through country systems was possible and effective but required strong implementation support.
- Decision-makers should be provided with a broad set of technically sound options for investments – in e.g. sand dams, deep wells, or rehabilitation of existing water points – from which they can select final sites.
- Site selection should be done remotely to identify potential sites. This should be followed by rapid site assessments by the Ministry of Water FMS Engineers to ground truth and confirm water availability. Following confirmation of feasibility then the Backstopping Engineer do detailed Construction Investment Reports.
- In times of water scarcity, water-truckers may present a threat to a sustainable use of sand dams as they can remove excessive amounts water in little time and at little or no compensation to local communities.
- Local markets for goods and services were better than expected, but the market for works was limited and quality highly variable.
- The Wadi Evaluation Tool (WET) is a useful tool to assist the site selection of sand dams and sub-sand dams and is supported by detailed specifications for field investigations to determine location and detailed design parameters and structured CIR (Construction Investment Reports).
- Government's willingness to solve problems was not necessarily matched with their ability to solve problems.
- Cross-ministerial participation is key for proper site selection, as well as rapidly identifying and addressing problems with the water points.
- Greater emphasis should have been put on hydrological monitoring as an input to the designs.

- An environmental and social impact assessment is an important component of understanding the dams' success.

## 3 Assignment

### 3.1 Objective of the Consultancy

The objective of the consultancy is to support the Government of Somaliland by providing backstopping technical services for water point development, enhanced capacity, and methodology evolution. A number of Water Delivery Systems will be constructed or rehabilitated. In addition to this, a lump sum exists for small-scale rehabilitation investments. To enable procurement, this sum has been divided into a number of tentative investments, although this number may change once implementation starts. Depending on the choice of technology, like more expensive deep wells vs. less expensive rehabilitation of existing shallow wells, the final number of investments may vary. In addition to this investments will be made in water use arrangements and WASH service facilities.

### 3.2 Scope of Work

The Consultant's work includes two different although closely linked main tasks.

- Support PIU capacity and involvement and carry out assigned tasks required in order to undertake site selection, plan, design, supervise, control, and report the construction of new and rehabilitated wells, dams, rainfall harvesting systems, and water use systems.
- Train, guide, advise, coordinate, encourage PIU (with support from PIU Coordinator and Senior Adviser on technical issue) to increasingly carry out work duties linked to basic hydrogeological and socioeconomic/community assessments, site identification, coordination and planning, community mobilization, contract construction firms, and assess progress made and work done, and provide real time engineering support as required.

This assignment goes beyond a standard supervising engineer's role. It also has a mentoring and teaching aspect added.

### 3.3 Tasks

The assignment consists of 11 tasks. When applicable, the deliverables of tasks are defined in Work Orders prepared for each upcoming 6-month period (see Section 5 below).

#### Task 1 Inception meeting

The Consultant will visit Hargeisa for an inception meeting. The inception meeting will bring together the SL PIU, the Consultant and World Bank task team. During the meeting, the Consultant will present their understanding of the assignment and how they can support the development of new and rehabilitated water points in Somaliland. At the end of this mission or directly afterwards, an inception report will be submitted with a work plan and a time plan for supporting priority sections of Component 1 and 2 of the project.

## Task 2: Assess the availability of professional groundwater capacity

The Consultant shall, in close collaboration and together with designated staff at the PIU, assess the capacity that exists in Somaliland to engage in the development of new and rehabilitated water points. The assessment shall focus on both individuals and companies that can act as consultants in construction work and, specifically, what is needed in order to roll out project activities. The Consultant's role in this task is mainly to advise and support designated PIU staff, ensure quality work is carried out, and, depending on need, undertake own work to achieve stated task outcome.

## Task 3: Capacity development of PIU

As a complement to a planned distance learning capacity development program (being planned and developed in early 2023), delivering training on specific PIU tasks, additional capacity development activities may be needed in more technical areas and for staff working with the project but not being PIU staff members. This may include other Ministry of Water Resources Development staff, construction companies, and partnering NGO staff. Training may include for example the construction of wells, pump testing, and geophysical siting of wells, but also comprehensive courses in arranging village water committees and data management and monitoring. Task activities will be coordinated and approved by the PIU and closely aligned with other capacity development activities. Activities will be demand driven and initiated by a brief capacity development needs assessment.

## Task 4: Site Selection

A most critical task for the Consultant is to engage in, guide, and support the siting of water delivery systems. The siting process is managed by the PIU in each GoSL – with support provided by the Consultant. The process at large is as follows:

1. The PIU, supported by the consultant, prepares national site selection criteria
2. The PIU prepares a long list of potential locations for improved water supply. The list is based on already known needs (areas, villages), demands from communities, NGOs, and political leaders, and information shared by other donor supported organizations. To avoid raising expectations, this long list remains an internal PIU document.
3. In a workshop organized by PIU, the results of the hydrogeological mapping assignment (a separate consultancy) is presented, together with available new maps and how they are used in site selection.
4. For validation purpose, a groundwater potential map will compare to the existed borehole yield data which reflect the actual groundwater potential. A number of groundwater sources data from boreholes, dug wells and springs existed in Somaliland, specifically the focused area will be collected by the consultancy with PIU. Most of these groundwater sources have their yield, static water level and depth or in other words the pump test results. Besides the validation with the wells proxy data another attempt will undertake by the consultant which the resulting map will classify into equal divisions and number of wells falling in each section is counted to plot the relationship. Area under the curve (AUC) will be calculated to verify the accuracy of the model.

5. PIU engineers undertake a rapid field assessment in order to identify those locations that confirm site suitability, producing a list of potential locations;
6. The Consultant is engaged and supports PIU to undertake a Feasibility Study of each suitable location. Depending on the type of potential investment, this work includes detailed geophysical work, community discussions, assess alternative options, and how to establish sustainable groundwater utilization. Following an analysis, where one or several WDS options are selected, the Consultant leads the work on preparing a Construction Investment Report. This report contains two sections: (a) detailed siting studies, and (b) design, construction, and costing information. In the process of undertaking the Feasibility Study, writing the Construction Investment Report, and making a final decision (by the PIU, see below), the community shall provide an approval at 4 stages: (1) initially, that a feasibility study is undertaken altogether; (2) proposed options (location, type of water point, water use facilities); (3) expected community role and responsibilities (operations, maintenance, sustainable water use, costs), and (4) the decision by the PIU to go ahead and construct improved groundwater supply in their village/community. How the community provides an approval is regulated in the Abaar-Tir Community Engagement Guidelines.
7. The final decision to invest or not is also part of the siting process. At this stage several good locations may exist, and a decision has to be made on which one to support. The decision is taken by the PIU and is based on (i) an approval to go ahead by the community; (ii) availability of funds, (iii) a cost-effective investment options (i.e. most people gaining improved water supply for a given investment, this an issue if alternative and otherwise equal options exist), and (iv) strategic considerations for improved water supply schemes.

The above process may start with a long list of e.g. 40 desired locations for improved water supply, reduced to 15-20 following the PIU criteria-based review and after Field Assessments, and, finally, after the Feasibility Studies, delivering 10-15 favorable Construction Investment Reports.

The Feasibility Study includes a number of activities that the Consultant will support, advise, and engage in:

- Acquisition of information. Maps and data can be downloaded from web-service system (see TOR groundwater mapping). Relevant are the satellite images, hydrogeological maps, suitability maps and socio-economic maps and data of wells in the target areas. The Consultant will assist PIU staff in downloading the information to tablets or smartphones for use in the field.
- Field reconnaissance. Terrain accessibility will be investigated, existing wells, springs will be investigated and tested on water quality and sites will be indicated for follow-up geophysical survey. This will be carried out by hydro-geologists of the PIU and the Consultant (on-the-job training).
- Geophysical surveys. In case of shallow aquifers (for hand dug wells, manually drilled wells). Vertical Electrical Soundings (VES) or Electrical Resistance Tomography (ERT) are the most suitable techniques. For deep exploration TDEM and CSAMT soundings and in some cases magnetic surveys are more appropriate. Geophysical studies will be carried out by the Consultant initially. PIU staff will get on-the-job training. Depending on need, equipment like VES and ERT

will be procured for each Member State. Expertise and equipment for more sophisticated techniques like TDEM, CSAMT and magnetometry will be hired (contractors) or supplied by the PIU or Consultant.

- Community consultations. This process is guided by the Abaar-Tir Community Engagement Guidelines. At the siting stage, local communities will be contacted and probed for their commitment and capacity to manage the system, their views on the
- WDS type, and their preferences or dislikes for certain zones. This task will mainly be carried out by PIU staff. The Consultant will support and guide whenever needed. A Village Water Committee or similar should preferably exist or be formed. The community must give their approval at four stages (see above)
- Sustainable groundwater management. Investments likely to only last a short time should not be promoted. All potential investments should be assessed from the perspective of ensuring sustainable groundwater utilization, i.e. to balance inflow and discharge. This can be achieved by knowing the resource base, its variation over time, the demand for water today and into the future, and by an engaged, trained and committed community.

In all activities, the Consultant shall work closely with the PIU– in particular the Project Coordinator, Hydro geologist, and Senior Adviser – in order for them to increasingly manage the process of site selection, field surveying, design, and monitor construction work.

The above outlined site selection process is followed, albeit slightly differently during the project’s two stages: the initial establishment and learning pilot phase, and the main long-term implementation phase. The two stages are outlined below, and how the siting will take place during each.

#### *Stage 1: Siting in target areas for initial WDS schemes*

In the first 18 months of the project – characterized by arranging project structures, capacity development, and learning by doing – investments in existing (rehabilitation) and new wells will pilot the methodologies, technical approaches and roles and responsibilities. This period will be characterized by not having access to the large-scale, detailed hydrogeological mapping work that will take place in the project’s first 18 months. Once that information is available, the siting will become increasingly accurate (from a hydrological perspective). In the meantime, information about groundwater resources – location, depth, amount, quality, sustainable pumping rates – will be based on existing and generally known information. Local communities often know where groundwater can be found, donor organizations and NGOs have experience, and private construction firms have much knowledge. During this stage the intention is to find so-called “low-hanging fruit” cases, i.e. cases that can be developed quickly, delivering improved services to the public, build citizen confidence, provide opportunities to learn-by-doing, and to establish the project structure. Siting can start immediately either because existing deep wells can be rehabilitated or repaired or because siting has been carried out in other previous or ongoing projects. This fast-track approach follows the above siting process at large, including the delivery of the Construction Investment Report, but it proceeds faster due to addressing less complex cases to invest in.

The number of deep wells in the first 18-month period are very limited. The actual number will depend on each GoSL’s readiness to move forward and initiate and implement deep wells, and what type of options identified for investment.

### Stage 2: Siting in the project's main implementation phase

Once the hydrogeological mapping has been concluded and reported and available, siting can also take place in areas that are less well known in terms of groundwater resources, quality, depth and access. The site selection process outlined above is followed, the Consultant is engaged in stated activities, and the project delivers deep wells, plus a set (5-10) of smaller rehabilitation and upgrading investments. The implementation period lasts from the end of the first 18 months to the project end at year 6. Each of the 5 deep wells should include a community center and basic water use and sharing facilities.

### Task 5 Preparation of Construction Investment Report and BoQ

The Consultant shall in collaboration with designated PIU staff develop the Construction Investment Report, that includes necessary civil, structural, architectural, mechanical, geo-technical and foundation designs including technical specification of quality and amounts of required materials and funding needs (BoQ) for construction. The designs must adhere to the general standards as defined under Task 3. While preparing design documents, eligible contractors should follow standard bidding document from the World Bank as well as Eurocodes (<https://eurocodes.jrc.ec.europa.eu/>)

Furthermore, designs shall include guidelines on how communities shall manage investments and handle operations and maintenance and groundwater sustainability aspects<sup>1</sup>. This shall include aquifer recharge, quality, storage, and sharing issues. Depending on the intended multiple uses (for people, livestock and agriculture) of the water, appropriate mechanisms for abstracting the water from the aquifer and into outlets or distribution systems have to be included for each purpose. The solutions should put an emphasis on the life-cycle costs of the infrastructure, its operation and maintenance. The designs should also be realistic about the local technical capacity to operate and maintain the system including the availability of spare parts.

### Task 6 Preparation of Tender Documents

The Consultant shall support and guide the PIU in the procurement and contracting of a Construction Firm (and any other needed consultant) to be assigned the construction of deep wells. The Construction Firm is responsible for all technical work, like drilling, piping, building, and arranging equipment, pumps and energy supply. The Consultant's support to PIU staff shall consist of all or a sub-section of the following tasks: (i) define type of procurement in accordance with World Bank procurement method set out in the project procurement plan in STEP<sup>2</sup>, (ii) assist in identifying the type of goods and services to be procured; (iii) assist to prepare required procurement (bidding) documents (arranged by the bank and checked by the TPMA), (viii) monitor delivery of services; and (ix) final assessment of delivered results for approval by the PIU

Bidding documents include all work associated with the designs and field investigations, including maps and drawings at suitable scales, design criteria and guidelines, design memoranda, design calculations,

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<sup>1</sup> Reference to existing standard designs of the MoWRD and development partners such as RWS guidelines of the Somaliland Wash Cluster and RWS standard designs of the IOM (Int Org for Migration))

<sup>2</sup> Systematic Tracking of Expenditure in Procurement (STEP) is the World Bank's online procurement system for projects.

equipment catalogues and other pertinent information. Bidding will conform to World Bank procurement standards. A consolidated bidding package includes:

- Complete set of bid documents according to the World Bank procurement standards.
- Tender drawings for the architectural, civil, structural, electrical, mechanical, disciplines to appropriate scales as required for construction of the works.
- Technical specifications for the work in accordance World Bank procurement standards.
- In a separate report marked confidential, an engineer's cost estimate for all works to within +/- 10%
- Proposed criteria and procedures for the evaluation of contractors' bids for construction packages in accordance with current Government of Somaliland procurement procedures, for use by the Client during the procurement process.

### Task 7: Construction support, monitoring and assessment.

When the PIU has provided an approval to make an investment in a new or rehabilitated deep well – based on a Construction Investment Report and the community's approval – and a Construction Firm has been contracted (as outlined above), and Environmental and Social Management Plan (ESMP) cleared then construction work can commence. The community engagement process, to have the community supporting the construction, and prepare it for ownership, operations and maintenance, which requires a focus on awareness raising, training, and institutional arrangements, is the responsibility of the PIU, with support provided by the Consultant (further outlined below). This responsibility may last much longer than the time it takes to construct a deep wells. Depending on the WDS option, this responsibility may last several years, until the community is capable to manage the WDS without support from the outside. It is agreed in the Community Engagement Report. The PIU may enter into an arrangement with a NGO, private company or local government to provide the long-term support.

During the construction phase – when the Construction Firm is engaged in the building activities – the Consultant will support the PIU to deliver three tasks:

1. Monitor construction activities; i.e. to ensure they follow the Construction Investment Report and guidelines and standards developed and available for project activities (this is closely aligned with task 8 in the above outlined procurement process). Monitoring shall include the actual location of a WDS, progress of drilling and excavation and construction, describe subsurface lithology, define well and dams design, inspect gravel (for gravelpack), screen and casing material, concrete and masonry structures, backfilling of wells, oversee pump testing, test water samples from wells (EC, TDS, Fluoride, nitrate, e-coli, coliform) using field kits;
2. Provide technical advice when complex hydrogeological or construction issues arise. Such advise will be demand-driven – by the Construction Firm or the PIU – and should be limited in scale.
3. Make a final assessment of work carried out and that the improved water supply is in accordance with agreement and expectations (this is closely aligned with task 9 in the above outlined procurement process). After a deep wells is completed, the PIU with support of the Consultant will prepare a Completion Report for each deep well constructed. A Completion Report focuses on what has been constructed and achieved during the building phase, i.e. what the Construction

Investment Report states in terms of what should be achieved and delivered. So Completion report is prepared by the PIU.

#### Task 8: Support Community ownership and engagement.

The community engagement process contains three stages: (i) preparations, before construction work commence; (ii) during construction work; and (iii) following the completion of construction activities. At large, the community has to engage and take ownership of the new investments. This is achieved by training and institutional development, responding to stated demands for improved water supply, allocating real powers to the community to lead and approve development activities, and requiring clearly defined community inputs into the construction, operations, and maintenance. The Abaar-Tir Community Engagement Guidelines provides information on this. Depending on the conditions and experience found in Somaliland of similar investments, the community should show its capacity and willingness to engage by providing e.g. a small cash contribution, a functioning village water committee, and labor during construction.

At large, it is a learning process, which will take time to achieve, and requires support from both the PIU and the Consultant. How a community will respond to new tasks and responsibilities will vary, depending on its capacity and preparedness to mobilize, the complexity of the task, costs involved, security conditions, and much more. In any case, the transfer of responsibilities cannot happen quickly, it is a gradual process. A plan has to be developed and agreed by all engaged, delivering support over several years, albeit in a weaning manner. Specific criteria will be developed and agreed between PIU and community for each investment case, clearly defining the procedures for final handover to community responsibility. This plan will form a central section of the Construction Investment Report. As outlined above, the Consultant will support the PIU to develop this plan.

#### Task 9: Assessment and lessons learned

At the end of the investment period, when the water point is fully transferred to the community for subsequent management and maintenance (which in many cases is several years after construction work has concluded), in accordance with GOSL rules, a Final Construction Status Report shall be submitted, one per site. The Final Construction Status Report shall provide an assessment of all work carried out at the site, including a project assessment, review current status, list lessons learned, and raise areas of concern and their possible solutions. It focuses on the situation at the end of the investment period; how the community is doing, if operations and maintenance works well, if the supply of water is in accordance with original plans, and how development indicators are fulfilled or not. The format of the Final Construction Status Report will be developed by the PCU. It should not be a lengthy report.

#### Task 10: Assist in the procurement of groundwater exploration hardware

The consultant will support the PIU in the procurement of hardware for groundwater exploration and development, like geophysical equipment, equipment for water sampling and water testing, handheld GPS, and computer tablets. Especially geophysical equipment is essential for siting wells and dams.

## 4 Consultant qualifications and Personnel

### 4.1 Consultant qualifications

The assignment will be undertaken by an international firm with at least eight years' experience in providing back stopping technical assistance and advisory groundwater development support in fragile state contexts. The Consultant shall be based in Hargeisa and available to travel across Somaliland – given agreed security conditions. The consultant shall offer a mix of international and national (Somaliland) expert personnel (see below) to deliver the assignment. More national and Somali-speaking personnel is regarded as a strong merit and will be regarded positively in the assessment of alternative tenders. Only the first 2 full-time staff has to be available in Hargeisa on an on-going arrangement. The part-time on-demand staff are not needed to be given time initially and location in Hargeisa. They are merely for on the demand needs, most likely providing their support virtually (from a distance).

The Consulting firm shall as a minimum represent:

- 8 years of cumulative experience of providing back stopping technical assistance and advisory support to groundwater development projects in fragile state context in Africa.
- 5 years of experience of providing technical backstopping support to rural water development activities in Somaliland or Somalia
- Extensive experience in arranging and delivering capacity development and training in topics relevant to groundwater development and management in a dry African environment,

The Consultant shall represent the following professional experience:

- In-depth knowledge and working experience about water resources in Somaliland and Somalia, with a particular focus on groundwater development and management;
- Hydrogeological surveying and mapping;
- Assessing aquifer characteristics and long-term capacity;
- Groundwater flow – recharge, underground flows, potential pumping rates;
- Water point development: wells (deep/shallow), new/rehabilitated, rainfall harvesting;
- Design and construction of water points, water distribution, and simple usage systems;
- Socioeconomic, community and gender issues linked to water supply;
- Training/capacity development at community and professional levels;
- Cooperate with government institutions and jointly develop and oversee investments;
- Reporting, monitoring and assessments;
- GBV, security and to arrange travel/work in Somaliland;
- Financial management and reporting, proven anti-corruption management and experience;
- Environmental issues linked to groundwater development;
- Sustainable aquifer management;
- Knowledge about World Bank guiding documents;

### 4.2 Consultant personnel

#### **Staff engaged full time – Key Experts**

1. **Team Leader & Groundwater Development Expert:** A Master's degree in civil engineering, water resources management, or hydrology, with a strong focus on groundwater development and the design, siting and construction of water points and water use schemes in complex. Proven experience in the development of community managed water systems, including an experience of analyzing power and gender issues that determines the access to water for women, youth, and disabled, plus developing system that use groundwater sustainable (i.e. balancing recharge and withdrawal rates). At least 15 years of professional experience in groundwater and water supply development, linked to international development work, community development, water supply and sanitation, working with Governments and international donor agencies and banks. At least 5 years' experience of working with water projects in rural semi-arid Africa. Proven ability to lead professional missions and to convene workshops and meetings in multi-cultural situations, strong understanding of working in fragile and conflict affected states. Proven ability to lead teams working in highly insecure contexts. Proven ability of report writing. Language requirements: Fluency in English. Knowledge of Somali language is regarded as a strong additional capacity. The position is based in office in Hargeisa.
2. **Groundwater Siting, design, and Construction Expert:** A Masters' degree in groundwater surveying and exploration. Experience in the siting, designing and location of WDS investments. This includes geophysical, GIS, remote sensing, geological, landscape, and biological data and its analysis. Experience in using GIS and the Wadi Evaluation Tool (WET) is an asset. At least 10 years of professional experience in groundwater development with a focus on the siting and construction of WDS investments. At least 5 years' experience of working with water projects in rural semi-arid Africa. An experience of working in fragile states is a merit. Language requirements: Fluency in English. Knowledge of Somali language is regarded as a strong merit.

#### **Staff available on-demand for limited short-term assignments**

1. **Groundwater Development Expert – Community and Sustainability Focus:** A Master' degree in Water Resources Management or Community Development with a focus on natural resources management. Proven experience in the development of community managed water systems, including an experience of analyzing power and gender issues that determines the access to water for women, youth, and disabled, plus developing system that use groundwater sustainable (i.e. balancing recharge and withdrawal rates). Experience in designing community-based systems for water point operations, maintenance, and sharing and utilization of water. Extensive experience institutional arrangements and communication with communities in rural areas of Africa. At least 10 years of professional experience in developing community managed water systems in Africa. Solid experience of working in fragile states. Language requirements: Fluency in English and Somali language. A native of Somaliland.
2. **Monitoring and Evaluation specialist:** Master's in Advanced Development Studies or MSC in International Development. Five years' experience in development of groundwater projects. Extensive experience in training and managing field teams in M&E and for supporting governments in, and documenting, local level community socio-economic discussions and results. Experience in M&E research methodologies. Experience of working with governments to develop monitoring frameworks as inputs to resilience planning. Experience in Impact Assessment Reporting. Experience in Geo-tagging and

Drone technology for M&E. Language requirements: Fluency in English. Knowledge of Somali language is regarded as a strong merit.

3. **Sr Groundwater Engineer:** A Masters’ degree in groundwater engineering and development. Experience in groundwater surveying – e.g. geophysical surveying, landscape analysis, geological mapping, test pumping – of both shallow and deep aquifers; development of exploration and monitoring wells, testing and assessing sustainable yields; and a proven ability to undertake feasibility studies and write Construction Investment Reports (or similar reporting). Experience of overseeing construction firms developing groundwater resources. At least 10 years of professional experience in groundwater development with a focus on assessing aquifers, designing WDS, and overseeing construction work. At least 5 years’ experience of working with water projects in rural semi-arid Africa. An experience of working in fragile states is a merit. Language requirements: Fluency in English. Knowledge of Somali language is regarded as a strong merit. The position is based in office in Hargeisa.
4. **Groundwater and Environmental Expert:** A Bachelor’s or higher degree in groundwater engineering and development, and environmental and sustainability aspects of groundwater exploration and utilization. Experience in assessing sustainable groundwater pumping rates and to translate these into management guidelines, including strong community engagement. Experience in addressing environmental issues in areas where a water point is located: land degradation, discharge of polluted water and other substances, waste management, and conflicts between different types of water users. At least 10 years of relevant professional experience in groundwater development with a focus on environmental and sustainability issues. At least 5 years’ experience of working with water projects in rural semi-arid Africa. An experience of working in fragile states is a merit. Language requirements: Fluency in English. Knowledge of Somali language is regarded as a strong merit.

## 5 Deliverables, Timeline and Payment

It is not possible at this stage to precisely state the number and scope of activities that the Consultant will engage in and deliver upon. Some are possible to outline with some accuracy, but most – like supporting unknown number and scope of WDS investments – are not possible to adequately define a deliverable and payment schedule for. However, for the purpose of the tendering process, a number of different types of deliverables are given below, priority needs are identified, and the most cost-effective investments are recognized. **Note: the table below only covers the first 36 months and all planned WDS are therefore not listed.**

Tasks and deliverables to be tendered.

Task	Summary of activity	Deliverables	By when	Payment
Task 1	Together with PIU re-view activities, collaboration, plans, timing	<b>Report:</b> Inception Report	+1 Month	22% of total contract value
Task 2	Support PIU to assess and analyze existing capacity and upcoming needs.	<b>Report:</b> Current capacity and future needs in relevant topics is established, documented and	+2 months	3% of total contract value

		available to plan training programs.		
Task 3	Support the PIU with planning and arranging training in priority areas.	<b>6 training events:</b> PIU and linked staff are capacitated in priority topics.	2 per year in first 3 years	Upon delivery as a Work Order task
Task 4-8	Supporting the development of improved water supply – new and rehabilitated water points. This includes needs linked to site selection, Construction Investment Reports, Tender Documents, and support construction and communities.	<b>Support 1:</b> 2 improved shallow wells; 2 rehabilitated water points.	+18 months	Upon delivery as a Work Order task
		<b>Support 2:</b> 1 deep wells; 3 improved shallow wells; 4 rehabilitated water points	+28 months	Upon delivery as a Work Order task
		<b>Support 3:</b> 3 improved shallow wells; 2 manually drilled wells; 4 rehabilitated water points.	+36 months	Upon delivery as a Work Order task
Task 9	Collect lessons learned, analyze, and share revised guidance	<b>Report 1:</b> Summarize lessons learned and initial analysis in first 18 months	+18 months	Upon delivery as a Work Order task
		<b>Report 2:</b> Summarize lessons learned, analysis and revised guidance in first 36 months in first 18 months	+ 36 months	Upon delivery as a Work Order task
Task 10	Assist PIU in the procurement of technical hardware	<b>Report:</b> Based on demand and needs, deliver 5 cases of support in writing.	+ 36 months	Upon delivery as a Work Order task

The above provides an indication of the total number of different tasks and deliverables the Consultant will engage in, although this is likely to change as conditions to work in the field, capacity to do more of the work with own staff, additional WDS investment options exist, and cost-effectiveness is recognized as a selection criteria for investments. All deliverables – like support to a WDS investment – contain numerous and different activities that together assists PIU to implement the project. All deliverables are defined in Work Orders (see below) in terms of what, number and timing.

In order to make planning, implementation, and payment arrangements practicable, with special reference to the World Bank STEP system, about 6 deliverables (specific activities) are grouped together into batches that subsequently are fed as one into STEP for approval and payment upon delivery. All payment upon full delivery of defined activities.

Defining specific activities and managing the STEP system are PIU responsibilities. Activities that the Consultant will undertake will follow the process outlined below. To keep apart different roles are important: PIU manages the project and thus defines what the Consultant will do and in what order. The Consultant delivers as requested.

The planning cycle is based on 6-month periods. At the end of a 6-month period, PIU plan upcoming work and develop Work Orders (see below) for the coming 6 months in close collaboration with the Consultant.

1. The PIU identify a need for the Consultant to engage in. This can be to e.g. support a Feasibility Study, a community training event, or to identify the best type of hand-pump to install.
2. The PIU writes a Work Order in close collaboration with the Consultant. It contains:
  - a. Objectives to address
  - b. Activities to perform
  - c. Results / outcome to deliver
  - d. An estimated time (for the consultant) to utilize
  - e. Required inputs in terms of equipment, travel costs, etc
  - f. Required support and inputs by PIU, Construction Firm, community etc.
  - g. A timeline when activities will take place and a final delivery date.
  - h. Potential risks, like security, delays, lack of inputs etc.

A Work Order is not cut in stone – if there is a need to revise time or inputs, both more and less, that can take place in collaboration between PIU and Consultant. For example, delays due to security or political reasons are likely to develop and shall be accepted as reasons for revising the Work Order and enabling the Consultant to deliver according to a realistic timetable.

3. The Work Order is agreed by the engaged partners (PIU and Consultant) by way of email.
4. Approximately 5 work orders are grouped together into a batch and fed the STEP for approval.
5. Work is initiated according to Work Order, engaging identified partners according to plan.
6. Responsible PIU monitor activities performed by the Consultant, and upon full delivery (according to Work Order specification) make an approval and payment is arranged.

## 6 Contract Management

The Government of Somaliland will lead and supervise project implementation and ensure quality control. The Consultant's primary partner and reporting links will be with the Ministry of Water Resources Development (MoWRD), specifically the PIU. The Consultant will also work closely with the World Bank task team, TPM, and Abaar-Tir Project Coordinator. It is important to note that the purpose of this consultancy is one of technical assistance and advisory support, not being an implementing partner. This is in line with the overarching capacity and country systems building principle that GW4R Somaliland is designed to promote. As such the Consultant will be available to support and guide MoWRD/PIU and GoSL/PIU through every step in the construction process. In this process the MoWRD/PIU Water Engineer will play an important role as an interface between the Consultant and the team found within the PIU. At all times, GoSL/PIU are responsible for all WDS implementation activities.

Following initial percent payments (see above), payment (time and reimbursables) is based on the delivery of agreed tasks as the Work Orders define.

The total cost proposed to maintain the two full time staff in Hargeisa plus their capacity and experience will be critical inputs into awarding a contract. The Government envisages the need for continuity for downstream work as this is a phased assignment.

The contract is signed for 36 months with the possibility to extend until the project ends.

## **Facilities**

***Transport*** – The firm will be responsible for all air and surface transport costs for their staff. Firm to provide security strategy at point of contract signing.

***Per diem and accommodation costs*** – The firm will be responsible for per diem and accommodation costs as agreed with MoWRD.

***Communications and printing costs*** – The firm will be responsible for all communications and printing costs.