GSMA™

Environmental Impact Assessment for HydroNeo, Thailand: GSMA Innovation Fund for Climate Resilience and Adaptation 2.0 grantee

Terms of Reference

June 2025

Overview

GSMA requires the services of a consultancy firm/specialist consultants to undertake an environmental impact assessment for HydroNeo's operations, with a focus on their new project that has been awarded a grant under the GSMA Innovation Fund for Climate Resilience and Adaptation 2.0. This should include the following:

   I.   Project and literature review of a) HydroNeo's operations and their new project supported by GSMA; b) key environmental literature, considerations and regulations in relation to the project and the context; c) stakeholder and subject matter expert interviews; d) baseline observation and assessment of key environmental conditions.
   II. An Environmental Management Plan and supporting workshop (EMP) based on a materiality assessment of environmental impact, with a set of indicators and plan for monitoring, and recommendations for mitigation of any negative risks or tracking positive impact.
   III. A final Environmental Impact Assessment report, integrating the literature review, EMP and other insights.

The details are outlined within this Terms of Reference document. **The deadline to submit expressions of interest is 23:59 (UK time) on Monday 30th June 2025**. GSMA will review submissions on a rolling basis and may extend the deadline, if needed. The work is expected to be completed between July to August 2025.

GSMA Mobile for Development

GSMA's Mobile for Development team drives innovation in digital technology to reduce inequalities in our world. Singularly positioned at the intersection of the mobile ecosystem and the development sector, we stimulate digital innovation to deliver both sustainable business and large-scale socio-economic impact for the underserved.

Our unique research and insights platform advances digital innovations and implementations that empower underserved populations to build a better future. Our in-market expertise informs partnerships between the mobile industry, tech innovators, governments and the development sector. And our unparalleled convening power motivates conversations and inspires action.

GSMA ClimateTech Programme

Climate change is one of the most pressing challenges facing humanity and we continue to see its impacts, including: frequent extreme weather events; food and water insecurity; displacement of vulnerable populations; increase in temperatures; wildfires and droughts; reduction of wildlife populations and biodiversity; lower agricultural yields; sea-level rises and daily loss of forest.

The mission of the GSMA's ClimateTech Programme[1] is to unlock the power of digital technology for climate action to create a low-carbon, climate resilient, and environmentally sustainable future. Through our research activities, we identify, promote and inform opportunities for digital innovation and develop pathways for aligning climate action with the sustainable development agenda. We also catalyse vital partnerships between the GSMA, the mobile industry, tech innovators, governments and the development sector with the aim of reducing fragmentation, facilitating scale and promoting collective action.

GSMA Innovation Fund for Climate Resilience and Adaptation

The GSMA Innovation Fund for Climate Resilience and Adaptation Cohort 2.0[2] was launched during the GSMA's MWC Barcelona event in February 2023, and is supported by the UK Foreign, Commonwealth and Development Office (FCDO) and the Swedish International Development Cooperation Agency (Sida). The fund is designed to help accelerate the testing, adoption and scalability of digital innovations that enable the world's most vulnerable populations to adapt to, anticipate and absorb the negative impacts of climate change, or strengthen biodiversity. It builds on the previous GSMA Innovation Fund for Climate Resilience and Adaptation, currently supporting 1 start-ups.

The fund seeks to support start-ups, and small and medium enterprises (SMEs) to leverage mobile and digital technology to build the climate resilience of vulnerable low-income communities and marginalised groups in Africa, Asia-Pacific, the Caribbean, Latin America and Eastern Europe. Grantees are to receive an equity-free grant of between £100,000 and £250,00 to pilot and scale their innovation over an 18-month period, with additional soft benefits such as GSMA facilitated industry partnerships, provision of mobile and digital, monitoring and evaluation, and market expertise through GSMA staff, and a platform to raise the profile of their start-up or SME to potential investors.

Under this fund, up to 12 start-ups and SMEs across Africa and Asia have been awarded grants to pilot and scale innovative digital solutions for **climate action**.

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[1] GSMA | ClimateTech | Mobile for Development
[2] GSMA | Announcing The GSMA Innovation Fund for Climate Resilience and Adaptation Cohort 2.0 | Mobile for Development

HydroNeo

HydroNeo is a startup based in Germany, specialising in smart farm management systems for aquaculture, particularly shrimp farming worldwide. Established in 2018, HydroNeo aims to enhance the efficiency and sustainability of shrimp farming through the use of Internet of Things (IoT) technology, automation, and data analytics.

The company's main product is an IoT-based Smart Farm Management System that provides real-time monitoring and control of shrimp farm conditions. This system integrates various sensors and automation tools to optimise water quality (e.g. real-time oxygen level measurements), reduce labour costs, and improve overall farm productivity. Key features include 24/7 water quality monitoring, automated control of equipment like pumps and aerators, and data-driven insights to streamline operations and enhance resource management.

In Thailand, shrimp production has declined from 600,000 metric tons in 2011 to 270,000 in 2022, with the number of farmers decreasing from 25,000 to approximately 7,000. This stems from a lack of knowledge and technological intervention, influenced by stigma and pride. Climate change impacts, such as heat waves, diseases, and algae blooms, add complexity to the challenge

GSMA funding will enable the creation of the 'HydroNeo Digital Farm App', accessible to all Thai shrimp farmers through the Android Play store. It will offer free basic features and affordable in-app purchases, supporting smart farming to mitigate climate change risks. The app will include six main functions: regional climate data, disease reporting, smartphone-based shrimp analytics, market price index, financials overview, and market demand.

Environmental Impact Assessment Assignment

We are seeking the services of a consultancy firm/specialist consultants to conduct an environmental impact assessment of HydroNeo's operations, particularly focusing on the GSMA supported project. We expect this work to be done through the following three phases *(suggestions for alternative approaches are welcomed by consultants)*:

I.   Project and Literature Review

A review of:
   a. HydroNeo's operations and their new project supported by GSMA
   b. key environmental literature, considerations, and policy and regulatory framework in relation to the project and the context
   c. 6 stakeholder (farmer, start-up staff) and subject matter expert interviews (aquaculture and conservation experts)
   d. In-person field visit for baseline observation and assessment of key environmental conditions. The consultant may want to supplement this with primary data collection.

The majority of the review process is expected to be desk-based. The review should be summarised in a word document and pdf no longer than 6 pages.

II.   Environmental Management Plan and Workshop

An Environmental Management Plan (EMP) based on a materiality assessment of environmental impact, with a set of indicators and plan for monitoring, and recommendations for mitigation of any negative risks or tracking positive impact. This should be done on MS Excel or tabulated if using other software.

A workshop to discuss and refine the EMP with HydroNeo should take place before finalising the EMP. The consultant is expected to lead on the preparation of the workshop agenda, materials, logistics (with support from GSMA), and facilitation. The workshop is expected to take place in person.

III.   Environmental Impact Assessment report

A final Environmental Impact Assessment report, integrating the literature review, EMP and other recommendations and insights for HydroNeo. The final report should clearly outline key findings from the initial phases, summarise stakeholder perspectives, identify material environmental risks and opportunities, and provide actionable, context-specific recommendations. It should include concise visuals or tables where appropriate to support clarity and decision-making.

The project activities are limited in scope and scale; thus, the environmental impact assessment is expected to be streamlined to focus primarily on key environmental issues relating to the project intervention, with some additional consideration of HydroNeo's wider operations.

The report should be presented in a word document and pdf no longer than 12 pages.

Working with GSMA and HydroNeo

The GSMA Climate Monitoring, Evaluation and Learning Manager will provide overall direction to the consultant, as well as facilitate initial communication with HydroNeo. The consultant is expected to lead on project communications with HydroNeo thereafter.

Key Deliverables and Timeline

July 2025

- Project and Literature Review
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August 2025

- Environmental Management Plan
- Final Environmental Impact Assessment Report

Application and selection process

Interested applicants are asked to submit:

1. Documentation of the firm's or consultant's knowledge and expertise on:
   o Environmental impact assessments of
   o Environmental monitoring, data collection and testing relating to water quality and aquaculture projects
   o Carbon and energy savings
   o International development and humanitarian aid – specifically climate action
   o Innovative mobile digital technologies
   o Expertise, and presence or established networks in Thailand
2. Samples of two recent and relevant pieces of work e.g., environmental impact assessment reports.
3. Name and CVs of team working on the project

4. Detailed proposal of plan to complete the work including:
   - High-level proposed approach and methodology.
   - High-level schedule and activity timeline
   - Please note any limitations, risks and mitigations.
   - Any additional considerations that you feel have been left out
5. Budget including:
   - Personnel fees (broken down by name, role, activity, daily fee rate and proposed number of days per each of the three phases of the project outlined in the ToR)
   - Expected expenses and travel costs. If international travel is expected, this should be limited to one short trip for either the baseline observation or the EMP workshop.
   - Expected costs for specialist data collection tools and services
   - The GSMA default currency requirement for all proposals is 'UK Pounds Sterling', this will be the contract currency for the successful Respondent

Due to GSMA compliance requirements, exact project budgets cannot be provided at this stage. You are, however, able to provide a few implementation/budget options that can help us assess value for money and we can align our project scope to the relevant budget after a consultant has been selected.

The details are outlined within this Terms of Reference document. **The deadline to submit expressions of interest is 23:59 (UK time) on Monday 30th June 2025**. Proposals should be submitted to Samir Hafiz shafiz@gsma.com and Henry Bowes hbowes@gsma.com. GSMA anticipates that interviews will be conducted on 2nd and 3rd July 2025.