Iowara, Papua New Guinea: The Digital Worlds of West Papuan Refugees

Introduction

As mobile phones have become nearly ubiquitous globally, digitalisation has affected almost every aspect of modern life. Humanitarian contexts are no exception. For people affected by war, displacement and the increasingly severe impacts of climate change, mobile phones play a vital role, connecting them to both lifesaving information and to loved ones in times of crisis.

Through mobile phones, individuals and communities create their own digital worlds. While accessing humanitarian services and information might be part of that world, it almost always extends much further to the personal preferences and activities of users.

This case study is part of a larger research study conducted in partnership with UNHCR that explored how people in humanitarian contexts use and relate to their mobile phones. The research team conducted both in-depth qualitative research activities and a representative survey in three locations: northern Lebanon, Bor, South Sudan and Iowara, Papua New Guinea (PNG).

The full report, including details on methodology and findings from the other humanitarian contexts, can be found [here](#).
Key findings:

- Overall, mobile phone use in Iowara is limited and intermittent. The digital ecosystem is characterised by a high prevalence of basic phones that people use for relatively simple functions, such as phone calls or SMS messaging. Community members with more stable employment, such as teachers, sometimes serve as “digital connectors”, helping neighbours to learn and perform more advanced functions.

- Still, mobile phones play an important social function, helping people in Iowara keep in contact with family and friends in West Papua or elsewhere in Papua New Guinea (PNG). Ninety-four per cent of phone users reported using their phones in this way. Playing music and games also helped users relax and stay connected with Papuan culture.

- Significant barriers restrict mobile phone use, including low digital literacy, affordability and cost, charging and language barriers.

- Women, older people and people with disabilities were less likely to own and use mobile phones, especially smartphones. There were significant social barriers to mobile ownership and use, especially for female users.

- The refugee and host communities in Iowara are largely farmers and extremely vulnerable to climate hazards. However, there were few examples of people using their mobile phone to access information or support with food security, farming or climate hazards, and in fact there was some resistance to using mobile phones in this way.

Population

Iowara, Papua New Guinea

West Papuan refugees
2,500 – 3,000

Host community
~200
Context

Papua New Guinea (PNG) is a diverse lower-middle-income country that faces several humanitarian challenges, including economic insecurity, political tensions and high risk of climate hazards. As of August 2022, UNHCR estimated there were 11,800 refugees and asylum seekers in PNG, largely from West Papua, Indonesia. The research site, Iowara, Western Province, is a refugee settlement consisting of 10 villages. It is home to approximately 2,500–3,000 West Papuan asylum seekers and refugees living alongside a host community of around 200 people. Like many areas of PNG, Iowara is difficult to access. It is accessible by a boat trip from the nearest town, Kiunga, followed by a 20 kilometre journey that must be made on foot during the wet season.

West Papuans across PNG consider themselves ‘forgotten refugees of the world’; as they have been provided very little assistance from the humanitarian community. Literacy levels are low within the community as few can afford school fees beyond primary education, which is provided by the local Catholic diocese. Most of the refugee and host communities in Iowara are farmers, with approximately 36 per cent engaged in subsistence farming and another 50 per cent able to sell some produce. A smaller group of professionals are employed by the diocese to provide health and education services.

Mobile context

Mobile use in PNG is growing but is far from universal. GSMA Intelligence data indicates that 35 per cent of the population have a mobile phone and 21 per cent have a mobile internet connection. The country’s digital ecosystem faces many challenges. Physical barriers such as challenging terrain, natural hazards and low population density can make it prohibitively expensive for mobile network operators (MNOs) to build and maintain mobile infrastructure. Eighty-seven per cent of the population live in rural areas, inhabiting 600 islands. Additionally, with more than 800 languages spoken in PNG and low levels of digital literacy, it is complicated to create digital products and services that can be scaled across the country.

There are three MNOs operating in PNG, but Digicel is currently the only provider in Iowara. The challenges of maintaining infrastructure were poignantly demonstrated during the research when the camp was left without connectivity for six days due to difficulties delivering fuel to the mobile tower. Western Province is one of the provinces most reliant on fuel delivery by helicopter.

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1 UNHCR, 2022) [Papua New Guinea](https://www.unhcr.org)
2 While some refugees have been given access to naturalisation, official numbers are unavailable.
3 This research focuses on West Papuan refugees; however interviews were also conducted with the host community as well. Findings were very similar across both the refugee community and the Papua New Guinean community that hosts them.
4 Key informant interview with a UN agency, 2021.
5 Ibid.
6 Ibid.
7 GSMA (2022) [Data](https://www.gsma.com)
9 Nique (2019) *Papua New Guinea: How can mobile be harnessed for digital transformation?*
10 KII (2022) [MNO](https://www.kii.org)
What does mobile phone use look like in Iowara?

Figure 1
Mobile phone use among refugees in Iowara, PNG
While mobile phone ownership in Iowara was much higher than the national average at 89 per cent, mobile phone use was relatively limited and intermittent overall. In fact, 26 per cent of mobile phone owners had not used their phone at all in the past three months. This high penetration rate is likely due in part to a recent distribution of basic phones by Save the Children PNG (see Box 3).

Users tended to rely on their mobile phones for simple tasks like calling or messaging. Interviews suggested that a small group of individuals with higher income levels served as “digital connectors”. People relied on these fellow community members and their mobile phones to perform more advanced tasks, such as paying school fees. These people were important figures that the community depended on to mediate financial transactions and relationships with the world beyond Iowara.11

Figure 1
Mobile phone access and ownership in Iowara

<table>
<thead>
<tr>
<th>Access and ownership</th>
<th>Access</th>
<th>Ownership</th>
<th>Mobile internet access</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>9%</td>
<td>61%</td>
<td>6% 22%</td>
</tr>
<tr>
<td>%</td>
<td>91%</td>
<td>89%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Most cited uses of mobile phones

- Talking, video calling or messaging with family or friends: 94%
- Games, entertainment and music: 58%
- Torch (flashlight): 55%

11 Sample sizes for all charts in this section can be found here, along with question phrasing. Note that while in Bor, South Sudan and northern Lebanon we sampled both the host community and the displaced population, in Iowara we only included refugees in the survey due to the small size of the host community (200 people). Instead, we spoke to host community members through additional qualitative interviews. All = 362; Men = 180; Women = 182; 18 to 24 = 140; 25 to 59 = 182; 60+ = 40; People with disabilities = 65; People without disabilities = 297

Q: What kind of phone do you personally own? (None, Basic, Feature, Smart)
Q: Do you have access to someone else’s mobile phone?
Q: Do you use mobile internet (social media, apps and websites like WhatsApp, Messenger, Facebook, etc.)?
The social and economic benefits of mobile phones

Interviews suggested that the most common use of phones in Iowara was keeping in contact with family and friends in Indonesia or across PNG, with 94 percent of users reporting that they used their phones in this way. The purpose of the calls was usually to maintain kinship and familial connections, and sometimes for economic support. Family members in the nearby town of Kiunga sometimes provided support for family businesses or when food was scarce. The economic benefits of mobile phones were otherwise quite limited. Ninety-nine per cent of those surveyed explained that they do not use their phones to support their business, which is often farming (85 per cent). Subsistence farmers are often more marginalised and less likely to own a phone.

Accessing information about the situation of West Papuans in Indonesia was also important and largely through word of mouth rather than social media or the news.

The role of mobile phones in climate resilience in Iowara

Given that 85 per cent of the refugee community was involved in farming, the research sought to understand how people in Iowara experienced climate risks. Refugees in Iowara reported three main challenges as a result of changing weather patterns: unpredictable and inconsistent wet and dry seasons; more frequent extreme weather that disrupted access to clean water and damaged homes; and soil quality degradation due to both overuse and flash flooding.

“When it continuously rains, it destroys foods like bananas and greens. We wait for the weather to be right to harvest but instead the food gets spoiled. It’s all because of the change in the weather”.

– Male West Papuan refugee, Iowara, PNG

While people spoke more extensively about climate risks than other subjects, mobile phones had not yet played a role in how they address these risks. Eighty-three per cent of respondents had not used their phone to access information on the weather or climate-resilient farming techniques. The most common use was to call family or friends for local weather updates on areas where they planned to travel since the rain has a huge impact on road conditions between Iowara and Kiunga. There was almost no reported use of weather forecasting apps to identify climate hazards. Two of the people we interviewed explained that mobile phones have supported food security by allowing them to call relatives in Kiunga to ask for food if harvests in Iowara are poor.

There was still quite limited buy-in to accessing this information via mobile phone and revealed some complex barriers that will need to be addressed. Although 34 per cent were interested in accessing weather information, almost half (46 per cent) said they would not find it useful to access information on the weather or climate-resilient farming techniques on their phones. Although the exact reasons for this lack of interest were not clear, few people had access to smartphones or the know-how to find this type of information online. Interviewees reported that information on climate-resilient approaches should be provided by a trusted organisation, such as a government department or UNHCR, but one person suggested this would not be sufficient without some in-person support and follow-up to check whether these approaches were working.

Interviews also revealed that it will be vital to complement traditional knowledge and approaches. The population commonly practise established farming traditions and look for environmental indicators to guide their activities, for example, the colour of the sun indicating the weather or a flock of birds indicating an approaching storm.
Fun, leisure and connection to home

Despite the prevalence of basic phones with limited functionality, fun and entertainment were cited as one of the main ways people use their phones in Iowara. Respondents either relied on basic phones to play games or shared smartphones to access films and music. Some interviewees suggested that music and films were both a way to connect with their home culture in Indonesia, as well as a way of switching off and relaxing.

“The movie was in Bahasa, and watching it makes me think of our home in West Papua. I felt a little bit sad watching it.”

– Female West Papuan refugee, Iowara, PNG

Access to online apps was extremely limited, but Facebook was highly valued by those with access. Only 5 per cent of those surveyed were able to access the internet as often as they wished, and the range of app use was quite minimal. Facebook was the main online destination (88 per cent of respondents), closely followed by Facebook Messenger (65 per cent) and YouTube, Vidmate and Google (used by 53 per cent). Although interviewees considered Facebook an unreliable source of information, respondents in Iowara said they benefited from connecting to family.

“When my family are in Port Moresby, I have not contacted them for several years. When I have this smartphone, I created my Facebook account and when they saw my picture on Facebook they inboxed me and we shared each other’s contacts and started communicating with each other.”

– Male West Papuan refugee, Iowara, PNG

Torch

Another common use of mobile technology was the torch function. Fifty-five percent of survey respondents said they used their phone in this way. This highlights the challenges of poorly lit rural contexts where sources of light and power are limited, particularly at night. In other research it has been suggested that the torch offers a key safety function for women in this type of location.12

**Concerns and risks**

While the refugee community recognised the important role of mobile technology, the negative impact of mobile technology on family relationships and gender-based violence were the two largest reported risks (explored in detail below). Members also expressed concerns about the trustworthiness of digital services and MNOs, and many felt there was a high risk of being exposed to scams. Phishing\(^{13}\) messages and calls were a major concern. Several interviewees shared detailed stories of being scammed, suggesting a high prevalence of scams. Although only 7 per cent of survey respondents reported experiencing scams, many also found scams difficult to identify. Thirty-eight per cent of those who had been targeted reported being harmed in some way.

There was also overall concern about the negative impact of mobile technology on social relationships. Even limited Facebook access appears to have undermined COVID-19 vaccination efforts in Iowara. Most interviewees implied that they had not been vaccinated due to fears over vaccine safety after seeing videos that had circulated on social media.

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\(^{13}\) Phishing refers to the fraudulent practice of sending messages purporting to be from a reputable source to induce individuals to reveal personal information, such as passwords and credit card numbers, or to send money.

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**Education and remote learning**

Supporting children’s educational needs remotely was a very important use for a small number of people. Many young adults and parents spoke of their mobile phones giving them access to educational resources, either for themselves or for supporting younger siblings and children with schoolwork, particularly during the pandemic. In the host community, everyone between the ages of 18 and 24 said they relied on accessing school resources and assignments through their phones, and that this was an essential tool for remote learning during the COVID-19 lockdown.

“During [the] COVID-19 outbreak, we were sent home and we received some assignments, so instead of going back to Kiunga to submit the assignments they said not to travel. Our teacher called and said that the time to return to school had been extended, so instead of going down to Kiunga, we email the assignments.”

– Male host community member, Iowara, PNG
**Digital diary of a refugee in Iowara**

Maria* is a 27-year-old female smartphone user who lives with her father and brother. She is self-employed as a farmer and family is central to her life. She takes responsibility for a younger brother who studies in Port Moresby and has other family members who live even farther away with whom she wants to maintain close ties.

*Not her real name*

<table>
<thead>
<tr>
<th>Day 1</th>
<th>How you used your phone</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morning</strong></td>
<td>I used Facebook.</td>
<td>My aunty from West Papua sent me a message that today is our grandpa’s birthday. I felt happy talking with my aunt and I wished my grandpa happy birthday. They would ask about our situation here, how our family is doing, whether anyone is sick, etc. We also would ask them about the condition of our grandfather so we can maintain our connection and communication as families.</td>
</tr>
<tr>
<td><strong>Afternoon</strong></td>
<td>I listened to music.</td>
<td>Music makes me feel relaxed and happy.</td>
</tr>
<tr>
<td><strong>Evening</strong></td>
<td>I watched a movie and I used the internet data to download some movies.</td>
<td>The movie was in Bahasa. It is an Indonesian movie about a child who was being kidnapped. All of us watched the movie together, myself, my two nieces and their father and my father. Father does not actually watch it, but he would just listen to hear Bahasa spoken in the movie. When we watched it, it helped us to think about our families in West Papua and the life there in our villages.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day 2</th>
<th>How you used your phone</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morning</strong></td>
<td>Phone off</td>
<td>Battery was dead. This affected my communication with my family. For instance, when the battery is flat, I cannot call my family in Kiunga.</td>
</tr>
<tr>
<td><strong>Afternoon</strong></td>
<td>Phone still off.</td>
<td></td>
</tr>
<tr>
<td><strong>Evening</strong></td>
<td>I called my brother.</td>
<td>I was able to charge using a neighbour’s solar charger. I called my younger brother in school in Port Moresby and he told me his phone was malfunctioning. It made me feel sorry for him. It is important for me to call him because we do not have our mother with us today, so he looks up to me as a mother. Every time he wanted to call or send a text, he would only send it to my phone. It is important also because he is in school and far away from us, so talking to him is always important.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day 3</th>
<th>How you used your phone</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morning</strong></td>
<td>Going through the phone gallery and looking at the photos.</td>
<td>I saw my mum’s photos and it made me feel sad because she had passed away already. The photos bring back memories of her.</td>
</tr>
<tr>
<td><strong>Afternoon</strong></td>
<td>I had a phone call with my boyfriend.</td>
<td>My boyfriend called and told me he was drinking. I got mad at him.</td>
</tr>
<tr>
<td><strong>Evening</strong></td>
<td>I had a phone call with my cousin.</td>
<td>My cousin said her daughter was sick, and I felt sorry for my cousin’s daughter.</td>
</tr>
</tbody>
</table>
Who’s included? Who’s excluded?

In any digital humanitarian programming, it is important to understand the digital landscape. That includes who does and does not have access to a mobile phone, and why.

**Box 3**

**Save the Children mobile money pilot: a shift in access to mobile-enabled services in Iowara**

Between the qualitative and quantitative phases of this research, a cash assistance pilot was rolled out to 449 refugee households in Iowara and the surrounding host community households, leveraging mobile money in partnership with Digicel. Free basic phones were distributed to ensure every household would have access to at least one. Women were actively targeted alongside heads of households to sign up to the mobile money account based on the assumption that women are more trustworthy recipients of cash assistance.14

While many participants did not have access to requisite identity documents to access SIM cards and set up the accompanying MiBank account, Save the Children helped participants obtain a letter from community leaders to verify their identities. Identity documents remain a barrier to accessing financial services across PNG, but this issue is particularly acute for displaced populations.

As the survey for this research was conducted so soon after the distribution, many questions remain about women’s relationships with phones. However, this distribution offers an opportunity to explore how better access to mobile technology impacts the livelihoods and wellbeing of women in Iowara in the future.

14 KII (2022) International NGO.
Surveys showed that mobile phone ownership among women is almost even with men, with a gender gap of only 5 per cent. However, this figure masked a significant gap in both mobile use and access to smartphones and, therefore, to more advanced functions. The smartphone ownership gap was 48 per cent, which means women are still excluded from more advanced functionality. Additionally, only 57 per cent of women had used a phone in the past three months compared to 76 per cent of men – a mobile usage gap of 25 per cent. Because Save the Children targeted women with their distribution of basic phones, this likely inflated the number of female basic phone owners compared to other phone owners.

Interviews revealed two contributing factors to women’s comparatively lower mobile use:

- **Fear of social breakdown:** Mobile phones were perceived to contribute to extramarital affairs and family breakdown, with 22 per cent of users concerned that mobile use is damaging to marriages (the second greatest concern about mobile use). Several interviewees believed that phones offered the opportunity to reconnect with ex-partners and to arrange clandestine meetings. Interviews with women suggested that this fuelled their reluctance to use mobile phones, as there is an assumption that any woman who wants to is interested in being promiscuous. Indeed, women of marital age, between 25 and 59, reported the lowest mobile phone use of the three age groups.

- **Fear of mobile use leading to gender-based violence:** Likely related to the first fear of social breakdown and affairs, gender-based violence was the most-reported concern about the potential impacts of mobile phone use (24 per cent of survey respondents). This reflected a broader problem in PNG where as many as two-thirds of women experience violence at home. However, the relationship between women’s safety and mobile phones is complex, as demonstrated by the number of women who signed up for Save the Children’s programme to receive a personal phone despite these concerns. More research is needed to better understand gender dynamics around mobile technology.

Interviews with women suggested these barriers all contribute to feeling generally less comfortable using mobile phones, in addition to low digital literacy.

“Interviewer: What type of phone do you have? Interviewee: The one that recently they distributed. I don’t know how to use the phone, so I just keep it in my possession.”

- Female host community member, Iowara, PNG

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Age

Old age also appears to affect mobile access and use. Men and women over the age of 60 were less likely to be phone users. It was this age group that other community members reported as likely to be marginalised by a shift towards greater reliance on mobile technology. It was also worth noting that while the mobile ownership gap was relatively low overall, the age gap for smartphone ownership was much higher at 67 per cent. This means that older people are likely unable to access more advanced functionality.

Figure 4
Mobile ownership age gap

<table>
<thead>
<tr>
<th>Age gap</th>
<th>18-59</th>
<th>60+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owns a basic phone</td>
<td>61%</td>
<td>65%</td>
</tr>
<tr>
<td>Owns a feature phone</td>
<td>5%</td>
<td>13%</td>
</tr>
<tr>
<td>Owns a smartphone</td>
<td>24%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Disability

People with disabilities appear to be less likely to use a mobile phone. A significant proportion (18 per cent) of the refugee population reported having a disability. A smaller number of this group owned a mobile phone and, importantly, none used the internet. This may indicate they are at risk of exclusion, both from the benefits of digital technology as an assistive tool and from accessing humanitarian services that are delivered through digital channels.

Figure 5
Mobile ownership disability gap

<table>
<thead>
<tr>
<th>Disability gap</th>
<th>Without disabilities</th>
<th>With disabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owns a basic phone</td>
<td>65%</td>
<td>71%</td>
</tr>
<tr>
<td>Owns a feature phone</td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td>Owns a smartphone</td>
<td>8%</td>
<td>9%</td>
</tr>
</tbody>
</table>
What are the barriers?

People in Iowara faced many barriers to accessing and using mobile phones. Twenty-two per cent of mobile phone owners had not used a phone in the past three months. Those with limited access to mobile or the internet pointed to four main barriers they faced in addition to the gender-specific barriers outlined above:

1. **Low purchasing power**
   The cost of purchasing a phone was the main reason people did not own a mobile phone (reported by 75 per cent of interviewees). The cost of buying airtime was also a barrier to ownership (13 per cent), but interviews suggested it was more likely to prevent people from using their phones as frequently as they would like.

2. **The cost and difficulty of charging phones**
   Interviewees largely relied on solar-charging points that are regularly compromised by overcast weather. Most community members did not own a solar-charging device, which left 76 per cent of users unable to reliably charge their phones at home.

3. **Language barriers**
   Users who did not speak English often reported being unable to perform functions beyond phone calls. They explained that they were often unable to get past the initial set-up instructions for apps, which are usually in English by default.

4. **Low digital literacy**
   Sixty-four per cent of users who did not access the internet cited “not knowing how to use (it) by themselves” as the main reason. This lack of knowledge also created a culture of fear around use. Ten per cent of users, primarily women, were worried about the consequences of pressing the wrong button. This contributed to a reluctance to share phones.

5. **Social barriers**
   Women faced particular barriers in accessing and using phones, as outlined above, due to concerns about family breakdowns and gender-based violence.

   “I don’t know how to use it, so I’m worried I’ll spoil it.”
   – Female West Papuan refugee, Iowara, PNG

While connectivity is relatively stable and available in Iowara, some villages that are located further from the tower face issues with network coverage and people had to walk long distances to use their phones.

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18 Charging can take place at shops or a neighbour’s house for K1-2 per charge.
Conclusions and recommendations

Mobile technology presents a host of opportunities to address challenges in Iowara. It could be used – and in some cases already is – to provide economic support, facilitate social connections, build climate resilience and increase access to education, leisure and culture from home. However, providing phones alone will not be enough for refugee and host communities to reap the full benefits of mobile. Addressing the specific challenges that have been outlined, working with communities to co-design programming and providing comprehensive digital literacy training are all essential.

Recommendations

For humanitarian organisations:

- **Humanitarian organisations** should recognise that they are well positioned to improve the digital literacy of marginalised groups and support targeted interventions for women, older people and people with disabilities. Community members who are already helping their neighbours can be trained to support others in developing digital skills to use their mobile phones autonomously.

- Training should also focus on accessibility features, like screen readers, which might help older populations, people with disabilities and people with low literacy levels.

- Functional literacy also has a direct impact on users’ ability to use mobile technology effectively and safely. **Humanitarian organisations** can support literacy and education programming alongside digital programming. Actors designing digital programming should take low literacy levels into account by ensuring that icons and other visual aids are available.

- **Improving financial literacy and mobile financial literacy** are an important component of mobile-money enabled cash assistance programming. Ensuring users are comfortable and familiar with the products and services available can advance financial inclusion and reduce risk of harm.

- **Humanitarians** should also mainstream gender programming in any digital intervention, given concerns around gender-based violence. This training should include men and male gatekeepers to explore the uses of mobile and socially acceptable use cases for women to combat perceptions of “misuse” for extramarital affairs, as well as promote the benefits and positive use cases for women. For example, Save the Children found that introducing phones as part of cash-based assistance may have changed the perception of mobile phones and mobile ownership in the short term.

- Climate-smart agricultural practices informed by data from satellite imagery, weather information and other sources could boost farmers’ resilience to climate change. Accessing information on such practices may benefit communities in areas where network connectivity is strong, along with information on soil and water quality and climate-resilient crops. These practices will support how farmers adapt to and mitigate the challenges posed by climate change and increase their productivity and profitability. However, any digital intervention should be accompanied by in-person support and complement traditional approaches, as communities expressed some resistance to the idea of receiving farming support via mobile phones.

- **Humanitarian organisations** could explore providing solar charging kits or supporting solar entrepreneurs to set up charging points in central market areas.
For MNOs and digital providers:

- **MNOs** could consider additional public awareness efforts on fee structures and available bundles to reduce financial barriers to mobile use.

- **MNOs** could also consider partnerships with development and humanitarian organisations to provide digital literacy training, given the vital importance of connectivity in PNG and the potential for long-term return in terms of increased revenue.

- While tower construction, maintenance and fuel remain mobile infrastructure challenges in PNG due to geographic barriers and low population density, these challenges should be communicated clearly to raise public awareness.

For donors:

- Some MNOs in PNG are already engaging in alternative financing models with government for tower construction and infrastructure maintenance. Considering the key role connectivity plays, **donors** could consider providing additional support to this type of initiative.

For all stakeholders:

- **Digital service providers and humanitarian organisations** should consider how to work together to build the digital ecosystem. Service providers could work with merchants to ensure digital payments are accepted, and humanitarian organisations could help communities learn how to access and use digital savings and digital payments. This has a dual benefit of reducing cash-out fees for users, connecting them directly to the goods and services they need and increasing financial inclusion. Over time, this can have broader impacts on well-being.

- **MNOs, digital service providers and humanitarian organisations** should build effective collaborative partnerships to ensure they leverage one another’s strengths. Challenges around identity documents (IDs), cash programming logistics, connectivity and power, for example, can be solved more effectively if partners are working together. Lessons in digital programming should be shared regularly between stakeholders.

- **Stakeholders** should be aware of the growing mistrust and discontentment towards digital service providers, with community members in PNG noting concerns around Facebook in particular. Authorities like NICTA could be engaged to help combat misinformation and scams on social media. Additionally, stakeholders could consider partnerships to provide training on digital protection and identifying scams.

- Lack of IDs are a barrier to accessing financial services and cash-based humanitarian support for displaced populations. All **stakeholders** could explore digital identity solutions could be explored to create verifiable forms of identity for both humanitarian support and to access other services.

- **Government** could consider advocating global players like Google and Facebook for more translated content to make services accessible in the languages of Papua New Guinea and the wider Pacific region. While the vast linguistic diversity of PNG poses a significant challenge to making digital services available in all languages, the government could consider joint advocacy with other regional actors for translation into key languages.

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**Conclusion**

While digital development in Iowara is still nascent and users’ digital worlds are relatively small, mobile technology presents significant opportunities. To fully realise these opportunities, significant work needs to be done, both with users directly to develop digital literacy, as well as on the structural side to increase connectivity infrastructure in the region and tackle social and economic barriers to mobile phone ownership and use. Existing community structures, trusted leaders and those already helping their neighbours to connect should be leveraged to achieve these aims. By working together to dismantle local barriers, humanitarian organisations, digital service providers and MNOs can expand mobile access and use, enabling refugees and local populations alike to use mobile phones safely and autonomously.