fsdafrica

Supporting Digital Payments in Cash Programming

Sudan

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STRATEGIC IMPACT ADVISORS

NORWEGIAN MINISTRY OF FOREIGN AFFAIRS

NRC NORWEGIAN REFUGEE COUNCIL

UKaid from the British people

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Executive Summary

This report is intended to assist the Norwegian Refugee Council (NRC) and other humanitarian actors to leverage digital payment systems such as mobile money in their humanitarian cash transfers. FSD Africa commissioned Strategic Impact Advisors (SIA) to examine the challenges and opportunities of providing digital financial services (DFS) in Sudan, particularly to displaced populations and low-income segments. SIA also leveraged the Connectivity Usage and Needs Assessment (CoNUA) data by GSMA to conduct additional analysis on beneficiary digital readiness, and assess the key challenges stopping them from either accessing or using their mobile devices in more diverse and confident ways. Overall, this exercise aimed to improve cash assistance programs in Sudan and to provide guidance on improving access to DFS. Based on the analysis of the key barriers for both the supply and demand side, SIA came up with recommendations for how the humanitarian sector can help improve access to financial services and strengthen the underlying digital payments infrastructure.

Supply Side Recommendations

Provide Evidence of Revenue Potential

When humanitarian organizations engage the private sector, they can provide projected transfer numbers in more detail to help financial service providers (FSPs) calculate revenue potential. Providing FSPs with a clear roadmap of the number of households, including the values and frequency that cash is disbursed, can help providers get a clearer picture of the potential. Humanitarian organizations can also provide some of the analysis done on different segments to help providers think about which beneficiaries might be more likely to use the products and services beyond simply cashing out. Based on cash volume, value, and frequency projections provided by the Sudan Cash Working Group (CWG), SIA developed a high-level revenue potential analysis (Annex C) to help service providers assess the market opportunity for delivering digital cash transfers.

Support MNOs in Overcoming Airtime Credit Transfers

Cash-in/cash-out agents are a crucial part of any digital financial service, and the primary physical points of service for mobile money are currently nonexistent. Airtime resellers for mobile network operators (MNOs) are not being incentivized to consider mobile money as they are making high commissions off of airtime credit transfers, which is essentially using airtime to send funds that airtime resellers then turn into cash for a price.

Humanitarian organizations can support the transition away from these more informal services by providing information on the frequency and value of transfers (demand) in a certain area to allow formal FSPs to help potential agents understand how much they could be making compared to the credit transfers they are conducting now via formal DFS (i.e. mobile money). Humanitarian organizations should support fintechs and other initiatives that are attempting to build out agent networks. Shared agent networks like Alsough are interoperable, meaning they provide a point of service where customers can access services regardless of their FSP (bank or mobile money), and provide choices among beneficiaries, allowing them to select the provider that offers the product that is the best fit for them.

Support in Bolstering the Access and Usage of ID

The Commission of Refugees (COR) identity document (refugee ID card) is not recognized as a know your customer (KYC) document within the governing KYC/customer due diligence (CDD) regulation or by most financial institutions; however, in 2019 the Central Bank of Sudan issued a decree stating that the refugee ID card is a KYC document, but banks have been slow to offer services to this segment and

have yet to adapt their procedures to accept it.[1] Humanitarian organizations can play an advocacy role in getting regulators to issue more clear guidance on refugee access to mobile money wallets. Among internally displaced persons (IDPs) and host communities, humanitarian organizations can educate beneficiaries about the benefits of having access to an ID that enables them to register for DFS.

Demand Side Recommendations

Expanding Digital Capability, With a Focus on Women

Across all segments, women were less confident in using a mobile phone or using the mobile internet. Building digital capabilities among beneficiaries, with a focus on women, can start to reduce this barrier. Humanitarian actors could begin considering how to integrate elements of digital capability training into their interactions with beneficiaries. Having greater digital capabilities and knowing which activities consume more data can also help improve smartphone users' management and use of data, helping reduce costs.

Driving Down Costs of Handsets

Cost of handsets was the most popular barrier across all segments in White Nile and West Darfur. While the cost of mobile phones, particularly smartphones, is declining, cost is a major barrier for accessing and using a mobile phone. Humanitarian organizations could consider partnerships with MNOs to subsidize basic and smartphones for interested beneficiaries.

Awareness of Limited Network Coverage

Another barrier often cited was a lack of network coverage, particularly for the use of the mobile internet. Expanding network coverage is likely out of the scope of humanitarian organizations, but field staff could collect data on signal strength when making field visits and provide this feedback to MNOs. This information could be used to inform whether pushing for digital payments in certain areas is premature, as network coverage is weak. While it is highly unlikely humanitarian organizations can influence greater investment in network infrastructure in certain areas, they can provide information on weak network areas and help to make data driven decisions on where digital payments may be harder to achieve.

[1] UNHCR (2022), Sudan Livelihoods Roadmap (2023-2025)

Acronyms

ADRA	Adventist Development and Relief Agency International
AML	Anti Money Laundering
API	Application Programming Interface
ATM	Automated Teller Machine
B2P	Business to Person
BNMB	Blue Nile Mashreq Bank
BoK	Bank of Khartoum
CARE	Cooperative for Assistance and Relief Everywhere
CBoS	Central Bank of Sudan
CDD	Customer Due Diligence
CFT	Countering the Financing of Terrorism
CoNUA	Connectivity Needs and Usage Assessment
CoR	Commission of Refugees
CRS	Catholic Relief Services
CSR	Corporate Social Responsibility
DFS	Digital Financial Services
EBS	Electronic Banking Services
FAO	Food and Agriculture Organization
FSD Africa	Financial Sector Deepening Africa
FSP	Financial Services Provider
GBP	British Pound
ICT	Information & Communication Technology
ID	Identity Document
IDP	Internally Displaced Person
IFAD	International Fund for Agricultural Development
IRC	International Rescue Committee
KII	Key Informant Interview
KYC	Know Your Customer
MoF	Ministry of Finance
MNO	Mobile Network Operator
MSME	Micro Small and Medium Enterprises
NFIS	National Financial Inclusion Strategy
NGO	Non-Governmental Organization
NRC	Norwegian Refugee Council
NTC	National Telecommunications Corporation
NTRA	National Telecommunications Regulatory Authority
OTC	Over the Counter
OTP	One-Time Passcode
PAN	Primary Account Number
P2P	Person to Person
PoS	Point of Sale
PSP	Payment Service Provider
QR	Quick Response
SCI	Save the Children International
SDG	Sudanese Pound
SIA	Strategic Impact Advisors
SFSP	Sudan Family Support Program
SFTP	Secure File Transfer Protocol
SIM	Subscriber Identification Module
SMS	Short Message Service
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TPRA	Telecommunications and Post Regulatory Authority
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
USD	US Dollar
USSD	Unstructured Supplementary Service Data
VC	Venture Capital
VSLA	Village Savings and Loans Associations
WFP	World Food Programme
WHO	World Health Organization

Background

FSD Africa engaged SIA to support NRC to explore ways in which it could improve it's efficiency and impact in its humanitarian response by using digital financial services. NRC had developed a concept note to:

1. Examine systemic issues and barriers to accessing digital payments.
2. Support multiple coordination structures including Sudan's Cash Working Group by facilitating increased engagement between the humanitarian, public, and private sector stakeholders.
3. Generate research and practical learning in order to steer discussions and future policy decisions.
4. Carry out digital payment pilots for hard-to-reach communities and ensure they have a voice in the development of digital payment policies and products.

SIA provided technical support to NRC to undertake this preparation work successfully. This included reviewing the Connectivity Needs and Usage Assessment (CoNUA) that NRC conducted and supported by GSMA in White Nile and West Darfur, as well as presenting the results to the private sector. These sessions led to a better understanding of the challenges and opportunities in delivering payments to displaced populations, specifically to White Nile and West Darfur. The sessions also identified actors willing to participate in follow-on project activities and informed how these activities would be undertaken.

This report summarizes both the supply and demand side findings from SIA's landscaping and data analysis. It also provides recommendations to the humanitarian sector on establishing sustainable, lasting partnerships with financial service providers (FSPs) in Sudan.

Supply Side Analysis

Key Objectives of Supply Side Analysis

SIA examined the challenges and opportunities of providing digital financial services (DFS) in Sudan, particularly to displaced populations and low-income segments. Overall, this exercise aimed to improve cash assistance programs in Sudan, specifically for NRC, and to provide guidance on improving access to Digital Financial Services (DFS). SIA interviewed two commercial banks, three mobile network operators (MNOs), five financial technology companies (fintechs), three financial sector experts, a postal service representative, and an ecosystem enabler. Information in this section has been primarily sourced from these interviews and desktop research. The list of stakeholders interviewed can be found in Annex A and a summary of the services they provide can be found in Annex B.

Supply Side Actor Landscape

Country Context

Sudan is a transit and destination country for asylum seekers, refugees, and migrants from at least 10 countries: South Sudan, Chad, the Central African Republic, the Democratic Republic of the Congo, Eritrea, Ethiopia, Somalia, Syria, and Yemen. Three-quarters (75%) of the 1.1 million refugees in the country are South Sudanese; 51% of all refugees are women, and 48% are under 18. Due to long-term recurring conflict, 2.6 million people remain internally displaced. Refugees and internally displaced persons (IDPs) live in camps and out-of-camp settlements.[2]

Sudan is still in a state of political uncertainty following the military coup on October 25, 2021.[3] According to some of the organizations interviewed, the Sudan Family Support Program (SFSP), known as the 'Thamarat' project, was seen as a catalyst for digital transformation and financial inclusion in Sudan. Thamarat was launched in February 2021 to give financial assistance (cash transfers) to low-income families affected by economic reforms and other short-term shocks. The program aimed to reach 80% of Sudanese families (approximately 32 million people), disbursing approximately US $5 per person per month for six or 12 months, subject to availability of funding. The project's first phase received US $400 million in funding (US $200 million from the World Bank and US $200 million from the Sudan Transition and Recovery Support Trust Fund (STARS)). However, due to the political coup in October 2021, this program was halted and disbursements to beneficiaries stopped after only six months. In July 2022, the United Nations World Food Programme (WFP) in Sudan received a contribution of US$ 100 million from the World Bank to implement its newly launched Sudan Emergency Safety Nets Project. As part of this project, cash transfers and food will be provided to more than 2 million people across Sudan, including internally displaced people and residents.[4]

Financial Sector Overview

37	38	14	2	>64
Commercial banks	Microfinance institutions (MFIs)	Insurance companies	Current mobile money providers[5]	licensed fintech organizations[6]

[2] ACAPS (2021), Sudan Complex Crisis
[3] Aljazeea (2021), Sudan's military dissolves cabinet, announced state of emergency
[4] WFP (2022), WFP welcomes World Bank US$100 million contribution for critical emergency cash and food assistance in Sudan
[5] Only MTN and Sudani are live. Zain is set to relaunch in September 2022
[6] IMF (2020), Sudan Overview

Sudan remains a cash-based economy and digital financial services are not widely available. A significant amount of money is sent through informal channels such as credit transfer mechanisms, where people use airtime as a form of money transfer to send and receive money. Airtime resellers essentially charge a fee of their choosing to turn airtime into cash, and an end user can transfer airtime to the reseller in exchange for cash. Findings from Findex (2014)[7] indicate that only 15% of adults (15+) have an account with a financial institution, and financial inclusion efforts are hindered by a lack of a comprehensive strategy framework defining inclusion objectives and raising awareness of financial services.[8]

Regulation

The Central Bank of Sudan (CBoS) is responsible for promoting, regulating, and supervising payment and settlement systems in Sudan through 17 branches across the country.[9] CBoS is currently formulating the first Sudanese National Financial Inclusion Strategy (NFIS), which aims to build on DFS to achieve greater financial resilience and expand access to and use of quality formal financial services.[10]

Previously, the National Telecommunications Corporation (NTC), an agency of the Ministry of Telecoms and Information Technology, regulated Sudan's telecommunications sector. The Telecommunications and Post Regulatory Authority (TPRA) took over the NTC's duties in 2018 and is now Sudan's telecommunications regulatory body. Although the authorities began enforcing mandatory SIM card registration late in 2017, SIM registration has been a legal requirement since 2008. Subscribers were given until December, 31 2017 to register their numbers with their national ID.

The Know Your Customer/Customer Due Diligence (KYC/CDD) for SIM cards allow refugee identity cards to be used, but their acceptance varies among service providers. There are providers who will only accept the refugee identity card; others will require the refugee to submit a letter from the Commission of Refugees (COR) verifying that they are a registered refugee in addition to the identity card. Others do not recognize the card and do not offer alternatives.[11] The KYC/CDD identification and verification procedures for financial accounts require that the financial service provider verify the individual's identity using valid official documents (national identity card, driver's license, military card, judicial card, police card, residency papers, passport or travel document). The identification data must include the customer's full name, nationality, date of birth, address of permanent residence, phone numbers, work address, and other information deemed necessary by the financial institution. Mobile money service providers are governed by the same regulations as those for other financial services.[12]

Despite the fact that the Central Bank announced in 2019 that the refugee ID card is a KYC document, the COR identity document (refugee ID card) is not recognized as a KYC document under KYC/CDD regulations or by most financial institutions. Although some refugees in Khartoum have been able to open bank accounts with their COR ID cards in the past, there is uncertainty concerning whether the Circular is still valid due to the change in government.[13]

[7] New Findex 2021 data does not include Sudan at the moment
[8] Sudan is not included in the Findex (2017) nor Findex (2021) data
[9] AFI (2017) National Retail Payment Systems to Support Financial Inclusion
[10] AFI (2022-012) Sudan RFP
[11] NRC (2022), KII Interview
[12] CBoS Circular (2014) Regulatory and Supervisory Requirements
[13] UNHCR Innovation Service (2022 forthcoming), Displaced and Disconnected (Sudan)

Licensing

Financial institutions are licensed and regulated by CBoS. Three levels are regulated by CBoS.[14]

Table 1: Summary of Licenses Regulated by CBoS

Level	Overview
Provisioning Level	• Financial Services Providers (FSP): any institution that owns a financial license from the Central Bank • Customer Services Providers (CSP): any brand that owns a customer base and capabilities to build and maintain a brand, a distribution network, and/or customer interfaces to provide such financial services to customers
Distribution Level	• Merchant Distribution Network (MEDIN) • Point of Sale (PoS) where the cash physically moves in and out • Billers and Utility (Bn) provider level are the business owners who accept payment through mobile money for their services and products
System Operation Level	• Electronic Banking Services (EBS)

Electronic Banking Services (EBS)

EBS is the technical arm of the CBoS and provides a centralized wide range of payment products and channels. It is jointly owned by the CBoS, the Union of Sudanese Banks, and Sudatel.[15]

EBS operates a national switch providing full interoperability for all ATMs and PoS devices in the country.[16] EBS's central switch connects all banks and financial institutions in the country and is the sole operator of the clearing house, national ATM switch, and Society for Worldwide Interbank Financial Telecommunication (SWIFT), which was connected in 2005. There are five banks with their own switch and 33 that rely on EBS. The Central Bank slowed down on its investment in developing EBS in 2017. Most financial institutions are required to integrate EBS to process their transactions through a single API integration. Once a financial institution connects to EBS, it can access a range of products and services such as Swift, ATMs, PoS, Cards, Apps, and Billers through this integration, allowing banks, merchants, fintechs, mobile money providers, and other business partners to connect and come up with a variety of innovative electronic payments solutions.

Table 2: EBS Products and Services

Product/Service	Product Details	Product Feature
1 **Mobile Money**	• Associate mobile # with a wallet (SVA) • Available to anyone with a mobile phone • No bank account needed • Self-registration or through agents • Can be used for all electronic financial services through all channels • You put money in the SVA through agents or P2P protected by a pin #	**Money Transfer** • From mobile to mobile • From mobile to account • From account to mobile **eVoucher** • International remittance • Merchant payments • Utility payments • Balance enquiry • Cash deposit & withdrawal

[14] Samena Communication Council (2017), Utilizing Digital Innovations in Mobile Payments
[15] C. Pulver, April 2015, Sudan Social Safety Nets Payment Mechanism Assessment, World Bank
[16] Ibid

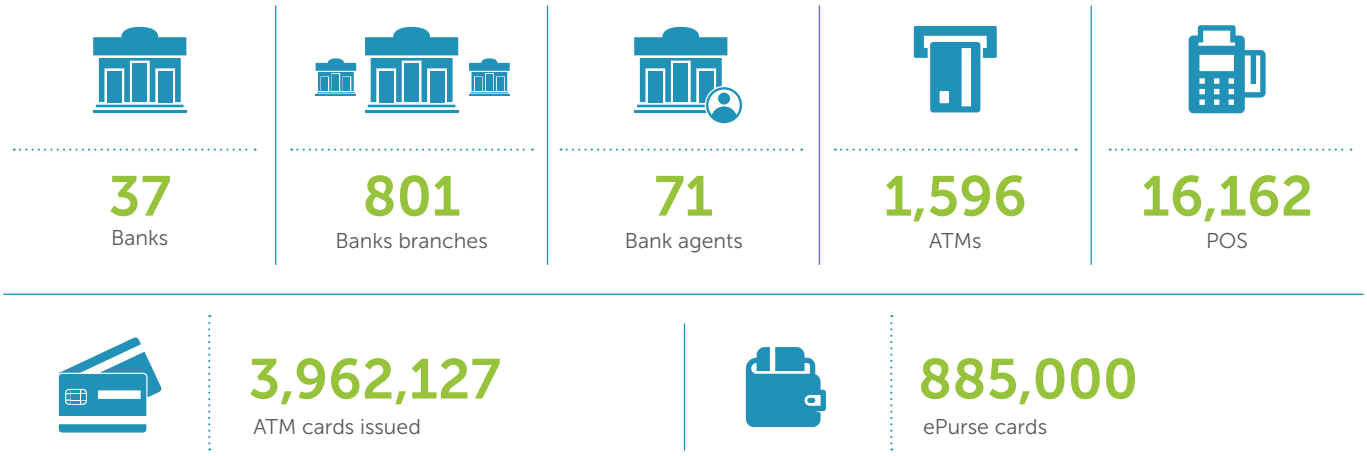
Product/Service	Product Details	Product Feature
2 **ePurse (CashCard)**	• Prepaid card associated with wallet • Used to store money and use it • Protected by a pin # • Anyone can obtain it from any agent • No need for bank account or KYC • Cash-in/cash-out through agents or P2P • Can be used for electronic financial services through all channels	**Standard Card** • Not personalized • Can be obtained from any agent • Limit 50,000 SDG **Silver Card** • Is Personalized • Is issued by an institution • Limit 150,000 SDG • KYC - ID number **Golden Card** • Is Personalized • Needs full KYC e.g. ID number, ID documents • Has no Limit Mostly used by merchants and agents
3 **Switching Services**	• EBS provides for ATMS, PoS, RTGS, eCommerce switching services	• Provides customers with the ability to use service regardless of the financial institution
4 **Government Payments Gateway**	• EBS has integrated with various government entities to facilitate payments	• Payment of government services fees through the different electronic payment tools and channels
5 **Bill Payment Gateway (BPG)**	• EBS has integrated with various billers to facilitate bill payments	• Payment of bills such as airtime, phone bills, and electricity through different electronic payment tools and channels

Banking

The banking sector consists of 37 banks, six specialized banks and 32 commercial banks. Blue Nile Mashreq Bank (BNMB) and Bank of Khartoum (BoK) both offer retail DFS at scale and are often used by humanitarian organizations for cash transfers. Other banks that have digital offerings include Faisal Islamic Bank, Al Nile Bank, and Export Bank. MasterCard and Visa are relatively new and are not used for local transactions. Banks must provide each customer with a local ATM card when opening an account. Bank of Khartoum has issued around 2 million cards.

Currently, there is no public data available on the banking sector, such as market share, active customer numbers, branch locations, assets, volumes, and value per organization. The last official figures provided by the Central Bank were in 2018 as illustrated below.

Figure 1: Last Official Figures on Banking Sector (2018)



Microfinance

In 2018, there were 44 deposit-taking and credit-only Micro Finance Institutions (MFIs) registered with the CBoS. Some of them were national and others were regional, but the majority were located in urban areas. The sector flourished as part of the CBoS strategy, Vision for the Development and Expansion of the Microfinance Sector (2007-2011), with over 50+ MFIs operating at the time. This strategy called for the establishment of a Microfinance Unit, a specialized entity in the CBoS, to regulate, supervise, and promote the microfinance sector in Sudan.[17]

Some MFIs have since collapsed or are struggling due to recent political developments and COVID-19. A number of SACCOs have also collapsed. The majority of NGOs do not deal with MFIs but instead promote village savings and loans associations (VSLAs) known as Sandooks.[18]

There are several challenges facing MFIs, including a lack of capital, a lack of system management platforms, a lack of availability of branches in rural areas, and a lack of technical and managerial skills. MFIs are generally not digitized. The International Fund for Agriculture (IFAD) is currently working with two MFIs to digitize their operations and launch agency banking.

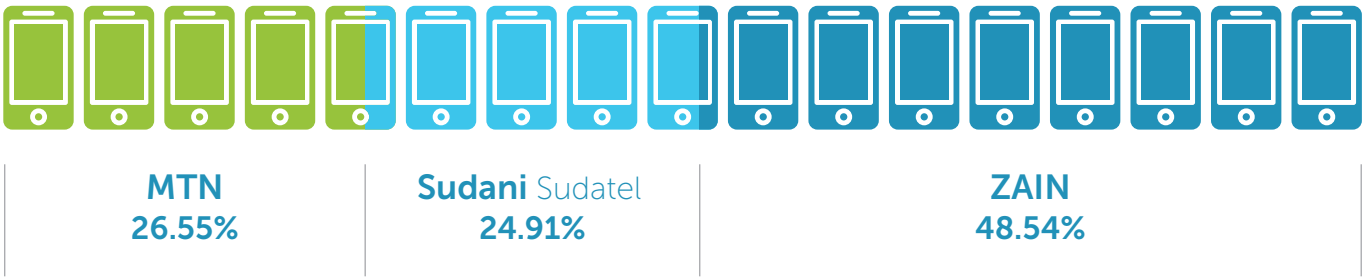
CBoS launched two other strategies to support the microfinance sector:

1. Comprehensive Strategic Plan for the Development of Microfinance in Sudan (2013- 2017)
2. Microfinance Strategic Plan for Growth (2021-2025) to elevate the Sudanese microfinance sector to an international level. It is built around five main pillars: 1) regulations, 2) microfinance practices, 3) microfinance infrastructure, 4) networking, and 5) linkages to international specialized agencies.

Mobile Money

There are three mobile network providers in Sudan, MTN, Sudani (Sudatel), and Zain, with a total of 22,494,424 unique mobile subscriptions and a quarterly growth rate of 1.1%.[19]

Figure 2: Market Share of Total Mobile Connections, By Provider[20]



Mobile money services are regulated by the CBoS.

Zain launched Sudan's first mobile financial service, Hassa, in partnership with the Bank of Khartoum in 2014, but the service was shut down in 2015. Mobile money services are currently offered by two MNOs, Sudani and MTN, as well as a few commercial banks. Zain will relaunch its mobile money service in September 2022.

[17] CBoS (2018), 58th Annual Report
[18] Yasser (2022), Microfinance Expert KII Interview
[19] GSMA Intelligence, https://data.gsmaintelligence.com/, accessed June 21st 2022
[20] GSMA Intelligence, https://data.gsmaintelligence.com/, accessed June 21st 2022. These figures are calculations. Total connections at the end of the period, expressed as a percentage share of the total market connections. Excluding licensed IoT connections.

Prior to 2020, mobile money providers were required to connect to Gemalto, a mobile money platform owned and operated by EBS. Customers, accounts, and transactions were also managed by EBS; however, this model was not suitable for mobile money providers since they wanted autonomy to own and manage their own customers. In 2020, CBoS changed this requirement after mobile money providers lobbied against it, and as a result, mobile money providers were allowed to use their individual platforms connected to the mobile money switch since they had demonstrable use cases for mobile money in Sudan.

The slow rollout of mobile money by MNOs can be attributed to several factors, the most important being that agents earn more commissions from credit transfers than[21] from mobile money. Agents have the autonomy to determine the commission, and the commission can range from 10-15% in large cities and 20-50% in rural areas. Additional factors included:

1. The previous requirement for MNOs to only use the EBS infrastructure instead of being able to establish their own mobile money platforms. This has changed, MTN for example, re-launched its mobile money platform, provided by Ericsson, at the beginning of 2022 and now has more control over the back end of their mobile money services.
2. Weak network infrastructure in many areas, still makes connectivity an issue.
3. Awareness levels amongst much of the population on what mobile money can be used for is very low.

Fintechs

Fintech companies in Sudan provide support services to banks and other financial institutions. In 2016, the CBoS created a sandbox environment that enabled fintech companies to participate in the last mile distribution of bank cards, ATMs, and PoS infrastructure.[22]

Fintechs also offer integration services to EBS, advisory services, and the collection and disbursement of cash transfers. A number of fintech companies hold licenses that allow them to provide mobile money services, but implementing these services is a complex process. The primary obstacle is a lack of capital. According to expert interviews,[23] a fintech startup would have to invest an average of US $10.5 million over three years to turn a profit — an amount many startups cannot afford or have not raised funds to support. Some of the challenges encountered include a lack of awareness of the Sudanese market, the payment legislation, a lack of a dedicated full-time customer service unit, an absence of a network of agents to support cash-in and cash-out, an insufficient market research effort to identify challenges and possible solutions, and the existence of credit transfer solutions. Currently, there are more than 64 licensed fintechs, but only a few are active.

Key Challenges for Supply Side Actors

The following section summarizes the main findings from market research and interviews with financial services providers regarding the challenges of providing digital financial services. It is important to note that these challenges are not the only ones present, but were the most frequently mentioned.

[21] They use airtime as a form of money transfer mechanism to send and receive money.
[22] Omer Omarabi (2022), Digital Transformation Expert / Former EBS CEO KII Interview.
[23] Omer Omarabi (2022), Digital Transformation Expert / Former EBS CEO KII Interview

1. **Political uncertainty:** The current political situation makes it very challenging for FSPs to invest in their businesses.
2. **Complex operating environment:** Many challenges have hindered the financial sector's ability to provide financial services to its customers including economic sanctions, political instability, and currency devaluation.
3. **Low ID penetration (refugees, IDPs, locals):** Some beneficiaries do not have access to an ID. For those who do have an ID, like the refugee ID, acceptance and use varies among MNOs (for SIM registration) and FSPs (for account registration).[24]
4. **High regulatory requirements:** To provide financial services, MNOs and fintechs have to apply for several licenses, which is costly and takes time.
5. **Low levels of digital and financial literacy:** Awareness and use of DFS is low, which is reflected in the data collected on beneficiaries in White Nile and West Darfur. A vast majority of respondents were unable to speak to the questions on mobile money as they did not know what it was. Additionally, a primary barrier for usage of more advanced digital services (i.e. mobile broadband) was a lack of understanding on how to use it.
6. **Low internet penetration:** Sudan's internet penetration rate stood at 30.9% of the total population at the start of 2022.[25] Smartphone penetration and availability of internet across the country is low. This data was also reflected in the demand side survey responses, as many beneficiaries cited no or spotty network as a barrier.
7. **Low network coverage:** Network coverage is not universal. Coverage depends on the MNO and where they chose to invest. This data was also reflected in the demand side survey responses, as many beneficiaries cited the network as a barrier.
8. **Prescribed pricing by CBoS:** CBoS provides pricing guidelines to FSPs and does not consider individual FSP business models. This is reflected in the price ceilings set for the use of the EBS, which does not consider the issuing and acquiring costs of FSPs, making margins on payment products minimal to nonexistent. While this is great for customers, the economic incentives are not there for providers to invest heavily in building out services.
9. **Inertia to change:** Senior management in FSPs and regulatory authorities are slow to prioritize digital transformation in the financial sector.
10. **Low agent penetration:** There are low economic incentives for mobile money vs. credit transfer. Agent commissions are lower than airtime commissions, making it difficult to convert airtime dealers to mobile money agents.
11. **Limited bank branch network coverage:** There is limited investment in bank branches outside the major cities, particularly in rural areas. This is due to infrastructure challenges and banks' preference to focus operations in the main cities. Cash management is difficult in rural areas partly because of infrastructure challenges and sparse population in some areas.
12. **Reliance on the national switch:** All FSPs are connected to EBS, the national switch, which provides them with opportunities to interconnect with the ecosystem using a single API. However, this is also a single point of failure and FSPs noted that when they had system downtimes, a majority of their services were also not available to customers.

[24] UNHCR (2022), Sudan Livelihoods Roadmap (2023-2025)
[25] Simon Kemp, HootSuite (2020), Digital in Sudan

Demand Side Analysis

The section below highlights the main findings from the Connectivity Usage and Needs Assessment (CoNUA), conducted by NRC and supported by GSMA. SIA leveraged this data collection effort to conduct additional analysis on beneficiary digital readiness, and assess the key challenges stopping them from either accessing mobile phones or using their mobile devices in more diverse and confident ways. The dataset focused on two regions[26] in Sudan, White Nile and West Dafur, which enabled SIA to compare the results between the two regions.

Summary of Main Findings

1	Segmentation of the beneficiary population shows segment 3 to be the largest in both regions. This is the segment of the population that owns phones but only uses them for basic functions.
2	In general, populations have access to phones, with men being more likely to own a smartphone, and women being more likely to not own any type of phone.
3	Refugees in White Nile are more likely to own a phone than host community members.
4	Age seems to be correlated with digital readiness, with younger populations (under 30) making up the majority of the most digital-ready segments.
5	The top barriers for those who do not own their own phone are centered around the cost of purchasing handsets, cost of airtime, and lack of network coverage. These were the top barriers for both men and women.
6	In West Darfur, women also cited a lack of understanding of how to use a mobile phone as a major barrier, which differentiated women in West Darfur from women in White Nile.
7	Across segment 3, most of the barriers revolved around understanding how to use a smartphone device and costs involved in purchasing smartphones. Data costs were another barrier often brought up.
8	For those who are using handsets in more advanced ways and accessing mobile internet services, a major barrier is the quality of the network where they live (for both regions).

[26] Sample size - White Nile (n=1,619) and West Darfur (n=1,512)

CoNUA Dataset Description

With funding from the Norwegian Ministry of Foreign Affairs, NRC partnered with GSMA to roll out a survey called the Connectivity Usage and Needs Assessment (CoNUA), designed by GSMA. CoNUA provides tools to help users understand mobile phone access, usage, preferences, and digital skills among populations of concern in a robust and standardized manner. SIA was able to leverage this data collection effort to conduct additional analysis on where beneficiaries are in terms of digital readiness and assess the key challenges stopping them from either accessing mobile phones or using their mobile devices in more robust and confident ways. The dataset was gender disaggregated, which enabled SIA to assess where divides in digital readiness and access occur between men and women.

The dataset focused on two regions in Sudan, White Nile and West Darfur, which enabled SIA to compare the results between the two regions. GSMA published the reports in June 2022. The reports can be accessed here. The sections below highlight specific analyses conducted in order to provide private sector stakeholders in Sudan with an idea of where beneficiaries are in their digital customer journeys and demonstrate that segments of these populations are ready for cash transfers to be delivered using digital channels.

Challenges with the Data

While the data collected on both regions was robust, enumerators left the section focusing on mobile money and mobile wallet usage mostly blank. The primary reason for this is simply that mobile money as a product has not been widely promoted in Sudan. It seems that enumerators were faced with confused respondents when asking about mobile money; while the sample sizes were quite large for the questions on digital readiness, they were insignificant for the questions on mobile money (n=29 across the two datasets). While the sample size was the same, the majority did not use or know anything about mobile money, so only a small proportion provided additional details.

It should be noted that SIA were unable to access the merchant survey data, a portion of the GSMA CoNUA survey toolkit that assesses the strength of merchants and potential agents in the area. This data was seen as highly sensitive and was therefore not shared with SIA for this assessment. That means this analysis will only be able to speak to the end user readiness as a result of the CoNUA survey implementation.

Credit Transfers

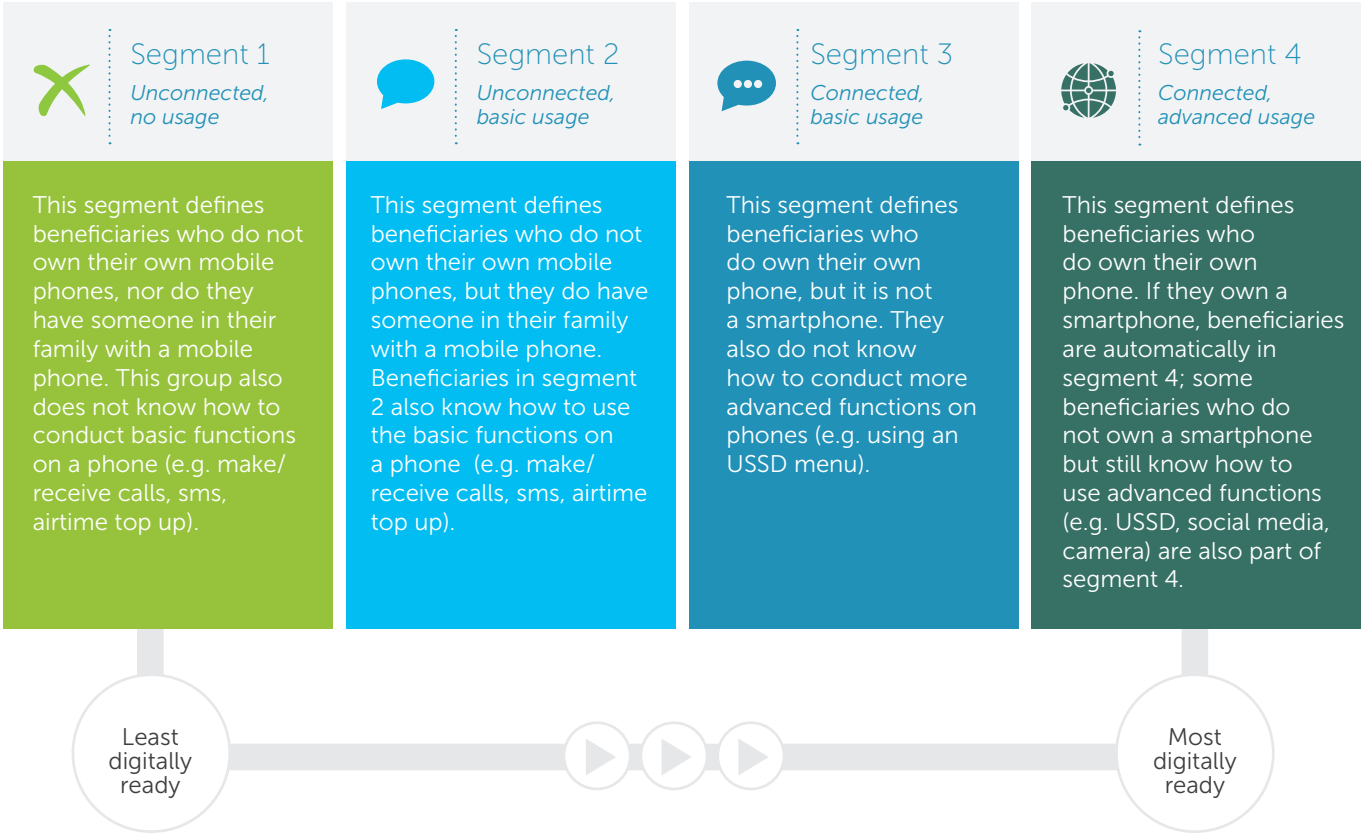
While the data on mobile money was small, the survey did collect information on the number of beneficiaries who use airtime credit transfers to send and receive funds. Credit transfers are used by 46% of the surveyed population in White Nile (62% of men and 36% of women) and 68% of the total surveyed population in West Darfur (74% of men and 64% of women). This service is prime for being replaced by mobile money, but the network of airtime resellers who are offering this service will be taking a cut in their commissions, as the airtime credit transfer is not a regulated or legal transaction and tariff structures are created by the resellers vs. mandated by the mobile money provider. There will be some recommendations for how to overcome these negative economic incentives in the section below.

[27] Sample size - White Nile (n=1,619) and West Darfur (n=1,512)

Digital Readiness Segmentation Description and Analysis

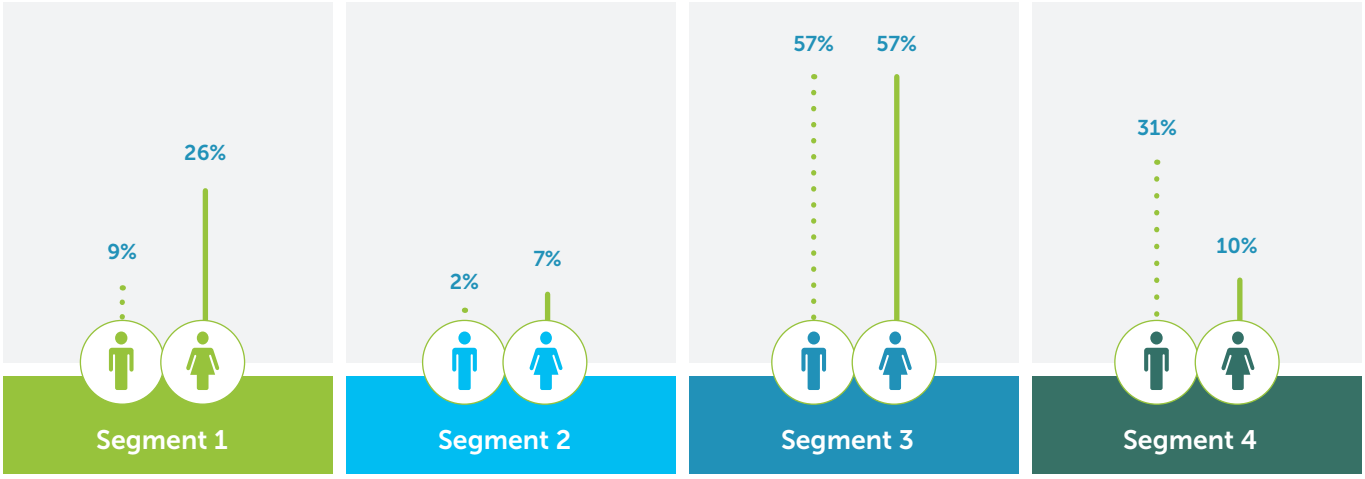
As part of the analysis, SIA used a segmentation model to help place beneficiaries into four categories. By developing these segments, SIA were able to observe where the surveyed populations were in terms of digital readiness, with those in segment 1 being least ready and those in segment 4 being most ready.

Figure 3: Beneficiary Segmentation Definitions and Digital Readiness



The segmentation exercises for both datasets, White Nile and West Darfur, were relatively similar. Segment 3 was the largest segment for all populations, with mobile phone penetration being relatively strong.

Figure 4: Segmentation Breakdown by Gender for White Nile Dataset



Gender Digital Divide

When comparing the two regions, it is apparent that West Darfur is generally more digitally ready, with a smaller portion of the population in segments 1 or 2. When looking at the differences between men and women, in both regions there are more women in segment 1 and more men in segment 4, which indicates a digital gender divide does exist. The largest gender divide to be aware of exists within segments 4, with men being 2 to 3 times more likely to be in segment 4 than women. An analysis on the key barriers for women's access and usage of phones in each segment is given later in this report.

Refugee/IDP/Host Community Status Digital Divide

In the White Nile region, it was found that refugees were generally more digitally ready than their host community neighbors. Refugees make up 63% of segment 3 and 61% of segment 4, whereas host communities make up the majority of segments 1 and 2. This suggests that refugees have access to SIM card registration, which will help pave the way to meeting KYC mobile money requirements in the future. UNHCR mentioned that the Central Bank circulated a decree to all banks authorizing the use of the Commission of Refugees (COR) ID Card as acceptable KYC for opening a bank account. In West Darfur, where there is a mix of IDP and host community inhabitants, it was found that the host community populations were more digitally ready. Respondents that were part of the host community made up 59% of segment 3 and 62% of segment 4, while IDPs made up 54% of segment 2.

Age Digital Divide

As expected, youth make up the majority of segment 4, the more digitally-ready segment, in both regions. Age is less of an indicator of digital readiness in West Darfur than in White Nile. In White Nile, those beneficiaries under 30 represent 69% of segment 4, while in West Darfur they only represent 43%. Interestingly, in both regions, beneficiaries under 30 also represent the majority of segment 2. This is likely due to the fact that younger populations may not own their own phone due to costs, but they likely have access to one from a family member and know how to use the basic functions.

Key Challenges for Beneficiary Population Segments

By segmenting the population SIA were also able to observe which barriers were causing beneficiaries in segments 1 and 2 from moving forward on the digital readiness scale, while also observing what challenges individuals in segments 3 and 4 were facing with using digital services.

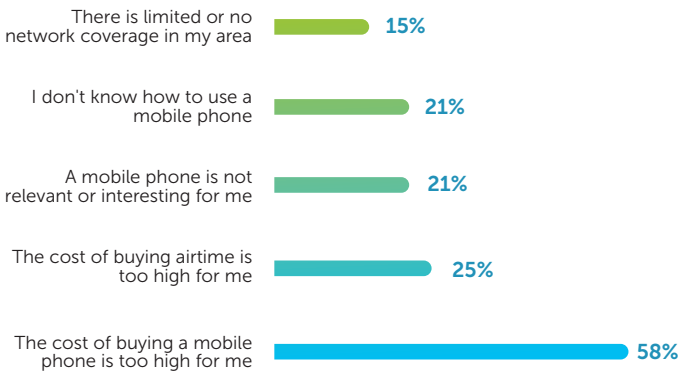
White Nile Segment Barriers

Segment 1

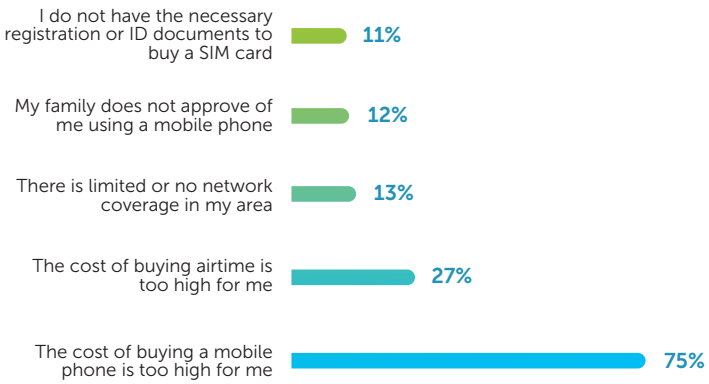
The top two barriers for owning a mobile phone in White Nile were cost of the handset (75% of women, 58% of men) and cost of airtime (27% of women, 25% of men). Men and women differed for their third largest barrier, with 21% of men stating a mobile phone was not relevant or interesting to them, and 13% of women stating there was limited network coverage in their area. Women are more likely to face barriers brought on by social norms or family pressures. 12% of women reported facing social norms or family pressures as barriers to owning a phone; men did not.

Figures 5 and 6: Top 5 Barriers for White Nile Segment 1 (Men/Women)

Segment 1: Top 5 Barriers to Phone Ownership (Men)



Segment 1: Top 5 Barriers to Phone Ownership (Women)

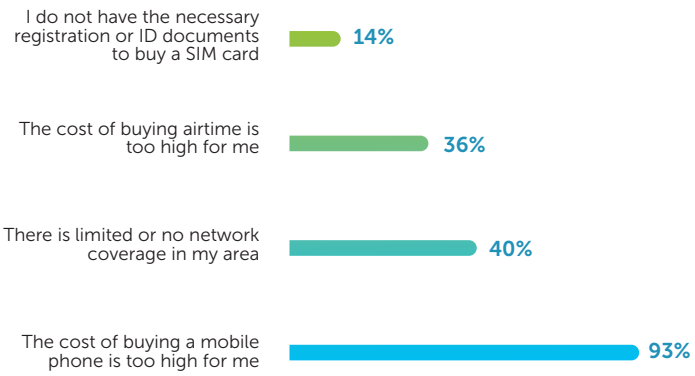


Segment 2

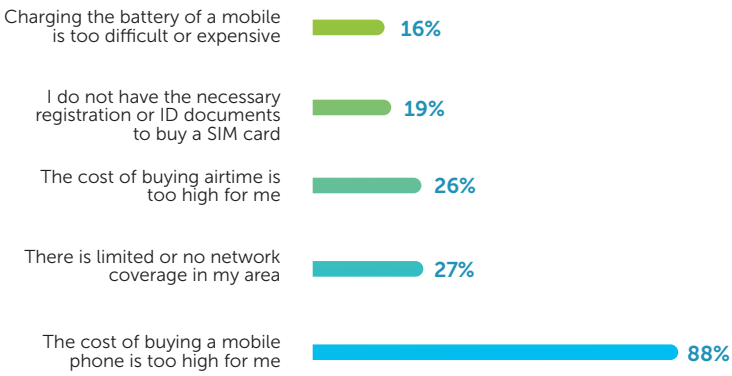
The top three barriers for men and women in segment 2 were the same in White Nile: 1) the cost of buying a handset (for 88% of women and 93% of men); 2) limited network coverage (27% of women and 50% of men); and 3) the cost of buying airtime (26% of women and 36% of men). These numbers reflect similar challenges around cost and network coverage. Individuals in segment 2 have access to phones but do not own their own, which is likely why costs and network coverage are the barriers vs. a lack of interest.

Figures 7 and 8: Top 5 Barriers for White Nile Segment 2 (Men/Women)

Segment 2: Top 4 Barriers to Phone Ownership (Men)



Segment 2: Top 5 Barriers to Phone Ownership (Women)

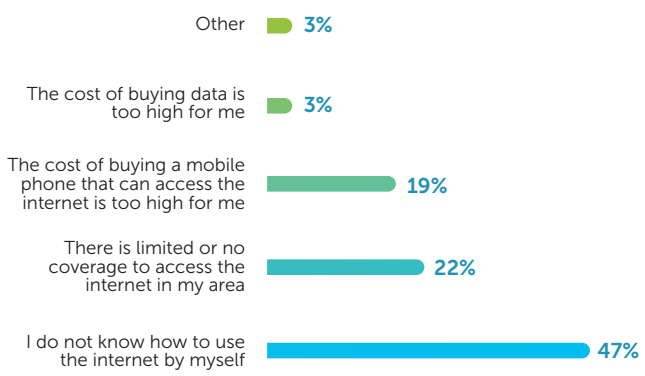


Segment 3

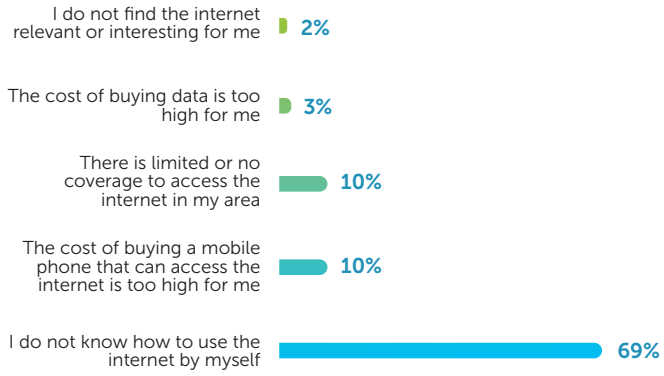
For beneficiaries in segment 3, SIA observed the need to strengthen and deepen digital capabilities in order to expand the use of the mobile internet. There were similar barriers for men and women in using the mobile internet within this segment. The largest barrier for both women and men was a lack of knowledge on how to use mobile internet (69% of women and 47% of men). For women in segment 3, the cost of buying a smartphone or feature phone that allows access to the internet and network coverage were equal barriers (10% of women for each barrier). For men, it was the same barriers, but limited network coverage for mobile internet was the larger barrier (22% of men) followed by the cost of a device (19% of men). These results mean digital literacy and training on the benefits of mobile internet access are lacking among these populations.

Figures 9 and 10: Top 5 Barriers for White Nile Segment 3 (Men/Women)

Segment 3: Top 5 Barriers to Mobile Internet Use (Men)



Segment 3: Top 5 Barriers to Mobile Internet Use (Women)

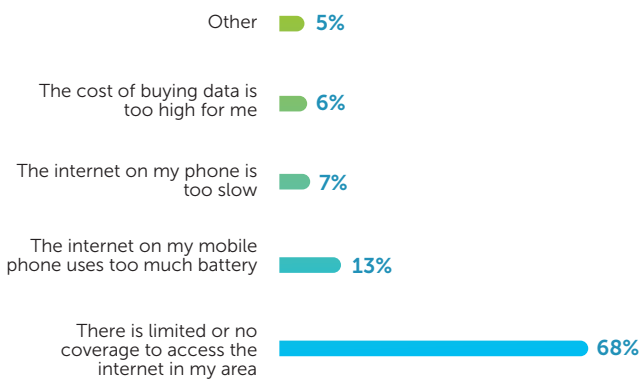


Segment 4

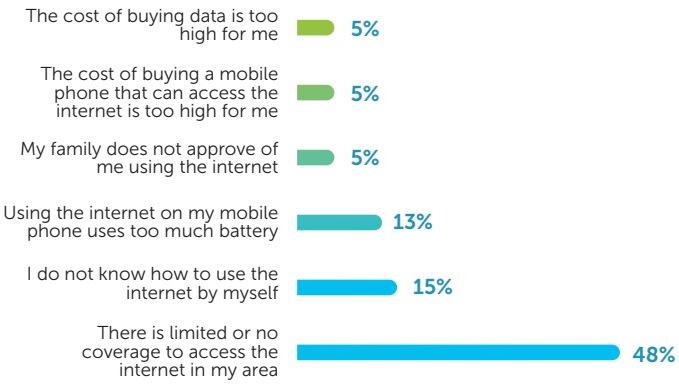
This segment provides the best option that players could focus on but the group also has barriers preventing them from making greater use of the mobile internet. As they are already using their devices in more advanced ways, barriers for this segment were more around physical infrastructure limitations (vs. cost), with the largest barrier being the quality of network coverage (48% of women and 68% of men cited limited network coverage as the largest barrier for their use of mobile internet). Other barriers included the fact that smartphones using the mobile internet use too much battery and the network coverage that does exist is weak and causes delays. Women did cite a lack of understanding on how to use the internet as a top three barrier for them; men did not.

Figures 11 and 12: Top 5 Barriers for White Nile Segment 4 (Men/Women)

Segment 4: Top 5 Barriers to Mobile Internet Use (Men)



Segment 4: Top 6 Barriers to Mobile Internet Use (Women)



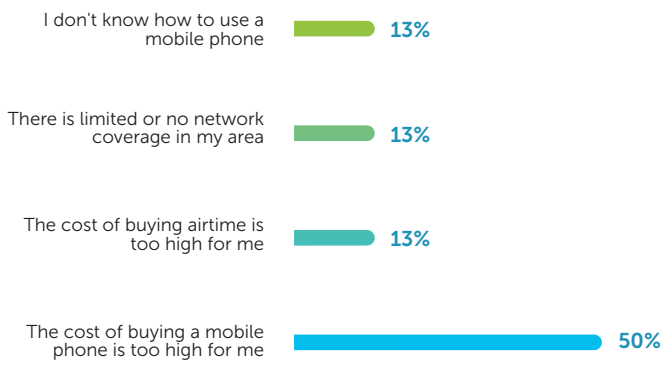
West Darfur Segment Barriers

Segment 1

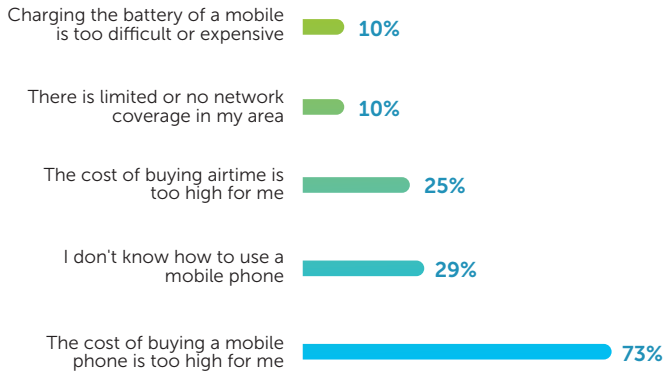
The top barrier to owning a mobile phone in West Darfur was the cost of the handset (for 73% of women and 50% of men). Women in segment 1 also stated they did not know how to use a mobile phone (29% of women); men in this segment did not mention this as a barrier. The cost of buying airtime was also a large barrier to owning their own mobile phone (for 25% of women and 13% of men). Men also mentioned a lack of network coverage that made it difficult for them to own a mobile phone.

Figures 13 and 14: Top 5 Barriers for West Darfur Segment 1 (Men/Women)

Segment 1: Top 4 Barriers to Phone Ownership (Men)



Segment 1: Top 5 Barriers to Phone Ownership (Women)

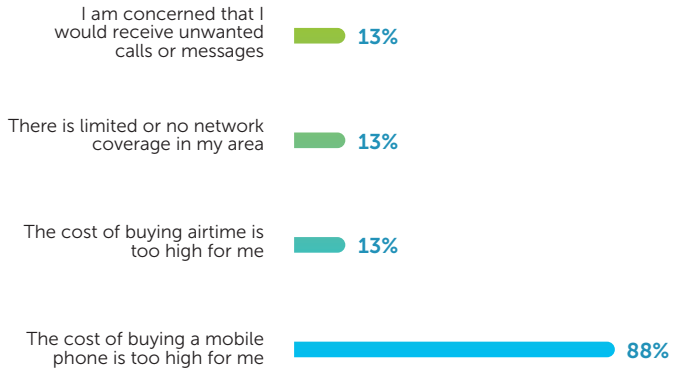


Segment 2

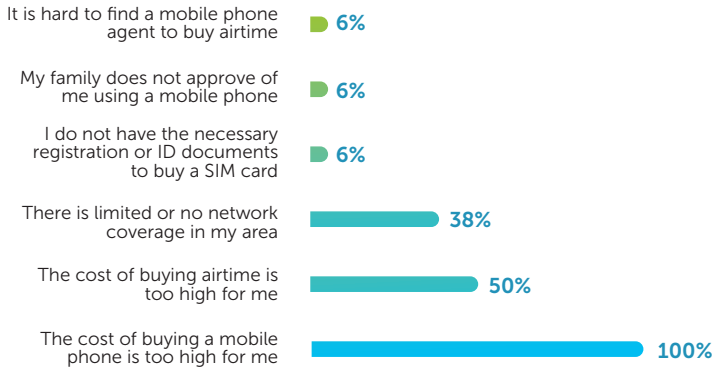
The top three barriers in segment 2 were the same in West Darfur (and the same as the barriers cited by segment 2 in White Nile): 1) the cost of buying a handset (100% of women and 88% of men); 2) the cost of buying airtime (50% of women and 13% of men); and 3) limited network coverage (38% of women and 13% of men). These numbers reflect similar challenges around cost and network coverage.

Figures 15 and 16: Top Barriers for West Darfur Segment 2 (Men/Women)

Segment 2: Barriers to Phone Ownership (Men)



Segment 2: Barriers to Phone Ownership (Women)

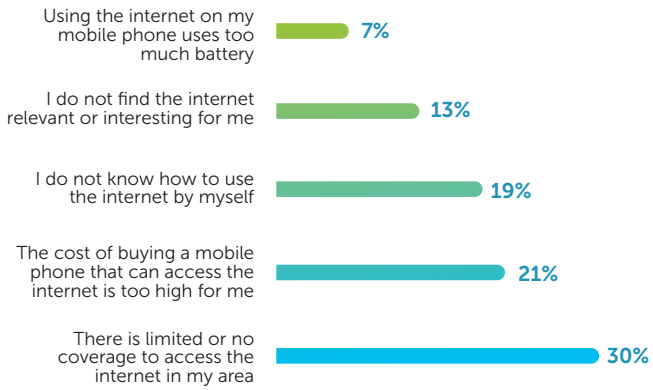


Segment 3

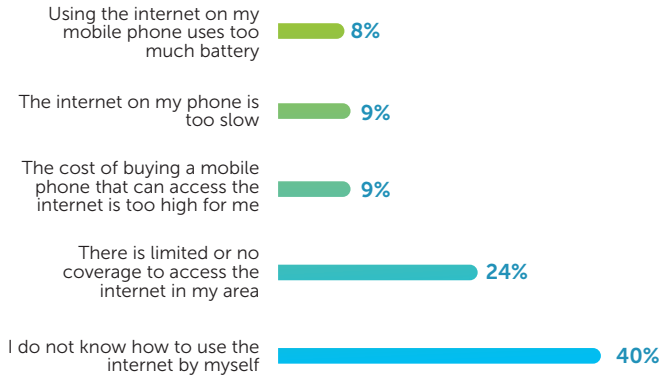
For beneficiaries in segment 3, we observed the need to strengthen and deepen digital capabilities in order to expand the use of the mobile internet. We observed similar barriers for men and women in using the mobile internet within this segment. The largest barrier for women in segment 3 in West Darfur was a lack of knowledge on how to use mobile internet (40% of women, 19% of men). It is evident that women across segments feel they lack the knowledge and skills to engage with digital channels, and this sentiment is less commonly held by men. Women and men in Segment 3 also stated there was limited network (24% of women, 30% of men) and that handsets that accessed the mobile internet were too expensive (9% of women, 21% of men).

Figures 17 and 18: Top Barriers for West Darfur Segment 3 (Men/Women)

Segment 3: Top 5 Barriers to Mobile Internet Use (Men)



Segment 3: Top 5 Barriers to Mobile Internet Use (Women)

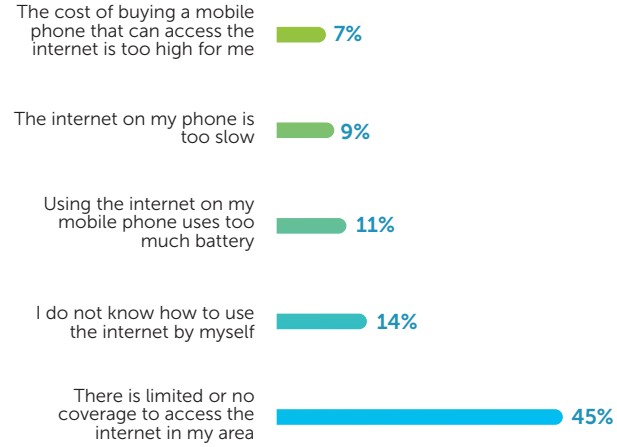


Segment 4

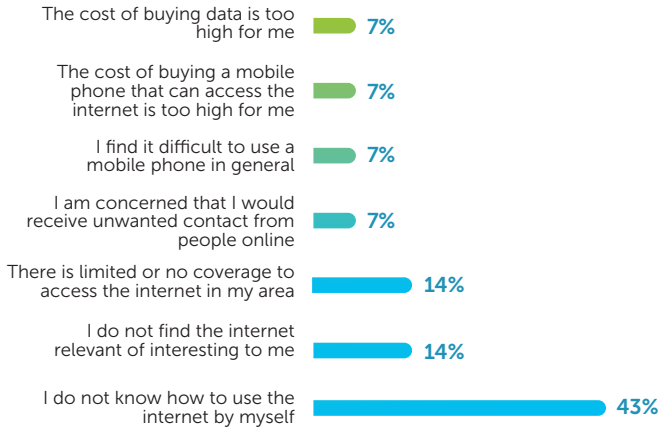
While segment 4 will likely not be a segment that NRC focuses on, they also have barriers that prevent them from using the mobile internet. Interestingly, both men and women in segment 4 cited issues with understanding how to use the mobile internet on their devices as a barrier (43% of women, 14% of men), with women once again being much more likely to feel this way. This is an indicator that while many individuals in segment 4 may own smart devices, it does not mean they feel confident using them. Limited network coverage was another issue cited by both men and women (14% of women, 45% of men).

Figures 19 and 20: Top Barriers for West Darfur Segment 4 (Men/Women)

Segment 4: Top 5 Barriers to Mobile Internet Use (Men)



Segment 4: Top 7 Barriers to Mobile Internet Use (Women)



Recommendations for the Humanitarian Sector

Based on the analysis of the key barriers for both the supply and demand side, SIA have come up with some recommendations for how the humanitarian sector can help improve access to financial services and strengthen underlying digital payments infrastructure.

Demand Side Recommendations

Expanding Digital Capability, With a Focus on Women
Across all segments, women were less confident in using a mobile phone or using the mobile internet. Building digital capabilities among beneficiaries, with a focus on women, can start to reduce this barrier. Humanitarian actors could begin considering how to integrate elements of digital capability training into their interactions with beneficiaries. There are several open source resources that could be used to roll out digital capability training.

GSMA's Mobile Internet Skills Training Toolkit **(MISTT)** provides a "set of free resources to teach people the basic skills they need to access and use mobile internet. Lessons are available in pdf and video formats.

In addition to MISST, USAID funded the development of an open source curriculum focusing on women's digital financial literacy. Called **"Hey Sister! Show Me the Mobile Money!"**, the curriculum is a set of audio lessons that follows the stories of three female characters, and covers key lessons in using financial services that are delivered via digital channels.

Having greater digital capabilities and knowing which activities consume more data can also help improve smartphone users' management and use of data, helping reduce costs.

Driving Down Costs of Handsets
Cost of handsets was the most popular barrier across all segments in both White Nile and West Darfur. While the cost of mobile phones, particularly smartphones, is declining, it still seems cost is a major barrier for accessing and using a mobile phone. For segments 1 and 2, cost is the primary reason for not owning a mobile phone for both men and women. In segment 3, the largest segment in both regions, the cost of purchasing a handset that can access the mobile internet was also a prominent barrier. Humanitarian organizations could consider partnerships with MNOs to subsidize basic and smartphones for interested beneficiaries. Below are some ideas for how humanitarian organizations could reduce the costs of purchasing a handset for their beneficiaries:

Humanitarian organizations could purchase the phones wholesale from providers and allow beneficiaries a three or six month period to repay.

Provide fully subsidized phones but require training before accessing them.

Provide reduced price options through partial subsidies.

Awareness of Limited Network Coverage

Another barrier often cited was a lack of network coverage, particularly for the use of the mobile internet. Expanding network coverage is likely out of the scope of humanitarian organizations, but field staff could collect data on signal strength when making field visits and provide this feedback to MNOs. This information could be used to inform whether pushing for digital payments in certain areas is premature, as network coverage is weak. While its highly unlikely humanitarian organizations can influence greater investment in network infrastructure in certain areas, they can provide information on weak network areas and help to make data driven decisions on where digital payments may be harder to carry out.

Supply Side Recommendations

Provide Evidence of Revenue Potential

When humanitarian organizations engage the private sector, they can provide projected transfer numbers in more detail to help FSPs calculate revenue potential. Providing FSPs with a clear roadmap of the number of households, including the values and frequency that cash is disbursed, can help providers get a clearer picture of the potential. Humanitarian organizations can also provide some of the analysis done on different segments within this paper to help providers think about which beneficiaries might be more likely to use the products and services beyond simply cashing out. Based on cash volume, value, and frequency projections provided by the Sudan Cash Working Group (CWG), we developed a high-level revenue potential analysis (Annex C) to help service providers assess the market opportunity for delivering digital cash transfers. The assumptions are based on data provided by the CWG on transfer amounts and frequency. The model looks at several scenarios based on market capture assumptions and uses MTN's mobile money tariffs as the basis for the fees that contribute to the revenue potential calculation.

Support MNOs in Overcoming Airtime Credit Transfers

Cash-in/cash-out agents are a crucial part of any digital financial service, and the primary physical points of service for mobile money are currently nonexistent. Airtime resellers for MNOs are not being incentivized to consider mobile money as they are making high commissions off of airtime credit transfers, which is essentially using airtime to send funds that airtime resellers then turn into cash for a price. The agents currently conducting the credit transfers are making significantly more per transfer in commission than they would make for conducting a cash out for any of the mobile money providers. Credit transfers are informal, and therefore do not have any regulatory oversight.

Humanitarian organizations can support the transition away from these more informal services by providing information on the frequency and value of transfers (demand) in a certain area to allow formal FSPs to help potential agents understand how much they could be making compared to the credit transfers they are conducting now via formal DFS (i.e. mobile money). MNOs will need to support the transition by calculating the estimated volume of business for potential agents using mobile money vs. credit transfers. As credit transfers are more expensive than mobile money, the demand side levers may be enough to convince some of the agents to support mobile money instead of credit transfers. NRC and GSMA can also provide insights to service providers based on the merchant survey data collected during the CoNUA implementation. This data will be useful for service providers moving forward in identifying high potential merchants to provide agent services.

Humanitarian organizations should also support fintechs and other initiatives that are attempting to build out agent networks. Alsough is one such fintech in Sudan that is attempting to build out a shared agent network that can be used by all DFS providers. Shared agent networks like Alsough are interoperable with service providers, meaning they provide a point of service where customers can access services regardless of their FSP (bank or mobile money). These types of agent networks can support choice among beneficiaries, allowing them to select the provider that offers the product that is the best fit for them.

Support in Bolstering the Access and Usage of ID

The COR identity document (refugee ID card) in Sudan is not recognized as a KYC document within the governing KYC/CDD regulation or by most financial institutions; however, in 2019 the Central Bank issued a decree stating that the refugee ID card is a KYC document, but banks have been slow to offer services to this segment and have yet to adapt their procedures to accept it.[28] Refugee ID cards are recognized and can be used for SIM card registration, but the acceptance of the document by the different telecom service providers varies. Some providers will accept the refugee ID card only, and others will require the refugees to present a letter from COR confirming that the individual is a refugee registered in that location in addition to the refugee card. Other providers do not recognize the card at all and have no alternative measures. This means that refugees are often using SIM cards that are not registered in their name, as some telecommunication companies agents will have SIM cards that are pre-registered to a Sudanese citizen and sell them at a higher cost. In some cases, refugees themselves will look for Sudanese individuals to register the SIM cards on their behalf. This will be a challenge if they are eventually allowed to open mobile wallets. Humanitarian organizations can play an advocacy role in getting regulators to issue more clear guidance on refugee access to mobile money wallets. Among IDP and host communities, humanitarian organizations can educate beneficiaries about the benefits of having access to an ID that enables them to register for DFS.

[28] UNHCR (2022), Sudan Livelihoods Roadmap (2023-2025)

Annex A: Stakeholders Engaged

Type	Organization
Banks	Bank of Khartoum
	Blue Nile Mashreg Bank (BNMB)
Fintech	Alsoug.com
	SyberPay
	Next Technology
	eConnect
	Bloom
Innovation Hub	249 Startups
Mobile Network Operator	MTN
	Zain
	Sudatel
Postal Office	Sudapost
Fintech Expert	Shomoul
MFI Expert	Dr. Yassir Jamie
Digital Transformation Expert	Mr. Omar Omerabi

Annex B: Financial Service Provider (FSP) Summaries

FSP Summary for Banks

Bank	Overview
بنك الخرطوم Bank of Khartoum	**Founded** in 1913 **Coverage:** Has extensive coverage (present in all states) **Target customers:** corporate, retail, microfinance, and investment business segments **Distribution Channels** • Branches: 194 branches, 61 outside Khartoum • ATMs: 325 • PoS: 28,000 • Agents: 4,096 **Digital Offerings** • (BANKAK) app (previously known as mBOK) • Pay (QR) **Overview** • Offers a mobile app (Bankak) which is used for utility bill payments, person-to-person transfers (P2P), business-to-person transfers (B2P), Western Union remittances, forex, and PoS transactions • Issues local ATM/debit cards to all account holders. • Issues virtual, prepaid, debit, and corporate Visa debit cards. • Plans to provide internet banking services to businesses and retail customers • Plans to install electronic deposit machines and offer other ATM services besides cash dispensing • Use digital client onboarding with image and video verification. • Are in the process of implementing a USSD platform interface with Zain • Working with MTN to provide customers with the ability to do offline transactions during network outages **Experience with Humanitarian Payments** • Work with humanitarian organizations such as Save the Children. • There is no ID requirement from the beneficiary; instead the agency is responsible for verifying identity and mobile number; BoK issues codes based on a list provided • BoK has expressed willingness to offer over-the-counter (OTC) cash delivery, including using manual distributions or One Time Passcode (OTP) at the community level. Through the OTP method, a unique code is sent to beneficiaries via SMS, and beneficiaries present their mobile number and code to agents/ staff to cash out.
BNMB Blue Nile Mashreg Bank	**Founded** in 1983 **Coverage:** Has extensive coverage (present in all states) **Target customers:** retail customers **Distribution Channels** • Branches: 22 • ATMs: 37 • PoS: 520 • Agents: 150 staff members

Bank	Overview
Blue nile Mashreg Bank (continued)	**Experience in Cash Programming** • Used by most UN agencies and International NGOs. Are working with WFP, UNHCR, UNICEF, FAO,WHO, SCI, ADRA, NRC, Concern, Mercy Corps., IRC, CARE and Action against hunger to provide cash based distribution, reaching over 1 million beneficiaries every month all over Sudan. • They have the ability to quickly scale up capacity if required. • Offers manual delivery options and prepaid cards (bank staff use the mobile PoS device for prepaid card cash out in rural areas). Prepaid cards can be used at branches or ATMs. • Prepaid cards are issued in the name of the organization (therefore, KYC requirements apply to the organization, not the individual beneficiaries) • Mobile distribution teams are deployed at remote locations on pre-arranged distribution days in each distribution locality for cash-based interventions. • They previously deployed fixed Agents/Merchant locations in previous projects, but it wasn't very successful since it was hard to control the merchant shops from overcharging beneficiaries. The bank now only deploys mobile teams to distribution sites in remote rural areas. In urban settings, however, cash can be withdrawn from any ATM and from any shop that accepts Sudanese cards. • There are 150 designated staff members who make up the distribution teams. BNMB keeps a roster of additional trained personnel to call upon when needed.

Mobile Money Providers

Mobile Money Provider	Overview
[29]	**Launch date:** February 2022 **Product name:** MoMo **MNO customers:** about 9 million **Market share estimate:** 34% **Agents:** about 9,000 while MTN GSM deals with about 35,000 airtime dealers **Channel:** USSD **Services available:** Paying utility bills, merchant payment (goods and services), withdrawal & deposit and transfer money from one account to another, bank to wallet and wallet to bank transfers, government payments, school fees payments and donations **Registration process:** Registration is free and simple. Customers dial *200# and follow the instructions to set up a PIN. **Overview** In 2021, MTN-Sudan Fintech Company was registered as a separate company in line with the requirements of the Central Bank of Sudan (CBoS). MTN and Ericsson signed a contract to deploy mobile financial services in Sudan through the Ericsson Wallet Platform which was launched in Feb 2022. **Experience in Cash Programming** • Are working with a number of national and international NGOs to digitize bulk disbursements, including IOM, WFP, FAO and others • Their platform enables API connection to the bulk disbursement partner's system or SFTP for file upload/ transfers. • Offer wallet creation for existing SIM cards or new SIM cards issued in the organization's name. There is an OTP option for cash out for those who do not have an MTN GSM subscription.

[29] MTN (2022), KII interview
[30] Save the Children (2021), Delivery Mechanism Assessment in Sudan.

Mobile Money Provider	Overview
	Launch date: 2014 **Product name:** Gorooshi **MNO customers:** 7 million **Market share estimate:** 25% **Mobile money customers:** 20,000 **Agents:** 70 shops (20 in Khartoum, 50 in the regions) **Channel:** App and USSD (*111#) **Services available:** deposit, withdrawal, person to person transfers, bank account to wallet transfers and wallet to bank transfers, merchant payments, electricity purchase, bill payments, donation payments **Overview** • Started mobile money in 2014 using the centralised model where EBS provided the platform and Sudani worked on developing the ecosystem . • Gorooshi uses the EBS platform and enables customers to manage their money by opening a wallet connected to a mobile phone number. • They have 3,000 PoS located mainly in city centers.[31] • They are in the process of assessing a new mobile money platform. They expect to go live at the end of the year. • The mobile platform might be specific to Sudan or might also be used in other Sudatel subsidiaries in Mauritania and Senegal. **Experience in Cash Programming** • Sudani worked with Catholic Relief Services (CRS) in 2015 to distribute money in West Sudan. They provided CRS with SIM cards to distribute to beneficiaries and sent a voucher via SMS for the beneficiary to cash out. In some cases, they sent mobile money to the mobile wallet. • Sudani is currently working with the World Food Program (WFP) • Supported the Ministry of Finance in implementing the Family Support Program • Requires a national ID and SIM card registered to the same beneficiary. • May be willing to accept NGO-issued ID/verification in the absence of a national ID. Does not find ID verification as a challenge as Sudani is linked to the national registry and can do automatic verification for any new SIM registration.[32]
	Planned launch date: September 2022 **Product name:** TBD **MNO customers:** Between 15,000,000 to 16,000,000 **Market share estimate:** 40% **Agents:** Currently has 32,000 airtime dealers some of whom will be signed up as mobile money agents. Will also use its 49 master agents in different territories to sign up agents. **Channel:** Will use USSD. **Planned services:** Phase 1: Cash In /Cash Out/ Bill payment, electricity payment, airtime purchase, merchant payment, funds distribution. Phase 2: Loans, savings, insurance. It has a framework agreement with Visa to process international payments using Visa cards linked to the Zain wallet. **Overview** • Initially launched in August/September in partnership with Bank of Khartoum in 2014 but stopped the service in February 2015. • Zain has since received a payment service provider license and will launch their new service in September 2022, which they will connect to EBS for interoperability purposes.

[31] Save the Children (2021), Delivery Mechanism Assessment in Sudan.
[32] Save the Children (2021), Delivery Mechanism Assessment in Sudan.

Mobile Money Provider	Overview
ZAIN (continued)	**Experience in Cash Programming** • Facilitated Sudan Family Support Program payments to one locality, with 7,000 recipients with a delivery rate of more than 70%. • Received 3.3 billion Sudanese Pounds but returned 300 million Sudanese Pounds to the Ministry of Finance (MoF) in phase 1.). In phase 2, Zain expanded transfers to other localities in Khartoum state in addition to more other states, i.e., Khartoum, White Nile, Kessela, and made payments for around two weeks, using 556 agents. They delivered 2.1 billion Sudanese Pounds and returned 800 million Sudanese Pounds to MoF due to various delivery challenges. **Ministry of Finance Disbursement Process** • MoF transfers money to a designated Zain bank account for disbursement (provides national ID, mobile no., name of beneficiaries), loads data on the system, and sends a static SMS (minimum of six times) to beneficiaries • An agent with USSD access facilitates the cash-out process by asking the beneficiary for a mobile number to validate and do the requisite checks. Once these checks are successful, both the agent and beneficiary receive a confirmation message; the recipient gets the amount and password they give to the agent. The agent then provides cash to the beneficiary. With this process, the accuracy is high. At the end of the day, Zain calculates how much has been disbursed by the agent, and Zain refunds the agent. • Zain distributed vouchers to beneficiaries through agents in many territories; has one primary dealer in each territory with several agents.

Fintechs

Fintech	Overview
Syber Pay	**Overview** • Founded in 2015 • Currently focused on providing consumer services and building a merchant network • Started with eCommerce services, now growing the network via merchant services so that people pay online • Has 300,000 users, 400 merchants and eCommerce merchants. Targeting areas with the highest density. • Offers QR payment services.. • Offers co-branded virtual cards or requests for a physical card which is delivered via Syber Pay's logistics company called Syber Delivery; the Card can be used for all services. A phone number is used to sign up the customer. Can top it up using any point through the EBS infrastructure. • Has issued more than 30,000 prepaid cards since launch • Also offers visa prepaid cards both physical and virtual, and delivers the physical cards via Syber delivery • Launching a new USSD channel soon • Offers a mobile wallet that is hosted on the national switch (EBS) **Licensing** • Has a PSP license which allows them to offer mobile money **Experience in Cash Programming** • Provided a platform and dashboard to distribute money to people with cards and wallets • Their platform is used to make COVID subsidy payments and money can be sent to any bank using their bulk transfer API. • The Ministry creates the users, creates the card, gets the Personal Account Numbers (PAN) , uploads the file, and money is distributed instantly

Fintech	Overview
NEXT TECHNOLOGY	**Overview** • Established in 2017 by a team of experienced professionals in the fields of ICT, Fintech and Digital services with a total of over 30 years of experience in the Financial technology and e-payment industry. . **Products and services** • ZoalPay mobile payment app (link card to app for payments). • Money transfer services. • Payment Gateway that avails payments to more than 30 banks • PoS machines. • PoS software and management system. • PoS after-sale service and support. • KIOSK machines • Bill payment presenter and payment. (Governmental Services, Entertainment Services, Merchant Services, Utility Services,...). • Microfinance applications manage and distribute payments to beneficiaries. • Corporate Payment Software: manage corporate transactions and bulk transfers for employees, agents, etc. The solution is integrated with an SMS gateway to alert customers of receiving payment. • A fundraising platform to support various initiatives; does data analysis; and supports women in need, families, and agriculture. **Licensing** • Has been certified by CBoS as a payment services provider since 2017. • Holds a mobile money wallet license and targets customers that don't have an account who can register immediately and go to any agent network to transact • Hold a Consumer mobile application license. • Hold PoS merchant license. **Experience in Cash Programming** • Has helped many local NGOs pay beneficiaries (as a CSR activity), i.e., Mujadiduon. • Participated in the Thamarat (government payment) project in Port Sudan. • Focused on financial inclusion, e.g., using Thamarat, which provided Sudanese with tools to receive and make payments • Works as an agent for Sudatel Telecom Company. • Planning to expand its services to other provinces in Sudan to build agent networks
e connect INTERNATIONAL FOR ELECTRONIC TECHNOLOGY CO. LTD.	**Overview** • Founded in 2009 • Has regional offices in seven regions, covering 16 of 18 states, including Central Sudan, East Sudan, Red Sea, North Sudan, and Khartoum. **Licensing** • Are regulated by CBoS and has a mobile app and PoS licenses & Is connected to EBS, therefore, is connected to all banks in Sudan **Products and Services** • Mobile apps (for smartphones), which are available in cities such as Khartoum • PoS solutions – some for their own merchants, some outsourced to banks. Feature phone cash out is facilitated via PoS terminals. • Self-service machines – a new offering for upscale customers in banks and supermarkets for self-service bank-related operations apart from deposit/withdrawal **Agent Network** • Has an estimated agent network of 350 (50 in places with a regional office) who can be trusted people in the community or businesses with a physical structure • There are no clear agency banking guidelines, and culture plays a significant role in determining who qualifies as an agent

Fintech	Overview
eConnect (continued)	**Experience in Cash Programming** • Supported BNMB with UNHCR Refugee monthly payments to beneficiaries via technical support by: 1. Making payments to UNHCR refugees every month. Providing P2P, utility payments, top-up, elec, purchase if an agent has a shop. 2. Providing prepaid cards (status not active) and distributing funds in the card; then, the beneficiary can cash it out or consume it directly. To activate the card, you need to link it to the mobile number. UNHCR records information about the refugees, names, how many are in the family, etc. 3. Providing a collection tool for microfinance providers where customers can pay in installments. eConnect provides them with PoS.
alsoug.com كاشي CASHI	**Overview** • Founded in 2016, alsoug.com, Sudan's largest online classifieds platform and marketplace, is rolling out an agent-led point of sale network known as Cashi, which will enable people to pay by card; make payments for essential services such as electricity, airtime, and higher education fees; receive remittance payments; deposit, withdraw, and transfer cash; and transact digitally. • They recently raised $5 million from a consortium that included respected western VCs and publicly listed Egyptian company Fawry to fund the rollout of Cashi, a national payments network enabling quick, easy, and safe transactions for all Sudanese. Cashi is in talks to extend its seed round by another $1m in the coming months. • Their agents will be interoperable with their partner banks and MNOs. • They are focused on urban populations initially, as they perfect their product, but will be starting to penetrate other segments by the end of the year, 2022. • Their platform is integrated with the national switch, major billers and is supported by, and undergoing integrations with, major banks. • Cashi believes bank card usage is low because no one has put in the heavy leg work required to run and maintain a digital point of sale network that sees merchants as clients and true partners. • Cashi's software is malleable and is deployed on a range of devices from traditional pos machines to mobile phones. **Licensing** • Cashi has licenses from the Central Bank and TPRA and always looks to work in accordance with the CBOS and EBS vision to push financial inclusion across Sudan **Products** • As of 2 August 2022, there are just under 1500 Cashi POS located throughout Khartoum State, and the rollout is well underway. • Plan to have 30,000 pos cross-country by the end of 2023 • Aiming to install 50% of the PoS in Khartoum and the rest outside Khartoum • Looking to work with NGOs and UN in more remote areas to ensure access to digital payments - discussions underway with various UN and NGO bodies • Has not yet executed with any partners on cash programming initiatives.
bloom	**Overview** • Bloom is a Fintech company founded in 2021, which offers a mobile app that allows users to hold foreign currency and spend it in local currencies. • The company is registered in Delaware and the UK and has operations in Sudan (Khartoum). The founders have extensive experience in banking, IT, e-commerce, and regional markets. • They have secured a partner bank in Sudan, Export Development Bank, and is in the process of securing another. • The company raised pre-seed capital from Global Funders Capital, Blue Water Capital and Y Combinator launch Africa and in July 2022, the company also raised seed capital from Visa, Y Combinator, Global Founders Capital (GFC), Goodwater Capital, and VentureSouq, which will help it expand into Ethiopia, Kenya, Rwanda, Tanzania, and Zambia. The capital will help them scale their team, improve customer service, and develop new, innovative products and services.

Fintech	Overview
Bloom (continued)	**Products and Services** • Bloom offers accounts for users to save in dollars and buy and spend in Sudanese pounds. As at July 2022, Bloom registered over 100,000 customers and aims to grow this number significantly. • It provides remittance services to both individuals and companies. Sudan's principal remittance corridors are Saudi Arabia, Egypt, the UAE, the UK and Scandinavia. The Sudan/Ethiopia remittance corridor is estimated to be worth $1 billion. • In addition, it offers local cards and is planning to launch a Visa card in the near future that will allow users to make international payments.

Ecosystem Supporters

Organization	Overview
SHOMOUL شمول	• Shomoul is on a mission to democratize finance and leave no one in Sudan without access to all the financial instruments available in the country. • Shomoul is a center of excellence in FinTech thought leadership, collaboration, sandboxing, education and training and mentoring. It connects all stakeholders to a growing global FinTech ecosystem, • They work with all stakeholders in both the public and private sectors to facilitate access to affordable, accessible, easy to understand and fair financial services to everyone across Sudan. • Shomoul aims to support the growth of FinTech as a driver for financial inclusion in Sudan.
249 Startups Get ready to be Accelerated	• Established in 2018, 249 Startups is a social enterprise that supports the entrepreneurship ecosystem by investing, offering mentorship, training, and business services. • Works with various funders, including UNDP, and JICA, e.g. via managing their investment funds in Sudan • Has graduated over 90 businesses, raised more than US $1 million, and created over 1,000 jobs and received over 7,000 applications • They launched an equity fund in March 2022, a funding vehicle known as Rhino investments Impact Acceleration Programme: a three-month program that provides business knowledge, customized services, and capital (seed and pre-seed), in exchange for equity, with ticket sizes of up to $30,000 per venture • They invest equity in fintechs, social commerce, healthtech, social inclusion, edutech, beauty, manufacturing, renewable energy, agritech etc • Planning to set up an MFI to invest in MSMEs and launch a digital bank for MSMEs and startups to provide affordable investment and capital.
بريد السودان SUDAPOST	**Overview** Sudapost was established in 2009 after the privatization of postal services in Sudan They have offices in all major cities i.e. 78 permanent locations, and 55 temporary locations. **Experience in Cash Programming** Support the Ministry of Welfare and Social Security to distribute Pension via Cash Transfer Programs in five states (North Kordofan, South Darfur, North Darfur, White Nile, and Gazira) **Cash Transfer Process** • Receives a list every month from the Ministry's pensions office; receive the funds from the Ministry via nominated bank account; distributes this cash to the responsible offices via various banks e.g. BoK, BNMB, Savings Bank; designated officers cash out these funds from the banks and begin the process of distribution to pensioners who are often over 60-70 years old. The recipient details (contained on the pension card) are counterchecked against the list, and once confirmed, the pensioner is paid. • Often distributed to about 35,000 pensioners on the first week of the month for 7-10 days • Disburse about 100 billion Sudanese pounds per month, on average • Each payment is $70 per pensioner. Some collect monthly; others collect quarterly • Each pensioner has a pension card issued by the Ministry

Annex C: Revenue Opportunity Analysis

Based on cash volume, value, and frequency projections provided by the Sudan Cash Working Group (CWG), SIA developed a high-level revenue potential analysis that will help service providers assess the market opportunity for delivering digital cash transfer services. This model takes the projected volumes and values of the CWG members and provides scenario planning based on assumed market capture by a service provider. The model looks at several scenarios based on market capture assumptions and uses MTN's mobile money tariffs as the basis for the fees that contribute to the revenue potential calculation. It should be noted that these fees are likely negotiable, and may not reflect the real pricing offered to cash programs, but by using the retail tariffs, we can establish an idea of what the revenue potential is for digital financial service providers.

The model also makes assumptions on the percentage of full cash outs vs. percentage of beneficiaries that use additional digital services via their mobile wallet, which generates additional revenue for the service provider or reduces costs by keeping funds in a digital form. The model can be used by NRC and other humanitarian organizations to communicate partnership opportunities to the private sector, and the numbers highlighted below should be considered preliminary estimates based on current assumptions. These numbers are likely to be adjusted in the future as additional information becomes available.

Key Assumptions:
The below assumptions are based on data provided by the CWG on transfer amounts and frequency.

Average amount of transfer per household	Average frequency of transfers	Average duration
USD 70	**Monthly**	**11 months**

Scenarios:
SIA build out three scenarios for this model that provide a spectrum of revenue scenarios based on very conservative to moderate assumptions on the adoption rate of digital transfers by beneficiaries. The scenarios for each adoption rate assumption and their corresponding revenue projections over a five year period are provided below. Based on these conservative scenarios, cash programming could produce between US $801,000 and US $1.6 over the next five years.

Scenario 1: 5 year adoption rate of 5%

	Year 1	Year 2	Year 3	Year 4	Year 5
Send Fee Revenue	865,920	909,216	1,591,128	2,338,958	2,455,906
Withdraw Fee Revenue	36,747,480	38,584,854	66,131,258	95,166,360	96,701,301
Bill Payments Revenue	1,136,520	1,193,346	2,088,356	3,069,883	5,372,295
Push/Pull Bank Revenue	378,840	397,782	1,392,237	4,093,177	5,372,295
Total (SDG)	39,128,760	41,085,198	71,202,978	104,668,378	109,901,797
Total (USD)	$85,715	$90,000	$155,976	$229,285	$240,749
Total (GBP)	£69,593	£73,073	£126,639	£186,160	£195,468

Scenario 2: 5 year adoption rate of 7%

	Year 1	Year 2	Year 3	Year 4	Year 5
Send Fee Revenue	1,443,200	1,515,360	2,227,579	2,673,095	3,508,437
Withdraw Fee Revenue	61,245,800	64,308,090	92,583,761	108,761,554	138,144,716
Bill Payments Revenue	1,894,200	1,988,910	2,923,698	3,508,437	7,674,706
Push/Pull Bank Revenue	631,400	662,970	1,949,132	4,677,916	7,674,706
Total (SDG)	65,214,600	68,475,330	99,684,169	119,621,003	157,002,566
Total (USD)	$142,858	$150,001	$218,366	$262,039	$343,927
Total (GBP)	£115,989	£121,788	£177,295	£212,754	£279,240

Scenario 3: 5 year adoption rate of 10%

	Year 1	Year 2	Year 3	Year 4	Year 5
Send Fee Revenue	2,309,120	2,424,576	3,182,256	3,341,369	5,262,656
Withdraw Fee Revenue	97,993,280	102,892,944	132,262,515	135,951,943	207,217,074
Bill Payments Revenue	3,030,720	3,182,256	4,176,711	4,385,547	11,512,060
Push/Pull Bank Revenue	1,010,240	1,060,752	2,784,474	5,847,395	11,512,060
Total (SDG)	104,343,360	109,560,528	142,405,956	149,526,254	235,503,850
Total (USD)	$228,573	$240,001	$311,952	$327,549	$515,890
Total (GBP)	£185,582	£194,861	£253,279	£265,943	£418,860

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