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TERMS OF REFERENCE

National WASH Consultant - Groundwater Management and Hydrogeology Expert

CONTRACT MODALITY	Individual Consultancy
DUTY STATION	**Dhaka**
DURATION OF CONTRACT	12 months

Purpose of Assignment

Bangladesh's water resources are essential for public health, food security, economic development, industrial growth, and the realization of children's rights. Increasing groundwater abstraction, declining water levels, arsenic and salinity risks, industrial pollution, climate change, rapid urbanization, and fragmented institutional arrangements are placing growing pressure on national water security.

Since 2023, UNICEF and the Embassy of Sweden have supported the Government of Bangladesh, particularly the Department of Public Health Engineering (DPHE), to strengthen groundwater monitoring, aquifer mapping, groundwater-resource assessment, and digital decision support for evidence-based planning and investment. This support has contributed to real-time groundwater monitoring, aquifer characterization, resource assessment, and improved groundwater information management.

The challenge is especially acute in groundwater-dependent industrial areas, including Gazipur, where rapid industrialization, urban expansion, reduced natural recharge, groundwater abstraction, and inadequately treated industrial effluent affect groundwater sustainability and surface-water quality. Following a policy dialogue convened in May 2025 by the Embassy of Sweden, the Government of Bangladesh, Swedish brands, and UNICEF, the Ministry of Water Resources established a task force under WARPO to advance evidence generation, policy development, and coordinated action.

Through the GoB-UNICEF Climate Resilient Programme, UNICEF is collaborating with IAT-BUET and the University of Dhaka on a pilot initiative in Sreepur, Gazipur. The initiative will demonstrate industrial water-use efficiency, reduced groundwater abstraction, improved wastewater treatment, reuse and recycling, and pollution-control measures through engagement with participating textile industries.

The purpose of this consultancy is to provide specialized technical support to UNICEF and relevant government institutions for groundwater assessment, monitoring, mapping, modelling, governance, and sustainable management. The consultant will support selected industrial water-management initiatives, strengthen technical standards and data systems, facilitate institutional coordination and knowledge transfer, and document scalable approaches for replication across Bangladesh.

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Scope of Work

• Finalize a national groundwater situation analysis and management plan for safe and sustainable water supply.
• Provide technical oversight for groundwater monitoring, aquifer mapping, groundwater-resource assessment, modelling, and scenario development.
• Support groundwater-governance pilots in selected priority areas, including water metering, improved water-use efficiency, reuse, recycling, recharge where technically and environmentally appropriate, and technology-enabled effluent monitoring.
• Support participating industries and relevant government authorities in developing and documenting industrial water-use efficiency, wastewater treatment, reuse, recycling, and pollution-control arrangements.
• Prepare and validate technical and functional requirements for a digital groundwater decision-support mechanism, including data standards, interoperability, indicators, visualization, access protocols, and institutional responsibilities.
• Develop an investment-ready project proposal on integrated groundwater-resource management and governance to support safe and sustainable drinking-water services for children.
• Document implementation processes, innovations, lessons, and recommendations through technical briefs, case studies, consultation records, progress reports, and a final completion report.

• Undertake field missions, consultations, technical reviews, and capacity-strengthening activities agreed with UNICEF and government counterparts.

Work Assignments Overview	**Deliverables/Outputs**	**Delivery deadline to complete the deliverable**
Finalize the national groundwater situation analysis, identify strategic and technical gaps, and prepare a prioritized groundwater management plan.	Final national groundwater situation analysis and management plan, including methodology, data sources, gap analysis, priority actions, institutional responsibilities, and recommendations.	8 January 2027
Support UNICEF and implementing partners in developing and initiating industrial water and wastewater management concepts in Gazipur, including water metering, flow segregation, water-use efficiency, and environmental-compliance measures.	Inception and technical concept report for the Gazipur industrial water management pilot, including baseline approach, monitoring framework, roles, milestones, safeguards, and initial progress.	20 February 2027

Provide technical oversight to pilot groundwater-governance and industrial water-management measures in selected critical areas, including metering, efficient use, reuse, recycling, recharge where appropriate, wastewater treatment, and technology-enabled effluent monitoring.	Pilot implementation and progress report, including field findings, water balance and monitoring results, technical recommendations, risks, corrective actions, and lessons for safe and sustainable drinking-water services.	25 May 2027
Support regional groundwater management initiatives in selected priority industrial zones, including monitoring frameworks, aquifer mapping, groundwater modelling, development-pattern analysis, and future-management scenarios.	Groundwater assessment and scenario report for selected priority industrial zones, including datasets, maps, assumptions, limitations, and recommended management actions.	25 May 2027
Assist the UNICEF WASH section in creating a project proposal aimed at guaranteeing sustainable access to safe drinking water for children in Bangladesh through a study on integrated groundwater resourc	Technical project proposal on groundwater and industrial wastewater management	25 August 2027
Prepare and validate technical and functional requirements for a digital groundwater decision-support mechanism.	Digital decision-support concept and technical requirements report covering indicators, data standards, interoperability, visualization, quality assurance, data-sharing protocols, access arrangements, and institutional responsibilities.	25 September 2027
Develop an investment-ready project proposal on integrated groundwater resource management and governance for safe and sustainable drinking-water services for children.	Complete project proposal including situation analysis, theory of change, results framework, implementation arrangements, indicative budget, risk and safeguard analysis,	10 October 2027

	sustainability strategy, and scale-up pathway.	
Support sector consultation, consolidate lessons and recommendations, prepare knowledge products, and complete final reporting.	Consultation/workshop report; at least two technical knowledge products; and final consultancy completion report summarizing outputs, results, sustainability actions, operational lessons, recommendations, and handover requirements.	25 October 2027

Payment Schedule:
Payment will be made on submission and acceptance of deliverables. UNICEF reserves the right to withhold payment in case the deliverables submitted are not up to the required standard or in case of delays in submitting the deliverables on the part of the consultant.

Important Notes

- Individuals engaged under a consultancy or individual contract 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 and Individual Contractors. Consultants and individual contractors 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 for ensuring that the health insurance (and visa if applicable) 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.

QUALIFICATIONS / SPECIALIZED KNOWLEDGE / EXPERIENCE/ COMPETENCIES (CORE/TECHNICAL/FUNCTIONAL) / LANGUAGE SKILLS REQUIRED FOR THE ASSIGNMENT

- Minimum requirements:
- **Education**: An advanced university degree (master's degree or equivalent) in geology, hydrogeology, water-resources engineering, environmental engineering, civil engineering with specialization in water resources.
- **Work Experience**: At least 10 years of progressively responsible professional experience in hydrogeology, groundwater-resource assessment, groundwater management, water-resources planning, or a closely related field.
- **Skills** (optional):
- At least five years of demonstrated experience in groundwater monitoring, aquifer mapping, groundwater modelling, groundwater development, water-quality assessment, or groundwater-management planning in Bangladesh.
- Demonstrated experience preparing technical reports, management plans, project proposals, and evidence-based recommendations.
- Experience in industrial water-use efficiency, wastewater management, reuse and recycling, industrial pollution control, or environmental compliance is highly desirable.

- Experience with GIS, groundwater databases, data visualization, and digital decision-support systems is desirable.
- **Language Requirements**: Fluency in written and spoken Bangla and English is required
- **Desirables**:
- Passion and commitment to UNICEF's mission and values
- Experience working with DPHE, WARPO, government agencies, academia, UN organizations, INGOs, or the private sector is an advantage.
- Strong analytical, facilitation, communication, and report writing skills in English; working capacity in Bangla is required.
- Ability to work in a multidisciplinary environment and undertake approved field travel.
- **Technical requirements**: Applicants must submit a concise technical proposal of no more than five pages describing their understanding of the assignment, proposed methodology, work sequencing, stakeholder engagement approach, quality-assurance measures and key risks and mitigation actions