

HIGHLIGHT

Burundi's shift from its initial management information systems (MIS) to the open-source CORE-MIS (powered by open IMIS) offers valuable insights in terms of implementation approach for other countries. Key benefits include cost efficiency and enhanced government ownership. The transition also underscores challenges with previous MIS notably vendor lock-in, which restricted flexibility and operational capacity.

Implementing CORE-MIS to Strengthen Social Protection Delivery in Burundi

Lessons from the Cash for Jobs Project

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Background

The Cash for Jobs Project (P175327), locally referred to as Merankabandi, is a flagship social protection program in Burundi financed by the International Development Association, IDA. This initiative became effective in 2022 following a successful pilot phase that ran from 2017 to 2022. The project is designed to enhance access to income-generating opportunities and build resilience among vulnerable populations in Burundi. With a total financing envelope

of US\$279 million, the project has already reached about 250,000 households (more details in **Table 1**).

A core enabler of effective delivery in such programs is a fit-for-purpose Management Information System (MIS). The project requires robust information management systems to effectively track

beneficiaries, manage payments, and monitor program outcomes. Enhancing social protection delivery systems is a priority for the project. This involves developing efficient and transparent service delivery mechanisms across various interventions. As part of this effort, Burundi is working on establishing a unified social registry (USR) to streamline and improve the delivery of social protection services.

Table 1: Project Card

Category	Details
Type of intervention	Graduation approach with unconditional cash transfers, productive inclusion grant, human capital and productive inclusion accompanying measures
Geographic coverage	National (All 18 provinces of Burundi)
Beneficiaries	1.25 million
Targeting mechanism	Community-based targeting combined with proxy means test to identify the poorest and most vulnerable households, prioritizing families with children under 5 years
Payment system	Mobile money transfers
Budget	US\$279 million
Financial partners	World Bank (IDA)
Implementing partners	Ministry of National Solidarity, Social Affairs, Human Rights and Gender (MDPHASG), National Refugee Protection Office (ONPRA), Permanent Executive Secretariat-National Commission for Social Protection (SEP-CNPS), local administrations, World Food Programme (WFP), Food and Agriculture Organization (FAO)
Project components	<ol style="list-style-type: none"> 1. Scaling up safety nets to the national territory 2. Productive inclusion and access to jobs 3. Development of Social Protection delivery systems 4. Integration of refugee and host communities into national social protection systems 5. Project management and implementation 6. Contingent Emergency Response Component (CERC)

Challenges with the former MIS

The project opted to engage an external vendor during its first years, aiming to balance the use of external expertise with internal capacity building. In the beginning, the government relied on UN agency-implemented crisis response efforts. However, in 2024, the Cash for Jobs Project was called upon to respond to the devastating impacts of El Niño-related flooding and landslides through its own delivery systems. This experience exposed significant inadequacies of the existing MIS, which had not been designed to accommodate emergencies of such scale or complexity.

As a result, operational flexibility was limited, making it difficult to scale up interventions nationally or adjust program features rapidly in response to evolving needs.

While the MIS in place provided a foundation for basic beneficiary management, it faced limitations in several areas critical to effective program delivery. The system's architecture made it difficult and time-consuming to implement changes, which created delays during critical periods. Additionally, restricted access to system data and backend controls meant that

the project team and government counterparts could not fully manage or adapt the platform independently. This lack of flexibility, combined with a system design that

was not fully aligned with institutional mandates and workflows, created challenges for long-term sustainability and increased the risk of operational disruptions.

Transitioning to CORE-MIS (powered by openIMIS): Rationale

The project therefore opted to adopt the social protection CORE-MIS, a system designed to support the implementation of safety nets programs, including in emergency contexts. The CORE-MIS solution was developed by The World Bank Social Protection and Labor Delivery Systems Global Solutions Group (GSG) during the COVID-19 crisis and is now part of the openIMIS initiative.¹ It is a robust, scalable, free, and open-source digital platform, supported by an established community of developers and practitioners, making it an accessible and cost-effective solution. The system architecture incorporated modular components that could leverage existing open-source frameworks while meeting the unique requirements of Burundi's social protection programs. The system features an integrated menu of core and optional modules, enabling seamless customization and scalability while facilitating the incorporation of new modules. The CORE-MIS offers several advantages:

- **Modular Architecture:** Allows phased rollout and alignment with project needs.
- **Government Ownership:** Eliminates vendor dependency and promotes long-term sustainability.
- **Interoperability:** Supports integration with third-party systems (e.g., payment systems, ID databases).
- **Cost Efficiency:** Avoids licensing fees and reduces reliance on proprietary support.

This approach enabled easy and cost-effective customization to Burundi's specific context while benefiting from alignment with broader community development efforts and standards.

Implementation Approach

The government adopted a phased five-step approach in implementing the CORE-MIS system, consisting of: (i) inception; (ii) foundation; (iii) payment module development; (iv) grievance redress mechanism (GRM) and monitoring and evaluation (M&E); and (v) review and training (see **Figure 1** below).

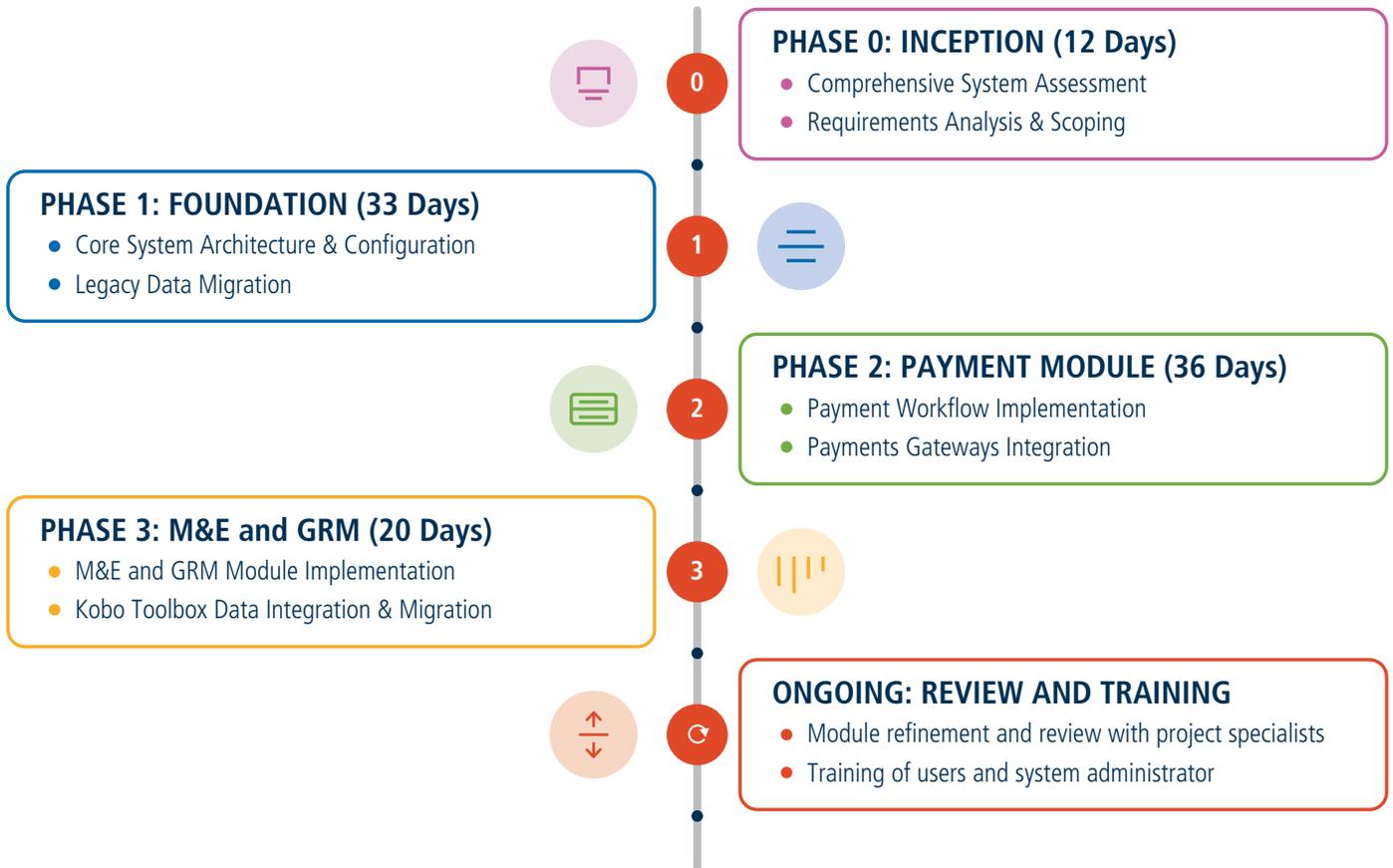
Phase 0: Inception (October 2024)

The transition started in October 2024 with a comprehensive system assessment of the legacy system (former MIS) followed by a gap analysis comparing it with the CORE-MIS to identify the required functionalities for the target system and initial strategic considerations and high-level steps for data and system migration.

- **Existing system functionality** was evaluated through a mapping of core business processes and existing modules, finding out what is included and what is missing.
- **Target system functionality** was defined through a participatory approach involving key stakeholders, establishing requirements for comprehensive beneficiary management, advanced payment processing, robust M&E framework, streamlined data collection, and integrated GRM.
- **Migration requirements** were established through detailed analysis of (i) functionalities to replicate, (ii) additional capabilities to develop, and (iii) data transformation needs.

¹ In 2023, the CORE-MIS was integrated into the OpenIMIS initiative, where the World Bank remains an important partner, particularly in the area of social protection. (<https://openimis.org/>)

Figure 1: Implementation timeline



Source: Authors

The comparison between the existing and target (new) systems revealed significant gaps that needed to be systematically addressed. The new system should support multiple interventions, including an M&E module to capture key indicators and visualize them with dashboards and reporting capabilities, a grievance management module, flexible data management tools, and enhance interoperability with payment service providers.

Phase 1: Foundation - Data Migration and Base System Configuration (November to December 2024)

The first implementation cycle focused on establishing the base CORE-MIS installation and foundational elements. First, data migration

processes were established for location data, household data, individual data, and beneficiary data, following a carefully designed protocol with data extraction, transformation, loading, and validation steps. Second, system-wide **configuration** included defining benefit plans, establishing role-based access control, setting up administrative hierarchies, and configuring global parameters and business rules. With support from the World Bank's Cash for Jobs Project, the Government successfully transferred data of over 1,000,000 individuals from the legacy system to the Merankabandi CORE MIS.

Phase 2: Customization of payment module (January to February 2025)

The second implementation cycle focused on payment functionality, enabling effective distribution of benefits. Since beneficiary targeting

had already been completed using the former MIS, the immediate priority after data migration to the CORE-MIS was to configure and enable payment generation as quickly as possible, thereby avoiding implementation delays due to the transition. The project team therefore started with the **payment plan configuration** to establish payment cycles and set up approval workflows tailored to the local context. Then, **payment data migration** transferred historical records of payment agencies, payment cycles, payroll records, and payment requests. The final step was the **payment workflow implementation** which includes automated payroll generation for beneficiaries, multi-level authorization processes, and integration with payment service providers (PSP).

The development of the payment module considers the heterogeneity of the PSPs. Two integration approaches were possible. First, payment agencies should be able to integrate directly into the CORE-MIS system to access payroll lists and transfer information regarding payment reconciliation once the transfer is effective. Second, some agencies have their own Application Programming Interface (API), thus the CORE-MIS needed to be integrated into their system. To address both scenarios, the project team, led by the Ministry of National Solidarity, Social Affairs, Human Rights and Gender, collaborated closely with payment providers' technical teams, focusing implementation efforts on:

- Developing dedicated APIs within CORE-MIS to support functionalities like account opening, payment processing, and reconciliation.
- Implementing integrations with third-party APIs, overcoming challenges including:
 - ◇ Obtaining comprehensive documentation;
 - ◇ Securing access rights to functional test servers; and
 - ◇ Implementing dedicated security measures (VPNs) for secure server-to-server communication.

Phase 3: M & E and GRM (March to April 2025)

The M&E module was tailored to include:

- **Back-end Infrastructure for Indicator Tracking.** This infrastructure ensures that all relevant metrics are accurately recorded and stored, facilitating systematic data management. It enables stakeholders to monitor progress and make informed decisions based on real-time insights.
- **Front-end Dashboards for Visualization:** To complement the backend infrastructure, the module includes user-friendly frontend dashboards for visualization. These dashboards transform complex data sets into intuitive graphical representations such as charts, graphs, and tables. By providing a clear and concise view of the data, they enhance the ability to assess project performance and identify areas for improvement.
- **Data Collection Tools for Field Monitoring:** KoboToolbox was integrated directly into the M&E module since it is the project's data collection tool for field monitoring. This configurable integration represents a valuable piece of functionality that can be contributed back to the openIMIS codebase, benefiting other implementers and the wider community.
- **Automated Reporting Mechanisms:** The M&E module features automated reporting mechanisms that streamline the generation of reports. These mechanisms are fed with operational data managed by the system, including payment records, grievance logs, and other relevant information. Automation ensures that reports are generated efficiently and consistently, reducing the potential for human error and freeing up resources for more strategic tasks.

The CORE-MIS includes a comprehensive **GRM module** that supports the lifecycle of complaint management. The following processes were customized for Merankabandi:

- Field mapping between existing and new grievance data;
- Case categorization and priority frameworks;
- Tracking resolution progress; and
- Ensuring accountable and transparent handling of beneficiary concerns.

Phase 4: Review and Training – System deployment (ongoing)

The system is deployed in the government data center at the Executive Secretariat of Information and Communication Technologies (SETIC- *Secrétariat Exécutif des Technologies de l'Information et de la Communication*). The deployment includes both production (infrastructure for daily project

management) and test environments (training and integration testing). This approach ensures long-term project sustainability while providing the government with complete system access and ownership. The government will continue to refine the system throughout the project's implementation.

System and data security is central to the project, supported by Government-owned cloud infrastructure that guarantees data sovereignty at SETIC, eliminating third-party risks and ensuring sustainability. The CORE-MIS implementation provides role-based access control, audit trails, and international security compliance. Combined with CORE-MIS security framework, transparency, and accountability, this delivers significant security for national social protection data. Security, maintenance, and administration responsibilities are shared between government employees and project Information Technology Specialists to facilitate knowledge transfer. **Box 1** below provides information on security measures while using an open-source system like CORE-MIS.

BOX 1: ENSURING SECURITY IN OPEN-SOURCE GOVERNMENT SYSTEMS

Using an open-source platform like CORE MIS does not inherently introduce more security risks compared to other systems. Open-source software often benefits from a community of developers who continuously review and improve the code, potentially leading to more robust security measures. Importantly, open source does not mean that a country's system becomes publicly accessible or exposed to outsiders; rather, it means that the base software code is openly available for use and adaptation, while the country retains full control over access, hosting, and data protection. However, the responsibility for ensuring the security of any system using this code ultimately lies with the government or the organization implementing it. Governments must adopt best practices in cybersecurity, including regular updates, vulnerability assessments, and adherence to security protocols, to safeguard their systems. By actively managing and securing their systems, governments can leverage the advantages of open-source platforms while mitigating potential security threats.

In Burundi, project data are securely hosted at SETIC, which plays a crucial role in ensuring system security. To further enhance data integrity and compliance with security standards, the Merankabandi project acquired additional equipment, including a dedicated firewall and a switch hub. In support of the project's security infrastructure, a firewall is a network security device or software application that monitors and controls incoming and outgoing network traffic based on predetermined security rules, and a switch hub is a network device that connects multiple computers or other network devices together within a local area network.

Training and capacity building were integrated throughout the implementation process with:

- Specialized training for system administrators, program managers, payment operators, and field staff;

- Training of the trainers approaches to build sustainable local capacity; and

- Support for three user categories: central administrators, regional managers, and local operators.

Lessons learned

Drawing on Burundi's experience in adapting the CORE-MIS for the Merankabandi project, **Table 2**

summarizes key lessons, including what worked well and the main implementation hurdles faced.

Table 2: Key lessons

Success Factors	Challenges
Phased implementation approach: The iterative approach allowed for manageable chunks of work with clear milestones and deliverables. Each cycle is built on the previous one, ensuring a logical progression of functionality.	Data quality and completeness: The quality of data in legacy systems varied significantly, requiring substantial cleaning and validation efforts. Historical records often lacked complete information, especially for older interventions.
Stakeholder engagement at all levels and strong governance structure: The implementation involved stakeholders from the Project Implementation Unit and key stakeholders. Clear governance mechanisms with defined roles and decision-making processes have ensured effective coordination.	Adapting to new conditions: Transitioning from established manual processes to automated workflows required significant adjustments. Additional training and support were provided to address these concerns.
Modular system architecture: The modular design allowed for independent development and testing of system components, facilitating parallel work streams and incremental deployment. This approach also supports future expansion and adaptation.	Capacity building and knowledge transfer: Building sustainable local capacity for system administration and maintenance required more time and resources than initially anticipated.
Comprehensive data mapping: Detailed mapping between old and new data structures ensured that all essential information was preserved during migration.	Integration with existing systems: Working with external payment providers requires navigating different technical environments, aligning development timelines, and reconciling conflicting priorities. The project team had to establish effective communication channels, and resolve security requirements for inter-system communication, while respecting each organization's security protocols and operational constraints.

Next Steps

To further enhance and expand the capabilities of the Merankabandi platform, the following actions are planned:

Development of other modules and additional functionalities through:

- Advanced targeting mechanisms with improved data integration and analytical capabilities;

- Implementation of community validation processes;

- Enhanced grievance redress workflows; and

- Development of a module on productive inclusion measures.

Capacity Building by focusing on:

- Developing advanced technical skills for system administrators;
- Strengthening analytical capabilities for data-driven decision making; and
- Establishing a community of practices for knowledge sharing and peer support.

Contributing to the openMIS initiative. The Burundi implementation experience offers valuable lessons and components that can contribute to the CORE-MIS (powered by openMIS) solution through

- Documented implementation methodology adaptable to various contexts;
- Modular components that can be shared with other countries;
- Lessons learned regarding data migration and system deployment strategies; and
- Governance frameworks that can be adapted for different institutional settings.

Leveraging Digital Innovations such as Artificial Intelligence (AI). Future system enhancements will explore the integration of artificial intelligence to enhance system capabilities:

- **Machine learning (ML) algorithms for improved targeting and fraud detection:** ML can improve the accuracy and efficiency of identifying eligible beneficiaries by analyzing large datasets and identifying patterns in household characteristics, income sources, and expenditures. This approach can streamline the set of variables used for targeting

and help minimize errors of inclusion and exclusion, ensuring that assistance reaches the most deserving households.

- **User friendly interface using AI for the CORE-MIS:** To enhance the user experience, operational efficiency, and monitoring capabilities of the CORE MIS, the integration of a user-friendly interface with AI-driven prompts is proposed. This advanced interface will leverage AI to provide intuitive and context-aware prompts, guiding users through various tasks and processes within the system.

Building the Unified Social Registry. The Cash for Jobs project is supporting the Government of Burundi in creating a USR to enhance the coordination of social programs. The government is considering using the CORE MIS as a starting point for the development of the USR. This strategy of using open-source platforms aims to prevent vendor lock-in related to hardware and license fees, while also leveraging the expertise and support of the user community that is being built around CORE-MIS as an open-source solution².

In conclusion, the successful implementation of the CORE-MIS in Burundi demonstrates how a carefully planned, phased approach can effectively transform social protection delivery systems even in resource-constrained environments. By aligning technical innovation with institutional readiness for change, the approach not only ensured smooth system rollout but also fostered local ownership and capacity. This has enabled the government to independently manage and adapt the system, enhancing long-term sustainability, reducing reliance on external support, and laying a solid foundation for future enhancements and expansions to meet the evolving needs of delivery systems for implementing social protection programming in Burundi.

² Open-source solutions often foster active user communities that contribute to ongoing improvements, troubleshooting, and knowledge sharing. For governments, this collaborative ecosystem enhances sustainability, reduces long-term support costs, and mitigates dependency on single vendors.

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