

# Mojaloop Cross Provider / Cross Market Provider Review

Part of The Level One Project: an initiative of the  
Bill and Melinda Gates Foundation's Financial  
Services for the Poor (FSP) program.

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# The Level One Project Overview

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- ▶ Meeting the Needs of Low-Income Users
  - ▶ **Level One Project Design Principles**, are a set of principles to guide countries, regions, or commercial organizations working to create real-time retail payments systems that are designed to meet the needs of low income consumers:
    - ▶ **Accessible** - Users can easily acquire and use Digital Financial Services (DFS)
    - ▶ **Reliable** - Users' money and information are secure and available for use; systems help deter usage for money laundering and terrorist financing
    - ▶ **Valuable** - Increase the value proposition for low-income consumers to use DFS rather than cash or other traditional services
    - ▶ **Affordable** - End users are willing and able to pay for the cost of preferred product and receive value in excess of cost
    - ▶ **Profitable** - DFSPs that support low income consumers earn sustainable margins through product and service innovations

# Mojaloop Cross Provider / Cross Market Provider Review - Project Scope

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- ▶ “As we develop the model for managing transactions between different Mojaloop implementations, it is important to ensure that our approach meets the needs of poor people in the markets where we work. This work would provide for an assessment of the needs in the market and how those needs are met by the proposed Mojaloop solution.
  - ▶ Assess the cross border and cross currency remittance needs of poor people in one or more of our implementing markets.
  - ▶ Develop a gap analysis between those needs and recommended cross implementation solution.
  - ▶ Work with Mojaloop community to understand technical and regulatory limitations on possible solutions.
  - ▶ Make recommendations for optimized cross implementation solution(s) most beneficial to poor people.
  - ▶ Advocate for solution with Mojaloop community.”

# Countries in the Scope of Assessment

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# Why focus on Poverty and Remittances in Sub-Saharan Africa?

- ▶ Global Poverty insights from the **World Bank**:
  - ▶ More than half of the extreme poor live in Sub-Saharan Africa.
    - ▶ 413 million people living on less than US\$1.90 a day in 2015, more than all the other regions combined.
    - ▶ If the current trend continues, by 2030, nearly 9 out of 10 extreme poor will be in Sub-Saharan Africa.
  - ▶ The majority of the global poor live in rural areas, are poorly educated, employed in the agricultural sector, and under 18 years of age.
  - ▶ **Accelerating Poverty Reduction in Africa** - World Bank Group, Kathleen Beegle & Luc Christiaensen, 2019
    - ▶ “Pre-payment and **per unit payment business models**, facilitated by **mobile-phone** technology, are further bringing services within the reach of the poor. This holds great promise for poverty reduction.”
- ▶ **Remittances** are “non-reciprocal transfers of money from an individual or household in one place to another individual or household in another place” (Hougaard, 2008)
  - ▶ Typically associated with **working migrants** that **send regular amounts of money to support their families and communities back home**

\*Source: Accelerating Poverty Reduction in Africa - **World Bank Group**, Kathleen Beegle & Luc Christiaensen, 2019

# The current state of Cross Border Remittances in Africa:

- ▶ Remittance flows from **the Rest of the World** to **Africa** and make up the **highest value**
- ▶ The flow of remittances **to the relatively high GDP per capita countries** (e.g. Nigeria / Ghana) tend to be from outside of Africa with Western Countries like US/UK, **receiving funds** back from **citizens that have emigrated to Western Countries like US/UK**

| Top remittance-sending countries | Five-year average sent to SSA (US\$m) | Nigeria | Senegal | Kenya | Uganda | Ghana | South Africa | Mali | Ethiopia | Liberia | Sudan |
|----------------------------------|---------------------------------------|---------|---------|-------|--------|-------|--------------|------|----------|---------|-------|
| United States                    | 7,386                                 | ✓       | ✓       | ✓     | ✓      | ✓     | ✓            |      | ✓        | ✓       | ✓     |
| United Kingdom                   | 5,077                                 | ✓       |         | ✓     | ✓      | ✓     | ✓            |      | ✓        |         |       |
| Cameroon                         | 2,085                                 | ✓       |         |       |        |       |              |      |          |         |       |
| Italy                            | 1,517                                 | ✓       | ✓       |       |        | ✓     |              |      | ✓        | ✓       |       |
| France                           | 1,377                                 |         | ✓       |       |        |       |              | ✓    |          |         |       |
| Spain                            | 1,106                                 | ✓       | ✓       |       |        |       |              | ✓    |          |         |       |
| Cote d'Ivoire                    | 1,025                                 | ✓       | ✓       |       |        | ✓     |              | ✓    |          | ✓       |       |
| South Africa                     | 900                                   |         |         | ✓     | ✓      |       |              |      | ✓        |         |       |
| Germany                          | 845                                   | ✓       |         | ✓     |        | ✓     |              |      | ✓        | ✓       |       |
| Ghana                            | 814                                   | ✓       |         |       |        |       |              |      |          | ✓       |       |

Source: Exploring barriers to remittances in sub-Saharan Africa series, Volume 1, Where are the flows?, April 2018, Cenfri (based on World Bank remittance data 2017)

# The current state of Cross Border Remittances in Africa:

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- ▶ Remittance flows **within Africa** make up the **highest volume**
  - ▶ The **prevailing solution** for remittances within Africa is a **cash-in / cash-out model**, leveraging **retailers (till points)** on the **cash-in side**, and **Banks or Agents** on the **cash-out side**
  - ▶ Poorer countries with lower GDP (e.g. Malawi / Cote d'Ivoire) tend to **received funds from citizens that are working as migrant labourers** in neighbouring African countries
  - ▶ Most cross border remittance **solutions** that are available to consumers are **heavily dependent on Banks** and the availability of electronic payment schemes within the receiving market. The **Banks provide the interoperability** of the solution, and typically take a portion of the fees
  - ▶ The availability and maturity of domestic payments schemes and their interoperability is an important aspect to whether or not **Remittance Receivers choose to cash-out**
- ▶ **More remittances** tend to be sent between countries that are **in a common currency union** due to no **FX costs**

# Cross Border and Cross Currency remittance needs of the Poor - Overview:

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**Migrant workers** need to be able to **support their dependents** in their home country **by leveraging earnings**:

- ▶ Sending funds to dependents - ideally sending monetary value to a mobile phone (replace cash)
- ▶ Pay for goods and services directly in their home country from their country of work
- ▶ Running a bank account in their country of work with transactional history & tiered/transparent fees
  - ▶ Earn interest / Build up savings
  - ▶ Qualify for credit
  - ▶ Qualify for insurance
- ▶ Exchange rates close to wholesale market rates, with low commissions/fees (tiered/transparent)

*Account transactional history proves income, supports obtaining credit / insurance*

*Credit / insurance / savings help navigate shocks (droughts, floods, hyperinflation)*



# Challenges in moving to Electronic Remittances:

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- ▶ Regulation restricts the amounts of Forex that are allowed to be processed through **Authorised FX Dealers**
  - ▶ Tight exchange controls (Nigeria/South Africa)
  - ▶ Official documentation required to send or receive remittances (Proof of address plus ID), which is often difficult to obtain for those living in rural areas or those who do not have the necessary **Residency Status**
- ▶ High cost - Sub-Saharan Africa is the most expensive region in the world to send remittances
  - ▶ Lack of liquidity or willingness to trade in volatile currencies, and
  - ▶ Operational burden of FX/Sanctions Screening/Balance of Payments reporting by Banks/RSPs drives up costs
- ▶ *These then lead consumers to use informal, less secure means of transferring money*
  - ▶ *E.g. sending cash through relatives / friends / public transport providers*


# Level One Project Design Principles in action: the Mojaloop Solution

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- ▶ **Additional Design Principles to consider for Cross Border Remittances:**
  - ▶ Possible shared investment in **Sanctions Screening** and watchlist services
  - ▶ Possible shared investment in a **Central KYC / Digital ID Registry**
  - ▶ Possible shared investment in **Integration to Central Banks** for **Balance of Payments Reporting**
  - ▶ Possibility of a **new regulation model**, where a **broader body** regulates the system (e.g. Association of Central Banks or a Supranational Bank)


# Level One Project Design Principles in action: the Mojaloop Solution



An *open-loop system*, available to any licensed DFSP in the country. This includes banks and licensed non-banks.  The system leverages *open, international standards*.

Payments that are *real-time* and “*push*” only. This removes many of the risks and costs inherent in batch processed and “*pull*” payments systems. Payments that are *irrevocable*. A system that allows *same-day settlement* among participants.



A system that has *pro-poor governance* practices including equal ownership opportunities and DFSP engagement. A system that is *supported and regulated by a government financial authority*, and leverages *tiered ‘know your customer’ KYC requirements*. 

A system that operates on a “*not-for-loss*” or “*cost-recovery-plus-investment*” basis where payments are a utility, and take into account the needs of women, the poor, and other disadvantaged groups. This does not preclude DFSPs—or other service providers in the ecosystem—from earning profits.



A *shared investment in fraud detection* and other scheme and platform services. The compliance burden remains with the DFSP, but they share in a less costly, more efficient fraud service.

## ▶ Additional Design Principles for Cross Border Remittances:

- ▶ Possible shared investment in **Sanctions Screening** and watchlist services
- ▶ Possible shared investment in a **Central KYC Registry**
- ▶ Possible shared investment in **Integration to Central Banks for Balance of Payments Reporting**
- ▶ Possibility of a **new regulation model**, where a **broader body** regulates the system (e.g. Association of Central Banks or a Supranational Bank)

# Cross Border and Cross Currency remittance needs of the Poor:

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Migrant workers - Ability to pay individuals (family & friends), business entities, government entities electronically in their home country, from their country of work, using real time electronic payment services.

“Financial systems that enable easier, less costly sending of transfers can be a critical advantage when shocks occur. Remittances from family and friends are among the most common means of dealing with shocks”\* (drought, floods).

Migrant workers and Merchants (particularly in remote/rural areas) - Ability to store monetary value on a mobile phone, exchangeable to/from their bank account. Ability to pay & receive to / from the monetary value on a mobile phone (P2P/P2B/P2G), which supports pay-as-you-go business models for the poor that have liquidity constraints. Linking legacy payment systems & mobile alternatives for the underbanked (cash to acct/cash) will provide an expanded set of electronic payment options to the Poor.

Migrant workers and Merchants - Access to an interest bearing Bank account (savings) in their home country & country of work, that has cash deposit/withdrawal, and basic domestic electronic transactional capabilities, and a history of inflows/outflows that can be used to establish credit worthiness in order to secure credit.

\*Source: Accelerating Poverty Reduction in Africa - World Bank Group, Kathleen Beegle & Luc Christiaensen, 2019

# Cross Border and Cross Currency remittance needs of the Poor:

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Migrant workers and Merchants - Bank account fees, transactional fees, and commissions, that are easy to understand, transparent & tiered to the limited account type and transactional needs of the Poor.

Migrant workers - Access to insurance and credit in their country of work or home country (leveraging their earnings and credit history), to help migrant workers secure credit facilities, to borrow in their home country or send funds home to support their dependents during periods of shocks.

Migrant workers - Access to foreign exchange capabilities, at near to 'wholesale market' spot rates. Light KYC documentary requirements for cross border remittance services, ideally with secure sharing of registration data between Banks/Agents to increase customer options, and reduce time spent travelling/queuing.

# Enablers that support the move to Electronic Remittances:

- ▶ **Agents** - the role of **cash handling agents** (DFSP / RSP reps) is a key **catalyst** in supporting trade and the flow of money in an economy, in **taking cash out** and **moving to a digital economy**, and ultimately enabling financial inclusion
  - ▶ Low levels of **financial numeracy** amongst the general population - **agents can play a key role** here in assisting people unable to transact on their own on their mobile phones, which would limit adoption of mobile services
- ▶ **Mobile phones**
  - ▶ The provision/use of **mobile wallets**, mobile **mPOS** Apps, supports increased **merchant acceptance & interoperability**
  - ▶ **Cross border remittance** that can be received to a **mobile phone solves for a number of the barriers** to cross border remittance (lack of rural bank branches & post offices, lack of agents or additional costs of agents)
  - ▶ The ability to then **make payments locally from the mobile wallet** will also reduce the use of cash
  - ▶ Mobile power supply - The supply of solar powered chargers for mobile phones
- ▶ Creating an **Interoperable digital ID** / Creating a **Central digital ID utility** shareable across all DFSPs/Agents
- ▶ **Risk-based regulation** / Principles-based regulation - **Tiered KYC** / **Exchange Control** requirements on **low value transfers**
- ▶ **Linking legacy payment system & alternatives for the underbanked** - cash to acct / cash to cash
  - ▶ Expands the payment network available to the Poor through Interoperability
  - ▶ Allows some cash to be removed from the payment network, while supporting the needs of the Poor to transact
- ▶ **Biometric pre-paid cards** within a **domestic** card scheme (currently being used effectively in **Ghana**)

# Current Mojaloop design meeting the needs of the Poor:

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The immediate needs of the poor are partially met in the Primary Use Case catered for in Mojaloop:

- ▶ The Needs of the Poor - Primary Current Use Cases:
  - ▶ P2P Transfers
    - ▶ Household expenses, school fees, medicine, farming activities/supplies (preference to receive cash)
  - ▶ P2P, P2B Transfers
    - ▶ Start-up funds for business creation, or land purchases (preference to receive funds electronically)
- ▶ Mojaloop Primary Current Use Case:
  - ▶ Payer-Initiated
    - ▶ P2P Transfers to a customer bank account (fully implemented)
- ▶ Mojaloop Cash based use cases in the pipeline:
  - ▶ Payer-Initiated
    - ▶ Customer-Initiated Cash-out - Receive Amount / Customer-Initiated Cash-out - Send Amount (supported, not tested)
  - ▶ Payee initiated
    - ▶ ATM-Initiated Cash-out (future roadmap)
    - ▶ Agent-Initiated Cash-out / Agent-Initiated Cash-in - Send Amount / Agent-Initiated Cash-in - Receive Amount (partially implemented)

# Considerations for expanding the Cross Currency / Cross Border Solution:

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- ▶ Regulatory requirements that add technical and operational complexity for the Banks:
  - ▶ Exchange controls clearance from the Regulator prior to sending the funds cross border / cross currency
    - ▶ Payment details would need to be pre-approved prior to sending the real time payment
    - ▶ Any in-line approval from the Regulator at the time of requesting the real time payment would be dependent on the Regulator providing a real time exchange controls clearance interface service
  - ▶ Balance of Payments Reporting (BOPs)
    - ▶ This is typically required 'after-the-fact', and although it should not effect the real time payment being processed, it does add an operational burden on the Sending and Receiving DFSPs
  - ▶ Sanctions Screening
    - ▶ Required on the Sending side to screen the Ordering Customer (KYC) and Beneficiary / Beneficiary DFSP
    - ▶ Required on the Receiving side to screen the Receiving Party (KYC) and the Ordering Customer / Ordering Customer DFSP
    - ▶ Any in-line screening at the time of requesting the real time payment would be dependent on the both the Sending and Receiving DFSPs, which would add latency to the end-to-end real time payment



# Considerations for expanding the Cross Currency / Cross Border Solution:

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- ▶ Assess the best **Governance** and **Operational model** for the provision of the **CNP / FXP services**, which are relied upon for Mojaloop to support Cross Currency / Cross Border payments
  - ▶ **Commercial model** where large scale **international clearing service providers** or **clearing system operators** **consolidate** Mojaloop integration/CNP/FXP functions into Pan-African Hub/s for cross-currency / cross-border provision of centralised Clearing / FX / Settlement & Operations
  - ▶ **Regional Central Bank model** where a single or multiple Central Bank/s provide the cross network connectivity, clearing system and settlement scheme participation (CNP), as well as the FXP services and functions (liquidity & risk management, Treasury , netting etc.)

# Considerations for expanding the Cross Currency / Cross Border Solution:

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- ▶ With **most Intra-African remittances** tending to be sent between countries that are in a **common currency union**, it makes sense to focus on the existing common monetary areas where a Regional Real Time Payments system would add value. These opportunities would be:
  - ▶ **Economic and Monetary Community of Central Africa (EMCCA/CEMAC)**
    - ▶ Centralised Regional Central Bank (BEAC) RTGS (SYGMA)
    - ▶ Clearing & Settlement within Regional RTGS operated by BEAC (Central African Franc - XAF)
  - ▶ **West African Monetary Zone (WAMZ)**
    - ▶ Currently working on a project to link the 6 real time gross settlement (RTGS) systems in the region

# Country Assessments

Phase 1 - Current Payments Ecosystems



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The better the world works.

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working world

# African Regional High Value Payment Systems

Common Market for Eastern and Southern Africa (COMESA)

Regional Payment and Settlement System (REPSS)

Clearing in COMESA Clearing House (CCH) & Net Settlement through Bank of Mauritius (USD/EUR)

Southern African Development Community (SADC)

SADC Integrated Regional Electronic Settlement System (SIRESS)

Clearing & Settlement within Regional RTGS operated by SARB (ZAR)

East African Community (EAC)

East African Intra-Regional Payment System (EAPS)

Bilateral Clearing & Settlement through Central Banks Domestic RTGS (local Ccy)

West African Economic and Monetary Union (WAEMU/UEMOA)

Centralised Regional Central Bank (BCEAO) RTGS (STAR-UEMOA)

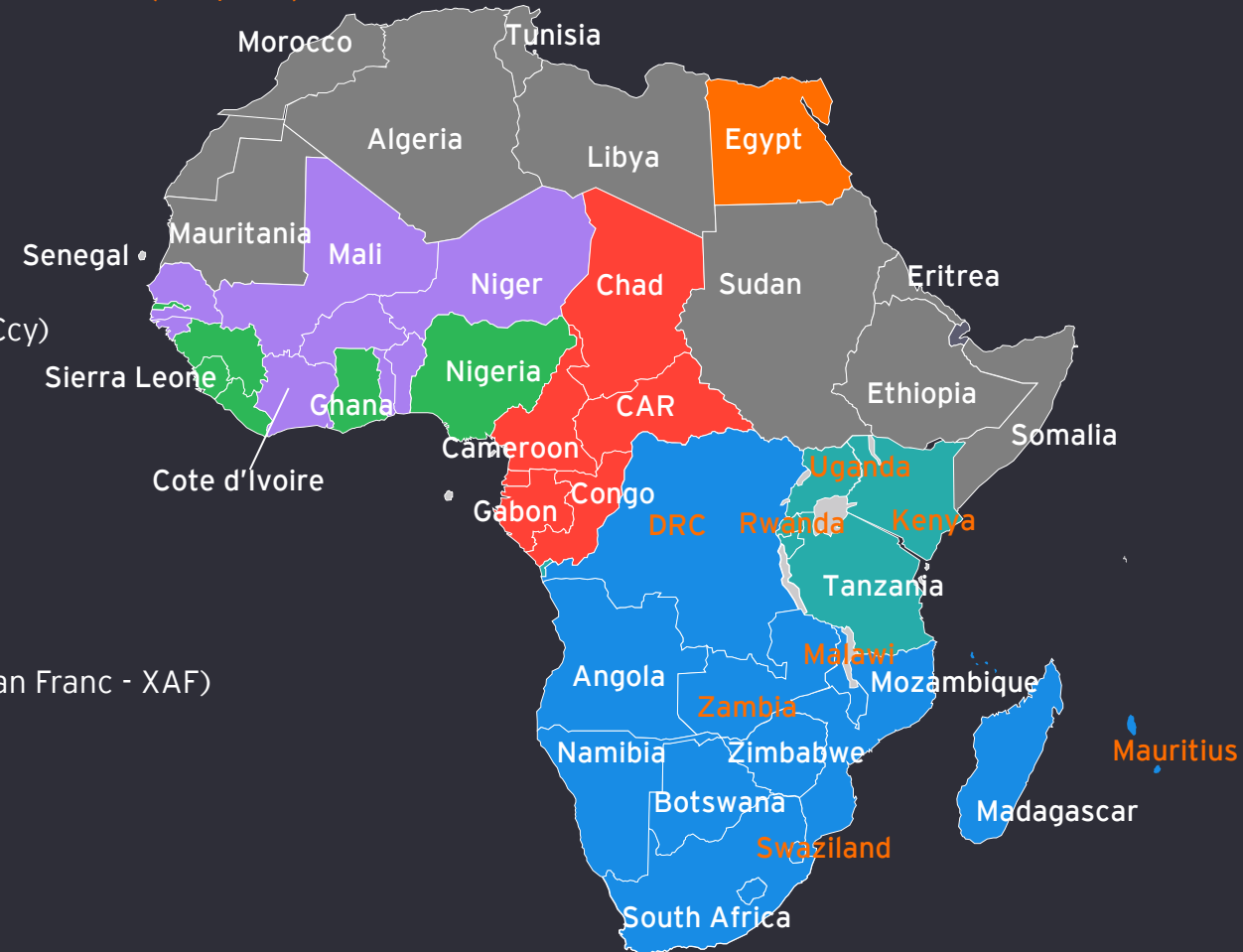
Clearing & Settlement within Regional RTGS operated by BCEAO (XOF)

Economic and Monetary Community of Central Africa (EMCCA/CEMAC)

Centralised Regional Central Bank (BEAC) RTGS (SYGMA)

Clearing & Settlement within Regional RTGS operated by BEAC (Central African Franc - XAF)

West African Monetary Zone (WAMZ): currently working on a project to link the 6 real time gross settlement (RTGS) systems in the region



# Summary of Technology Penetration & Retail Payments Per Country

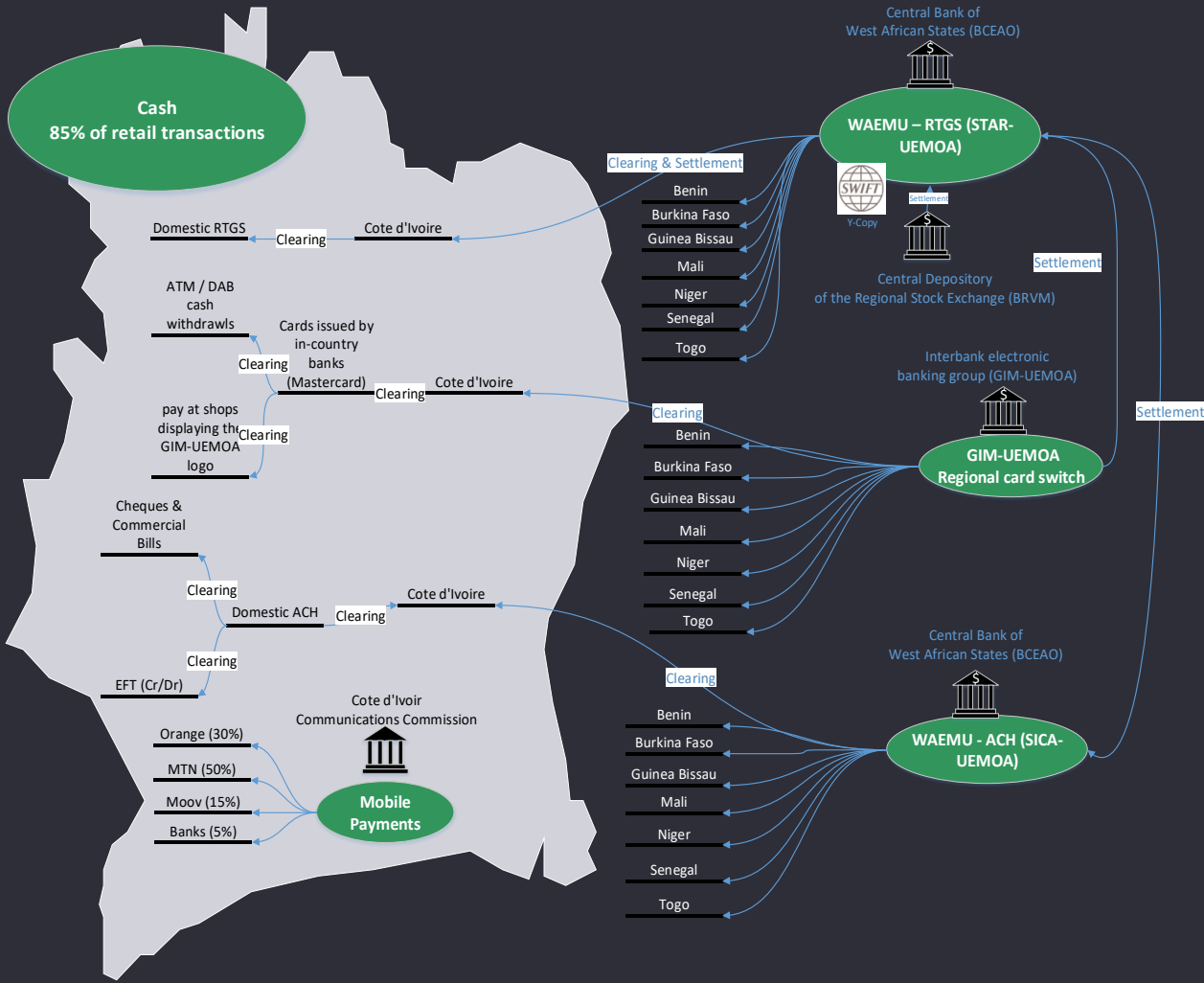
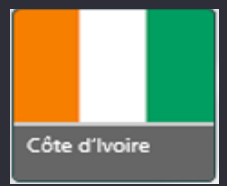
| Country              | Population | Cash Usage                      | Mobile phone penetration | Bank account access | Mobile money accounts | Internet penetration | Card accepting Merchants | # installed POS | # installed POS Per capita | In-store transaction volume | Online transaction volume |
|----------------------|------------|---------------------------------|--------------------------|---------------------|-----------------------|----------------------|--------------------------|-----------------|----------------------------|-----------------------------|---------------------------|
| <b>Nigeria</b>       | 177.4m     | Sales P2B: 85%<br>Wages B2P 83% | 70%                      | 40%                 | *3%                   | 42%                  | 7%                       | 181k            | 1/1,000                    | 7,157m                      | 3,617m                    |
| <b>Ghana</b>         | 26.7m      | Sales P2B: 72%<br>Wages B2P 76% | 91%                      | 57%                 | 20%                   | 39%                  | 4%                       | 8k              | 1/3,333                    | 1,026m                      | 576m                      |
| <b>Cote d'Ivoire</b> | 23.7m      | Retail: 87%                     | 87%                      | *10%                | *38%                  | 46%                  | 1%                       | 2k              | 1/12,500                   | 102m                        | 471m                      |
| <b>Malawi</b>        | 17.5m      | Sales P2B: 82%<br>Wages B2P 82% | 39%                      | 34%                 | 40%                   | 14%                  | 7%                       | 2,2k            | 1/10,000                   | 0.5m                        | 0.1m                      |

## \*Noteworthy:

- ▶ Consistently higher Mobile phone ownership compared to Bank accounts
- ▶ Consistently low access to POS devices & card acceptance
- ▶ **Nigeria - Restrictive Regulations on mobile money providers, onerous KYC requirements & lack of interoperability have kept mobile money adoption low (until end of 10/2018 the government prohibited mobile money services from MNOs)**
- ▶ **Cote d'Ivoire - High degree of mistrust of banks and formal remittance channels have reduced demand for bank accounts**
- ▶ **Cote d'Ivoire - Ranked 5<sup>th</sup> in the world regarding mobile money account holders with a transaction volume of 15 bn. per day**

Source: Exploring barriers to remittances in sub-Saharan Africa series, Volume 1, Where are the flows?, April 2018, Cenfri (based on World Bank remittance data 2017), Country Insight Report - Malawi, Dun & Bradstreet, 2019

# Country Focus: Cote d'Ivoire



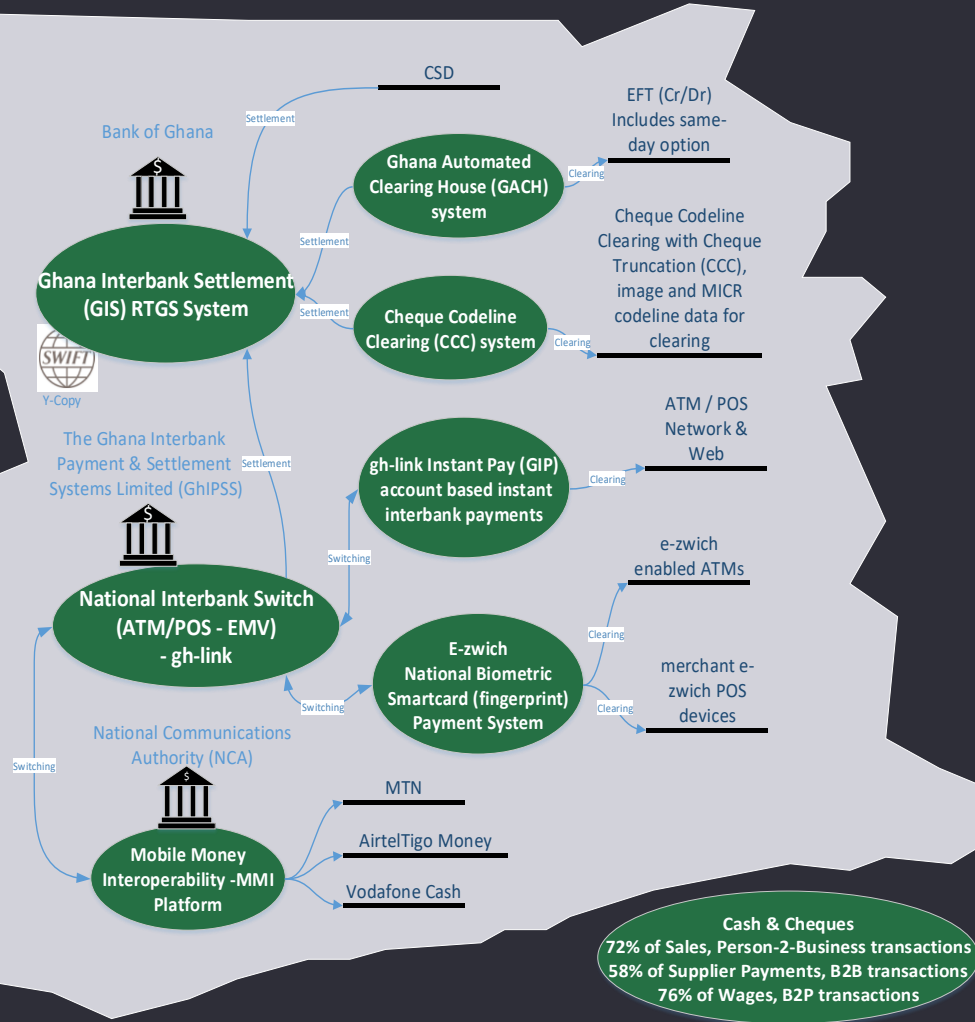
Sources: World Bank, Central Bank of West African States (BCEAO), U.S. Department of Commerce's International Trade Administration

## Country Profile

|                   |  |
|-------------------|--|
| Region            | Sub-Saharan Africa                       |
| Income Group      | Lower middle income                      |
| Population        | 23,740,424                               |
| Exchange Controls | None (reporting)                         |
| Currency          | West African Franc - XOF (pegged to EUR) |

| Clearing Streams   | Payment Type   | Instrument & Characteristics   |
|--|----------------|--|
| BCEAO (Banque Centrale des Etats de l'Afrique des l'Ouest) Central Bank  | Paper          | <ul style="list-style-type: none"> <li>Cheques</li> <li>Other paper instruments</li> </ul>   |
| SICA (BCEAO), bank account identifiers (RIBs)  | Low Value      | <ul style="list-style-type: none"> <li>Domestic Funds Transfer (ACH, DFT, Wire)</li> <li>Cross-border Funds Transfer</li> <li>Payroll, Standing Order</li> </ul> |
| STAR (BCEAO), SWIFT BICs   | High Value     | <ul style="list-style-type: none"> <li>Domestic Funds Transfer (ACH, DFT, Wire)</li> <li>Cross-border Funds Transfer</li> <li>RTGS</li> </ul>                    |
| GIM-UEMOA (Groupement Interbancaire Monétique de l'Union Economique et Monétaire Ouest Africaine) Regional card switch | Card (ATM/POS) | <ul style="list-style-type: none"> <li>Regional Card Switch</li> </ul>   |

# Country Focus: Ghana



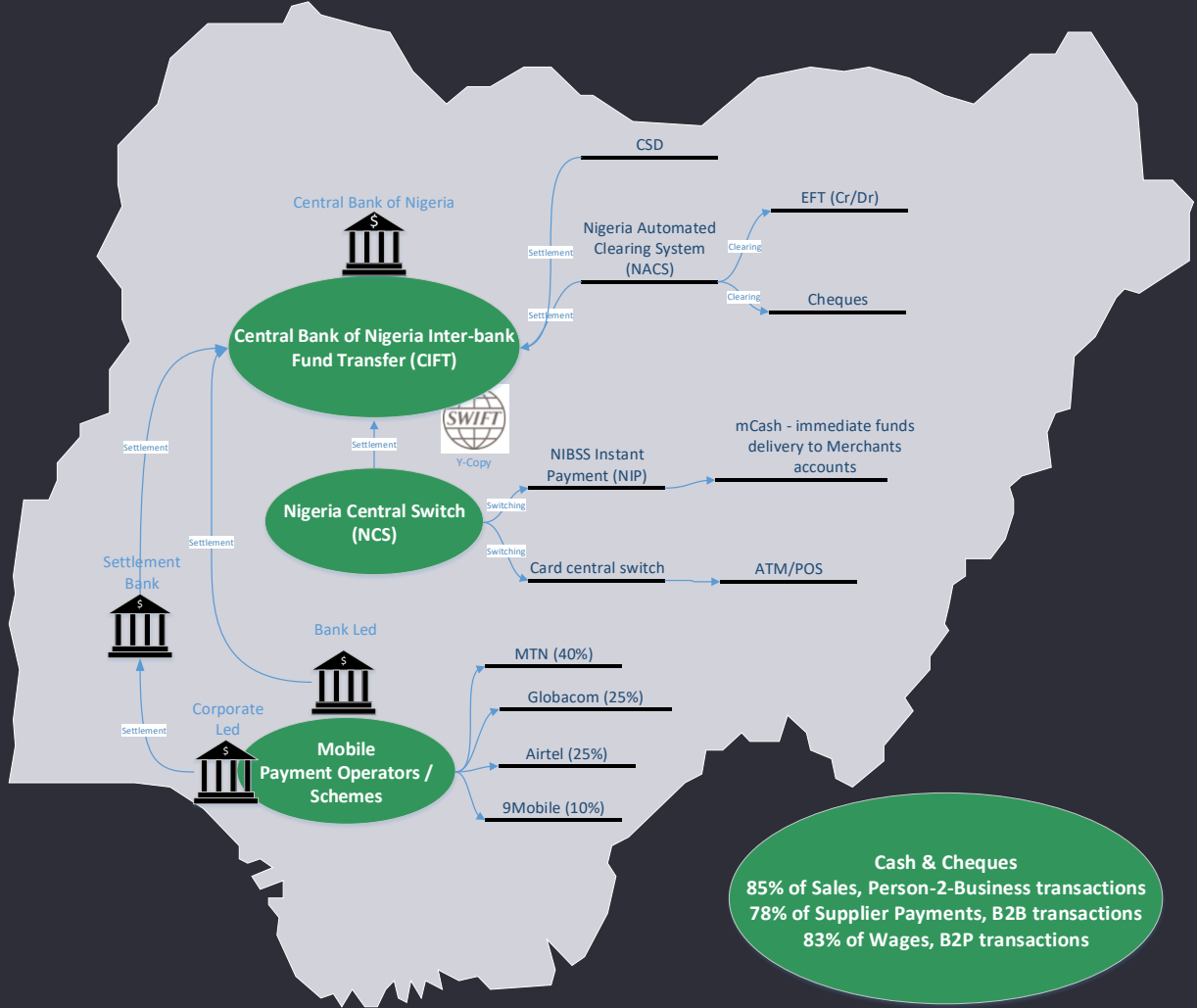
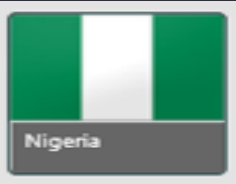
## Country Profile

|                   |                     |
|-------------------|---------------------|
| Region            | Sub-Saharan Africa  |
| Income Group      | Lower middle income |
| Population        | 26,786,598          |
| Exchange Controls | None (reporting)    |
| Currency          | Ghanaian cedi - GHS |

| Clearing Streams  | Payment Type                                    | Instrument & Characteristics  |
|---|---|---|
| CCC - Cheque Codeline Clearing system                               | Paper   | <ul style="list-style-type: none"> <li>Cheque Truncation, image and MICR codeline data for clearing</li> </ul>  |
| GACH - Ghana Automated Clearing House system                        | Low Value                                       | <ul style="list-style-type: none"> <li>Domestic Funds Transfer (EFT CT/ DD, Express same-day option)</li> </ul> |
| GIS - Ghana Interbank Settlement RTGS System, SWIFT BICs            | High Value                                      | <ul style="list-style-type: none"> <li>Cross-border Funds Transfer</li> <li>Domestic RTGS</li> </ul>            |
| gh-link - National Interbank Switch (ATM/POS - EMV)                 | Card (ATM/POS)                                  | <ul style="list-style-type: none"> <li>Debit / Credit Card</li> </ul>   |
| GIP - Instant Pay, account based instant interbank payments         | ATM/POS, Online                                 | <ul style="list-style-type: none"> <li>Real time credit push (switch through gh-link)</li> </ul>                |
| E-zwich - National Biometric Smartcard (fingerprint) Payment System | ATM/POS<br>Cash deposit/<br>withdraw/ transfer) | <ul style="list-style-type: none"> <li>Pre-paid card</li> </ul>   |
| MMI - Mobile Money Interoperability Platform                        | Mobile  | <ul style="list-style-type: none"> <li>Mobile payments (switch through gh-link)</li> </ul>                      |

Sources: World Bank, Bank of Ghana, U.S. Department of Commerce's International Trade Administration

# Country Focus: Nigeria



## Country Profile

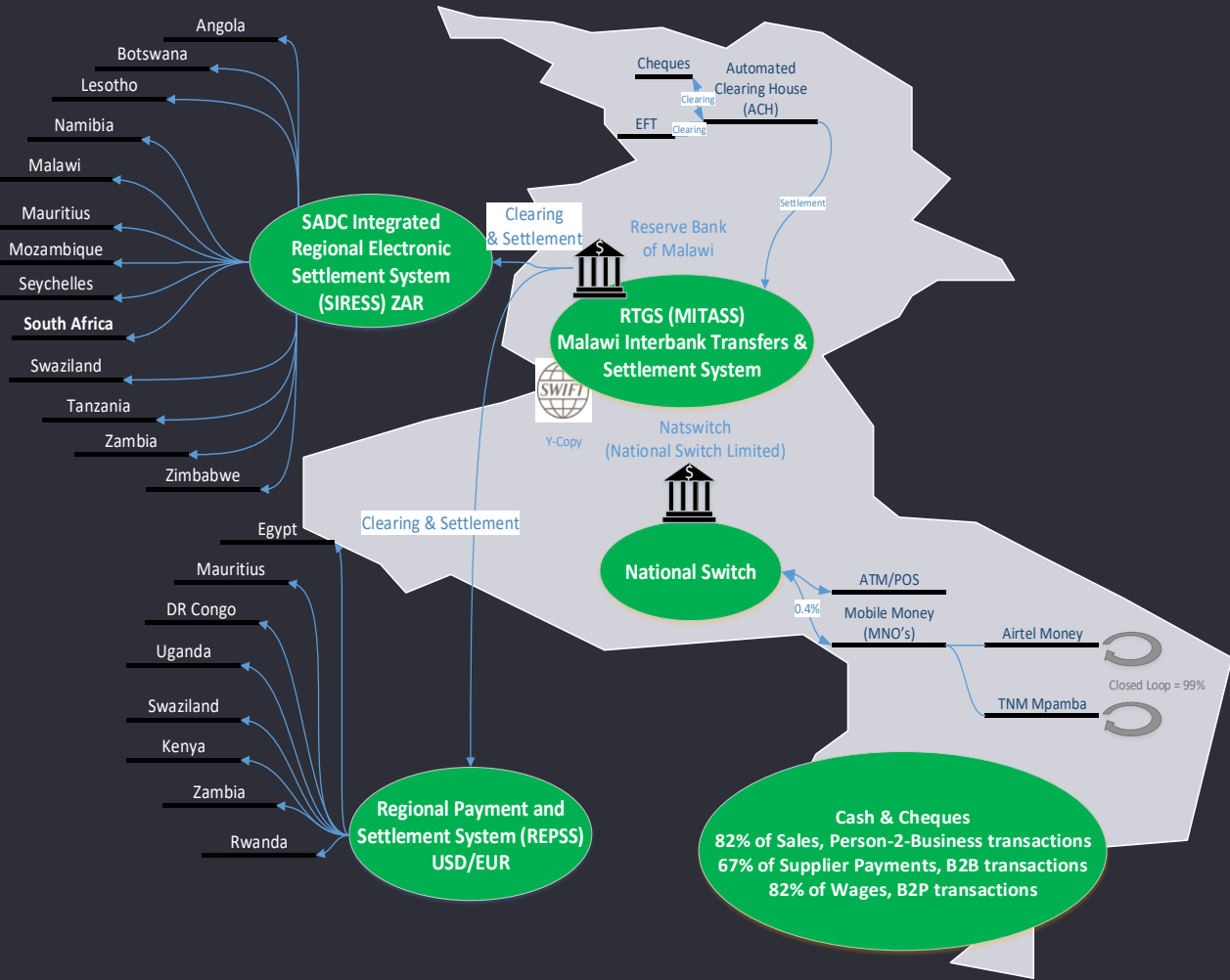
|                   |   |
|-------------------|---|
| Region            | Sub-Saharan Africa  |
| Income Group      | Lower middle income   |
| Population        | 177,475,986   |
| Exchange Controls | Some CBE limitations on importers, overseas travel allowances & repatriation of funds |
| Currency          | Nigerian naira - NGN (multiple fx rates )   |

| Clearing Streams  | Payment Type  | Instrument & Characteristics   |
|---|---------------|--|
| Nigerian Automated Clearing System (NACS) operated by NIBSS PLC | Paper         | <ul style="list-style-type: none"><li>Cheques (MICR / Truncation)</li><li>Other paper instruments</li></ul>  |
| Nigerian Automated Clearing System (NACS) operated by NIBSS PLC | Low Value     | <ul style="list-style-type: none"><li>Domestic Funds Transfer (EFT CT/DD)</li><li>Bank Verification Number (BVN) unique customer id for KYC</li><li>Nigeria Uniform Bank Account Number (NUBAN) serial number and cheque digit</li></ul> |
| CIFT (RTGS) operated by CBN, SWIFT BICs                         | High Value    | <ul style="list-style-type: none"><li>Domestic RTGS through settlement banks</li></ul>   |
| Nigeria Central Switch (NCS) operated by NIBSS PLC              | Card & Mobile | <ul style="list-style-type: none"><li>ATM/POS (EMV)</li><li>mCash (Merchant payments via USSD/Web/POS)</li></ul>   |
| Mobile Payment Schemes regulated by CBN & NCC                   | Mobile        | <ul style="list-style-type: none"><li>Bank-led, Bank-focused and Non-bank-led models</li></ul>   |

Sources: World Bank, Central Bank of Nigeria (CBN), U.S. Department of Commerce's International Trade Administration



# Country Focus: Malawi



| Country Profile                           |  |  |
|---|--|--|
| Region                                    | Sub-Saharan Africa   |  |
| Income Group                              | Low income   |  |
| Population                                | 17.5m  |  |
| Exchange Controls                         | None (freely floated since it was unpegged from the U.S. dollar in 2012) |  |
| Currency                                  | Malawian Kwacha - MWK  |  |
| Clearing Streams                          | Payment Type   | Instrument & Characteristics   |
| ACH                                       | Paper  | <ul style="list-style-type: none"><li>Cheques (MICR / Truncation)</li><li>Other paper instruments</li></ul>  |
| ACH                                       | Low Value  | <ul style="list-style-type: none"><li>Domestic Funds Transfer (EFT CT/DD)</li></ul>  |
| MITASS (CBM), SWIFT BICs                  | High Value   | <ul style="list-style-type: none"><li>Domestic RTGS</li></ul>  |
| Natswitch operated by National Switch Ltd | Card (ATM/POS), Mobile Money   | <ul style="list-style-type: none"><li>Domestic Card Switch</li><li>Mobile Money schemes, closed loop and interoperable through Natswitch</li></ul> |

Sources: World Bank, Central Bank of Malawi (CBM), U.S. Department of Commerce's International Trade Administration

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