



Financing Climate-Smart Agriculture

**Five climate-resilient technologies and the
microfinance institutions financing them.**

Developed with Sa-Dhan under the GIZ-CAFRI programme.

This is an interactive edition of Financing Climate-Smart Agriculture
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Introduction



India's agricultural sector is increasingly vulnerable to climate-induced stresses — erratic rainfall, heatwaves, prolonged droughts and devastating floods — that threaten food security and disproportionately impact small and marginal farmers who comprise over 90% of the country's agrarian population. Climate-smart agriculture technologies offer a pathway to combat these risks, but their adoption amongst smallholders is hindered by poor credit access, high upfront costs and risk perceptions.

This is where Microfinance Institutions (MFIs) are playing an important role. They extend financial support and awareness to small and marginal farmers. **Over 60% of microfinance loans in India are used for agriculture and allied activities**, making MFIs an important channel for climate adaptation.

Under the Indo-German project Climate Adaptation, Resilience and Climate Finance in Rural India (CAFRI) commissioned by Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Sa-Dhan & Sustain Plus energy foundation have collaborated to expand the reach of climate-resilient technologies through

improved financial access. The initiative by Sa-Dhan, GIZ & Sustain plus Energy Foundation started in 2022 building on the the evidence base of the Lakhpati Kisan Initiative(2015-2021), where farmers achieved a 2.5 times growth in income and have been benefitted from it. Subsequent to Lakhpati Kisan, Sustain plus energy foundation replicated field trials of the technologies, testing at least 22000 units.

Through this CAFRI initiative, Sa-Dhan & GIZ and Sustain Plus have improved financial access to climate-smart technologies, with **more than 40 technologies field-tested and 10 selected for scaling** based on their economic returns, adaptation potential and suitability for small-scale farmers. 2030 WRG , with their enhanced enabling of subsidies for drip irrigation in Uttar Pradesh, became a significant partner of the programme. The initiative has also expanded engagement with financial institutions and other stakeholders such as 2030 WRG, Agri3, HSBC, Rabo Foundation and so on.

This compendium presents the five climate-resilient technologies developed in collaboration with Sa-Dhan under the GIZ-CAFRI programme. It also shines a light on the microfinance institutions financing them and the ecosystem they are a part of.



Climate change is increasingly impacting the lives of people especially underprivileged people, small and marginal farmers and the weaker sections of society. It also affects their livelihoods very badly. Supporting them with appropriate income generating activities resilient to climate shocks with suitable financial products is our climate-resilience agenda. At Sa-Dhan, we believe that microfinance institutions, with their deep grassroots presence and trusted relationships with underserved communities, can play a critical role in taking climate-resilient financial products to scale, helping these communities tide over such calamities.

Our work has focused mainly on bridging the gap between climate-resilient technologies and affordable financial access by working with microfinance institutions, technology providers, financial institutions and development partners. Through this initiative of supporting solutions such as micro-irrigation, biodigesters, solar pumps and other climate-smart technologies, we aim to enable farmers to reduce vulnerability to climate shocks, improve productivity and strengthen their livelihoods.

Going forward, our focus is on building a stronger ecosystem for climate finance — one that combines appropriate financial products, risk-sharing mechanisms, capacity building, technology, insurance and catalytic capital. We see this convergence of climate action and financial inclusion as an important pathway towards building more resilient rural communities and ensuring that climate solutions reach those who need them most.

Jiji Mammen
Executive Director and CEO
Sa-Dhan



Building on the long-standing partnership between our two countries, The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) has worked with the Government of India for over six decades to promote sustainable economic, ecological, and social development.

Indo-German cooperation reflects our shared responsibility to protect the planet and foster inclusive growth that leaves no one behind. It is grounded in global commitments such as the Paris Agreement and the Sustainable Development Goals (SDGs).

To advance these joint goals, both countries signed the Indo-German Green and Sustainable Development Partnership (GSDP) in May 2022. Supporting Climate Adaptation is a part of this partnership.

For rural communities, adopting climate-smart and climate-resilient technologies often requires upfront investment in productive assets, water management, energy, irrigation, and other solutions that can strengthen resilience to climate risks. Unlocking appropriate and accessible sources of finance is therefore critical to enabling wider adoption of such solutions, particularly among smallholder farmers and rural enterprises.

This booklet brings together the work undertaken under the Indo-German project Climate Adaptation, Resilience and Climate Finance in Rural India (CAFRI) with Sa-Dhan, in partnership with Sustain Plus Energy Foundation and the 2030 Water Resources Group, among others, to strengthen access to finance for climate-smart agriculture. The collaboration has progressively expanded to encompass a growing number of Microfinance Institutions (MFIs), as well as other Financial Institutions supporting the financing ecosystem. As we go along, we look forward to creating financing pathways for more technologies which create climate adaptation benefits, as well as involving more players in the commercial finance space.

This publication provides a strong example of Indo-German cooperation in action and reflects both countries' continued commitment to the objectives of the Green and Sustainable Development Partnership. Together, we set the foundation for scalable and sustainable climate smart agriculture solutions that support India's adaptation needs and highlight the potential of meaningful international collaboration.

We hope this booklet will serve as a useful resource for stakeholders across the financial services sector, NGOs, CSR organisations, policymakers, practitioners and others working to advance climate-smart agriculture and climate adaptation finance.

I wish you an insightful and inspiring read.

Kirtiman Awasthi
Project Director
GIZ India

Building an Ecosystem in Climate Finance for MFIs

For Microfinance Institutions (MFIs) to finance climate-smart agriculture, they need access to capital, technical support and the right partnerships to develop and test new financing models. Partnerships with financial institutions and development organisations are helping MFIs access this support and strengthen their ability to finance climate-smart technologies.

The support helps the MFIs understand these technologies, to design suitable financial products and find financing models that work for their customers. They are also able to move beyond pilots and explore ways to scale climate finance through their existing lending networks.

The experiences of **Muthoot Microfin, Sanghamithra Rural Financial Services and Magenta Finance** show how funding, guarantees and technical support can help MFIs build and expand their climate-finance portfolios.

2.1 Muthoot Microfin Limited (MML)

Muthoot Microfin Limited (MML) is the microfinance arm of the Muthoot Pappachan Group. It operates across 21 states and union territories with an aim to provide climate-smart financing to strengthen customer livelihoods and build more resilient portfolios; including products such as solar pumps, drip irrigation and biodigesters that can improve household cash flows and reduce customer exposure to climate economic shocks. Using its financial services and customer outreach, Muthoot strives to enable climate-resilient livelihoods making climate-smart agriculture technologies more accessible to underserved households.

Muthoot's Collaboration with HSBC and Agri3

The partnership with HSBC and Agri3 has enabled Muthoot to initiate its climate-resilient finance portfolio. The company deepened its focus on customer suitability, technology quality and long-term usability, ensuring that climate financing translates into real improvements in household cash flows and resilience. By combining HSBC and Agri3's funding support with Muthoot's on-ground customer outreach and last-mile delivery capabilities, the association is helping bridge the gap between climate technology and the communities that need it most.



LEADERSHIP VOICE

Climate-resilient finance is central to how we think about serving our customers' evolving needs. Products such as solar pumps, drip irrigation systems and biodigesters address the real, everyday challenges our customers face, from rising fuel costs and water scarcity to unreliable irrigation and agricultural productivity. We focus on understanding each customer's livelihood, cash flows and technology requirements to ensure these solutions genuinely improve their economic resilience. We want to be an enabler of climate-resilient livelihoods for underserved households and small producers across the communities we serve.

Sadaf Sayeed, CEO, Muthoot Microfin Limited



2.2 Sanghamithra Rural Financial Services (SRFS)

Sanghamithra Rural Financial Services (SRFS) is a Karnataka-based NBFC-MFI, headquartered in Bengaluru and operational in five states. Focused on building a sustainable financial ecosystem for underserved communities, SRFS has provided WASH financing for over a decade and is also working relentlessly to support climate-resilient solutions for rural households.

Sanghamithra and Rabo Foundation

In India, Rabo Foundation actively collaborates with Farmer Producer Organisations (FPOs) and MFIs to advance climate-resilient agriculture, women's economic empowerment and the adoption of renewable energy solutions in rural areas. The Foundation offers support through impact investments, credit guarantees and capacity-building programmes.

Rabo Foundation has raised a euro-denominated External Commercial Borrowing for a line of credit to Sanghamithra. The credit amount is ₹10 crore (approximately 1 million euros), with an average

maturity of three years. The loan is expected to be disbursed in November 2026; with the borrowing cost for Sanghamithra being approximately 12% per annum.

Sanghamithra and Rabo Foundation support the adoption and scaling of climate-smart agriculture, dairy, goat farming, drip irrigation, water conservation and other sustainable livelihood activities amongst rural smallholder farmers, particularly Self-Help Group (SHG) members, in Karnataka, Tamil Nadu and Andhra Pradesh. The support also includes a Technical Assistance grant to build Sanghamithra's capacity through specialised staff, farmer training, agricultural experts, exposure visits and systems for measuring climate-smart agriculture adoption and environmental impact. The overall objective is to improve farmers' resilience to climate change, enhance productivity and incomes, promote sustainable use of natural resources and integrate climate considerations into Sanghamithra's agricultural lending model.

LEADERSHIP VOICE

Sanghamithra was started to facilitate the SHG-bank linkage programme in Karnataka. The vision of Sanghamithra is to empower rural smallholder farmers to adopt and scale Climate-Smart Agriculture practices that enhance resilience to climate change, strengthen livelihoods and economic resilience, improve productivity and contribute to sustainable and inclusive rural development.

Sunil Jadli, CEO, Sanghamithra Rural Financial Services



2.3 Magenta Finance Services Private Limited



Magenta Finance Services Private Limited is a Delhi-based NBFC-MFI working with women in rural and semi-urban areas across four states. The organisation provides small loans to support income-generating, agriculture-allied and non-farm activities, with a focus on financial inclusion and livelihood opportunities.

Magenta's objective is to help half-a-million poor families, outside the formal banking system, become financially independent.

Magenta De-Risking Facility from SIDBI and Shell Foundation for Green Portfolio

Magenta has availed of a risk sharing facility supported by SIDBI and Shell Foundation. Under the facility Magenta received a 10% second-loss guarantee on its green portfolio for a tenure of three years, which is expected to play a catalytic role in de-risking investments in climate-resilient technologies. It also enables the institution to scale innovative products and clean energy solutions. The risk sharing mechanism reduces exposure to credit losses beyond the initial threshold.

LEADERSHIP VOICE

Microfinance has helped rural women build businesses, create livelihoods and inspire their communities. But a loan should be the beginning, not the destination. By combining finance with technology, products, services, knowledge and market access, we can help women become entrepreneurs, job creators and role models.

When every loan creates opportunity, strengthens a family and transforms a community, microfinance becomes a force for Samriddhi Bharat and Atmanirbhar Bharat — one woman, one enterprise and one livelihood at a time. Its true value lies not in the money we lend, but in the opportunity and confidence we create.

Samrat Roy, CEO, Magenta Finance Services Pvt. Ltd.



Drip Irrigation

Drip irrigation delivers water directly to crop roots through pipes and emitters, reducing evaporation and runoff. It increases productivity of crops and saves up to 70% water compared to flood irrigation. Through drip irrigation, fertigation is possible, which enables fertilisers to be delivered through the irrigation system, reducing input and labour costs and improving nutrient uptake.

For farmers growing vegetables, fruits, plantations and other similar crops, drip irrigation can improve crop health and yields, while enabling more land to be irrigated with the same water resources. It also helps manage erratic rainfall and prolonged dry periods. Financing support helps small and marginal farmers overcome the upfront installation cost, enabling them to adopt the technology and benefit from lower water charges, decreased input costs and improved farm incomes.



3.1 Sangamithra Rural Financial Services (SRFS)

Sanghamithra Rural Financial Services (SRFS) is delivering inclusive, sustainable financial solutions to underserved communities. As erratic weather and extreme heat increasingly threaten rural livelihoods, SRFS is leveraging its deep footprint in WASH financing to champion climate-resilient farming — partnering directly with women farmers to deliver high-impact irrigation systems that is more efficient, save labour, secure crops and transform farm economics.

3.1.1 Intervention



Sanghamithra provides unsecured loans of ₹25,000–75,000 to women farmers for installation of drip or sprinkler systems, bundled with training for its efficient working and maintenance. The financing supports drip and sprinkler systems, pump sets, water storage tanks, pipes and related equipment.

3.1.2 Impact



The intervention is helping farmers adopt technologies that reduce water and manual labour, improve farm yield and productivity and strengthen resilience to erratic rainfall and heatwaves. Stories from the field demonstrate how finance is enabling livelihood improvements in agrarian communities.

3.1.3 Stories from the Field



Manjula

Kolar, Karnataka

Manjula adopted drip irrigation to improve water efficiency and enable precise fertigation for her brinjal crop. The system has improved her water use, increased the plantation area from one-and-a-half to six acres and enables her to grow bananas and tomatoes in addition to brinjal.



V Kaviya

Dharmapuri, Tamil Nadu

Kaviya grows flowers for which there's a good demand. She was cultivating them on one acre of land, using a borewell. However, she faced challenges due to the low groundwater table. Through drip irrigation, she is now cultivating the flowers on three acres. She can irrigate throughout the year and her plants are healthier.

3.1.4 Way forward



Timely finance, technology providers and farmer capacity-building support can work in tandem to improve the adoption of climate-resilient methods and technologies amongst smallholder farmers. The grassroots reach of MFIs and their longstanding relationships with SHGs position them as effective delivery channels for scaling commercial finance for climate adaptation technologies.

3.2 Svamaan Financial Services

Svamaan Financial Services is a Maharashtra-based NBFC-MFI established in 2017, with microfinance operations beginning in 2019. Svamaan operates in 12 states and is focused on financial inclusion and improving the livelihoods of women and micro-enterprises.

3.2.1 Intervention

Svamaan has begun integrating climate-resilient agriculture into its financial portfolio — offering women unsecured loans ₹30,000–1,00,000 for drought-related needs, irrigation and livestock resilience. Irrigation financing supports solutions such as farm ponds, borewells, drip and sprinkler systems, pump sets, storage tanks, pipes and related equipment. The institution piloted drip irrigation financing in the drought-prone areas of Jharkhand and Maharashtra, including Osmanabad, Buldhana and Nanded.



3.2.2 Impact

The intervention helps farmers adopt technologies that reduce water and energy costs, improve farm productivity and strengthen resilience to climate-related challenges. The stories from the field demonstrate how finance is enabling practical changes in farming practices.



3.2.3 Stories from the Field



Mandira Devi

Bhawnathpur, Jharkhand

Mandira used financing to install a solar-powered irrigation system, reducing dependence on diesel and erratic electricity supply. The system has reduced operational costs, ensured more reliable irrigation access and strengthened the household's financial resilience.



Padminabai Gangadhar Mule

Hadgaon, Nanded, Maharashtra

Padminabai adopted drip irrigation to provide a regulated water supply to her turmeric fields. With improved water-use efficiency and reduced moisture stress, the intervention has supported more consistent crop quality and yields.

LEADERSHIP VOICE

Working in climate-resilient agriculture has reinforced our belief that finance must evolve with the needs of small and marginal farmers. Climate-resilient technologies can reduce vulnerability, improve productivity and strengthen livelihoods, but require accessible financing. Our Vision is to deepen climate-focused financing, helping more farmers build resilience and create sustainable economic opportunities.

Kiran Kumar

Executive Director and CEO, Svamaan Financial Services



3.2.4 Way Forward

It is important, now more than ever, to expand climate-resilient financing with field-level technical support to help farmers adopt suitable solutions and strengthen their livelihoods.





3.3 Sampada Entrepreneurship and Livelihoods Foundation (SELF)

Sampada Entrepreneurship and Livelihoods Foundation (SELF) is a not-for-profit microfinance institution which was established in 2013. It supports women from marginalised communities and underserved rural households, through financial, technical and managerial assistance. Headquartered in Ahilyanagar, it operates across Maharashtra and Madhya Pradesh through 11 branches covering seven districts.

Its livelihood-focused work includes green finance and climate-resilient solutions that help smallholder farmers improve water efficiency, productivity and income while strengthening resilience to climate-related challenges.

3.3.1 Intervention



SELF developed a financing model for drip irrigation, combining **70–75% government support under PMKSY-PDMC**, around **15% farmer contribution** and green loans of **₹30,000–50,000** for upfront installation costs. FWFB provided **₹3.5 crore in concessional institutional capital**, helping SELF offer finance at more affordable rates.

3.3.2 Impact



Farmers adopting drip irrigation noticed improved water efficiency; reporting water savings up to 40-50%.

The crop quality improved which led to higher incomes and more reliable agricultural livelihoods. The farmers also increased the cultivated area using existing water sources, now with better resilience to water scarcity and rainfall variability.

3.3.3 Hear from the Beneficiaries



“Earlier, our pomegranate orchard depended entirely on rainfall and irregular irrigation, which affected crop quality and income. With access to financing and drip irrigation, we were able to save water, improve fruit quality and yields and increase our annual income significantly. The system has helped create a more stable and reliable livelihood for our family.”

Sanjeevani Narwade
Ahilyanagar, Maharashtra



“Earlier, a large amount of water was required for irrigating our maize crop, leaving limited water for other farming activities. With access to financing and drip irrigation, we were able to improve water efficiency, increase our farm income by 10% and use the saved water for cultivating additional crops. The system has reduced labour and helped create a more reliable source of income for our family.”

Shobha Balu Sarode
Ahilyanagar, Maharashtra

LEADERSHIP VOICE



At SELF, we believe climate finance must move beyond funding technology to help vulnerable rural communities build resilience to climate and water-related risks. When affordable finance is combined with awareness, technical guidance and livelihood capacity building, climate-smart solutions become more accessible and economically viable for small and marginal farmers. We are committed to scaling inclusive financial solutions that strengthen livelihoods while delivering environmental and socio-economic impact.

Anirudha Mirikar, CEO and Director, Sampada Entrepreneurship and Livelihoods Foundation



3.3.4 Way Forward



The Sampada intervention shows how localised finance systems, government subsidies, institutional capital and technical support can work together to make climate adaptation technologies more accessible to smallholder farmers. By connecting water stress, rural livelihoods and structured finance, the model offers an improved pathway for scaling climate-resilient agriculture in vulnerable regions.

3.4 Midland Microfin Limited (MML)

Midland Microfin Limited (MML) is a Punjab-based NBFC-MFI, founded in 2011. It operates in 18 states and union territories with a focus on financial inclusion and economic empowerment. Known for its technology-driven approach since inception, MML is currently focusing on providing sustainable finance by empowering smallholder farmers and promoting climate-smart technologies.

MML piloted drip irrigation under the Uttar Pradesh Micro Irrigation Programme (UPMIP) in Lucknow, Uttar Pradesh. Under this initiative, the State provides an 80-90% subsidy leaving the farmers to contribute only 10-20%. This balance amount is financed by MML.

3.4.1 Intervention



MML provides loans with an average ticket size of ₹25,000–30,000 to marginal farmers for drip irrigation. The financing product was developed specifically for this system, focusing on innovative irrigation and the efficient use of water resources.

3.4.2 Impact



The MML pilot focused on helping farmers adopt drip irrigation to manage water scarcity, irregular rainfall and increasing temperature-related stress, while supporting productivity and more sustainable farming practices.

3.4.3 Stories from the Field

Sunita Devi

Bakshi Ka Talab, Lucknow, Uttar Pradesh



Sunita adopted a micro-irrigation system facilitated by a government subsidy and financing from Midland Microfin. With access to this improved irrigation solution, she transitioned to highly efficient water management on her farm. This intervention has empowered her to adopt climate-resilient agricultural practices and strengthen the overall stability of her livelihood.



Meena Devi

Dharaura Village, Lucknow, Uttar Pradesh

Meena adopted drip irrigation across 0.86 hectares of farmland through the Uttar Pradesh Accelerator PRAGATI initiative, supported by financing from Midland Microfin. The targeted water application system has significantly improved water management on her farm.

LEADERSHIP VOICE



Through the pilot on drip irrigation financing, we have seen how access to finance can help marginal farmers adopt water-efficient and climate-resilient irrigation solutions. With the guidance of Sa-Dhan, we developed a dedicated financing product and are now looking to scale it across Uttar Pradesh in FY 2027–2028. We believe such initiatives can help conserve water, improve farm productivity and strengthen farmers' resilience to climate-related challenges.

Amitesh Kumar, COO and CFO, Midland Microfin Limited



3.4.4 Way Forward



Building on the pilot, MML plans to scale the financing across all districts of Uttar Pradesh in FY 2027–2028, making climate-resilient irrigation solutions more accessible to small and marginal farmers.



Dairy-Related Products

Biodigesters

Biodigesters convert livestock manure into biogas for cooking and nutrient-rich slurry that can be used as organic fertiliser. For rural dairy farmer households and dairy farmers, this can reduce dependence on LPG, firewood and chemical fertilisers. This helps in putting livestock waste to productive use. The slurry can also be marketed thereby creating an additional source of income.

The upfront installation cost can be a barrier for small and marginal farmers. Financing support helps bridge this gap, enabling households to adopt the technology, reduce fuel and fertiliser costs, improve farm productivity and build more climate-resilient livelihoods.



4.1 Pahal Financial Services

Pahal Financial Services, a Gujarat-based NBFC-MFI headquartered in Ahmedabad, operates across 17 states and union territories with a focus on affordable financial services for rural and urban households.

As part of its climate-finance work, Pahal has supported over 60 biodigesters in Gujarat through partnerships with Sistema bio and Social Alpha. Through its UPAZ loan programme, more than 2,000 farmers have also received financing for bio-fertilisers and organic pesticides.

4.1.1 Intervention



Pahal financed prefabricated biodigesters for households with around four to six cattle. The institution introduced a carbon-credit-linked system — farmers could purchase the biodigester for ₹10,000 at an interest rate of 24-28% — which emerged as the primary driver of adoption during the pilot.

Pahal created a three-stage instalment payment model spread across three months, with approximately ₹5,000 paid at booking, ₹3,000 at installation and the balance after installation. An additional biodigester loan was extended to existing Pahal customers, topped up to ₹25,000 and linked to their existing cattle loan. The loan was aligned with the remaining tenure of the customer's cattle loan, allowing repayment to be spread over the existing loan period.

4.1.2 Impact



In the first phase, Pahal financed **61 biodigesters across Kheralu, Borsad and Palanpur in Gujarat during 2024–2025**, enabling it to focus on existing cattle-loan customers and leverage established borrower relationships. The intervention demonstrated reduced LPG, firewood and natural resource dependence. Farmers reported a significant reduction in fertiliser expenditure via slurry reuse, enabling better nutrient recycling. There was an improved climate adaptation through resilience against fuel prices and events such as floods and landslides.

4.1.3 Hear from the Beneficiaries

“Earlier, cooking with firewood exposed me to smoke every day, causing allergies and irritation in my eyes. Collecting fuelwood was physically exhausting. After installing the biodigester, I no longer need to use firewood or LPG. Cooking has become faster and cleaner. I spend less time on household chores and I even have time to rest! Using bio-slurry from the biodigester has also reduced our dependence on chemical fertilisers, making it a sustainable solution for both our home and our farm.”

Alka Ben

Dairy Farmer, Pilucha, Gujarat



LEADERSHIP VOICE

“For our customers, climate finance is not just about financing a product. It is about protecting livelihoods, reducing vulnerability and building resilience. In recent times, we have witnessed unprecedented heatwaves, changing rainfall patterns, cyclones and floods. It is time for the financial inclusion sector to make climate resilience a priority — before it is too late.”



Purvi Bhavsar, Co-Founder and Managing Director, Pahal Financial Services

4.1.4 Way Forward



For Pahal, climate finance is evolving from an emerging opportunity into a strategic component of financial inclusion.

Pahal's next phase is focused on moving from pilots to a scalable and diversified climate-smart finance portfolio. The institution is exploring products such as drip irrigation, solar-powered irrigation, solar smart fencing and solar crop dryers, alongside other sustainable agriculture and clean-energy solutions. It also intends to expand its climate-insurance portfolio.

The strategic direction is to identify solutions based on farmers' demand and implementation learnings, deploy them through cluster-based approaches and build partnerships that provide the technology, awareness and technical support required for responsible scale.

4.2 Magenta Finance Services Private Limited



To help unbanked families achieve financial independence, Magenta Finance complements micro-lending with its Backstopping through Entrepreneurship Support (BEST) initiative. The programme transforms women into local green entrepreneurs, creating steady monthly income while expanding climate-smart agriculture.

Low Methane Cattle Feed

Low-methane cattle feed, developed by Krimanshi, is designed to improve livestock nutrition and productivity while reducing methane emissions from cattle. The feed combines nutrition and minerals to support animal health, while its low-methane formulation can help reduce emissions associated with livestock rearing.

For rural livestock-owning households, better nutrition can support livestock productivity and more efficient livestock management. However, access to quality feed and related services can be limited in remote markets. The intervention takes climate-smart livestock solutions closer to these households while also creating an income opportunity for women.

4.2.1 Intervention



BEST is designed to complement Magenta Finance's core microfinance business by helping women who are currently outside the formal credit cycle rebuild their livelihoods and repayment capacity. Under the model, women are supported in building **ongoing income-generating opportunities**, rather than receiving a one-time incentive. Magenta refers to these women as **WISE (Women Initiative Support)** and aims to help them generate a minimum monthly income of **₹10,000–15,000** through multiple livelihood opportunities.

4.2.2 Impact



Under BEST, Magenta is enabling selected women to become local entrepreneurs by distributing Krimanshi's low-methane cattle feed through their existing social networks. Women earn a commission on sales, creating an additional income stream while connecting livestock-owning households with climate-smart feed.

The model also proposes access to low-cost veterinary services through a mobile application, nutrition guidance based on animal weight and age and emissions tracking that could support access to carbon benefits.

4.2.3 Stories from the Field



👉 *I started with just five bags. Today, I sell 40–50 bags. A small beginning, with hard work and the right opportunity, can lead to something much bigger.* 👉

Rekha

Shivam Colony, Bilaspur

Rekha began her journey as a cattle feed entrepreneur with just five bags, after Magenta introduced her to the opportunity and provided training and support. Within 15 days, she made her first ₹500 profit. Today, she sells 40–50 bags a month, earning around ₹4,000–5,000 in monthly profit.

4.2.4 Way Forward



The longer-term objective is to help WISE women clear outstanding dues with financial institutions and return to the formal credit cycle, while strengthening loan recovery and responsible access to credit.

4.3 Sangamithra Rural Financial Services (SRFS)

When extreme weather threatens seasonal crops, rural families need financial shock absorbers to keep their livelihoods intact. Sanghamithra Rural Financial Services (SRFS) is bridging the climate vulnerability gap. By helping women establish dairy enterprises, SRFS equips farming households with a stable, year-round income stream that absorbs crop losses and cushions families against agricultural distress.

4.3.1 Intervention

Sanghamithra provides collateral-free loans of ₹25,000–75,000 to women for dairy farming. The loans are for essential infrastructure like livestock procurement, construction of sheds, water tanks and working capital like cow feed. The loan is for a 12 to 24-month period with a three-month repayment moratorium to help with stabilising the income from milk. Thereafter, repayment is through monthly instalments.



4.3.2 Impact

This intervention helps farming households diversify and enhance their livelihoods. It also shields the families from climate-change induced unpredictability of agricultural crop production and the resultant financial stress.



4.3.3 Hear from the Beneficiaries



I took my first loan of ₹10,000 five years ago to purchase a crossbreed cow to start dairying. After repaying the first loan from dairy earnings, I took two more loans to buy more cattle. Today, I have five crossbreed cows and their four calves. The dairy generates 60 litres of milk per day and earns me a daily income of ₹1,800 from supplying it to the local milk cooperative society. I've been able to construct a better house for my family from this income.

Veena

Kadur Taluk, Chikkamagaluru District, Karnataka

4.3.4 Way Forward

Women Self Help Group members whose families' only income source is agriculture will be encouraged to take loans to diversify income sources, such as through dairying. As the initial investment for dairying is high, they can start with one cattle and with experience take additional loans to purchase more cattle.



Cashew-Cutter

Mechanised cashew-cutter replaces manual shelling — a labour-intensive, time-consuming process that can expose workers to corrosive cashew shell liquid and cause skin and finger injuries, including fingerprint erosion. These cashew-cutters improve processing speed, reduce kernel breakage and improve recovery of marketable kernels, helping farmers and small processors save labour and increase the value of their produce.

For households engaged in cashew cultivation and processing, mechanisation can also enable them to move beyond selling raw cashew and undertake higher-value activities such as grading, packaging and marketing. However, the upfront cost of the equipment can be a barrier for small processors. Financing support helps bridge this gap, enabling borrowers to invest in machinery, increase processing capacity and build a more sustainable income-generating enterprise over time.



5.1 BWDA Finance Limited

BWDA Finance Limited is a Tamil Nadu-based NBFC-MFI headquartered in Villupuram. Established in 1985, it operates across seven states and union territories. Their focus is on financial inclusion, women empowerment and sustainable livelihood development. As part of its climate-finance journey, BWDA has been financing **cashew-cutters**, with the intervention continuing to support livelihoods across Tamil Nadu. Since December 2025, BWDA has financed approximately 250 loans across the cashew value chain, including 26 loans for cashew-cutters.

5.1.1 Intervention



BWDA finances cashew cutters with loans of around **₹25,000** against cashew-cutter costs of ₹35,000–40,000, with repayment over **24–36 months**. Seasonal and balloon repayment options are available to align repayments with agricultural and business cash flows.

The model allows customers to start with one cashew-cutter and gradually upgrade as their processing business grows. Financing also extends to procurement, packaging and working capital, enabling households to participate across the cashew value chain.

5.1.2 Impact



The intervention has enabled 26 cashew-cutters to be financed since December 2025, alongside around 250 cashew value-chain loans during the same period. It has increased the quantity and quality of marketable produce and improved the cashew-cutting process by reducing drudgery. By supporting mechanisation and working capital, the model helps rural households increase processing capacity, improve kernel recovery and capture greater value from cashews. The step-by-step financing approach also allows enterprises to grow incrementally, while creating opportunities for local employment as businesses expand.

5.1.3 Hear from the Beneficiaries

My name is Rani and I am from Puliur village. With BWDA's support, I purchased a cashew-cutter and started working from home. Earlier, I worked in a cashew processing factory, where I earned up to ₹400 a day and had fixed working hours. Working from home now allows me to manage my work around my family responsibilities and choose my working hours based on the availability of work. It has made my daily routine easier and helped me earn a better and more stable income. I am grateful to BWDA for helping me become more financially independent while maintaining a better balance between work and family.

Rani E, Puliur, Kurinjipadi Taluk, Cuddalore, Tamil Nadu



LEADERSHIP VOICE



At BWDA Finance Limited, we see the cashew sector as an important contributor to enterprise growth, employment and economic activity, particularly in regions where the value chain is concentrated. We finance activities across the value chain, including raw cashew procurement, processing equipment, packaging, working capital, business expansion and other investments.

Timely, appropriately structured finance helps cashew enterprises manage seasonal requirements, strengthen operations, improve value addition and pursue growth. By supporting businesses across the value chain, BWDA aims to build a stronger, resilient cashew ecosystem, enabling sustainable livelihoods and deeper economic impact as part of our larger Smart Agriculture and Resilient Livelihoods programme. We remain committed to evolving our financing solutions with the sector's needs.

Dr C Joslin Thambi

Chairman and Managing Director, BWDA Finance Limited



5.1.4 Way Forward



BWDA plans to build on the cashew-processing model by expanding access to other climate-smart livelihood technologies. Sa-Dhan has also connected BWDA with drip irrigation and biodigester technology providers, which are currently being explored through pilots.

The experience demonstrates how financing productive assets, combined with working capital and opportunities to gradually scale, can help rural enterprises strengthen livelihoods and build greater resilience.

Stall-Fed Goat

Stall-fed goat rearing involves keeping goats in shelters and providing them with a controlled diet instead of relying on free grazing. The system allows for better management of nutrition, health and breeding, while reducing exposure to diseases and pressure on grazing lands. With relatively low land and investment requirements, goat rearing can be a viable livelihood option for landless and marginal households, with returns possible within a year.

For farmers, stall feeding can improve weight gain and enable more efficient feed use, while the short breeding cycle provides opportunities for regular income from the sale of kids. The system also reduces dependence on common grazing land and can be combined with fodder cultivation, making it a climate-smart livestock practice.

The initial investment in goats, a shed and feed can be a barrier for low-income households. Financing support helps farmers establish or expand their goat-rearing units, with loan repayment aligned to the livestock sale cycle. Access to finance, combined with basic veterinary and livestock management support, can help households build a more sustainable income source.

6.1 Sangamithra Rural Financial Services (SRFS)

Sanghamithra Rural Financial Services (SRFS) is driving rapid economic mobility through an exposure-led micro-entrepreneurship model. Launched in 2022, the programme builds peer conviction before delivering structured livestock financing — equipping rural women to establish sustainable, high-return goat farming ventures.

6.1.1 Intervention

Sanghamithra started support for stall-fed goat farming in 2022, at the initiative of Chairperson Aloysius Fernandez. The institution is building awareness by taking farmers, at its own expense, to a stall-fed goat farming location. Interaction with a successful farmer is enough for other farmers to venture into the business.

Sanghamithra gives loans of ₹20,000–40,000 for shed construction, purchase of 10–20 goats, initial feed, veterinary care and insurance. Goats are reared for their milk, meat and manure for organic fertiliser. Farmers are expected to contribute 20–25% of the total cost.



6.1.2 Impact

In less than a year over 230 farmers have come forward to start stall-fed goat farming, with loans from Sanghamithra. Household women, who were earlier engaged in manual labour, are increasingly taking up this venture. The farmers have reported a 200% return on investment in 12 months, after their periodic loan repayment instalments.

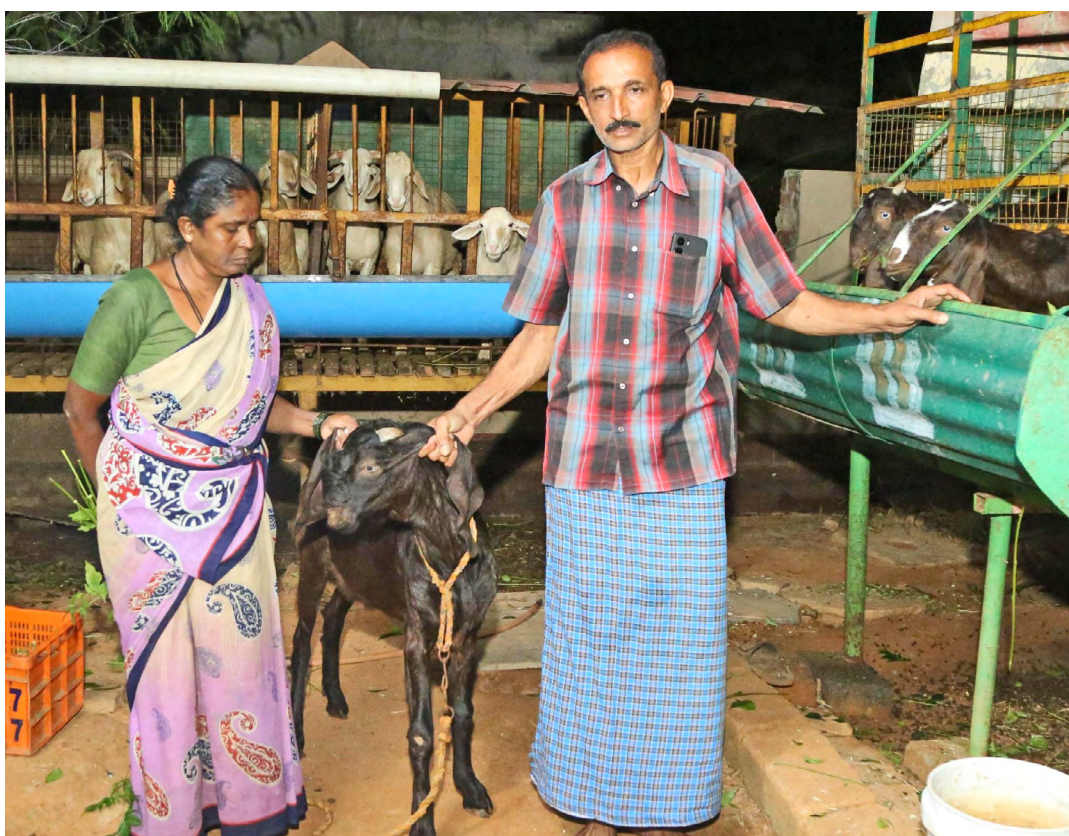


6.1.3 Stories from the Field

Shobha

Kolar, Karnataka

Shobha, along with her husband, decided to start a stall-fed goat rearing unit and took a loan to install the stalls and purchase the livestock. In one year, they have sold sheep, twice or thrice, within three to four months of rearing. They sell goats twice a year after rearing them for about six months. Within a year, the family has recovered the invested amount and is earning a surplus.



6.1.4 Way Forward

Stall-fed goat farming provides an opportunity to diversify income sources, at a lower investment than rearing cows and buffalos. It also builds farmer resilience to climate change impacts. Creating awareness for this method is the key to spreading its adoption which can be accelerated through the support of the entire ecosystem, including availability of concessional finance from financial institutions.



CLIMATE RESILIENCE FINANCING

The Road Ahead



Climate finance has been a buzzword for some time now. Most of the financing is limited to pilots or smaller-scale interventions. The next phase of climate finance requires moving beyond individual pilots to a more **systemic and scalable approach** that integrates climate considerations into mainstream financial services for underserved communities. Because Microfinance Institutions serve the most climate-vulnerable sections of the population, they have a major role to play in this regard. Sa-Dhan envisions playing a catalytic role in this transition by bringing together financial institutions, technology providers, development partners, investors, and policymakers to build an enabling ecosystem for climate finance.

Going forward, Sa-Dhan will focus on **deepening the integration of climate-resilient technologies with appropriate financial products**, enabling MFIs to assess and finance climate-related investments as part of their regular lending portfolios. This will include strengthening the capacity of MFIs to understand climate risks, develop suitable credit products, assess technology viability, and build climate-responsive underwriting and portfolio-management practices.

A key priority will be to **expand access to diverse sources of capital** for climate-resilient lending. Partnerships with banks, development finance institutions, impact investors, guarantee providers and other ecosystem actors can help create mechanisms such as dedicated lines of credit, risk-sharing instruments, guarantees and blended-finance structures that enable MFIs to extend financing to small and marginal farmers and other climate-vulnerable communities.

Sa-Dhan will also continue to **build evidence and knowledge from the field**, documenting adoption, repayment performance, livelihood outcomes and the financial viability of different climate-resilient technologies. Such evidence can help lenders and investors better understand the risk-return characteristics of climate portfolios and support the development of more standardised financing models.

Equally important will be **strengthening the last-mile ecosystem**. Collaboration among MFIs, technology providers, government programmes, aggregators and local institutions can help address barriers related to technology awareness, quality assurance, after-sales services, subsidies and market linkages. This integrated approach can make climate-resilient solutions more accessible, affordable and financially viable for farmers.

Ultimately, Sa-Dhan's vision is to help move climate finance **from the margins of financial inclusion to its mainstream**—where financing climate resilience becomes an integral part of responsible and inclusive finance. By connecting capital, knowledge, technology, and last-mile institutions, Sa-Dhan aims to contribute to a financial ecosystem in which vulnerable communities are better equipped to manage climate risks, protect livelihoods, and pursue sustainable economic growth.

Our Vision

Promoting an economically and socially empowered inclusive society.

Our Mission

To promote and foster inclusive impact finance institutions to support low income households, particularly women, to achieve stable livelihoods, improve their social and financial well being and quality of life and fulfil Sustainable Development Goals.

FINANCING CLIMATE-SMART AGRICULTURE

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Illustrations and Design:
The Good Edge
Sa-Dhan is responsible for the content of the publication