GSMA

Terms of Reference: Technical Assistance for the Development of Early Warning System Development in Tanzania

Background

The GSMA Mobile for Humanitarian Innovation (M4H) programme works to accelerate the delivery and impact of digital humanitarian action. This is achieved by building a learning and research agenda to inform the future of digital humanitarian response, catalysing partnerships, investing in innovation for new digital humanitarian services, advocating for enabling policy environments, monitoring and evaluating performance, disseminating insights and profiling achievements. This is achieved by three key workstreams:

- Research and Policy: To build robust evidence to support MNOs and humanitarian organisations in delivering effective digital humanitarian action and promote enabling policy environments that support the delivery of digital humanitarian assistance.

- Innovation Fund: To provide funding and support to organisations using mobile technology to deliver innovative products and services that respond to humanitarian challenges.

- Strategic Partnerships: To form and catalyse sustainable partnerships between mobile operators and humanitarian partners to enable scalable and commercially viable solutions that deliver digital humanitarian assistance.

M4H is supported by the UK Foreign, Commonwealth & Development Office (FCDO) and has been running since April 2017. In March 2022 FCDO committed a further £15.5 million to the programme.

Early Warnings for All (EW4All)

In 2022, United Nations Secretary-General launched the **Early Warnings for All (EW4All) Initiative**, which aims to ensure that everyone in the world is protected by an early warning system (EWS). The GSMA has catalysed the role of the mobile industry in EWS for several years and immediately took a leadership role in the initiative through the GSMA Mobile for Humanitarian Innovation programme, which is funded by the UK Foreign, Commonwealth and Development Office. The GSMA is part of the International Telecommunication Union led 3rd Pillar of the initiative, which focuses on "warning dissemination and communication", and is represented on the High-Level Advisory Panel by our Director General.

The GSMA and M4H in particular with support from FCDO has supported the development of mobile-enabled Early Warning Systems (EWS) for a number of years. For example, solutions from extreme weather preparedness in Haiti, mobile-internet-of-things enabled fire sensors in South Africa, and provision of accurate information to disaster responders.   M4H is a member Emergency Telecommunication Cluster and involves mobile network operators as key stakeholders in the Cluster's regional and country level emergency telecommunication preparedness initiatives.

M4H's support to partners on Early Warning Systems (including EW4All) includes but is not limited to:

- Ensure MNOs are part of major international initiatives

  - Such as the UN's Early Warnings for All (EW4All) initiative
  - Facilitating introductions and discussions for partnerships and delivery of digital innovations and services

- Engage the mobile industry in the EWS plans and processes

  - Ensure MNOs are engaged by government as equal stakeholders in the creation of an EWS
  - Provide peer-to-peer learning opportunities with MNOs in other markets who have supported the set-up of similar systems

- Guidance on how to set up a mobile-enabled EWS based on M4H's experience and international best practice

    - Invest in innovative digital solutions for EWS through the GSMA Innovation Fund
    - Advise on workplans, review concept notes and technical documents
    - Share relevant reports and documents
    - Brainstorm and ideate potential solutions
    - Provide insights on financial sustainability of mobile-enabled EWS

- Convening of stakeholders

    - Organise and facilitate national workshops in country with relevant stakeholders to understand the needs and challenges of creating an effective, inclusive mobile-enabled EWS
    - Ensure all key stakeholders are involved in the design and operationalisation of the EWS and in doing so facilitating connections to relevant experts and resource persons

- Promotion of success stories

    - Highlight best practice, including through the GSMA's MWC and global M360 event series and through GSMA published reports and social media.
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Project Overview and Objective

In March 2024, GSMA led the Tanzania Early Warning System National Convening in Dodoma, aimed at (i) bringing relevant stakeholders, including government agencies, mobile network operators, regulators, and humanitarian organisations, to share insights and initiatives related to Early Warning Systems; (ii) Sharing successful international models of Early Warning Systems and stimulate discussion on potential technologies applicable to Tanzania; and (iii) Exploring common challenges, identify opportunities, and assess enhancing collaboration among stakeholders. This event explored the role of mobile technology in strengthening early warning systems, including prompt alert dissemination, crowd-sourced information gathering, and real-time communication during emergencies, while also sharing insights from other countries. As a result of the national convening, all the key MNOs agreed to form a national steering committee to support the establishment of a mobile led multi-hazard early warning system in Tanzania.

Following the national convening, GSMA led a baseline user experience study, providing valuable insights into the user perception on early warning messages and their preferences regarding early warning messaging. The user experience study is expected to be a key tool in designing the blueprint of the early warning system and its functionalities. In May 2024, Tanzania was added to the priority country list under the EW4All initiative. In June 2024, the new Emergency Operation and Communication Center (EOCC) was opened as a key step towards building the multi-hazard EWS in Tanzania. In a recent preparatory meeting held with the ITU, the key stakeholders pointed out the need to implement a CB solution and to ensure that the EWS messages are compliant with the Common Alerting Protocol (CAP) and ITU has responded positively, extending support towards implementing a CB based EWS in Tanzania.

The objective of this consultancy is to provide technical assistance to GSMA in assisting the MNOs and other key stakeholders to assess the readiness to implement a cell broadcast (CB) based EWS. The supplier will assess the current digital landscape, technical infrastructure and the emergency warning processes of Tanzania to identify the necessary steps to implement a CB based EWS and provide technical expertise to ensure that all activities are aligned with the best practices and goals of the EW4A initiative.

The supplier will work closely with GSMA, all MNOs in Tanzania and key EW4All partners to support the delivery of the following key components:

Component 1 – Desktop study / Market overview
- MNOs Geographical Coverage
- MNOs technology coverage (e.g., 2G, 3G, 4G, 5G)
- MNOs market share
- Current emergency alerting policy(s)
- Mobile usage gap (e.g., demographics, barriers, recommendations)
- Current warning dissemination and communication channels being used
  (*The desktop study findings will feed into the development of a country level gap analysis checklist and roadmap under the EW4A framework*)

Component 2 – Continuous Stakeholder engagement
- Discussions with MNOs and key stakeholders and ensuring adequate buy-in
- MNO Steering committee and key stakeholders meeting & presentation of the plan
- Identify single point of contact (SPOC) for all key stakeholders to support on coordination i.e MNOs, (I)NGO and Government
- Set up the in-country workshop.
- Bi-weekly stakeholder check-ins and debriefs

  (*The outcomes of these engagements will feed directly into the workshop, addressing the gaps identified*)

Component 3 – Cell Broadcast Infrastructure gap assessment
- Conduct a technical evaluation of the existing network readiness of MNOs in Tanzania to implement CB technology
- Identify infrastructure, coverage, and system gaps, and provide recommendations for addressing these gaps
- Develop a comprehensive report documenting the findings, including a standardized checklist and methodology that can be replicated in other EW4All countries and contribute to the EW4All roadmap
- Identify policy and regulatory barriers to the implementation of EWS and CB

Component 4 - Development of a high-level blueprint for Cell broadcast messaging
- Develop a detailed recommendations document on multiple options of emergency CB implementation in Tanzania.
  - Recommendation on centralised vs decentralised architecture
  - Cost estimations for different solution options, including CapEx and OpEx, for a 5-year plan. ***The blueprint will outline costed implementation pathways to support EW4All roadmap targets and facilitate funding mobilization.***
- Collaborate with GSMA, ITU, and key stakeholders to develop a CB system architecture
- Provide recommendations to MNOs and key implementors to ensure that the implementation plan is actionable, realistic and reflects the needs and realities of the Tanzanian context.

Component 5 - Stakeholder dissemination workshop
- Facilitate a workshop with MNOs, Communications Regulator, Prime Minister's office and IFRC to present the CB infrastructure gap assessment and blueprint for CB messaging.
- Organize co-design workshops with government, academia, civil society organizations, and communities to develop actionable messages for inclusion in hazard alerts or conduct them in parallel to focus on the IFRC component, then transition to CB messaging.

Deliverables and Timelines

The services will be provided over a period of 3 months, from January 2025 to March 2025 with the total number of days expected not to exceed 45 days. The supplier will report to the M4H Strategic Partnerships Manager Ida Juma. The supplier will participate in a weekly coordination call with GSMA, as well as ad hoc planning meetings as agreed with GSMA.

The contractor will undertake the activities above and deliver the milestones outlined below:

Table 1: Deliverables and Timeline

Activity	Milestone Deliverable		Estimated days	Indicative Timeframe Date
Component 1 - Desktop study / Market overview	i.	A report mapping MNOs' geographical coverage, market share, and mobile network technologies, identifying underserved areas, infrastructure needs for emergency alerting, and analysing the mobile usage gap.	Up to 5 days	January 2025
	ii.	An analysis of mobile network technologies (2G, 3G, 4G, 5G), their coverage, and their capability to support emergency alerting systems.		
	iii.	Data on MNOs' market share, connectivity quality, and user distribution across regions.		
	iv.	Evaluation of existing emergency alerting policies, their implementation, and gaps in the regulatory framework, with actionable recommendations to enhance network coverage.		
	v.	Actionable suggestions to improve mobile network coverage, technology, and emergency alerting policies.		
Component 2 – Continuous Stakeholder engagement	i.	Initial meetings with MNO representatives and key stakeholders to introduce the project, gather input, and build buy-in.	Up to 5 days	January - February 2025
	ii.	Formal meeting to present the project plan, align stakeholders, and obtain feedback.		
	iii.	Identification and confirmation of key SPOCs responsible for project coordination and communication.		
	iv.	Organize a workshop with MNOs and stakeholders to discuss the project, address challenges, align efforts, and provide necessary documents and presentations.		
	v.	Hold meetings bi-weekly with stakeholders to review progress, gather feedback, and address concerns. After each meeting, provide internal teams with a summary of key discussions, decisions, and next steps.		
Component 3 – CB Infrastructure gap assessment	i.	Report assessing the current capabilities of MNOs in Tanzania to support CB technology.	Up to 25 days	February 2025 – March 2025
	ii.	Document identifying infrastructure, coverage, and system gaps that may hinder CB implementation and actionable recommendations on infrastructure, coverage, and system improvement.		
	iii.	A comprehensive report detailing the gap assessment methodology, findings, and recommendations, including a replicable approach for other EW4A countries.		

Activity	Milestone Deliverable	Estimated days	Indicative Timeframe Date
	iv. A report identifying policy and regulatory challenges and offering recommendations to remove barriers to CB and EWS implementation.		
Component 4 - Development of a high-level blueprint for CB messaging	i. A comprehensive report detailing multiple options for implementing a CB messaging system, focusing on emergency use cases. ii. Recommendation on centralized vs. decentralized architecture. iii. Cost estimation for CapEx and OpEx over 5 years. iv. Collaborative CB system architecture document with GSMA, ITU, and key stakeholders. v. Actionable recommendations for MNOs and implementors on deployment and sustainability.	Up to 8 days	March 2025

Component 5 - Stakeholder dissemination workshop	i. Presentation materials in PPT format e.g., CB infrastructure gap assessment and blueprint for CB Messaging reports.
	ii. Workshop facilitation plan (including breakout sessions, Q&A, and group discussions).
	iii. Comprehensive final report documenting the co-design workshops with government Academia, Civil society organisations and communities. This would include
	   - Actionable hazard alert messages developed during the workshop
	   - Insights from parallel sessions with IFRC focused on integrating their component in EW4All pillar 4 into the CB messaging system
	iv. Recommendations for incorporating these messages into future alert systems ensuring they are relevant, culturally appropriate and tailored to local context
	v. Strategic recommendations for the next phases of CB implementation.
		Up to 2 days	March 2025

Ongoing	Hold meetings biweekly with stakeholders to review progress, gather feedback, and address concerns. After each meeting, provide internal teams with a summary of key discussions, decisions, and next steps.		
		Up to 45 days	

Other Requirements:
- All deliverables shared must be written in clear and concise language (UK English).
- Prompt responses to emails from the GSMA.
- Regular status meetings to report on project progress.
- Timely notification to the M4H Strategic Partnerships Manager regarding any anticipated delays and complications.

Proposal requirements

Relevant experience:

Essential:
- Demonstrable track record of completing similar assignments.
- Thematic expertise in early warning / emergency communications
- Sectoral experience and knowledge of the humanitarian sector
- Clear and demonstrable experience in working with mobile network operators/ telecommunications.
- Full working proficiency in English, writing to publication quality.
- A strong network, including potential interviewees.
- Relevant local experience and language skills.

Proposals should include:

Technical proposal
1. A short (1 page) statement of suitability, highlighting recent relevant experience.
2. A short (2 page) discussion of the proposed approach including: concise discussion outlining the approach for assessing emergency communication infrastructure, providing technical expertise, coordinating stakeholders, ensuring regulatory alignment, building local capacity, and delivering actionable recommendations, while considering Tanzania's context and best practices.
3. Any proposed changes to the ToR.
4. Gantt chart outlining major project stages and timelines
5. CV, and location of team member.

Financial proposal
1. Fee rates (per day in GBP).
2. Total project cost (GBP), without VAT[1].The Respondent's Total Price is inclusive of all costs, insurances, fees, costs, expenses, liabilities, obligations, risks, and all financial requirements for the performance of Services and provision of Deliverables.

Proposal assessment and selection Process

The proposal will be scored on the following set of criteria:

Criteria	Importance	Weighting
Cost	Proposal's value for money	20%
Quality	Quality of the approach outlined in the proposal.	35%
Bidder's capacity to manage the project on time and on budget	Demonstrated expertise in CB technology and EWS best practices, with a thorough understanding of mobile network technology and infrastructure capabilities for emergency communication. Proven ability to manage projects efficiently, ensuring completion on time and within budget.	30%
Relevant experience	Bidder's experience in successfully conducting similar projects	15%

- Proposals are to be submitted no later than **1700 (BST) on December 10th**. Electronic submission should not exceed more than 5 MB in size per email and should be sent to: ijuma@gsma.com and ankonu@gsma.com.
- Clarification questions can be sent to ankonu@gsma.com.

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[1] GSMA Foundation Inc is a US registered 501(c)(3) charity and will be the contracting entity.