

UNLOCKING PMFME

Transforming Food Processing with Climate Smart Solutions - March 2025









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Compendium of 10 Case Studies: Livelihood Diversification and Entrepreneurship in Micro Food Processing

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Unlocking the Potential of Micro Food Processing Enterprises

Through Sustainable Productive Use Technologies and Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) scheme.

1.1 About the Scheme

The Ministry of Food Processing Industries, Govt. of India, launched the first-ever scheme to upgrade and support the micro-units in the food processing sector, named Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) in June 2020, with an outlay of a thousand crore Indian Rupees (USD 1.15 billion). It seeks to support micro food processing enterprises through a package of services. The services include financial support for starting a new processing enterprise, back-end subsidy, training and capacity building as well as marketing support to individuals, self-help groups, cooperatives and farmer producer organisations along the entire commodity value chain.

Outline of the Scheme



Financial Support

Seed capital @ Rs. 40,000/- per membe for groupsto those engaged in food processing as a working capital Total eligible project cost should not exceed Rs. 10 Crore



Subsidy & Interest Subvention

Credit linked grant at 35% - 50% of the project cost with maximum grant up to Rs 10.0 lakh



Training & Capacity Building

be availed usually anchored by an allocated nodal body for pmfme



Marketing Support

Support for branding and marketing up to 50% of the expenditure with maximum limit as prescribed. Marketing support only for turnover equal to or

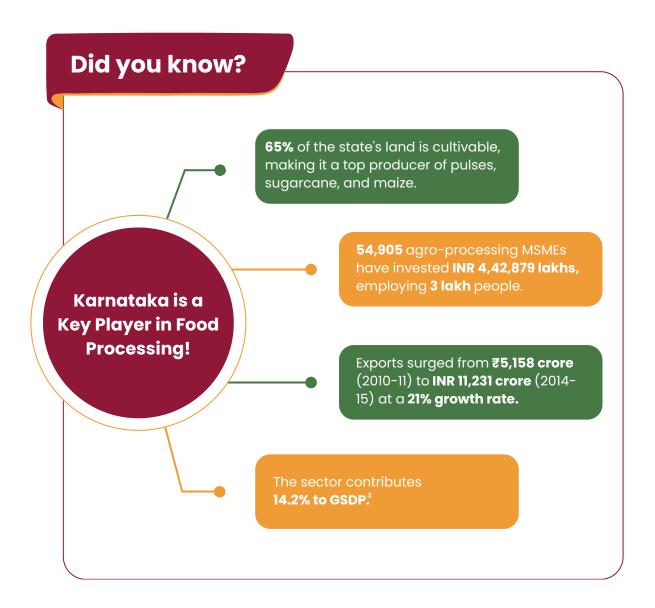


Target Beneficiaries

Individuals, SHGs, Cooperatives, FPOs, Individual entroreneurs

1.2 Why Food Processing as an Industry?

A significant portion (42%) of the unorganised sector contributes to the food processing industry in India, playing a pivotal role notably accommodating numerous small-scale food processing units. It contributes 8.9% of India's GDP and 11.6% of the country's total employment. Therefore, it is critical to bridge the gap in integrating primary agricultural production with sustainable income-generating opportunities like food processing, particularly for small and marginal farmers and grassroots entrepreneurs including rural women.²



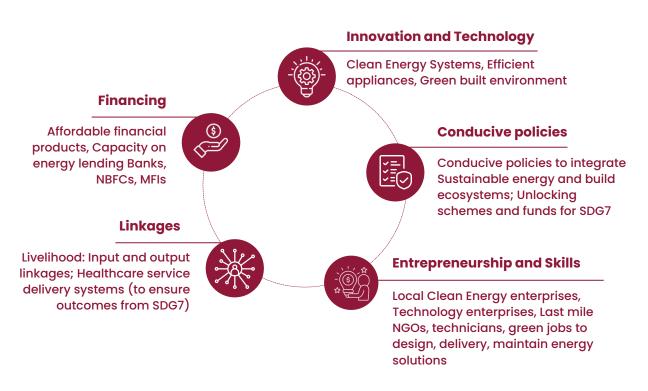
This enables a compelling demand for approximately 1.2 million enterprises by 2027 to find employment within the food processing sector as per the government of Karnataka report on Agri Business and Food Processing.⁴ Hence, bringing in inclusive financial instruments and government, schemes such as PMFME can enable the loan taking capability of entrepreneurs in the unorganised sector.

Recognizing this challenge, the Karnataka State Rural Livelihood Promotion Society (KSRLPS) with Karnataka State Agricultural Prices Processing and Export Corporation (KAPPEC) has played a foundational role in building entrepreneurship models, formalizing collectives, and bridging the gap between farm production and value-added processing with markets. By facilitating credit access for non-farm livelihoods, the state has supported self-help groups (SHGs), farmer producer organizations (FPOs), and rural entrepreneurs establish sustainable micro-enterprises in food processing, linking them to structured value chains and markets.

1.3 SELCO Foundation's Role in Integrating Climate Smart Solutions

SELCO Foundation in partnership with KSRLPS and KEPPAC have a focus on integrating sustainable solutions, practices and systems with energy-efficient appliances to accelerate and optimise livelihood development and income generation opportunities.

Ecosystem Components



A critical challenge for rural entrepreneurs is the lack of access to sustainable mechanization that can enhance efficiency, ease workload, and sustain businesses in the long term. While local enterprises have the potential to diversify or scale their operations, their growth is often hindered by inadequate in-house production capacity. The challenge also lay in access to asset-based financing to drive business growth. This restricts their ability like Vidya Gavi (p.12) to respond to market demands, improve productivity, and ensure profitability. Investing in solar energy and productive use technologies is critical to strengthen grassroots businesses that also adds to the local industrial/business clusters to remain profitable and functional in the long run.

Investing in solar energy for micro enterprises then becomes critical to strengthen grassroots businesses that also contributes and adds to the local industrial/business clusters to remain profitable and functional in the long run.

- The Department of Industries and Commerce, Karnataka. Industrial Policy 2014-15, annual reports, and statistical data.
- The Karnataka State Agricultural Produce Processing & Export Corporation Limited (KAPPEC).
- Government of Karnataka, Karnataka Agri Business and Food Processing Policy 2015, available at Invest Karnataka.

As part of the collective commitment to strengthening local ecosystems through Climate Smart Solutions for livelihoods

Category	Details
Total Amount Unlocked	INR 9.7 Crore (USD 11,36,000)
Beneficiaries	300+ Micro Food Industry Entrepreneurs
Region Covered	14 Districts in North Karnataka
Investment Focus	Productive Use Technologies with Solar Energy Integration
Supported Banks	Karnataka Vikas Gramin Bank, Union Bank, Canara Bank, Vijaya Bank, State Bank of India, Bank of Baroda



2

From Access to Utilization: Key Insights on Productive Use Technology Integration via leveraging PMFME

Till now sixteen types of food processing technologies (Table 1) were implemented with 300+ entrepreneurs (unlocking 35% credit linked back-end subsidy under PMFME), each tailored to meet the specific local demand requirements of the respective regions. The need-based assessment conducted helped identify the demand and integrate technology and energy solutions into traditional food-making businesses accordingly.

"The ground up - user first approach gauging potential for business diversification have made adoption of these solutions comparatively easier, enabling entrepreneurs to enhance their livelihoods. People now understand how it can benefit their businesses in the long run."







New Beginnings:

A notable observation is that 40% of the total two hundred entrepreneurs were first time entrepreneurs venturing into a new livelihood. Food processing business tend to be the first income generating business for the end users.

Prior to the intervention, the entrepreneurs were involved in on farm activities, daily labour work under MNREGA and coolie work as a source of sustenance lacking reliable income channels. Home-based models emerged as the popular choice of enterprise comprising 72% of livelihood implementations. The integration of technology into their businesses has helped entrepreneurs increase their production capacity by 25%–40% daily, a growth achieved over a period of 1–1.5 years.



Entrepreneurs Expanding Business Portfolios:

A trend of diversification in livelihoods was observed across the households of North Karnataka districts. Livelihood diversification is defined as the process by which rural families construct a portfolio of income-generating activities to improve the quantum of income and subsequently standard of living.

For example, Vidya Gavi and Ramesh Khanagoudar, among other entrepreneurs, have added a series of solutions after the initial success from adoption of Productive Use Technologies integrated with Solar Energy Systems, including solutions like rice flour mill and oil extractor in a period of one year. The subsidised loan under PMFME scheme served as a strong driver in unlocking loans for assets and realise their entrepreneurial ambitions otherwise difficult to achieve due to low credit availability or high-risk lending practices.

"The entrepreneurs are interested and are willing to take loans but most of the time we do not accept their application because of low chances of repayment and poor CIBIL score. But credit linked subsidy can boost up the loan taking capability as it eases capital investment burden. However, in my experience, there is a lack of awareness, and many are losing out due to limited knowledge on availing such schemes"





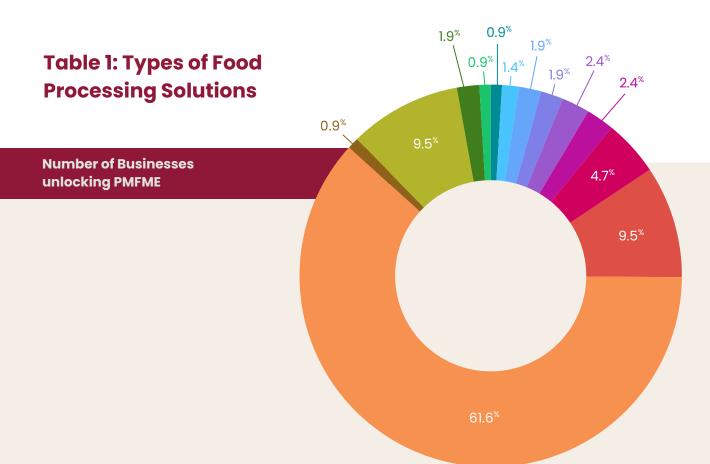


Importance of Localized Knowledge Sharing:

A key theme that emerged from interviews with bank managers in Dharwad and Belgaum is the importance of localized knowledge sharing. This includes awareness of available technologies and solutions, understanding commodity-specific requirements, mechanics of the scheme that guide entrepreneurs on machine usage, input materials and output capacity including the availability of schemes and subsidies for such capital investment.

Additionally, facilitating peer-to-peer learning, where early adopters in these events – melas, exposure visits, panel discussions, share their experiences on business performance, profitability, and revenue growth can play a crucial role in building confidence, trust, and catalyse adoption among new entrepreneurs. They also emphasized the mobilisation of potential and existing business owners to strengthen loan-taking capability and improve the number of applications.





	Commodity	Types of Food Processing Solutions	Daily Production Capacity
	Sugarcane, Orange, Coconut	Juicer (0.5 hp)	100-200 glass/day 400-500 glass/day
	Cow / Buffalo milk	Khova processing machine (1 hp)	100 ltr milk processing /1.5 hrs
FLOUR	Rice flour	Chakli making machine (0.5 hp)	5-8 kg/hr
	Potato, banana	Slicer, Peeler, Dryer (0.5 hp)	500 kg/day
	Rice Flour, Chili	Vermicelli Making (2 hp) + Pounding machine (2 hp)	15-20 kg/hr
	Safflower, Rice Flour	Vermicelli Making (2 hp) + Pulveriser (2 hp) + Pounding machine (2 hp)	Up to 15 kg/hr (1 hp)
FLOUR	Millet (Bajra, Jowar) Rice Flour, Rava	Dough Kneading machine (0.5 hp) + Dough Rolling Pedal Operated	1000 Rotti/day
	Safflower, Millet, Rice Flour	Dough Kneading machine + Dough Rolling Pedal Operated + Pulveriser (2 hp) + Vermicelli Making (2 hp)	1000 Rotti/day, 15 kg/hr pulveriser

FLOUR	Millet (Bajra, Jowar) Rice Flour	Dough Rolling Belt Conveyor (0.5hp)	15 kg/hr, 25 kg/day papad
2000 2000	Green grams, Toor daal+ Bengal graam	Oil Mill Cold Press (2 hp)	10 kg/hr
\$ 0000 \$000	Groundnut, Sesame, Coconut, Sunflower, Safflower , Kushbee, Lemon	Oil Mill Cold Press 3 hp + Dall Mill (3 hp) + Pounding machine (2 hp)	20 kg/hr
	All pulses, Minor millets-Foxtail, Kodo, Barnyard, Browntop	Millet Integrated Precleaner Huller Destoner Grader Polisher Elevator (2 hp) AC	250 kg/hr
	Turmeric, Groundnut, Safflower, Sunflower, Coconut	Oil Mill Cold Press (3 hp) + P Pulveriser Blade type (2 hp) + Pounding machine (2 hp) + Juicer (0.5 hp) + Nano tractor	20 kg/hr, 15 kg/hr (pounding, pulveriser)



Income Increase:

The integration of renewable energy solutions has had a positive financial impact on entrepreneurs. Across the 15 types of livelihood implementations (Table 1), the average monthly profit stands at thirty-two thousand Indian Rupees (USD 370) with the highest recorded at forty-six thousand Indian Rupees (USD 530) per month. Prior to the intervention, the average monthly income across these livelihoods was recorded at seven thousand Indian Rupees (USD 80).

Based on the analysis, entrepreneurs experience a 45% reduction in EMIs after receiving the PMFME subsidy, making technology adoption more affordable and accessible. This trend persisted as entrepreneurs subsequently integrated complementary technologies into their businesses, demonstrated by entrepreneurs and community leaders.



Cost Savings on Utilities:

Entrepreneurs have reported significant reductions in bills including electricity, labour charges and monthly instalments, leading to crucial cost savings. The average savings on operational costs range from five thousand to six thousand Indian Rupees (USD 58 – 70).

Did you know?

On an average, for entrepreneurs making use of firewood to process their products (e.g. *Khova*) have also reduced their monthly spending on firewood by one thousand five hundred Indian Rupees (USD 18), contributing to improved financial sustainability and reduced exposure to fumes, responsible for respiratory diseases among the entrepreneurs.



Time Flexibility for Agriculture-Based Entrepreneurs:

Nearly half of the entrepreneurs come from agricultural backgrounds, with many dedicating their early morning hours to farming activities. Without mechanization, balancing agriculture and enterprise work would be extremely challenging, as manual processes are time-consuming and physically demanding.

However, energy-efficient mechanization allows them to streamline production, and optimize their time, making it possible to run parallel livelihoods. For example, entrepreneurs engaged in *Khova* and *Rotti* Rolling first attend to their farms and then efficiently manage their homebased businesses, dedicating 4–5 hours daily—something that would be difficult to sustain with purely manual methods.

Additional Info

Capacity building of stakeholders to accelerate adoption

- Conducted 30 training sessions across five districts, equipping 1,500 entrepreneurs with insights on food processing solutions and case studies.
- Provided training on 18 food processing solutions, followed by exposure visits to align business opportunities with DAATC's technology sessions.
- Exposure Visits: Organized 10 visits across 5 districts, enabling 250 entrepreneurs to gain hands-on experience with implemented solutions.
- Banker trainings: Over two years, fifty training and engagement sessions were conducted with bankers and branch managers across five districts, facilitating the exchange of information on unlocking PMFME support for DRE livelihood



Operations and Maintenance Post Adoption

Building a robust system for Operations, Servicing and Maintenance of the systems and technologies post adoption, ensuring that entrepreneurs can easily adapt to new technologies while navigating business models, market access, and long-term sustainability via strong servicing contracts included into the loan/cost of service. A key component of this approach is embedding servicing contracts within loan agreements or the cost of service for initial two years post installation that ensures regular maintenance, repairs, and ongoing technical support. This helps ensure regular usage of the technology, building user confidence and enhances adoption rates.

Awareness at the hyperlocal level (taluk, panchayat, village) on the availability of credit linked schemes, skilling and training on technology and energy access are most desirable because they give individuals and households more decision-making power.

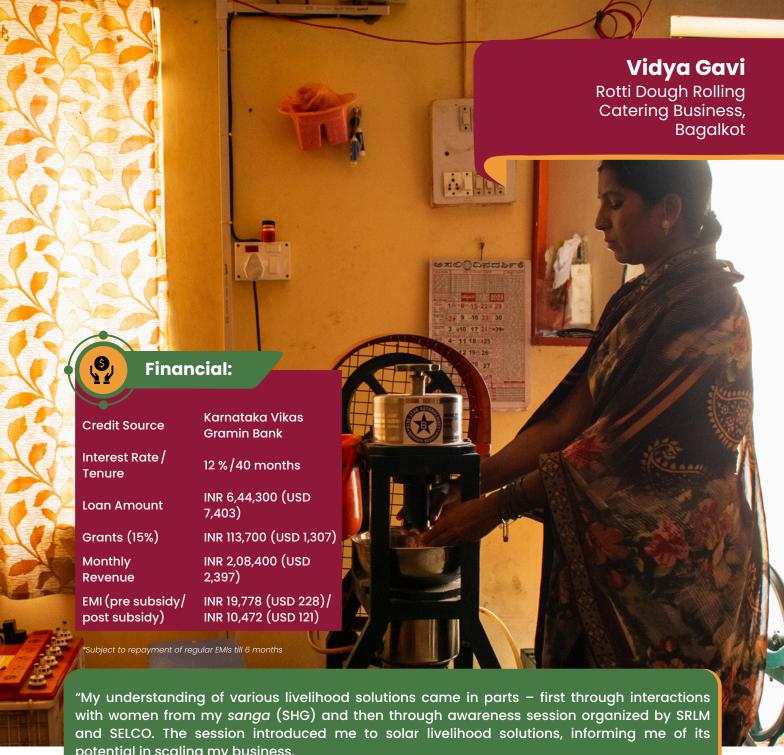




Frequent electricity cut in our village made it difficult to meet production demands, which led us to explore solar-powered solutions. We decided to invest in a solar system worth Nine Lakh Forty Thousand Indian Rupees (USD 10,812) which included 2 HP flour mill, 1.5 HP Rotti Dough Rolling machine, a 1 HP Atta (Dough) Kneading Machine, 3 HP Vermicelli Machine, and 2 HP Chilli Pounding Machine. Securing financial assistance was the real challenge. Through my SHG group, Veerabhadreshwara, we learned about the PMFME scheme and successfully applied.

We secured a loan from KVG Bank along with a subsidy under PMFME. Our Rotti production capacity grew to 2,500 units daily, increasing our monthly operating profit to Fifty Thousand Indian Rupees (USD 575). We successfully fulfilled bulk orders of over 4,500 Rottis during weddings and festive seasons while also capitalizing on vermicelli production, earning an extra Thirty Thousand Twenty-Five Indian Rupees (USD 345) and via the Chilli pounding services, charging Two Hundred Fifty Indian Rupees (USD 3) per kg.

This has given us more leisure time as a family—something I never imagined before."



potential in scaling my business.

I had been running a small-scale business producing Rottis since 2007, but I knew I needed better technology to grow. Inspired, I soon adopted a solar-powered vermicelli-making machine. With further support from my mahila group, I secured a Five Lakh Rupee (USD) loan in 2019, which allowed me to acquire a Rotti Dough Rolling Conveyor Belt Machine.

As demand grew, scaling required credit. I learned about the PMFME scheme. Understanding the loan structure, interest rates, and subsidy benefits took time as well as developing a business proposal- I confidently secured a loan from Karnataka Vikas Gramin Bank to invest a new Vermicelli (thin wheat spaghetti) Machine. The 35% subsidy, which came in after six months, reduced my EMI payments by nearly 48%, making repayment manageable.

With my new machines, I started vermicelli production of 100 kg per day. My monthly profits increased to forty-five thousand Indian Rupees (USD 518) — an increase of INR twenty thousand per month (USD 230). The intervention enhanced my business efficiency and gave me the confidence to train my fellow sangas too."



"I am a 37-year-old LIC agent, working since 2006, earning Six Thousand to Eight Thousand Indian Rupees (USD 72 – 90) per month. In 2013, I joined Athi Sakthi Sanga SHG, actively engaged in agricultural guidance and machinery management.

My interest in farming led me to join the National Rural Livelihood Mission (NRLM) agriculture team as a *KRISHI SAKHI* in 2022, where I learned to promote modern and sustainable farming technique introducing communities to solar-powered machines. I was fortunate to gain exposure to various agro and food processing technologies. I noticed a consistent demand for chilli grinding in my locality and also observed a growing market for organic oil in the city. This sparked my interest, and I decided to integrate both machines to start my business. Since the machines have been recently installed, I am still assessing how my business will develop and feeling both nervous and excited.

At present, I provide chilli pounding services to my customers, processing around 25 kg per day. For oil processing, I extract organic coconut and groundnut oil, producing nearly 35 kg per month, which has considerable demand from customers. Currently, other than earning as a LIC agent, my monthly revenue stands at Thirty-Six Thousand Four Hundred Indian Rupees (USD 420).

My initiative and efforts in starting my own business have been recognized by the agriculture department, which has further motivated me to continue and expand my work. As a Sakhi and Sanga member, I actively engage with my fellow sanga members and community women, guiding them on sustainable technologies that can enhance productivity and create new business opportunities."



Our Self-Help Group (SHG), Sapalamma Grama Lakshmi Shree Shakthi Sangha in Somenahalli Village, Kolar, was formed in 2015 with thirteen members. Initially dependent on monocropping, we faced financial instability due to seasonal losses and price fluctuations. Seeking alternatives, we learnt about mushroom cultivation via Krishi Kendra and got connected to Indian Institute of Horticultural Sciences and Gandhi Krishi Vigyan Kendra, Bangalore for further guidance.

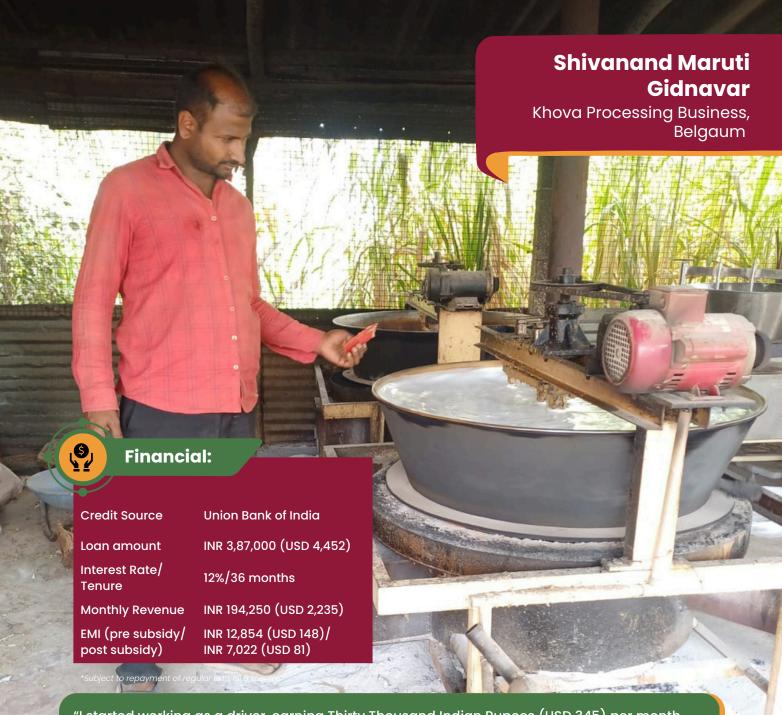
However, spoilage became a major hurdle as 40%-50% of our produce perished due to lack of storage facilities. To address this, we attended awareness sessions anchored by the Horticulture department, Department of Post-Harvest Management and SELCO Foundation. As a result, we understood the gaps in our current practices and decided to install a 500 kg polycarbonate tunnel-type solar dryer, enabling us to preserve mushrooms for a longer period and expand into preserving high-value produce as well including tomatoes, moringa, mangoes, onions, and curry leaves.

The machine is helping us preserve a total of 125 kgs of Mushroom (10 kg), Tomato (50 kg), Mango (25 kg) and Banana (40 kg) output respectively and improve our production as we are able to prevent spoilage of nearly 60 kgs due to the dryer. Currently, our profit stands at INR 21,700 per month. With improved production, we have focused on strengthening market linkages with the support of the horticulture department and the local NGO network in Kolar. Through this effort, we have partnered with Raheja traders in a buyback model, helping us with consistent sales contributing to a stable source of income.



I run a small shop in Sindhanur selling over 20 varieties of millet crops. Personally, overseeing cleaning and grading with hired labor, I ensured high-quality grains for my customers. However, managing labor costs, shop rent, and raw material expenses was becoming financially overwhelming. I was searching for ways to simplify my daily routine and lighten my workload.

At a mela in Sindhanur organized by SELCO Foundation, I discovered millet grader and destoner solutions. Their approach to empowering small businesses resonated with me, and I decided to integrate the energy efficient multi-processing unit into my business. The processing capacity has increased by 50%. Earlier, with three laborers, I could process one quintal in 5-6 hours. Now, I process two-three quintals per hour, running the machine for five hours a day. This increased efficiency has lowered my operational costs by INR 10,000 while increasing my monthly income by 40%, helping me gain a stable financial footing.

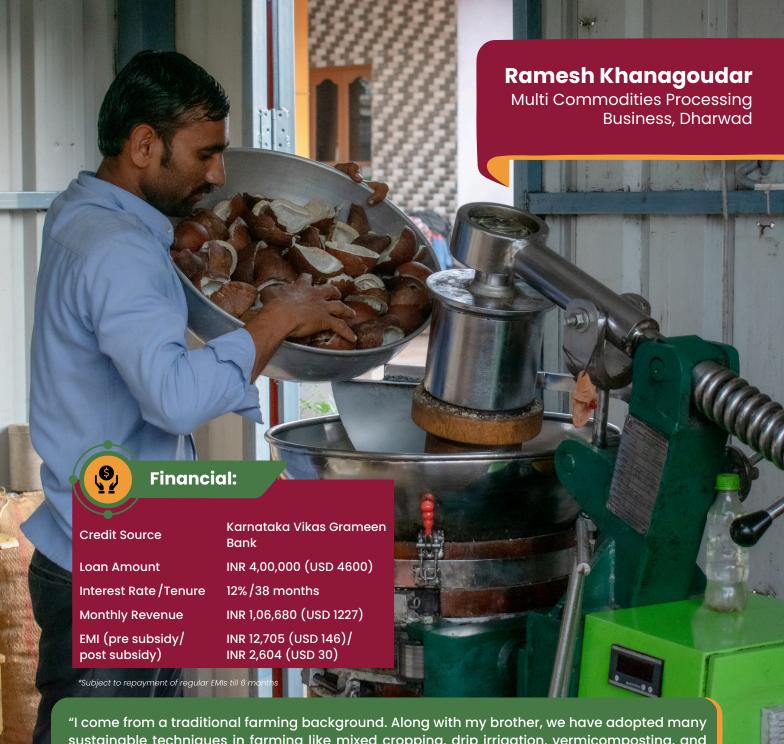


"I started working as a driver, earning Thirty Thousand Indian Rupees (USD 345) per month, but in 2016, the passing of my father made me rethink my path as I was always away from home. I decided to leave my job and work on the farm.

For the next few years, I soon realized that agriculture alone was not enough to provide for my family. In 2021, I ventured into dairy farming, hoping to expand my income, but financial losses in the business left me searching for a more sustainable solution. During this time, I visited local Khova (reduced sweet, spiced milk)-making units, which sparked the idea of starting my own Khova production business.

I learned about the PMFME scheme from Agriculture Officer Sayt Batil. Encouraged by the opportunity, I applied for support in 2022 and successfully secured a loan of one lakh to two lakh Indian Rupees (USD 1,150 – 2,300) from my Self-Help Group (SHG) Dharmasthala Sanga to purchase a specialized solar powered Khova-making machine.

With the new equipment and expert support, I set up my Khova production unit, starting with a modest 30 kg of Khova per day. Today, after two years of continuous effort and adaptation, my production has grown to 200 kg per day. My Khova has become a sought-after product allowing me to create employment opportunities for others in my community."



sustainable techniques in farming like mixed cropping, drip irrigation, vermicomposting, and using organic fertilizers.

As the demand for organic products grew, we saw an opportunity to modernize agriculture produce processing. This led us to SELCO's solutions, where we learned about energy efficient equipment that ran on solar and gave optimal outputs. With support from the PMFME scheme, we secured a solar-powered flour pulveriser, a turmeric pulveriser, and an oil seed processing machine. We took a loan from Karnataka Vikas Grameen Bank, and the 35% subsidy ensured a reduced EMI and total loan payable.

With these advancements, I set up a business along the highway, selling farm-processed organic turmeric and oils - groundnut and coconut. Our income has increased and strengthened our commitment to sustainable agriculture further. As a resource person for Krishi Vigyan Kendra (KVK) and the Department of Agriculture, I now share my knowledge about these solutions at various awareness meetings, melas and conferences, encouraging others to adopt similar eco-friendly practices and solutions.

We have earned recognition from NABARD and Department of Agriculture, Karnataka."





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