



CONSULTANCY - TERMS OF REFERENCE

Title: Consultant – Transient Electromagnetic (TEM) Technology Scaling Strategy

Division: UNICEF Sustainable WASH Innovation Hub, Copenhagen, Denmark

Duration: Approx. five months

Duty Station: Remote

Advertising summary

The vision of the UNICEF Sustainable WASH Innovation Hub (WASH Hub) is a global home for building, accelerating and scaling transformational climate resilient solutions for a WASH secure future of universal and equitable access to services, addressing the full ambition of the SDG6. WASH Hub will source, pilot and scale transformational and frontier climate resilient solutions that respond to key programmatic challenges that, if solved, will unlock faster progress for a water secure future for children and young people. One of those solutions is Transient Electromagnetic (TEM) technology, a geophysical method that uses electromagnetic induction to map sustainable deep groundwater sources.

The Consultant will support the WASH Hub by outlining the scaling pathway, approach and key considerations for the Transient Electromagnetic (TEM) solution, to support multi-country and multi-region scale.

Child Safeguarding

Is this project/assignment considered as “Elevated Risk Role” from a child safeguarding perspective? YES NO

If YES, check all that apply:

Direct contact role YES NO

If yes, please indicate the number of hours/months of direct interpersonal contact with children, or work in their immediately physical proximity, with limited supervision by a more senior member of personnel:

Child data role YES NO

If yes, please indicate the number of hours/months of manipulating or transmitting personal-identifiable information of children (name, national ID, location data, photos):

More information is available in the [Child Safeguarding SharePoint](#) and [Child Safeguarding FAQs and Updates](#).

UNICEF works in some of the world's toughest places, to reach the world's most disadvantaged children. To save their lives. To defend their rights. To help them fulfill their potential.

Across 190 countries and territories, we work for every child, everywhere, every day, to build a better world for everyone.

And we never give up.

For every child...innovate

UNICEF has a 70-year history of innovating for children. We believe that new approaches, partnerships and technologies that support realizing children's rights are critical to improving their lives. The **Office of Innovation** is a creative, interactive, and agile team in UNICEF. We sit at a unique intersection, where an organization that works on huge global issues meets the start-up thinking, the technology, and the partners that turn this energy into scalable solutions.

The **Sustainable WASH Innovation Hub**, based in Copenhagen, Denmark, aims to source, pilot and scale transformational and frontier climate resilient innovations that respond to key programmatic challenges that, if solved, will unlock faster progress for a water secure future for children and young people. One of the key global challenges that the Hub will address through exploration and scale of innovative solutions will be tackling foreseen climate change impacts on WASH services and delivery access. The Hub will also support research and innovation on the links between climate change and water, sanitation and hygiene.

The Hub will bring together a passionate community of strategic partners including children and young people, academia, private entrepreneurs, public policy makers, social development and humanitarian actors, and our global UNICEF WASH / CEED and innovation colleagues in 150+ countries. Collectively we will co-create, advocate, enable, convene, and motivate for innovative sustainable solutions to long-standing barriers and emerging opportunities for a WASH secure and climate resilient future for every child.

How can you make a difference?

The role of the WASH Hub is to develop pathways to scale for solutions. For the work on Transient Electromagnetic (TEM) technology we are looking for a consultant to outline the scaling pathway. This should be a structured approach that outlines the steps, strategies, and choices for expanding a proven innovation so it can reach a larger population and achieve sustainable impact over time.

The pathway is not a single, fixed route but rather a sequence of stages and decisions that adapt to changing contexts and challenges as the innovation grows. The strategy will demonstrate success, building evidence, address local challenges, foster partnerships, enable policy, ensure economics, replicate models, and iterate based on feedback to enable TEM to be scaled as a robust, sustainable water management innovation.

[United Nations Children's Fund](#)

Specifically, for the TEM technology the strategy needs to:

1. Identify UNICEF countries using TEM technology and review of work in key countries (including Somalia, Iraq, Afghanistan, Ethiopia) and others to be defined in discussion with the WASH Hub team) to identify effectiveness in results and efficiency for delivery;
2. Identify the scope and vision for accelerated scaling of TEM technology to maximise potential for improving drinking water (and broader groundwater) resource development;
2. Identify and assess how to engage key actors in strategic adoption of the innovation to optimize uptake; and
3. Identify what is needed in deployment kits and other resources to facilitate uptake and adoption into new contexts and countries.

This consultancy is intended for an individual to carry out, it will be informed by the WASH Hub technical team including a hydrogeologist and innovation specialists. Technical support will also be available through academia and industries utilizing the technology.

Your main responsibilities will be:

The consultant is expected to design and implement an approach to review the TEM technology within UNICEF contexts to identify:

1. **Mapping of the enabling environment for technology uptake** outline the challenges in ground water mapping up to 500m depth in country contexts and how countries are prioritizing ground water mapping in different contexts, how effective are they at mapping and defining/addressing the actual problem? Review and outline the existence of institutions/ regulatory frameworks/ instruments/ capacity to support the function of ground water mapping in country contexts
2. **Identification and comparison of other technologies/ methods** that could be applied in similar contexts and settings to outline ground water profiles. Outline how they compare from an effectiveness/ efficiency perspective. Investigate and outline optimal operating conditions for the TEM technology.
3. **Learnings for TEM technology adoption** into new contexts. Through a desktop analysis with field visits (for example to Somalia, Ethiopia or Afghanistan, that will be agreed as part of the inception report) for validation, engage key informants (local, national and global actors), outline who are the key actors that need to be engaged in using the TEM technology and leveraging the results to inform decision making. The consultant is expected to outline how the TEM technology implemented in the defined contexts can be transferrable to other countries/ contexts and the necessary conditions to facilitate adoption and use of results.
4. **Business model development.** Evaluation of business model opportunities, in the current contexts TEM technology is being applied and the role of government, academia and private sector in these settings, to identify how TEM technologies can be applied in country settings and where the technology should sit in the groundwater stakeholder ecosystem

5. **Replication approach.** Based on a combination of desktop review, interviews and review of existing projects, what countries/ contexts would this technology be applicable in? Within these countries outline:
 - i. What is the likely potential for the outputs from TEM technology having impact at scale?
 - ii. As much as possible outline the relevant timelines for uptake and scaling at individual country level/ regionally/ globally?
 - iii. What are the relevant challenges likely to be encountered in scaling TEM technology into relevant countries and contexts? What strategies are likely to be suitable to address these challenges?
6. **Risk mapping.** What are the risks/constraints of TEM technology in:
 - i. The current relevant program countries
 - ii. Introducing it into new countries
 - iii. Inherently in any context (i.e. generic and potential risks such as aquifer clogging, access to land, rights to water, etc.), what are the mitigating strategies and what are the residual risks?
7. **Develop a scaling strategy** to scale TEM technology into multiple countries (in both humanitarian and development contexts) and regions to rapidly reach maximum impacts, including identifying risk mitigation approaches. The strategy should go beyond targeting and prioritization of countries/ regions to develop a full strategy that outlines how to use the necessary information to produce resources that:
 - i. Demonstrate Technical Feasibility and Effectiveness in UNICEF contexts including identifying priority countries for scaling and key national strategies in those countries
 - ii. Document and Share Evidence
 - iii. Address Site-Specific Challenges
 - iv. Build Capacity and Partnerships, including building skills for practitioners through academic and professional training
 - v. Develop Enabling Policies and Regulations
 - vi. Ensure Economic Viability - Identify likely funding needs to drive momentum and potential donors (either at individual country level, or across sub-regions/ contexts depending upon donor priorities).
 - vii. Scale Through Replication and Adaptation
 - viii. Monitor, Evaluation and Iterate
 - ix. Strengthen country-level ownership, policy integration, and institutional uptake.
 - x. Identify key opportunities and entry points for scaling
8. **Identify and outline what is needed in deployment kits** to facilitate uptake and adoption into new contexts and countries
 - i. Define contents of Deployment kits considering the tools and the purpose that make up the toolkit. Outline how countries access the support and resources (technically and financially) and how this relates to the format of the toolkit (i.e. live database of resources, contracting modalities for products and services, Terms of Reference for service delivery of TEM Technology etc)
 - ii. Outline any further demonstration projects or evidence that may be required

- iii. Identify types of materials for different decision makers to make informed decisions on uptake and provide key information for inclusion in proposals
9. **Capacity development.** Carry out capacity/ gap analysis and identify what skills/ capacity are likely to be required to support scaling into new countries and indicative support for suppliers. Outline key actors, roles and responsibilities. Outline how capacity for TEM can be imbedded within national academic institutions, vocational training centres and private sector

Description of assignment

Detailed responsibilities / deliverables:

	Deliverables/Outputs	Tasks	Delivery deadline	% of payment/ Estimated combined working days
1	Deliverable 1: Inception Report	Deliver an inception report (up to 20 pages) outlining the planned work approach, timelines, activities and review process. Include proposed approach, overview of desk top approach including interviews (number, people and format) and documents to be included in the review. Proposed country visits and information to be gathered and the approach to achieving this. The approach should be agreed with the WASH Hub Innovation Manager before other activities continue.	30/11/2025	15%
2	Deliverable 2: Summary of the current status of TEM technology within UNICEF contexts and other relevant TEM schemes. Undertake field visits for validation.	Combining the elements described above: <ul style="list-style-type: none"> • Definition of the problem • Identification and comparison of other technologies/ methods that could have been applied. • Learnings for TEM replication Compile in a single report outlining the learning and findings on the current status of TEM technology application within UNICEF contexts. The main report should be no more than 20 pages with annexes.	31/01/2026	20%

3	Deliverable 3: Outline a framework for TEM technology adoption and scaling based on current work	Address the key factors for TEM technology to identify what works universally, solutions to common challenges that prevent adoption of TEM and situation specific elements and challenges. This will combine the following elements described above: <ul style="list-style-type: none"> • Business model development, • replication approach and • risk mapping In a single report with supporting evidence. This will inform deliverable 4.	28/02/2026	25%
		Support a technical writer with a field note on TEM work at UNICEF outlining work done and lessons learnt using case studies.	28/02/2026	
4	Deliverable 4: Scaling approach for TEM	Outline a scaling strategy for TEM that includes: <ul style="list-style-type: none"> • Scaling Strategy • Priority countries • Outline of deployment kits • Outline capacity development needs • Strategies for priority countries This should be delivered in a way that is actionable by different actors and driven the WASH Hub.	31/03/2026	30%
5	Deliverable 5: Final report	Final outline of deployment toolkit and supporting justification for TEM including summary presentation with supporting report of up to 20 pages with annexes that can be used for key audiences (to be defined in discussion with the WASH Hub), with supporting summary documents and presentation.	30/04/2026	10%

To qualify as an advocate for every child you will have...

- An advanced university degree (Master's or higher) in Innovation management (or similar) with demonstrated business/scaling experience or Geophysics, Water Engineering, Hydrogeology, background with product development and/or business development experience other relevant fields can be considered if relevance can be demonstrated.

**A first University Degree in a relevant field combined with 2 additional years of professional experience may be accepted in lieu of an Advanced University Degree.*

- A minimum of 8 *years* of relevant business development/scaling strategy development for product, services or businesses is essential, experience in development/humanitarian contexts is strongly encouraged
- Demonstrable experience of strategy development, knowledge management and strategic planning to scale projects is essential
- Demonstrable knowledge of models for scaling innovation within development contexts and relevant experience in other contexts that add value to development approaches is essential
- Experience of project and contract management and working with government actors in this process
- Experience of driving projects in development settings with strong stakeholder engagement processes
- Professional experience in technical project management in groundwater is considered an asset
- Demonstrable strong research, analysis and concise report writing skills.
- Demonstrated experience on scaling innovation in low resource settings considered an asset
- Experience with private sector innovation actors considered an asset
- Experience in developing contexts and/or familiarity with emergency and fragile contexts is considered an asset
- Fluency in English is required. Knowledge of another official UN language (Arabic, Chinese, French, Russian or Spanish) or a local language is an asset.

Travel:

In the financial proposal include travel costs for:

- 2 trips from your home to Copenhagen for one week at a time, include DSA rate
- 1 trip to Somalia for 5 days, followed by 5 days in Ethiopia, include DSA rate
- 1 trip to Afghanistan for 5 days, include DSA rate

All travel (in case of any) will be by most economical fare and reimbursement will be as per UNICEF policy, "As per UNICEF DFAM policy, payment is made against approved deliverables. No advance payment is allowed unless in exceptional circumstances against bank guarantee, subject to a maximum of 30 per cent of the total contract value in cases where advance purchases, for example for supplies or travel, may be necessary".

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.

Payment details and further considerations

- Payment of professional fees will be based on the submission of agreed 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.

How to apply:

- Interested applicants are required to submit a financial proposal with all-inclusive fee. Please see the financial proposal template.
- Financial proposal must include travel costs (economy class) and daily subsistence allowance, if travel is required as per TOR and any other estimated costs: visa, travel/health insurance.
- Interested applicants are required to submit a technical proposal. Please see instructions below:

The Technical Proposals will be evaluated against the following:		
REF	CATEGORY	POINTS
1.	<p>Experience of the consultant</p> <ul style="list-style-type: none"> • Evidenced experience in business development/scaling strategy development for product, services or businesses is essential, experience in development/humanitarian contests is strongly encouraged • Experience in strategy development, knowledge management and strategic planning to scale projects. • Experience of designing and knowledge of alternative models for scaling innovation within development contexts and relevant experience in other contexts that add value to development approaches • Experience with private sector innovation actors considered and in developing contexts and/or familiarity with emergency and fragile contexts • Outline any professional experience in technical project management in groundwater 	45
2.	<p>Proposed Methodology and Approach that outlines how the consultant would:</p> <ul style="list-style-type: none"> • Demonstrate Technical Feasibility and Effectiveness • Document and Share Evidence • Address Site-Specific Challenges • Build Capacity and Partnerships • Develop Enabling Policies and Regulations • Ensure Economic Viability • Scale Through Replication and Adaptation • Monitor, Evaluate, and Iterate 	35
Total Technical (max 80)		
Only Proposals which receive a minimum of 60 points will be considered further.		
3.	Financial proposal	20
Total Financial (max 20)		
Total Overall (max 100)		

Applications without a financial and technical proposal will not be considered. Technical proposals should be no more than 10 pages (not including Annexes) and should outline how the consultant intends to approach the assignment.

For every Child, you demonstrate...

UNICEF's values of Care, Respect, Integrity, Trust, Accountability, and Sustainability ([CRITAS](#)).

To view our competency framework, please visit [here](#).

UNICEF is here to serve the world's most disadvantaged children and our global workforce must reflect the diversity of those children. The UNICEF family is committed to include everyone, irrespective of their race/ethnicity, age, disability, gender identity, sexual orientation, religion, nationality, socio-economic background, or any other personal characteristic.

UNICEF offers reasonable accommodation for consultants/individual contractors 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.

UNICEF has a zero-tolerance policy on conduct that is incompatible with the aims and objectives of the United Nations and UNICEF, including sexual exploitation and abuse, sexual harassment, abuse of authority and discrimination. UNICEF also adheres to strict child safeguarding principles. All selected candidates will be expected to adhere to these standards and principles and will therefore undergo rigorous reference and background checks. Background checks will include the verification of academic credential(s) and employment history. Selected candidates may be required to provide additional information to conduct a background check.

Remarks:

Only shortlisted candidates will be contacted and advance to the next stage of the selection process.

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 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.