

Humanitarian Connectivity Needs and Usage Assessment

A toolkit to support in
assessing the current and
potential use of mobile
technology and connectivity
in humanitarian crises



GSMA

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

We invite you to find out more at www.gsma.com

Follow the GSMA on Twitter: [@GSMA](https://twitter.com/GSMA)



REACH is a joint initiative of two international non-governmental organizations - ACTED and IMPACT Initiatives - and the UN Operational Satellite Applications Programme (UNOSAT). REACH's mission is to strengthen evidence based decision making by aid actors through efficient data collection, management and analysis before, during and after an emergency. By doing so, REACH contributes to ensuring that communities affected by emergencies receive the support they need. All REACH activities are conducted in support to and within the framework of interagency aid coordination mechanisms.

For more information please visit our website:

www.reach-initiative.org.

You can contact us directly at:

geneva@reach-initiative.org and follow us on

Twitter [@REACH_info](https://twitter.com/REACH_info)



In accordance with its mandate, the Emergency Telecommunications Cluster (ETC) provides services to enable populations affected by crises to access life-saving information and communicate through technology.

GSMA Mobile for Humanitarian Innovation

The GSMA Mobile for Humanitarian Innovation programme works to accelerate the delivery and impact of digital humanitarian assistance. This is achieved by building a learning and research agenda to inform the future of digital humanitarian response, catalysing partnerships and innovation for new digital humanitarian services, advocating for enabling policy environments, monitoring and evaluating performance, disseminating insights and profiling achievements. The programme is supported by the UK Foreign, Commonwealth & Development Office.

Learn more at www.gsma.com/m4h or contact us at m4h@gsma.com

Follow GSMA Mobile for Development on Twitter: [@GSMAM4d](https://twitter.com/GSMAM4d)



This initiative has been funded by UK Aid from the UK Government and is supported by the GSMA and its members. The views expressed do not necessarily reflect the UK Government's official policies.

GSMA Contributors:

Belinda Baah – former Insights Manager
Matthew Downer – Senior Insights Manager

REACH Contributors:

Łukasz Kruk – Assessment Specialist

Acknowledgements:

The GSMA would like to thank all the research participants who gave their time and input to help with field testing for this Toolkit.

We are also grateful to the many colleagues from a range of organisations who contributed their expertise and time during this work: American Red Cross, BBC Media Action, CARE, CDAC Network, CALP Network, Danish Refugee Council, Emergency Telecommunications Cluster (ETC), Grameen Foundation, Ground Truth Solutions, ICRC, IOM, International Rescue Committee, Internews, Joint IDP Profiling Service, Jangala, Mercy Corps, Norwegian Refugee Council, Overseas Development Institute, People in Need, Solidarités International, The Research People, Translators Without Borders, United Healthcare Distributors, ULEARN, UNHCR, WFP.

Contents

01	Introduction	2
02	Using the Toolkit	6
03	Development and refinement of the Toolkit	12

Notes

This report introduces the Connectivity, Needs and Usage Assessment (CoNUA) Toolkit, how it was created and what it might be used for. The full Toolkit, along with detailed guidance documentation, are available at www.gsma.com/mobilefordevelopment/conua.

This is the second iteration of the Toolkit, building on the beta version which was published in January 2021. Since that first version was published, the Toolkit has been piloted, tested and deployed in a number of humanitarian settings by a number of different organisations. This revised version has been adapted based on the lessons from those deployments.

Throughout the Toolkit, the phrase “Toolkit user” refers to the agency or organisation using the CoNUA Toolkit to conduct an assessment. An “end-user” is an “end user of a mobile phone and related services” and refers to an individual affected by a humanitarian crisis. The closest humanitarian term is “beneficiary”.

If you have questions regarding the Toolkit, have used any of the tools or intend to do so then we would love to hear from you. You can contact the GSMA team at conua@gsma.com.

01

Introduction



Mobile technology is a powerful tool for improving the efficacy of humanitarian assistance. More and more humanitarian organisations are using mobile technology to deliver assistance, especially since the COVID-19 pandemic has reduced human interactions. As humanitarian assistance shifts to digital, there are growing calls to move beyond anecdotal accounts about mobile penetration and its use in humanitarian contexts, towards a more evidence-based understanding.

More evidence is needed to understand how people in humanitarian contexts are currently accessing and using mobile technology, and also to understand the barriers they encounter.¹ This lack of data on digital access and needs continues to be one of the key barriers to digitising humanitarian assistance on a large scale. Data is vital to adequately inform organisations about how to effectively and appropriately digitise products and services for populations of concern, in a way that leaves no one behind and does not present new risks or exacerbate existing inequities.

In recent years, there has been substantial increase in research about the role of connectivity and mobile technology in humanitarian settings.

A number of landscaping studies have highlighted how mobile technology could be used in thematic areas and could engage with ongoing debates within the humanitarian sector.² There has also been research looking at key components of delivering connectivity as aid for various actors within the sector, including papers focussing on both government regulation³ and partnership models.⁴

While there have been some papers that focused on the perspectives of end users,⁵ *The Digital Lives of Refugees*⁶ (published in 2019 by the GSMA, in partnership with UNHCR) was one of the first to provide in-depth findings for specific contexts – in this case, locations in Jordan, Rwanda and Uganda. This report provided robust data that specifically looked at how mobile technology is used in humanitarian settings. It also quantified, for the first time, key access gaps, such as the mobile gender gap⁷ and mobile disability gap⁸ for refugees. This report sparked considerable interest among actors in other contexts, who wanted to replicate its approach and use similar data to inform their own programming. It became clear that there was an appetite for research tools to make this replication possible.

The GSMA, in partnership with REACH and supported by the Emergency Telecommunications Cluster (ETC), has produced the Connectivity, Needs and Usage Assessment (CoNUA) Toolkit. The CoNUA Toolkit addresses the current evidence gap by providing tools to humanitarians and their key stakeholders to measure mobile phone access, usage, preferences and digital-skills of populations of concern in a robust and standardised manner, which will allow them to assess and provide appropriate digital humanitarian interventions.

The Toolkit supports those who are committed to using a user-centred approach to deliver humanitarian assistance. It also specifically contributes to the Grand Bargain commitment 6 – “a participation revolution” aimed at including people to make the decisions that affect their lives.⁹ The Toolkit gives humanitarian responders a tangible way to engage with affected populations about their needs and find out how mobile technology and other digital services can best serve those in need.

1. GSMA (2019). [The Digital Lives of Refugees. How displaced populations use mobile phones and what gets in the way.](#)
2. GSMA (2018). [Landscaping the digital humanitarian ecosystem.](#) HPG (2019). [The humanitarian 'digital divide'.](#)
3. UNHCR (2018). [Displaced & Disconnected.](#)
4. GSMA (2020). [Partnering during Crisis.](#) UNHCR (2020). [Collaborating for connectivity.](#)
5. UNHCR (2016). [Connecting Refugees.](#) GSMA (2017). [Mobile is a Lifeline.](#)
6. GSMA (2019). [The Digital Lives of Refugees.](#)
7. GSMA (2019). [Bridging the mobile gender gap for refugees.](#)
8. GSMA (2019). [Bridging the mobile disability gap in refugee settings.](#)
9. IASC (2016) [A participation revolution: include people receiving aid in making the decisions which affect their lives](#)

1.1 What is the CoNUA Toolkit?

The GSMA is providing this Toolkit to people working in humanitarian crises to help them understand how people affected by these crises are using mobile phones. This Toolkit has been designed to allow interested stakeholders to conduct similar assessments in any humanitarian context.

The Toolkit is:

- a) **Modular:** all of its tools can be used in full, some can be chosen to be used without others, or elements can be taken out of the Toolkit and added to another assessment to complement it.
- b) **Adaptable:** it can be deployed in various scenarios – we have highlighted the most critical parts that need to be adjusted for specific contexts throughout the Toolkit and its guidance.
- c) **Supported:** the GSMA will track deployments where possible, offer guidance on how to best use the tools, and continually listen for feedback and update the Toolkit so that it stays up to date.

If you plan to deploy the Toolkit, please let us know at conua@gsma.com



1.2 What questions does the Toolkit answer?

The Toolkit provides a range of tools to examine multiple aspects of mobile phone use for humanitarian purposes. Taken all together, these tools form a comprehensive understanding of mobile phone use and its context for a particular crisis. The tools answer questions such as:

- what is access to mobile phones like? Who does – and who does not – have this access?
- what are the barriers to access? How do they differ between population groups (e.g. the elderly)?
- which mobile-enabled services are available (e.g. mobile money services; social media, etc.), and which are used, and how? Which ones are not used, and why?
- what specific technologies and services (e.g. SMS, phone calls) do people prefer to use for receiving humanitarian assistance?

The Toolkit not only makes it easier to understand mobile phone use and its context for a particular crisis, but also enables:

- a better understanding of the digital ecosystem in a particular context and the factors that allow this ecosystem to function (e.g. availability and use of charging stations, strength of network coverage, etc).
- the ability to quantify the digital divide including amongst more marginalised groups, such as people with disabilities and women.

The Toolkit addresses the lack of data about the digital needs of people affected by crisis by giving humanitarians and their key stakeholders the tools to measure mobile phone access, usage, preferences and skills in a robust and standardised way. Such data should go some way towards enabling the delivery of appropriate, impactful and dignified digital humanitarian assistance.

1.3

What does the Toolkit not do?

Mobile technology plays a pivotal role in delivering multiple areas of humanitarian programming, but the Toolkit does not aim to replace purpose-specific assessments already available in areas such as:

- broader communication (where resources from UNHCR¹⁰, Internews¹¹ or the CDAC Network¹² would be more appropriate)
- cash and voucher assistance (where it might be better for users to consult the CALP Network Programme Quality Toolbox¹³ or the Red Cross Cash in Emergencies Toolkit¹⁴)
- energy access

Those who want to collect evidence in these areas may benefit from using elements of the Toolkit, but by itself, CoNUA is not designed to answer all the questions necessary to design a successful communication strategy or a mobile money-based cash programme.

Additionally, whilst the Toolkit can help to identify services which may be appropriately digitised, it is not created to support the design process of new digital products or interventions. Here, we would advise that human-centred design approaches be taken to co-create with end users. These approaches can be adapted to suit the context or user group as required.¹⁵

Finally, this Toolkit does not replace the obligation for all humanitarian actors to ensure that their products and services do no harm.¹⁶ Regardless of the evidence generated by using these tools, users should ensure that the programmes they intend to deliver do not lead to any negative consequences for end users.



10. UNHCR (2017). [Information and Communication Needs Assessment Tool](#).

11. Internews (2015). [Why Information Matters](#).

12. CDAC Network (2014). [Assessing Information and Communication Needs: A Quick and Easy Guide for Those Working in Humanitarian Respon](#)

13. CaLP, [Programme Quality Toolbox](#).

14. Red Cross Cash Hub, [Cash in Emergencies Toolkit](#).

15. GSMA (2020) [Human-centred design in humanitarian settings: Methodologies for inclusivity](#).

16. ICRC (2020). [Handbook on data protection in humanitarian action](#).

02

Using the Toolkit



[A guidance document is available.](#) It provides guidance on the types of data each tool is designed to produce, as well as how to effectively administer the Toolkit. It also highlights the most critical decisions and considerations that need to be taken into account before using the Toolkit, which include, but are not limited to:

- how does the tool fit into broader humanitarian programming?
- what protection concerns should be addressed?
- what makes a connectivity assessment different from other humanitarian assessments?

The guidance also includes further reading suggestions, which provide background on fundamental topics, such as humanitarian assessment and emergency connectivity, as well as more detailed understanding of specific topics, such as the required government regulation, mobile money and digital literacy. Given the length and breadth of the complete Toolkit, we recommend that users only select the tools where the resultant data is critical to the intended project or programme. Additionally, each tool includes a cover sheet with concise guidance specific to that tool.

2.1 Overview of tools



2.1.1 End user survey

The end user survey tool is similar to a traditional individual assessment. It is designed to collect statistically representative data so that, with proper sampling, its findings can then be generalised to the entire affected population. Users should select the questions that are most relevant and exclude others to reduce the overall length. The survey can also be used as a question bank so that specific questions can be added to existing surveys.



2.1.2 End user Focus Group Discussion guides

Individual stories, nuanced aspects of mobile technology use, as well as topics that the researcher may not expect, are more likely to be revealed through semi-structured discussions. The Focus Group Discussion (FGD) guides therefore provide guidance on the best ways to collect the qualitative data that can often be lost in structured interviews, as well as explore topics that benefit from group dynamics. The FGD guide also provides suggestions on how to select participants. The questions in each FGD guide have been framed to facilitate free-flowing discussion, with specific prompts embedded, where appropriate, to help deepen discussions as the FGD progresses.



2.1.3 End user exercises

Exercises give mobile phone users the opportunity to demonstrate how the technology is used to complete specific tasks. They help the Toolkit user understand specific pain points for a given task and also learn about creative uses of technology that they may not have expected. One of the exercises included in the Toolkit is a participatory mapping session that helps the facilitator see a setting –for example, a refugee camp – from the perspective of its residents, highlighting areas and features that are prominent to them, rather than to camp managers.



2.1.4

Merchant survey, in-depth interview (IDI) and mapping tools

The tools targeted to merchants focus on understanding what mobile technology-related products and services are available and accessible in the local market, and at what cost. Merchants can be an individual or shop (ranging from small one-person kiosks to more established supermarkets) that sells products and services in a particular location. They are particularly useful when paired with phone users' perceptions on what they need (obtained through the end user tools).

A combination of merchant interviews (structured and semi-structured) allow users to get representative quantitative data on the products and services available in a specific location, but also leaves space for qualitative insights, similar to the end user tools. The mapping tool helps to understand a number of variables, including the opening times of select merchants, the density of phone credit/airtime and SIM card resellers, phone charging points, mobile money agents, and the products and services available for sale (e.g. mobile phone handsets, over-the-counter mobile money services).



2.1.5

Market assessment

This section helps users better understand what mobile phone and mobile money products and services are available and at what cost. It also can show how popular and convenient mobile money is within the local economy, and what electricity access really looks like. Because these topics vary widely from context to context, the best way to obtain this information will likely also vary. Therefore, this tool has purposely been developed to avoid being overly prescriptive and make it applicable in a wide variety of contexts. It can also act as a guide for including elements of or questions about mobile technology into pre-existing market assessment tools.



2.1.6

Signal strength test

The signal test tool helps Toolkit users map out connectivity coverage and quality in the area of interest, which helps collect systematic evidence about network connectivity strength and which services are reliably accessible.

2.2

Usage scenarios

The Toolkit is purposefully designed in a modular way to make certain tools or questions fit the users' specific objective. This allows them to create tailored assessments and to combine it with other tools (either from other pre-existing resources or those created for the specific assessment).

While this Toolkit will likely be useful in a large number of scenarios, and the evidence from assessments using the tools would be valuable when many decisions are being made, we envision that the majority of usages will fall into one of four categories:

- 1) **Broad assessment:** to understand how connectivity and mobile technology is used in a certain context.
- 2) **Cash and Voucher Assistance (CVA):** to assess whether mobile money, or other digital financial services might be a suitable modality to distribute cash assistance.

- 3) **Communications:** to identify where mobile channels (such as IVR, SMS or USSD) could form components of communicating with communities, early warning systems or other communication based programming.

- 4) **Mobile-enabled products:** to assess the degree to which potential users already have access to mobile technology for different products, such as a pay-as-you-go solar home system.

We recommend that users take time to consider their evidence needs for each assessment, but we have highlighted possible ways in which this Toolkit might be used for a hypothetical assessment under each of these areas (see figure 1).

Scenario

Broad assessment

An agency is interested in understanding how the communities they support in a particular refugee settlement access and use mobile technology, to help them identify aspects of programming that can be digitised in an inclusive and appropriate way.



Tool	Relevant	Comment
End-user survey	<input checked="" type="checkbox"/> Yes	
End-user Focus Group Discussions	<input checked="" type="checkbox"/> Yes	All.
End-user exercises	<input checked="" type="checkbox"/> Yes	All.
Merchant survey	<input checked="" type="checkbox"/> Yes	
Merchant IDI	<input checked="" type="checkbox"/> Yes	
Merchant mapping	<input checked="" type="checkbox"/> Yes	
Market assessment	<input checked="" type="checkbox"/> Yes	
Signal strength test	<input checked="" type="checkbox"/> Yes	

Scenario

Cash and voucher assistance (CVA)

Members of a cash working group are considering working with mobile money providers for future disbursements. To assess its feasibility, they want to jointly assess how comfortable users already are with using the technology and incorporate appropriate trainings into programme design.



Tool	Relevant	Comment
End-user survey	<input checked="" type="checkbox"/> Yes	
End-user Focus Group Discussions	<input checked="" type="checkbox"/> Yes	Some.
End-user exercises	<input checked="" type="checkbox"/> Yes	Linked to mobile money.
Merchant survey	<input checked="" type="checkbox"/> Yes	
Merchant IDI	<input checked="" type="checkbox"/> Yes	
Merchant mapping	<input checked="" type="checkbox"/> Yes	
Market assessment	<input checked="" type="checkbox"/> Yes	
Signal strength test	<input checked="" type="checkbox"/> Yes	If working in a contained area such as a settlement.



This would address questions about the distribution modality. Other questions linked to a CVA programme would require other tools.

Scenario

Communication

An agency wants to support the development of an early warning system in one of the contexts where they work. They want to assess whether mobile (IVR or SMS particularly) is an appropriate modality.



Tool	Relevant	Comment
End-user survey	<input checked="" type="checkbox"/> Yes	
End-user Focus Group Discussions	<input checked="" type="checkbox"/> Yes	Some.
End-user exercises	<input type="checkbox"/> No	
Merchant survey	<input type="checkbox"/> No	
Merchant IDI	<input type="checkbox"/> No	
Merchant mapping	<input type="checkbox"/> No	
Market assessment	<input type="checkbox"/> No	
Signal strength test	<input checked="" type="checkbox"/> Yes	If working in a contained area such as a settlement.



This user should also consult tools designed for broader communication needs and carry out a holistic assessment.

Scenario

Mobile-enabled products

A local innovator wants to roll out their mobile-enabled energy solution to a new humanitarian context. They want to understand how much their target customers already use mobile and mobile money.



Tool	Relevant	Comment
End-user survey	<input checked="" type="checkbox"/> Yes	
End-user Focus Group Discussions	<input checked="" type="checkbox"/> Yes	<i>Some.</i>
End-user exercises	<input type="checkbox"/> Maybe	<i>Linked to required technology.</i>
Merchant survey	<input type="checkbox"/> Maybe	<i>If mobile money required.</i>
Merchant IDI	<input type="checkbox"/> Maybe	<i>If mobile money required.</i>
Merchant mapping	<input checked="" type="checkbox"/> No	
Market assessment	<input checked="" type="checkbox"/> No	
Signal strength test	<input checked="" type="checkbox"/> Yes	<i>If working in a contained area such as a settlement.</i>

 This assessment should also include (and prioritise) tools focusing on the key thematic component of the project (energy access and use).

2.3

Guidance documentation

Documentation is available to support the use of the Toolkit. This guidance is broken into two categories:

- **General guidance** outlining key considerations when deploying the Toolkit (including the ethical and protection issues with users must ensure to address). It also helps user consider the key themes within the tools and outlines when and how to deploy the overall assessment.
- **Tool level guidance** provides detail on how to use each of the tools in the Toolkit.

Both guidance documents are available in PDF format on the [GSMA website](#) as well as in .txt format within the Toolkit itself.

03

**Development
and refinement
of the Toolkit**



The process for designing the CoNUA Toolkit started in early-2020 with an inception phase to scope that gap that CoNUA would fill and identify materials and best practice in early-2020. During this phase, a broad range of organisations identified by GSMA and REACH were engaged through interviews, a half-day workshop, and a technical committee consulted on an ongoing basis through the initial development phase. This phase culminated in the development of a draft toolkit.

The next stage involved testing and piloting the draft tools. Originally, this was meant to take place in Lebanon, Uganda and Ethiopia, evaluating whether the tools and their translations adequately conveyed the intended meaning, are easily and consistently understood, and result in useful data. Due to the COVID-19 pandemic, this was not possible.

As an alternative, REACH conducted remote testing of just the end user survey in Lebanon over the phone. Interviewees included 72 demographically diverse individuals, with a mix of Syrian and Palestinian refugees and Lebanese citizens.

Two key tests were conducted. In the first, A/B test, interviewees were asked questions with the same meaning in different ways – all aimed at capturing the same information but using varying wording. Participants identified the version of each question that was easiest to understand. The version most frequently selected was then taken to be optimal. If participants responded differently to the different versions of the same question, the reasons for misunderstandings were investigated and the most straightforward and readily understood version was selected. In the second, test-retest, the same questions were asked twice to interviewees, with an interval between them

of at least two weeks. The responses were then compared to check if interviewees gave consistent answers. Where responses were inconsistent, the reason for the discrepancy was investigated so that the phrasing of the question could be improved.

In January 2021 a beta version of the toolkit was published on the GSMA website and GSMA, REACH and ETC actively encouraged its use. Between then and November 2022 several assessments using the toolkit have been conducted, with varying degrees of support from GSMA or REACH. Three of these deployments were closely monitored by REACH, who collected feedback from the lead agencies as well as assessed the quality and relevance of the data. This enabled the team to revise the full toolkit as well as the supporting documentation and guidance.

GSMA is committed to continuing to update and refine the Toolkit as necessary. As such, we continue to work with partners who want to use the tools both providing guidance and soliciting feedback to inform any future changes. We suggest ensuring that you are always using the most up to date versions of the tools by downloading them directly from the GSMA website ahead of each use. If you are planning to use the toolkit, or have already done so, please reach out at conua@gsma.com to share your experiences.

The Toolkit will undergo additional testing and validation to ensure that it is fit for purpose. It will also allow robust data to be collected – about mobile phone access, use and skills amongst populations of concern – in a rigorously tested and standardised way. This data will be applicable to a wide variety of humanitarian contexts.

A register of all the known deployments of the Toolkit is kept available on the [CoNUA site](#) and you can add your own assessment there too.

GSMA Head Office

One Angel Lane
London, U.K.
EC4R 3AB
United Kingdom
Tel: +44 (0)20 7356 0600
Fax: +44 (0)20 7356 0601

