Sa-Dhan
Fostering Inclusive Impact Finance

10 YEARS AS SRO FOR MFIS

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SUSTAIN+

FROM READINESS TO RESILIENCE: MITIGATING CLIMATE CHANGE THROUGH FINANCIAL PRODUCTS & SERVICES

Home to more than 1.4 billion people, about one-fifth of the global population, India is facing one of the worst man-made global crises in the form of climate change. Global warming, erratic rainfall patterns, heatwaves, rising sea levels, prolonged droughts, and devastating floods are increasingly threatening the country's food security, water resources, public health, and economic stability, disproportionately impacting the most vulnerable communities.

India's economy is highly dependent on nature and extremely vulnerable to climate risks. The climate change impacts on agriculture are profound and affect the lives and livelihoods of small and marginal farmers. **The Climate Transparency Report 2022** highlighted the precarious situation of small and marginal farmers, who comprise 85% of India's farmer population, and are particularly vulnerable due to decreased yields and agricultural losses, attributable to climate change events. Climate change can severely affect the yields of many agricultural products, as well as livestock and aquaculture, compromising the country's food and nutritional security. *However, this grim situation has a silver lining: climate-smart agriculture technologies* integrated with sustainable agricultural practices are equipping farmers with the necessary means to combat climate change. Yet, the adoption of climate-smart agriculture technologies among smallholders is hindered by poor credit access, high costs, and risk perceptions. Inclusive finance, capacity building, and policy support can scale climate resilience practices and adaptation at the farmers' level. Globally, there are **multiple examples** of leveraging microfinance as a tool to promote climate adaptation through green energy products, concessional finance, financing climate-resilient technologies, training and capacity building.

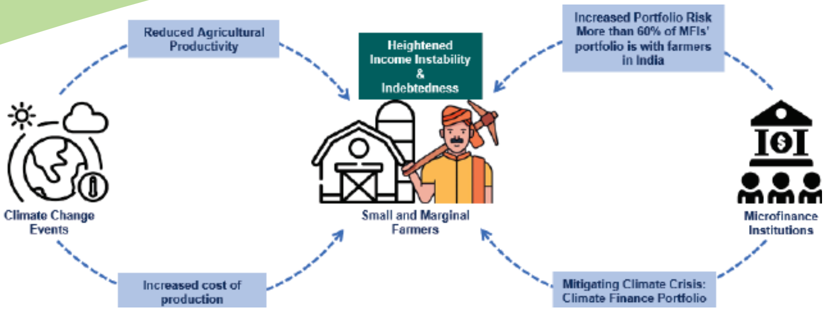


Figure 1: Nexus of Climate Change, Agriculture and Microfinance

Initiatives promoting climate adaptation

To mitigate climate risks and enhance livelihoods, Microfinance Institutions (MFIs) in India are empowering small and marginal farmers through financial support and awareness generation. Data from Sa-Dhan indicates that over 60% of microfinance loans are used for agriculture and allied activities. Therefore, addressing climate adaptation is critical to ensuring the resilience and vibrancy of the microfinance sector. Under the Indo-German development cooperation project 'Climate Adaptation and Finance in Rural India (CAFRI II) commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, **Sa-Dhan and Sustain Plus Energy Foundation** have collaborated for the project - **"Expanding the reach of climate resilient technologies for agriculture through improved financial access"** in India. This initiative aims to provide credit for the adoption of climate-smart agriculture technologies, promoting sustainable agriculture and allied livelihoods. The initiative enables financial institutions to expand their lending for climate-smart agriculture technologies.

The initiative's approach to promoting climate-smart agriculture technologies is grounded in an evidence-based approach and focused on scaling proven solutions that have undergone rigorous field trials. More than 40 climate-smart agriculture technologies were field-tested. Subsequently, 10 were chosen for scaling based on their economic returns, adaptation potential, and suitability for small-scale farmers. Sa-Dhan has been working to scale affordable credit products for climate-smart agriculture technologies nationwide. The initiative has immensely benefited from the government's efforts in promoting start-ups and the evolving policy and regulatory ecosystem in the country. India's startup ecosystem, the world's third-largest, thrives due to supportive government policies like Startup India, Fund of Funds, Atal Innovation Mission, and continued reforms.

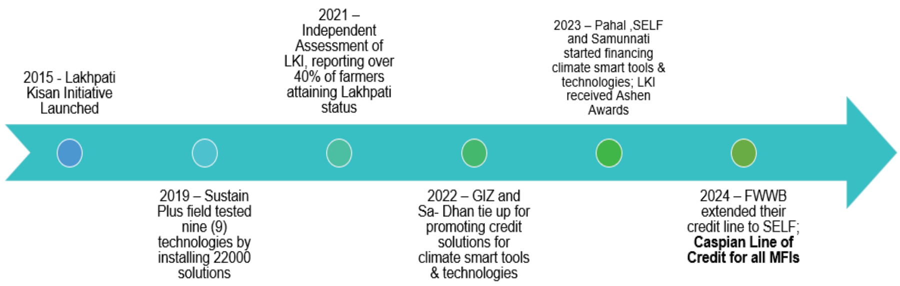


Figure 2 : Evolution of the Initiative

The foundational work for this initiative was done during the Lakhpati Kisan Initiative (LKI) from 2015 -2021 led by CInI with support from Tata Trusts. Through the rigorous field trials of climate-smart agriculture technologies, such as drip irrigation and mulching, various kinds of nurseries, as well as other agricultural-related initiatives, **farmers achieved a 2.5 times growth in their income**. About 40% of the targeted farmers attained the Lakhpati status, symbolising the project's success. Additionally, the Sustain Plus Energy Foundation field-tested various climate-smart agriculture technologies by installing more than 22,000 units of them across the country. Leveraging this evidence base, Sa-Dhan and GIZ tied up in 2022 to promote wider adoption of climate-smart agriculture technologies. And soon, an additional suite of climate-smart agriculture technologies was piloted with

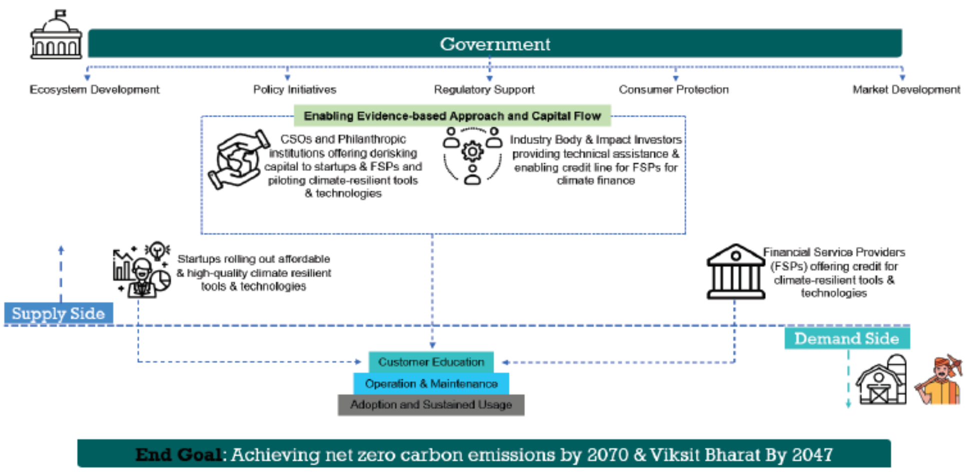


Figure 3 : Evolution of the Initiative

MFIs, such as Pahal Financial Private Limited, Midland Microfin Limited, and Sampada Financial Services Private Limited, further strengthening the evidence base for what climate-smart agriculture technologies work in the Indian context and highlighting the critical role MFIs can play in climate adaptation. **In 2024, Caspian Debt launched India's first credit line for MFIs to finance these tools, marking a breakthrough in climate-smart lending.** NABSAMRUDDHI Finance Limited signed a 4-way MoU with Sa-Dhan, Sustain Plus, and GIZ India to scale financing for climate-smart agriculture technologies, and the initiative continues engaging other financiers to expand support.

The exhibit above showcases Sa-Dhan's approach to climate finance and highlights its endeavours with various key stakeholders on the supply and demand sides. The initiative aims to create a financial ecosystem that offers affordable credit for climate-smart agriculture technologies to small and marginal farmers nationwide.

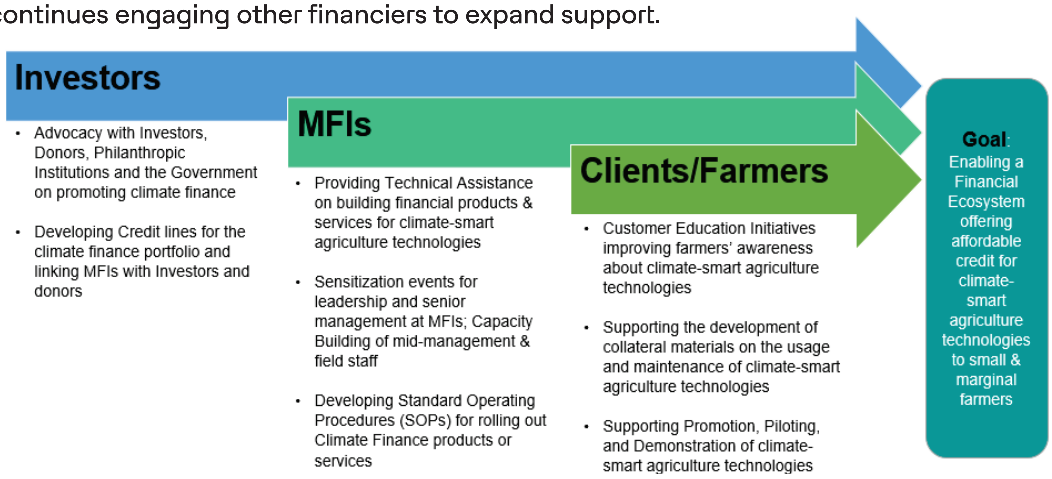


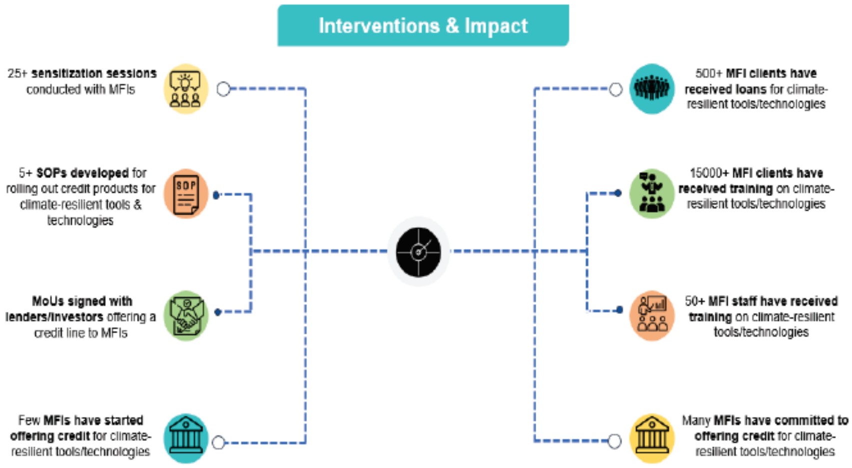
Figure 4 : Sa-Dhan's approach to Climate Finance

Through these initiatives, Sa-Dhan is working across Sustainable Development Goals (SDGs), especially across SDG1 - No Poverty, SDG2 - Zero Hunger, SDG13 – Climate Action and SDG14 Life on Land.

Technologies Promoted

Technology	Description
Moisture Retention	
Drip Irrigation	Delivers water directly to plant roots, reducing evaporation and water waste.
Hydrogel	A polymer-based soil additive that improves moisture retention in arid regions.
Energy	
Portable Solar Pumps	Solar-powered irrigation system reducing dependency on fossil fuels and grid electricity.
Biodigesters	Convert organic waste into clean biogas for cooking or farm operations, and produce organic manure.
Poultry Shed Lighting	Energy-efficient lighting that enhances livestock well-being and reduces energy costs
Pesticides and Crop Protection	
Wheel-Mounted Boom Sprayer	Ensures uniform and efficient pesticide application, minimizing chemical waste and exposure
Mivipro	Organic pest repellent that also promotes crop growth, reducing reliance on synthetic chemicals.

Catalyzing Change



Outcomes on small and marginal farmers

Key outcomes at the farmers' level are: 1) Increased productivity; 2) Improved resilience to climate change-induced patterns such as erratic rainfall, pest attacks, etc, and 3) Cost Savings and an increase in income. Thus, the adoption of climate-resilient technologies has significantly improved the livelihoods and economically empowered small and marginal farmers, aligning closely with national and regional initiatives. These outcomes not only contribute to climate adaptation but also directly support the economic empowerment goals of transforming smallholder farmers into Lakhpati (prosperous) farmers.

"Any farmer in their right mind will buy the biodigester. It makes complete economic sense. I was buying 10-12 LPG cylinders in a year, and they cost 1000-1100 per cylinder, plus the cost of going to the market. The product has 10 10-year warranty, and I save the cost in the first year itself."

- Farid Jahangir, Lalawada, Gujarat

Having used the Khethworks pump since 2020, I find it a lot easier to use because it does not have any recurring costs. It's a one-time investment and eliminates the need to search for kerosene. Earlier, I used to spend about 10,000 on Kerosene to earn Rs. 20,000. But with the Khethworks solar pump, the entire Rs. 20,000 will be the profit."

- Manoj, Khunti, Jharkhand

"Through the Drip system, the soil moisture increased, and the fruit size was bigger than earlier. Now, fruits are not cracking at the fruiting stage due to uniform soil moisture, and fruits have a good demand in the market. So, this helped to increase our income by 2.50 to 3.00 Lakh per season."

- Sanjeewani Narwade, Maharashtra

Severe pests were controlled after using Herboliv+ from Mivipro. Additionally, the growth of watermelon was also very good and greenish. Thanks to Herboliv+ from Mivipro

- Hanumanta, Chikmanglur, Karnataka

What lies ahead: Learnings and Emerging Opportunities

The convergence of climate finance and microfinance presents a transformative opportunity to empower India's rural communities while contributing to climate adaptation and mitigation. MFIs' grassroots presence, financial inclusion focus, and trusted relationships with rural communities make them ideal intermediaries for delivering climate-resilient solutions at scale. Sa-Dhan's learning from the current collaboration falls into two broad categories: 1) What MFIs can offer additionally, and 2) Opportunities for strengthening the Supply Side.

What MFIs can offer additionally?

Green Loans: Expanding access to customised credit products for purchasing climate-smart agriculture technologies such as solar irrigation pumps, drip irrigation systems, bio-digesters, and weather-resilient seeds.

Bundled Solutions: Combining loans with access to clean technologies, training, and after-sales services to drive adoption and impact. Maintenance and reverse logistics were identified as key issues hindering the wider uptake of the products.

Risk Mitigation Tools: Facilitating access to micro-insurance products that protect against crop failure, livestock loss, or climate shocks.

Climate Literacy and Advisory: MFIs can offer weather-based advisory services and promote sustainable farming practices by partnering with Agri-tech or climate advisory platforms.

Opportunities for strengthening the Supply Side

Catalytic Capital: Philanthropic or public funding is critical to de-risk private investments into MFI-led green portfolios.

Green Credit Lines: Development finance institutions (DFIs) can establish low-interest climate credit lines that MFIs can on-lend to end-users.

Results-Based Financing (RBF): Governments and donors can offer incentives for MFIs based on climate outcomes achieved, such as energy saved or emissions avoided, convenience and efficiency gains.

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