



CONNECTING REFUGEES

How Internet and Mobile Connectivity can
Improve Refugee Well-Being and Transform
Humanitarian Action.

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Geneva, September 2016

Front cover: Uganda/ A young South Sudanese man tries to get signal on his mobile phone in Nyumanzi refugee settlement, Adjumani, northern Uganda. From this hill overlooking the refugee settlements, refugees can sometimes pick up the South Sudanese phone network and make cheaper calls home. © UNHCR/Cosmos/Frederic Noy



Figure 1: Kenya/ Instant Network Schools open up a new world for Somali refugees. Secondary School Nasib is one of 13 schools and vocational training centres in Dadaab that have been connected to the Internet under an education programme launched in 2014 by the UN Refugee Agency and Vodafone Foundation.
© UNHCR/ Silja Ostermann



From the High Commissioner

Over the last 25 years, the internet and mobile communications have transformed life in the industrialised and the developing world. Now that information is so freely available, we worry more about overload than scarcity. Mobile communications and social media provide an ever-expanding variety of ways to stay in touch with friends, family and colleagues. Cloud computing, remote working and networked global teams are re-shaping the way that we interact and connect.

Not so for the world's refugees. Today, more than 65 million people – the largest number in decades – are living as refugees or are internally displaced, uprooted from their homes in search of safety, and often struggling to access the basic means of survival. But displaced people are also living without the connectivity they need to obtain vital information, communicate with loved ones, access basic services and to link to the local, national and global communities around them. The locations in which they live frequently lack digital networks and infrastructure, or the connectivity that is available there is too expensive. The digital revolution transforming the world is leaving refugees behind.

A connected refugee population can also play a critical role in enabling organizations such as UNHCR to innovate effectively and to improve the quality of services that we provide. Connectivity has the potential to transform how we communicate, the way in which we respond to the protection needs of displaced people, and our delivery of humanitarian services. Most significantly, better connectivity can promote self-reliance by broadening the opportunities for refugees to improve their own lives. Access to the internet and mobile telephone services has the potential to create a powerful multiplier effect, boosting the well-being of refugees and of the communities that host them.

Our research shows clearly, however, that many refugees need additional support to access reliable internet and mobile communications.

The findings also confirm that we need the engagement of the private sector – in particular, large technology companies and mobile network operators – if we are to achieve this vision.

I am delighted that UNHCR's Division of Information Systems and Telecommunications (DIST), in collaboration with Accenture Development Partnerships (ADP), has undertaken this research and is launching a new UNHCR Global Connectivity Strategy for Refugees. I very much hope that it will garner the support it deserves.

– **Filippo Grandi, United Nations High Commissioner for Refugees**



Figure 2: Rwanda/ A girl talks to her family in Burundi for the first time since fleeing political violence, on a phone provided by humanitarian workers in Mahama Refugee Camp, Rwanda.
© UNHCR/Kate Holt

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This document, and the research it contains, was compiled by UNHCR's Division of Information Systems and Telecommunications (DIST) in collaboration with Accenture Development Partnerships (ADP). It provides an overview of the first ever Global Assessment of Refugee Connectivity, as well as a summary of UNHCR's Global Connectivity Strategy for Refugees. The research findings and the strategy presented here are informed by comprehensive field assessments, surveys and desk research into the connectivity situation of refugees globally, in addition to collaborative feedback from divisions and bureaux within UNHCR.

Executive Summary

The Challenge: Refugees are Behind in Connectivity

The digital revolution is transforming the world but refugees are being left behind. Today, almost 65 million forcibly displaced refugees and internally displaced persons are living without reliable internet and mobile connectivity.

Having to live offline means that contact and communication with loved ones is difficult and often impossible. Without access to up-to-date information on events back in their home countries as well as in their countries of asylum, refugees cannot access basic services such as health and education or make informed decisions on how to start improving their lives. A lack of connectivity constrains the capacity of refugee communities to organize and empower themselves, cutting off the path to self-reliance. But it also constrains the kind of transformative innovation in humanitarian assistance at a time when such a transformation has never been more necessary.

UNHCR believes we can do better. Through creative partnerships and smart investments, UNHCR aims to ensure that all refugees, and the communities that host them, are connected to mobile networks and the internet so that they can leverage these technologies to improve their lives. UNHCR recognizes it cannot create a connected refugee population on its own. Partnerships are key – between refugees and host communities, and between governments, civil society and the private sector. In particular, UNHCR is seeking to build strong, multi-faceted partnerships with the technology and telecommunications sectors to ensure that refugees can benefit from the digital revolution.

Our recently completed global assessment of this issue indicates that while seven per cent of refugee communities lack the requisite digital infrastructure for internet access and mobile communications, most refugees in urban areas live in places that have 2G or 3G mobile coverage. For those in rural areas, however, the situation is far worse, with 20 per cent living in areas with no connectivity. Our assessment has also found that refugees often spend up to a third of their disposable income on staying connected – highlighting the main obstacle to refugee connectivity: cost. Globally, refugees are 50 per cent less likely than the general population to have an internet-enabled phone, and 29 per cent of refugee households have no phone at all.

All this is a major barrier to innovation and transformative change in humanitarian action. A connected refugee population would unleash innovation in areas such as communicating with displaced persons, responding to their security needs, and getting humanitarian services to them. It would improve their lives and transform humanitarian operations.

The digital revolution is more than 25 years old. It is shocking we didn't do this before. Now is the time to start.

The Vision of Connectivity for Refugees

UNHCR aims, through creative partnerships and smart investments, to ensure that all refugees, and the communities that host them, have access to **available, affordable and usable mobile and internet connectivity** in order to leverage these technologies for protection, communications, education, health, self-reliance, community empowerment, and durable solutions.

The Strategy: Finding Partners to Tackle Problems

The strategy seeks to address the following key challenges: How can reliable connectivity be made available for refugees? How can it be made affordable? How can refugees make the best use of it?

Working with governments, NGOs and the tech and telecoms sectors, UNHCR will build strong, multi-faceted partnerships that ensure refugees can benefit from the digital revolution. The 10 options below identify opportunities to: 1) expand the availability of mobile/internet networks,

particularly in rural areas with poor or non-existent infrastructure, 2) reduce barriers to affordability for all refugees, and 3) increase the usability and relevance of the internet for displaced populations.

Figure 3: Intervention options to enhance availability, affordability and usability



Country-Specific Strategies & Implementation

The Global Strategy for Connectivity for Refugees sets out the vision and establishes a framework for addressing the challenges for refugees around the world. UNHCR aims to work with its partners to tailor this global approach to local contexts in order to implement country specific strategies. Pilot programmes will begin in 2016 to test and refine these interventions before the strategy can be adopted on an international level. In emergency situations, those interventions that focus on more immediate needs will be prioritized.

UNHCR Budget for 2016

For the launch and pilot-stage implementation of UNHCR's Global Programme for Connectivity for Refugees in 10 countries, UNHCR is actively seeking funding of **USD 6 million**.

Figure 4: Yemeni refugee shows his son's picture on a mobile phone. © UNHCR/Oualid Khelifi





Figure 5: Italy/ Sub Saharan refugees and migrants taking a rest at Le Zagare reception in the province of Siracusa while watching their mobiles. © UNHCR/ Fabio Bucciarelli

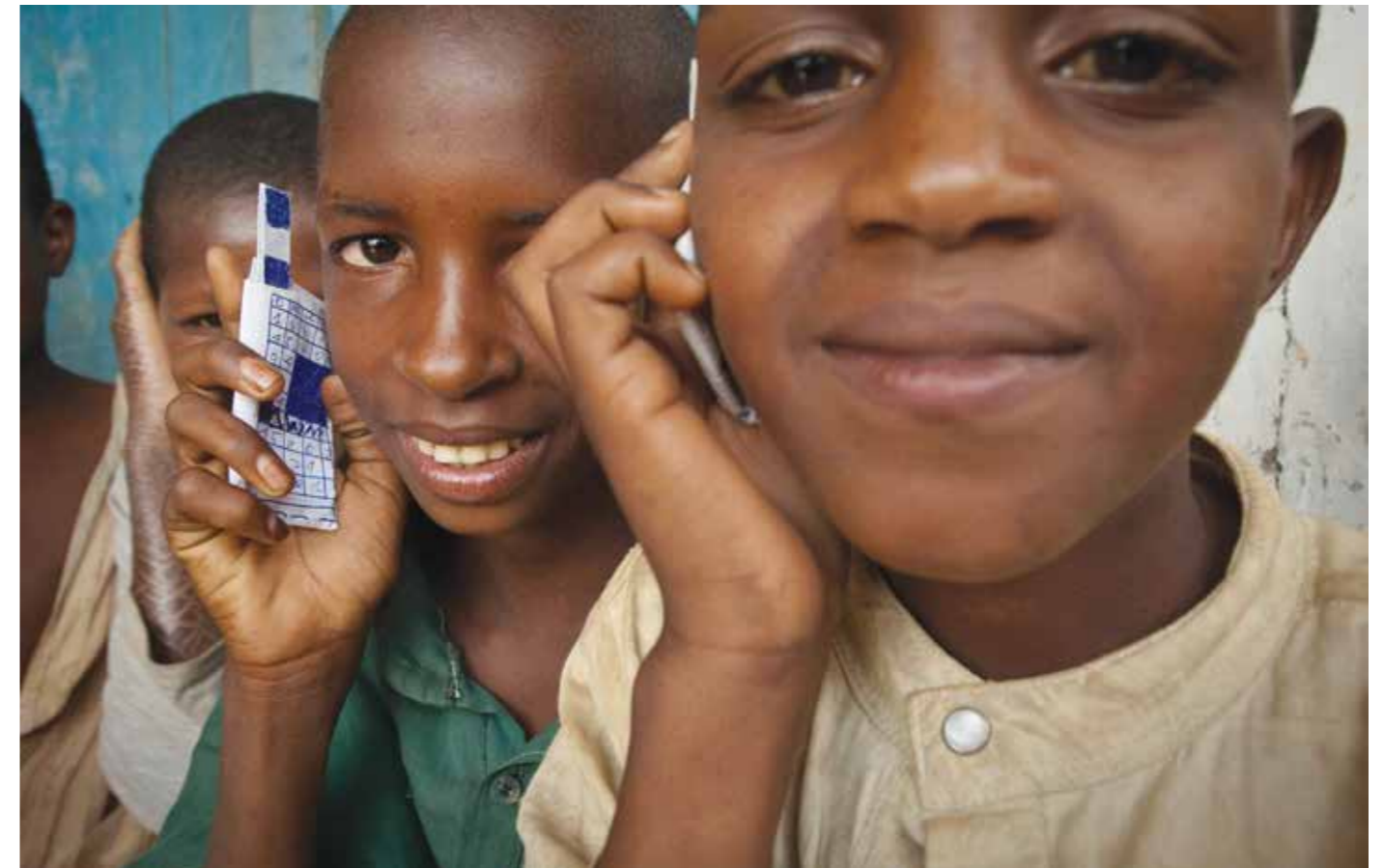


Figure 6: Cameroon/ Gbiti, 140 km east from Bertoua, located on the border with Central African Republic. Gbiti is one of the 3 gates where Mbororo refugees enter Cameroon, with Garou-Boula and Ngaoui. Children are sitting around the school, playing with cellular phones that they drew. The closest phone connection is located 18km away, without any insurance that the network is working. © UNHCR/Frederic Noy/October 2009



Figure 7: Nepal/ A Nepalese girl is seen talking on the phone at her house destroyed by the earthquake in Sindhipalchok. On April 25, a devastating earthquake killed more than 7,500 people and flattened towns and villages across central Nepal. © UNHCR/Diego Ibarra Sánchez/ May 2015

Part One: Research & Implications

Research Findings

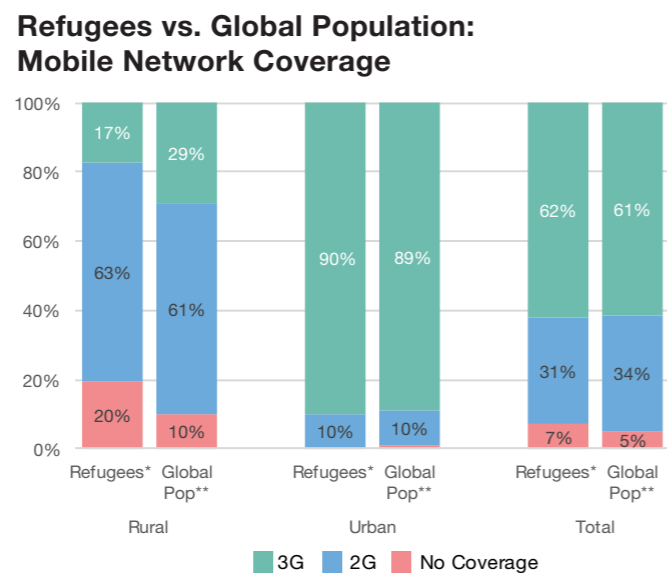
UNHCR, with the support of Accenture Development Partnerships (ADP), carried out a global assessment of refugees' access to, and use of, the internet and mobile phones where available¹, to help inform the development of a new UNHCR Global Strategy for Connectivity for Refugees. The research made 11 key findings.

1. Refugees have similar access to mobile networks as the global population. However, when we look at the urban and rural split, rural refugees have less access to connectivity and are often overlooked in connectivity initiatives.

Given that developing countries today host more than 80 per cent of the world's refugees, the perception has arisen that a large part of the world's refugee population must live in areas not well covered by mobile networks. UNHCR's research has determined that this is not the case. Using the most recent data, UNHCR has found that 93² per cent of all refugees live in places that are covered by at least a 2G network, and that 62 per cent live in locations covered by 3G networks.

However, there are large differences in the availability of mobile networks when the urban and rural data are examined separately. Unsurprisingly, urban areas tend to have better coverage. Ninety per cent of refugees living in urban areas are covered by 3G networks, similar to the proportion of global urban population living in 3G areas (89 per cent).

Figure 8: Refugee vs Global Population Coverage



In rural areas, while coverage and quality is progressively improving thanks to increasing mobile network penetration, refugees risk being overlooked in these expansion plans. For instance, only 17 per cent of rural refugees live in areas with 3G coverage, compared to 29 per cent of the global rural population, while 20 per cent of rural refugees have no mobile coverage at all, which is double the proportion of global rural population without coverage. Rural refugee locations are densely populated, however, so if they are excluded from plans to expand networks, this amounts to a huge missed opportunity.

¹ The analysis was informed by (i) direct feedback from 238 refugees through 20 focus groups in 10 countries; (ii) survey responses from 95 UNHCR staff members representing 44 countries and over 3 million refugees; (iii) in-person interviews with over 30 UNHCR staff from 5 countries; (iv) analysis of proprietary mobile network coverage data; and (v) supplementary data from UNHCR and the public domain

² Refugee Connectivity: GSMA/Collins Bartholomew 2014 Coverage Explorer product; MNO websites; Opensignal; GSMA Intelligence Country Data Reports; Survey Results (Top 50 Refugee Camps Connectivity Assessment, Global UNHCR Staff Connectivity Survey); Connectivity Missions (Tanzania, Kenya, Greece, Jordan); GSMA Intelligence country data.

**Global Population connectivity: ITU Facts and Figures 2015; UN Statistics; Refugee rural/urban distribution: 2013 UNHCR Statistical Yearbook – Table 16

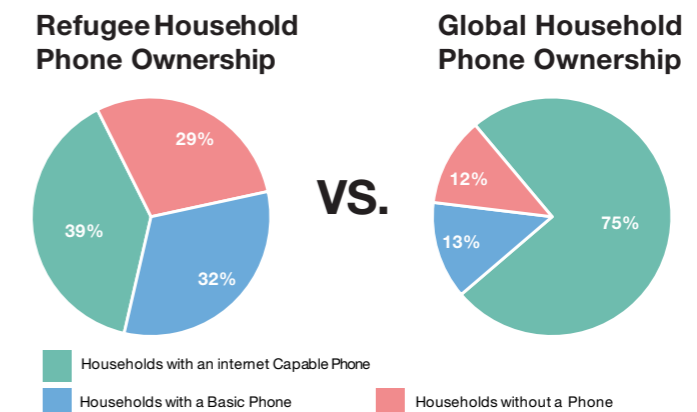
Figure 9: Maher shows the last selfie he took with his family before they left for Ethiopia. "The phone rung at 6am, IOM called to instruct us to go to the airport, fighting was so fierce then that I even thought about how risky it would be to go, then I came back to my senses to realise we had no other choice. Two hours later, I was told they, my wife and my two children, could go to Ethiopia, but I couldn't. That was the selfie I took after complaining and eventually accepting that separation was real and about to happen for god knows how long". © UNHCR/Oualid Khelifi



Three-quarters of the total refugee population lives in Sub-Saharan Africa (29 per cent), the Middle East and North Africa (29 per cent) and South Asia (18 per cent), areas that already have lower-than-average 3G coverage³.

2. Affordability constraints – the most significant hurdle to overcome in connecting refugees – cause average phone ownership and internet access for refugee households to be much lower than for global households.

Figure 10: Refugee versus global household phone ownership



Compared to the world as a whole, refugee households are approximately 50⁴ per cent less likely to have an internet-enabled phone and approximately two and a half times more likely to be living without a phone. This is driven by refugees' extreme difficulties in affording a device or data plan, a problem caused by factors such as the very fact of their displacement or by government restrictions on their right to work or move freely from place to place. Owing to a lack of income, refugee households often share phones within the family unit, as well as between families (especially in rural camps). Thus the per capita phone ownership gap between refugees and the rest of the population is likely to be large.

³ 2014 UNHCR Statistical Yearbook – Table 16. Only refugee locations with coverage and geographic information were included in analysis & Facebook – 2015 State of Connectivity Report

⁴ Basic phone and internet enabled phone ownership: Focus groups and Global UNHCR Staff Connectivity Survey. Other sources: Overall household phone ownership estimates based on ITU 2015 World Telecommunications Indicators Report. Split between smart phone, feature phone, and basic phone penetration based on research reports from Mobiforge & eMarketer.

3. As with the global population, refugees experience differences in network coverage and device ownership in urban and rural areas.

Figure 11: Urban versus rural network coverage

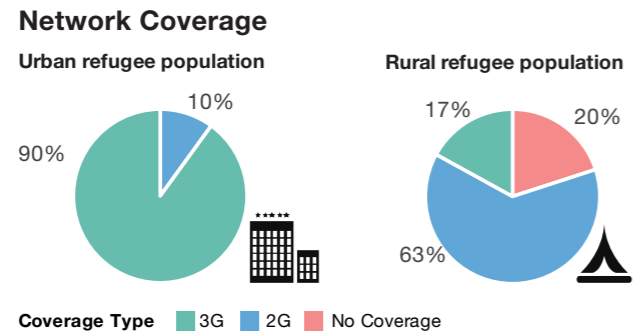
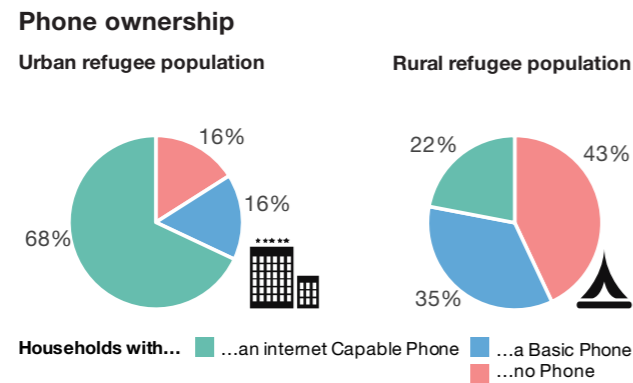


Figure 12: Urban versus rural refugee household phone ownership

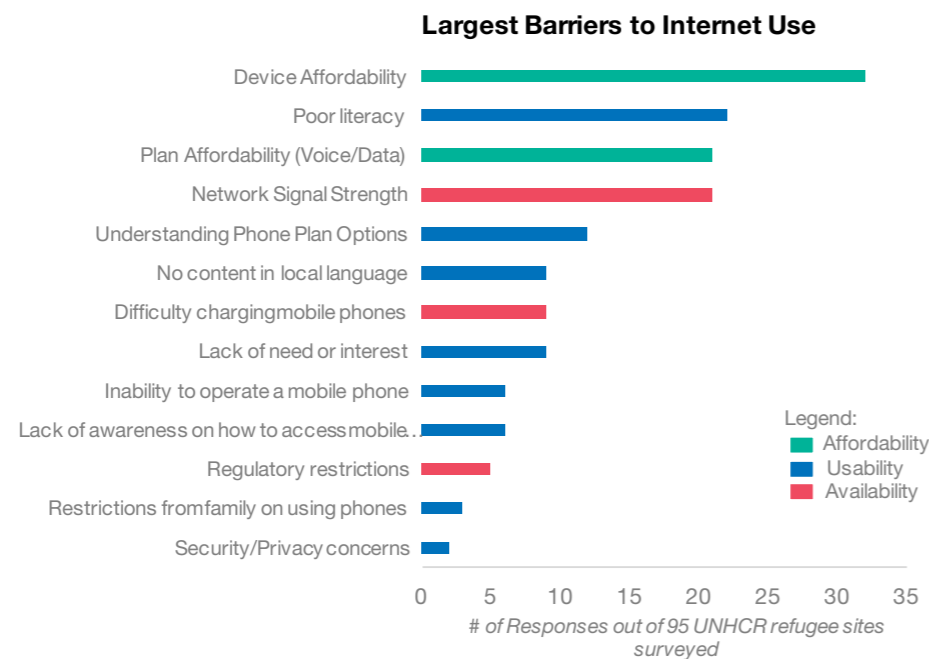


Forty per cent of all refugees live in rural locations. In these places, only 17 per cent have access to mobile networks⁵ with 3G speeds or better. Moreover, rural locations typically have significant problems getting access to electricity. Such challenges are not limited to refugees, however – their host communities and other rural populations all over the world experience similar issues. In terms of phone ownership⁶, 68 per cent of refugee households in urban locations have an internet-capable mobile phone, versus just 22 per cent in rural locations. This is partly because rural communities are often poorer and have worse mobile coverage, but also because refugees in towns and cities have a greater need of such devices for navigation and information; they prioritize phone ownership as critical to their security.

4. Language and digital literacy levels among refugees create yet another barrier to connectivity.

UNHCR staff members indicate that next to cost, low levels of literacy comprise the second-biggest barrier to connectivity for refugees⁷. Since much of the internet and many mobile applications are in English, large numbers of refugees with limited or no English skills are prevented from using them. There are also variations across age groups and backgrounds, with younger people tending to be more computer literate while refugees who hail from towns and cities have, as a rule, higher levels of digital literacy than those originally from the countryside.

Figure 13: Largest barriers to connectivity at refugee sites



5 Global UNHCR Staff Connectivity Survey 2015
 6 Global UNHCR Staff Connectivity Survey 2015
 7 Global UNHCR Staff Connectivity Survey 2015

In some cases, refugees lack literacy in any language, which makes it virtually impossible for them to use the internet. And even where they have linguistic literacy, a lack of digital knowledge and familiarity can be an issue.

Refugees from countries with poor internet penetration, or who have spent their entire lives in camps, often have difficulty understanding how to use the internet. Furthermore, mobile data price plans can be complicated to understand, causing many refugees to avoid buying them.

5. Mobile broadband is the cheapest and most scalable way to access the internet, but fixed-line broadband can provide targeted services in places like classrooms and community centres and thus bridge gaps in coverage.

Figure 14: Fixed-line vs mobile penetration based on connections, 2012

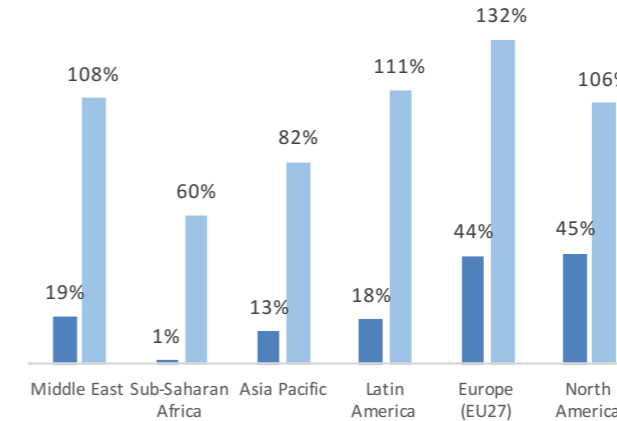
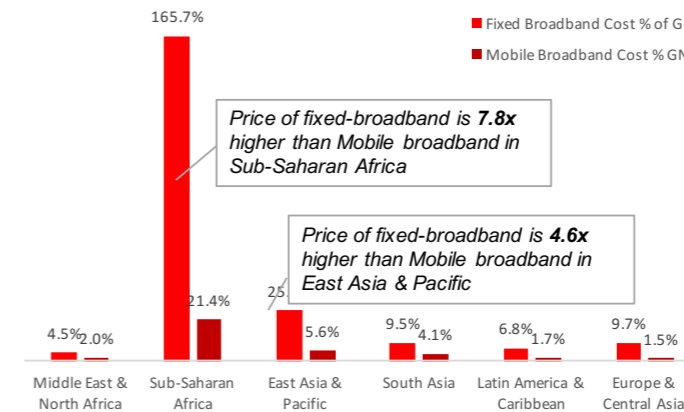


Figure 15: Relative price of fixed broadband to mobile broadband plan, 2013-14



Mobile broadband (e.g. internet accessed via 3G+ mobile data networks) is both cheaper and more widely available than fixed or satellite broadband. Across the world, the number of mobile broadband connections is higher than that for fixed broadband⁸. The gap is particularly large in Sub-Saharan Africa, where mobile connections are almost 50 times greater than fixed-line connections. Mobile broadband is also significantly cheaper than fixed.

Fixed broadband is over four times more expensive than mobile in Sub-Saharan Africa and East Asia and the Pacific⁹. However, in some locations (e.g. remote areas or education centres), fixed broadband solutions such as Wi-Fi could be a valuable means of connecting key access points such as classrooms and community centres. For example, UNHCR's Community Technology Access programme is underpinned by Wi-Fi, providing services to refugees who want to learn how to use computers and the internet.

Furthermore, there has been a rise in innovative new solutions, aimed at delivering connectivity to the unconnected, such as TV White Space, drones, balloons, and so on. The future of connectivity, especially in poorly covered areas, may look very different if these solutions reach scale.

6. Despite affordability constraints, refugees place significant value on being connected.

Refugees deem connectivity to be a critical survival tool in their daily lives and are willing to make large sacrifices to get and stay connected. For instance, in Jordan, refugee families spend 10-20 per cent¹⁰ of their cash distributions on connectivity (after paying for housing) – prioritizing it over many other important needs such as clothing and health care. In Tanzania, refugees were observed to be selling as much as a third of their monthly food ration in order to purchase airtime and data for their mobile phones. Survey data shows that connectivity has often been prioritized over items such as education, clothing and health care.¹¹

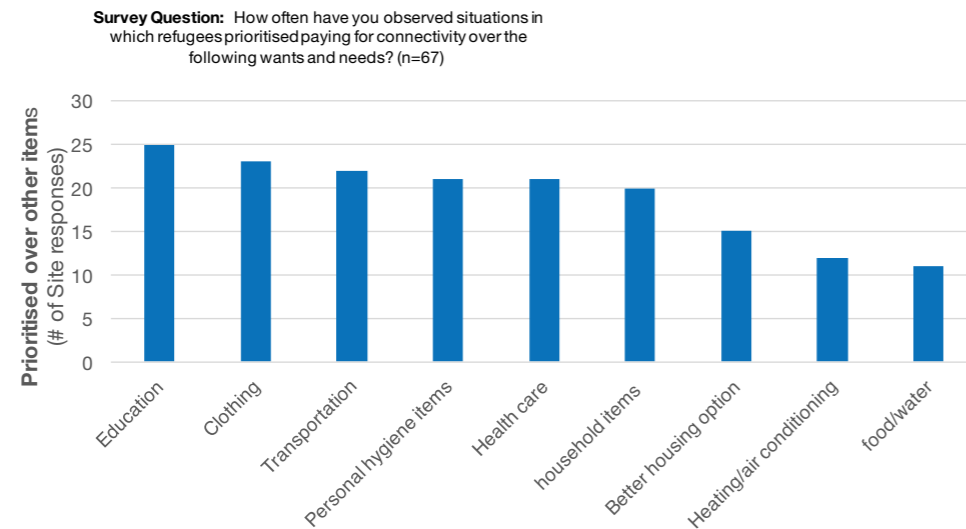
8 Adapted from: GSMA Intelligence Report: Gauging the relationship between fixed and mobile penetration, February 2014

9 ITU Broadband Cost Database 2013-2014

10 Based on interviews conducted with four separate refugee families living in Amman and a focus group of over 20 refugees in Amman.

11 Global UNHCR Staff Connectivity Survey 2015

Figure 16: Instances where connectivity has been prioritised over other items

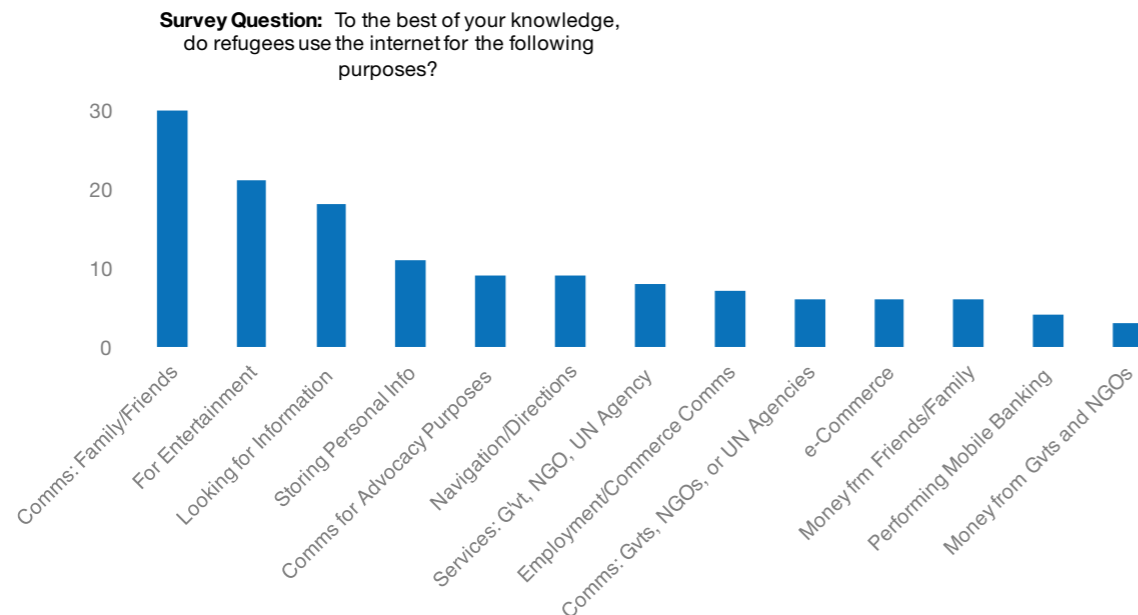


7. Connectivity is critical for refugees in communicating with friends and family, in both their home and host country.

In all discussions between refugees and UNHCR staff, communication with friends and family was identified as the most important need from connectivity. Arguably, this need is greater for refugees than for the general population because displacement often separates refugees from their loved ones and can leave them isolated. Knowing where friends and family are and knowing that they are safe is of paramount importance to refugees.

Apart from that, connectivity has proven to be vital in empowering refugees to educate and entertain themselves, and for earning a livelihood in refugee sites.¹²

Figure 17: Most popular uses of the internet for refugees



8. There are cultural and societal challenges associated with “inclusively” connecting women, but these challenges are not unique to refugees.

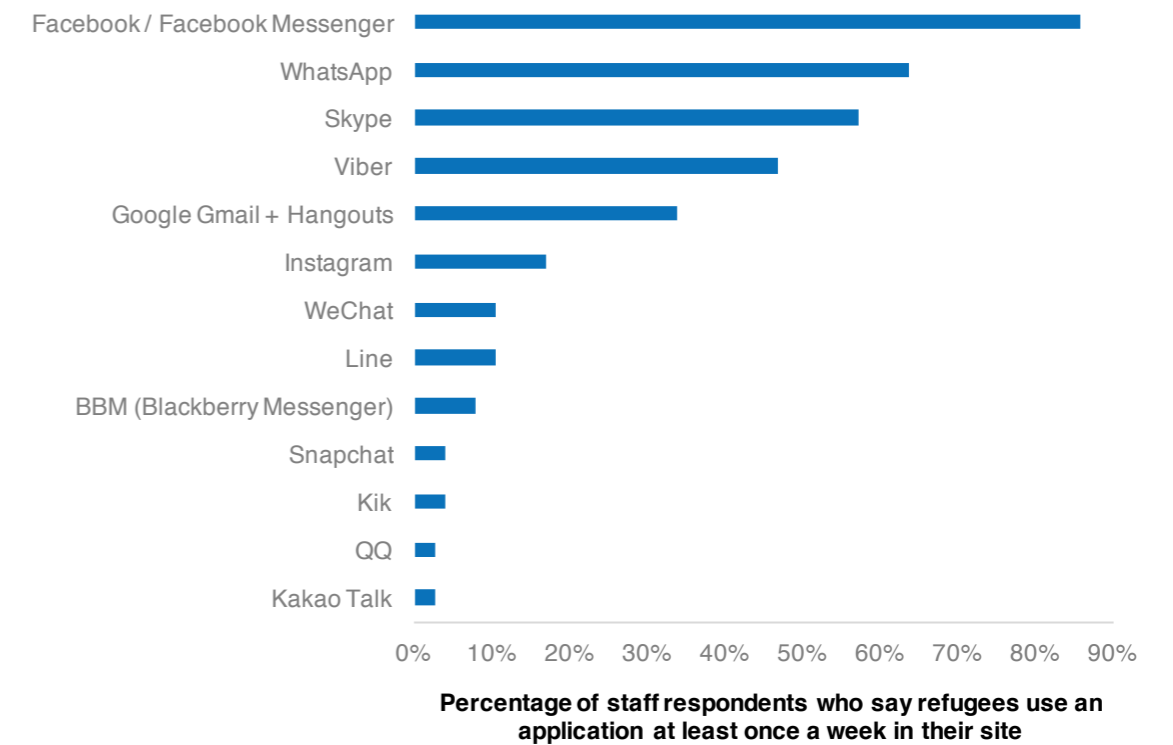
In refugee populations, women, the elderly and the less educated are less likely to have access to mobile phones and the internet. Cultural and social norms often dictate who does or does not have access to technology. This finding reflects the situation outside refugee populations, however. For example, in low and middle-income countries, a woman is 21 per cent less likely to own a mobile

phone than a man¹³. This imbalance can exacerbate situations for the most vulnerable refugees. Insights from focus groups below show some specific issues that refugee women face with regard to connectivity:

- A single woman with several children and no income has a strong need to communicate with her children. In order to access the means to do so (e.g. procure a phone), she may be more willing to endure exploitation because she has no other way of affording it.
- Some women in Rwanda would not be allowed access to the internet or to a mobile phone because their husbands would be more likely to suspect them of infidelity.
- In Jordan, families have “connectivity managers” who purchase phone plans for the household. While instances of connectivity managers being women were observed, men generally control who has access in the household and how much access they have.

For older people less familiar with technology and for people with lower levels of education, access to the internet and mobile communications is clearly not enough by itself if they are to benefit from all the opportunities these technologies can offer, and more must be done to help them in this regard.

Figure 18: Refugee social media use



9. There is an enormous opportunity for UNHCR and its implementing partners to better leverage connectivity.

The survey showed that Facebook, Skype, Viber and WhatsApp are the most popular social networking apps among refugees, and yet UNHCR in particular makes very little use of social media to communicate with them.¹⁴

While some humanitarian groups are beginning to develop services that make use of mobile and internet technologies, such initiatives are few and far between. In areas where there is existing connectivity, NGOs and UNHCR are not fully taking advantage through mobile apps or SMS platforms. Transmission of important information to refugees is often done via individual home visits conducted by staff or refugee representatives. This ‘analogue’ communication process is often time-consuming and inefficient. Connecting refugees will have a transformative impact on the humanitarian sector.

¹³ GSMA and Cherie Blair Foundation for Women, Women & Mobile: A Global Opportunity: A study on the mobile phone gender gap in low and middle-income countries
¹⁴ Global UNHCR Staff Connectivity Survey 2015

The insights below from discussions with UNHCR staff and partners demonstrate these current gaps in the use of connectivity:

- NGOs in Tanzania said there were huge safeguarding opportunities through enhanced connectivity (e.g. help lines or mass messaging to inform refugees about major issues, such as a cholera outbreak).¹⁵
- There are, however, some new solutions being developed to reach refugees, such as UNHCR's Ascend¹⁶, which has been piloted in Costa Rica. This uses Frontline Cloud (an online SMS management platform) and allows organizations to send out mass messages or surveys to refugees while keeping a digital record of responses. But to get the best out of this sort of technology, such initiatives would have to be expanded and coordinated via a comprehensive programme.

In the annex, we take a deeper look into two specific profiles: Julian, a Burundian refugee from Nyarugusu, Tanzania, and Tali, a UNHCR field officer in Amman, Jordan. Both profiles highlight the huge benefit connectivity could bring to refugees but also how it could revolutionize the way UNHCR operates and communicates with persons of concern. *Note: the names and details presented in the profile have been altered to protect their identities.*

Figure 19: Hungary/
A photograph on refugee Dara's phone shows his destroyed home in Kobane, pictured in Szeged, Hungary. © UNHCR/Andrew McConnell



10. Refugees, UNHCR staff and NGO partners see connectivity as critical to the protection of refugees.

Discussions with refugees, UNHCR staff and partner organizations revealed a consensus that connectivity can significantly improve refugee safety and security. For example, refugees in a Nairobi focus group expressed a desire to be able to quickly alert their communities via mobile if they encountered any danger¹⁷. There is great demand to use phones to access information on issues such as food distribution, water and sanitation for health (WASH) assistance and other health services. UNHCR staff and partners agreed that there were endless possibilities for digital protection services.

The insights below from refugees highlight how useful connectivity would be to them for protection reasons:

- “The problem is that in my community, getting timely access to first aid is hard, so it'll really help if an app can teach basic first aid, or warn of disease outbreak” Urban refugee in Kenya.
- “Due to the precarious protection situation, a mobile phone is considered a protection tool, for example to call friends if arrested, to alert friends of raids, or to use applications like Waze to navigate safely” Urban Refugee in Malaysia
- “A safety app would be very useful to warn us about which part of community/city we should avoid dangerous areas” Urban Refugee in Kenya.

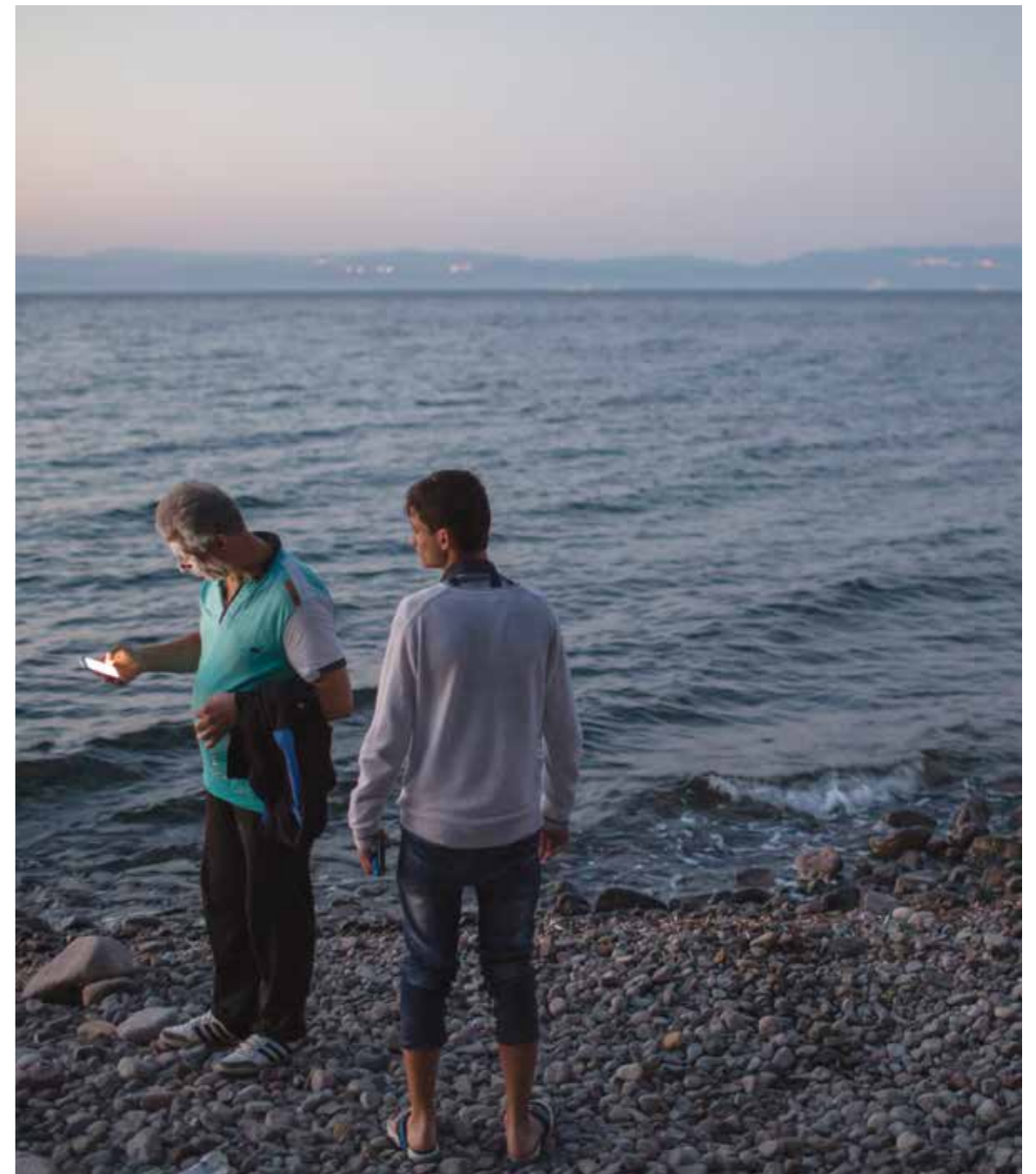
¹⁵ UNHCR Refugee Connectivity Mission to Tanzania 2015
¹⁶ http://innovation.unhcr.org/labs_post/ascend/
¹⁷ UNHCR Refugee Connectivity Mission to Kenya 2015

However, there are also security risks arising from refugees revealing their identities online, particularly for those who are politically at risk. Data security is therefore extremely important, alongside the necessary safeguards to protect organizations holding sensitive information against the threat of cyber attacks.

11. The private sector is keen to support refugee connectivity and has already started investing in transformative connectivity initiatives – but there is a need to scale up and expand these partnerships.

There are a few initiatives underway to bring connectivity to refugees – for example, the new mobile phone mast that Vodacom has put up in the Nyarugusu camp in Tanzania, providing 3G access. This and similar initiatives show a willingness on the part of the private sector to support network expansion and improve conditions for refugees. However, these should be scaled up from small, site-specific projects to globally coordinated programmes by developing more comprehensive partnerships with the organizations and companies leading these projects. There is both the need and the opportunity to expand connectivity for protection, self-reliance and the delivery of services. What's more, any such initiatives must also take into account that access to electricity is essential if refugees and host communities are to remain connected.

Figure 20: Greece/
Refugees arrive on the Island of Lesbos after crossing the Aegean from Turkey. Syrian refugees who just landed on the Northern shores of Lesbos Island from Turkey try to get mobile phone receptions so that they can check their location and notify relatives that they arrived safely. © UNHCR/Ivor Prickett



Implications of Research Findings

The research proves that there is enormous opportunity and potential to enhance refugees' lives by increasing their access to connectivity and their ability to use it to help themselves and others. Furthermore, host communities as well as refugees feel the benefits.

The following conclusions from the research provide an insight into how best to enhance connectivity for refugees; they form the basis of the Global Strategy for Connectivity for Refugees.



Improvements to mobile networks will have a positive impact on refugees as well as their host communities. Urban refugees have similar internet and mobile network coverage as the rest of the world. Refugees living in rural locations are more likely to have less coverage and less access to power infrastructure than the communities around them. Indeed, 20 per cent of rural refugees (0.9 million people in total) have no coverage at all, and 63 per cent have only 2G access (2.8 million people in total). But refugee sites are typically densely populated. Increasing coverage in those areas will not only benefit the refugee population but also the host community. This makes the value proposition for expanding network coverage to rural refugee locations more attractive to mobile network operators, host communities and host governments.



Making connectivity affordable is critical. Where networks do exist, refugees struggle to afford connectivity but still buy data with the scarce means they have, though strictly limiting its usage. Smartphone ownership, in particular, presents the greatest challenge, with refugees almost half as likely as the general population to own an internet-enabled phone. The inability of refugees to afford mobile and internet is of particular concern in countries where the right to work and freedom of movement are not granted. One way of overcoming this would be to provide refugees with access to reduced prices and/or increasing their purchasing power in order to sustainably improve their connectivity while pursuing livelihood out of camp strategies.



Mobile broadband is a feasible way of improving refugee connectivity at scale. Providing free and low-cost Wi-Fi for refugees in community centres, schools and similar places can also boost access, particularly when costs would otherwise be prohibitive. Mobile broadband is the most widely used form of internet access where it is available, as it is also the cheapest. Providing free or cheap Wi-Fi in community centres, schools and other places where refugees gather can also improve access, particularly when costs would otherwise be prohibitive. This approach is also effective in towns and cities, particularly when Wi-Fi hot spots are combined with computer learning centres. Furthermore, in future we may see that the rise of innovative connectivity solutions, such as TV White Space (unused broadcasting frequencies), drones, balloons, etc will complement mobile and fixed broadband in reaching previously under-resourced areas.



UNHCR and its partners can maximize impact by using connectivity better to deliver services. Given vast digital disruption occurring across the world, there is a huge opportunity for partners to leverage connectivity for refugee protection. But being online poses certain risks associated with data security. As such, training programmes should include both digital literacy alongside approaches for using the web securely. Furthermore, connectivity should also be made available to refugees in their own and in local languages – indeed, refugees themselves could translate content, which would provide them with some income. However, without affordable connectivity, refugees will not be able to access digital services. Unless mobile and internet access are available and affordable, innovative digital apps and services will not have a truly transformative impact.

Figure 21: Jordan/
A billboard above a
shop along Za'atari's
market area, which
references various
social media
platforms and
messaging apps that
are popular among
Syrians. Photo credit:
Al Jazeera/Michael
Pizzi.



Figure 22: Uganda/
A young refugee calls
relatives who stayed
behind in Congo.
© UNHCR/Frederic
Noy/ November 2012



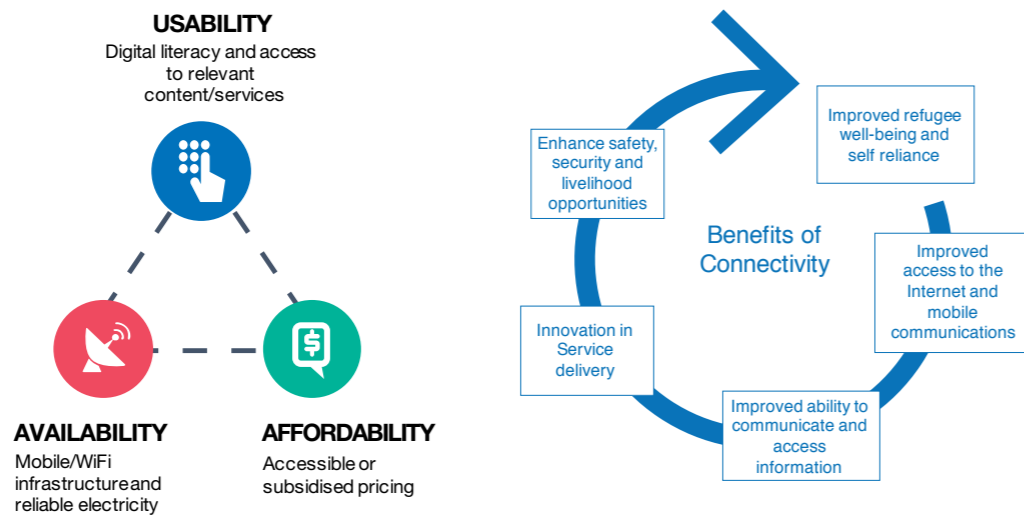
Part Two: The Strategy & Way Forward

Strategy Objectives

To address the issues identified in the Assessment, refugees must have access to **available, affordable and usable mobile** and internet connectivity. As such, UNHCR created the Connectivity for Refugees programme to collaborate with external partners and implement strategic interventions tailored to country and region specific contexts.

UNHCR aims to ensure refugees have access to **available, affordable and viable mobile and internet connectivity** in order to use it for protection, communication, education, health care, self-reliance, community empowerment and other durable solutions.

Figure 23: Enhanced Availability, Affordability and Usability Enables 5 Key Benefits



Governments and the private sector, in particular mobile network operators, can ensure refugees have access to networks and can afford connectivity. In certain cases, UNHCR will support subsidies for vulnerable populations to enable them to purchase connectivity, as well as support community-based free/low-cost Wi-Fi services. In addition, digital training for refugees must be provided in order to facilitate the delivery of refugee-specific content, alongside ensuring they can navigate the web safely. These interventions will enhance access to mobile and internet connectivity. Available mobile/internet infrastructure and affordable access are the foundations of connectivity. Usable services and applications will ensure that transformative change can occur at scale for refugees all over the world.

It is important to note, however, that refugees benefit from all levels of connectivity. For instance, even with a 2G cellular network and access to a basic phone, they can carry out money transactions, access SMS and interactive voice response (IVR) based training, and communicate with their families. Although the ultimate goal is to target broadband speeds and make internet-enabled devices available in order to truly empower refugees, UNHCR will design its interventions so that people can benefit from the full range of available connectivity.

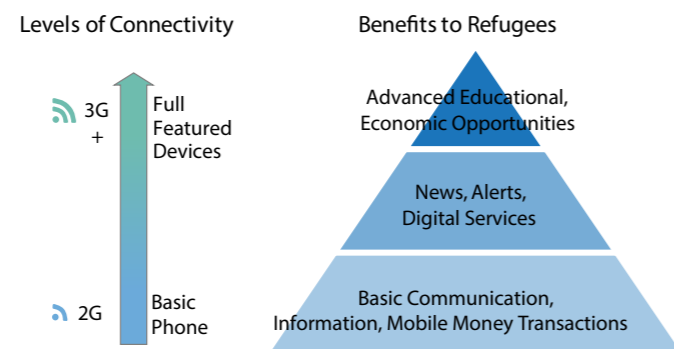


Figure 24: Tanzania/ A new 3G tower built by Vodacom in the middle of the Nyarugusu camp, Tanzania



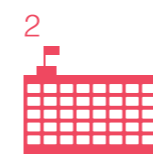
Strategic Interventions

UNHCR will deploy a mix of ten strategic interventions that address issues of availability, affordability and usability, refugees face. During the pilot phase, our analysis will identify which interventions require adapting to country-specific contexts.

Availability Interventions: Improving Access to Networks and Reducing Regulatory Barriers.

Roughly 40 per cent of all refugees and 40 per cent of the global population do not have access to a 3G+ mobile network, most of them in rural areas. **Increasing the availability of mobile and internet networks for the 38 per cent of refugees that do not have mobile broadband access will benefit both refugees and host communities.** Moreover, providing and maintaining accessible electricity infrastructure is essential for ensuring that people can stay connected.

UNHCR aims to improve availability where networks are poor through partnerships and advocacy with the private sector and governments. Where advocacy is unable or unlikely to yield positive outcomes, UNHCR may itself invest in connectivity infrastructure (such as microwave links, satellites, and electricity supply), but only as a last resort. The four availability interventions are discussed below.



Improving access to mobile networks allows for the most scalable and affordable access to connectivity. **UNHCR will advocate to mobile network operators to establish or expand networks in locations with limited 3G capability (or none).** Specific appeals would include construction of new cellular masts, installation of temporary masts, or enhancement of existing infrastructure. Based on country specific analysis, UNHCR will collaborate with network operators to devise a market-based approach to network expansion to refugee locations.

UNHCR will advocate to telecommunications regulators and other agencies to create incentives for mobile network operators, internet services providers (ISPs) and other technology companies to expand their infrastructure. UNHCR will also advocate to governments to include refugee locations in rural electrification plans and to reduce regulatory barriers preventing refugees from accessing connectivity (e.g. looser identification requirements to obtain SIM cards). Working to reduce regulatory barriers is applicable to both rural and urban refugees.

UNHCR will advocate to ISPs and other tech companies to establish or improve Wi-Fi infrastructure in refugee locations by using microwave links, satellite dishes, unused TV spectrum and connectivity-enabling drones and balloons, among other innovations. UNHCR will also advocate for alternative power solutions when electricity from the grid is not available. UNHCR would perform similar analysis and collaboration as in Intervention 1 in order to partner with ISPs and other companies.

Where advocacy with the private sector and/or the government is not feasible or is unsuccessful, **UNHCR will consider investing in Wi-Fi network infrastructure via ISPs and other alternative technology companies.** Investment might also be made in electricity infrastructure (e.g. solar charging stations) to support mobile charging, especially in rural areas and camp-like situations. This intervention is a lower-priority option, however, owing to high resource requirements and a lack of sustainability.

Affordability Interventions: Reduce Price of Connectivity and Expand Community Access

UNHCR will prioritize affordability interventions where possible as all refugees have difficulty affording devices, mobile data plans and internet access. From our assessment, refugee households are half as likely as the general population to own an internet-enabled phone¹⁸. UNHCR estimates that those living in rural areas are more likely to find connectivity unaffordable because of the greater lack of livelihood opportunities.

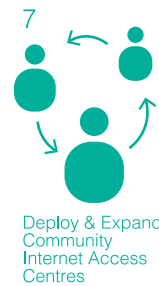
There are three potential interventions available to address refugees' affordability challenges:



UNHCR aims to reduce the cost of device ownership by advocating to mobile network operators, ISPs and alternative technology firms to create refugee-specific internet plans, provide discounts for devices or allow greater access to low-cost devices in refugee sites. Refugee-specific internet plans could comprise low/no-cost products such as operator-sponsored free data packages (e.g., free 100 MB daily), zero-rated applications (e.g. Facebook's Free Basics), and low-priced bundles tailored for refugees (e.g., more international SMS and less local voice services in Sub-Saharan Africa). Where relevant, UNHCR will also collaborate with the private sector on custom pricing for implementing partners and other humanitarian agencies to reduce the cost of providing digital services to refugees (e.g., discounts on mass-SMS platforms or mobile money transfer rates to support mobile cash distribution).



For particularly vulnerable populations who may not be able to access reduced pricing from Intervention 5, UNHCR may electronically or physically distribute cash/voucher subsidies. This could take shape in one of two ways: (1) altering methodologies of existing UNHCR/partner cash distribution programmes (e.g., UNHCR's programme in Jordan and the World Food Programme in Kenya) to include connectivity need; or (2) implementing new e-voucher initiatives focused exclusively on connectivity. As part of this intervention, UNHCR would also identify and advocate to private sector partners who are open to donating products or devices to refugees.



UNHCR will establish and operate community internet access centres in collaboration with implementing and private sector partners. **Community internet access centres further reduce the cost barriers for refugees who cannot afford individual devices or plans.** Moreover, equipped with computers and tablets, these centres could provide refugees with access to a more complete internet service to enable enriched learning and livelihood opportunities. Where possible, community internet access centres will also be accessible to host communities to strengthen ties between them and refugees.

Figure 25: Uganda/ 25 year old Athong Mayen works at his day job in his phone charging shop in Nyumanzi refugee settlement in northern Uganda. © UNHCR/Cosmos/ Frederic Noy/ December 2014



¹⁸ 2015 UNHCR Connectivity for Refugees Survey & Refugee Focus Group Discussions. Refugee Household internet access based on smartphone ownership rates

Usability Interventions: Enable Richer Use of the internet through Training Programmes and Relevant Digital Content and Services

The global connectivity assessment revealed that six of the top ten challenges with refugee connectivity were related to usability issues such as poor literacy, lack of digital skills, and lack of relevant content in the local language. To address this, **UNHCR will work with implementing partners and the private sector to deliver training and encourage the creation of refugee-relevant content and services.**

In areas where only 2G cellular coverage is available, UNHCR will encourage implementing partners to take advantage of SMS or voice-based services, such as appointment booking or mass SMS announcements, to improve communication or content delivery to refugees. In parallel, UNHCR will be advocating for development of digital service delivery once mobile broadband is available to refugees.

There are three interventions that address usability barriers to connectivity:



UNHCR will coordinate the development and delivery of digital literacy training programmes to increase refugees' ability to fully use the internet. Such training will also include information around data security so that refugees are aware of how to use their data online responsibly. The development and delivery of these programmes will be in co-operation with implementing and private sector partners. UNHCR will look to integrate and work with existing UNHCR and partner initiatives, such as the Community Technology Access (CTA) programme.



UNHCR will work with implementing partners and the private sector to develop and utilize applications to support digital service delivery for refugees (e.g., mobile health alerts, e-registration). Where appropriate, UNHCR will fund and develop applications to support protection and other mandates. UNHCR will also work to make it easier for partners to deliver services digitally by releasing non-personal refugee data in open formats, recommending application standards and enabling Application Program Interfaces (APIs) to standard web services.



UNHCR will facilitate the development of refugee-relevant content and applications for enhancing service delivery. Through training and communications, UNHCR will encourage partners and refugees to develop and publish relevant content online and to make use of social media. This will facilitate collaboration within refugee communities, leading to increased well-being and self-reliance. UNHCR will also support the efforts of refugees to publish their own content online in a safe and responsible manner. The connectivity programme will also take into consideration the various native languages of refugees and offer solutions, such as having multilingual refugees serve as translators.

Figure 26: Kenya/ Many children in Dadaab refugee camps were born as refugees and have never left the camps. A total of 13 Instant Network Classrooms were established in schools and vocational training centers across all five Dadaab camps in September 2014. Vodafone Foundation provides funding, technical support, some of the tablets and training. Huawei donated the majority of computer tablets and Safaricom is providing internet connectivity. © UNHCR/Sijja Ostermann



Figure 27: Turkey/
After days of fleeing
from Syria, Wazam, a
Syrian refugee, reach
Suruc camp in Turkey.
© UNHCR/Ivor
Prickett



Figure 28: Italy/
African refugees and
migrants wait at Le
Zagare reception
centre in Italy.
© UNHCR/Fabio
Bucciarelli



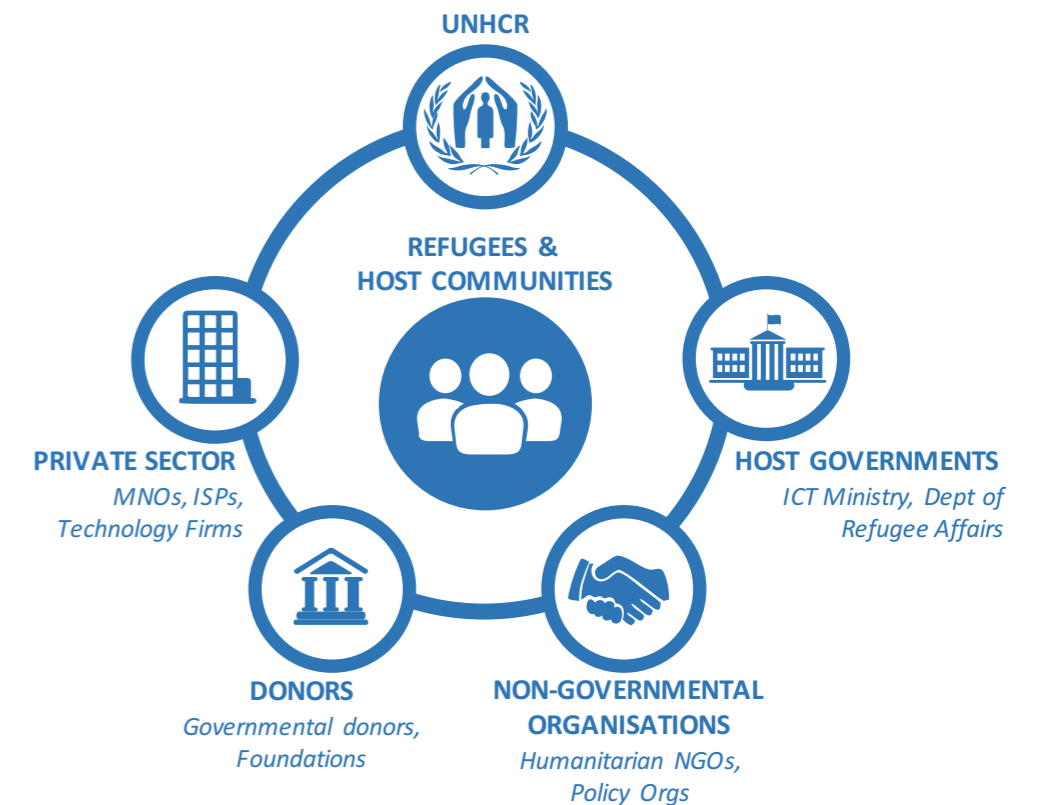
Implementation Approach

UNHCR will collaborate with relevant partners to provide sustainable connectivity for refugees and identify the required resources to lead the planning, execution, and monitoring of implementation. The approach will be customized for each target country.

Partners

UNHCR cannot connect the refugee population by itself. Rather, **it will proactively build multi-faceted partnerships with a broad range of stakeholders** across five key categories: (1) refugees and host communities, (2) host governments; (3) the private sector; (4) non-governmental organizations and (5) donors.

Figure 29: UNHCR
Partnership
Framework with
Potential Partners



Refugees and the communities that host them are at the centre of this programme.

While all interventions are designed with their needs in mind, refugees and host communities are also partners. They can provide critical feedback and data to inform advocacy efforts and facilitate monitoring and evaluation. Refugees can also be directly involved in content creation (e.g., by developing websites/apps, translating content) and outreach to their communities to increase the acceptance and adoption of technology. Moreover, with affordable connectivity, beneficiaries of connectivity interventions become contributing members to a marketplace. In turn, private companies will be more likely to tailor solutions to them that are sustainable and market-based.

Host governments are key partners in incentivizing the private sector to enable connectivity and establish policy frameworks around refugee rights and privileges.

Approval from host governments is often required before connectivity interventions can be implemented. UNHCR, with support from partners, aims to collaborate with governments to:

1. Incentivize the expansion of connectivity and electricity networks to regions where refugees reside.
2. Encourage pricing segmentation practices such that low-income people can access connectivity.
3. Remove identification barriers for refugees to obtain devices/plans.

Governments may have concerns that a connected refugee population will bring additional challenges – for instance, many governments fear that access to connectivity may increase security problems. However, it is UNHCR’s experience that well-informed refugees with regular links to their home communities experience improved well-being and are less likely to be negatively influenced by individuals or groups seeking to exploit their vulnerability. Below is a non- exhaustive list of benefits to governments of enabling enhanced refugee connectivity:

- Improved connectivity among host communities, especially where availability is at present a challenge.
- Increased compliance with government requirements around registration and monitoring, as anything that requires attendance in person is often not carried out in a timely manner.
- Cost savings from moving certain refugee activities from in-person to online.
- Two-way communication opportunities with refugees to better understand the security and health risks among their populations.
- Improved refugee access to government information, further reducing risk of non-compliance.
- Opportunities for innovation in the area of digital service delivery.
- Better access to information about the situation in their home countries, meaning that refugees can make better informed decisions about when it is safe to return home.

Private sector partnership is essential to scale the strategy to a global level.

The private sector brings global reach, innovative business models, experience in the telecoms sector, robust relationships with government regulators, and a deep pool of financial and staff resources. By partnering with UNHCR on this initiative, private sector partners can realize benefits beyond those normally associated with corporate social responsibility. These include:

- Incremental revenue opportunities from new paying subscribers (i.e. refugees, host communities, UNHCR and partner agency staff).
- Increased employee engagement through staff volunteer programmes; validation of new technology for rural connectivity.
- Ability to pilot new business models in a controlled, low-resource setting (e.g. refugee camps).

Figure 30: Types of support the private sector could offer



NGO partners can boost UNHCR’s capability in the field by establishing connectivity related programming and by offering digital services to refugees once connectivity is available.

They can also extend their influence to support connectivity advocacy efforts with government agencies and encourage the adoption of mobile technology among refugees and host communities through outreach efforts.

Institutional donors will provide the necessary funding for the operational and programmatic costs.

Funding for the overall programme will come primarily from traditional governmental donors, particularly to fund implementation in regions where donors have an existing interest in connectivity expansion. Foundations and development finance institutions may also play a central role in providing funding.

Resource Requirements

In addition to committed partners, **UNHCR** requires funding to increase the availability of the internet and to provide subsidies for internet-enabled phones and data for the most vulnerable refugees. **UNHCR also requires a dedicated internal team, including field connectivity coordinators,** to lead the planning, execution, coordination and monitoring of country-specific strategies.

A total of **USD 6 million** in external fundraising is required to support this strategy for the first 12 months of implementation:

Figure 31: First Year Cost for UNHCR Global Programme for Connectivity for Refugees

We will:	Summary Budget	Amount in US\$
Reduce the cost of internet and mobile connectivity for vulnerable populations through subsidies for devices and data.		1.6m
Provide seed funding for connectivity-enhanced services including relevant content on the internet for refugees, digital literacy, Apps, mass SMS, online education, protection monitoring and reporting, eMedicine and more.		1.2m
Increase the availability and quality of internet access within refugees and host communities.		1.0m
Carry out detailed field-level assessments, develop country implementation plans, monitor implementation, negotiate price reductions and extension of services to refugee and host communities, coordinate efforts of multiple stakeholders and provide programme management support in ten countries as well as manage the global programme.		1.8m
Standard UNHCR Cost Recovery on Donations.		0.4m
Total		6.0m

Local Context

UNHCR will work with partner organizations to select from and customize the ten strategic interventions to make them country specific. **A key driver for determining which combination of interventions to pursue is whether the target country has urban refugees, rural refugees, or both, and if the country is experiencing a humanitarian emergency that would affect the connectivity strategy.**

In urban locations, affordability and usability interventions are most applicable. Availability interventions are generally not required owing to good 3G+ mobile broadband coverage. Insufficient broadband access in urban areas is mainly caused by broader systemic issues that are beyond the scope of this programme (e.g. government restrictions on connectivity for all citizens, or for targeted groups such as refugees). As good mobile broadband coverage exists in urban areas, the situation is ripe for the programme to focus on affordability and usability to promote access to refugee-relevant content and introduce digital services.

In rural locations, availability, affordability and usability interventions are all required. In many cases, availability interventions are needed first because of a widespread lack of 3G mobile broadband coverage. If 3G+ coverage is not available, UNHCR and partners can still focus on usability interventions that use existing 2G connectivity, such as delivering services via SMS/voice until network improvements are made and internet-enabled devices are more commonly used. As some rural areas become more urbanized and are supplied with broadband coverage, the UNHCR programme may reduce availability interventions and refocus on usability to exploit newly available networks to deliver digital services.




In addition to urban and rural factors, other variables will be considered when customizing or selecting interventions to apply to each country. UNHCR country teams will be provided with a detailed implementation toolkit that equips them to collaborate with partners and deploy the relevant interventions in their refugee sites.

Monitoring and Evaluation

To measure the effectiveness of interventions and the impact of enhanced connectivity, sample Key Performance Indicators (KPIs) for each intervention category will be measured by the UNHCR team. The list of KPIs below is indicative and subject to change.

These KPIs¹⁹ and other livelihood and social indicators will be baselined and tracked throughout the intervention implementation. In scenarios where such data is not available, new livelihood and social indicators will also be created by the UNHCR team in collaboration with other programmes and country teams.

Figure 32: Sample Refugee Connectivity KPIs by Category

Category	Sample Refugee Connectivity KPIs
 Availability	<ul style="list-style-type: none"> # of refugees who live in area without consistent 3G network # of monthly reported cases of refugees unable to purchase connectivity due to regulatory barriers # of monthly refugee users on MNO, ISP, or alternative technology company's network Revenue of MNO, ISP, or alternative technology from refugee users % of refugees who report network quality as "satisfactory" (following qualitative survey)
 Affordability	<ul style="list-style-type: none"> # of refugees who use an internet-enabled device more than once in a week # of refugees who own a basic, feature, and smartphone # of refugees who require subsidies to afford a device and basic plan # of refugees enrolled in refugee-specific plans, products, or discounts % of refugee disposable income spent on connectivity Average monthly spending on connectivity Average rate plan purchased by refugees (segmented across Voice, SMS and Internet usage)
 Usability	<ul style="list-style-type: none"> # of refugees who use the internet (besides social media) at least once a week # of refugees who use a connectivity-based service (e.g. mobile money, humanitarian agency's service) at least once a week # of digital services targeted to refugees by UNHCR, humanitarian and government agencies Refugee engagement on digital channels operated by UNHCR, humanitarian/government agencies Average usage patterns, frequency and duration (if applicable) of calls, text and Internet

19 Note that the unit of KPI measurement can vary between individual and household levels

Conclusion

Sustainability

UNHCR strives for sustainability through affordable pricing models where refugees, host communities, and partner organizations are seen as paying customers, rather than just beneficiaries of aid.

Despite severe affordability constraints, many refugee households buy devices and plans at market rates, particularly in urban areas. However, this means they often spend a significant proportion of monthly disposable income on connectivity. Our goal is to collaborate with the private sector to provide refugees with pricing models that reduce the cost yet offer some benefit to the companies concerned. Moreover, improving refugees' access to connectivity means reducing the need to rely so heavily on humanitarian funding.

While the priority is to identify market-based solutions, **UNHCR recognizes that there are groups of extremely vulnerable refugees who could not afford connectivity no matter how low the market price.** To support these groups, UNHCR would explore targeted subsidies, as discussed in the Strategic Interventions section. Despite the need for some level of subsidy, UNHCR believes that sustainability can be achieved through:

1. A market-based approach in most interventions, which will incentivize long-term private sector interest.
2. An increase in refugee and host purchasing power from additional livelihood opportunities created through connectivity.
3. Downward trends in the cost of devices and services, thus increasing refugees' ability to afford connectivity over time.

Looking Forward: Connected Refugees Enhance Humanitarian Services

Without a reliably connected refugee population, UNHCR and its partners are unable to take advantage of the innovations the digital revolution has made possible and the developed world takes for granted. Today, thanks to the internet and communications technology, access to information and the ability to stay in touch is easier than ever.

Figure 33: Jordan/Syrian refugees look at a mobile phone containing old family photos, in Azraq Refugee Camp in Jordan.
© UNHCR/Warrick Page



For most refugees, however, this is not the case. As a result, they do not have the access to information they need to improve their lives, nor the means to communicate with each other, their families and humanitarian services providers.

If and when refugees are reliably connected to the internet and are able to purchase mobile connectivity, not only will they be better equipped to support themselves and their communities, but also they will find every area of humanitarian support boosted by the increased sharing of information and better communication.

The following are a few of the ways in which existing humanitarian services could be immediately improved:



Regarding **protection**, a connected refugee population would mean that partners could provide security-enhancing services so that:

- Security-relevant information can be shared on UNHCR country websites and other refugee-specific sites.
- The asylum process, which is typically lengthy and process-heavy, can be streamlined. In Greece, for instance, appointments for the registration of asylum applications are granted over Skype to minimize queues.²⁰
- Text messaging and social media can be utilized.
- Protection incident reporting and tracking can reduce dangers.
- Hotline services can support refugees in need.
- Women are increasingly empowered.



In terms of enhancing **community-based protection**, a connected refugee community can become more self-reliant and would:

- Organize itself, share information among its members, and form meaningful and mutually beneficial associations.
- Have greater access to information and be in a better position to identify its needs and lobby effectively for help and support.
- Engage more meaningfully and substantially in all aspects of the programmes that affect them, thus strengthening the community's leading role as a driving force for positive change.



In the area of **education**, the potential benefits are dramatic. Connectivity would:

- Provide opportunities to take part in online training courses.
- Allow refugees to access education remotely. At a time when thousands of refugee children are absent from school – for example, the 60 per cent of Syrian children in Lebanon²¹ – this could have a major impact on creating future leaders among this generation.
- Allow refugee students at secondary and university levels to continue their disrupted education.



In the area of **health**, the potential advantages of a connected population are also significant:

- Refugees will benefit from better access to health information.
- Monitoring and reporting of the health of refugees can be improved through online systems, a benefit that would be of enormous impact in situations where medical services are not readily available.



For **livelihoods and self-reliance**, the potential benefits are also immense. Being connected will:

- Make creating and sustaining their own businesses much easier.
- Allow for the possibility of working remotely – particularly important in situations where there are constraints on the right to work or limited opportunities in the local economy.

Indeed, all areas of humanitarian response – from food and nutrition to water, sanitation and hygiene, to camp management and coordination – will benefit from a connected refugee population as services and communication with populations of concern will be easier and more reliable. Large-scale innovation in service delivery will become possible. The challenge and opportunity is to get refugees connected so that this transformation can begin.

Mobile and internet connectivity has brought the world tremendous economic and social benefits. The time has come for us to work together to extend these benefits to refugees, and other persons of concern.

²⁰ Greek Council for Refugees, Asylum in Europe: <http://www.asylumineurope.org/reports/country/greece/asylum-procedure/procedures/registration-asylum-application>

²¹ UNHCR, April 2014: <http://www.unhcr.org.uk/news-and-views/news-list/news-detail/article/10-shocking-facts-on-the-syrian-refugee-crisis-in-lebanon.html>



Figure 34: Greece/ Refugees arrive on the Island of Lesbos after crossing the Aegean from Turkey. 7-year-old Syrian refugee Hawler from Qamishle speaks to her mother back in Syria immediately after landing on the Greek island of Lesbos after crossing the Aegean sea from Turkey. She was travelling with her uncle Abdullah. Her parents could only afford to send one of their 5 children and because Hawler was old enough to make the journey but still young enough for it to be half the price she was chosen to go. They hope to be able to follow their daughter soon but for now Hawler and her uncle are alone and headed to Germany. © UNHCR/Ivor Prickett

Figure 35: Nyawon, 28, and a foster mother, borrows a phone to search for her children which she lost touch when escaping the conflict in Malakal, South Sudan. "I miss my phone. I had one in South Sudan but I sold everything I had to get here. If I had a phone, I could call and see if my children were alive". © UNHCR/Catianne Tijerina



Figure 36: Italy/ African and Syrian guys recharging their phones after the long sea journey at the reception center at Sicilian port of Augusta. © UNHCR/ Fabio Bucciarelli



Appendix: Facts and Figures

Connectivity user profiles –

Figure 37: Example refugee user profile from Tanzania & UNHCR field worker profile from Jordan. N.B. these profiles are fictitious and information provided is for illustrative purposes only.

Julian, 26 – Nyarugusu, Tanzania Underconnected Rural Refugee

Julian fled Burundi in 2015, after his family was wrongfully imprisoned for opposing the government, and now lives in the Nyarugusu refugee camp. He speaks fluent French and proficient English and briefly studied at a university in France. Julian teaches fellow refugees how to remain connected with loved ones via Free Basics and volunteers with Communicating with Communities.

Connectivity affords Julian:

- Economic Empowerment
- Comms & Information
- Access to Digital Services
- Well-being & Self-reliance

Julian before connectivity:

- Cannot continue his **university studies** or work.
- Suffers from **anxiety** and feels **isolated** as he is unable to keep in touch with his family in Burundi.
- Did not know there was a deadly **Cholera outbreak** in his section of the camp.
- Has to **wait** half a day for **food distribution**.
- Walks over 5 km across the camp** to fulfil his volunteering responsibilities.
- Is **vulnerable** to being negatively influenced by groups seeking to exploit him.

Julian with connectivity:

- Can view education and **mobile literacy programs**, independently allowing him to **generate more income**.
- Is able to maintain links with his family and engage in online entertainment; experiencing **improved well-being**.
- Can receive **bulk texts** from peers, the government, or NGOs about key issues.
- Can make the most of **mobile cash distribution, mobile health alerts and online learning**.
- Can fulfil volunteering responsibilities **remotely**.
- Experiences increased **self-reliance and safety** by being **well-informed**.

Tali, 35 – Amman, Jordan UNHCR field worker

Tali works for UNHCR in Jordan to meet the needs of refugees affected by conflict, economic disparity, discrimination or a fragile resource base. She is passionate about women's issues and counsels young women that have been affected by sexual violence and advocates for greater access to services for women. She currently runs a daily face-to-face workshop for women in the city that want to be self-reliant at the community centre.

Connectivity affords Tali access to the following digital services:

- Protection Services
- Community-based protection
- Education
- Health
- Livelihoods & Self-reliance

Tali before connectivity:

- Low attendance rates** for her class due to difficulty updating women of changes to schedules, and due to large distances that women have to walk to get to the community centre.
- Experiences **challenges communicating** with the group as some women do not want to publicly discuss their problems.
- Has limited means by which to **report violence and health issues** experienced by women, alongside lengthy procedures to affect change.
- Finds that there are **few opportunities** for women to become self-sufficient or maintain their own livelihoods, for both cultural and practical reasons.

Tali with connectivity:

- Uses **SMS to schedule workshops** and notify women of any timetable changes. This **reduces absenteeism**.
- Harnesses UNHCR's **self-learning applications** so that she can hold **online training courses** which can be rolled out **at scale and remotely**, reducing **attrition rates**.
- Recommends CARE's **hotline services** for women that want to discuss issues privately, or who want additional support.
- Uses **online incident reporting** to **track incidents of violence** while upskilling women on **community-based protection apps** so that they can **become self-reliant**.
- Recommends **health information services** to pregnant women (e.g. SMS reminder for prenatal care).
- Can hold sessions on **livelihood opportunities** by introducing **remote work programmes**.

Global Refugees – Availability of Connectivity

The analysis presented in this document used the most recent available data on the global refugee situation, which was from 2014. The number of refugees has increased from roughly 13 million in 2014 to almost 21 million in 2016. With respect to the analysis presented herein, the relative magnitude of refugee access to connectivity remains the same.

Notes about this Table:

- Source for refugee geolocation and population information is Table 16 from the 2014 UNHCR Statistical Yearbook (Major locations and demographic composition of refugees and people in refugee-like situations end-2014).
- Refugees without general location information are not included in Table 16 of the 2014 UNHCR Statistical Yearbook (and hence are not included in this table).

Table 1. Number of and Percentage of refugees living in areas with different types of mobile cellular coverage by global regions

Regions	Number of Refugees Living in Areas With...				Region Total [A, B, C, D]	Region Total (Excluding Refugees with No Geo-Location Data) [A, B, C]
	No Coverage [A]	2G only [B]	3G+ [C]	No Geo-Location Data [D]		
East Asia & Pacific	24,975	28,354	483,890	9,510	546,729	537,219
Europe & Central Asia	-	-	2,375,635	654	2,376,289	2,375,635
Latin America & Caribbean	-	13,467	136,542	197,668	347,677	150,009
Middle East & North Africa	1,709	917,267	2,693,969	268,169	3,881,114	3,612,945
North America	-	-	9,869	-	9,869	9,869
South Asia	37,439	1,094,320	1,124,620	16,402	2,272,781	2,256,379
Sub-Saharan Africa	815,730	1,840,980	921,771	130,923	3,709,404	3,578,481
World	879,853	3,894,388	7,746,296	623,326	13,143,863	12,520,537

Regions	Percentage of Refugees Living in Areas With... (Excluding Refugees with No Geo-Location Data)			Region Total (Excluding Refugees without Geo-Location Data)
	No Coverage [A/(A+B+C)]	2G only [B/(A+B+C)]	3G+ [C/(A+B+C)]	
East Asia & Pacific	4.6%	5.3%	90.1%	100.0%
Europe & Central Asia	0.0%	0.0%	100.0%	100.0%
Latin America & Caribbean	0.0%	9.0%	91.0%	100.0%
Middle East & North Africa	0.0%	25.4%	74.6%	100.0%
North America	0.0%	0.0%	100.0%	100.0%
South Asia	1.7%	48.5%	49.8%	100.0%
Sub-Saharan Africa	22.8%	51.4%	25.8%	100.0%
World	7.0%	31.1%	61.9%	100.0%

Regional Breakdown and Countries - Availability of Connectivity

Notes about this Table:

- Source for refugee geolocation and population information is Table 16 (Major locations and demographic composition of refugees and people in refugee-like situations end-2014) from the 2014 UNHCR Statistical Yearbook.
- Refugees without general location information are not included in Table 16 of the 2014 UNHCR Statistical Yearbook (and hence not included in this table).

Table 2. Number of and Percentage of refugees living in areas with different types of mobile cellular coverage by global regions and countries

Region/Countries	Number of Refugees Living in Areas With...				Country/Region Total [A+B+C+D]	Country/Region Total (Excluding Refugees with No Geo-Location Data) [A+B+C]	Percentage of Refugees Living in Areas With... (Excluding Refugees with No Geo-Location Data)		
	No Coverage [A]	At Least 2G [B]	At Least 3G [C]	No Geo-Location Data [D]			No Coverage [A/(A+B+C)]	At Least 2G [B/(A+B+C)]	At Least 3G [C/(A+B+C)]
East Asia & Pacific	24,975	28,354	483,890	9,510	546,729	537,219	4.6%	5.3%	90.1%
China			300,895		300,895	300,895	0.0%	0.0%	100.0%
Indonesia			3,083		3,083	3,083	0.0%	0.0%	100.0%
Japan			2,560		2,560	2,560	0.0%	0.0%	100.0%
Malaysia			99,381		99,381	99,381	0.0%	0.0%	100.0%
Papua New Guinea				9,510	9,510	-	No Available Geo-Location Information		
Rep. of Korea			1,062		1,062	1,062	0.0%	0.0%	100.0%
Thailand	24,975	28,354	76,909		130,238	130,238	19.2%	21.8%	59.1%
Europe & Central Asia			2,375,635	654	2,376,289	2,375,635	0.0%	0.0%	100.0%
Armenia			16,574		16,574	16,574	0.0%	0.0%	100.0%
Azerbaijan			1,299		1,299	1,299	0.0%	0.0%	100.0%
Bosnia and Herzegovina			6,672		6,672	6,672	0.0%	0.0%	100.0%
Croatia			601		601	601	0.0%	0.0%	100.0%
Czech Rep.			3,137		3,137	3,137	0.0%	0.0%	100.0%
France			192,264		192,264	192,264	0.0%	0.0%	100.0%
Germany			216,973		216,973	216,973	0.0%	0.0%	100.0%
Hungary			2,867		2,867	2,867	0.0%	0.0%	100.0%
Luxembourg			1,108		1,108	1,108	0.0%	0.0%	100.0%
Montenegro			4,161		4,161	4,161	0.0%	0.0%	100.0%
Romania			2,182		2,182	2,182	0.0%	0.0%	100.0%
Russian Federation			235,750		235,750	235,750	0.0%	0.0%	100.0%
Serbia and Kosovo (S/RES/1244 (1999))			43,695		43,695	43,695	0.0%	0.0%	100.0%
Switzerland			62,619		62,619	62,619	0.0%	0.0%	100.0%
Tajikistan			649	654	1,303	649	0.0%	0.0%	100.0%
The former Yugoslav Republic of Macedonia			800		800	800	0.0%	0.0%	100.0%
Turkey			1,581,065		1,581,065	1,581,065	0.0%	0.0%	100.0%
Ukraine			3,219		3,219	3,219	0.0%	0.0%	100.0%
Latin America & Caribbean		13,467	136,542	197,668	347,677	150,009	0.0%	9.0%	91.0%
Argentina			3,498		3,498	3,498	0.0%	0.0%	100.0%
Bolivia (Plurinational State of)		595			595	595	0.0%	100.0%	0.0%

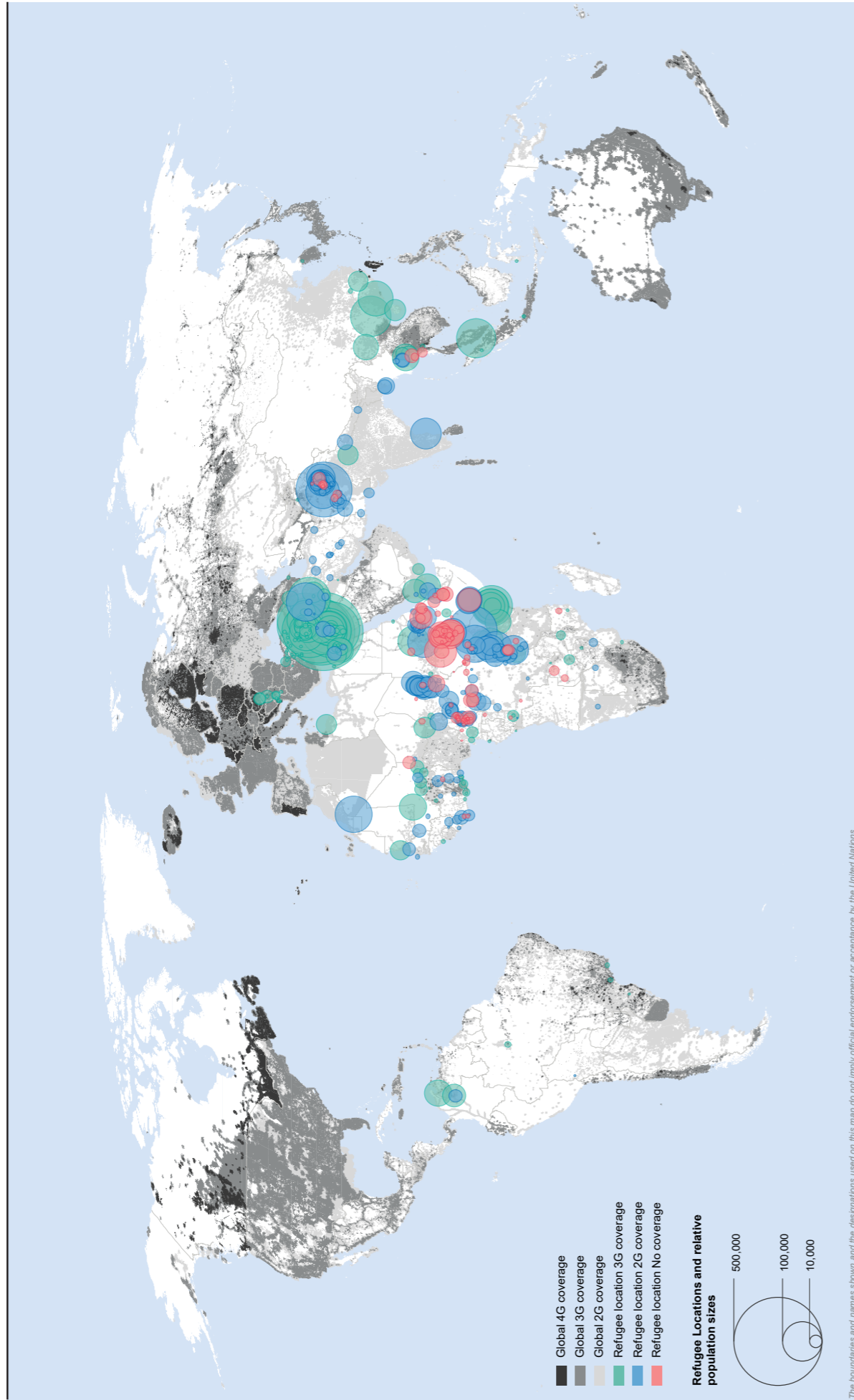
Region/Countries	Number of Refugees Living in Areas With...				Country/Region Total [A+B+C+D]	Country/Region Total (Excluding Refugees with No Geo-Location Data) [A+B+C]	Percentage of Refugees Living in Areas With... (Excluding Refugees with No Geo-Location Data)		
	No Coverage [A]	At Least 2G [B]	At Least 3G [C]	No Geo-Location Data [D]			No Coverage [A/(A+B+C)]	At Least 2G [B/(A+B+C)]	At Least 3G [C/(A+B+C)]
Brazil			5,234		5,234	5,234	0.0%	0.0%	100.0%
Chile			1,773		1,773	1,773	0.0%	0.0%	100.0%
Costa Rica			20,744		20,744	20,744	0.0%	0.0%	100.0%
Dominican Rep.				607	607	-	No Available Geo-Location Information		
Ecuador				122,161	122,161	-	No Available Geo-Location Information		
Mexico			1,295		1,295	1,295	0.0%	0.0%	100.0%
Panama			16,867		16,867	16,867	0.0%	0.0%	100.0%
Peru			1,303		1,303	1,303	0.0%	0.0%	100.0%
Venezuela (Bolivarian Republic of)		12,872	85,828	74,900	173,600	98,700	0.0%	13.0%	87.0%
Middle East & North Africa	1,709	917,267	2,693,969	268,169	3,881,114	3,612,945	0.0%	25.4%	74.6%
Algeria		90,000		4,005	94,005	90,000	0.0%	100.0%	0.0%
Djibouti	1,709	18,208	613		20,530	20,530	8.3%	88.7%	3.0%
Egypt		16,644	216,859	1,177	234,680	233,503	0.0%	7.1%	92.9%
Iraq		111,283	159,091		270,374	270,374	0.0%	41.2%	58.8%
Islamic Rep. of Iran		628,221	352,286		980,507	980,507	0.0%	64.1%	35.9%
Israel			39,716		39,716	39,716	0.0%	0.0%	100.0%
Jordan		9,727	644,414		654,141	654,141	0.0%	1.5%	98.5%
Kuwait			614		614	614	0.0%	0.0%	100.0%
Lebanon			1,154,040		1,154,040	1,154,040	0.0%	0.0%	100.0%
Libya			27,964		27,964	27,964	0.0%	0.0%	100.0%
Morocco				1,216	1,216	-	No Available Geo-Location Information		
Syrian Arab Rep.		22,706	1,135	123,764	147,605	23,841	0.0%	95.2%	4.8%
Yemen		20,478	97,237	138,007	255,722	117,715	0.0%	17.4%	82.6%
North America			9,869		9,869	9,869	0.0%	0.0%	100.0%
Canada			9,869		9,869	9,869	0.0%	0.0%	100.0%
South Asia	37,439	1,094,320	1,124,620	16,402	2,272,781	2,256,379	1.7%	48.5%	49.8%
Afghanistan		300,334			300,334	300,334	0.0%	100.0%	0.0%
Bangladesh		86,635	145,720		232,355	232,355	0.0%	37.3%	62.7%
India		174,072	25,865		199,937	199,937	0.0%	87.1%	12.9%
Nepal		23,024		15,035	38,059	23,024	0.0%	100.0%	0.0%
Pakistan	37,439	510,255	953,035	1,367	1,502,096	1,500,729	2.5%	34.0%	63.5%
Sub-Saharan Africa	815,730	1,840,980	921,771	130,923	3,709,404	3,578,481	22.8%	51.4%	25.8%
Angola				15,474	15,474	-	No Available Geo-Location Information		
Botswana		2,645			2,645	2,645	0.0%	100.0%	0.0%
Burkina Faso		1,845	21,990	8,056	31,891	23,835	0.0%	7.7%	92.3%

Region/Countries	Number of Refugees Living in Areas With...				Country/Region Total [A+B+C+D]	Country/Region Total (Excluding Refugees with No Geo-Location Data) [A+B+C]	Percentage of Refugees Living in Areas With... (Excluding Refugees with No Geo-Location Data)		
	No Coverage [A]	At Least 2G [B]	At Least 3G [C]	No Geo-Location Data [D]			No Coverage [A/(A+B+C)]	At Least 2G [B/(A+B+C)]	At Least 3G [C/(A+B+C)]
Burundi	16,185	36,700			52,885	52,885	30.6%	69.4%	0.0%
Cameroon	62,627	133,081	12,208	46,550	254,466	207,916	30.1%	64.0%	5.9%
Central African Rep.	3,978	1,801	1,769		7,548	7,548	52.7%	23.9%	23.4%
Chad	27,933	413,065	2,750	9,149	452,897	443,748	6.3%	93.1%	0.6%
Congo	1,888	41,383	10,137		53,408	53,408	3.5%	77.5%	19.0%
Côte d'Ivoire		906	858		1,764	1,764	0.0%	51.4%	48.6%
Dem. Rep. of the Congo	41,119	62,884	6,766	5,540	116,309	110,769	37.1%	56.8%	6.1%
Eritrea		2,762			2,762	2,762	0.0%	100.0%	0.0%
Ethiopia	382,850	251,979	5,508	18,870	659,207	640,337	59.8%	39.4%	0.9%
Gabon			712		712	712	0.0%	0.0%	100.0%
Gambia				11,608	11,608	-	No Available Geo-Location Information		
Ghana		4,212	12,356	1,800	18,368	16,568	0.0%	25.4%	74.6%
Guinea		6,208	1,795		8,003	8,003	0.0%	77.6%	22.4%
Kenya		153,959	397,393		551,352	551,352	0.0%	27.9%	72.1%
Liberia	3,307	34,829			38,136	38,136	8.7%	91.3%	0.0%
Malawi			5,874		5,874	5,874	0.0%	0.0%	100.0%
Mali		14,675			14,675	14,675	0.0%	100.0%	0.0%
Mauritania			75,635		75,635	75,635	0.0%	0.0%	100.0%
Mozambique	2,446		1,534		3,980	3,980	61.5%	0.0%	38.5%
Namibia		1,555			1,555	1,555	0.0%	100.0%	0.0%
Niger	12,738	10,319	54,444		77,501	77,501	16.4%	13.3%	70.2%
Nigeria		869			869	869	0.0%	100.0%	0.0%
Rwanda		50,217	16,624	6,979	73,820	66,841	0.0%	75.1%	24.9%
Senegal		14,059			14,059	14,059	0.0%	100.0%	0.0%
Somalia		2,088			2,088	2,088	0.0%	100.0%	0.0%
South Africa			112,192		112,192	112,192	0.0%	0.0%	100.0%
South Sudan	231,778	14,879			246,657	246,657	94.0%	6.0%	0.0%
Sudan	11,520	196,129	64,846	1,297	273,792	272,495	4.2%	72.0%	23.8%
Togo	1,906	16,526	3,346		21,778	21,778	8.8%	75.9%	15.4%
Uganda		302,604	82,909		385,513	385,513	0.0%	78.5%	21.5%
United Rep. of Tanzania	2,272	63,825	22,227		88,324	88,324	2.6%	72.3%	25.2%
Zambia	13,183		6,795	5,600	25,578	19,978	66.0%	0.0%	34.0%
Zimbabwe		4,976	1,103		6,079	6,079	0.0%	81.9%	18.1%
World	879,853	3,894,388	7,746,296	623,326	13,143,863	12,520,537	7.0%	31.1%	61.9%

ANALYSIS OF MOBILE COVERAGE AND GLOBAL REFUGEE LOCATIONS

Global refugee population living in areas with different types of mobile cellular coverage

According to 2014/2015 data sources



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
 Creation date: 22 August 2016 Sources: 2014 UNHCR Statistical Yearbook, GSM/Collins Bartholomew 2015 Coverage explorer product, survey results (Top 50 Refugee Camps Connectivity Assessment, Global UNHCR Staff Connectivity Survey), Connectivity for Refugees country missions (Greece, Kenya, Jordan, United Republic of Tanzania), other public domain Feedback: eisemata@unhcr.org

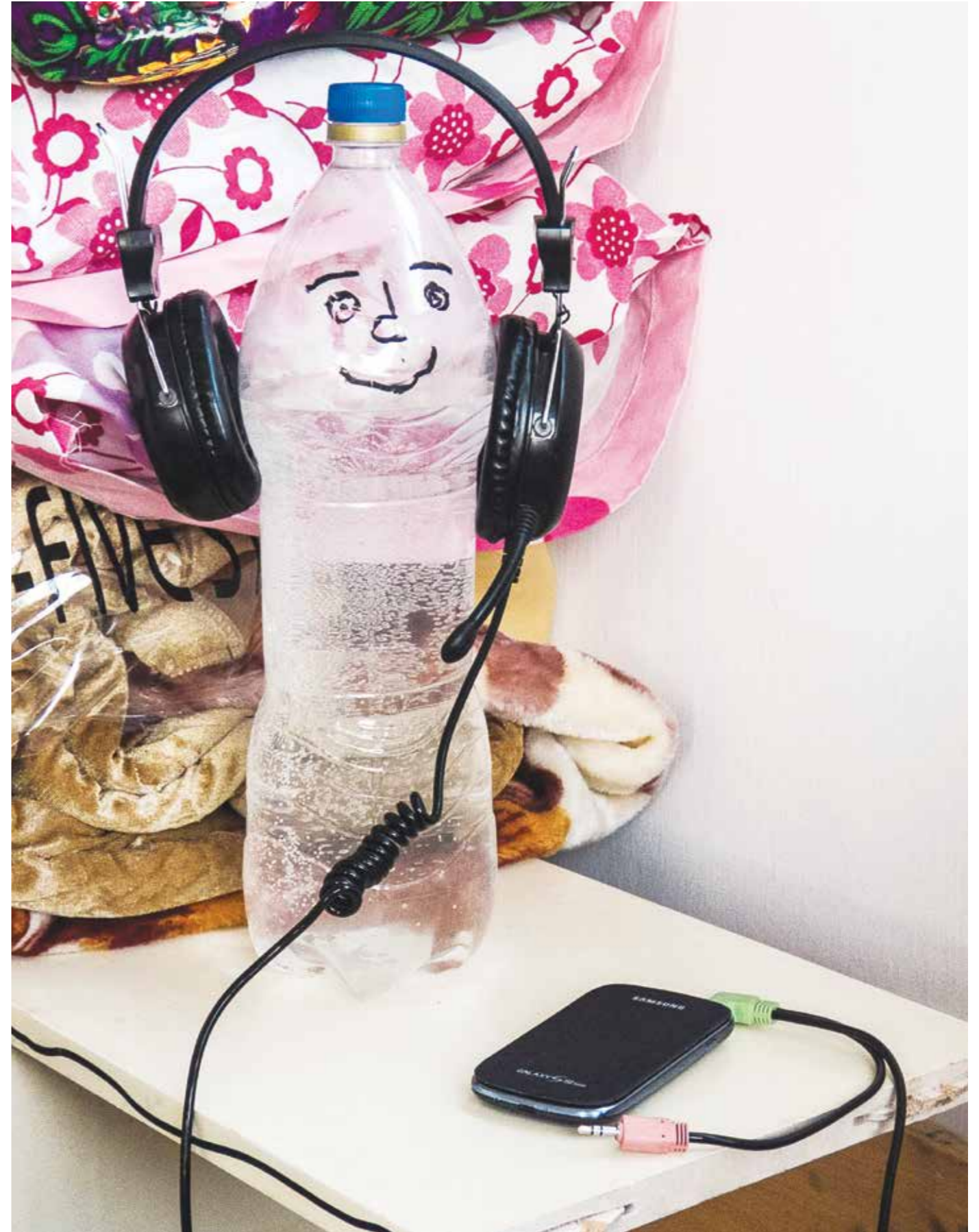


Figure 38: Lebanon/ My name is Khalil. I am 14 years old and from Dara'a in Syria. I like sports. My favourite one is soccer. I want to be a teacher. Khalil took a picture of this bottle for its funny smile while listening to music on the phone. That's her favourite part of life: to listen to music and enjoy.
 © UNHCR/Khalil



UNHCR
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CONNECTING REFUGEES

How Internet and Mobile Connectivity can Improve Refugee Well-Being and Transform Humanitarian Action.

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