

## HIGHLIGHT

*There is currently a major focus on digitization within African countries, with the interest of, on the one hand, increasing efficiency and lowering the cost-of-service delivery, and on the other hand, increasing financial inclusion for excluded parts of the population. Zambia provides an important case study of digitization of social protection transfers. Whilst Zambia is sparsely populated with remote rural populations often living up to 100 km from the nearest town, making beneficiaries hard to reach with digital services, the country has successfully demonstrated that cash transfers can be digitized for remote rural populations to varying extents, tailored to their particular context. This Discussion Note presents challenges faced and solutions found in digitizing cash transfer payments in Zambia, which may be of interest to other countries embarking on similar endeavors.*

# Digitizing cash transfers to remote rural populations: challenges and solutions from the experience of Zambia

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## Background to cash transfers in Zambia

The number and percentage of poor people in Zambia is high, estimated at 58% of the population in 2020<sup>2</sup>.

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- 2 Zambia - Social Protection and Jobs Public Expenditure Review 2021 (English). Washington, D.C.: World Bank Group

The Social Cash Transfer (SCT) is the Government of Zambia's flagship social protection program, aiming to stabilize the consumption of the poor and vulnerable. The program started in 2003 with small pilots in a few districts and has since scaled up over time, currently reaching 974,000 households (representing 30 percent of the population or 50 percent of the poor). Beneficiaries currently receive bi-monthly cash transfers of ZMW 400 (US\$24 equivalent or US\$12 monthly) for an average household and double this amount for households with a disabled person. Beneficiaries are selected through categorical as well as poverty targeting mechanisms to identify people that are poor and also unable to work. Eligible categories are extreme poor households with members that are either disabled, elderly, chronically ill, child-headed, and female headed households. The World Bank has provided financing to the SCT together with the governments of UK, Sweden, and Ireland through the World Bank administered multi-donor trust fund since 2020, in addition to a major proportion of financing coming from the Zambian Treasury. Prior to 2022, all SCT cash transfer payments were made manually, in physical cash, by civil servant Pay Point Managers (PPMs), most often teachers.

Another important social protection program providing transfers in Zambia is the Supporting Women's Livelihoods (SWL) component of the World Bank funded Girls Education and Women's Empowerment and Livelihoods (GEWEL) project. The first phase of SWL started in 2017, providing a livelihoods package for women to start small businesses. SWL targets women of working age, between 19-64 years old, from SCT households, supporting them for one year with a package that includes participation in savings groups; a 21-day life and business skills training; and a productive grant equivalent to US\$225. The grant is a one-off payment, made in two equal tranches, and has always been paid through digital Payment Service Providers (PSPs) given its large monetary value.

## Key achievements in digitizing cash transfers in Zambia

SWL was the first social protection program in Zambia to introduce digital payments through PSPs in 2017. To viably reach remote rural beneficiaries, SWL introduced an innovative, beneficiary choice-based, multi-service provider system, which at that time was unique in Africa. The system has since been scaled up successfully to over 95,000 beneficiaries, who have been able to choose where to receive their payment among initially four PSPs, which has now grown to seven. The PSPs are integrated into a web-based Payment Gateway, allowing real-time payment tracking.

The government also decided to start digitizing SCT payments to reduce financial risks and improve real time tracking and authentication of payments. Since then, some key results achieved include:

- Successful partnership between the World Bank, Smart Zambia (the digitization agency of government), the Ministry of Community Development and Social Services (MCDSS), the Ministry of Finance and National Planning (MOFNP), and the United Nations towards system development and support.
- End-to-end integrated Management Information System (MIS) and digital payment system for SWL and SCT put in place and integrated to nine PSPs, including three Mobile Network Operators (MNOs) (Airtel, MTN, Zamtel), one interoperable independent mobile cash voucher provider (Zoono), one pre-paid Visa card issuer (UBA Bank), as well as four banks (Zanaco, Atlas Mara, Natsave, Indo-Zambia).
- The web-based system automates the end-to-end business functions, improving accountability and traceability, and allows for real-time payment tracking and reconciliation with PSPs.

The World Bank's CORE-MIS modules, developed to eventually become an open-source solution for client governments to use, were customized to meet the needs of SCT and SWL. The Payment Gateway developed for SWL was also leveraged and customized for SCT, providing the integration to nine PSPs. The SCT system is currently deployed and functional across all 116 districts of Zambia in terms of registration, enrollment, and grievance functions and the generation of payment lists. The registration and enrollment modules were used across all districts for the SCT beneficiary scale-up undertaken in 2021, and digital payments through PSPs have been piloted in two districts, with further rollout being undertaken in 2022 and 2023.

## Lessons learned from Zambia's experience

The challenges encountered and solutions found from the experience of Zambia could provide valuable lessons to other countries.

### **Challenge #1: No single PSP with national coverage and uncertainty on coverage levels in individual communities**

#### **Solution: Multi-service provider system with beneficiary choice**

A digital payments feasibility assessment by the World Bank and MOFNP found that, while MNOs had the best reach, with the average rural person having to travel no more than 3 km to reach an agent, no single provider was servicing all districts. There were also areas without any mobile money provider, but that may have a bank. Moreover, there was limited information about the location of financial access points and their accessibility to beneficiaries.

Once the decision to deliver digital payments was made, it became clear that the only option was to engage multiple providers to reach a national scale. The obvious choice, albeit a paradigm shift in social welfare payment norms, was to allow the beneficiary to independently select the most convenient provider for them based on the premise that empowered beneficiaries will make sensible decisions in their favor. The innovation was introduced to allocate PSPs to beneficiaries based on each beneficiaries' own choice of PSP, to leverage their local knowledge on proximity of access points. The beneficiary choice approach has been evaluated and has been found to benefit both recipients and the program<sup>3</sup>. The evaluations show that, when given the choice, recipients tend to select the provider with the closest, most convenient access point. Recipients report that this reduces travel expenses and frees up time to spend with family or on income-generating activities. Choice also gives government programs flexibility when one provider drops out or doesn't comply with the service standards. For example, in Zambia, one PSP lost its banking license due to insolvency but because the program worked with several providers, it simply asked beneficiaries to select another provider, without disrupting payment cycles. Governments can also avoid monopolies and reduce leakage with this approach.

Programs often choose the provider with the highest number of access points and the best financial offer, but that is typically the provider with the strongest market power, excluding other small providers that are providing good services in some areas. It is also problematic for program staff to assign communities or regions to particular providers because there is seldom up-to-date information about every beneficiary's preference or proximity to financial access points. Allowing recipients to choose is not only a more customer-centric approach but can also avoid reinforcing monopolies and protect program officers from being lobbied by providers.

<sup>3</sup> See Baur Yazbeck and Wadie Hobson (2021). The Future of Government-to-Person (G2P) Payments: Three Years of Learning About G2P Choice in Zambia. CGAP Background Documents. April 2021.

With regards to PSP contracting under the beneficiary choice approach, SWL took the approach of signing Memorandum of Understanding (MOUs) with all interested PSPs and paying their market-based withdrawal fees. These fees are paid as a rebate top-up payment so that the beneficiaries can pay the withdrawal fees themselves. The SCT took a direct selection approach, where all interested PSPs were invited to bid against ToRs and specifications, and all those who met the selection criteria were directly selected. Framework contracts were used to keep the numbers of beneficiaries flexible until beneficiary choices were recorded. PSP fees negotiated are also paid as a withdrawal rebate to the beneficiary.

Thanks to the increased competition to provide payments in the market, between 2017 to 2020 the Government managed to reduce the cost of SWL digital payment by 30% (from K50 to K35 per payment). As SWL uses MOUs, government did not have to renegotiate contracts to take advantage of the cost savings. Government merely reduced the withdrawal fee rebate top-up given to beneficiaries per payment to match the reduced market costs of withdrawal. This top-up rebate approach of covering the withdrawal fees was another innovative approach trialed in Zambia.

## **Challenge #2: Unstable MIS system**

### **Solution: Adoption of CORE-MIS as an end-to-end integrated web-based MIS**

Like many social protection implementing ministries in other countries, MCDSS had numerous non-functional and under-performing MIS systems. The MIS systems, including a beneficiary enrollment application (App) and targeting modules for SCT, and a Single Registry of Beneficiaries for all programs, had been developed for the ministry by private sector firms but had become antiquated and non-functional

over time due to vendor lock-in<sup>4</sup> complexities and limited IT capacity issues. After the end of the contracts with the private sector firms, the ministry did not have neither the source code nor the IT capacity to maintain the systems. Continuously re-engaging the developer firms would come at an unaffordable medium to long-term cost to the ministry. This absence of functional web-based systems limited fiduciary control and accountability. For example, it meant that beneficiary data was never up to date at the national level and one needed to go to the district level to ascertain the up to date list of beneficiaries; beneficiary lists were updated and modified outside the system, with no log of who made the changes or who approved them; and there was no capability for real time tracking of payments.

As a solution, the Zambian government requested to benefit from the CORE-MIS developed by the World Bank. This free tool is specifically designed to support the implementation of social protection programs and includes a wide range of available modules covering the entire program cycle (from enrolment to payment, and graduation). The benefits of doing this included: the possibility of relying on robust software that is modular and highly customizable to the needs of the ministry; benefitting from support and training from the World Bank's in-house developers through the Bank's technical assistance support; and a fast configuration and deployment of the system. The fully enhanced MIS system was customized to the needs of the ministry and was ready for piloting in just eight months. The system provides an end-to-end integrated web-based MIS automating all business functions of the program. For SCT, the MIS functionalities available include Registration (Listing, Validation, and Enumeration), Targeting (Pre-eligibility, Eligibility and Proxy Means Test, PMT, assessments), Beneficiary and Household management, Payment management and reconciliation, Grievance Redress Mechanism (GRM), Geo restriction of user access, Multi-factor authentication framework

<sup>4</sup> Vendor lock-in describes a scenario where Government is unable or unwilling to continue to maintain IT systems because the only way to do so is to continue paying a vendor, becoming increasingly unaffordable over time thus increasing the risk to national security over time.

for increased security and ETL (Extract, Transfer, Loading of data) for the beneficiary and household data, with interactive reporting modules (allowing for user customization).

### **Challenge #3: Lack of connectivity in remote rural areas**

#### **Solution: Vary design of digital payments for areas with and without connectivity**

The SWL was able to undertake digital payments across all areas of the country because the value of the livelihood grant was large enough to incentivize beneficiaries to travel long distances to areas that have connectivity and PSP presence. Moreover, given that the SWL grant was a one-off payment, it was affordable for the program to offer an additional travel rebate to beneficiaries to compensate them for their travel costs. However, SCT involves small frequent payments, making it difficult for beneficiaries to travel long distances every time, and the SCT guidelines specify that pay points should be no further than 7 km away from communities. This means that digital payments for SCT will not be possible everywhere until network connectivity and PSP presence improve in the most remote areas. The key was therefore to know which communities have connectivity and vary the system's design for areas with and without connectivity and PSPs.

The strategic approach agreed upon was to delineate between so-called Rural and Urban beneficiaries (defined as residing in areas with or without network connectivity and availability of PSPs). District staff are the ones that specify whether a community/village should be considered Rural or Urban in the MIS system.

Rural payments, in remote areas with no network connectivity, will continue to be made through Pay Point Managers (PPM) civil servants, but with real-time payment tracking through an Android App with offline functionality. SCT transfers have traditionally been entirely manual with associated weaknesses in respect to auditability, reconciliation, and beneficiary authentication. The new Rural

payment modality developed strengthens the system to provide robust auditability, automatic digital reconciliation, reporting, and beneficiary authentication elements to better verify that the beneficiaries targeted for SCT benefits are successfully paid. To achieve this, an android Mobile App was developed to download payment lists to mobile devices owned by the PPMs. The PPMs take the mobile device with the cash withdrawn from the local district bank to make payments off-line. The App presents beneficiary identification information to the PPM, and the PPM is required to verify the identity of the beneficiary that must present their National Registration Card (NRC) to ensure a match with the payment list data downloaded to the App<sup>5</sup>.



PPM in Namwala district using the App. Photo credit: Lubasi Musambo

5 Zambia has a national ID system that covers over 83 percent of the population. It is a paper based ID and not yet digitalized. "World Bank Group. 2016. Identification for Development : Zambia. World Bank, Lusaka."

The App also requires the PPM to take a photograph of the beneficiary receiving payment. Additional security features include GPS location and the time of payment being automatically captured by the App. Once the PPMs complete the payment at the community level, they travel back to the District office or any area where Internet connectivity is available to upload the payment receipts to the system, which can then report, usually on a daily basis, as to the status of payments.

The SCT Urban payments modality, in areas with network connectivity, undertakes digital payments through multiple PSPs (MNOs and Banks) based on the beneficiary's choice as per the successful experience of SWL. Urban SCT beneficiaries are sensitized about the approach in advance of capturing their choice of PSP out of the available SCT PSPs.

Urban payments are processed in real-time from the MIS system and passed to the Payment Gateway, which facilitates a double entry payments approach. While on the one hand, payments are debited to the ministry Trust Account held at the PSP and, on the other hand, payment is credited to each unique beneficiary account at that PSP. The 'double entry' approach to electronic payments means that funds only leave the ministry's account if the balancing credit is successfully credited to each beneficiary account at the PSP. This means that in case of failed transactions there is no movement of funds and no need for the Government to request refunds from the PSPs. In the Payment Gateway double entry approach, electronic instructions result in electronic responses for each payment transaction. The Payment Gateway in-turn advises the MIS that can then report on payment status in near-real time showing successful payments and failed payments with any associated 'payment failure reason code'. Ministry staff then use the 'payment failure reason' information to help address the problems such as inaccurate mobile or account number provided or dormant account. Once the problem is corrected, payment can be re-tried almost immediately.

#### **Challenge #4: Limited capacity of district staff to operationalize digital payments on the ground**

#### **Solution: Prioritize capacity building for operational rollout and troubleshooting**

The pilot of the system in two districts (Kitwe and Namwala) has shown that the system is stable and successful from the Information Technology (IT) perspective, with the main challenges encountered being due to district staff capacity gaps in ensuring data quality and accuracy. The MIS and Payment Gateway have successfully provided a consolidated platform for the automation of SCT business processes, from targeting to poverty estimation and disbursements of rural and urban payments to eligible beneficiaries in the pilot districts. The system was found to be robust and stable at the transaction stages. Rural payments via the PPM app were successful and were conducted with no major issues. Urban payments through PSPs were successful when correct data was entered for the beneficiary. However, data quality issues were encountered at the time of data entry in the MIS as well as data clean-up, mainly due to duplicate or incorrect records of NRCs.

A key lesson learned, therefore, was the need to pay equal attention to operational and data quality issues as much as to system design and testing. In hindsight, in Zambia there was a lot of focus on system design and testing while operational and data quality issues received less attention, leading to the difficulties experienced on duplicate and incorrect IDs (NRCs) delaying digital payments through PSPs. Some of the solutions that Zambia is adopting to remedy this challenge include:

- Undertaking further capacity building and training for field staff to minimize data entry errors
- Instituting a Monthly Payments Working Group for the ministry and PSPs to troubleshoot issues
- Use of the Payment Gateway to produce reconciliation reports with PSPs

- Close follow-up of failed payments by the ministry and district teams to solve the NRC duplication and other issues arising.

## Conclusion and way forward

Key lessons learnt from Zambia's experience with the digitization of cash transfers for remote rural populations, therefore, include: (i) promoting multiple providers with beneficiary choice is beneficial to leverage beneficiaries' local knowledge of the proximity of access points, in situations where information on coverage in every community is not available; (ii) customizing the World Bank's CORE-MIS open source software was a fast and reliable solution to the MIS needs of Zambia's cash transfer programs; (iii) utilizing the Payment Gateway allowed the ministry to maximize on the integration effort to PSP's and re-use these for multiple programs from SWL to SCT and others in future; (iv) varying the design of digital MIS and payment systems for areas with and without network connectivity is needed, while relying on district staff knowledge of which communities should be considered to have connectivity; (v) it is as important to pay attention to training of local staff at district level on data quality issues and troubleshooting operational issues as it is to invest in system design and testing. The former is often the most significant bottleneck to a fast rollout.

The way forward in Zambia's digitization of cash transfers includes a rapid countrywide rollout of the Rural modality of physical cash delivery with real time payment tracking through the PPM App, which is expected to be completed in the first half of 2023. The Urban modality of digital payments through MNOs and Banks will also be rolled out, but in a more phased manner at the rate of a few districts at a time to allow for the troubleshooting that is needed on data quality and NRC issues. A capacity building plan is also under development outlining the handover protocol and capacity building requirements for MCDSS to manage

the system sustainably without support from the developers going forward.

Another major reflection is that, given limited IT capacities within government ministries, counterparts need a long-term support commitment, which is often unavailable or unaffordable if only relying on private sector firms. There is also a need to advocate for social protection ministries to hire the right caliber of staff, in conjunction with the IT ministry or digitization agency, for the successful maintenance of such systems and to ensure their long-term sustainability. This includes staff with software configuration skills.



SCT beneficiary receiving a ZoonA payment from a Kazang agent in Kitwe district. Photo credit: Lubasi Musambo

Finally, Zambia is still at an emerging stage in its story of digitization of cash transfers, but the achievements made so far in system design and deployment, reaching very remote rural populations, make it an important case study from which to learn.

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