DIGITISATION OF SELF HELP GROUPS IN INDIA

ROADMAP FOR STATE RURAL LIVELIHOODS MISSION-LED INITIATIVES

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EXECUTIVE SUMMARY

Self Help Groups (SHGs) have progressively become a key focal point for empowerment of women by mobilising them and bringing about a change in their condition[1] in India. Digitisation and the use of technology in the processes followed by SHGs can have significant streamlining effects, particularly in addressing pain points. Digitisation can deliver extensive benefits by, for instance, reducing complexities in monitoring and evaluation of SHGs, minimising inefficiencies and inaccuracies in resource allocation, mitigating information fragmentation among stakeholders, bridging capacity constraints through training and literacy-based initiatives, and so on. The National Rural Livelihoods Mission (NRLM) and its state chapters, prominent stakeholders in the ecosystem, have made significant headway in digitising processes for SHGs. **This rapid landscaping assessment aims to serve as a roadmap for** State Rural Livelihoods Mission **(SRLM)-backed programmes in successful digitisation of all processes associated with SHGs.** This report highlights the current initiatives undertaken within the technology space and maps the trajectory of digitisation that various promoting agencies have followed. It seeks to inform the key gaps that exist within the current NRLM/SRLM-backed digitisation initiatives. The report further identifies programmes within the ecosystem that have successfully bridged these gaps; it also highlights key focus areas that remain to be addressed within the ecosystem.

In terms of mapping the readiness of SRLM programmes to carry out successful digitisation, our findings suggest that most programmes face the 'phase' issue, that is, they have a clear trajectory of the digitisation phases to adopt but are faced by a limitation of resources and ability to embrace a multi-focus approach to digitisation. At the mission level, manpower shortages in terms of availability of staff for training, monitoring and data entry hinder programme effectiveness. Information Technology (IT) capabilities for effective troubleshooting and capacity building of resource persons who support SHGs need significant scale up. At the SHG level, there is limited clarity on the benefits of digitisation, leading to a lack of community ownership. The absence of regular capacity and trust building measures to augment literacy, numeracy and digital literacy of group leaders and members continues to be a readiness parameter for digitisation that needs attention.

The primary focus of programmes in the digitisation trajectory has been on the development of **digital Management Information Systems (MISs).** In terms of digitised data entry, programmes incorporate digital tools at varying levels. However, at least one level of manual data entry is common – very few programmes incorporate digital data collection at the ground level. Most integrated MISs we reviewed featured a basic range of functionalities as, currently, there is scarcely any innovation taking place across MIS features. Digitisation's success is heavily dependent on the vision of the SRLM programme which determines its approach to technology partners and implementation, including the trajectory adopted.

Usage of MIS data by stakeholders other than SRLMs and banks remains limited; currently, SHGs and their members do not have direct access to data, neither do they receive direct information from generated data. However, automated report structures generated from the MIS allow SRLMs to efficiently

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[1] SHG platforms have the transformative ability to ensure women's empowerment through enabling gender equity, poverty reduction, and inclusive economic growth. 'What works for gender equality and women's empowerment - a review of practices and results' (2017); International Fund for Agricultural Development (IFAD).

monitor SHG-level data for financial and training allocations. Programmes also regularly use the digital MIS to track their staff's performance. However, findings suggest limited usage of data for customising content and delivering training initiatives. Focusing on strengthening the quality of data provided to external stakeholders such as banks is key to ensuring SHGs can graduate to higher ticket sizes of credit, better credit terms and access financial products.

In terms of building linkages, the emphasis of SRLM programmes has been on Business Correspondent (BC)-based initiatives to strengthen financial linkages within communities and drive digital inclusion of community members. However, scalable solutions for livelihood and market-based linkages continue to receive lower priority under the phased approach. Current innovations are small in scale and replicability while having significant potential is heavily dependent on the local context and the focus of the program. The emphasis on making use of digital channels of learning for literacy-building initiatives at the ground level is currently low. There is also a need for horizontal integration of the major SRLM programmes with associated programmes related to livelihood promotion and healthcare.

Intensive use of **technology for digital communication and learning** is almost negligible. Various SRLMs have taken preliminary steps towards introducing technology into this space. However, due to low penetration of smartphones and internet connectivity in many rural areas of operation, use of digital platforms poses a challenge for many SHG programmes. Efforts have been made to spread awareness among SHG women on various financial and non-financial aspects. However, information dissemination through digital channels such as projectors and tablets is currently limited. Key gaps remain in terms of identifying the balance between 'technology and the human touch' in effective engagement of the community.

Innovations in the technology solution space are heavily contingent on the nature of partnerships between the implementing agency and Technology Service Providers (TSPs). Centralised MIS solutions developed by NRLM are currently rudimentary and require extensive, time-consuming customisation/additions. Conversely, MIS technologies and solutions designed by private vendors are more advanced; however, they require intensive capacity-building of programme staff and raise concerns about data privacy and data sharing with third party entities. However, flexible partnerships such as those between Andhra Pradesh's Society for Elimination of Rural Poverty (SERP) and Jharkhand State Livelihood Promotion Society (JSLPS) with their respective TSPs provide a template for programme partnerships in the future.

While the sector has progressed towards incorporating technology to enhance the efficiency and effectiveness of the SHG ecosystem, key focus areas emerge that require redress:

• **Convergence** in the approach to digitisation among stakeholders and focus of the various programmes reviewed, including within NRLM structures;

• **Cross-learning** among stakeholders both at a macro level as well as between SRLM programmes that may be implementing similar initiatives; and

• **Sustainability** in terms of implementation and financing of current digitisation initiatives in the absence of external grant-based support.

The SHG ecosystem's approach to addressing these focus areas will determine the success of digitisation initiatives and ensure their self-sustenance in the long run.

LIST OF ABBREVIATIONS

AP	Andhra Pradesh
ATM	Automated Teller Machine
BC	Business Correspondent
BMGF	Bill & Melinda Gates Foundation
CLF	Cluster Level Federations
CRP	Community Resource Person
IFMR	Institute for Financial Management and Research
IT	Information Technology
IVR	Interactive Voice Response
IWWAGE	Initiative for What Works to Advance Women and Girls in the Economy
JSLPS	Jharkhand State Livelihood Promotion Society
LEAD	Leveraging Evidence for Access and Development
MAVIM	Mahila Arthik Vikas Mahamandal
MIS	Management Information System
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NABARD	National Bank for Agriculture and Rural Development
NGO	Non-Governmental Organisation
NIC	National Informatics Centre
NRLM	National Rural Livelihoods Mission
PMJDY	Pradhan Mantri Jan Dhan Yojana
PoS	Point of Sale
PPI	Progress out of Poverty Index
PRADAN	Professional Assistance For Development Action
RGMVP	Rajiv Gandhi Mahila Vikas Pariyojana
SERP	Society for Elimination of Rural Poverty
SHG	Self Help Group
SHPA	Self Help Promoting Agency
SHPI	Self Help Promoting Institution
SMS	Short Message Service
SRLM	State Rural Livelihoods Mission
TN	Tamil Nadu
TOT	Training of Trainers
TSP	Technology Service Provider
UIDAI	Unique Identification Authority of India
VO	Village Organisation
WISE	Women's Integrated and Synergistic Empowerment

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INTRODUCTION

The National Rural Livelihoods Mission (NRLM) aims to alleviate poverty through its multidimensional approach, primarily by promoting self-employment and organisation of low-income rural households. To this end, recognising the role of institutions of the poor, NRLM promotes a total of 54,20,612 Self Help Groups (SHGs) under its ambit, reaching out to 5,94,04,428 members across 28 states and six union territories.[2] Given the scale and reach of NRLM and its state chapters, their potential to create social impact is significant. Recognising the role that technology can play in promoting the effectiveness of SHGs and their ecosystem, particularly to meet the movement's objective of economic empowerment, NRLM and its state-specific programmes promote several initiatives for digitisation. To overcome inefficiencies in monitoring of SHGs, NRLM initiated MIS digitisation across some state chapters and forged partnerships with the National Informatics Centre (NIC) to develop the digital MIS. Some State Rural Livelihoods Missions (SRLMs) have also partnered with external Technical Service Providers (TSPs) to develop customised MISs. Efforts have also been made by SRLMs to drive digital inclusion of community members by appointing community women as data collectors and Business Correspondents (BCs), thus linking them to digital tools.

This report presents a roadmap for SRLMs, designated as nodal agencies under NRLM to implement the rural livelihood mission in their respective states, and their programmes on SHGs, social mobilisation, financial inclusion and livelihoods.

The report is organised into the following sections: Section 1 provides an introduction to the importance of digitisation for the SHG ecosystem to function efficiently as well as the research objectives of this study. Section 2 presents the research methodology and limitations of the study. This is followed by Section 3 that highlights a few key parameters for adoption of digitisation. Section 4 reviews the digitisation initiatives undertaken by various SRLM programmes and prioritisation of various components of the MIS and front-end for digitisation, key gaps that are being addressed by non-SRLM initiatives to provide opportunities for SRLMs to cross learn from, and gaps that still exist in the ecosystem. Finally, Section 5 concludes the report.

[2] SHG Report (https://nrlm.gov.in/shgOuterReports.do?methodName=showShgreport)

Importance of digitisation for SHGs

SRLMs and SHGs face a number of ecosystem challenges that hinder the effectiveness of SHGs. Some challenges occur at the SRLM level and primarily pertain to complexities in monitoring the progress of SHGs by virtue of the small scale at which a SHG operates as well as inefficient allocation of resources. On the other hand, there are a number of challenges faced by SHG members such as lack of digital and financial literacy that limits effective functioning of groups. Harnessing the potential of technology through digitisation can address these challenges and result in enhanced effectiveness of the SHG ecosystem:
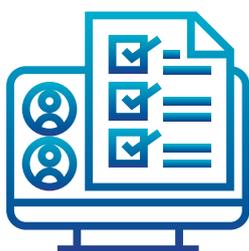
Reduce complexities: The monitoring[3] and evaluation of SHGs is a complex, time-consuming and tedious process which makes it an irregular and lean period activity. Such complexities can be reduced with the help of a sound digital MIS that improves relevant stakeholders' accessibility to information on parameters such as performance and financial health of SHGs through automatic and timely report generation on an integrated digital platform. Further, digital data entry at the ground level reduces backlogs through near real-time capture of information. In addition, digital book-keeping and a digital transaction MIS using simplified user interfaces can reduce the complexity of financial management by minimising dependence on the book keeper's numeracy skills.
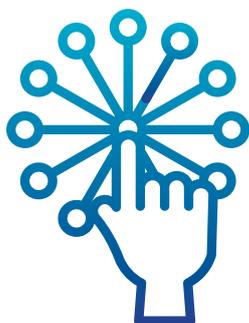
Minimise inefficiencies and inaccuracies: Frequent monitoring of SHGs enabled by an integrated digital platform allows better allocation of resources such as assistance, capacity building and funds by the SRLM. This, in turn, informs apex institutions such as NRLM regarding efficient devolution of funds. Digitisation of transaction MIS or e-book-keeping can also minimise errors in data entry and delays in transmission of data from the field to the SRLM due to manual methods of book-keeping at the field level. This would be addressed through automated validation checks. This, in turn, allows the SRLMs to review performance of groups and provide adequate feedback to their respective block- and federation-level structures. Lastly, to alleviate the problem of access to banks in remote rural areas, digital technology can be leveraged to introduce a BC model that caters to SHGs members and results in saving of time and travel costs.

[3] The parameters for monitoring SHGs include but are not limited to frequency of meetings, savings, attendance, repayments, inter loaning and credit linkages. Other aspects such as livelihoods, capacity building and government entitlements are potential areas that can be monitored.
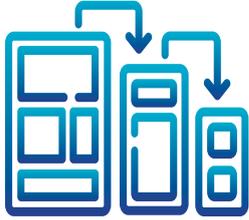
Mitigate information fragmentation: Information pertaining to SHGs tends to be fragmented and available through a variety of sources. An integrated digital platform can reduce such information fragmentation leading to more efficient monitoring. A sound digital MIS can also enable efficient feedback mechanisms that can streamline information flow from the ground through the NRLM hierarchy, resulting in faster policy responses. It also provides potential for a comparative assessment of data across SRLM programmes that can enable performance evaluations and inform decision making. In addition, external stakeholders such as banks and credit bureaus can easily access credit histories of SHGs with a digital financial or transaction MIS, thereby facilitating and enhancing credit linkages of groups with banks. Further, member-level data can also provide alternate credit histories that can facilitate credit access at an individual level.

Bridge capacity constraints: Typically, financial and digital literacy levels of SHG members is low; they often fail to understand and fully internalise interventions aimed at their empowerment such as enabling financial and market linkages, capacity building and skill development. A combination of digital learning (with interactive content which is agnostic to the users' level of literacy) and assisted learning through a human touch point (enabling real-time troubleshooting) can help the women acquire new skills, improve financial and digital literacy, and gain market intelligence locally to overcome the issue of constrained mobility faced by rural women, especially in remote areas. Digital messaging and social media platforms can also connect women and groups with each other to facilitate cross learning; digital modules can ensure standardisation of information dissemination and increase reach to a larger and more remote audience. However, this is largely dependent on the state of digital infrastructure such as smartphone penetration and internet connectivity which is variable across geographies.

Digitisation can thus help in achieving the goals of financial support and social mobilisation, envisaged at the outset of the SHG movement to improve livelihoods of the target population. Technology can be leveraged to help overcome the pain points described above and act as an enabler by promoting the values and achieving the aims identified by the system based on the principles of self help. To this end, the next section highlights the objectives of the study.

1.1 RESEARCH OBJECTIVES

Digitisation has been recognised as a solution that will address many of the challenges faced by SRLMs and SHGs.[4] It is thus imperative to understand the placement of SRLM programmes in the digitisation journey of the SHG ecosystem and take stock of where and how technology has been used so far to promote the effectiveness of SHGs. It is essential to highlight the experiences of key stakeholders in SHG digitisation to inform key questions such as how technology can be harnessed to augment the effectiveness of SHGs through financial and non-financial mechanisms and potential of technology to improve service delivery, monitoring, and outreach. A thorough review of the digitisation initiatives by various Self Help Promoting Agencies (SHPAs) in the SHG ecosystem can provide a roadmap for SRLMs to cross learn from one another as well as Non-Governmental Organisation (NGO)/large SHPA programmes by highlighting the scalability and replicability of different initiatives. It can also highlight the key gaps in SRLM programmes and how non-SRLM initiatives are addressing them. Against the background of this rationale for the study, the broad objectives of this landscaping effort are to provide an assessment of:

- The experience of using digital/mobile technology to support savings and SHGs within major programmes that support SHGs in India;

- The role of technology, such as digital MIS, applications enabling financial and market linkages and digital communication platforms, in promoting the effectiveness and efficiency of SHGs and capacity gaps they fill;

- The current trajectory of digitisation and future uses of digital/mobile technology to support savings and SHGs in NGO and NRLM/SRLM programmes and identify key

gaps in this approach, determine how non-SRLM initiatives are bridging them, and pinpoint ecosystem gaps that need to be addressed; and

- The overall approach to digitisation in the SHG landscape and approaches used by SRLM and non-SRLM programmes on parameters of viability and sustainability.

To meet the study's objectives, stakeholder mapping was carried out and in-depth interviews with key informants were conducted. The next chapter highlights the methodology adopted to meet the objectives of the study and the limitations of the study.

:2

RESEARCH METHODOLOGY AND LIMITATIONS OF THE STUDY

To conduct this rapid landscaping, extensive secondary research was conducted to sketch out a detailed stakeholder mapping of the SHG landscape[5] in India. This was followed by key informant semi-structure interviews with each identified stakeholder. This chapter highlights the methodology deployed to meet the study's objectives and presents the limitations of this rapid landscaping.

2.1 RESEARCH METHODOLOGY

The rapid landscaping exercise was carried out over the period of June to August 2018. The research team started with an extensive mapping of the stakeholder landscape through secondary research[6,7,8,9,10,11] which was followed by in-depth semi-structured interviews to map key themes and experiences in digitisation with pivotal stakeholders identified, such as

[4] Financial Inclusion and Digitisation of Self-Help groups (2018); NABARD.
[5] The SHG landscape includes various stakeholders in the SHG ecosystem such as promoting agencies, TSPs, apex institutions and SHG members. It also includes the process flow and various initiatives undertaken for the empowerment of SHGs members and each stakeholder involved.
[6] C. Wamala, Empowering Women through ICT (2012); Stockholm University Spider ICT4D Series No 4.
[7] A Study of SHG Federation Structures in India: Core Elements in Achieving Sustainability (2012) GIZ NABARD Rural Financial Institutions Programme.
[8] Status of Microfinance in India 2016-17 (2017); NABARD.
[9] SHG Federations in India – A Status Report (2008); APMAS.
[10] Financial Inclusion and Digitisation of Self-Help groups (2018); NABARD.
[11] A Handbook on SHG – Bank Linkage (2017); Deen Dayal Upadyay Antyodaya Yojana – National Rural Livelihoods Mission.

apex institutions,[12] large SHG programmes,[13] SRLMs[14] and other Self Help Promoting Institutions (SHPIs)[15] and external stakeholders such as TSPs.[16] To understand the demand-side perspectives and experiences in adopting digitisation, we also interviewed members at the SHG federation level as well as SHG group leaders and group members [17]

The study involved key informant semi-structured interviews with each stakeholder in the landscape of SHG digitalisation in India, covering both supply- and demand-side stakeholders, with the aim of forming a holistic perspective as well as understanding how these entities interact with each other. Interviews captured details of programmes centred on digitisation of SHG processes and stages of digitisation attained by the various stakeholders. Also captured were parameters for preparedness for SHG digitisation, trajectory and prioritisation of digitisation components and levels of digitisation attained, pain points to be addressed through digitisation, pre- and post-process flows, specific benefits and challenges. States and programmes were chosen for geographical variation as well as variations in timelines of digitalisation

adoption to compare and contrast experiences, trajectories and roadmaps.

2.2 LIMITATIONS OF THE STUDY

The rapid landscaping study aims to provide a roadmap for SRLMs; however, the findings of the study must be understood with certain caveats:

- The findings of the study are based largely on qualitative key informant interviews and no administrative data were collected. Thus, comparisons between various programmes in terms of their reach, scale and actual costs versus benefits are limited;

- The study is limited to understanding the mapping processes and approaches followed by the ecosystem actors. Exploring outcomes and measuring impact are beyond the scope of this study; and

- Due to time constraints, we were unable to interview representatives of banks and other financial institutions to understand financial linkages better. We were also not able to cover purely livelihood-based interventions.

Figure 1: Stakeholders in the SHG landscape
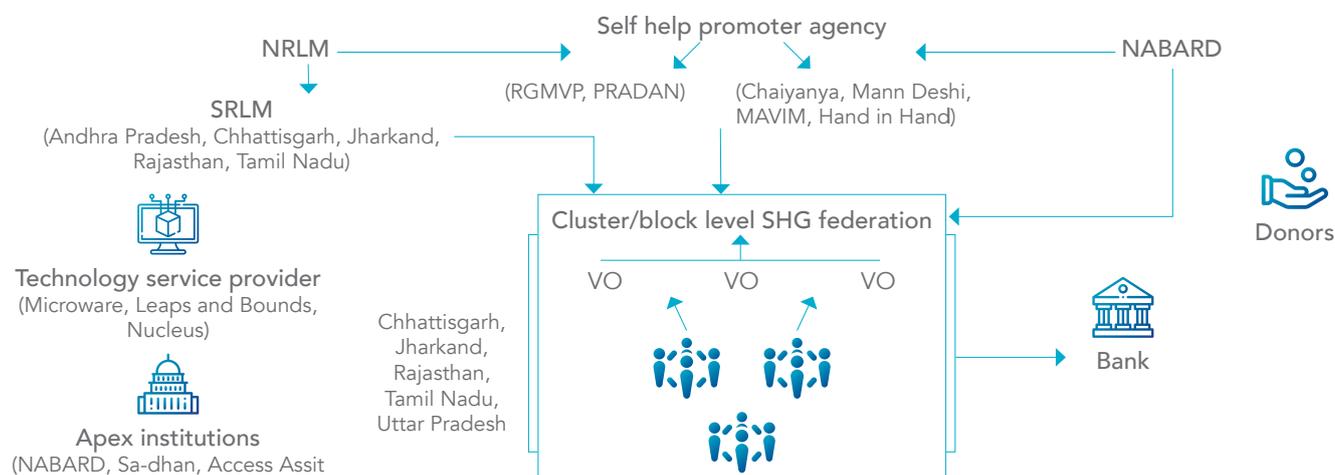
[12] Sa-Dhan Association of Community Development Finance Institutions (New Delhi), Access Assist India (New Delhi) and National Bank for Agriculture and Rural Development (NABARD) (Mumbai).
[13] Professional Assistance for Development Action (PRADAN) (Chhattisgarh).
[14] Jharkhand State Livelihoods Promotion Society (JSLPS), Chhattisgarh State Rural Livelihood s Mission (CGSRLM), Tamil Nadu State Rural Livelihoods Mission (TNSRLM), Andhra Pradesh Society for Elimination of Rural Poverty (AP SERP), Rajasthan Grameen Aajeevika Vikas Parishad (RGAVP)..
[15] Chaitanya Women's Integrated and Synergistic Empowerment (WISE) (Madhya Pradesh and Maharashtra), Mahila Arthik Vikas Mahamandal (MAVIM) (Maharashtra), Rajiv Gandhi Mahila Vikas Parishad RGMVP (Uttar Pradesh), Hand in Hand India (HiH) (Tamil Nadu).
[16] Microware Computing and Consulting Pvt. Ltd. India (Gurugram), Leaps and Bounds Technologies Pvt. Ltd. (Pune), Nucleus Software Exports Ltd. (Noida).
[17] Observational Analysis and Field Interviews Conducted: Jharkhand State Livelihoods Promotion Society (JSLPS), Chhattisgarh State Rural Livelihoods Mission (CGSRLM), Tamil Nadu State Rural Livelihoods Mission (TNSRLM), Rajiv Gandhi Mahila Vikas Pariyojana (RGMVP),Uttar Pradesh, Rajasthan Grameen Aajeevika Vikas Parishad (RGAVP), Mahila Arthik Vikas Mahamandal (MAVIM),Maharashtra.

:3
READINESS TO ADOPT DIGITISATION

To highlight the gaps and inform policy-making, the study analysed factors that influence the preparedness of a SHG to digitise successfully. We classified influencers into internal and external factors. Internal factors are attributes of the SHG itself or the organising SHPA/SRLM, and are the most crucial in assessing readiness to digitise. External factors include support from a multitude of ancillary structures, including TSPs and apex institutions. Another key external factor is the presence of a stable digital infrastructure that can be reliably accessed by last-mile clients.

3.1 MAPPING READINESS

A qualitative analysis of responses from programme personnel interviewed during the study indicated that both internal and external factors are important for readiness, and could broadly be organised into spheres shown in Figure 2.[18]

Figure 2: Mapping readiness for digitisation
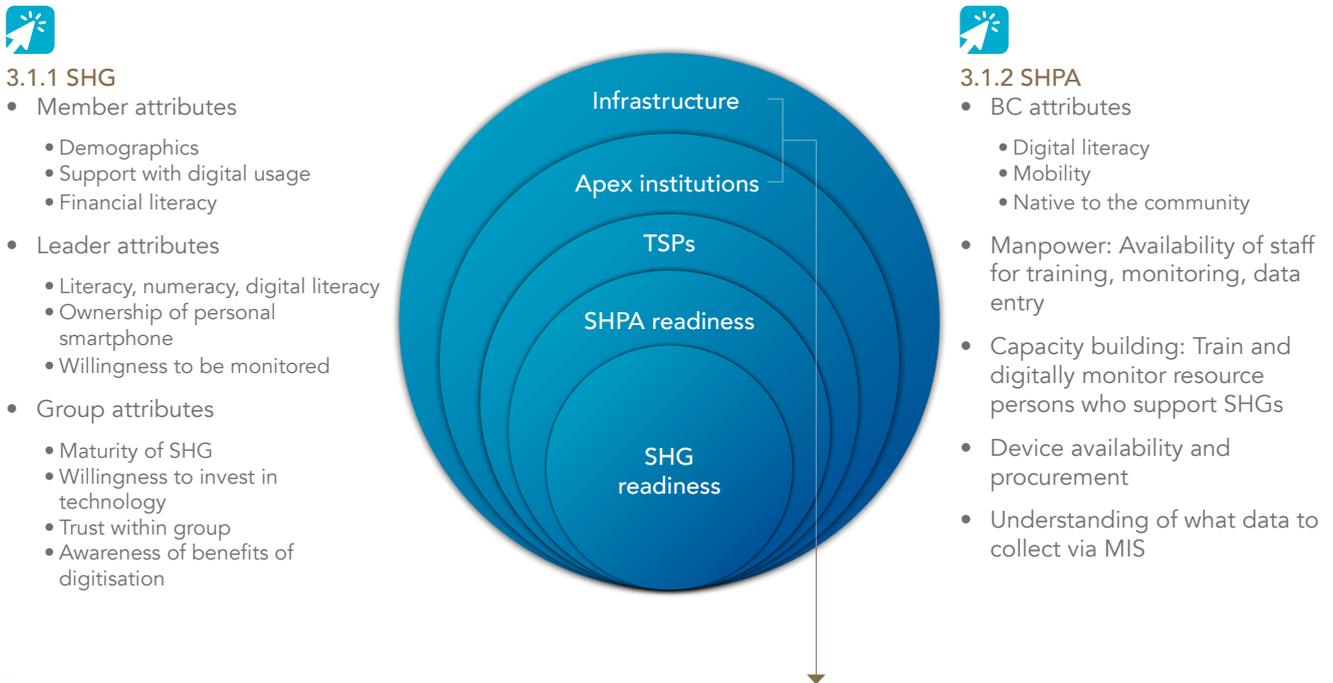
3.1.1 SHG
- Member attributes
  - Demographics
  - Support with digital usage
  - Financial literacy
- Leader attributes
  - Literacy, numeracy, digital literacy
  - Ownership of personal smartphone
  - Willingness to be monitored
- Group attributes
  - Maturity of SHG
  - Willingness to invest in technology
  - Trust within group
  - Awareness of benefits of digitisation

Infrastructure
Apex institutions
TSPs
SHPA readiness
SHG readiness

3.1.2 SHPA
- BC attributes
  - Digital literacy
  - Mobility
  - Native to the community
- Manpower: Availability of staff for training, monitoring, data entry
- Capacity building: Train and digitally monitor resource persons who support SHGs
- Device availability and procurement
- Understanding of what data to collect via MIS

Support from ancillary structures

3.1.3 TSP providers
- Work closely with SHPA to deliver training
- Twin strengths of NRLM/ programming awareness and tech bandwidth
- Linking app to SHG bank accounts via CBS
- Effective troubleshooting channels

3.1.4 Apex institutions
- Timely payments to field coordinators of implementing agency
- Funding for SHGs
- Support for rollout, including financial support for capital costs

3.1.5 Digital infrastructure
- Network connectivity
- Internet connectivity
- Smartphone penetration, affordability
- Diffusion of technology, acquiring merchants in the area and giving them devices

[18] *Methodology*: To develop a comprehensive understanding of factors that influence readiness, the research team analysed qualitative data with individual SHGs, SHG federations, SHPAs/SRLMs, TSPs and apex institutions to isolate factors indicated by the respondents.

3.1.1 SHG CHARACTERISTICS

Within each SHG, there are certain characteristics of members, leaders, and the group as a whole that impact the readiness of the SHG to digitise:

- **Members who are younger, more educated, and financially and digitally literate are more willing and able to contribute to the group's transition.** Older and less educated women are slower and more apprehensive;

- **Older and more mature[19] SHGs will have a clear organisation structure and streamlined processes on which a digital infrastructure can be superimposed. They are also more likely to have cultivated trust towards digitisation amongst group members;** and

- **Exposure and support are crucial to successful digital adoption.** The ownership of a personal smartphone, as opposed to using a smartphone owned by someone else in the household, makes learning to use and using technology easier and faster.

3.1.2 SHPA/SRLM CHARACTERISTICS

There are particular attributes of the governing SHPA/SRLM that are integral to a streamlined digitisation process:

- Programmes should **employ BCs, women who are digitally literate, mobile, and native to the community.** BCs with these characteristics will be adaptable, readily accepted by local communities and provide digital on-boarding support as necessary. Interviews show that Bank Sakhis are often restricted in movement due to societal constraints and therefore cannot move across individuals households to provide help where needed. Further, educational achievement should not be conflated with digital literacy; and

- Effective capacity-building takes thought and resources, and is the primary responsibility of a SHPA/SRLM. The **ability to provide training that caters to the requirements of target women is key to preparing for digitisation.**
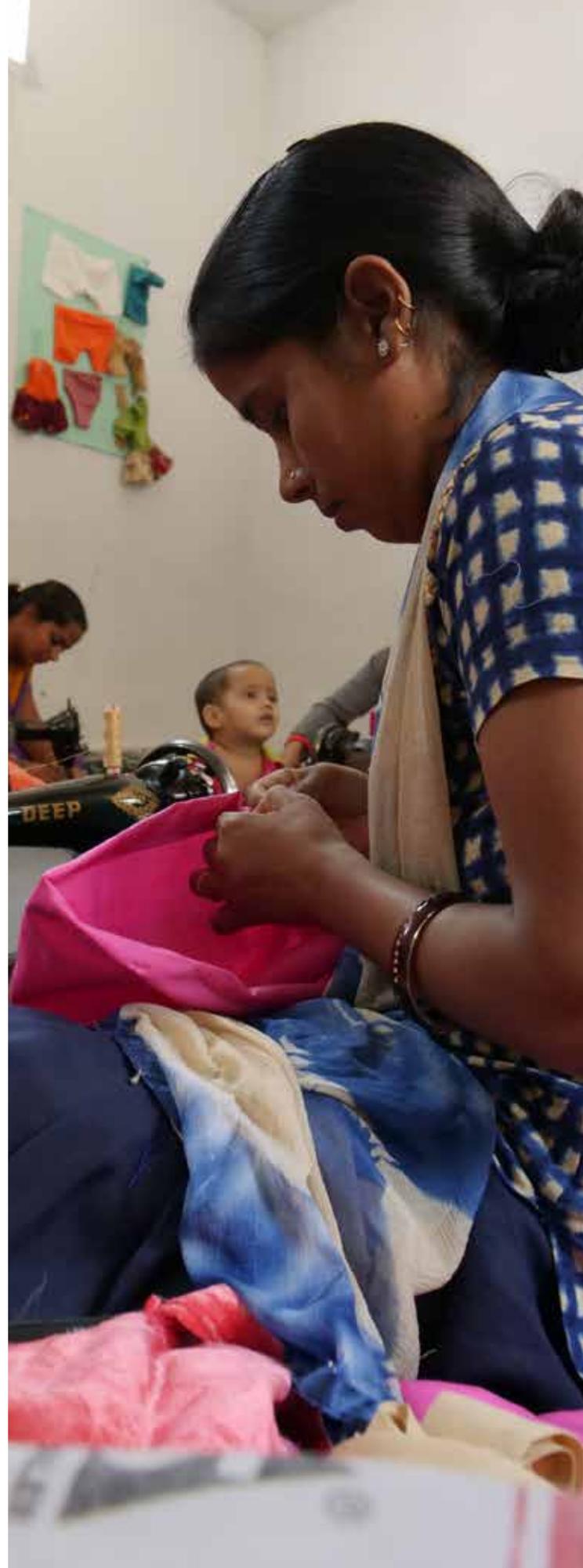
[19] Groups that have been operational for 3 years or more. Deendayal Antyodaya Yojana: Guidance for Mission Implementation; National Rural Livelihoods Mission (2016)

3.1.3 TSP CHARACTERISTICS

TSPs must have a certain blend of skills to effectively contribute to the digitisation process:

- **TSPs should work closely with the SHPA/ SRLM programmes to build capacity on the ground.** It is important for them to understand the SHG model and ground realities that affect uptake and usage of their services, both by mission staff as well as community members;

- In addition to understanding the requirements of the NRLM, there must be cognizance of the scale of the SHG movement. **Scalability of initiatives must be factored in through adequate technological bandwidth** to provide solutions. Larger firms have more bandwidth but they do not understand the nuances of SHG programming. Regular interactions with SHG partners will allow them to exploit their bandwidth to create products that can be adopted effectively (for example, interactive user interfaces employing vernacular language options); and

- Once SHGs have been digitized, establishing **effective communication channels** will allow for troubleshooting and iterative improvements to the software.

3.1.4 APEX INSTITUTION CHARACTERISTICS

The role of apex institutions in facilitating the digitisation process is an important one:

- **Efficiency in provision of financial support** was observed to be the key channel by which apex institutions can support digitisation efforts. This applies to both assessment of the quantum of capital investment and allocation of dedicated funds for functions such as research and development of technological solutions and forging partnerships with TSPs and implementing agencies; and

- In addition to broader guidelines that are in place for mission implementation, apex institutions such as NRLM and the National Bank for Agriculture and Rural Development (NABARD) need to formulate clear vision statements and guideline documents specific to digitisation efforts. Stakeholder collaboration with advocacy and assist institutions can be useful in this regard. These guideline documents would serve as a primer for state-specific programmes in devising a trajectory for digitisation.

3.1.5 DIGITAL INFRASTRUCTURE CHARACTERISTICS

Finally, the digital infrastructure on which the digitisation process relies must be stable and widespread in order for SHGs to transition successfully:

- **Smartphone penetration and affordability remain low.** The cost of digital devices, while on the decline, still places them outside the reach of a typical group member. In addition, a lack of awareness on usage and the value proposition inhibits widespread adoption of smartphone devices within the community;

- **Diffusion of technology and establishment of an acceptance infrastructure is a primary requirement for digitising.** Adoption of technologies to enable use of digital payment media becomes more attractive as more social peers use them as well. Exploiting network effects can enable a faster diffusion of these technologies; and

- **Network and internet connectivity should be reliable** to ensure payments and disbursements are processed in a timely fashion. This is also crucial to maintain the trust of SHG members as they interface with programme implementation agencies digitally.

REVIEW OF READINESS FOR DIGITISATION

A PHASE VERSUS FOCUS ISSUE

SRLMs have a clear trajectory of the digitisation phases to adopt; resources and ability to embrace a multi-focus approach to digitisation are limited.

SRLMs therefore concentrate on each phase separately and lack a holistic view of digitisation.

Benefits of digitisation are still not understood at the **SHG level** leading to a lack of community ownership.

KEY GAPS

Regular capacity and trust-building (literacy, numeracy and digital literacy of group leaders and members) which continues to be a missing link in digitisation efforts.

Manpower shortages (availability of staff for training, monitoring and data entry) which hinders programme effectiveness.

Capacity building (training and digitally monitoring resource persons who support SHGs) which needs to be scaled up significantly.

Limited Information Technology (IT) capabilities and ineffective troubleshooting resulting from an absence of close working relationships with TSPs.

KEY LEARNINGS FROM NON-SRLM PROGRAMMES

e-Learning modules on programme management developed by **Chaitanya** can be used by SRLMs for capacity building of staff.

WhatsApp communication and troubleshooting channels such as those developed by **Hand in Hand models** can be scaled up across SRLM programmes.

Manndeshi Foundation's outreach programme which features buses equipped to provide hands-on training to women in remote areas on use of Automated Teller Machines (ATMs), Point of Sale (PoS) devices and online payments to build trust in using digital media can be replicated.

The **Internet Saathi** programme which provides training to digitally illiterate women on usage of digital media through the internet can be used by SRLMs.

ACTIONABLE POINTS

Increased cross learning/collaboration among state-level programmes on adopting best practices to enhance preparedness.

Renewed focus on developing ground-level capabilities and providing clarity on value propositions of digitisation for communities.

Enhanced penetration of low-cost digital devices to enable greater access and usage to build trust in digital platforms.

:4
REVIEW OF DIGITISATION EFFORTS

Overall, digitisation efforts across study programmes mainly focus on digital Management Information Systems (MISs), including financial, transaction and programme MIS components. The study covered the approaches and focus of programmes that are implemented by various SRLMs, salient gaps therein as well as key learnings from non-SRLM programmes in addressing these gaps.

Figure 3: Overview of levels of digitisation

Transactional MIS (financial book-keeping, accounts digitised VO level)

Transactional MIS (accounts digitised at group level)

Program MIS (attendance, operations, meeting minutes)

» Tamil Nadu SRLM
» Rajasthan SRLM
» Chhattisgarh SRLM

Financial MIS (flow of funds within and outside SHG) → JSLPS

Financial MIS (bank linkages for savings) → AP SERP

Financial MIS (bank linkage for credit – credit history data)

Monitoring of SHG (frequency of meetings, performance, grading criteria)

Linking facilitator (group leaders or master book keepers) to digital tools

Linking group members to digital tools

Collection and deposit of **payments** through digital means tools

Digitisation of **livelihoods data** and M&E of capacity building programmes

Technology and data to **measure organisational and social impact** being created

The varying levels of digitisation achieved by different programmes and their differing visions lead to a discussion on the **phase versus focus issue** which reflects two parameters:

- Whether the programme is focusing purely on digitisation of transaction MIS for financial usage or on transaction/financial MIS for now and plans to delve into livelihoods digitisation and move along the trajectory later; and

- Whether the programme wants a focussed approach by connecting ground-level group leaders and members to digital platforms or is attempting digitisation across livelihood, healthcare and entitlement linkages or monitoring and evaluating capacity-building programmes.

There is no clearly delineated trajectory to digitisation. In this regard, **most SRLM programmes are in the 'phased' approach.**

4.1 DIGITISATION OF MIS: ISSUE OF PHASE VERSUS FOCUS

Key initiatives from SRLM programmes: What worked?

- SRLM programmes place greater emphasis on community participation in the digitisation process vis-à-vis other SHPAs;

- **Andhra Pradesh's (AP's) Society for Elimination of Rural Poverty (SERP)** enables community participation and ground-level data entry by providing training on digital media and access to mobile phones to every SHG book keeper. To facilitate a direct interface with the Unique Identification Authority of India (UIDAI), AP's SERP has moved towards a web-based application; and

- **Jharkhand's Tablet Didi** initiative allows trained community members to capture data at the group-level by using a digital tablet interface thus creating a cadre of resource persons at the community level.

Chhattisgarh and Tamil Nadu SRLMs have introduced a digital transaction MIS[20] that captures transaction data of each SHG meeting digitally.After obtaining the physical transaction sheets manually filled by the book keeper[21] in Chhattisgarh and animator in Tamil Nadu, the community resource persons in these programs enter the data on a digital platform. Similarly, Rajasthan SRLM has introduced a digital MIS where from the monthly progress reports manually entered by SHG book keepers, the community resource persons called data sakhis enter the details into the MIS software. Digitisation of **data entry in the three states thus happens at the cluster or block level.**

Jharkhand State Livelihood Promotion Society (JSLPS) through its Tablet Didi programme[22] is digitising the entry of data into its MIS at the ground-level by providing tablets to master book keepers of villages. The master book keeper, referred to as Tablet Didi, enters the data into the tablet-based application of the MIS from the SHG's books after each SHG meeting in her village.

Unlike the digitisation efforts of other programmes, there is no manual data entry involved in the digital MIS developed by AP's SERP.[23] The group leader directly enters all data on the mobile application that captures details not only on group-level accounts, transactions, operations and credit linkage as well as member-level data on basic demographics and inter-loaning but also on member-level social and economic categorisation, savings and borrowings. These data are then made available publicly.

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[20] The transaction MIS capturing accounts, transactions and operations details of groups is over and above the base MIS that captures basic details of groups and its members at the time of formation.

[21] This is not the SHG book keeper. Chhattisgarh SRLM has a trained cadre (community members) of book keepers (one for every 15 SHGs) who go to every meeting of the SHGs under them and enter data in the sheets from the SHG books.

[22] JSLPS introduced the digital MIS 'Swalekha' in 2011 and the Tablet Didi initiative was piloted in 2013. A detailed account of the Tablet Didi programme can be found in Appendix B.

[23] m-Book-keeping was first launched in 2011 by AP's SERP with incremental changes to the digital application being made over time. A detailed account of the AP's SERP digital MIS tool can be found in Appendix A.

Table 1: Summary of SRLM programme digitisation

Organization and program tool	Data entry				Level of data captured		Data user
	Manual data collected	Manual data entered by	Digitisation of data entry	Data on digital platform entered by	Only group level	Group-member level	
Jharkhand JSLPS TSP - external private vendor implementation - Self	SHG books	SHG book keeper	At SHG meeting	Master book keeper (Tablet Didi)	» Accounts » Transactions » Operations » Credit linkage	» Basic » Demographics » Inter - loaning	SRLM
Chhattisgarh SRLM - TMIS TSP - Govt/ NRLM software implementation - Self	TMIS registers	Book keeper*	Block/cluster	ECRP**	» Accounts » Transactions » Operations » Credit linkage	» Basic » Demographics » Inter - loaning	SRLM
TN SRLM - TBSDAS TSP - TSP - Govt/ NRLM software implementation - Self	Transaction sheets	Animator	Village/cluster	CST***	» Accounts » Transactions » Operations » Credit linkage	» Basic » Demographics » Inter - loaning	SRLM
Rajasthan SRLM - MIS TSP - developed in-house implementation - Self	Monthly progress reports	SHG book keeper	Cluster	Data Sakhi	» Accounts » Transactions » Operations » Credit linkage	» Basic » Demographics » Inter - loaning	SRLM
Andhra Pradesh SRLM - MIS TSP - external private vendor implementation - Self	-	-	Ground	Group leader (on mobile app)	» Accounts » Transactions » Operations » Credit linkage	» Demographics and occupation » Social and economic categorization » Savings » Borrowings » Inter - loaning	SRLM data in the public domain

*This is not the SHG book keeper. Chhattisgarh SRLM has a trained cadre (community members) of book keepers (1 for 15 SHGs) who go to every meeting of the SHGs under them and enter data in the TMIS registers from the SHG books.
** ECRPs (E-community resource persons) are the cadre that Chhattisgarh SRLM has trained to enter data using laptops.
***CST are the community SHG trainers who enter data in destop/netbooks.

Digitisation at the ground-level provides advantages in the form of reduction in time required for data collection and enhancement of efficiency through near real-time data capture. Additionally, it ensures standardised data collection templates. Leveraging community support in the digitisation of MIS data also engenders greater engagement and recognition of the value proposition of digitised data among community members.
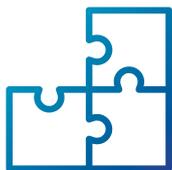
KEY GAPS ACROSS SRLM PROGRAMMES: WHAT'S MISSING?

- **Innovation of features across MISs remains low.** The range of functionalities across programmes reviewed as part of this study was limited. It included, but was not limited to, functionalities capturing complementary NRLM programmes such as those based on livelihood linkages and built-in provisions for effective data scrutiny/audit to ensure data quality;

- **Issues of data privacy and security are currently not a priority** in the trajectory of digitisation. This could be considered an outcome of the phased approach to digitisation adopted by state programmes and results in significant trade-offs between transparency and privacy;

- Across programmes, there is **prevalence of at least one level of manual data collection** which impacts potential efficiency that can accrue from digitisation. The break in the digitisation cycle happens usually at the last mile node as group members and SHG book keepers continue documentation through manual media; and

- **Lack of convergence** in terms of partnerships in technology development and programme implementation results in the digitisation process being heavily dependent on the SRLM's vision and focus (or lack thereof).

KEY LEARNINGS FROM NON-SRLM PROGRAMMES: ADDRESSING THE GAPS

- **Rajiv Gandhi Mahila Vikas Pariyojana (RGMVP),** through an iterative process, has developed an in-house MIS tool. This has allowed it to acquire a more integrated structure within a single MIS platform as well as greater flexibility in customisation such as linkages with livelihood-related indicators. It further resolves the key issue of data security and privacy by providing the programme greater control over client data; and

- **NABARD's 'e-Shakti' tool** captures member-level financial data to provide higher granularity of data compared to most SRLM programmes. In terms of increasing financial linkages, this granularity allows for generation of alternate credit history and credit-worthiness indicators that can be leveraged to increase access to financial resources to groups and members. NABARD also stratifies the data to inform policy decisions and assess entitlements as it collects Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Pradhan Mantri Jan Dhan Yojana (PMJDY) linkage data, thus providing a more integrated MIS platform.

KEY FOCUS AREAS: WHAT REMAINS TO BE ADDRESSED?

- Most SRLM programmes have a **lack of technological bandwidth and resources to capture meaningful data on livelihood linkages.** Programme officials across the board cite significantly greater technological challenges in capturing the complexity and quantum of livelihoods related data. However, they also acknowledge the need to incorporate these parameters into an integrated platform;

- Current processes associated **with verification/audit of input data are tool-dependent.** This has significant implications on the quality of input data which are exacerbated by the process of back-checking which currently is either lacking or conducted manually across programmes;

- There are very few **regularised information feedback channels** from the programme officials to the group level. This mechanism breaks down usually at the block/cluster level thereby hindering programme effectiveness. It also adversely impacts the ability to translate the value proposition of the digitisation process to the community; and

- **Lack of convergence** in the approach to digitisation and of standardised data entry processes prevents meaningful comparative assessments.

SUMMARY: PROGRAMME MIS DIGITISATION

» SHG digitisation across programmes focuses on a digital MIS. Programmes incorporate digital tools at varying levels (one level of manual data entry is common); a few programmes incorporate digital data collection at the ground level.

» Verification/audit of data is tool-dependent and back-checking occurs at a basic level.

» Most integrated MIS platforms feature a basic range of functionalities; innovation across MIS features is almost non-existent.

» Some models are working toward enabling personnel in the field to use digital technologies through BC models.

» Digitisation and programme success are heavily dependent on the vision of the SRLM programme which determines approach to technology partners and implementation, including the trajectory adopted.

» Data privacy and security are not focus areas for programmes; there are trade-offs between transparency and privacy.

» Community ownership of digitalisation is lacking and thus its value proposition is questioned by ground-level actors.

» Sustainability and business viability of digitisation models in terms of funding and expertise is an open question dependent on the degree of autonomy of each SRLM.

4.2 DATA USAGE

Key initiatives from SRLM programmes: What worked?

- **JSLPS** is using monitoring data from the MIS to allocate and sanction funds;

- **AP SERP** makes MIS data available in the public domain. SHG members can also access these data to view their entitlements and understand their financial position; the data are also used for credit linkages;

- **Rajasthan's SRLM** generates staff performance cards that measure the number of SHGs brought into the SHPA by each staff; and

- **Chhattisgarh SRLM** uses MIS data to provide regular feedback and alerts to the blocks, specifically on target completion.

4.2.1 DATA USAGE FOR PERFORMANCE GRADING

Digitisation of MIS has enabled the SRLMs to effectively capture performance measurement indicators for SHGs, such as regularity in meetings, attendance, protocol adherence, amount and frequency of savings, details on inter-loaning, external loans, and frequency of repayments. Digital MIS also captures the performance of the SRLM cadres, as in the case of Rajasthan SRLM, where performance cards, that measure the number of SHGs brought into the SRLM by each staff and assign a score to them.

4.2.2 DATA USAGE FOR FACILITATING RESOURCE ALLOCATION

The data collected on groups, such as regularity of meetings, savings, details on inter loans, external loans and number and types of trainings received by groups enables SRLMs to not just know whether groups are eligible for financial and non-financial resources but also identify the priority groups, resulting in an efficient and transparent allocation of resources. **JSLPS** uses the data to **analyze the groups in need of more time and assistance by assessing the performance and financial health of the SHGs**. Data also helps in identifying entitlements for the target groups. For example, Rajasthan SRLM is using MIS data to understand when **SHGs are eligible for entitlements.**

4.2.3 DATA USAGE FOR ASSESSMENT OF FINANCIAL HEALTH AND BUILDING LINKAGES

Detailed data captured digitally on inter-loaning within groups, external loans received by them, and repayment cycles of each member as well as the group makes it easier for the SRLMs to keep track of the **financial health of groups through automated reports** and analyses of the data. The financial data also enable banks to better **assess credit worthiness** of the groups. Certain programmes such as AP's SERP upload the **MIS data on a public domain,** so that SHG members and various governmental line departments can access these data to view entitlements and understand the financial position of SHGs.

4.2.4 DATA USAGE FOR FEEDBACK LOOPS AND PLANNING

Data on parameters such as the number of new SHGs formed, defunct SHGs revived, and households mobilised are used by organisations like **JSLPS and Chhattisgarh SRLM** to provide **regular updates and alerts to blocks on target completion.** The **Chhattisgarh SRLM** uses the MIS data to prepare **annual action plans** that chart out the targets it aims to achieve in the next financial year, especially the number of households in each block it plans to bring under its aegis. The vast data that is compiled across all SHGs under their respective programmes aid the SRLMs in creating an effective feedback loop that ties into assessing the overall performance of the SHGs.

KEY GAPS ACROSS SRLM PROGRAMMES: WHAT'S MISSING?

- **Use of MIS data is largely internal.** Access and usage of data generated from the digital MIS by other stakeholders are minimal. Policy makers can use these data to improve the design of programmes, particularly focusing on targeting, based on information on activities at the ground level as well as to improve credit linkages;

- **Processes for scrutiny and monitoring of input data quality are lacking or manual.** Without robust mechanisms in place, there is scope for significant data inaccuracies that can hamper the value of the generated data in decision making; and

- **MIS customisation is limited** in the presence of centralised digitisation software and lack of a close working relationship with the TSP. Innovation in MISs is lacking and heavily dependent on SRLMs' vision in the presence of a hierarchical top down approach to digitisation under the NRLM structure.

KEY LEARNINGS FROM NON-SRLM PROGRAMMES: ADDRESSING THE GAPS

- **PRADAN** generates indicators for financial health ratios, saving rates, share given to each member, and amount mobilised through banks. This financial transaction data is used to provide **feedback to the target groups,** through a dues sheet that states the instalment amounts (including interest) due next week;

- **Chaitanya** uses MIS data for: assessing financial capability; measuring Progress out of Poverty Index (PPI); monitoring training; and assessing SHG performance. It also makes use of training monitoring data to help build a customised capacity-building programme and understand key gaps in capacity building for specific groups; and

- **NABARD** provides banks with grading as well as credit history of SHGs and SHG members (linked to that bank) thereby enabling better assessments of credit worthiness and creation of alternate forms of credit history.

KEY FOCUS AREAS: WHAT REMAINS TO BE ADDRESSED?

- **Comparability of data** across SRLM programmes remains limited in the absence of standardised data collection templates and variations in implementation efficiencies. A more integrated approach to performance grading can also enable effective assessment of the SHG movement as a whole;

- **Data sharing** by SRLM programmes across ecosystem stakeholders such as credit bureaus and financial institutions is lacking. Inter-sharing of data across SRLM programmes can enable greater cross learning of best practices and ensure higher convergence in the digitisation process; and

- The absence **of a regularised feedback mechanism/loop** to SHGs, based on performance/grading data reports that are auto generated, does not allow community members participating in the SHG process to fully understanding the value proposition of and benefits from digitisation thereby alienating them from the process.

SUMMARY: DATA USAGE

» Largely, use of data by stakeholders other than SRLMs and banks remains limited and SHGs and their members do not have direct access to the data, neither do they receive direct information from the generated data.

» SRLMs' monitoring of SHG group-level data allows financial and training allocations; however, estimates of resource requirements are still subjective.

» There is potential for MIS functionality/tools that use algorithms to assign allotments.

» Performance and transactional reports are auto-generated; however, these are manually checked and the outputs are then communicated to programme officers and field staff. Few programmes provide feedback to SHGs based on performance/grading data – SHPA staff goes through the data and communicates to the officer. There is potential for creation of digital dashboards/feedback loops where block-level officers or CRPs can monitor their targets.

» Data are rarely used to customise content and delivery of training initiatives.

» Focus on strengthening the quality of data provided to banks is key to ensuring that SHGs graduate to higher ticket sizes of credit, better credit terms and access financial products.

» There is inadequate capacity within SRLMs and absence of software functionality to monitor and analyse repayment data in detail to identify low-performing groups to whom training/advisory can be provided.

» There is potential for software facilities to flag early warnings and assign advisory needs.

4.3 BUILDING FINANCIAL AND MARKET LINKAGES

### Key initiatives from SRLM programmes: What worked?

- The emphasis of SRLM programmes is on BC-based initiatives to strengthen financial linkages within communities and leverage digital inclusion for community members;

- **Chhattisgarh SRLM** has initiated the Bank Sakhi programme under which SHGs members are chosen and trained as BCs to enhance financial linkages in their areas. A key objective of the programme is to build trust on technology within communities; and

- **Haryana SRLM,** in association with the TSP Nucleus Software Exports Ltd., has developed top-up card solutions to augment digital transactions and minimise the role of cash. The solution also addresses issues related to the lengthy cash collection process and monitoring of large volumes of cash collected at the Village Organisation (VO).

Beyond the digital MIS that seems to be the focus of most SRLM initiatives, some programmes are striving to digitise the link to on-ground activities by promoting the uptake of digital tools by SHG members to include them into the digitisation ecosystem. As part of its Bank Sakhi programme, Chhattisgarh SRLM, in partnership with banks, trains and appoints select SHG members to act as bank agents in their areas and use digital tools such as laptops, biometric devices, printers, micro ATMs, etc. Similar efforts have been made by JSLPS to integrate the BC model into the SHG landscape. Integrating SHG members into the BC model benefits the entire community by making access to banks and banking facilities in remote areas easier minus travel costs. **Given that the BC is a woman from within the community, as opposed to a corporate BC who is not, it is easier for villagers to accept and trust digital transfers made by her, leading to the programme's success.** This gives the community-driven BC model a significant advantage over conventional models adopted by the banking system.

In an innovative initiative, Haryana SRLM has partnered with Nucleus Software Exports Ltd. that has developed top-up cards for SHG members and offline acceptance devices for group leaders/presidents such that members can load and use their cards to pay and group leaders can accept these payments and transfer them directly into bank accounts. In addition to reducing the cash burden, this solution has a **more holistic approach to digitisation and successfully overcomes several challenges.** Its features include enhanced technology usage at the cluster level, provisions to overcome lack of digital literacy and smartphone usage through prepaid cards and physical top-up options as well as online-offline modes to address infrequent internet connectivity. Overall, the model aims to strengthen the acceptance ecosystem, thereby building a value proposition for the entire chain.

While the study recognises these efforts as novel in their space, there are many important cultural and social perceptions to be taken into consideration whilst contemplating scale up.
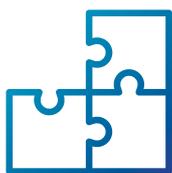
KEY GAPS ACROSS SRLM PROGRAMMES: WHAT'S MISSING?

- **Initiatives to build capabilities, form nodal points within communities and build trust in technology are few and far in between.** Only preliminary attempts are being made and innovative programmes are small in scale and their replicability is context and program dependent;

- **Livelihood and market linkages in SRLM programmes remain a low priority** under the phased approach. In addition, there is lack of technological bandwidth to capture complexities associated with mapping livelihood data;

- **Emphasis on use of digital channels for literacy building at the ground level is absent.** Learning initiatives are dependent on conventional methods that involve the presence of a physical trainer; and

- **There is a lack of client/end user centric focus** on building trust and familiarity with digital media/technology.

KEY LEARNINGS FROM NON-SRLM PROGRAMMES: ADDRESSING THE GAPS

- Community women are trained by **Digital Green** on usage and handling of Pico projectors which are used to disseminate videos on various (non-financial) livelihood aspects such as agriculture, weather and animal husbandry. In addition, women who operate the projectors serve to inspire other women and build their confidence in learning about and adopting technology;

- The **Internet Saathi** programme leverages community participation to educate rural women on digital literacy to enhance skills and livelihood development. Mahila Arthik Vikas Mahamandal (MAVIM) has partnered with the programme to train groups of women under its aegis to use the internet and further impart digital literacy skills to other women in the community; and

- **Hand in Hand's** digital platform facilitates market access and linkages for SHG member entrepreneurs. The application enables SHG members to sell their products to other SHG members through the app thereby increasing the market size for women and opening up channels of cross learning. Use of this application has also encouraged information sharing and percolation between women with high and low literacy levels and between those with and without internet/smartphone connections.

KEY FOCUS AREAS: WHAT REMAINS TO BE ADDRESSED?

- **There is limited or no data sharing by SRLM programmes across ecosystem stakeholders.** Data sharing with credit bureaus and financial institutions can be utilised to generate credit worthiness metrics and improve credit linkages for group members in livelihood development;

- **There is a need for horizontal integration of major SRLM programmes** with associated programmes on livelihood promotion and healthcare. The current lack of convergence among SRLM and non-SRLM programmes may result in duplication of efforts; and

- **There are very few solutions that facilitate scalability of initiatives** as most programmes currently have pockets of innovation that are in preliminary/pilot stages. Focus on building a sustainable revenue model without external support, an important consideration at the time of designing and scaling the programme, is lacking.

SUMMARY: BUILDING LINKAGES

» Some SRLM programmes are attempting to digitise the link to the field by promoting uptake of digital tools by SHG women;

» BC-based initiatives to strengthen financial linkages within the communities receive higher priority than livelihood and market linkages under the phased approach;

» Innovations are small in scale and dependent on context and the programme for replication;

» Only preliminary efforts have been made to build capabilities and form nodal points within communities that can be leveraged to overcome literacy barriers;

» There is a lack of technological bandwidth in SRLM programmes to capture complexities associated with mapping livelihood data;

» There is limited emphasis on use of digital channels of learning to build literacy at the ground level;

» A client/end user centric emphasis on building trust and familiarity with digital mediums/ technology is absent;

» Data sharing by SRLM programmes across ecosystem stakeholders such as credit bureaus and financial institutions is limited;

» There is a need for horizontal integration of major SRLM programmes with associated programmes on livelihood promotion and healthcare; and

» Few solutions for scalability of initiatives are available.

4.4 DIGITAL COMMUNICATION AND LEARNING

Key initiatives from SRLM programmes: What worked?

- **AP SERP** sends out an SMS to group members on the latest financials once data are generated in the MIS. However, readership and assimilation by the right person is low;

- **JSLPS** provides SIM cards (with an internet connection) to Tablet Didis enabling them to send information through SMS and Interactive Voice Response (IVR) which is shared at each group meeting in the village. JSLPS, in partnership with Digital Green, has also facilitated use of tablets and projectors by SHG members for information dissemination on finance, digital literacy and livelihood and skill development; and

- WhatsApp groups of programme heads and SHG members as well as of members are operational in **Chhattisgarh, Tamil Nadu and Jharkhand** enabling quicker communication and troubleshooting channels

Recognising the potential of digitisation in the space of communication and learning to promote the effectiveness of SHGs, JSLPS as well as Chhattisgarh and Tamil Nadu SRLMs have initiated the **introduction of digital tools for effective information dissemination, access to information, capacity building and communication.**

To complement the distribution of tablets under its Tablet Didi programme, JSLPS has provided SIM cards (with an internet connection) to enable the women to send non-financial information (especially related to agriculture) through SMS and IVR. The SIM cards are shared by the master book keeper (who is the main user of the tablet) in each group meeting in the village. Videos portraying stories of successful community women and best practices adopted by other SHGs across the state are circulated on tablets and played for all members during meetings. In addition, JSLPS is currently facilitating use of Pico (handheld) projectors for information dissemination through videos. Community women are trained on usage and handling of the projectors.

JSLPS has financial literacy modules for SHG members; however, the focus is largely on imparting financial and digital literacy to groups rather than increasing reach through digital delivery mechanisms. JSLPS is also in the process of digitising entitlement records on a singular MIS, where SHG member-wise data will be entered and assessed to enable a quick understanding of and access to entitlements of members and groups.

There is a WhatsApp group of SRLM programme managers, Bank Sakhis and bank officials in Chhattisgarh, used to resolve technical challenges and ensure effective and real-time troubleshooting. Similarly, WhatsApp groups of programme heads and SHG members as well as among members exist in Chhattisgarh, Tamil Nadu and Jharkhand that enable effective communication.
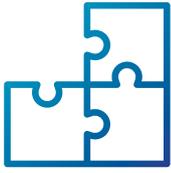
KEY GAPS ACROSS SRLM PROGRAMMES: WHAT'S MISSING?

- SRLM programmes administer large geographies spanning entire states. Current **models of asset management and content creation face key challenges on the scalability and financial sustainability front.** In addition, there is hardly any regular content generation in vernacular languages. Moreover, since most digital tools and applications are available in only select languages, using them for capacity building and training in remote areas where those languages are not commonly spoken will not yield the desired results;

- **Gaps remain in terms of identifying the balance between 'technology and touch'** in effective engagement of the community. While digital platforms are an effective means of communication, access to information and delivery of training content, the human touch is critical in explaining the digital content, answering queries and providing clarifications; and

- **There is limited integration of technology in training and capacity building** of SHPA staff and of staff at VOs, blocks, Cluster Level Federations (CLFs) as well as book-keepers, leaders and members of SHGs. Capacity building currently takes place through trainers rather than digitally.

KEY LEARNINGS FROM NON-SRLM PROGRAMMES: ADDRESSING THE GAPS

- **PRADAN** trains SHG members to use Haqdarshak, an android application that provides information on the eligibility of households for different government programmes. It also provides information on how to apply for these government programmes and documents required to apply. It leverages the CRP/block officer as the information dissemination point. In addition to improving understanding on entitlements, PRADAN has also developed financial literacy modules for SHG members as part of its capacity-building initiatives;

- The **Internet Saathi** programme leverages social networks to educate rural women on digital literacy and facilitate use of the internet. MAVIM is also introducing the Haqdarshak application through the Internet Saathi programme; and

- An e-learning module on financial management and administration of SHG federations has been designed by **Chaitanya Women's Integrated and Synergistic Empowerment (WISE)** for SHPA/federation staff. Chaitanya also conducts evaluation of its e-learning course and provides a completion certificate to participants.

KEY FOCUS AREAS: WHAT REMAINS TO BE ADDRESSED?

- **Digital platforms can be potentially used to convey programme and policy changes.** As NRLM is a dynamic programme, it is imperative to impart information on its iterations to the end user. To enable community participation, reiteration of the value proposition and mitigation of information asymmetry are crucial. Digital media can be effective channels in conveying these dynamic policy and programme changes;

- **Incorporation of core technological components in networking and communication** across and within SHGs on group activities, livelihood advisory, financial and literacy capability assistance to improve efficiency is essential. Integration of technology in horizontal information dissemination can overcome information fragmentation and lack of standardisation cost-effectively; and

- **Segmented approach** – the balance of high and low human touch - is essential for capacity building. Segmentation by age and level (group/member/leader/CRP/book keeper/block official) can determine the level of assistance required.

SUMMARY: DIGITAL COMMUNICATION AND LEARNING

»SRLMs are initiating preliminary steps towards introducing technology to the communication and learning space. However, due to low penetration of smartphones and internet connectivity in many rural areas of operation, use of digital platforms poses a challenge for many SHG programmes;

»Awareness building among SHG members on various financial and non-financial aspects is taking place. However, information dissemination through digital channels such as projectors and tablets is currently limited;

»Initiatives to improve SHG members' access to information are currently only at a pilot or planning phase;

»The focus of capacity building is primarily on imparting financial and digital literacy to groups rather than increasing reach through digital delivery mechanisms;

»Intensive use of technology for digital communication is almost non-existent;

»There is a severe lack of scalability in terms of procurement and maintenance costs of assets and regular content generation in vernacular languages;

»Gaps remain in terms of identifying the balance between 'technology and touch' in effective engagement of the community; and

»There is insufficient integration of technology in training and capacity building of SHPA staff and VO/CLF/block level staff as well as book keepers/leaders and members at the SHG level.

4.5 BUILDING TECHNOLOGY SOLUTION PARTNERSHIPS

Key initiatives from SRLM programmes: What worked?

- **AP SERP's** m-Book-keeping, developed through close interaction with an external TSP, captures near real-time member-level data through its dedicated mobile and web interfaces;

- In-house programme partnerships with TSPs offer highly customisable MIS solutions and faster troubleshooting channels but require significantly higher capacity building (for example, **JSLPS and Swalekha by MicroWare Corp.**); and

- **Nucleus' partnership with Haryana SRLM** has introduced top-up cards to enable a lower reliance on cash to overcome the challenges of connectivity and literacy.

The NRLM approach subscribes to its own internally developed solutions which are **currently not standardised.** There are significant differences in the experiences between states that: **use the NRLM MIS software; have developed their own MIS internally; and have partnered with a private TSP to develop software.** For their respective digital programmes, JSLPS and AP SERP have partnered with external TSPs to develop software while Tamil Nadu and Chhattisgarh SRLMs use software provided by the government/NRLM. On the other hand, Rajasthan SRLM uses software developed by its own in-house software development team. The states that use the NRLM software report time lags in troubleshooting as well slow speed of the portal. Private software partnerships **(as in the case of JSLPS)** provide agencies freedom to incorporate their needs and vision into the software while also ensuring an iterative feedback process and nearly real-time troubleshooting. However, private and in-house models of technology development will fail if the programme officials do not have a vision for data formats and usage of data – this vision is key to establishing on-the-ground connect.
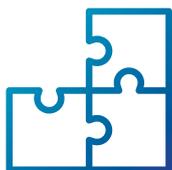
KEY GAPS ACROSS SRLM PROGRAMMES: WHAT'S MISSING?

- There is a **lack of scalable solutions for digitisation of livelihood data.** Programmes face considerable constraints in terms of technology bandwidth in integrating livelihood-based data points to existing software solutions;

- **SRLM programmes currently have few technology partnerships** even among themselves. There is limited cross learning among programmes currently, with JSLPS' attempts to adopt Chhattisgarh's Bank Sakhi model being among the exceptions to this case. Programmes are working in isolated silos;

- **Troubleshooting solutions in real time on the ground are limited** due to a lack of comprehensive partnerships with TSPs. Currently, these channels are fairly indirect where technical issues raised by the block level travel up the chain till addressed. This impedes potential efficiency gains from reduced resolution times; and

- **Innovation gaps remain in creating scalable market linkage solutions** to promote entrepreneurship and skill development. Solutions in this space are in development or nascent stages with lack of a substantial push from programmes to scale up initiatives.

KEY LEARNINGS FROM NON-SRLM PROGRAMMES: ADDRESSING THE GAPS

- Software developed in-house gives **RGMVP** freedom in incorporating its vision into the software while also ensuring an iterative feedback process and near real-time troubleshooting. It is currently in the process of testing solutions for integration of livelihood linkages data at the member level;

- **NABARD's** e-Shakti programme captures **member-level credit and financial data,** thus providing greater granularity to the data. In addition, innovative solutions aimed at creating alternate credit history patterns and data sharing with relevant stakeholders have enhanced credit and financial linkages for members. A multi-lingual user interface further increases the reach and usability of the solution; and

- **Hand in Hand** has leveraged data from SHGs to create an e-marketplace for women entrepreneurs, enabling greater communication and networking and providing sizable markets. Similar models can be integrated with SRLM programmes that have wider reach and considerably larger financial and human resources.

KEY FOCUS AREAS: WHAT REMAINS TO BE ADDRESSED?

- **The lack of a coordinated policy for technology development** across SRLM programmes compromises and duplicates the efforts made by individual programmes to create innovative solutions;

- **Solutions for scalability of initiatives are scarce** as most pockets of innovation are in preliminary/pilot stages. There must be greater focus on incorporating the scale/magnitude arising from the reach of SRLMs; and

- **Renewed emphasis on cross-learning and collaboration between the NRLM and non-NRLM programme solutions** on aspects such as innovative market linkage solutions, capturing of granular member-level financial data digitally and multi-lingual app interfaces would reduce development costs in addition to providing more uniform and integrated solutions across the ecosystem.

SUMMARY: TECHNOLOGY SOLUTION PARTNERSHIPS

» NRLM's MIS is basic and requires extensive time-consuming customisation/additions;

» MIS technologies developed by private vendors are more advanced; however, they require intensive capacity building of SHPA staff;

» The current innovation space with regard to digital technology is restricted:

» JSLPS with Jharkhand SRLM: Tablet Didi programme to collect data on the ground

» Nucleus' partnership with Haryana SRLM to overcome the challenges of connectivity and literacy;

» However, there are still gaps and potential for better solutions:

» Lack of solutions and bandwidth for digitisation of livelihoods programme data;

» Most programmes follow a train-the-trainer approach; however, flow of technical information down the chain is often missed or misconstrued;

» Troubleshooting on the ground is severely limited: technical issues raised by the block level travel up in the chain till addressed;

» On-going communication with programme officials is limited and occurs only in case of software updation/changes and major technical failures; and

» There is great potential for cross-learning between NRLM's software and that developed privately – very few private vendors use the MIS generated data to provide feedback to the implementation agency on the quality of data being collected and adherence to data collection protocols.

4.6 MAPPING EFFICIENCY AND EFFECTIVENESS OF SRLM DIGITISATION PROGRAMMES[24]

We mapped efficiency and effectiveness of all SRLM programmes that were reviewed as part of the study to visually compare and contrast the depth of digitisation initiatives undertaken.[25]

Figure 4: Mapping programme efficiency and effectiveness

Efficiency parameters:
» Level at which data digitisation takes place
» Online/offline uploading
» Training on technology
» Depth and scale of training initiative

Effectiveness has been measured in terms of usage of data on the following parameters:
» Feedback provision
» Monitoring and grading
» Usage of data by stakeholders
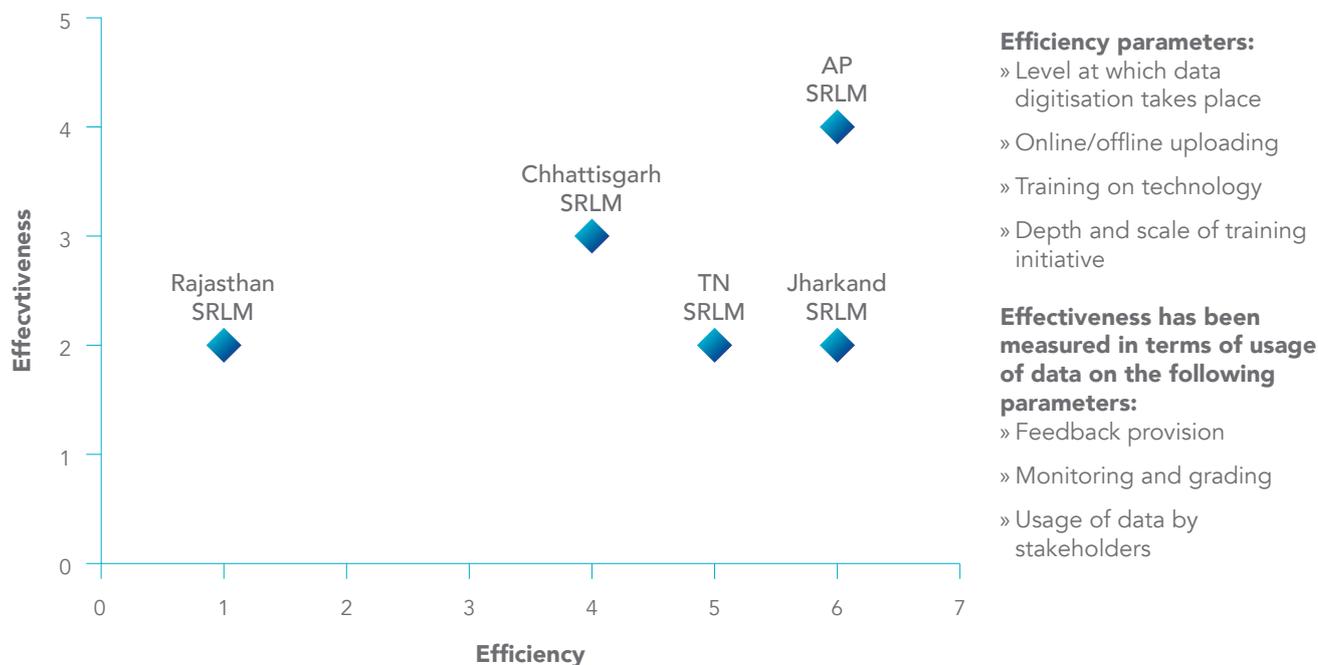
4.6.1 MAPPING EFFICIENCY (X-AXIS)

a) Level of digitisation of data
JSLPS and AP SERP have been given a score of 2 because the data are collected and entered by the village book keeper and group leader, respectively. Chhattisgarh SRLM has scored 1 as the data are entered by CRPs who only digitally enter the data that they get from book keepers, and are trained especially for this purpose (this position came into existence only after the digitisation process started). Tamil Nadu (TN) SRLM scored 1 because, though the CRPs existed before digitisation, they only enter data that they get from animators (generally group leaders/book keepers) into digital devices. On the other hand, Rajasthan SRLM scored 0 as the data are not currently entered into a digital device on the ground but at a block/cluster office.

b) Data uploading timeframe (real-time)
Note: An offline/online feature is the capability to upload data automatically once connectivity is established. Otherwise the data would be uploaded in real time if internet connectivity was reliable.

JSLPS as well as Chhattisgarh, TN and AP SRLMs have been given a score of 1 because the person entering the data into a digital device is able to upload them onto the central server immediately (given there is connectivity). Rajasthan SRLM currently does not have a provision for real-time uploading and hence has scored 0.

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[24] The scoring criterion used for the assessment can be found in Appendix E.
[25] Important Note: This is an assessment of the efficiency and effectiveness of digitisation initiatives in the context of the programme and not a proxy for overall programme effectiveness and efficiency.

c) Technology use in training initiatives

JSLPS, AP and TN SRLMs scored 2 as they have large-scale financial and digital literacy modules for SHG members; all other programmes have scored 1 because of the small scale of financial and digital literacy training or lack of focus on SHG members specifically.

d) Troubleshooting and communication

JSLPS has been given a score of 1 as it uses a call centre (Ajeevika One Touch Centre) that helps to resolve technical issues that Tablet Didis may encounter while using tablets. Chhattisgarh, AP and TN SRLMs have been given 1 as they rely on WhatsApp groups for effective and real-time troubleshooting of challenges faced on the ground. In Chhattisgarh, there are groups of Bank Sakhis with program managers and bank officials. There are also WhatsApp groups of CRPs with program officers in Tamil Nadu and group leaders with the SRLM program officers in AP.

4.6.2 MAPPING EFFECTIVENESS (Y-AXIS)

a) Usage of data by stakeholders

All programmes have been given a score of 0 as the primary users of the data are the organisations themselves; only banks have access to a part of the group data (savings and credit) because of the bank-SHG credit linkages. On the other hand, AP SRLM scores 1 as it makes the data available on a public domain and NABARD scores 1 as it shares member-level credit history data which other programmes do not capture.

b) Feedback mechanism: using collected data to ensure provision of feedback

JSLPS, TN and Rajasthan SRLMs have been given a score of 1 as feedback from the organisation is delivered to their block-level staff (or other intermediaries) on targets and progress of SHGs in their area. Feedback is not given directly to SHGs. On the other hand, AP SRLM has scored 2 as groups have direct access to feedback while Chhattisgarh SRLM has scored 2 because feedback on the performance of Bank Sakhis is delivered directly to them.

c) Automated monitoring and grading

All programmes have scored 1 as the MIS data are used for monitoring SHGs, their performance and progress as well as identifying defunct SHGs and allocating resources accordingly. The MIS also automatically grades SHGs using various parameters.

:5
CONCLUSION

NRLM and its state chapters have made significant strides in the incorporation of technology to facilitate and improve the SHG model's functioning aimed at maximising social impact for target communities. While gaps have been identified in terms of lack of preparedness, convergence issues, dependence on manual systems and limited use of technology across all aspects of SHG functioning, we highlight four key areas[26] of digitisation where SRLM-backed initiatives worked well and have significant potential for scale up and adoption by other promoting agencies within the SHG ecosystem.

a. Digital MIS: The m-book-keeping digital MIS application, developed by AP SERP through an external TSP partnership, improves efficiency and transparency in monitoring SHGs while enabling real-time data collection at the group level. In addition to internal monitoring, use of automated report structures and accessible data formats, AP SERP makes data available publically to enable access by external stakeholders such as credit bureaus and banks, thereby improving financial linkages at the member level.

b. Leveraging Community Participation: JSLPS' Tablet Didi initiative enables greater community participation by training master book keepers in each village through extensive capacity-building and training modules on numeracy, financial literacy and use of digital media. Training of the 'didis' is assisted closely by the TSP partner MicroWare Corp., underlining the close working relationship with the TSP in understanding the local context. In addition, this model also results in the creation of a cadre of CRPs who can act as enablers in the widespread adoption of technology by other women in the community. These women, therefore, have access to opportunities to become digitally literate and engage increasingly for productive purposes.

c. Building Financial Linkages: Chhattisgarh SRLM's flagship Bank Sakhi programme has created a cadre of 254 women (one per every five-six villages) who are trained to act as BCs and use digital tools and technology such as laptops, multi-functional printers, biometric devices, and micro ATMs. In addition to creating a network of financial touch points, the programme leverages community women to mitigate issues of access in remote geographical locations, low trust in the banking system, and inconvenience and costs associated with frequent visits to banks.

d. Innovative Technology Solutions: Top-up cards piloted by the Haryana SRLM and developed by the TSP Nucleus Software Exports Ltd. were introduced to eliminate challenges associated with handling large volumes of cash within the federation and group structures. The solution, in addition to addressing these problems, is an example of a close working relationship of an SRLM with a TSP to leverage technological expertise and bandwidth in tackling pain points that plague the ecosystem.

Although the sector is making progress toward incorporating technology to boost the efficiency of the SHG ecosystem, there are a few key critiques that have implications for the entire ecosystem under three broad themes:

1. A **need for convergence** in terms of the approach to digitisation among stakeholders and focus of the programmes reviewed, including within NRLM structures.
2. A **need for cross-learning** among stakeholders, both at a macro level as well as between SRLM programmes that may be implementing similar initiatives.
3. A **need to promote sustainability** in terms of implementation and financing of current digitisation initiatives in the absence of external grant-based support.

We close this review with relevant recommendations to serve as a roadmap to overcome gaps and on collaborations and partnerships of NRLM and SRLMs with external stakeholders.

[26] For a detailed account of digitisation initiatives, refer to Appendix: A-D.

5.1 NEED FOR CONVERGENCE IN APPROACH

A key gap we identified was that **agencies are working independently, following a work-in-silos approach.** There is little coordination between agencies which leads to duplication of effort in addition to an **inefficient allocation of resources in the implementation of initiatives.** The study identifies two main approaches to partnerships for digitisation. The following section highlights the implications of these approaches and how they translate into a lack of convergence.

5.1.1 PARTNERSHIPS ON TECHNOLOGY DEVELOPMENT

The findings suggest that challenges mentioned above are explicit in internally-developed software solutions as well as those developed through partnerships:

- The nature of partnerships adopted as part of technology development has significant implications for a potential lack of convergence between types of data that can be collected, which further influences use of such data;

- The lack of a coordinated structure for and policy on technology development compromises efforts made by individual programmes by backing them into silos; and

- The lack of uniformity in database access and structures limits efficient use of the captured data for processes such as standardised grading of SHG performance, credit linkages through the banking system, and integration with complementing programmes such as those on capacity building, healthcare and livelihood promotion.

5.1.2 PARTNERSHIPS ON PROGRAMME IMPLEMENTATION

The lack of convergence in the implementation of programmes is evident in the varying approaches of different implementing agencies to partnerships:

- The lack of convergence between actors and stakeholders in the ecosystem results in multiple focal points across digitisation initiatives and their objectives; and

- Partnerships between actors need to be facilitated to follow standardised data formats that allow back-end integration of data to benefit programmes and SHGs, even if the front-end approach is different.

Convergence in approach can be developed through increased synergy among programmes and other actors within the ecosystem. Apex and regulatory bodies must leverage their position to initiate this change among other stakeholders.

5.2 NEED FOR CROSS-LEARNING BETWEEN ECOSYSTEM PLAYERS

An **important channel to enhance convergence among actors and stakeholders is cross learning** -- sharing of experiences, challenges, solutions and learnings. The **second focal gap that the study identifies is that, currently, the level of cross learning across SRLM programmes reviewed is quite low.**

Instances of cross-learning observed in this study are far and few between. JSLPS is currently in the process of piloting Chhattisgarh's successful Bank Sakhi programme by implementing BC network models while Chhattisgarh is leveraging JSLPS's expertise in social mobilisation and capacity building to incorporate best practices into its own state programme. Several of these state-specific programmes came into existence before the current NRLM structures were established. As a result, these programmes function largely independently of the overall NRLM framework.

Additionally, our assessment of these programmes underscores the **existence of immense untapped potential for further cross-learning across programmes and stakeholders in the SHG ecosystem as well as private agencies working in similar contexts, such as microfinance institutions that have achieved efficiency in accessing credit bureau data in real time.** Such learnings can be applied to SHG programmes in the area of credit linkages.

Within the SHG landscape, we identify significant potential for cross learning for SLRM models from member-level data collection practices used in the NABARD model. In terms of communication and value-added services, cross learning can be utilised to adopt SMS integration to enhance transparency, and member value proposition and information dissemination on livelihoods through data collection applications. In terms of capacity building initiatives, SRLMs and large SHG programmes can learn from the experiences of JSLPS' collaboration with Chaitanya WISE in administering e-learning modules on SHG and federation management for SRLM/SHPA staff.

5.3 ARE CURRENT APPROACHES TO DIGITISATION SUSTAINABLE?

Our assessment of current large-scale digitisation initiatives within the SHG landscape in India reveals that these programmes largely function through grant- and expertise-based external support. The third major gap we identified pertains to issues of viability and sustainability in the absence of external support. The findings suggest that long-term sustainability cannot solely be a supply-side push, which includes improvement of digital infrastructure such as reliable internet connectivity and low-cost access to digital devices. It also requires effective community-level participation through customised capacity-building and literacy initiatives and behavioural changes such as greater recognition and awareness of the value proposition and longer term impact of digitisation initiatives.

5.3.1 PROMOTING INSTITUTIONS AND SUSTAINABILITY

The ability of implementing institutions such as SRLMs to continue and scale up digital initiatives is a key factor in determining the sustainability of digitisation initiatives in the ecosystem. Some key challenges in addressing this dimension of sustainability arise from:

• **Lack of convergence among implementing agencies/actors to scale up digitisation initiatives:** This shortcoming in focus leads to a lack of clarity in defining the value proposition from digital initiatives and developing appropriate tools to measure impact of SHG programmes. An absence of coordinated effort is also evident from

the missing synergy in ideation between SRLMs and TSPs in developing technological platforms that contribute to moving towards the goals of these programmes.

• **Ability to finance the cost of digital programmes:** The scale of SHGs under each SRLM programme coupled with the financial constraints faced by promoting agencies points to the pressing need for significantly high investment in devices such as mobile phones or tablets. Adoption and upkeep of these devices would also require larger internal staff/manpower on the ground.

• **Capacity building and resource allocation to facilitate expansion:** Within the promoting agencies, training at all levels of the organisation and keeping the staff motivated, especially the cadres dealing directly with the community, are challenging issues with implications on sustainability. Creating relevant content and models, for instance, finding the right balance between technology and the human touch, for effective capacity building is essential.

• **Lack of SRLM Vision and Technical Constraints:** From a technical point of view, insufficient bandwidth to understand current TSP solutions that deal with the data load, inflexibility of current technology solutions to incorporate future phases of digitisation, for example, livelihood data, as well as unavailability of troubleshooting functionality to deal with technology challenges on the ground, can undermine the sustainability of digitisation initiatives.

5.3.2 COMMUNITY PARTICIPATION AND SUSTAINABILITY

We recognise that challenges in addressing this dimension of sustainability arise from the inability to transmit the value proposition and benefits accrued from digitisation to community members.

"There are no direct benefits that we see for the groups. This digitisation has not changed any process but added one. It is a paid job for us, which is the only benefit to us. Apart from this we know the benefits of it for the ones to whom this data goes." ~ Group Leader, Chhattisgarh SRLM

This lack of awareness causes difficulties in building trust, ownership and accountability within communities on the use of digital

initiatives. It also poses problems in proliferating the willingness and ability to internalise the financing costs associated with digitisation initiatives. Currently, programmes lack focus on enhancing information dissemination and sharing within and amongst communities to enable cross-learning. Learning from the experiences of programmes such as the AP SERP that have successfully **initiated digitisation at the group level is recommended.** In addition to these challenges, we also identified **mitigation of external infrastructural issues, such as intermittent data connectivity and interrupted power supply, that hamper the use of digital media is a crucial step in building confidence** in using digital capabilities at the community level. It is also a prerequisite to ensuring the sustainability of these initiatives. In the current context, we found that digitisation solutions are primarily financed and managed by apex institutions/SHPIs. **We emphasise the need for a self-sustaining model with participation from stakeholders within the SHG landscape.**

5.4 KEY RECOMMENDATIONS

The issues identified through our assessment in the preceding sections are key gaps that need to be bridged to ensure that the digitisation process within the SHG ecosystem is effective. The lack of convergence among stakeholders leads to uncoordinated efforts in multiple directions, resulting in an inefficient allocation of resources with suboptimal outcomes across all focus areas.

- To ensure better convergence, we find that there is a need to improve communication channels across programmes and actors within the ecosystem. Cross learning from the experiences of other programmes and best practices adopted by them is key to acquiring a coordinated approach to digitisation initiatives. The role of apex bodies and regulatory stakeholders is crucial in developing a framework that ensures increased cross learning and thereby convergence.

- Scalability of such efforts requires synergy in approach from both the supply side (promoting agencies) and demand side (community-level participation). From the supply side, issues of sustainability, particularly

the ability to finance the cost of digitisation initiatives, needs resolution. From the demand side, we advocate the need to convey the value proposition of digitisation more effectively to community members. One such approach could be to leverage community participation to identify localised technology resource persons who could then act as touch points to bring about behavioural changes within community members.

- We propose a potential solution to enabling financial sustainability to digitisation initiatives could be the adoption of a subscription-based financing model thereby distributing the burden across all stakeholders that benefit directly from such digitisation initiatives.

The SHG ecosystem's approach to plugging these gaps will determine the success of digitisation initiatives and ensure their sustainability in the long run.

APPENDIX

A. DEEP DIVE- MIS BASED DIGITAL PROGRAMS BY SRLMs

EFFECTS OF DIGITAL MIS- AP SERP

Initially, SERP started with a transitory MIS, into which its staff would enter information. Information collected in this **MIS was basic[27] and there was no cross verification.** Additionally, the data were not used for monitoring. As a result, in 2009-10, SERP initiated use of an e-book-keeping software. The application was not comprehensive as it did not encapsulate many important indicators[28] and several challenges[29] persisted. In 2010, SERP started a new initiative, a web-based platform in which data could be entered in both online/offline modes. However, discrepancies in data started creeping in primarily due to the poor quality of data resulting from an inefficient data entry process.[30]

To overcome these issues, focus shifted to the collection of master and transaction data through the SHGs themselves with assistance from the field staff. For this, assistance was provided by SERP in the form of training and mobile phones for every SHG book keeper. To facilitate a direct interface with UIDAI, SERP moved toward a web-based application. The tool being used since 2010-11 is referred to as m-Book-keeping.[31] The app covers details related to the SHG's profile, member profile,[32] meeting details, attendance, savings (weekly, monthly), loans (internal and external),

repayments, type of economic activity, earnings, training information (by thematic area), financial inclusion, etc. The information is entered by the SHG book keeper[33] in the mobile app that is installed in smartphones provided to them by SERP. Changes in the process post m-Book-keeping include:

KEY BENEFITS FROM ADOPTION OF THE m-BOOK-KEEPING PLATFORM

- Increase in **transparency** as members can access information through SMS;

- **Grading** is automatic and allows for better training allocations and assistance;

- Accountability of the members has also increased as they are aware of performance data monitoring in place;

- Increase in efficiency as SHGs members are able to access information regarding entitlements;

- Reduction of exclusion of social groups as the bank now provides loans to disabled members and those belonging to Schedule Castes/Tribes also, if their group is rated well;

- With a fully digital linkage to Sreenidhi Bank, members can now complete the loan process in 48 hours instead of two or three months earlier. Repayment rates have improved and idle funds have reduced; and

- Data are available in the public domain and can be used by external stakeholders such as academics, government parties, line departments, and so on

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[27] Questions –such as how many members have been mobilised into groups and how many SHGs have been formed were focused on and 28 of such very basic indicators were captured.

[28] It just captured information related to savings, loans and bank linkages.

[29] The pilot was not highly successful also because the offline mode of functioning and struggle to use and maintain the netbook (virus, battery, etc.). Other challenges included poor monitoring, lack of progress reports, low computer literacy, high attrition of book keepers and lack of an audit process.

[30] The data are collected manually in those forms. Once collected these forms come to the VO level/Mandal Samakhya level where they are entered. Since persons who collect the data and who enter them are different, discrepancies in data arise primarily due to the lack of knowledge about the data collected by those who enter the data. Moreover, the data entry process is time consuming. Furthermore, there were challenges in terms of segregation of data across different levels, i.e., SHG, VO, Mandal Samakhya, District Level Samakhya, etc., with significant repercussions for SERP's plan of starting with a mobile application to capture real-time transaction data.

[31] Developed in partnership with Bluefrog Ltd., a TSP. The web application for this has been developed by Tata Consultancy Services (TCS).

[32] Name, age, social situation, logistical situation, names of family members, date of joining the SHG, marital status, livelihood data, ration card information, job card and Aadhaar card information.

[33] Training follows the Training of Trainers (TOT) model, wherein, the national teams train the SERP staff including the CRPs who in turn conduct regular training for the individual SHG book keepers.

CHALLENGES THAT REMAIN TO BE ADDRESSED

- As implementation took place through the government, consistency of leadership vision is a challenge and change in political scenarios affected the drive for digitisation;

- Long-term usage and self-sustainability of models is a challenge; there is potential to link such systems with the users of data through incentives; and

- There are trade-offs between data privacy and transparency as detailed SHG member-level data are available freely online.

## B. DEEP DIVE: LEVERAGING COMMUNITY PARTICIPATION

EFFECTS OF DIGITAL MIS- JSLPS

JLSPS's digital MIS has been in place since the start of NRLM in 2011. However, as data are collected manually on the field and digitised at the block office, the number of **data entry errors remains high and there is back-log between collecting data on the field and transfer to data entry.**

To overcome these challenges, JSLPS, in 2013, rolled out its flagship programme called **'Tablet Didi'** that digitises the MIS data at the ground level. In each village where the programme is operational, the village's master book keeper[34] is trained[35] to enter data for each SHG in a tablet with an internet connection provided by JSLPS. Earlier she entered the data manually in the MIS register. The tablet-based application enables SHG members appointed as master book keepers to enter transaction details of each meeting of each SHG in the village on a digital platform. This is an offline application that allows the Tablet Didis to enter all data in an offline mode so that internet connectivity does not pose a major challenge. The process followed before the Tablet Didi programme is shown in Figure A1.

Figure A1: Process flow before and after *Tablet Didi's* introduction

Pre 'Tablet Didi'

- SHG meeting
- Master book keeper enters data manually for the SHG level in the MIS register - this is done for each SHG in the village
- Sheets from the MIS register are given by the **master book keeper to the cluster coordinator who passes them to the block office**
- Data entry operators in the block office enter data into MIS on computers and upload it to the server

Time taken for book-keeper to enter data – 20 mins

Total time for data digitization: 7 days

Post 'Tablet Didi'

- SHG meeting
- Master book keeper enters data in the MIS on tablet which is then directly uploaded on the server

Time taken for book-keeper to enter data – 5-7 mins

Total time taken for data digitization: 1 day

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[34] Each village in Jharkhand has an SHG member appointed as a master book keeper who enters meeting details and records of each SHG in the village. In villages where this programme has reached, the master book keeper using the tablet for data entry is referred to as Tablet Didi.

[35] The Tablet Didis were trained by the JSLPS MIS officers who themselves were trained by the IT partner, Microware, to use 'Swalekha'.

KEY BENEFITS OF THE TABLET DIDI INITIATIVE

- **Increased efficiency:** Earlier, it took about 20 minutes for the master book keeper to enter all the data[36] in the register. Now the **Tablet Didi enters data in the tablet instead of the register after a group meeting which takes only about five to seven minutes;**.

- **Positive Hawthorne effect:** Group members feel that, since those responsible for allocating funds are monitoring their performance, they must meet and save regularly;

- Information on one platform enables use for monitoring and assessments;

- **Increase in transparency:** Transparent flow of digital information which facilitates efficient allocation of funds;

- **Increase in accuracy:** Since the digital MIS has automated calculation features and logical checks, accurate data are uploaded in the minimum time; and

- Digitisation of data has also led to a **reduction in the time taken to approve funds.[37]**

REMAINING CONSTRAINTS:

- The biggest challenge in implementing the digitisation of MIS is **training** a huge cadre of Tablet Didis;

- Though MIS is fully digitised across the state at the block level, without the Tablet Didi programme, there are **back logs** as data do not reach the data operators on time and are not accurate; and

- From the perspective of the Tablet Didis, though the device is user-friendly, however, the biggest challenge in adopting tablets is the **absence of a local language** since English or Hindi are not fluently used in remote villages of Jharkhand.

C. DEEP DIVE: BUILDING FINANCIAL LINKAGES

BANK SAKHI PROGRAMME BY CHHATTISGARH SRLM

As part of the Bank Sakhi Programme implemented by the Chhattisgarh SRLM, a cadre of women (one per five-six villages) is trained to act as BCs and use digital tools and technology such as laptops, multi-functional printers, biometric devices, and micro ATMs in partnership with the Chhattisgarh Rajya Grameen Bank and IDFC Bank to provide financial services to their communities. The programme aims to address key issues related to access to formal financial institutions. These include: **geographical location** --some regions catered to by SHGs are in extremely remote areas with restricted access to formal financial services; **trust** -- a lack of confidence among community members in banks due to long waiting time and irregular updates to clients from banks ; and **inconvenience** -- low usage of technology results in more frequent visits to banks.

As part of this programme, 254 community women have been trained[38] as Bank Sakhis, responsible for transactions worth over INR 90 crore in 2017-18.[39] The programme has also leveraged technology for communication; in order to provide real-time troubleshooting and assistance on technology, all sakhis, bank staff and SRLM programme staff interact on WhatsApp groups.

The role of the women serving as BCs is to provide their communities with easy access to banking facilities such as opening of bank accounts, cash deposits, cash withdrawal, Aadhaar seeding and linkage and documentation for the kisaan credit cards. They are also trained to use micro ATMs so as to provide access to a range of ATM

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[36] Once a SHG meeting, during which the SHG book keeper maintains five to six books keeping track of attendance, accounts and minutes of the meeting, was over, the master book keeper of the village enters all the relevant data (from the different SHG books) for that meeting in the MIS register.

[37] Before the implementation of a digital MIS, approval of rotating funds would take about four to six months from the time of application by the SHG but now, in the best case scenario, it takes only two days.

[38] Training for the bank sakhi is provided by both SRLM and the partner banks.

[39] This figure was reported by the Chhattisgarh SRLM representative.

[40] Once a SHG meeting, during which the SHG book keeper maintains five to six books keeping track of attendance, accounts and minutes of the meeting, was over, the master book keeper of the village enters all the relevant data (from the different SHG books) for that meeting in the MIS register.

services. Recruiting women[40] who are a part of SHGs themselves and come from similar socioeconomic backgrounds, is a step towards developing trust in the use of technology.

IMPLEMENTATION CHALLENGES
A significant implementation challenge cited by the SRLM is the **lack of support from banks on bearing the cost of procuring and maintaining equipment,** the commission paid to the sakhis and **difficulty in finding women who are literate and comfortable enough about using technology.** It is also difficult to find women in rural areas who are allowed by other household members to work outside the house and interact with others in the village. Apart from technical challenges and mobility constraints, another major challenge is the lack of cash with the BCs/sakhis (due to low confidence of community members to deposit it banks, and direct to bank welfare transfers) thus limiting their ability to cater to multiple villages.

D. DEEP DIVE: TECHNOLOGY SOLUTION SPACE

CASHLESS TOP-UP CARDS BY NUCLEUS AND HARYANA SRLM
Nucelus has developed a prototype[41] that aims to solve a few main challenges faced by SHGs in their financial mechanisms: **lengthy process[42] in cash collection that causes multiple delays and stress; and incapability of SHGs to monitor large cash volumes collected at the VO.**

Once a SHG is formed, an 'acceptance device' is given to the group lenders, and all members have 'prepaid cards' that can be loaded with money at nearby agents. Nucleus follows a cluster approach to enhance BC points that allow loading of cards as well as strengthening of the acceptance ecosystem[43] by providing acceptance devices to merchants and other stakeholders in the cluster area. The group leader collects savings through the SHG

Figure A2: Process flow before and after the inroduction of cashless top-up cards

Pre-digitization
- SHG meeting
- Collections by group leader
- Manual deposit by group leader to VO, and to bank and to group members (inter-lending)

Post-digitization
- Cards given to SHG members, acceptance device to group leaders and VO and enhancing of BC points to load cards
- SHG meeting
- Offline transfer from SHG member cards to group leader device
- Group leader can transfer to i) savings account, ii) loan account (NRLM), iii) VO (VO has an acceptance device) and iv) rotated fund (to members card)

[41] At the time of our interviews, this product was being piloted in partnership with the Haryana SRLM.
[42] Currently, there is a lengthy chain of actors between collections on the field and depositing into the various accounts - cash collection by the group leader, and then group leader passes onto the bank, group leader passes onto the VO and the VO also needs to monitor and collect the incoming cash manually.
[43] Typically, a cluster has a population of 18-20 thousand individuals and 80-100 merchants so that the entire ecosystem is digitised and there is scope for financial activity.

members' prepaid cards and group leaders' acceptance devices; the acceptance devices are 'tap and go' and allow offline collections at the ground level; the group leaders can then initiate transfers upon gaining internet connectivity. The group leader[44] can collect funds and then transfer them as per schedule – they have to refer to a paper/digital MIS to check the accounts. Additionally, any fund transfer to a SHG member through inter-loaning is routed through the member's card as well.

KEY BENEFITS

In addition to reducing the cash burdens, this solution has a **more holistic approach to digitisation and successfully overcomes several issues.** Technology usage is enhanced at the cluster level, provisions are made to overcome lack of digital literacy and smartphone usage (prepaid cards and physical top-up options) as well as internet connectivity issues (through online-offline modes). Overall, the model aims to strengthen the acceptance ecosystem, thereby building a value proposition for the entire chain.

IMPLEMENTATION CHALLENGES

Although a relatively simpler model of technology is incorporated, **the product requires heavy time investments in hand holding.** While the women are numerically literate, **comfort level with and understanding of digital financial concepts such as using a PIN is limited.** Additionally, the TSP reports a socio-cultural barrier in terms of privacy; village members have raised concerns over women stepping out of the house or going to nearby agents to recharge their prepaid cards.

KEY GAPS THAT REMAIN

Whilst the solution makes a significant headway into digitising payments, some components are still **manual,** such as **allocation of funds to the bank (savings and credit), VO and inter-loaning.** There is a need to link such solutions to the transaction MIS, so that the process of division of funds into each bucket is automatic. Additionally, **trust in technology** is a key enabler for the uptake of such products, and efforts in this space must be furthered.

[44] In this case, there are four buckets for the money to go to – savings account, loan account (NRLM), VO and rotation amongst group member depending on who needs the money. The VO also has an acceptance device; group leaders transfer funds to the VO.

E. MAPPING EFFECTIVENESS AND EFFICIENCY OF SRLM PROGRAMME DIGITISATION

The following scoring criteria were adopted to quantify the effectiveness and efficiency matrix to visualise the depth of digitisation efforts by SRLM programmes reviewed under this study.

	Efficiency parameter	Scoring criteria
A.	Level of digitisation of data	0 - It is being entered at an office level (block office/ Community Managed Resource Centre)
		1 - It is being entered by field coordinators who have been created after the digitisation process started
		2 - It is being entered and collected by existing members of the community (women already associated with SHG functioning) using devices such as tablets or mobiles
B.	Data uploading (real-time)	0 - If there is no provision of real-time data uploading usually identified by the presence of an offline/online feature
		1 - If there is an offline/online feature
C1.	Medium of Training of Trainers	0 - If the training has been provided following the TOT model manually
		1 - If the training has been provided following the TOT model digitally
C2.	Financial and digital literacy training at the ground level	0 - No ground-level training
		1 - Training imparted on both financial and digital literacy at a small scale
		2 - Training imparted on both financial and digital literacy at a large scale
D.	Troubleshooting & Communication	0 - Troubleshooting is available at the organisational level
		1 - Troubleshooting happens at the ground level

	Effectiveness parameter	Scoring criteria
A.	Usage of data by stakeholders	0 - If the data are used by the organisation only and banks
		1 - If the data are used or shared with other governmental stakeholders or external organisations or by groups/group members or the depth of the data shared with stakeholders is unique
B.	Feedback mechanism: Using collected data to ensure provision of feedback	0 - No feedback mechanism
		1 - Feedback goes through an intermediary
		2 - Feedback goes to the SHG members
C	Automated monitoring and grading	0 - Monitoring happens but the grading system is not automated OR no grading takes place
		1 - Monitoring happens and the grading system is automated