
# Assessment of Malawi's Proposed Unified Beneficiary Registry and Information Management Systems for Social Protection in Malawi

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Development Pathways

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# List of Acronyms

| | |
|---|---|
| BISP | Benazir Income Support Programme |
| CTM | Common Targeting Mechanism |
| COMSIP | Community Savings & Investments Promotion |
| DFAT | Department of Foreign Affairs and Trade |
| DFID | Department for International Development |
| DHIS | District Health Information Software |
| ECRP | Enhancing Community Resilience Programme |
| EMIS | Education Management Information System |
| EU | European Union |
| EVR | Electronic Village Registry |
| FAO | Food and Agricultural Organization |
| FISP | Farm Income Subsidy Programme |
| GoM | Government of Malawi |
| GIZ | German International Development Corporation |
| GPRS | General Packet Radio Service |
| HMIS | Health Management Information System |
| IFPRI | International Food Policy Research Institute |
| ILO | International Labour Organization |
| LIPW | Labour Intensive Public Works |
| LDF | Local Development Fund |
| MDAs | Ministries, Departments and Agencies |
| MIS | Management Information Systems |
| MoLMD | Ministry of Labour and Manpower Development |
| MoGCDSW | Ministry of Gender, Children, Disability and Social Welfare |
| MoEPD | Ministry of Economic Planning and Development (before June 2014) |
| MoFEPD | Ministry of Finance, Economic Planning and Development |
| MoAIWD | Ministry of Agriculture, Irrigation and Water Development |
| MoH | Ministry of Health |
| M&E | Monitoring and Evaluation |
| MSAF | Malawi Social Action Fund |
| NGO | Non-Governmental Organisation |
| NRB | National Registration Bureau |
| NRB-ID | National Registration Bureau Identification Number (for village resident) |
| NSSP | National Social Support Programme |
| PMT | Proxy Means Test |
| PWP | Public Works Programme |
| RIDP | Rural Infrastructure Development Programme |
| SCT | Social Cash Transfer |
| SMS | Short Message Service |
| SP | Social Protection |
| SQL | Structured Query Language |
| SMS | Short Message Service |
| UBR | United Beneficiary Register |
| UBR-TF | United Beneficiary Register – Task Force |
| UN | United Nations |
| UNICEF | United Nations Children's Fund |
| VSL | Village Savings and Loans |
| WFP | World Food Programme |

# Glossary of Terms

The term **Management Information System** (MIS) is used to refer to application software that perform a range of basic functions that enable the flow and management of information for key processes within social protection schemes including (i) identification of applicants and beneficiaries through targeting and registration, (ii) compliance with conditions in conditional cash transfer (CCT) and public works schemes (iii), management of appeals and grievance processes (iv), exit and graduation of beneficiaries, (v) production of payment lists and (vi) reconciliation of payments.

**Agile Model** is a software development approach where the software application evolves through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, continuous improvement and encourages rapid and flexible response to change.

**Waterfall Model** is a sequential design process, used in software development processes, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of conception, initiation, analysis, design, construction, testing, production/implementation and maintenance.

**Incremental Model** is a method of software development where the product is designed, implemented and tested incrementally (a little more is added each time) until the product is finished. It involves both development and maintenance.

## Study Limitation

The study is based on 6 days of meetings in Lilongwe and 2 days of field visit and field staff interaction, in addition to the literature review. Eight days was not a sufficient time span to conduct an intensive system review. As a result, there may still be some gaps in the review and we may have missed some modules/features or additional systems working in a particular implementation department inside or outside National Social Support Programme (NSSP). Additionally, no system review or meetings were conducted for Microfinance related interventions, which are part of NSSP.

# 1 Introduction

Malawi Social Support Policy (2012) sets out the building blocks of the country's strategy in the field of Social Protection. The Policy encompasses a comprehensive view of Social Protection, providing a wide-range framework for the development of the Social Protection System in the country. It is built around four key Policy Priority Areas: (i) Provision of Welfare Support; (ii) Protection of Assets; (iii) Promotion through Productivity Enhancement and (iv) Policy Linkages and Mainstreaming. As a follow-up to the approval of the Policy, the Government of Malawi, under the lead of the Ministry of Finance, Economic Planning and Development (MoFEPD), has designed a National Social Support Programme (NSSP) to operationalize the strategies and objectives laid out in the Social Support Policy. The NSSP, approved in March 2013, focuses on five key programmes of Social Support:

- Public Works;
- Social Cash Transfers;
- School Meals;
- Micro-credit and
- Village Savings and Loan programmes.

The MoFEPD in collaboration with the ILO is currently undertaking a comprehensive review of Malawi's Social Protection systems with a focus on the coverage, effectiveness and efficiency of the system. The ILO Social Protection assessment is planned to provide evidence for the review and redesign of the NSSP, which is set to expire in June 2016. The areas to be addressed as part of the exercises include analysis of the potential fiscal space available, exploring opportunities for the financing of Social Protection programmes, improving Social Protection management information systems and identifying the advantages and risks related to different options.

As part of improving the Social Protection management information systems, the Government of Malawi in conjunction with ILO and UNICEF commissioned a dual assessment of the existing SP MISs and a proposed UBR that unifies the targeting efforts of current Malawian Social Protection programmes. The assignment had three objectives:

- Carry out a system assessment of existing MIS and databases for each of the Social Protection programmes included in the National Social Support Programme (NSSP) and analyse their strengths and weaknesses;
- Identify needs for further improvement of Malawi's Social Protection MIS and advise stakeholders on how to implement these enhancements; and
- Provide concrete advice on requirements and systems specifications of a Unified Beneficiary Registry, integrating, amongst other aspects, the targeting for all Malawian social protection programmes, while leaving the management of programme data to the individual programme MIS.

The review was conducted between 1st May 2015 and 30th June 2015. The methodology of the study included: (i) a desktop review of the Social Protection documents in Malawi and international literature, (ii) discussions with national stakeholders, (iii) field visits to see how the programmes are implemented at the district level and (iv) a workshop with the Government and other stakeholders to discuss the potential options for Malawi based on interviews and information collected during the field visit.

The report is divided into five chapters. Chapter 1 frames the report within the terms of reference. Chapter 2 presents findings of NSSP MIS assessment. Chapter 3 sets out findings of assessment within SP sector and beyond. Chapter 4 addresses UBR as the current model of integration within Malawi, presents international experiences on integration and proposes a model for broader integration within SP sector and beyond in Malawi. Finally, Chapter 5 presents recommendations for improving the current SP MISs and model for broader information and data integration in Malawi.

# 2 Assessment of NSSP MISs

Social Protection MISs are more than just software and hardware. In fact, they are systems that enable the flow of information within one SP programme, across SP programmes and in some cases beyond the SP sector. They are also important tools for both programme administration and policy analysis. Generally speaking, there are no specific definitions of the MISs, databases and Single Registries within the SP context. The definitions of MIS concepts used in this report are set out in Box 1 below:

**Box 1: Definitions of SP MIS concepts**

- **A database is a system intended to easily organize, store, and retrieve large amounts of data and a 'registry' is an official written record of names, events or transactions.**
- **A MIS ("Programme MIS" in Social Protection context) is a system that transforms the data that is retrieved from a programme's database (or in some cases, different databases linked to different "modules") into information that can be used for efficient and effective management.**
- **Single Registry is a listing (database) of all people/households who have been registered (i.e. interviewed using either a census or on-demand registration approaches)1.**
- **An integrated system for information management refers to the broader system that enables the flow and management of information within and between SP programmes (and sometimes beyond, to other sectors).**

There are three perspectives to SP MIS: i) by reference to the functions of the MIS; ii) the computer and associated components; and iii) analysis of the type and size of MIS.

In terms of functionality, SP MIS are a reflection of the programme operational processes underpinned by appropriate technology. In this respect, SP MIS perform a number of functions such as:

- Registration of applicants, using either a census or on-demand method[2] for targeting and registration;
- Identification and registration of those accepted onto a programme (i.e. the beneficiaries);
- Management and monitoring a grievance process or monitoring compliance with conditions;
- Identifying those who should be removed from a programme when no longer eligible or because they have died;
- Producing lists of those who should receive payments and the level of payment that should be given;
- Identifying those beneficiaries who have been paid and those who have not;
- Notifying programme managers when different processes have happened or should happen e.g. when a payment is due or when beneficiaries are due to exit.

In classical terms, SP MISs can also be viewed as a set of computers and related technologies. These components include SP programmes' information requirements, software applications, databases, hardware and network infrastructure.

[1] Even though this term popularly used in the SP MIS literature, it is important to note that: (i) is not necessarily "single" as it does not often bring together all Social Protection programs in a country and does not substitute individual, program-level MIS; (ii) is not necessarily "national" since Social Protection programs, and data collection for registration, are sometimes targeted geographically; (iii) does not necessarily entail a single process for targeting or unifying operations across programs.

[2] A census method means that the programme attempts to visit all households to undertake targeting; an on-demand method means that applicants are expected to visit specific registration points to apply for the programme.

The requirements of SP programmes – typically consisting of registration, targeting, payments and case management processes – define the type and complexity of the application software to be developed. Software applications store information in databases[3] – e.g. Microsoft Access and Oracle. For software to run, hardware systems – such as servers, computers, laptops and printers – should be setup. The type of hardware to be procured is dependent on the type of technology relevant to the environment within which the SP programme operates. The network infrastructure – local area network and wide area network - creates the necessary links between operations of software and databases. It is also worth emphasizing that staff play a critical role in the operation of an SP MIS especially in a computerised environment.

SP MIS can also be conceptualised in terms of its implementation scope, size and use within the SP sector. From this perspective, MISs could be seen as simple tools used to automate functions of small programmes, or complex systems that interlink with other e-government[4] systems. The three types of SP MIS include (i) individual Social Protection programme MISs, (ii) integrated SP MISs and (iii) a unified single registry.

- **Individual SP scheme MIS** automate individual programme functions e.g. registration, targeting, enrolment, updates, payments, complaints and grievances.
- **Integrated SP scheme MIS** consolidate operations of a number of social benefits e.g. Retirement pension, widows' pension, disability grant, child grant. Examples include South Africa's SOCPEN, Mauritius MIS,

**Box 2: A Case of Multiple Registries**

**Mauritius**

**Mauritius SP MIS system is a centralised, twin-database information management system. However, the database can still be accessed across 34 Ministry of Social Security centres across the island using high-speed communication links. The system does, however, still use paper for benefit applications, which is transferred to the central office where it is required by legislation for the processing of benefits. However, there are currently on-going initiatives to review the MIS for enhancements to allow electronic document management and to integrate new requirements in the face of changing user needs.**

***Source: Chirchir, R. and Kidd, S. (2011) Good Practice in the Development of Management Information Systems for Social Protection: A Summary of South Africa and Mauritius Experiences, Annex to Briefing Paper No. 5***

- **Unified Registries** are databases developed using a common registration tool and in some cases harmonised targeting for one programme that is subsequently used as a basis for targeting by other programmes. Examples include Brazil's Cadastro Unico for Bolsa familia. Some ten programmes in other sectors such as energy, education and housing use its information. But, it is worth mentioning that large social security programmes in Brazil - e.g. Previdencia Social - are not linked to Bolsa Familiar6. They maintain their own independent MISs and databases.

[3] A database is a system intended to organize, store, and retrieve large amounts of data easily.
[4] E-Gov Strategies' (or Digital Government) is defined as 'The employment of the Internet and the world-wide-web for delivering government information and services to the citizens.' (United Nations, 2006; AOEMA, 2005).
[5] Agency for Social Protection
[6] Kidd, S. and Hudda, K. (2013) Bolsa Unfamiliar, Pathways Perspective, Development Pathways

**Box 3: Targeting Databases**

**CadÚnico in Brazil**

**The Brazilian database named CadÚnico was established in 2003 through a Presidential decree. The database has evolved through a decentralized management structure, a revision of data capture questionnaire and an upgrade of the management information system. The programme is managed through close coordination of three key stakeholders that have clear and distinct roles (i) Ministry of Social Development and Fight Against Hunger (MDS) (ii) CAIXA and (iii) Municipalities.**

**MDS has the overall policy and design function. CAIXA is a federal bank that has a mandate of registering households into the CadÚnico database. The bank consolidates data from all the municipalities and distributes the data capture questionnaires based on the request from the municipalities. The municipalities manage the data collection and entry process. Each municipality has a computerised distributed system.**

**BISP in Pakistan**

**Established in 2008, BISP has built a comprehensive targeting database. A national poverty score card instrument was implemented by door-to-door census of households. Data processing, quality and validation control was outsourced to National Database Authority. Each of the 27 million household data is verified and de-duplicated using a unique national ID (CNIC) before a list of eligible beneficiaries based on the proxy means tests cut off is produced. To date, 6.5 million are eligible based on proxy means test cut-off score of 16.17.**

***Source: Chirchir, R. (2009) Brazilian Single Registry: Lessons Learned from the Brazilian Delegation. Unpublished DFID Kenya work. And Chirchir R. et. al (2013) Review of BISP Management Information System, Unpublished World Bank Pakistan***

Four NSSP programmes that were reviewed as part of this assignment include: (i) Social Cash Transfer, (ii) Public Works, (iii) Village Savings and Loans and (iv) School Meals. Programme MISs were assessed based on the following criteria:

- Information requirements. This was relevant to determine the potential variables for integration and processes computerised by the MIS;
- Technology and hardware components. This entails the servers and computers and technology applied by the MISs;
- Software applications. This includes the programming language used, database and source code;
- Support and documentation. This includes warranty for MIS, nature of support and documentation;
- Implementation architecture. This refers to levels of security and whether the MIS is centralised or distributed;
- Mode of information transfer. This is whether the information is transferred manually or electronically from the point it is captured;
- Development approach. This refers to development architecture (whether web or desktop);
- Presence of unique programme identifies. This is an essential element for integration;
- Reporting. Types of reports;
- Modules. These are interfaces that computer SP programme functions.

The summary assessment chart is set out in Annex 1.

## 2.1 Social cash transfer

Established in the financial year of 2005-2006, Social Cash Transfer (SCT) is an unconditional cash transfer programme targeted at ultra-poor and labour constrained households. The objectives of the programme are to reduce poverty and extreme hunger among the 10 percent of ultra-poor and labour constrained households, increase school enrolment of

children in the beneficiary households and to improve the nutrition, economic and general well-being of beneficiary households. The programme is administered by the Ministry of Gender, Disability, Children and Social Welfare (MoGCSW) with policy guidance provided by the Ministry of Finance, Economic Planning and Development (MoFEPD).

To support its programme operations, SCT has put in place a MIS. The MIS has working modules for data entry, eligibility assessment computerisation using a proxy means test, recording of complaints and grievance, monitoring of compliance with conditions, processing of payments (for manual as well as electronic payments) and reporting. Additional features on case management are currently being added to the MIS as well.

The main features of the SCT MIS are illustrated in Figure 1 below.


Figure 1: SCT MIS Modules

### 2.1.1 Implementation architecture

SCT MIS is web based and accessible up to district level. The data collection is carried out on paper-based forms. Data is then entered at the district directly on the SCT MIS targeting module as shown in Figure 2 below. Complaints are launched, logged and resolved on the SCT MIS at district level.

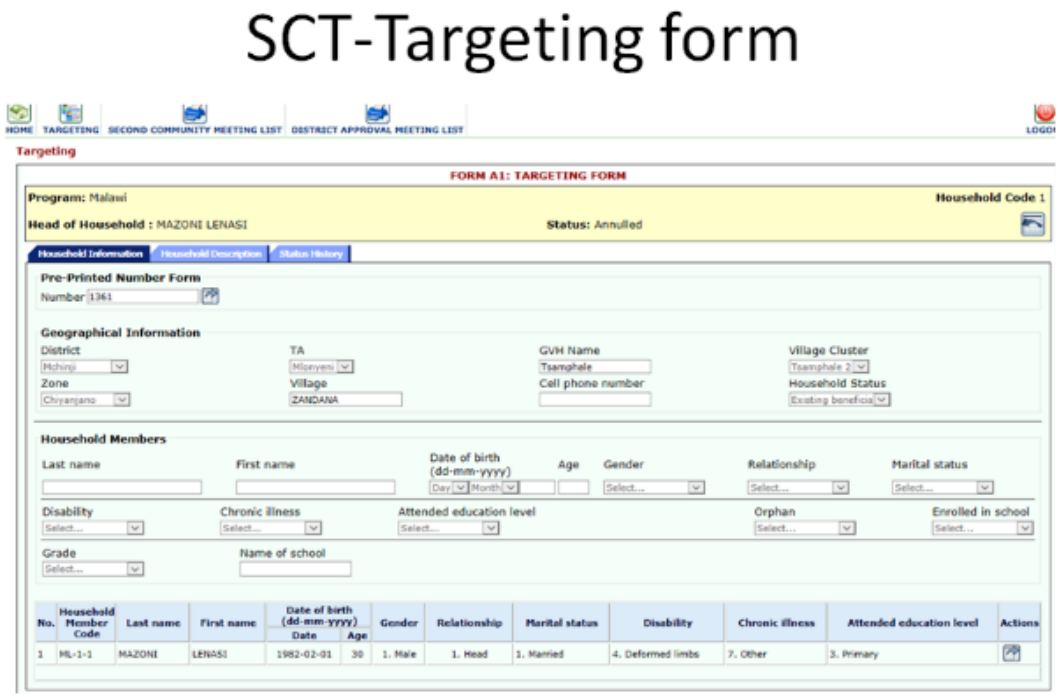



Figure 2: Data Entry of PMT form

### 2.1.2 Modules

The SCT MIS has a number of modules. These include, the registration module - a web based interface to register applicants, the targeting module for computing eligibility Proxy Means Test (PMT) and running eligibility assessment, a payments module for payments generation, and a reporting and grievance resolution module. Additionally, there is an offline module for making field payments. The module is used to register payments in field without any active Internet connectivity, and as soon as connectivity is restored to the module, data is synchronized to the main SCT database.

A module for electronic data collection was also piloted as part of the SCT-MIS. The module was developed for expensive hardware devices (Apple iPad) and is not fit for actual large-scale field data collection. A cheaper alternative is to set up electronic registration using open source tools – e.g. Open Data Kit – that run on Android tablets. This option does not require customisation and programming. Indeed, what is needed is the import of data into SCT MIS.

### 2.1.3 Development approach and tools

The SCT MIS was developed on the basis of the programme's operations manual. It was tested and debugged before it was deployed into production environment. The MIS is built on ASP.NET platforms. The tools for development are Visual Studio and SQL Server. The choice of development tools and database is driven by the requirements of the client. Typically, the key consideration is the functionality of MIS and capacity of the government to customise the source code once supplier hands over. Of course, the development tools selected in this case are proprietary i.e. Microsoft. There are also options to develop MIS using open source tools e.g. PHP and POSTGESSQL database. Overall, the development tools seem to have delivered a web-based MIS – a contemporary platform – that generally functions well for SCT programme.

### 2.1.4 Unique identification numbers

Beneficiaries and households in the programme are identified using a unique programme identification number, which is generated at the time of data entry. There is no linkage of SCT MIS with any external data sources. Indeed, cross matching with any other programme currently requires name and location based manual mapping.

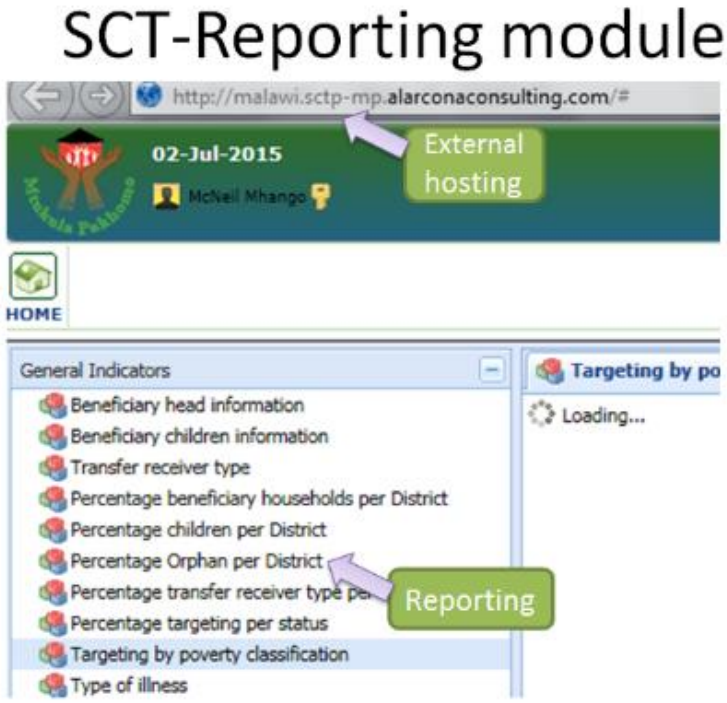



Figure 3: Different reports available

### 2.1.5 Ownership and source code control

Currently, the system including its source code is maintained by the development firm – Ayala/Alarcona Consulting. Additionally, the MIS is hosted by the firm. The Government does not have technical access to the system source code or the hosting environment. The Government is therefore unable to use SCT MIS outside its current scope and is closely restricted by the firm. This can be considered an unhealthy relationship between the client and the supplier.

### 2.1.6 Strengths

From the analysis it is evident that SCT is a flagship cash transfer scheme that has invested in an operations manual and MIS. The key advantage is that it is web-based and accessible at the district. The MIS is also capable of integrating with other forms of hardware e.g. tablets.

### 2.1.7 Limitations

SCT MIS ownership and source code is contentious. Whereas the government claims that they do not have the source code and have an issue with external hosting of it, the supplier counters that the source would be provided to the government.

In terms of performance, while using the system, especially with some of the reports, it was observed that the system was relatively slow when aggregating reports and that it was time consuming for some of the reports to be produced. This was whilst other reports never produced any results, despite several attempts. However, it should be noted that the routine tasks of data entry and payment generations and case management worked fairly smoothly.
For analyses of SCT MIS technical level aspects, refer to Annex 1.

## 2.2 Public works programmes

Labour Intensive Public Works (PWP) programmes are defined as "programmes that involve the regular payment of money (or in some cases, in-kind benefits) by government or non-governmental organisations to individuals in exchange for work,

with the objective of decreasing chronic or shock-induced poverty, providing social protection, addressing social risk or reducing economic vulnerability" (Samson et al, 2011).

There are four main PWP in Malawi. While their implementations differ, they share common approaches in terms of targeting and objectives. Two programmes were assessed as part of the MIS review: (i) RIDP and (ii) LDF. Both programmes use Excel as the main tool for programme data processing in the field (districts) and at the centre (headquarters).

Table 1: Public works programme in Malawi funding [7]and timeframe

| Public works programmes in Malawi | | | | |
|---|---|---|---|---|
| | **RIDP** | **LDF** | **IRLADP** | **FFA** |
| **Implementer** | EU | World Bank | World Bank | WFP |
| **Time-frame** | 2011-15 | 2014-17 | 2006-15 | 2014-17 |
| **Funding** | $ 45.6 mil. | $ 115.2 mil | $ 107 mil. | $ 3.96 mil. |
| **Districts** | 17 | 28 | 28 | 2 (soon 4) |
| **Targeting** | Self-targeting | Geographic, self- and community targeting | Self-targeting | Self-targeting |
| **Beneficiaries** | 26,201 households | 521,000 individuals | 677,502 households | 85,000 individuals, 15,500 households |
| **Benefit** | MWK 551 per day, 6 hours per day | 490 MK per day, 4 hours per day, 48 days per year | Paid in inputs (fertilizer, etc.) | Inputs provided to build community assets |

Source: ILO social protection Assessment for Malawi 2015 (Draft)

An attendance sheet (Excel based) illustrated in Figure 4 below is generated and printed at start of fieldwork. Attendance is noted daily by the programme managers on site, typically at the start and the end of the work.

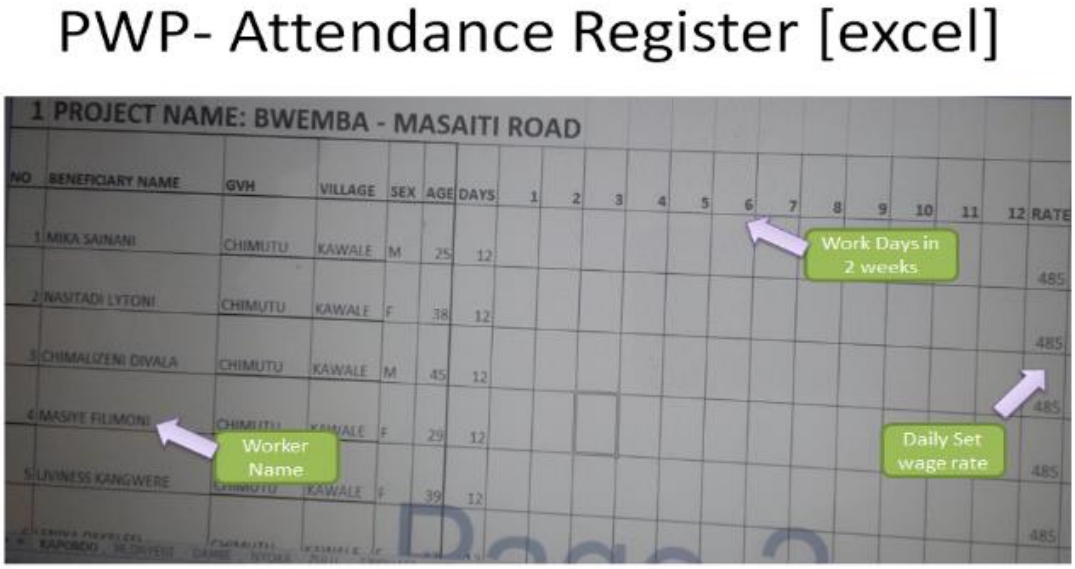



Figure 4: Excel generated attendance template

After two weeks, the total labour for each individual is manually calculated against the number of days worked. The total payment due to each beneficiary is recorded on a manual payroll. The recipient signs the payroll or appends a fingerprint on the paper against their names as evidence of payments received. The manual payroll is illustrated in Figure 5 below.

In the case of RIDP, payment is based on the tasks concluded irrespective of how much time a beneficiary has spent on a particular task. Each task is initially divided into "man days" and each payable day has similar rates to LDF implementation. However, instead of paying by days, beneficiaries working on these projects are paid based on task

[7] Source: ILO social protection Assessment for Malawi 2015

accomplished, which is translated into days worked. In the end, both the programmes effectively have similar objectives but with slightly different mechanisms of implementation.

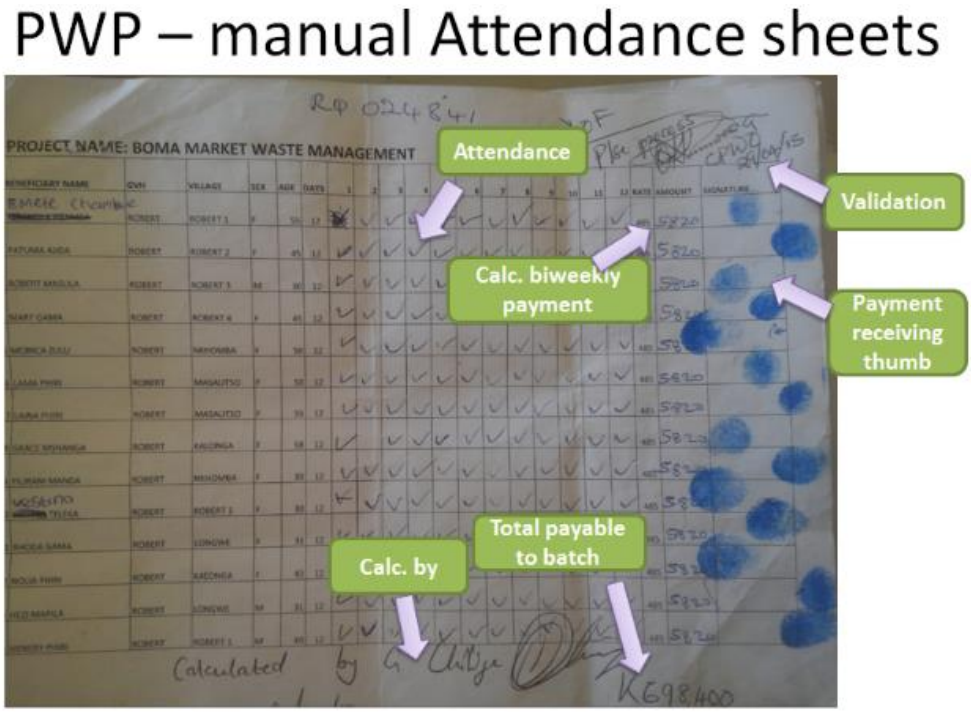



Figure 5: PWP attendance, payment & reconciliation sheet - 3 in 1

The attendance sheet has three functionalities: (i) capturing of attendance, (ii) computation of payments and (iii) reconciliation of paid payments. All three tasks were recorded on one sheet – illustrated in Figure 5 above – which is effectively an Excel-based MIS.

### 2.2.1 Strengths

Reporting formats are defined by the implementers.

### 2.2.2 Limitations

The operation of the current MIS involves a lot of manual work and is prone to miscalculation and wrong entries. It can therefore be considered segmented, incomplete and not scalable. There is the opportunity to put in place a MIS for PWP and leverage electronic registration systems using tablets running open source tools - e.g. ODK – to improve programme efficiency.

There are multiple implementations that need to be brought into a single framework. It would be very useful if single comprehensive MIS is used for all these implementations.

For more technical level aspects of MIS implementation, refer to Annex 1.

## 2.3 School feeding

In recognition of the need to improve school enrolment and ensure that children are nourished enough to pay attention in class, the provision of free school meals to Malawian students is a key part of the NSSP. Free and daily school meals are provided by the GoM, NGOs or the World Food Programme (WFP). The WFP and Mary's Meals, a Scottish charity focusing on school feeding, are the biggest implementers of school feeding in Malawi.

Table 2: Malawian school feeding programme financers

| Financing of the Malawian school feeding programme | | |
|---|---|---|
| **Contributor** | **Time-frame** | **Budget** |
| GoM | 2012 | $ 306,619 |
| WFP | 2012-16 | $ 19 mil. |
| Mary's Meals | 2010-14 | $ 28 mil. |
| NAPE | 2012-15 | $ 2.7 mil. |
| Millennium Village | 2008-15 | $ 250,000 |

Source: ILO social protection Assessment for Malawi 2015 (Draft)

Mary's Meals as well as WFP have their own MISs for implementation and information collection at district level. The MISs used by both organizations are stable, scalable and mature, given that the implemented systems are an extension of similar implementations from other countries. However, it is worth mentioning that WFP MISs were not be reviewed by the mission, because they were not accessible during the visit. MIS used by the GoM is Excel based, and data collection is paper based for all the three implementations. An M&E framework is being prepared by GoM with support from GIZ to streamline and standardise school feeding programme distribution and monitoring.

In terms of information kept by the school feeding MISs, no pupil data is collected for these implementations. However the EMIS code is collected for each school. Indeed, MoE collects data of each student in a school, which could be used as basis for linkages with other programmes and MISs if there was need to put in place complementary support, especially for cases where donors would like to introduce "take home rations" as part of school feeding.

There are a few issues of inaccurate data collection on the school feeding programme. It was observed that papers were being submitted without conducting school visits periodically. Additionally, information delay has been an issue, since data needs to be collected, digitized and validated and then submitted to the reporting office. In fact, at times, it becomes time consuming for accurate and timely decision making. To address this challenge, field based collections can be introduced using digital mobile devices which can report data in almost real time (in most cases) and with minimum errors.

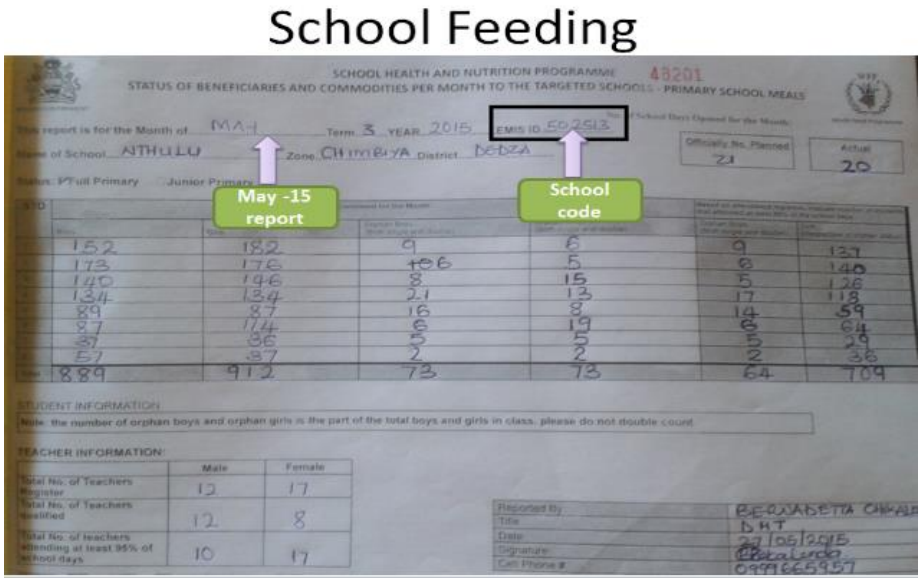



Figure 6: WFP - school meal monthly report from school – May 2015

Manual monthly data collection is regularly conducted using the forms in the Figures 6 above and 7 below.

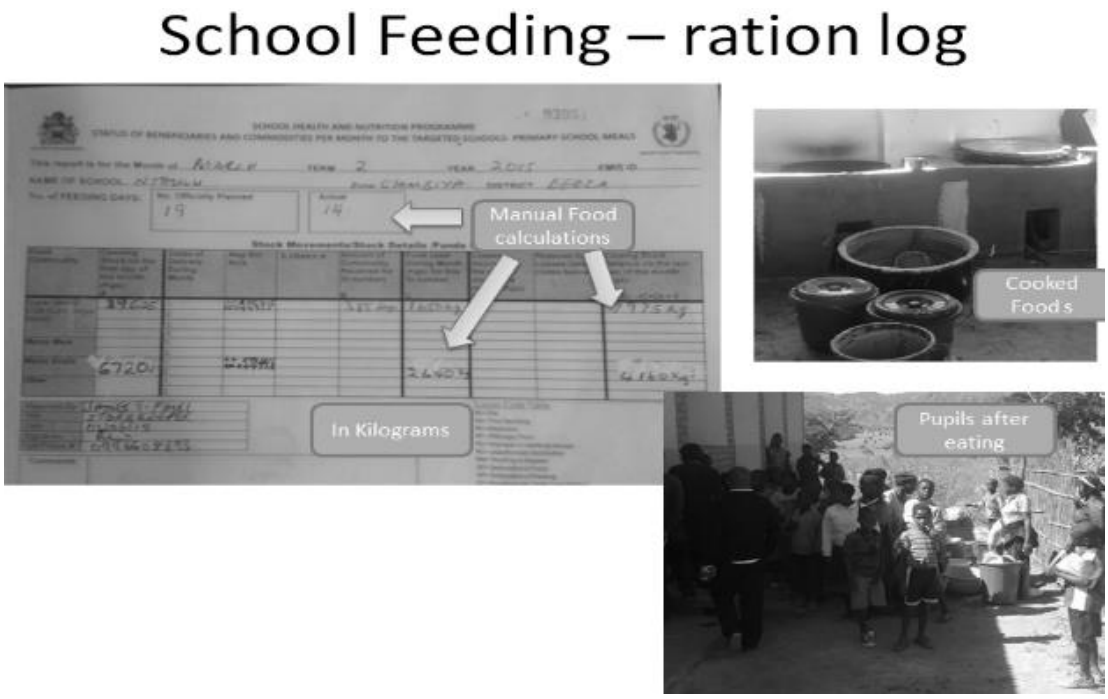



Figure 7: WFP - School feeding logging - March 2015 records

For more technical level aspects of MIS implementation, refer to Annex 1.

## 2.4 Village savings and loans programmes

In Malawi there are a number of organizations implementing and supporting Village Savings and Loans (VSL) schemes. The two largest programmes using the VSL methodology are the World Bank's Community Savings and Investment Promotion (COMSIP) programme and the Enhancing Community Resilience Programme (ECRP), which is jointly implemented by six NGOs. Both programmes employ voluntary self-selection as their targeting mechanisms and are in principle open to all rural poor in which the programmes operate. A recent mapping exercise conducted by the MoFEPD and Care Malawi found 67 organizations currently implementing VSL programmes in Malawi with a total of 37,461 savings groups and 610,596 members (Ministry of Finance, Economic Planning and Development, 2015).

For the exercise, MISs currently used by big organizations – COMSIP and Care Malawi - were reviewed. Both the organizations have working MISs. The details for each of their MISs are described in sections below. But, none are collecting member level information in their core systems. Since the two biggest, Care and COMSIP, are not collecting the information, it is also likely that the majority of the 67 organizations may not be collecting member level information (although this is not verified during the exercise). A mapping exercise conducted in 2014 collected data and showed that 73% of all implementing agencies reported[8] that they had knowledge of COMSIP and VSL groups existing in their impact areas. The study also found that 53% of the agencies reported that they had knowledge of dual membership of group members. It is important to collect member level data to overcome the challenge.

There are three major MIS Systems in VSL Social Protection section. These are:

- COMSIP MIS;
- SAVIX tool;
- VSLA MIS.

[8] Village Savings and Loans – Mapping report – 11th -18th June 2014

Care Malawi MIS implementation is also discussed below.

### 2.4.1 COMSIP MIS

COMSIP uses a custom developed (Visual basic front end and SQL database) system, which was developed in-house. The system is maintained in-house as well as being accessible at the head office. COMSIP MIS is illustrated in Figure 8 below.

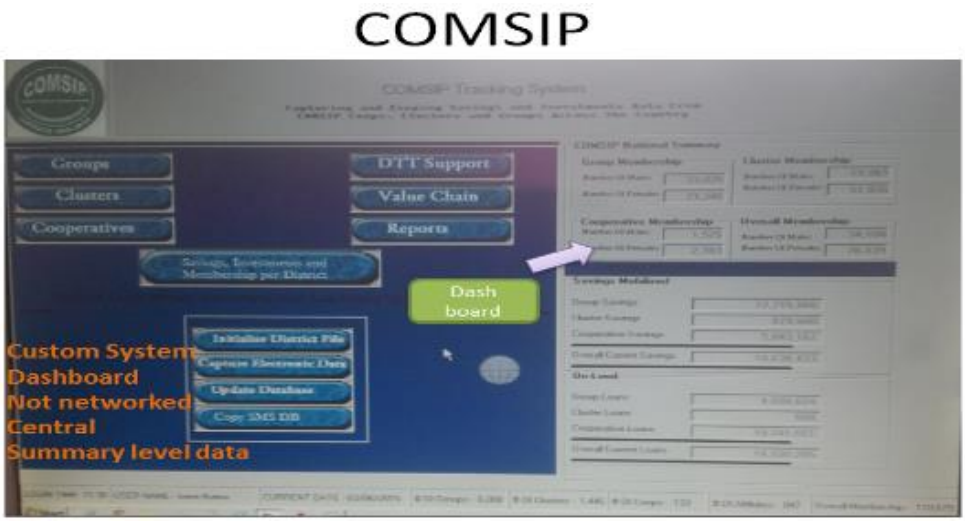



Figure 8: COMSIP MIS and Dashboard

COMSIP MIS collects information on different groups from the field, through emails. The data is digitized into the system at head office, by a dedicated team of data entry staff. The MIS is internally maintained and managed. Thus, upgrades are performed in-house.

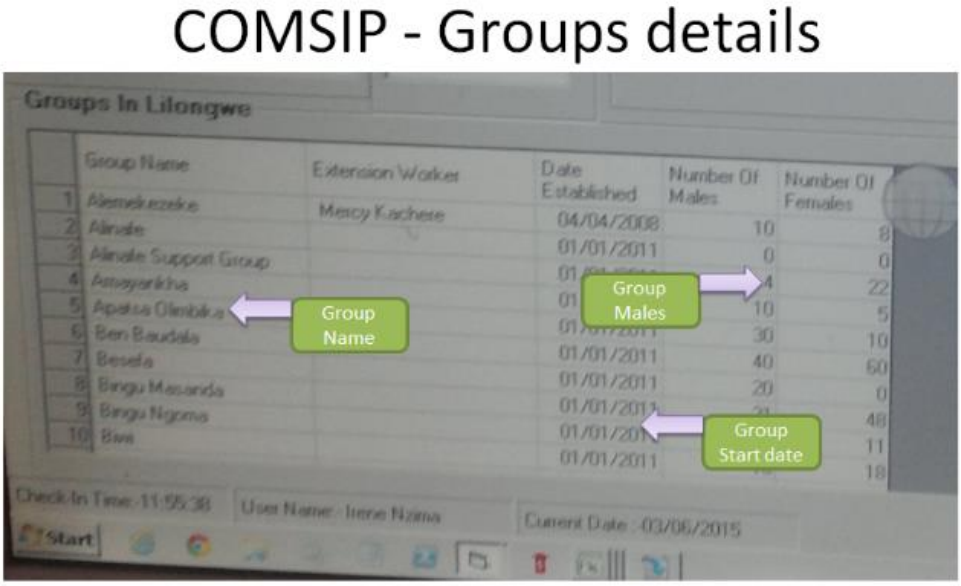



Figure 9: COMSIP district Lilongwe group details

COMSIP MIS also has an integrated SMS interface, exposing a mobile number, which field staff use to send periodic activity statuses to the head office. These short text messages are automatically imported into the MIS. The integration of COMSIP to SMS platform is illustrated in Figure 10 below.

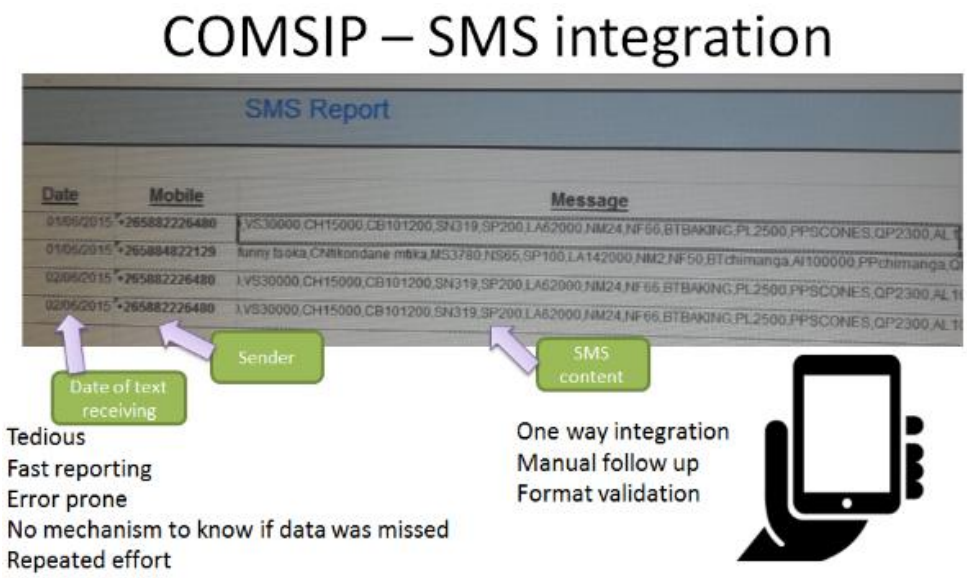



Figure 10: COMSIP - field to head office SMS integration

#### 2.4.1.1 Strengths

Reporting formats are well defined in the system. In addition, a SMS linked interface has been implemented for fast real-time status reporting.

#### 2.4.1.2 Limitations

The MIS lacks household member level details. It is therefore impossible to find any household member overlapping with other programmes except for manual member-by-member validation in the field. The current system is standalone, incomplete and not scalable. It may not be feasible to collect a large data set of member level information using only SMS. In fact, it will most likely create challenges with data accuracy e.g. data typos, since SMS systems do not have strong validation controls. Additionally, the standalone system is accessible only at one location and to one user at a time.

For more technical level aspects of MIS implementation, refer to Annex 1.

### 2.4.2 Care Malawi - MIS

Care Malawi (which is part of ECRP) is currently running a complete Excel-based distributed system. Each district office has its version of the Excel copy, which it updates regularly, and is shared periodically with the headquarters by emails. The Excel data is aggregated at the headquarters. Since aggregation requires manual work, at times there are repeated exchanges between the offices for error(s) resolution. Once the data is collated centrally, Care Malawi is supposed to report the data to the donors using their online MIS.

Care Malawi is planning to switch to SAVIX MIS, which is an online version of their current MIS and shall reduce manual effort and reduce errors significantly. The implementation is planned to start in July 2015.

Figure 11 below is a snapshot detail of financial year 2014, from aggregated Excel MIS, showing spending in different subprojects and male/female distribution.

CARE MALAWI PROJECTS

| B | C | K | AY | AZ | BA | BB | BD | BE | BF |
|---|---|---|---|---|---|---|---|---|---|
| | NAME | Partner | MALE | FEMALE | TOTAL | FY 14 Only | MALE | FEMALE | TOTAL |
| 1 | SAVE UP | EI | 3,477 | 19,705 | 23,182.00 | - | - | - | - |
| | | Africare | 4,830 | 11,824 | 16,654.00 | - | - | - | - |
| | | ELDS | 4,770 | 22,334 | 27,104.00 | - | - | - | - |
| | | CA LL | 6,649 | 24,132 | 30,781.00 | - | - | - | - |
| | | CA MZ | 5,602 | 19,297 | 24,899.00 | - | - | - | - |
| | | LISAP | 2,738 | 17,385 | 20,123.00 | - | - | - | - |
| | TOTALS FOR SAVE UP PROJECT | | 28,066.00 | 114,677.00 | 142,743.00 | - | - | - | - |
| | | | | | | | - | - | - |
| 1 | SAFE | | 739.00 | 6,778 | 7,517.00 | - | - | - | - |
| 2 | JMV | | 2,232 | 17,875 | 20,107.00 | 44.00 | 1,212.00 | 866.00 | 2,078.00 |
| 3 | PHASE I & II | | 197 | 2,016 | 2,213.00 | - | - | - | - |
| 4 | PHASE III | | 1,909 | 7,779 | 9,688.00 | 399.00 | 6,600.00 | 8,213.00 | 14,813.00 |
| 5 | Kulera | | 142.00 | 497.00 | 639.00 | - | - | - | - |
| 6 | DICE 1 | | 144.00 | 288.00 | 432.00 | - | - | - | - |
| 7 | IFSRI | | 469.00 | 1,485.00 | 1,954.00 | - | - | - | - |
| 8 | J & J | | 237 | 1,349 | 1,586.00 | - | - | - | - |
| 9 | MAZIKO | | 6,324 | 38,527 | 44,851.00 | 1,349.00 | 19,238.00 | 22,672.00 | 41,910.00 |
| 10 | DICE II | | 1,585 | 7,028 | 8,613.00 | 352.00 | 5,772.00 | 7,080.00 | 12,852.00 |
| 11 | WE-RISE | | 2,695 | 9,846 | 12,541.00 | 426.00 | 6,377.00 | 8,023.00 | 14,400.00 |
| 12 | Pathways-WIA | | 129 | 1,712 | 1,841.00 | 60.00 | 878.00 | 935.00 | 1,813.00 |
| 13 | ECRP | | 8,507 | 35,342 | 43,849.00 | 1,328.00 | 13,540.00 | 16,658.00 | 30,198.00 |
| | Sub Total CARE MW Project Minus SAVE-UP | | 25,309.00 | 130,522.00 | 155,831.00 | 3,958.00 | 53,617.00 | 64,447.00 | 118,064.00 |
| | | | | | | | - | - | - |
| | Grand Total | | 53,375.00 | 245,199.00 | 298,574.00 | 3,958.00 | 53,617.00 | 64,447.00 | 118,064.00 |
| | Grand Total Plus before 2008 | | 57,475.00 | 263,899.00 | 321,374.00 | | | | |
| | Women % | | 17.9% | 82.1% | | | | | |

Figure 11: Care Malawi Excel based distributed, manually aggregated system

### 2.4.2.1 Strengths

Even though the MIS used basic Excel, the operation of the Excel templates is well defined and programme reporting formats are captured as templates which are fully utilised by the users.

### 2.4.2.2 Limitations

The MIS lacks member level details. It is therefore impossible to find any household member overlapping with other programmes except for manual member-by-member validation in the field. Each time information needs to be aggregated between each level of hierarchy it is emailed and a manual procedure is adopted to import data into the master sheet. Additionally the master sheet has a limitation on the quantum of data it can sync and for each new phase new copies of Excel are made. The current system is segmented and not scalable.

For more technical level aspects of MIS implementation, refer to Annex 1.

## 2.1.8 VSLA Model

The Village Savings and Loan (VSL) model is a self-managed and self-capitalised microfinance methodology. By having its members mobilise and intermediate local pools of investment finance, it offers savings, insurance and credit services in markets outside the reach of formal institutions. The model was developed by CARE International in Niger in 1991 and has spread to at least 61 countries in Africa, Asia and Latin America. It runs a stable and mature MIS with tablet extension that can be used in the field. Details of the VSLA model and its MIS are found in the following link: http://www.vsla.net/home. It provides a complete software solution to implement projects end to end.

SAVIX, another tailored version of the VSL system, is being supported by VSLA.net at the backend. Care Malawi already plans to use SAVIX starting July 2015.

### 2.4.3.1 Strengths

The system can be extended to all the programmes in the country for a unified reporting. It is a stable and mature system with tablet extension that can be used in the field.

More information can be found under the following link: http://mis.thesavix.org/p:en/index.html

# 3 Assessment of information systems within and beyond the SP Sector

In many developing countries, as in Malawi, Social Protection systems cut across many sectors and involve a number of stakeholders. As part of this assignment a review was made of the MISs in Health, Education and Agriculture sector. Considering that civil registration is a critical pillar to Social Protection, the status of the National Identification System was also assessed. The key systems within these sectors include:

i. NRB (National Registration Bureau);
ii. HMIS (Health MIS);
iii. EMIS (Education MIS) and
iv. FISP (Farm Input Subsidy Progamme).

Details of the review are discussed below.

## 3.1 National Registration Bureau (NRB)

The National Registration Bureau was set up in 2007 and with mandate of issuing National IDs to Malawians. NRB currently has offices in each of 28 districts. Each district is responsible for all the traditional authorities, village groups and villages under its jurisdiction. Each village has a village head responsible for registering all the village population within the Village register.

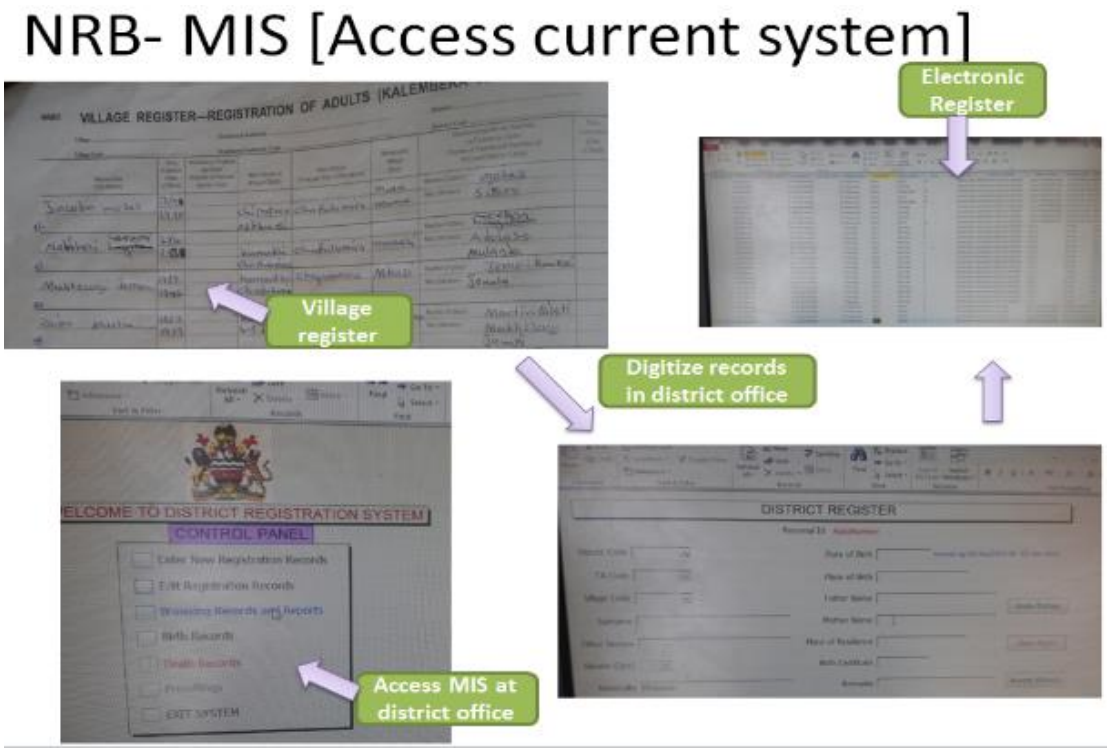



Figure 12: NRB village register digitization at district office - MS Access

### 3.1.1 NRB systems at the district / headquarters

As illustrated in Figure 12 above, NRB runs Microsoft Access based MIS, implemented at district level. The MIS is used for digitizing all the village registers. The MIS is buggy and unstable – i.e. it repeatedly crashes performing different actions. The information gathered on population in districts is decentralized. The Access-Based MIS installed at the districts operates in an offline mode. It is thus not automatically connected to MIS at the headquarters. Once information is digitized at district level it is sent as a batch to the headquarters for collation. It is then aggregated in the central MIS. However no evidence of aggregation was found at centre (head office). This periodic incremental batch update is cumbersome and error prone.

The model is therefore facing strong limitations and the MS Access database cannot cater to the whole population of Malawi due to the size limitation of the database. The maximum number of row access the database can have in a table is less than the total population. Of course, workarounds can be made but they do not represent an appropriate solution.

NRB Access-MIS has the provision to register births as well deaths as illustrated in Figure 13 below.

Each district is staffed with two data entry officers. NRB currently plans to digitize records of an average 700,000 persons in each district. However, with the unstable MS Access database, it is going to be a challenging undertaking to reach the targets in reasonable time. Hence, not one district has completed the digitization process.

NRB is currently in the build-up phase and technical infrastructures as well as new systems are being set up. It is expected that in 2018/19 elections, biometrically linked ID cards may be issued by NRB.

As part of its implementation, NRB has setup a server room to host Birth Registration System at head office. As illustrated in Figure 14 below, the data centre and installed MISs, shall be accessible across district hospitals to facilitate birth registration.

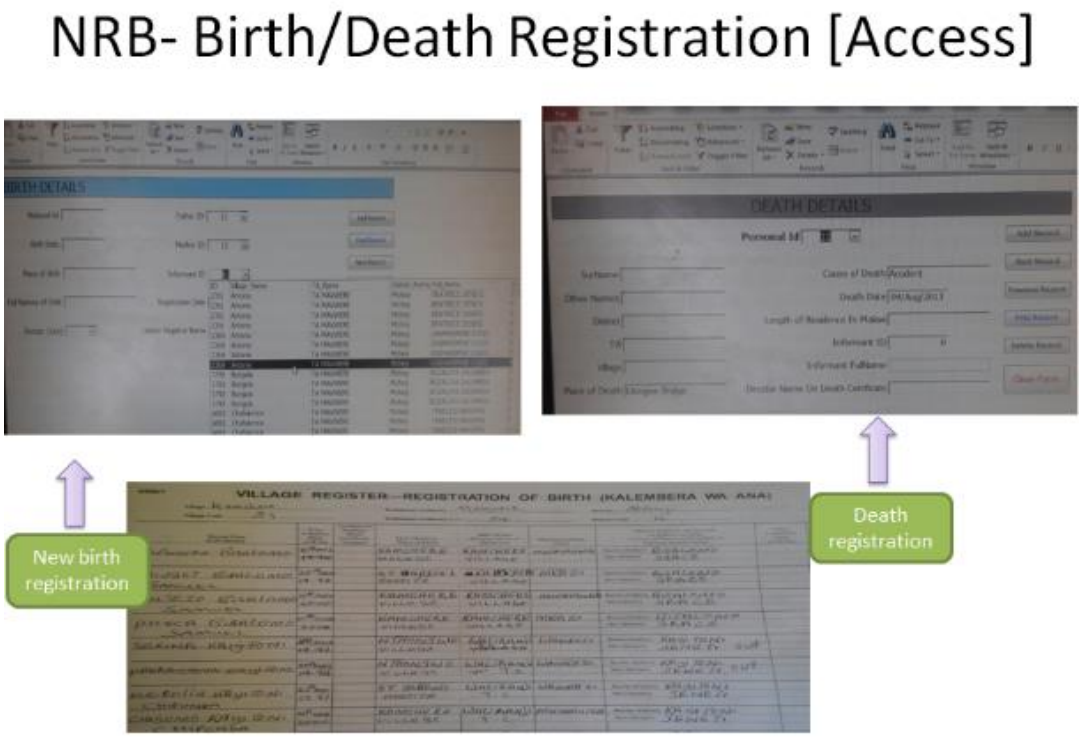



Figure 13: NRB New Births and Death registration in district - Access MIS

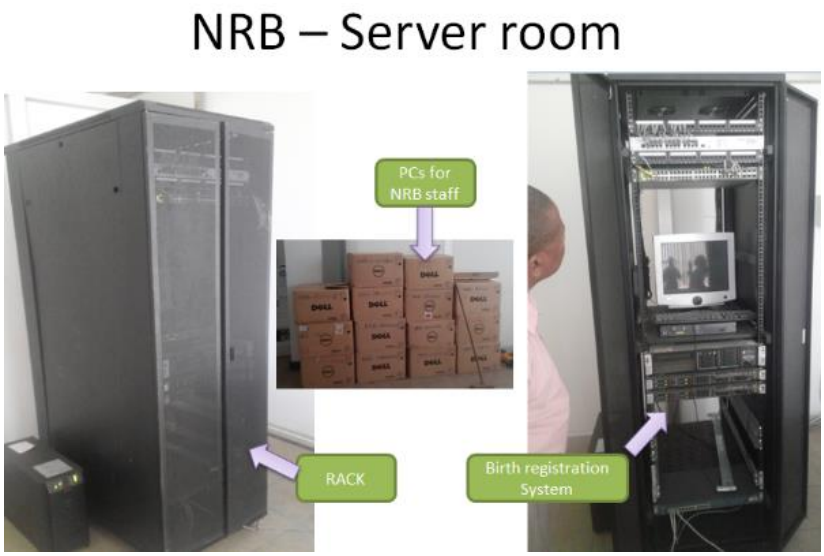



Figure 14: NRB central data hosting in Lilongwe office

### 3.1.2 Electronic Register in a rural village – pilot

An EVR (Electronic Village Registry) was successfully piloted in the Chalasa village, rural Malawi, and data on the resident village population, along with quarterly births and deaths are now available. According to NRB, this is the first step towards a village-level civil registration system in Malawi. This could be potentially extended to different villages provided it is cost effective.

From the review of the pilot, there were a number of challenges. The main challenges included slow adoption of the EVR by the village headmen, lack of health passports for village residents, double counting of some residents and difficult connectivity. A number of these challenges have been addressed as part of the pilot implementation, details of which are presented in the pilot report[9]. In terms of data from the pilot, of 790 village residents, 379 (48%) were male, 417 (53%) were aged <15 years and 29 (3.6%) ≥65 years. From April to December 2013, there were 18 births and 5 deaths. The cost of the EVR, including maintenance costs for 12 months, was US$ 6,210.

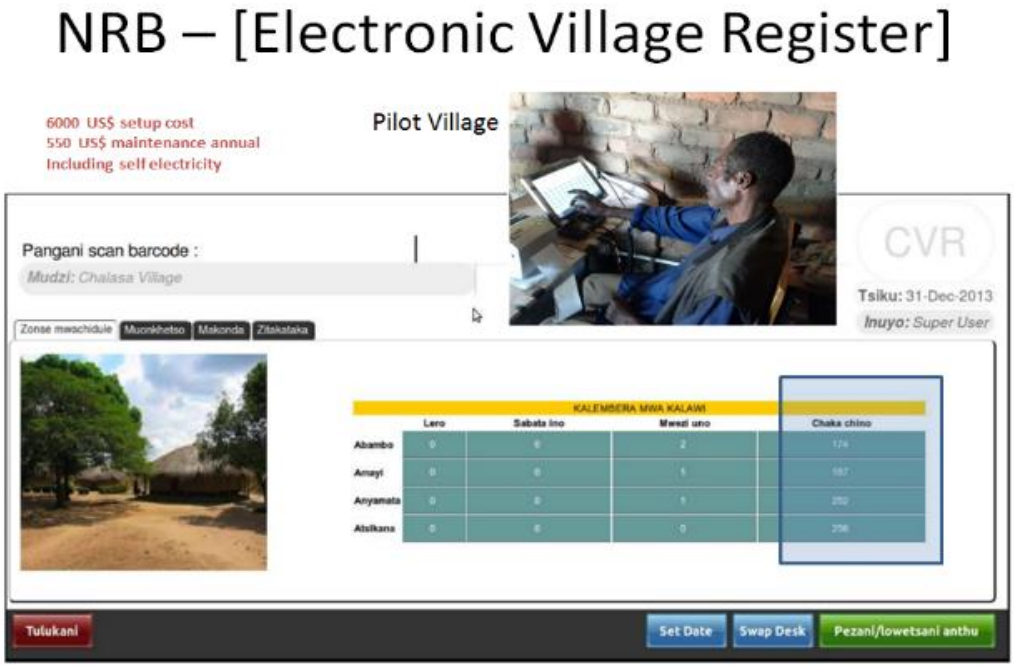



Figure 15: NRB Electronic village register - pilot

For more technical level aspects of MIS implementation please refer Annex -2.

[9] "An electronic register for vital registration in a rural village", Public Health Action, Vol. 4(3), pp. 145-149

## 3.2 Ministry of Health systems

There are multiple systems being implemented in Ministry of Health. As part of this assignment, two MIS that seemed most relevant were assessed: (i) DHIS and (ii) Point of Care.

### 3.2.1 District Health Information Software

District Health Information Software (DHIS) is an open source implementation, already deployed in other African countries including Kenya. DHIS was originally sourced from www.dhis2.org by the Ministry of Health and then enhanced to cater for specific needs of Malawi. It is centrally connected and hosted within Malawi. All district hospitals are connected to the system and update the statistics on different datasets periodically.

As illustrated in Figure 16 above, a particular module is made for a specific region. The MIS also provides an interface where the health data for a particular period can be captured, as shown in Figure 17 below.

The data entered from district offices is collated and is viewable at the ministry level to make more informed decisions as well as to perform active monitoring. The reports are presented in dashboards as illustrated in Figure 18 below.

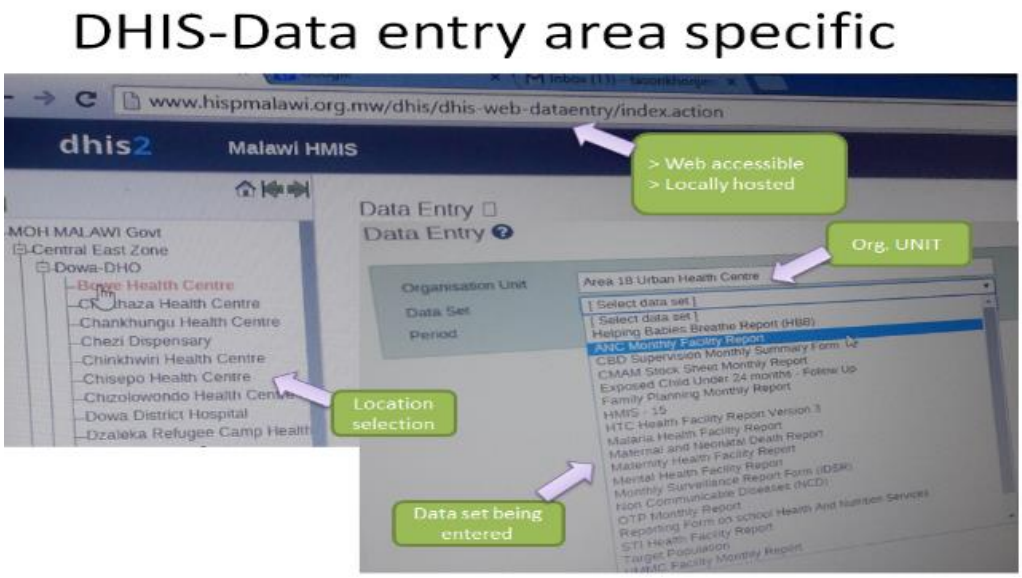



Figure 16: DHIS2 - Data Entry dataset selection

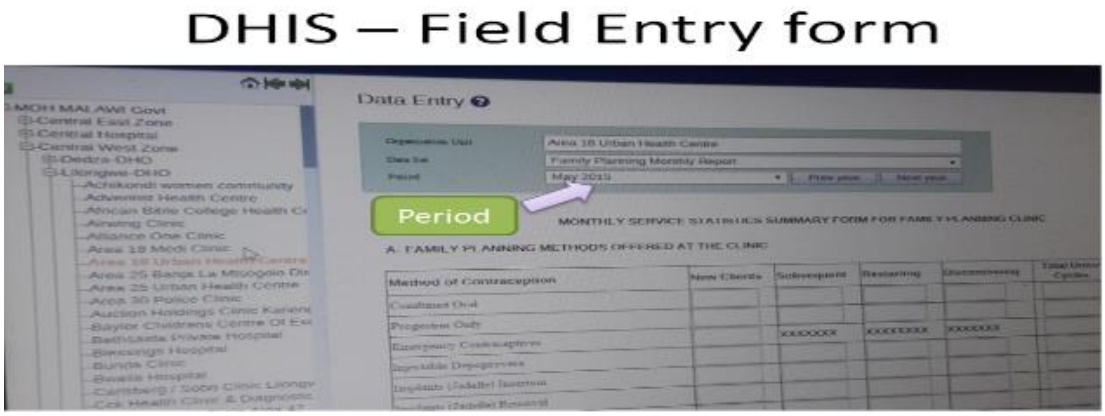



Figure 17: DHIS 2 data entry for particular month

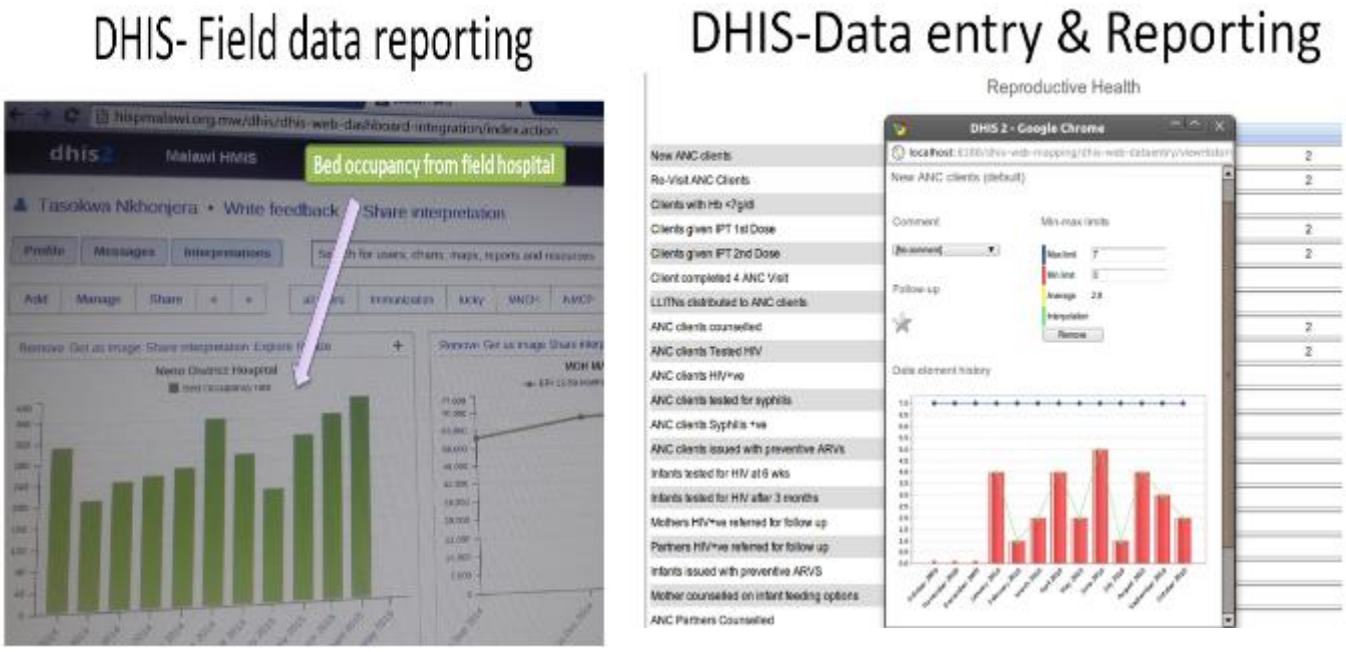



Figure 18: DHIS 2 dashboard and reporting tool

DHIS also provides secure mobile-based connectivity to extension hospitals for their monitoring. The user accesses the mobile application with a selective key and only designated and verified users post data updates to the system. Figure 19 is a screenshot of the mobile interface.

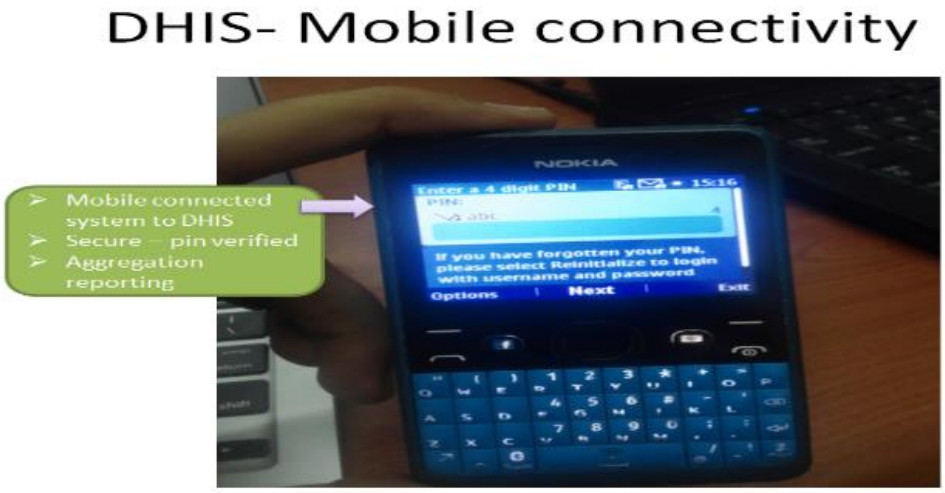



Figure 19: DHIS 2 field based data reporting using mobile GPRS app

For more technical level aspects of MIS implementation, refer to Annex 3.

### 3.2.2 Point of Care System – (Baobab)

A Point of Care solution is deployed extensively in District Hospitals by Baobab health systems. The system registers incoming beneficiaries as well as keeping track of repeat beneficiaries based on the identification generated by the district hospital system. The ID sticker is handed over to the patient for record keeping. The system is stable, works in a decentralized manner and has the ability to provide centralized reporting to the managers sitting in the main offices.

The system has the capability to register births and NRB already partners with Baobab to register birth records and issue certificates.

In Figure 20 below, the doctor logs in to the system (a), fetches already present patient record (b) from the system, updates any disease symptoms (c), checks the medicine log and issues a new receipt (e) finally the patient collects the medicine (f).

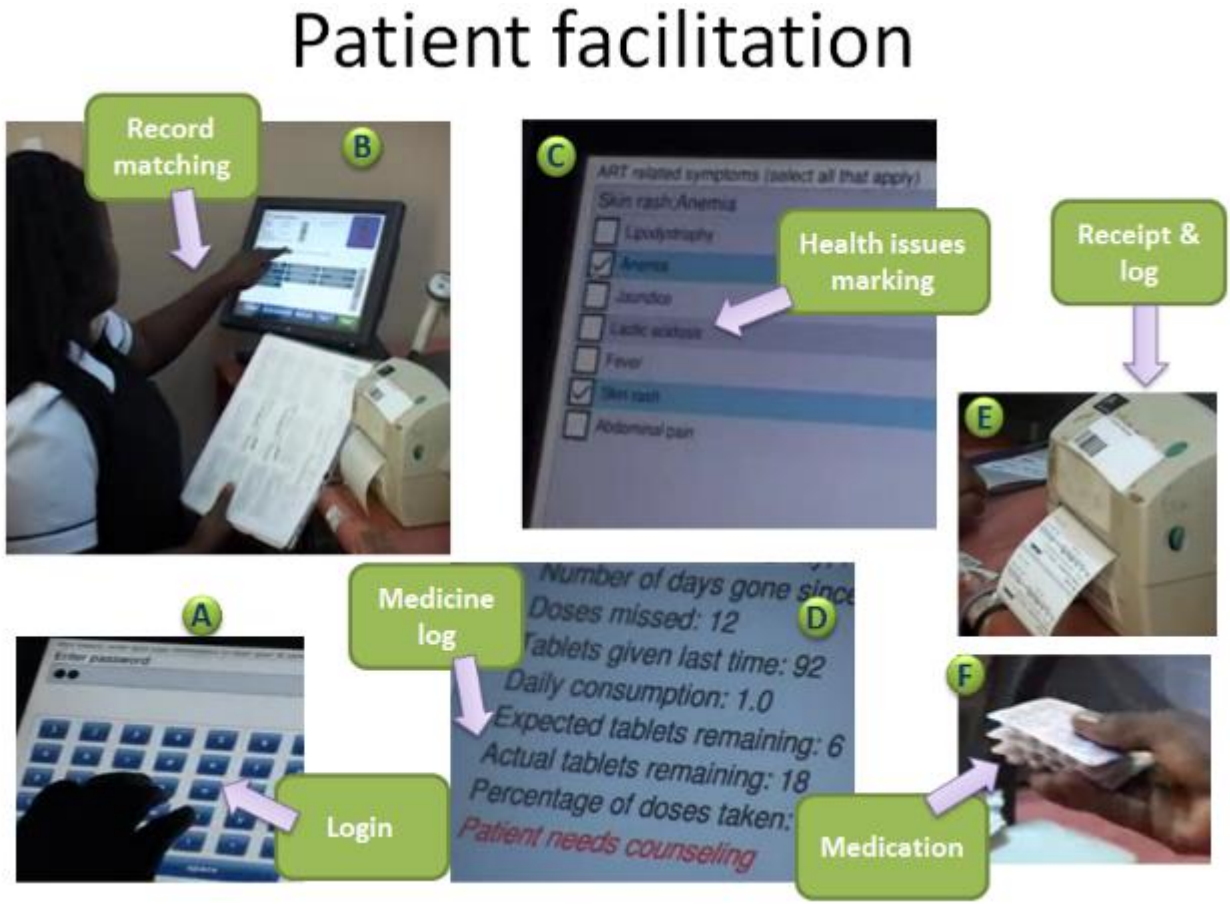



Figure 20: Baobab point of Care system

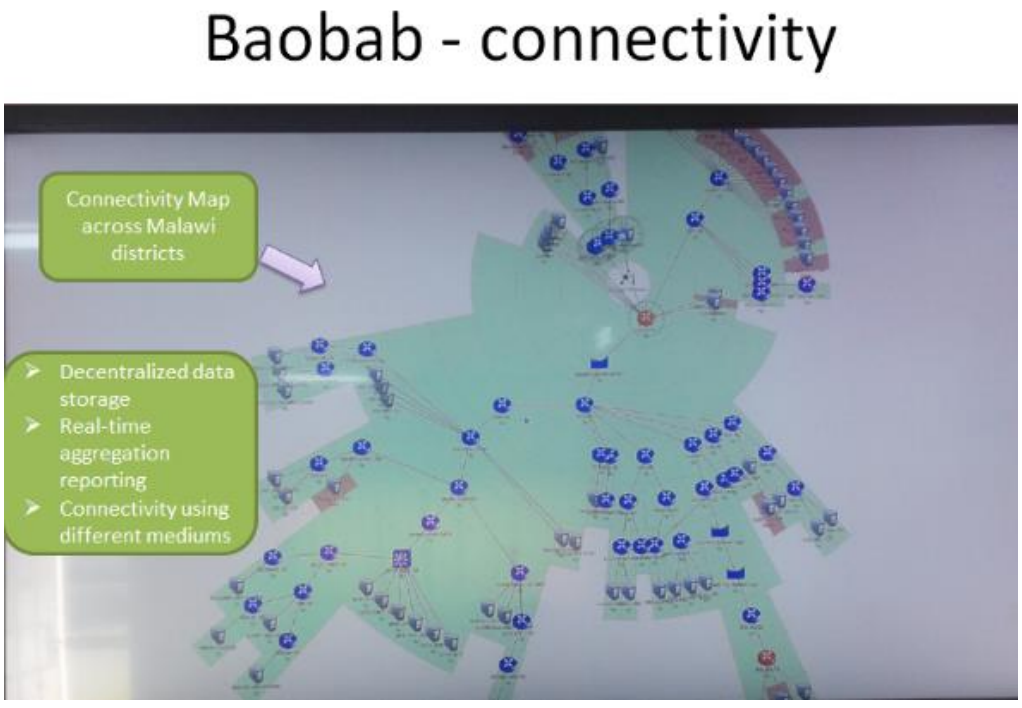



Figure 21: Baobab Point of Care connectivity map linking different district offices

Figure 21 above shows the implemented active Point of Care systems across Malawi and their connectivity chart.

### 3.2.3 Strengths

- Digital dashboards: The system has electronic charts providing management with oversight of the whole process from different angles.
- Connectivity: Different connectivity options have been deployed based on availability of internet connection in different areas of the country. This has effectively ensured that districts are connected to the centre.
- Web-based capability: The systems at the site are linked to the systems at regional or head office level through web based interfaces. Consolidated reports can be generated using this connectivity covering the whole of implementation.

### 3.2.4 Limitations

- Data is not consolidated centrally. It is kept at distributed sites. This means that to get a consolidated view, information for each site has to be collated. It would therefore be useful in the future if data is also consolidated into a central backup.
- Accessible in only a few selected health facilities in each district. This needs further expansion to cover complete districts.

For more technical level aspects of MIS implementation, refer to Annex 3.

## 3.3 Education MIS

The Ministry of Education, Science and Technology (MoEST) is responsible for implementing EMIS as well as keeping records of all students, schools, teachers and different performance indicators. In furtherance of this mandate, the MoEST has implemented two segmented systems.

### 3.3.1 Pupil record – Excel based system

At each district office, each school sends a manual, paper-based stamped list of pupils from each class with details including name, date of birth and parent or guardian's name. The list is digitized into the system and each student is assigned a pupil code. A list of all schools in the district with children is held by the district education office, as illustrated in Figure 22 below.

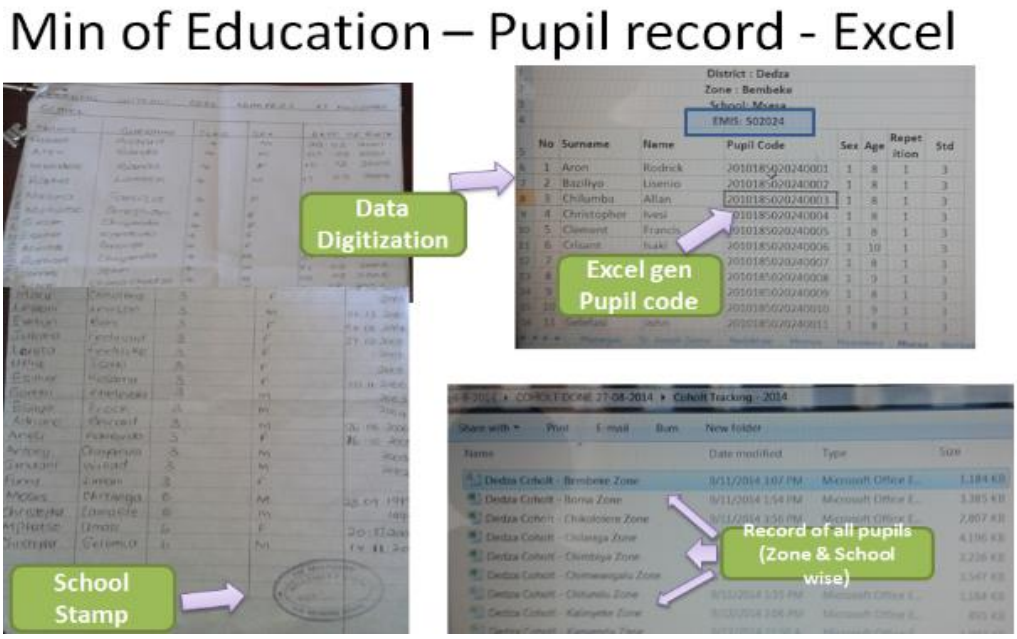



Figure 22: Excel based pupil school wise records

### 3.3.2 EMIS – Access based system

The current EMIS is an Access based Software system with an Excel dashboard. An Access version of EMIS is kept at each district office. The system is maintained at the district office. Data is received from the field staff or extension workers in the form of manual sheets. It is inputted into the Access based MIS. EMIS has two implementations: (i) one for primary school and (ii) for secondary schools.

The data is shared with MoEST in the form of Access backups which are loaded centrally into one system for aggregation at the centre. The exercise is conducted for both the primary school EMIS as well as the secondary school EMIS. Each year a new database is created, as Access has limited storage capacity. In case of special reporting requirements, district staff can access the underlying data and generate required reports.

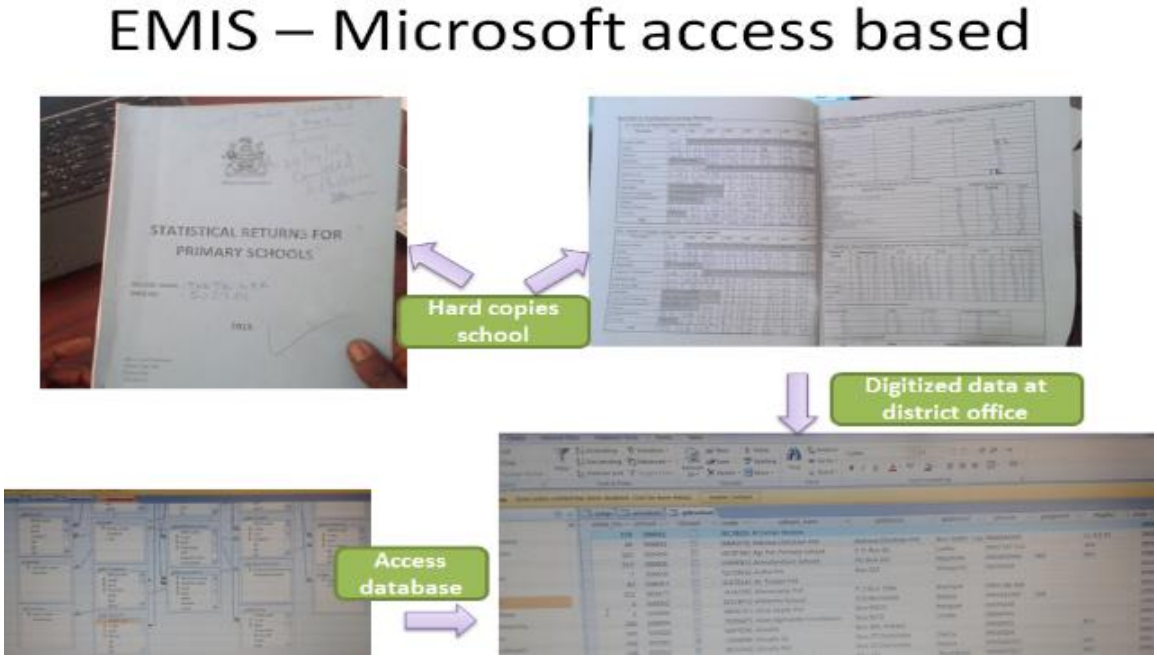



Figure 23: District office EMIS data and entry

The data is exported from Access into Excel to generate charts etc. See picture below.

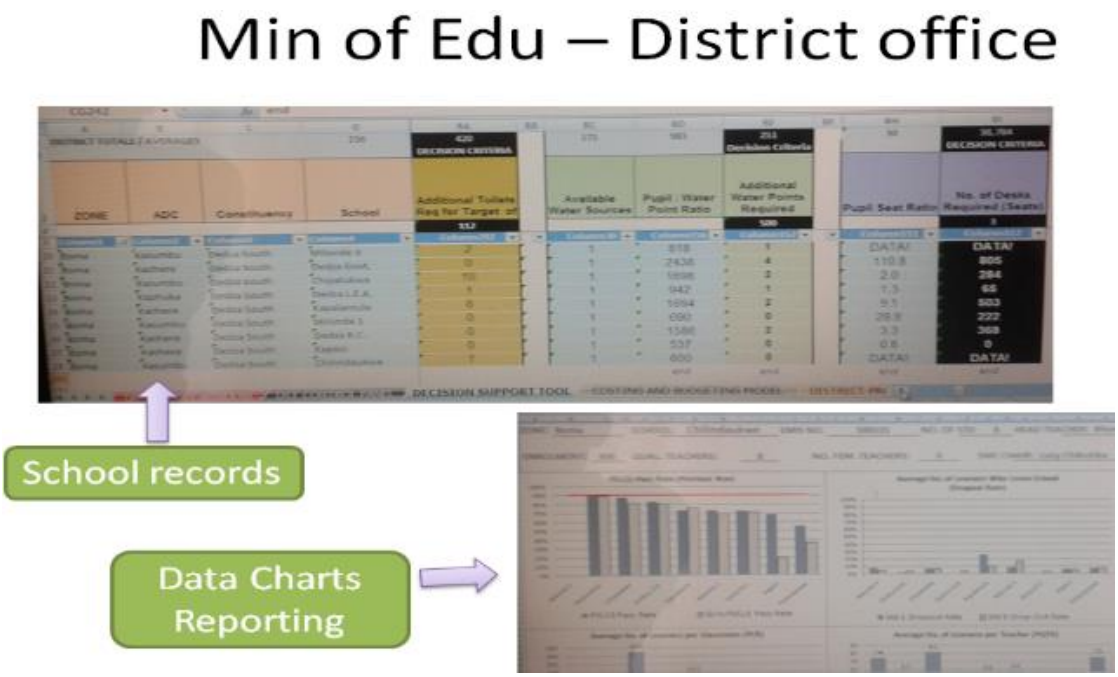



Figure 24: EMIS reporting segmented systems Access & Excel

The two systems; Excel based pupil records and Access based EMIS are stored locally as illustrated in Figure 25 below.

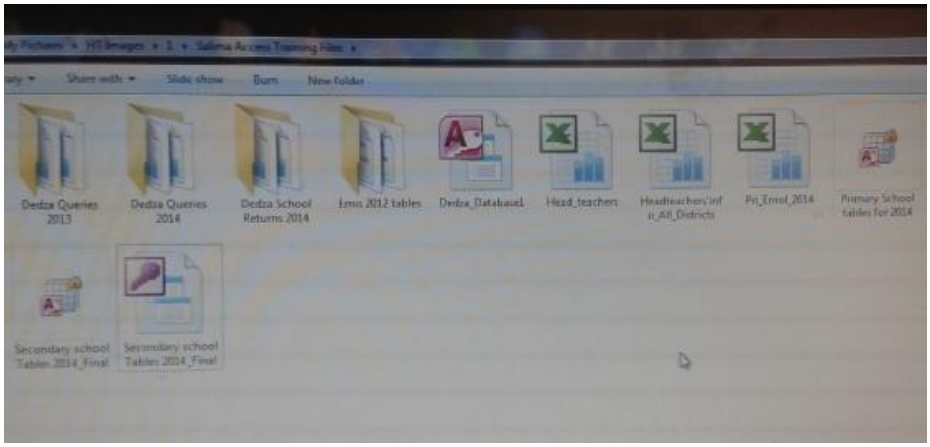


Figure 25: EMIS Database storage local

### 3.3.2.1 Strengths

- Historic data for several years is present, which can provide a good base for the new system.
- Reporting formats have been standardized.

### 3.3.2.2 Limitations

Even though it is distributed, it is an incomplete system, which requires a lot of manual effort for the conclusion of routine tasks. Manual data migrations, different platforms (multiple MS Access versions, Excel and querying SQL) are all being used simultaneously for different and interlinked tasks.

For more technical level aspects of MIS implementation, refer to Annex 3.

## 3.4 FISP – Farm Input Subsidy Programme

The Farm Input Subsidy Programme (FISP) has been implemented since 2005/6 and serves multiple objectives, which include reducing poverty, ensuring the country's food security by enhancing farmer productivity and income and increasing crop yields (IFPRI, 2013). The implementation of the FISP is a complex undertaking with "significant logistical and organisational tasks with critical deadlines within the farming season". Every year 1.5 million beneficiary households, representing about 34 percent of rural farming families, have to be selected. Six million vouchers are then distributed in time for growing season, and more than three million bags of fertilizer and three million bags of seeds need to be distributed, including to remote areas of Malawi (Chirwa & Dorward, 2014). The FISP is by far Malawi's most expensive Social Protection programme, consuming 4.6% of GDP or 11.5% of total government expenditure in 2012/13. By comparison, all other Social Protection interventions make up only 1.1% of GDP in the same year (World Bank, 2013).

Selected farming households in all 28 districts receive a number of vouchers once a year prior to farming season. The same farmers are also given a maize and legume seed voucher.


Figure 26: Farm Family register - yearly population validation list

FISP MIS has three functions described below:

### 3.4.1 Farm family population validation

FISP Access based central MIS has a record of 4.5 million families. Every year, it sends out the list - 'Excel based' - to District offices. District offices divide the lists further and send it to extension workers. New family members and those who passed away are updated onto the list. The list is aggregated and each District office sends it back to the Logistics Unit based in Lilongwe. A new Access database for each year is created at the Logistics Unit and each family head is assigned a new Registration ID.

### 3.4.2 Beneficiary selection

Once the new population count is ascertained, the total subsidy count for the year is divided between the districts. Each district receives an updated population register and is requested to select a certain number of beneficiary families, depending on a quota allocation. A district office forwards the allocated numbers to traditional authorities in the district.

Traditional authorities conduct the final beneficiary selection. The final selected beneficiaries are sent back to the Logistics Unit with the voter-IDs. The data is then loaded into the Access MIS. Each Beneficiary family is assigned a new ID by the system. A set of four vouchers is also generated for the family and sent for printing.

### 3.4.3 Coupon / Voucher Claim

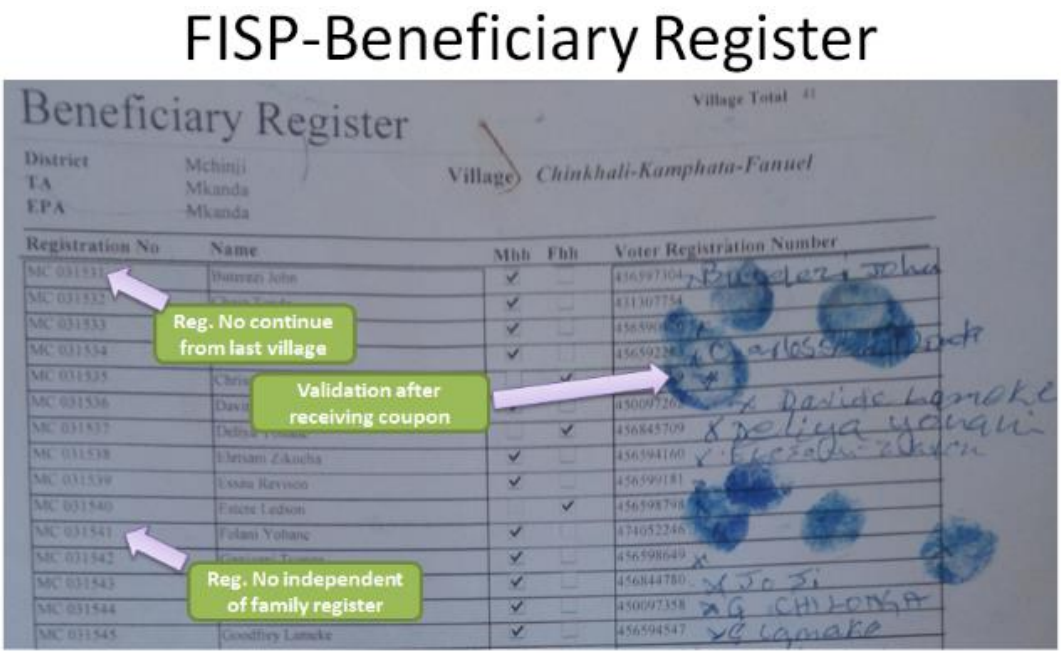



Figure 27: FISP manual beneficiary register for discount coupons

Once the printed vouchers are received at district offices they are distributed to the head of different beneficiary families and their signatures or thumbs are collected, as shown in Figure 27 above. Vouchers are serialized as illustrated in Figure 28 below.

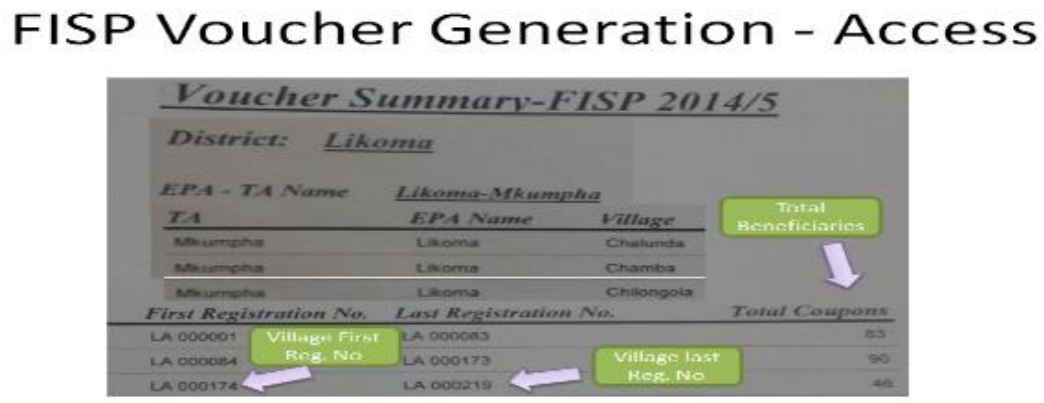



Figure 28: FISP access based coupon data generation

FISP initially had paper-based vouchers, which was a cause of a lot of fraud. Currently, the vouchers are electronically linked to the voter ID of the recipient as well as the scratch number on the card. This has made the claim process more transparent.

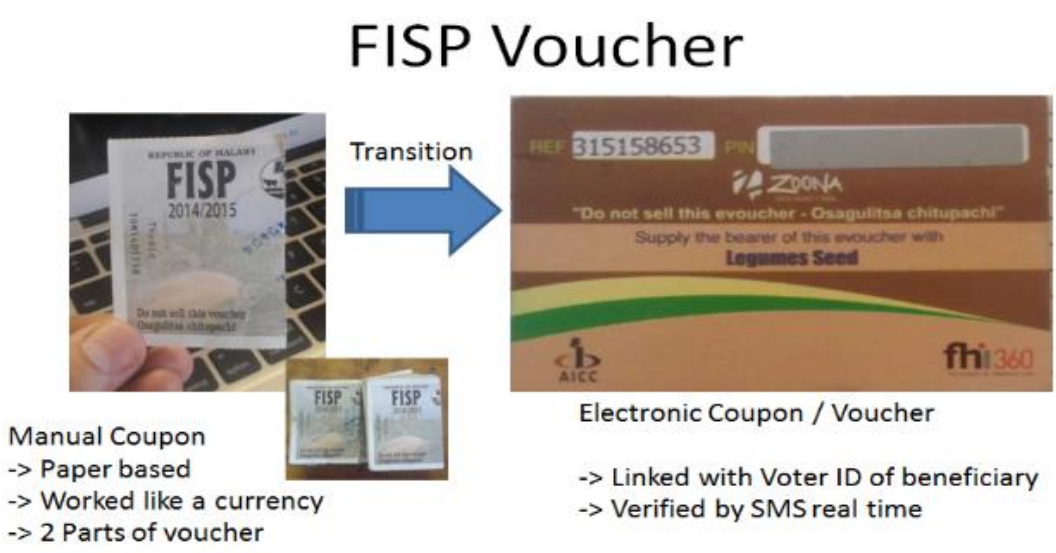



Figure 29: FISP Vouchers – transition

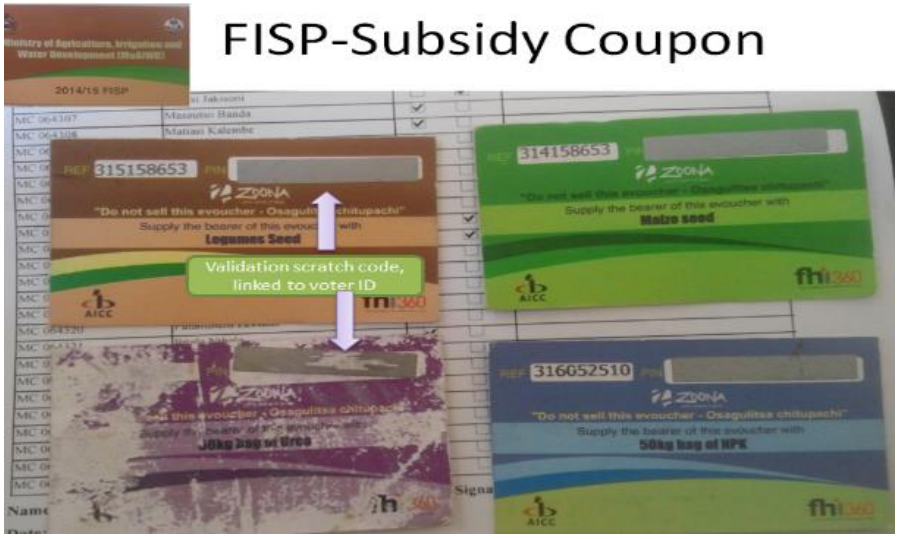



Figure 30: FISP subsidy coupons - 4 for each farmer

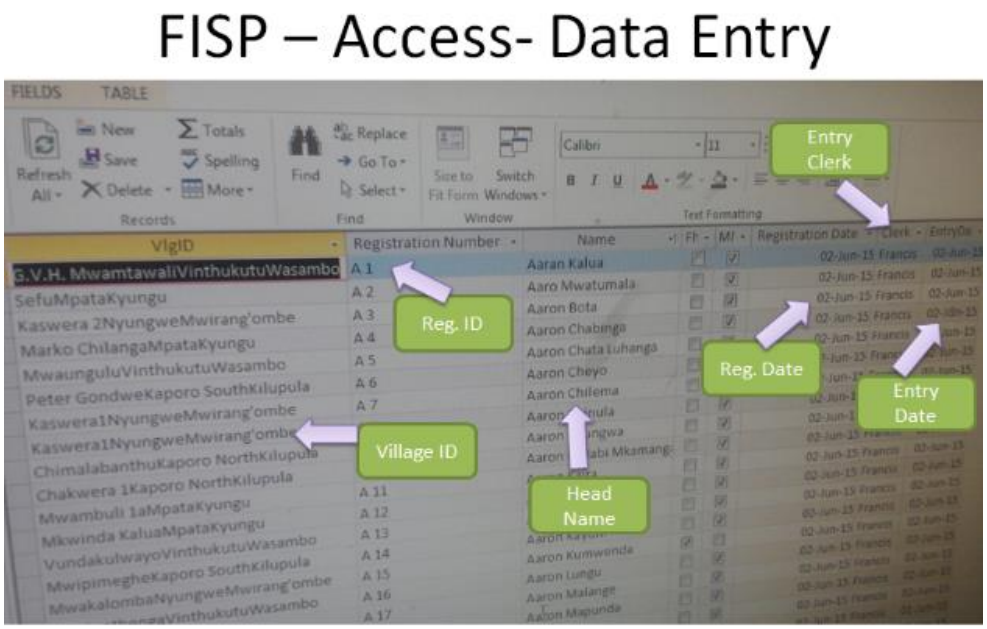



Figure 31: FISP Access based data entry - Family / beneficiary

### 3.4.4 Strengths

- A complete farm family database is available for the entire country.
- In-house technical team, well versed with process, is available to manage a technical system.
- Data sharing formats are well defined and mature.

### 3.4.5 Limitations

This is a decentralized system and hence requires email based data management. The database is limited in terms of size and processing speed, and therefore there are multiple copies for every fiscal year. There is too much manual management with Excel working at regional as well as head office level, all work should be moved to one MIS.

For more technical level aspects of MIS implementation please refer to Annex 2.

# 4 Social Protection sector data and information integration

International evidence (Barca, V. and Chirchir, R. (2014) points to three main objectives why countries opt for an integrated information management framework:

- **Providing oversight of programmes.** In this model, SP sector schemes are linked together to provide performance reports from a number of programmes within the SP sector, to policy makers e.g. Kenya's National Safety Net Programme Single Registry.

- **Consolidation of targeting.** A number of countries (e.g. Brazil and Indonesia) have set up large targeting registries or "single registries" with the aim of creating and maintaining a database of poor households whose output is a uniform targeting index for selecting programme beneficiaries. In this case, the registries are designed as a basis for targeting beneficiaries from multiple SP schemes.

- **Integrating operations and services.** This refers to SP sector integration or even beyond (as exemplified by Chile) where a complex integrated MIS is linked to a single registry and other programme MISs to provide a platform for shared services e.g. payments, complaints and grievances, and registration.

In terms of the approaches to integrating information and data, typically developing countries go through a three stage process:

- **Scope the objectives of data and information integration and set out the short term, medium term and long term objectives**. Typically, the policy documents set out a high level vision. It is therefore important to drill down the objectives of integration through consultative processes and provide reasonable time frames for implementation;

- **Scoping out the model of integration.** Building on the objectives of integration, the appropriate integration model is designed. This also helps clarify the approach to integration. There are two approaches to integration; an integrated approach or building "one monolithic" system. In most developing countries, an integrated approach is suitable because:

    a. Individual Social Protection policy and programmes are still at a relatively early stage of development and are still evolving;
    b. Individual SP programmes require significant strengthening of business processes, financial management and M&E systems;

c. Social Protection institutions have differing capacity to engage in the development, implementation and maintenance of sector-wide systems;
d. Need to leverage significant effort and funds invested in existing programme-level systems;
e. Existing programme-level systems are relatively well understood by users;
f. In Malawi, the implementation of unique ID is at the formative stage. Of course some countries such as Brazil do not have a national ID and have set up registries such as Cadastro Unico. But, they have been forced to develop complex algorithms called "Match Keys" - a set of variables such as beneficiary names, parents names and address - to cross check other databases. In Malawi, it would be important to implement the national ID as a pre-condition for integration.

- **Design high level functional and technical specifications for integration**. Building on the objectives of integration and selected integration model, the next step entails developing the functional requirements and technical requirements for integrated SP model. In most developing countries it would mean setting key parameters for on boarding programmes in the future as there will not be many programmes which will need to be integrated in the first place. Having said that, it is important to be clear from the outset about the integration parameters.

In terms of SP data and information integration, Malawi has not been left behind. In fact, as part of the implementation of MSAF IV objectives, Malawi is piloting the Unified Beneficiary Registry (UBR) as one of the tools that will help to improve operational processes.

From the outset, it seems Malawi jumped a number of steps and proceeded to pilot a specific model of integration driven by targeting objectives. Since the pilot is already on-going, it is sensible to deduce the results from it, but also to go back to the steps (i, ii, iii) outlined above to ensure a comprehensive and sustainable approach to integration, especially if the desired integration has to link to the broader SP sector and beyond (education, health etc).

The following section presents the models of integrating data and information, and analyses the Malawian UBR, which is being piloted. Based on this assessment a proposal is made for a broader integration beyond the current UBR efforts.

## 4.1 International models of data and information Integration

As set out in Figure 32 below, international evidence points to four models of integrating data and information within – and sometimes beyond – the Social Protection sector:

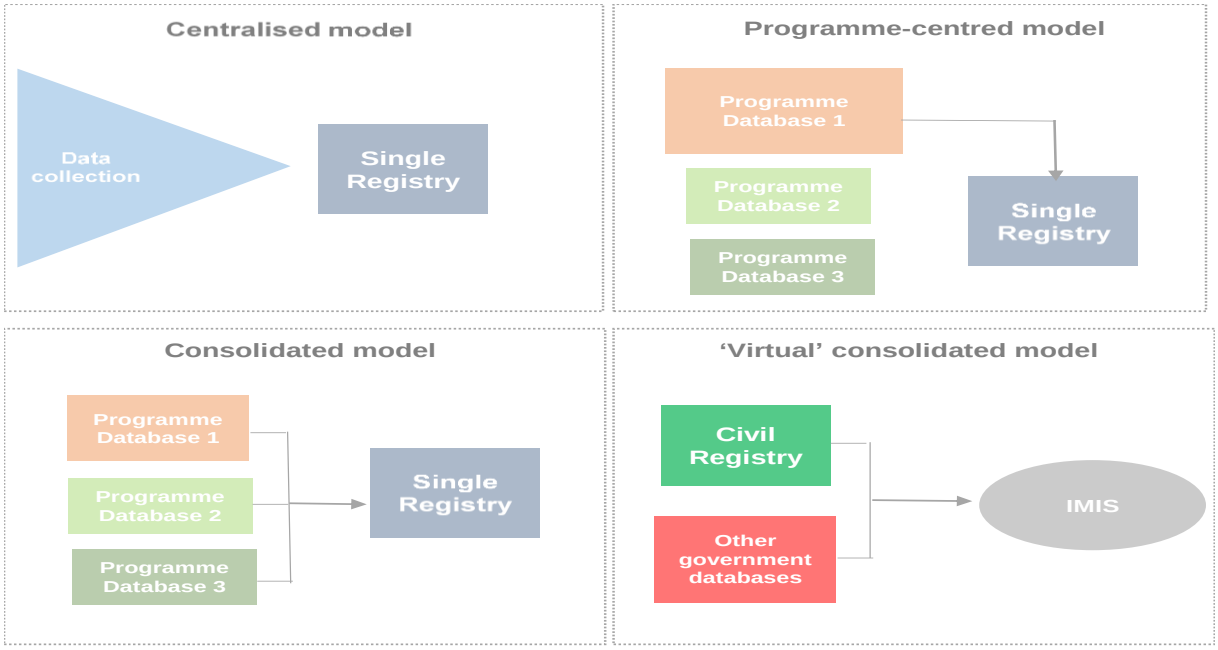
- **Consolidated model** where data from existing databases are consolidated into one database as exemplified by Kenya;

- **Programme centric model** where one programme collects data that is subsequently used by other programmes e.g. Benazir Income Support Programme in Pakistan;

- **Centralised model** where data and information is collected for the purpose of populating Single Registry e.g. Chile and Indonesia;

- **Virtual consolidated model** where there is no physical "data warehouse". Instead, virtual private networks are established to link to a number of databases and this acts as a basis for targeting beneficiaries e.g. Argentina and Turkey.

Figure 32: Models of populating Single Registries




Source: Barca, V and Chirchir, R (2014) De-mystifying data and information management concepts, DFAT.

## 4.2 Characteristics of the current UBR model

UBR in Malawi could be classified as Malawi's home-grown experiment on integrating data and information within SP sector. It is being piloted in 2 of the 18 districts that currently implement Social Cash Transfers. The PMT targeting tool that was used for 16 districts, and community based targeting for Social Cash Transfer intervention is being piloted to be used for combined Social Cash Transfer and LDF PWP targeting (also known as harmonized targeting) in two districts. The difference between the existing SCT and UBR approach is in the depth of household registration. With UBR, the target population has increased to cover approximately 50% of population from the initial 15% coverage for Social Cash Transfer to 16 districts.

If the pilot in 2 districts is successful, the plan is to scale up UBR to all districts in the country. The 16 districts already covered under SCT will be retargeted with an increased coverage size of approximately 50% because it will be very difficult to identify and separate households that have already been targeted from newly targeted ones. In fact, this could result in duplications. Currently, to find an overlap between the implemented UBR and any other SP programme that has collected member level information, it is only possible if member-to-member, name-to-name and picture-to-picture data are matched; which is a very expensive and challenging exercise. For instance, there is no automated way to identify how many of FISP beneficiaries are provided with cash transfers or how many cash transfer beneficiaries are enrolled in public works or village savings loans programmes.

As a mechanism for harmonized targeting and as a model of integrating data driven by targeting considerations, UBR would require a detailed assessment to determine its suitability for a developing country like Malawi. We recognize that there are a number of middle income countries – e.g. Brazil and Indonesia – that run unified registries for targeting purposes. But, we have not come across examples of low income countries that implement large scale registries – populated by mass registration or census - for targeting purposes. Therefore Malawi would be an interesting example to learn from if UBR pilot is successful.

Since UBR is a targeting database, the key issue is that of missed out applicants, especially considering that only 50% of the population is reached, that it does not become a mechanism of exacerbating poverty. The other issue is the creation of inclusion and exclusion errors based on the targeting mechanism. Another key issues is to ensure the ability of GoM to

afford mass registration of the 50% of the population. Of course, this could be answered by conducting a detailed assessment of the UBR pilot.

## 4.3 Proposed model for integrating data and information in Malawi

With all different implementations by donors and government in Social Protection in Malawi running across the country, it is an extremely challenging at least and nearly impossible at worst to manually identify and manage overlaps between different programmes.

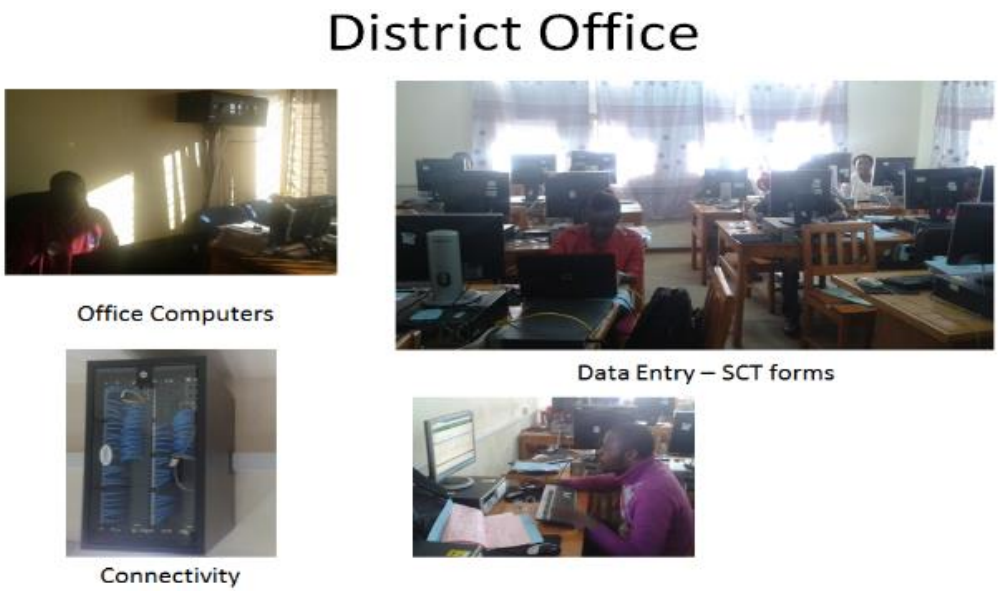



Figure 33: Well-connected district offices

Yet, one of the thematic areas of the NSSP is to ensure that Social Support programmes are linked with one another with the vision of enhancing quality of life for the poor and vulnerable. Indeed, a study[10] carried out for Village Saving and Loans mapping in 2014 had very interesting results. From the results, 56% of VSL members were from public works, 19% of members were receiving social cash transfer grants and 25% of households were receiving school feeding.

### 4.3.1 Assess results of UBR pilot and develop a roadmap for SP data and information integration

Even though Malawi is already piloting a model of data integration based on targeting, there are a number of key steps that it should undertake to put in place a comprehensive integration plan. These are:

- **Develop short, medium and long-term objectives for the Integrated SP MIS** building on the vision set out on the Social Protection Policy by liaising closely with key stakeholders involved in SP: donors and government agencies among others.

- **Once these objectives are agreed, to confirm/determine the following**

  a) Does Malawi need an Integrated SP MIS? Where should it be located? Which model of registry is currently in place? Which is the appropriate model?
  b) Is it feasible to centralize or decentralize the integrated SP MIS functions? What resources are required to implement integrated SP MIS?
  c) What controls need to be put in place to reduce fiduciary risks? How would this link to registration and payments systems?

[10] Village saving and loans mapping report 2014

d) What is the role of stakeholders in the MIS, including that of non-state actors?
e) What options are feasible and what are the associated costs?
f) Who will be the key users of the integrated MIS; what are their needs?

- **Once all points in (ii) are agreed, develop a detailed roadmap for Integrated SP MIS development in Malawi.**

Of course, UBR pilot results will be an important contribution to this discussion. However, answering these questions would also help to provide key information for discussions determining the nature of a possible UBR scale up, assuming it was found to be feasible. The proposed activities are not tied to the conclusion of UBR pilot.

### 4.3.2 Ability of SP MISs to communicate with each other

SP MISs communicate by identifying or referencing data across different programme implementations i.e. MISs identifying common variables across programmes. Currently, there is no **common unique identifier** available between the programmes to allow the programme MISs to talk to each other. As a result, there is the possibility that beneficiaries could be double dipping. In fact, there is no mechanism of identifying these beneficiaries - at least currently - without a "detailed one to many (1-to-N)" record by record matching. For this very reason, it is necessary to integrate NRB-ID to UBR as well as other SP implementations. NRB-ID would act as a common identifier between these implementations - just like a social security number in many developed countries. Once NRB-ID is in place, linkages between SP MISs can be established.

The technical approach of implementing the linkages between SP MISs – including UBR - irrespective of the technology used for implementation, are internet services. But, this can only be achieved if a common unique identifier is integrated into all programmes.

Another major challenge with current MISs is the inability of programme implementations to collect and collate information on programme beneficiaries centrally. In fact, this is not happening in major SP programme implementations such as public works, VSL as well as HMIS.

### 4.3.3 Integrating NRB-ID within SP programmes

NRB is an institute with designated responsibility of identifying each individual citizen, child or adult, in Malawi. By definition this is the only entity that can help link members across the programmes, especially in programmes not covered by harmonized targeting or UBR initiative. But, there are fundamental flaws (such as the lack of an identification number for each member) in the current implementation of NRB, which limits its ability to link different programmes.

However with small, immediate and mid to long term improvements we can be on our way to a more linked, transparent and effective implementation of complementing Social Protection programmes under NSSP. These recommended short-term (6 to 12 months), mid-term (2-3 years) and long-term (4-5+ years) recommendations for URB implementation improvements are described in the following sections.


Figure 34: NRB manual Village register

The enhancements are discussed below, starting with the immediate enhancement

#### 4.3.3.1 Update the current register with member ID and implement policy directive on inclusion – short term

Each village register should have an additional column, which gives each individual mentioned a serial number. The serial number composition is illustrated in Figure 36 below. The first seven digits are for the area code, which includes the district, traditional authority and village code; while the last three are serial numbers for members in the village.

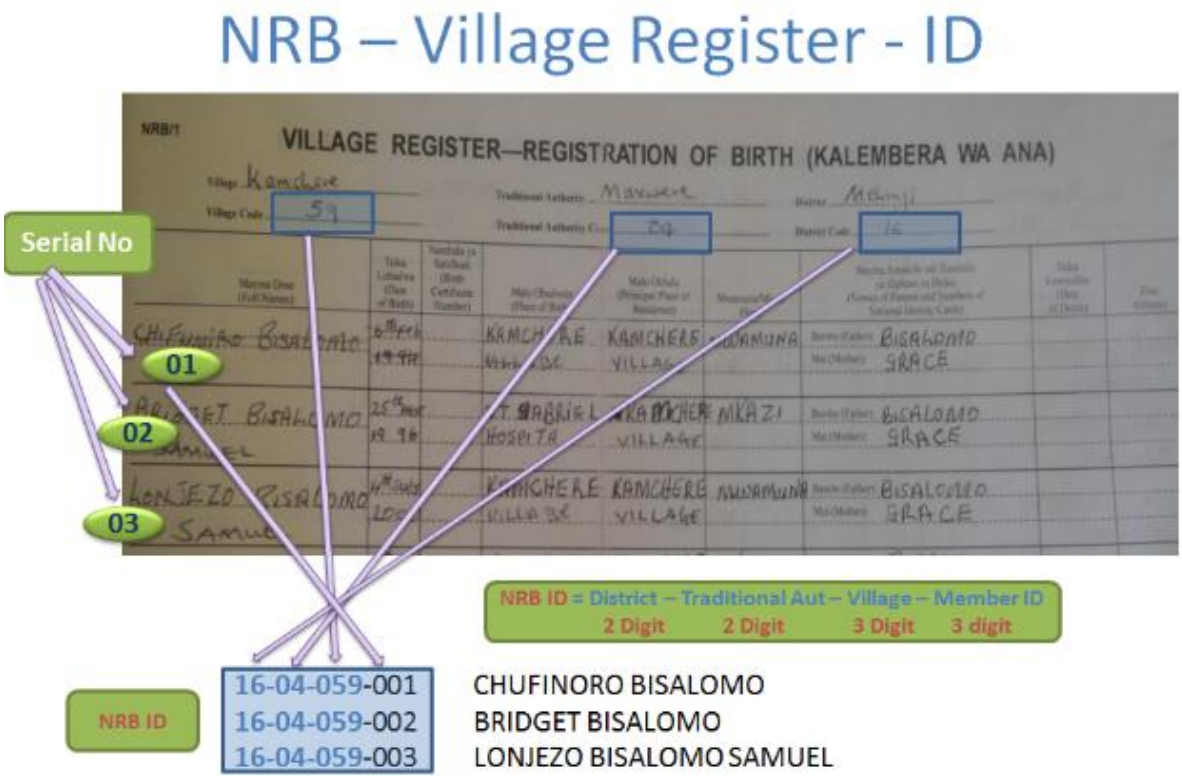



Figure 35: NRB - adding NRB-ID against each member

Once the population in the villages are identified with NBR IDs, all programmes including PWP, VSL, HMIS, EMIS, UBR, SCT should refer to these IDs while registering individuals into their respective programmes. This is the practical way to efficiently link different Social Protection programmes as well as to identify complimentary support or apply exclusion criteria. All extension workers should be trained on linking each programme's member selection from NRB and collecting the NRB ID against each selected member for any programme.

#### 4.3.3.2 Evaluate and scale-up electronic village register

A pilot for electronic registration (see section 3.1.2) was conducted and the results analysed. The Government should explore whether it is feasible to scale it up (given the cost and resource effort required as explained in the pilot test paper) to other parts of the country, in the medium term. Additionally, the NBR ID number (see section 4.3.1.1) should be incorporated. Further, data synchronization enhancements between the districts and headquarters should be added to the pilot test case in order to scale up. If the system is scaled up, the village registers would need to be periodically connected to the district database and that should be consolidated at national level for a digitized database of the Malawi population. This model can be very expensive to implement and sustain given the limitations on infrastructure, and before deciding on any investment feasibility study should be conducted.

#### 4.3.3.3 Upgrade to biometrically linked NRB ID with voter IDs in 2018-19

The ideal (long-term) implementation of NRB is to link it to biometrics. This is a fairly expensive investment in itself. So, it could be carried out simultaneously with voter registrations for elections in 2018-19. With proper implementation of the solution, most of the issues or duplications could be removed from the current manual NRB IDs.

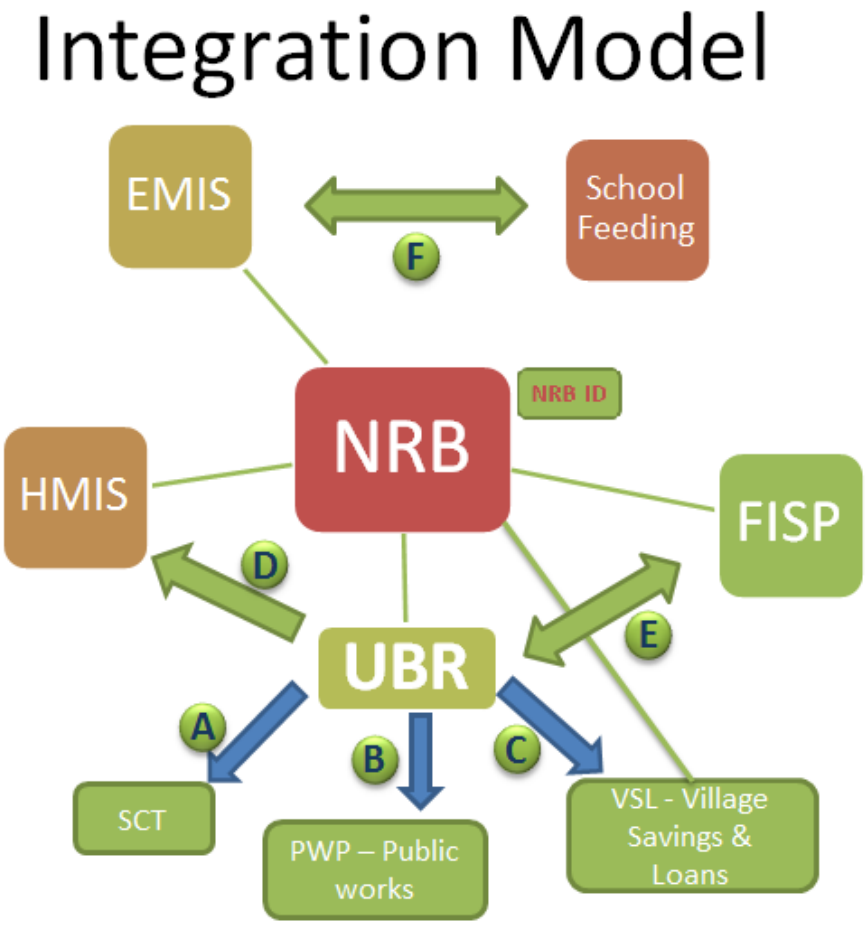



Figure 37: Integration model Social Protection sector

As Figure 37 above illustrates, NRB could be used to connect members of households and beneficiaries across programmes. NRB could be linked to UBR, VSL, FISP, HMIS and EMIS. Linking the UBR with the NRB means that sub-programmes could effectively be connected to NRB-ID. This linkage could ensure identification of duplication across the sub-programmes. The resources saved with such an investment could be used to provide complementary services or even expand the current outreach.

Since school feeding does not collect member level information, it should not be connected to the NRB-ID. However, it would maintain connection with EMIS using the school code collected, which indirectly links it to school students' and the NRB-ID.

# 5 Recommendations

## 5.1 Unified Beneficiary Registry (UBR)

- All household members captured using the harmonized targeting form should be linked to the National Registration Bureau (NRB) identifier (NRB-ID) – i.e. Village register. This will help in cross checking and applying filters with other programmes for implementing inclusions / exclusions against a particular poverty score;
- UBR-TF (Unified beneficiary registry – Task Force) should be broadened to include policy officers from the NRB, Ministry of Health, Ministry of Education, e-Government and Ministry of Agriculture;
- To develop the UBR Management Information System, UBR-TF should adopt standard system implementation and software development procedures for specialized tasks. This includes thorough documentation of business processes, data sharing details, systems specifications, software development, quality assurance and finally production. This should be conducted by a party experienced with delivering software solutions. UBR could also make use of the already developed for decentralised targeting data capture and processing currently being used by SCT MIS, provided the module and source code are handed over to the Government.
- UBR pilot implementation should be further evaluated to (i) validate the coverage size of piloted 50% poor household, (ii) review implementation to include third party data collection versus the current model of data collection and (iii) review overlaps between UBR data collected versus data collected by currently implemented by SP programs in the pilot districts. Based on such study, targeting can be better harmonized and survey questionnaires may be adjusted for different Social Protection programmes.

## 5.2 Social cash transfer

- The current targeting form should be linked to the NRB identifier (NRB - ID) – i.e. to village register. This will ensure that each household member has a unique NRB-ID;
- The Government should demand access to the Social Cash Transfer MIS source code, which is specifically developed for it, so it can make use of the system (fully/partially) as suited to governmental departments. The sharing should be formalized and the contracted firm should hand over the source code and technical documentation after every major project release or when the Government demands.

## 5.3 Public works

- All the organizations implementing Public Works (Local Development Fund (LDF), Rural Infrastructure Development Programme (RIDP) and others) should move to one standardized system of attendance and payment generation, reconciliation and projects reporting. All programmes should collect member level data and link to NRB identifier (NRB - ID) – i.e. to village register;
- The current Excel based system should be replaced by custom MIS developed following a complete software development life cycle and detailed analysis of public works business processes.

## 5.4 School feeding

- The standardized monitoring and evaluation framework being developed by Government should be implemented as soon as possible;
- Monthly data paper-based collection should be replaced with tablet-based digital process to minimize data quality errors and speed up data collection efforts;
- Since the implementation is at school level, member level data may not be collected. However, for further segmented interventions like "take home food" for selected children, member level data should be collected and linked to NRB identifier (NRB - ID) – i.e. to village register.

## 5.5 Village savings and loans

- Community Savings & Investments Promotion (COMSIP) should upgrade its current MIS to a standard web based, hosted system accessible to district offices through the internet and also accessible via mobile phones.
- All VSL programmes should collect member level data and link to NRB identifier (NRB - ID) – i.e. to village register.
- All the organizations in Malawi should move to one standardized system e.g. VSLA.net or theSavix.net or any other third party system. One of the options is to use VSL standard MIS, which is used globally in order to maintain a harmonized method of tracking both quantity and quality of VSL service delivery and measuring similar indicators. Effective and standard use of the MIS shall ensure quality across the programmes implemented by different organizations in the country. It would also standardize ways of identifying if VSL members are receiving the training services.
- A study of organizations implementing the VSL should be conducted to evaluate what system could best address their requirements and also integrate member level detail. Collected member detailed needs should be made accessible to other government programmes, to plan complementary efforts and necessary graduations.

## 5.6 Education management information system

- All pupils in the school should be linked to NRB identifier (NRB - ID) – i.e. to village register.
- A completely new web-based, centrally hosted MIS should be developed and deployed.
- EMIS with all the reporting requirements as well as details of all pupils in each school should be linked (data entered) with the EMIS code of school.
- Periodic data collection from the field should be changed from manual-based to tablet-based. To increase time efficiency, data quality, data location validity (that it was actually collected from site and timely). This would definitely reduce the overall cost.

## 5.7 Farm Income Subsidy Programme

- All beneficiary household heads as well as adult members in the programme should be linked to NRB identifier (NRB - ID) – i.e. to village register.
- A centrally-hosted, web-accessible, scalable MIS should be developed and implemented to replace the current Access based system.
- Inclusions and exclusions based on UBR can only be made if key NRB variables are collected of FISP beneficiary families. This linking will improve targeting quality of FISP going forward.

# Annex 1: Assessment chart for SCT, Public work and VSL Programmes

| | | | SCT | Public Works | VSL |
|---|---|---|---|---|---|
| Connectivity level | | | | | |
| | Central | | Yes | Yes | Yes |
| | Regional | | NA | NA | NA |
| | District | | Yes | Yes | Yes |
| | TA | | Manual sheets | Manual sheets | Manual sheets |
| | EPA Name | | Manual sheets | Manual sheets | Manual sheets |
| | Village | | Manual sheets | Manual sheets | SMS / Manual sheets |
| Communication | | | | | |
| | Papers | | Districts to village level | Districts to Site level | Districts to Site level |
| | Email | | NA | HO to Districts to HO | HO to Districts to HO |
| | System based | | Yes- upto districts | No | No |
| | | Web Services | No | NA | NA |
| | | Web based System | Yes, accessible upto district | NA | NA |
| | SMS | | | No | Yes |
| | Tablets / smart fone | | Field data collection | No | No |
| MIS Current State | | | Uniform, mature/stable, centralized, one system. Performance speed issues on reprots. | Excel based, segmented, multiple, non scalable, incomplete systems. Excessive manual data management. | Access/excel based, segmented, decentralized, multiple systems, non scalable |
| MIS Development | | | | | |
| | Development method | | | | |
| | | Agile | NA | NA | Yes |
| | | Water fall | Yes, on first batch | NA | NA |
| | | Incremental Development | Yes, as subsequent additions | NA | NA |
| | Process | | | | |
| | | Pre Documentation | Operations manual | None | Partial |
| | | Implementation | Third party | NA | On job implementatio |
| | | Testing | Yes - third party | NA | On job testing |
| | | Deployment | Yes | NA | On job deployment |
| | Training | | | | |
| | | Operational | Yes | NA | NA |
| | | Technical System ownership | Not with government | NA | NA |
| | Maintenance | | Third party | NA | Self by organization |
| | Source code ownership | | Contentious / unclear | NA | Self by organization |
| Members Identifiers | | | | | |
| | Unique identifier within program | | Yes, internal ID, member & HH | NO | NA |
| | Unique identifier linking outside world | | None | None | NA |
| Level of detail being captured | | | | | |
| | Member level details | | Yes | Yes | No |
| | Counts and statistics | | auto calculated from data | Yes | Yes |
| Technologies | | | | | |
| | Tablets | | Yes, pilot, expensive solution a | No | No |
| | Desktop Computers | | Yes | Yes | Yes |
| | Mobiles | | No | No | No |
| Reporting Dashboard | | | Yes, detailed | No | Yes |
| Local/External hosting | | | | | |
| | Inhouse | | No | Yes | Yes |
| | Third party National | | No | No | No |
| | Third party external | | Yes | No | No |
| Database | | | | | |
| | Distributed | | No | Yes | Yes/No |
| | Central | | Yes | No | Yes |
| | Backed up repeatedly | | No info | NA | NA |

**Agile Model:** Solution evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, continuous improvement and encourages rapid and flexible response to change.

**Waterfall Model:** is a sequential design process, used in software development processes, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of conception, initiation, analysis, design, construction, testing, production/implementation and maintenance.

**Incremental model** is a method of software development where the product is designed, implemented and tested incrementally (a little more is added each time) until the product is finished. It involves both development and maintenance.

# Annex 2: Assessment chart for School feeding, NRB and FISB

| | | | School feeding | NRB | FISP |
|---|---|---|---|---|---|
| Connectivity level | | | | | |
| | Central | | Yes | Yes | Only located centrally |
| | Regional | | NA | NA | NA |
| | District | | Yes | Yes | Excel sharing through email |
| | TA | | Manual sheets | Manual sheets | Manual sheets |
| | EPA Name | | Manual sheets | Manual sheets | Manual sheets |
| | Village | | Manual sheets | Manual sheets | Manual sheets |
| Communication | | | | | |
| | Papers | | Districts to Site level | Districts to Site level | Districts to village level |
| | Email | | No | HO to Districts to HO | HO to Districts to HO |
| | System based | | Yes | No | Only at Headoffice - LAN |
| | | Web Services | No | NA | NA |
| | | Web based System | Yes | NA | NA |
| | SMS | | No | No | Coupon verification - third party |
| | Tablets / smart fone | | No | No | No |
| MIS Current State | | | Stable, accessible, scalable. Multiple systems in sector | Segmented, basic, poor, non scalable. Excessive manual data management. | Segmented, basic, central system, multiple systems. Excessive manual data management. |
| MIS Development | | | | | |
| | Development method | | | | |
| | | Agile | Third party donor product | NA | NA |
| | | Water fall | | Yes | NA |
| | | Incremental Development | | NA | NA |
| | Process | | | | |
| | | Pre Documentation | Yes | Outdated, buggy system with no maintenance | No evidence found |
| | | Implementation | Yes | | On job implementation |
| | | Testing | Yes | | On job testing |
| | | Deployment | Yes | | On job deployment |
| | Training | | | | |
| | | Operational | Yes | Yes | Yes, centrally |
| | | Technical System ownership | Donor | Government | Not applicable |
| | Maintenance | | Donor | Government | Government |
| | Source code ownership | | Donor | Government | Government |
| Members Identifiers | | | | | |
| | Unique identifier within program | | NA | Yes | Limited |
| | Unique identifier linking outside world | | NA | itself | None |
| Level of detail being captured | | | | | |
| | Member level details | | No | Yes | Yes |
| | Counts and statistics | | Yes | No | auto calculated from data |
| Technologies | | | | | |
| | Tablets | | No | No | No |
| | Desktop Computers | | Yes | Yes | Yes |
| | Mobiles | | No | No | No |
| Reporting Dashboard | | | Yes | No | Yes, central |
| Local/External hosting | | | | | |
| | Inhouse | | No | Yes | Yes |
| | Third party National | | No | No | No |
| | Third party external | | Yes | No | No |
| Database | | | | | |
| | Distributed | | No | Yes | No |
| | Central | | Yes | No | Yes |
| | Backed up repeatedly | | Yes | No | Yes |

# Annex 3: Assessment chart for EMIS, HMIS-DHIS2, HMIS-POC

| | | | | District health info systems | Point of Care |
|---|---|---|---|---|---|
| | | | **EMIS** | **HMIS-DHIS2** | **HMIS-PoC** |
| Connectivity level | | | | | |
| | Central | | Yes | Yes | Yes |
| | Regional | | NA | NA | NA |
| | District | | Yes | Yes | Yes |
| | TA | | Manual sheets | Manual sheets / SMS | Manual sheets |
| | EPA Name | | Manual sheets | NA | NA |
| | Village | | Manual sheets | NA | NA |
| Communication | | | | | |
| | Papers | | Districts to village level | Districts to Site level | Districts to Site level |
| | Email | | HO to Districts to HO | No | No |
| | System based | | Districts and HO level but distributed system | Yes | Yes |
| | | Web Services | No | No | Yes |
| | | Web based System | No | Yes | No |
| | SMS | | No | Yes | No |
| | Tablets / smart fone | | No | No | No |
| MIS Current State | | | Segmented, unstable, decentralized, multiple systems, non scalable. Excessive manual data management. | Stable, accessible, scalable | Stable, accessible, scalable |
| MIS Development | | | | | |
| | Development method | | | | |
| | | Agile | NA | No | Third party Baobab services |
| | | Water fall | NA | Yes | |
| | | Incremental Development | | Yes | |
| | Process | | | | |
| | | Pre Documentation | No evidence found | Yes | Yes |
| | | Implementation | Third party | Yes | Yes |
| | | Testing | | Yes | Yes |
| | | Deployment | at District & central level | Yes | Yes |
| | Training | | | | |
| | | Operational | Yes | Yes | Yes |
| | | Technical System ownership | Yes | Government | Baobab |
| | Maintenance | | Government | Government | Baobab |
| | Source code ownership | | Government | Government | Baobab |
| Members Identifiers | | | | | |
| | Unique identifier within program | | Pupil code, EMIS code | NA | Yes |
| | Unique identifier linking outside world | | None | NA | No |
| Level of detail being captured | | | | | |
| | Member level details | | Yes, but segmented | No | Yes |
| | Counts and statistics | | Yes | Yes | Yes |
| Technologies | | | | | |
| | Tablets | | No | No | No |
| | Desktop Computers | | Yes | Yes | Yes |
| | Mobiles | | No | No | No |
| Reporting Dashboard | | | Yes, segmented | Yes | Yes |
| Local/External hosting | | | | | |
| | Inhouse | | Yes | No | Yes |
| | Third party National | | No | Yes | No |
| | Third party external | | No | No | No |
| Database | | | | | |
| | Distributed | | Yes | No | Yes |
| | Central | | Yes, copied | Yes | No |
| | Backed up repeatedly | | Yes | Yes | Yes |

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