



Small Loans, Big Impacts: Microfinance Pathway to SDGs, Climate Change and Energy Transitions

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Abstract: The concept of microfinance, pioneered by Professor Muhammad Yunus and SEWA Bank in India, has evolved into a powerful tool for financial inclusion, bridging gaps between economic growth, environmental sustainability and energy transitions. With two primary delivery models *i.e.*, Self-Help Group Bank Linkage Programme (SBLP) and Microfinance Institutions (MFIs), microfinance has significantly impacted rural livelihoods, particularly among women. Strengthened by government schemes like DAY-NRLM, DAY-NULM and *e-shakti* (digitalization of SHGs), microfinance institutions in India have reached an all-time high of 53 million clients with a gross loan portfolio of ₹1,79,855 crores. It utilized government reports (e.g., MoSPI Annual Reports, Periodic Labor Force Survey, Sa-Dhan Microfinance Annual Reports from 2007-08 to 2022-2023), academic literature (peer-reviewed articles, research papers, case studies) and institutional data (reports from microfinance institutions, SHGs, NGOs). Through regression analysis, the study identified links between SHGs credit-linked, loan disbursement, loan outstanding, NPAs and NPA percentage to loan outstanding. CAGR analysis provides a region-wise overview of JLGs promotion and loan disbursement. The analysis of MFIs covered client numbers and loan portfolios, while trend analysis tracked regional changes in microfinance outreach, loan disbursement and repayment rates. The number of SHGs credit-linked surged to 42.96 lakhs from 12.28 lakhs in 2007-2008, marking a 17.07 per cent increase from the previous year. Bank loan disbursements saw a sharp 45.59 per cent growth, reaching ₹145 crores, up from ₹999 crores the previous year. Loans disbursed to SHGs and outstanding loans show a strong correlation (0.991), while decreasing NPAs signal a healthier economy. By analysing data using CAGR, the northern region leads in JLGs promotion with 54.71 per cent growth, followed by the western region at 52.46 per cent, while the north eastern region lags at 21.05 per cent. In loan disbursements, the eastern region tops with 68.15 per cent, followed by the northern region at 64.6 per cent and the north eastern region at 31.1 per cent.

Keywords: JLGs, NABARD, SDGs, SHGs

Agriculture remains a vital pillar of India's economy, contributing 18.3 per cent to the GDP as per the Economic Survey of 2022-23. Despite its significance, the sector faces numerous challenges, with 45.76 per cent of the workforce engaged in agriculture as reported by MoSPI for 2022-23. Notably, women form a substantial part of this workforce, constituting 62.9 per cent as revealed in the Annual Periodic labor Force Survey of 2021-22. However, the majority of farmers are small & marginal, accounting for 86.21 per cent according to the agriculture census of 2015-16, with an average landholding size of just 1.08 hectares. Furthermore, the average, agriculture householding remains low at Rs. 8931 based on the NAFIS report of 2016-17. The data underscores the critical need for policy interventions to support and uplift India's agricultural sector.

The concept was created by *Professor Muhammad Yunus* founder of Grameen bank in Bangladesh and noble price winner in 2006. The Asian Development Bank (2000) defines microfinance as the provision of broad range of services such as savings, deposits, loans, payment services, money transfers and insurance to poor and low income households and their micro-enterprises. This definition of microfinance is not restricted to the below poverty line people but it includes low income households also. The taskforce on

Supportive Policy and Regulatory Framework for Microfinance constituted by NABARD defined microfinance as "the provision of thrift, saving, credit and financial services and products of very small amount to the poor's in rural, semi urban and urban areas for enabling them to raise their income level and improve their standard of living" (Sen 2008).

MATERIAL AND METHODS

The study intends to examine the effectiveness of microfinance on sustainable development goals, climate change and energy transitions. In this we have taken the data of SHGs and JLGs over the years. The data for SHGs has been collected from secondary source through the status of microfinance in India yearly report published by NABARD from 2007-08 to 2022-23 and for JLGs we have collected data from 2014-15 to 2022-23. We have taken different aspects *i.e.*, credit linkage, bank loan disbursed, bank loan outstanding, amount of NPA and percentage of NPA has been taken into account. We have also done the correlation analysis on the above aspects. The use of tables and graphs has been made to depict the data and progress of the various variables taken into account.

The compound growth rate has been calculated using the formula:

CAGR= [(Final value/Initial Value)^{1/Number of years}]-1*100%, Microfinance strengths, weaknesses, opportunities and threats are analysed by using SWOT analysis

RESULTS AND DISCUSSION

Evolution of Microfinance in India

1973 SEWA Bank, 1975 Rural Bank Ordinance, 1982 NABARD, 1990 SIDBI, 1992 SHG Bank Linkage Programme, 1999 Micro credit by SIDBI, 2006 MEDP by NABARD, AP Krishna Crisis, 2009 MFIN, 2010 Malegam Committee, 2011 NBFC MFI's, 2014 Universal Licensing for Bandhan Bank, 2015 MUDRA Bank & LEDP, 2021 BRICS Digital Financial Inclusion Report mentioned project e-shakti (Budampati and Sowmya 2022).

RBI regulates a wide array of financial entities, including commercial banks, RRBs, NABARD, cooperative societies and MFIs encompassing both NBFCs and NGOs. Microfinance in India lacks a unified regulatory framework, leading to a fragmented oversight system. Banks and Non-Banking Financial Companies (NBFCs) while SHGs are overseen by the National Bank for Agriculture and Rural Development (NABARD). On the other hand, cooperatives are governed by the Registrar of Cooperatives Societies (RCS). This disparate regulatory environment creates challenges in ensuring consistent standards and practices across the microfinance sector.

The non-availability of credit and banking facilities to the poor and under privileged segments has always been a major concern. In response, the government and the RBI have implemented several initiatives, including the nationalization of banks in 1969, the perception of priority sector lending norms and the provision of concessional interest rates for the weaker sections of society. To address these challenges, the primary microfinance delivery models have emerged: the self-help group bank linkage programme and microfinance institutions.

Self-Help Group Bank Linkage Programme

A SHG is a democratically formed entity comprising 10-20 individuals from a homogenous class of rural and urban poor who belong to the same community or society and share a common economic goal. In this model, informal SHGs are linked with formal financial institutions to facilitate access to credit. There are three primary methods of providing loans: Model I- SHGs are both formed and financed by banks; Model II- SHGs are formed by agencies other than banks but receive direct financing from banks and model III- SHGs financed by banks through other agencies acting as financial intermediaries. This structure enables broader financial inclusion and support for economically marginalized groups.

As of March 31, 2022, information on 12.74 lakh self-help groups (SHGs) comprising 146 lakh members from over 1.73 lakh villages in 281 districts has been digitized under Project e-shakti as shown in Table 1. Additionally, starting July 1, 2021, data from 8.68 lakh SHGs in 130 districts across 15 states and one union territory is being updated monthly under a focused approach. The project has led to an improvement in credit linkages with banks. Before E-Shakti, 4.92 lakhs (or 39%) of digitized groups had credit linkages, but as of March 31, 2022, that number has increased to 7.17 lakh (or 56%) post e-*shakti* (Sarawagi and Singh 2024). SHG members also receive SMS alerts on their banking transactions in local languages, which has helped boost women's confidence in these groups. This demonstrates the success of digitization in SHGs, as well as their enhanced access to financial services. The programme was crucial in reducing SHGs' reliance on informal sources of financing.

Table 2 and 3 shows that the no. of SHGs credit linked, loan disbursed, loan outstanding, and the amount of loan are significantly correlated to each other, indicating that as the no. of SHGs credit linked increases, loan disbursed to them also increases and so does the increase in loan outstanding and amount of NPA. All these variables were highly significant ($P < 0.01$, 2 tailed). The highest correlation is between loan disbursed and loan outstanding (0.991), which is attributable to the fact that as the loan disbursement increases, there is a corresponding increase in loan outstanding because of various reasons such as accumulated interest, longer loan tenures as new borrowers are added, delayed repayments and roll-over of existing loans. The correlation between the number of SHGs credit linked and loans disbursed and loans outstanding against SHGs is also very high (0.969 & 0.969, respectively). The reason could be the increase in the number of SHGs credit linkage due to digitization leading to the increase in demand for loans, thus, a higher volume of loan disbursement and loan outstanding. The percentage of NPA is negatively correlated to other factors because the amount of all other

Table 1. Digitalization of microfinance (*e-shakti*)

Year	Districts covered	Groups covered (in lakhs)
31.03.2016	2	0.08
31.03.2017	25	1.28
31.03.2018	100	3.49
31.03.2019	100	4.34
31.03.2020	254	6.44
31.03.2021	281	12.33
31.03.2022	281	12.74

factors considered was increasing due to the implementation of project e-Shakti except for the percentage of NPA which was decreasing and which is a good indicator.

Aajeevika-Deendayal Antodaya Yojana- National Rural Livelihood Mission (DAY-NRLM)

NRLM supported by world bank, launched on 3rd June 2011 to provide sharper focus & momentum for poverty reduction as also for achieving the Millennium Development Goals (MDG) by 2015 was renamed Deendayal Antayodaya Yojna-National Rural Livelihoods Mission (DAY-NRLM) w.e.f. November 2015. Components of Financial Inclusion are Interest subvention, SHG members as BC agents (BC Sakhis), Financial Literacy for SHGs (SAKSHAM centres), Digitalisation of SHG transactions (LoKOS App).

Deendayal Antodaya yojana- National Urban Livelihoods mission (DAY-NULM)

Government of India, Ministry of Housing & Urban Poverty Alleviation (MoHUPA), restructured the erstwhile Sawarna Jayanti Rozgar Yojna (SJSRY) & launched the National

Urban Livelihoods Mission (NULM) in 2013 in all district headquarters (irrespective of population) and all the cities with population of 1 lakh or more. In 2016, it is renamed as Deendayal Antyodaya Yojana- National Urban Livelihoods Mission (DAY-NULM) by GoI.

Microfinance Institutions

The Microfinance Institution (MFI) model is globally recognized, whereas SHG-BLP is uniquely Indian. MFIs provide financial services to individuals or groups like SHGs and institutions lend through the concept of Joint Liability Groups (JLGs). A JLG is an informal group of 5-10 members who come together to avail bank loans, either individually or through groups mechanism against a mutual guarantee. MFIs can exist in various forms including trusts registered under the Indian Trust act, 1882/ Public trust act, 1920; societies registered under the Societies Registration Act, 1860; Cooperatives registered under the Mutual Aided Cooperative Societies Act of the states; non-banking financial companies (NBFC)- MFIs registered under Section 25 of the companies Act, 1956 and NBFCs registered with the

Table 2. Factors affecting SHGs

Year	No. of SHGs credit linked (in lakhs)	Bank loan disbursed to SHGs (Rs. in crores)	Bank loan outstanding against SHGs (Rs. in crores)	Amount of NPA of SHGs (Rs. in crores)	Percentage of NPA to the total loan outstanding against SHG
2007-08	12.28	8849.26	16999.91	422.93	2.49
2008-09	16.1	12253.51	22679.85	625.86	2.76
2009-10	15.87	14453.3	28038.28	823.04	2.94
2010-11	11.96	14547.73	31221.17	1474.11	4.72
2011-12	11.48	16534.77	36340	2212.73	6.09
2012-13	12.2	20585.36	39375.3	2786.93	7.08
2013-14	13.66	24017.36	42927.52	2932.67	6.83
2014-15	16.26	27582.31	51545.46	3814.71	7.40
2015-16	18.32	37286.9	57119.23	3686.23	6.45
2016-17	18.98	38781.16	61581.3	4002.19	6.50
2017-18	22.61	47185.88	75598.45	4628.06	6.12
2018-19	26.98	58317.63	87098.15	4524.01	5.19
2019-20	31.46	77659.35	108075.1	5321.7	4.92
2020-21	28.87	58070.68	103289.7	4889.21	4.73
2021-22	33.98	99729.23	151051.3	5743.71	3.80
2022-23	42.96	145200.2	188078.8	5249.34	2.79

Source: Compiled from Status of Microfinance report NABARD

Table 3. Correlation among the factors considered

Factors	No. of SHGs credit linked	Loan disbursed to SHGs	Loan outstanding against SHGs	Amount of NPA
No. of SHGs credit linked	1			
Loan disbursed to SHGs	.969**	1		
Loan outstanding against SHGs	.969**	.991**	1	
Amount of NPA	.793**	.780**	.843**	1
Percentage of NPA to total loan outstanding	-0.332	-0.249	-0.205	0.283

**correlation is significant at the .01 level (2-tailed)

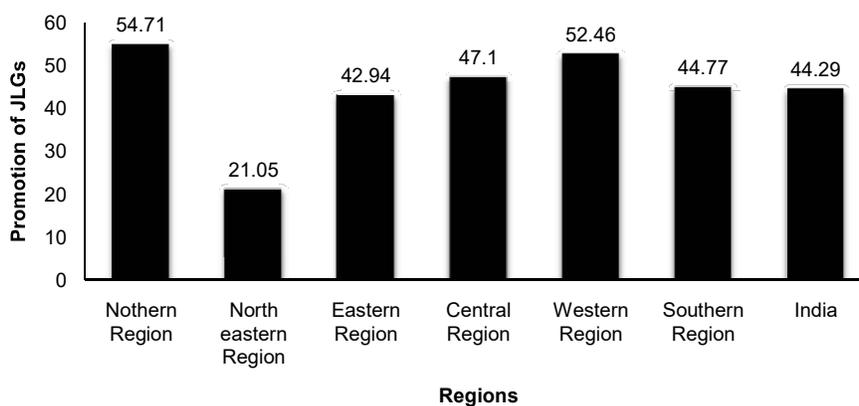
reserve Bank. This diverse framework facilitates wider financial inclusion and support for economically marginalized communities (Myyizhi 2021).

Table 4 shows the latest data for 2022-23 reveals a significant rise in the promotion of Joint liability Groups (JLGs) totalling 257.92 lakh, marking a 37 per cent increase from the previous year's 187.92 lakh. Region-wise, the

southern leads with the 31 per cent share, followed by eastern region at 30 per cent, central at 17 per cent, western at 12 per cent, northern at 9 per cent and north eastern at 2 per cent. This surge highlights the growing adoption of JLGs across India.

Table 5 shows latest data for 2022-23 reveals a significant rise in the loan disbursement to Joint liability Groups (JLGs)

Region-wise promotion of JLGs in India using CAGR (%) from 2011-12 to 2022-23



Region-wise distribution of loan disbursed to JLGs in India using CAGR (%) from 2011-12 to 2022-23

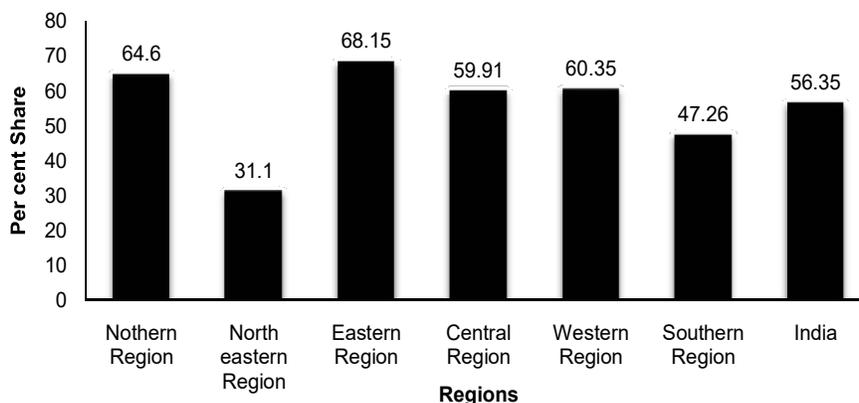


Table 4. Number of JLGs promoted

Year	No. of JLGs promoted (in lakhs)
2014-15	11.28
2015-16	17.52
2016-17	24.53
2017-18	34.53
2018-19	50.76
2019-20	92.56
2020-21	133.83
2021-22	187.92
2022-23	257.92

Source: Compiled from status of microfinance annual report by NABARD

Table 5. Amount of loan disbursed to JLGs

Year	Loan disbursed to JLGs (in crores)
2017-15	4414
2015-16	6161
2016-17	9511
2017-18	13955
2018-19	71750
2019-20	154853
2020-21	213614
2021-22	325938
2022-23	459310

totalling Rs. 459310 crores, marking a 41 per cent increase from the previous year's Rs. 325938 crores. Region-wise, the eastern region with the 36 per cent share, followed by southern region at 32 per cent, central at 14 per cent, western at 9 per cent, northern at 8 per cent and north eastern at 1 per cent. This surge highlights the loan disbursement to different JLGs across India.

Other services provided by Microfinance Institutions

1. MFI and Livelihood Interventions

ODISHA- Organization for Development of International Social & Health Action

CASHPOR Micro credit

Socio-economic Action Trust (SEAT)

Muthoot Microfin Ltd.

IIFL Samasta Finance Ltd.

2. MFIs and General Education Interventions

Satin Credit care Network Ltd.

Annapurna Mahila Coop credit Society Ltd.

REPCO Microfinance Ltd.

Digamber Capfin Ltd.

SAVE Microfinance Pvt Ltd.

3. MFI and preventive Healthcare Initiatives

SATYA Microcapital Ltd.

ASA International India Microfinance Ltd.

ODISHA

Muthoot Microfin Ltd.

Sonata Finance Pvt. Ltd.

Current Status and Growth of Microfinance in India

In 2023, a total of 213 Microfinance Institutions (MFIs) were reported, boasting a branch network of 25,790 and reaching all time high of 53 million clients with a gross portfolio of Rs. 1,79,855 crore, including a managed portfolio of Rs. 58,984 crore (Kumar 2015). According to Sa Dhan Bharat Microfinance Annual Report 2022-23, these MFIs cover 28 states, 5 union Territories and 646 districts serving 5.32 crore customers. In terms of geographical spread, Ashirvad Financial Services operated across 25 states helping in achieve SDG 10 (Reduced inequalities), surpassing Satin Microfinance's 24 states and Satya Microfinance's 22 states. Credit Access Grameen Ltd. Leads in loan portfolio with Rs. 21,031 crore supports SDG 1 (No poverty) by offering microloans that enable individuals to start or expand small businesses generating income and reduce poverty, followed by Shri KshethraDharmasthala Rural Development Project (SKDRDP) at Rs. 19,027 crore and IIFL Samasta Ltd. at Rs. 10,552 crore contributing to SDG 8 (Decent work and economic growth). The share of rural clientele notably increased during COVID-19 period, reflecting a shift in the microfinance landscape.

SWOT (Strengths, Weaknesses, Opportunities and threats) Analysis

Strengths

- Providing saving & credit facilities to poor and unreached people.
- Reduced dependence of poor people on informal money-lenders and non-institutional sources.
- Employment & income generation through micro-enterprises.
- Enhancing rural economic productivity through easy finances.
- Building up support system through non-financial assistance like technical support, skill development, training etc.
- Establishing the linkages between banks and marginalized citizens especially women.

Weaknesses

- Regional disparity in disbursement of credit across the country.
- High administrative cost.
- High repayment structure/high rate of interest.
- Multiple lending and over-indebtedness.
- Indiscipline among the borrowers for e.g. Dropout and migration of group members.
- No proper regulatory body & legal structure to check working of MFIs.
- Non-transparent pricing.
- Fight among MFIs to grab established markets.
- Inhuman behaviour of recovery of loans sometimes led to tensions even suicides.

Threats

- Cutthroat competition among MFIs.
- MFIs vested interests like to grab the market lead to non-required lending even.
- Loans being provided for unproductive or unfeasible projects.
- Multiple loans to the same borrower lead to the same borrower lead to un recovery of loans.
- No use of SHGs peer pressure group for repayment.
- Opportunities
- Large number of people & areas in India are still uncovered.
- Various regions still untapped.
- Government & banks support to the programme.
- Range of services can be increased from financial to non-financial and others.
- Members can be helped to invest in asset creation, diversify their occupation & improve their risk bearing capacities.

Linkage between Microfinance and Sustainable Development Goals

Both in developed and developing countries, the agenda 2030 for sustainable development aims to end poverty, protect the planet and ensure all people enjoy peace and prosperity. India which hosted the G20 presidency for the first time in 2022, has intensified its focus in sustainable Development Goals (SDGs) through the digital transformation, a low-carbon economic model and a women led governance emphasizing gender equality and women's empowerment. According to global Multidimensional poverty Index 2022, 415 million people in India exited poverty between 2005-06 and 2019-21, indicating the possibility of achieving the SDG target (Vishwakarma 2024). Efforts to reduce poverty, empower women, assist vulnerable groups and improve the standard of living are building resilience to environmental, social and economic shocks and disasters as highlighted by the NatCat Insurance Index. Moreover, the RBI employs 5 C's approach- content, capacity, community, communication and collaboration to spread financial literacy with Financial Literacy Centres (FLCs) conducting 110,081 programs in 2022-23. Financial Literacy week in February 2023 focussed on themes such as saving, planning, budgeting and the responsible use of digital financial services. Programs like "Skilling and Financial Literacy Workshops" aim to educate rural populations. Additionally, gender equality initiatives, as reported by Micrometer, show that 99 per cent of loans disbursed to women were through cashless modes, with cashless collections increasing from 9 per cent to 11 per cent between Q3 FY21-22 and Q3 FY 22-23. These efforts underscore the importance of climate change action and energy transition in achieving the SDGs. Under SDG 5 (Clean water & Sanitation), India has made significant strides with the construction of over 100 million toilets under the "Swachh Bharat Mission" and 120 million water supply connections through the "Jal Jeevan Mission," driving demand for water and sanitation loans. An awareness and income levels rise, climate-resilient structures such as rainwater harvesting systems, soak pits and all season accessible toilets have been established. Organizations like Nabsamruddhi (Nab Sam), DBS Bank and WaterEquity have played a pivotal role in providing dedicated capital for WASH (Water, Sanitation and Hygiene) lending. In alignment with SDG 8 (Decent Work and Economic Growth) a study by NCAER titled "Present and Potential Contribution of Microfinance to India's Economy" revealed that the microfinance sector created about 1028 crores jobs, with

NBFC-MFIs contributing 38.54 lakh jobs, significantly boosting employment generation. These efforts underscore India's commitment to climate change action and energy transitions, fostering sustainable growth and resilience.

CONCLUSION

Microfinance may not be a magic bullet but has emerged as a powerful tool, offering a wide range of financial and non-financial services, creating employment as a powerful, offering a wide range financial and non-financial services, creating employment opportunities and reducing gender and geographical disparities. Despite challenges such as slow graduation progress of SHG members, poor group functioning and member dropouts, initiatives like the e-shakti project have significantly increased SHG access to credit. This led to higher outstanding loan amounts and a decrease in the NPA growth rate, with the percentage of NPA to the total SHG loans outstanding also decreasing. Microfinance's impact spans several SDGs, creating domino effect that empowers people, reduces inequality and fosters sustainable economic growth. However, a lack of awareness about entrepreneurial benefits and reluctance to take risks have sometimes limited support for capable individual investing in start-ups. Addressing regional disparities can be achieved by promoting microenterprises through the Skill Upgradation for Women (m-Suwidha) initiative, emphasizing a 'vocal for local' approach. Expanding credit guarantees to SHGs and JLGs, fostering climate resilient microfinance and introducing micro pensions on a contribution basis are key steps forward. Additionally, enhancing skill development and building a digital ecosystem for SHGs will further drive sustainable growth and empower marginalized communities.

REFERENCES

- Sarawagi A and Singh MS 2024. Empowering women: E-Shakti's impact on self-help groups digitalization and financial inclusion in India. *Asian Journal of Economics, Business and Accounting* **24**: 192-205.
- Vishwakarma et al 2024. Achieving sustainable development goals through microfinance: An incremental step towards growth. *European Economic Letters* **14**: 2323-5233.
- Kumar et al 2015. An overview of microfinance in India. *Abhinav National Monthly Referred Journal of Research in Commerce and management* **4**:19-26.
- Budampati Sowmya 2022. Impact of microfinance in the empowerment of women workers: A case study. *Dr. Harisingh Gour University* **82**: 76-90
- Myvizhi et al 2021. Growth analysis of joint Liability Groups (JLGs) in India-with special reference to Tamil Nadu. *Asian Journal of Agricultural Extension, Economics and Sociology* **39**: 347-356.