TERMS OF REFERENCE - LONG TERM AGREEMENT

SHORT TITLE OF ASSIGNMENT

Water Supply Engineering Consultant

BACKGROUND

UNICEF Pacific WASH and Climate Programme supports government and partners to deliver safe, inclusive, and climate and disaster-resilient WASH infrastructure in communities, schools and health care facilities, across Pacific Island countries and territories.

UNICEF is currently supporting multiple construction projects in Fiji, Solomon Islands, Kiribati, Micronesia, Vanuatu, the Republic of the Marshall Islands, and Tuvalu.

To strengthen technical quality and ensure compliance with water supply specifications, standards, and climate- and disaster-resilient design principles, the UNICEF Pacific Multi-Country Office (MCO) proposes to recruit a **Water Supply Engineering Consultant on Long Term Agreement** with up to 300 working days as and when required stretched over 36 Months**.** The consultant will provide specialized technical expertise, on site assessment, system design review and quality assurance for water supply systems, integrated into community, health, and education infrastructure.

The consultant's primary role will be to assess, review, and support the design, installation, testing, commissioning, and maintenance planning of water supply systems in communities, schools, and health facilities across Pacific Island countries and territories. This includes ensuring systems meet required standards of safety, reliability, efficiency, durability, and resilience to Pacific environmental conditions such as cyclones, salt corrosion, high humidity, drought and heat.

OBJECTIVE / SCOPE OF WORK

The Consultant will provide technical services for the assessment, design, engineer's estimate, procurement support, quality assurance of climate- and disaster-resilient water supply systems for communities, schools, and health facilities across UNICEF Pacific programme countries.

The scope of work may include:

A. Inception, pre survey and design preparation

i. Water quality and source monitoring data

- Review existing/ baseline data including:
- Previous assessments and feasibility studies.
- Government datasets and records.
- Topographic maps and satellite imagery.
- Hydrogeological and meteorological information.
- Existing engineering drawings and system records.

ii. Prepare Survey tools

- Data collection tools and templates.
- Site assessment checklists.
- Quality assurance and quality control procedures for surveys.

iii. Develop a fieldwork plan including:

- Finalize survey schedule, equipment requirements, safety procedures and logistics arrangements.
- Coordinate with communities, schools, health facilities, government authorities, and other stakeholders. UNICEF Country Offices shall facilitate stakeholder engagement, introductions, community consultations, and coordination with government counterparts where required.

B. Assessment and survey

iv. Water Source and Site Assessment

The Consultant shall undertake site assessments directly or use available government approved survey data where appropriate.

- Water source identification and assessment.
- Yield testing of springs, boreholes, wells, or surface water systems.
- Water quality sampling and analysis using portable field test kit or samples collected and analysed at the laboratory
- GPS-based topographic surveys.
- Environmental and social screening

v. Climate and Disaster and water safety Risk Assessment

- Assess exposure to climate and disaster risks, including cyclones, flooding, drought, landslides, earthquakes, sea-level rise, and saltwater intrusion amongst others.
- Apply the Drinking Water Safety and Security Planning (DWSSP) framework and recommend mitigation and adaptation measures.

C. Water supply system design and technical documentation

vi. Water Supply System Design

- Prepare or ensure the availability of climate- and disaster-resilient water supply designs, drawings, calculations, and technical specifications.
- Design or ensure the availability of structurally sound water intakes, boreholes, rainwater harvesting systems, storage, treatment, distribution networks, solar-powered pumping systems, and associated infrastructure.
- Undertake water demand, hydraulic, tank-sizing, pump-sizing and EPANET analyses.

D. Preparation of Technical Bid Documents

vii. Prepare BoQs, confidential cost estimates, technical specifications, drawings, and tender documentation.

viii. Provide technical support during the procurement process, as required.

E. Quality Assurance and Quality Control

ix. Develop or review QA/QC plans and procedures, define testing and testing requirements, establish acceptance criteria for materials and workmanship

x. Develop quality monitoring and reporting templates.

xi. The Consultant shall develop operation and maintenance (O&M) guidance for each water supply system including operation manuals, spare part list and maintenance schedule.

The specific scope, deliverables, timeline, and level of effort for each assignment will be defined through individual Purchase Orders issued under the Long-Term Agreement.

ACTIVITIES, DELIVERABLES AND TIMELINES, PLUS PAYMENT SCHEDULE PER DELIVERABLE

The table below describes in detail each required engineering service, including tasks and expected deliverables. Payments will be based on satisfactory completion of deliverables.

Deliverables shall be submitted to UNICEF in electronic format (Engineering technical drawings in CAD, GIS, EPANET design software, Bill of Quantity in Excel, and Technical Specification in Word, as well as the PDF version).

Service Descriptions	Tasks	Deliverables	Payment amount
Pre survey	• Review existing/ baseline data • Finalize survey tool • Finalize survey plan	Inception Report with baseline data/information, survey tools and plan finalized	10 % of total lump sum fee
1. Consultation, Site assessment, Vulnerability and Climate Risk Assessment	**Consultation with stakeholders** - Consultation with the community, school management, and children - Administrative assessment of community structures, e.g., water	Consultation Report	10 % of total lump sum fee

Evaluation of site characteristics and preparation of detailed analysis with recommendations for design and implementation.	supply committees, construction regulations, land ownership issues, legal status, etc.		
	Water source assessment - Survey water sources, including hydrological and hydrogeological assessments (yield test, water quality test). - Conduct site surveys for water supply network (topographical, geotechnical)	Water source and site assessment and survey Report including vulnerability and climate risk assessment approved by UNICEF	20 % of total lump sum fee
	Vulnerability and climate risk assessment - The assessment shall assess climate risks and impact on water supply and rate its exposure to hazards (e.g., flooding, cyclones, earthquakes, landslides) as low, medium, or high, and recommend priority mitigation and adaptation measures. It shall also assess climate risks such as landslides, flooding, sea level rise, saline water intrusion, storm surge, and drought impacts on water supply, using the Drinking Water Safety and Security Planning (DWSSP) framework.		
2. Design and Technical Documents Development of technical documents	**Climate and disaster resilient Water supply systems design** - Design Climate and disaster-resilient water supply systems addressing site-specific climate and disaster risks: layout and detailed design with technical specifications. - Include borehole, plumbing, water intake, rainwater harvesting, storage, treatment, distribution, solar-powered pumping, and associated technical analyses. - Perform water demand calculations, tank sizing, pump and solar array sizing, water treatment design, and EPANET network pressure simulations.	ii. Detailed Engineering Design, Hydraulic Modelling, EPANET Output and full set of Design Drawings Package and specifications, approved by UNICEF.	50% of total lump sum fee
	Bid technical documents - Prepare Bill of Quantities (BoQs) and confidential cost estimate; and compile all technical documents (design drawings, specifications and BoQs).	BoQs approved by UNICEF. Confidential cost estimates.	
3. Quality Assurance	**Quality assurance** Develop or review Quality Assurance and Quality Control (QA/QC) plans	I. Comprehensive QA/QC plan detailing inspection procedures, testing	10% of total lump sum fee

	and procedures and quality verification protocols. Develop guidelines for monitoring and supervision and operation and maintenance (O&M) guidelines	requirements, material acceptance criteria, workmanship standards, and reporting arrangements. ii. Standardized quality monitoring, supervision, and reporting templates for use during construction and commissioning. ii. O&M manual, maintenance schedule, spare parts inventory, inspection checklists, and operational guidance for community operators, schools, and health facilities.	

QUALIFICATIONS, SPECIALIZED EXPERIENCE AND ADDITIONAL COMPETENCIES

☒ Bachelors ☒ Masters ☐ PhD ☐ Other

Education
A university degree is required in Civil Engineering, Mechanical engineering, or related field.

Experience
A minimum of five (5) years in assessment, design, installation, supervision, and QA/QC of water supply infrastructure projects, experience in Pacific SIDS preferred; familiarity with IEC, AS/NZS, IEEE standards. Experience in capacity building/knowledge transfer and stakeholder engagement.

Languages
Fluency in English is required. Knowledge of another official UN language or national local language of the duty station is considered as an asset.

Skills
i Water supply engineering assessment, design, and construction supervision.
ii Hydrological, hydrogeological, water quality, and site investigations.
iii Hydraulic modelling and network analysis using EPANET or equivalent software.
iv Design of water sources, storage, treatment, distribution, and solar-powered pumping systems.
v Preparation of engineering drawings, technical specifications, BoQs, and cost estimates.
vi Quality assurance, quality control, and contract administration.
vii Use of engineering and GIS software, including AutoCAD/Civil 3D, EPANET, and QGIS/ArcGIS.
viii Technical report writing and preparation of procurement and contract documentation.
ix Knowledge of sustainability, climate resilience, and GEDSI principles in infrastructure projects.

Competencies
Ability to resolve difficult, complex and sensitive situations often under pressure;
Ability to initiate and manage change in a diverse environment;
Ability to clearly and concisely express ideas and concepts in written and oral form;
Ability to manage and monitor the effective use of resources;
Ability to supervise and direct a team of professional and support staff working on construction projects;
Ability to work strategically to realize organizational goals, develop strategies, set clear visions; Strong communication and negotiation skills to establish and maintain trusted partnerships for achievement of objectives and to develop close and effective working relationships with diverse stakeholders;
Ability to identify and analyze systemic issues, formulate opinions and make conclusions and recommendations to resolve them;
Skill in the identification of new opportunities or requirements to meet challenges in the field and propose changes;
Strong knowledge of latest developments and technology in water supply industry;

Strong overall knowledge and understanding of UNICEF programmes, public procurement principles, financial and legal aspects of construction issues, ethics and risk management of construction projects.

CONDITIONS OF WORK AND CLARIFICATION ON SUPERVISION

The assignment covers up to 300 days stretched across 36 months for the Pacific island countries and requires extensive travel and site supervision within these countries with period at home/office to develop design, reports and planning activities. The base for this consultancy will be in the respective country based on the need.

The activities and deliverables included in the TOR for this Long-Term Agreement are general. Whenever services are required, a separate country-specific TOR will be established with a detailed list of activities required and the duration and number of days required for in country travel. A secondary bidding process will be required, where the TOR will be presented to the all the LTA holders to provide their financial proposal and state their Level of Effort against the LTA rates. The PO will then be issued to the LTA holder providing the lowest offer. Upon receipt of confirmation of availability and interest in the assignment, a contract will be issued with the prices/fees agreed in the LTA. The actual activities and deliverables will be formalized through the actual individual consultancy contract (Purchase Order (PO)). The consultant must sign the contract prior commencement of work. Payment will be made after completion of deliverables and submission of invoices for the actual work completed, subject to satisfactory performance.

To establish the LTA, the consultant must provide a daily fee quote for approximately 300 working days over three years. The exact project scope, location, and contract value for respective project or country will be finalized after signing the LTA.

The consultant would report directly to the in-house Construction Specialist with technical oversight from Chief of WASH, Chief of Field Office, and WASH Specialists.

ADMINISTRATIVE ISSUES

- Individuals engaged under a consultancy will not be considered “staff members” under the Staff Regulations and Rules of the United Nations and UNICEF’s policies and procedures and will not be entitled to benefits provided therein (such as leave entitlements and medical insurance coverage). Their conditions of service will be governed by their contract and the General Conditions of Contracts for the Services of Consultants. Consultants are responsible for determining their tax liabilities and for the payment of any taxes and/or duties, in accordance with local or other applicable laws.
- The selected candidate is solely responsible to ensure that the visa (applicable) and health insurance required to perform the duties of the contract are valid for the entire period of the contract. Selected candidates are subject to confirmation of fully vaccinated status against SARS-CoV-2 (Covid-19) with a World Health Organization (WHO)-endorsed vaccine, which must be met prior to taking up the assignment. It does not apply to consultants who will work remotely and are not expected to work on or visit UNICEF premises, programme delivery locations or directly interact with communities UNICEF works with, nor to travel to perform functions for UNICEF for the duration of their consultancy contracts. UNICEF offers reasonable accommodation for consultants with disabilities. This may include, for example, accessible software, travel assistance for missions or personal attendants. We encourage you to disclose your disability during your application in case you need reasonable accommodation during the selection process and afterwards in your assignment.
- No contract may commence unless the contract is signed by both UNICEF and the Consultant.
- The Consultant will be required to complete mandatory online courses (e.g. Ethics, Prevention of Sexual Exploitation and Abuse and Security) upon receipt of offer and before the signature of contract.

TECHNICAL EVALUATION CRITERIA (WITH WEIGHTS FOR EACH CRITERIA)

The selection of consultants for the LTA will be based on technical evaluation and financial offers in the ratio of 70:30. The criteria for technical evaluation will be as follows:

Criteria	Marks	
	Min	Max
1. Academic Qualifications • Bachelor's degree in Civil Engineering, Mechanical Engineering, or related field (required). • Master's degree (added value).		10
2. Relevant Professional Experience • A minimum of five (5) years in assessment, design, installation, supervision, and QA/QC of water supply infrastructure projects. • Experience conducting hydrological, hydrogeological, water quality, topographical, and geotechnical assessments		20
3. Experience in Similar Contexts (Pacific Environment) • Demonstrated work experience in Small Island Developing States or remote/off-grid environments. • Knowledge of cyclone-resilient, salt-corrosion-resistant, climate-proofed designs.		10
4. Technical Expertise in Assessment, Design, Calculation • Ability to review technical designs, drawings, BOQs, and specifications. • Demonstrated knowledge of relevant standards: IEC, AS/NZS, IEEE. • Experience using hydraulic modelling tools (e.g., EPANET) and preparing engineering calculations and technical analyses		10
5. Field Supervision & QA/QC Experience • Proven experience conducting site inspections, installation supervision, commissioning tests, troubleshooting, and quality assurance for water supply systems.		10
6. CV Quality & Professional Presentation • CV demonstrates clarity, completeness, relevance, and professional competency. • Evidence of strong communication/documentation skills.		10
TOTAL TECHNICAL SCORE The minimum overall qualifying score is 49. Only those candidates who meet the overall qualifying marks of 49 and score the minimum cut-off in each of the above sub-criteria, including the interview, will be considered technically responsive, and their financials will be opened.	49	70
Financial Score The selection of the consultant will be on the basis of technical evaluation & financial offer in the ratio of 70:30)	21	30
TOTAL	**70**	**100**

GUIDANCE FOR APPLICANTS

Please submit a separate financial offer along with your application. The financial proposal should be a lump sum amount for all the deliverables and should show a breakdown for the following:

Daily fees– based on the deliverables in the Terms of Reference above. To establish the LTA, the consultant must provide a daily fee quote for approximately 300 working days over three years.

The exact project scope, location, and contract value for respective project or country will be finalized after signing the LTA.

Travel cost to take up the assignment and field visits will be planned separately and will be part of a separate solicitation process via a secondary bidding process.