CASE STUDIES

LIVELIHOOD MODELS *of* RURAL MAHARASHTRA

Compiled by:
Action for Agricultural Renewal in Maharashtra (AFARM)

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ACTION FOR AGRICULTURAL RENEWAL IN MAHARASHTRA

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Foreword

It is a privilege to present this volume of case studies on rural livelihoods in Maharashtra, drawn from the collective work of Civil Society Organisations & CSR Foundations along with AFARM and its network organisations over the past several years. These cases span forest-based enterprises, tribal agriculture, livestock-based livelihoods, digital and financial inclusion, women-led microenterprises, and farmer producer companies, reflecting the diversity and dynamism of rural Maharashtra.

At a time when climate change, agrarian distress, and migration continue to shape the lives of smallholders, landless workers, and tribal communities, these experiences demonstrate that inclusive and sustainable rural development is both possible and scalable. The Jamun Collective Entrepreneurship initiative in Gadchiroli, the Shramjeevi fish seed production centre in Raigad, dairy-led transformation in Nivaje, tribal enterprise promotion in Nashik, Dhule, and Nandurbar, and AFARM's own models in goat-based livelihoods and digital financial inclusion are all powerful illustrations of community-owned, market-linked solutions that build resilience from below.

This publication is rooted in the belief that people's institutions are at the heart of durable change. Across the cases, Gram Sabhas, women's self-help groups, producer groups, cooperatives, farmer producer companies, and community resource persons emerge as critical vehicles for planning, implementation, and long-term stewardship. These institutions enable poor households to aggregate produce, negotiate better prices, access finance and technology, and engage more confidently with markets and the state. Equally important is the central leadership role of women. Whether as Pashu Sakhis providing last-mile animal health services, Digital Sakhis and eDosts driving digital and financial inclusion, women dairy producers in Sindhudurg, or SHG and federation leaders anchoring access to finance and markets, the cases show that women's economic participation and decision-making strengthen both household resilience and community institutions.

For practitioners and civil society organisations, this volume offers design principles, operational strategies, and implementation details that can inform program design and adaptive management in other geographies. For donors and financial institutions, it demonstrates that relatively modest but well-structured investments – in revolving funds, cadre development, digital infrastructure, and market linkages – can unlock substantial livelihood gains when channelled through capable community institutions. For researchers and policymakers, the cases provide rich evidence on what works in integrating climate resilience, livelihood diversification, gender equity, and institutional development in a coherent, place-based manner.

On behalf of AFARM, deep appreciation is extended to all partner organisations, community leaders, women and men farmers, youth, and local institutions whose efforts and insights form the backbone of this volume. Gratitude is also owed to the funding partners who trusted in community-led processes and to the authors who have documented these experiences with rigour and care. It is hoped that readers will not only draw inspiration from these stories but will also adapt, strengthen, and scale these models in their own contexts, contributing to a more just, resilient, and prosperous rural Maharashtra.

Dr. Venkat Mayande

Chairperson, AFARM

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Introduction

This volume brings together a curated set of case studies on rural livelihood models from different regions of Maharashtra, with a focus on approaches that have demonstrated clear results and strong potential for replication and scale. The cases span sectors such as community-managed forest produce, fisheries, dairy, goat-based enterprises, nutrition-sensitive agriculture, skill development, access to finance and markets, digital inclusion, and farmer producer organisations. Presented as case studies, the volume underscores the point that rural livelihoods programs are not just technical interventions or isolated projects; they are living narratives of rural transformation, where communities, collectives, and frontline organisations are reimagining livelihoods in the face of climate stress, market exclusion, and deep-seated social inequities. These are stories of resilience, creativity, and quiet courage—of women who have turned drought-prone fields into climate-resilient farms, of tribal Gram Sabhas who have reclaimed forest rights and turned degraded landscapes into sources of food, fuel, and income, of young people who have built enterprises from goat rearing, fish seed, and WASH services in places where opportunities once seemed scarce. Each case is grounded in a simple, powerful idea: that rural people are not passive recipients of development, but the primary architects of their own futures.

What makes these cases particularly valuable is their rigour and authenticity. They are not idealised success stories, but real-world experiments that have been tested on the ground, adapted to local ecologies and social realities, and measured in terms of tangible outcomes—increased food security, reduced input costs, higher incomes, improved nutrition, and greater agency, especially for women and marginalised groups. Many of these models have been implemented at scale, across hundreds of villages and thousands of households, and have been documented with clear baselines, outcome indicators, and lessons on what worked, what didn't, and why. They reflect a deep commitment to evidence: to understanding the specific constraints faced by smallholder farmers, landless labourers, and forest-dependent communities, and to designing solutions that are technically sound, socially just, and ecologically sustainable.

At the heart of every case is a commitment to placing people at the centre of rural transformation. These models do not treat livelihoods as a technical problem to be solved from the outside; instead, they start with the knowledge, priorities, and agency of rural communities themselves. Whether it is women farmers in Marathwada deciding which crops to grow and how to manage their land, or Gram Sabhas in Vidarbha deciding how to manage tendu and mahua, or youth in tribal areas choosing which skills to learn and which enterprises to build, the emphasis is on collective decision-making, local ownership, and dignity. They show that when communities are treated as partners rather than beneficiaries, when their voices shape the design and implementation of interventions, and when their leadership is nurtured and supported, livelihoods become not just more productive, but more secure, equitable, and sustainable.

The case studies in this section are based on submissions received in response to a call shared by AFARM. Our goal is to provide a rich knowledge base that can inform and inspire practitioners, policymakers, researchers, and development agencies. The inclusion of these case studies in this state of sector report is to complement evidence based on secondary research and data with evidence from livelihoods interventions. The hope is that each case study serves as a learning tool, offering insights into how

specific livelihood needs were addressed. By examining these models, we seek to offer a deeper understanding of the strategies that worked, the obstacles that were overcome, and the lessons learned along the way. Every initiative is a story of resilience, creativity, and collaboration.

The case studies are organized around five themes, including –

1. Climate Resilient Sustainable Livelihoods
2. Sustainable Rural Enterprises
3. Skill Development & Employment
4. Access to Finance & Markets
5. Technology & Digital Inclusion

While the cases are grouped under each theme, most case-studies will exemplify multiple themes given the nature of rural interventions – they involve communities, they address capacity and knowledge gaps, and they seek to solve for market linkages – even as they are unique.

By sharing these diverse livelihood stories, we aim to offer perspectives that can be replicated or adapted in similar contexts, contributing to more sustainable and effective development practices. Below is a brief glimpse of each case study, organised by theme, to set the stage for the detailed stories that follow.

Approach and Methodology

The case studies consolidate grounded evidence from diverse livelihood interventions across Maharashtra to highlight practical models of rural resilience and economic empowerment. The case study component serves two complementary functions: (a) to document successful or promising approaches that have potential for wider replication, and (b) to identify systemic enablers and gaps that inform future programming and policy.

First, an open call for submissions was issued through AFARM's partner network and allied rural development platforms. A total of 27 case studies were received from 23 organizations, including both grassroots organisations and large implementation consortia such as WOTR. The call invited cases illustrating measurable livelihood improvements linked to climate resilience, natural resource management, enterprise promotion, digital inclusion, or financial access. These submissions were screened against five criteria: Relevance to the thematic focus; some Evidence of outcomes — demonstrated livelihood enhancement, increased incomes, or improved adaptive capacity; Scalability and replicability within or beyond the implementing geography; Innovation in institutional forms (collectives, gender-responsive structures, technology-enabled models); and Quality and completeness of documentation.

Finally, each selected case underwent a structured three-stage validation and editing process including – firstly Desk Review and Rewriting where submitted documents were assessed for clarity, internal consistency, and alignment with evaluation criteria. Where data or design details were insufficient, organisations were contacted for clarification and supplementary information. The editorial team ensured that each case followed a comparable analytical structure: context–challenge–intervention design–implementation process–results–lessons learned; secondly, Triangulation with Secondary Sources: Program claims were cross-referenced with external documentation—project reports, Monitoring and Evaluation (M&E) data, government evaluations, or publicly available information—to enhance verifiability; and finally, thematic clustering where the cases were grouped across five thematic clusters. reflecting the multidimensional nature of rural livelihoods:

- Climate-Resilient and Sustainable Livelihoods
- Sustainable Rural Enterprises
- Skill Development and Capacity Building

- Access to Finance and Markets
- Technology and Digital Inclusion

After documentation, case study insights were synthesised to extract cross-cutting drivers of success, such as participatory design, institutional ownership, and local innovation. The goal is to identify scalable design principles rather than isolated successes.

Summary of Case Studies

1. Climate-Resilient Sustainable Livelihoods

This theme highlights how communities are building resilience to drought, erratic rainfall, and soil degradation through agro-ecological farming, water conservation, and community-led natural resource management.

- **Women-Led Climate Resilient Farming (WCRF) – Swayam Shikshan Prayog, Marathwada**

  In drought-prone Latur and Dharashiv, SSP's WCRF model has enabled over 200,000 women farmers to shift from monocropping to multi-cropping of 10–15 food crops on small plots, using bio-inputs and micro-irrigation. This has increased household food availability from 6 to 10 months, reduced cultivation costs by 25–30%, and tripled incomes through linked enterprises like dairy, poultry, and seed production, while also strengthening women's land rights and leadership in producer groups.

- **Strengthening Climate-Resilient Livelihoods through the Soil Sakhi Model – WOTR, Jalna**

  In semi-arid Jalna, WOTR's Biological Resource Centres (BRCs) are community-owned hubs where farmers produce low-cost biopesticides and organic inputs using locally available materials. Inspired by the 10-Drum Theory, this model reduces dependency on expensive agrochemicals, improves soil health, and strengthens pest management, making farming more sustainable and profitable for smallholders.

- **Strengthening Livelihoods through Community Forest Rights – VNCS, Vidarbha**

  In the forests of Vidarbha, VNCS has supported Gram Sabhas to claim and manage Community Forest Rights (CFR), turning degraded forests into productive, community-managed landscapes. Through regulated harvesting of tendu, mahua, and bamboo, and community-led fisheries, these Gram Sabhas have generated over ₹85 crores in income, restored over 16,000 hectares of forest, and created thousands of workdays, linking conservation with livelihood security.

- **Transforming Agriculture through the 10-Drum Theory – MANAVLOK & Reliance Foundation, Parbhani**

  In six villages of Parbhani, the 10-Drum Theory has been scaled across 500 hectares as a regenerative farming model. By using ten locally prepared microbial and nutrient solutions, farmers have reduced chemical inputs, improved soil health, and increased yields. The model is now being institutionalised through Farmer Producer Companies (FPCs) and has been formally adopted into Maharashtra's SOPs for natural and organic farming.

- **Moving Towards Secure Livelihoods and Forests through Participatory Management (FRA) – Gramin Samassya Mukti Trust, Vidarbha**

  In tribal areas of Vidarbha, GSMT has used the Forest Rights Act (FRA) to empower Gram Sabhas as managers of forest resources. By securing CFR rights, communities have revived degraded forests, improved access to NTFPs, and strengthened local institutions,

demonstrating how legal empowerment can be a powerful tool for both ecological restoration and livelihood security.

- **Water Resource Development through Decentralisation of Water Structures – Bajaj Foundation, Gangapur, Chhatrapati Sambhajinagar**

  In water-scarce Gangapur, a community-led water conservation project has decentralised water structures, deepened wells, and promoted micro-irrigation. This has eliminated tanker dependence, doubled the number of functional wells, and increased household incomes by 119% on average, showing how local water governance can transform agrarian livelihoods.

2. Sustainable Rural Enterprises

This theme showcases how community-owned enterprises in agriculture, livestock, fisheries, and NTFPs are creating stable, market-linked livelihoods and reducing distress migration.

- **Collective Marketing of Jamun – Aamhi Aamachya Aarogyasathi, Maharashtra**

  A women-led collective in Maharashtra has successfully marketed jamun (black plum) through value addition and direct market linkages, turning a seasonal fruit into a year-round income source. This model demonstrates how collective marketing can reduce dependence on middlemen and increase returns for small producers.

- **Empowering Tribal Fishermen – Shramjeevi Fish Seed Production Centre, Gadchiroli**

  In tribal Gadchiroli, a community-based fish seed production centre has empowered tribal fishermen by providing quality seed, technical support, and market access. This enterprise has improved fish yields, reduced input costs, and created a sustainable livelihood option in remote, forested areas.

- **Nivaje Village Dairy Enterprise Model – Sindhudurg**

  In Sindhudurg, a women-led dairy cooperative in Nivaje village has transformed smallholder milk production into a profitable, climate-resilient enterprise. With technical support and market linkages, the model has increased milk productivity, reduced costs, and improved incomes for hundreds of households.

- **'Prabodhan Agri. Implement Bank' – An Innovative Experiment in Agricultural Tools**

  The main objective of an Agri. Implement Bank is to provide agricultural tools on rent to small and marginal farmers who cannot afford to buy them. For this purpose, 11 or more farmers can come together to form a Farmer Group or a Farmer Producer Company. Such groups, having a similar background, can practice collective farming to reduce costs. Jnana Prabodhini's Harali Centre is running a school and agriculture diploma college along with this initiative of tool/implement bank. The centre undertakes a variety of rural development initiatives, including women empowerment, watershed development, organic farming and entrepreneurship development for rural youth.

- **Tribal Enterprise Approach – Strengthening Sustainable Livelihoods in Maharashtra's Tribal Districts**

  This case study highlights a holistic tribal enterprise model that combines agriculture, livestock, NTFPs, and handicrafts into a diversified livelihood portfolio. By linking these enterprises to markets and government schemes, the model has reduced vulnerability and improved food and income security in tribal areas.

3. Skill Development & Employment

This theme focuses on how training, capacity building, and entrepreneurship programmes are equipping rural youth and women with skills for decent work and self-employment.

- **Improving Nutritional and Livelihood Security through Nutritional Gardens – KVK Kharpudi**

  Krishi Vigyan Kendra Kharpudi has promoted nutritional gardens in rural households, combining home gardening with nutrition education. This simple intervention has improved dietary diversity, reduced food expenditure, and created a small but steady income stream for women.

- **Community Livestock Business Centres (CLBCs) – Maharashtra**

  CLBCs in Maharashtra have created an enterprise-led approach to small ruminant-based livelihoods, providing training, inputs, and market linkages for goat and sheep rearing. This model has helped thousands of smallholders, especially women, to build resilient, community-owned livestock enterprises.

- **StartUp Sarathi – Impact Lessons from Vigyan Ashrams' Entrepreneurship Development Program**

  The StartUp Sarathi programme in Vigyan Ashrams has trained rural youth in entrepreneurship, helping them launch small businesses in agriculture, services, and manufacturing. The model shows how structured entrepreneurship training can create local employment and reduce migration.

- **Reviving Goatery and Poultry in Ghatanji, Arni-Kalamb Block**

  In Ghatanji, a community-led initiative has revived goat and poultry rearing after repeated losses, using improved breeds, disease management, and market linkages. This has restored a critical livelihood option for small and marginal farmers in a drought-prone area.

- **Pratham Education Foundation – Community Training Camps Model**

  Pratham's community training camps have equipped rural youth with basic skills in literacy, numeracy, and life skills, improving their employability and confidence. This model demonstrates how non-formal education can be a powerful tool for livelihood preparedness.

- **WASH Mitra Initiative – Skilling with Equitable Employment for Rural Youth and Women**

  The WASH Mitra initiative has trained rural youth and women as WASH (Water, Sanitation, and Hygiene) entrepreneurs, creating a cadre of local technicians for plumbing, sanitation, and water management. This model links skilling with dignified, local employment in the public WASH sector.

- **AFARM's Goatery-Based Livelihood Approach**

  AFARM's goatery model has supported small and marginal farmers, especially women, to establish goat-based enterprises with technical and market support. This has improved asset ownership, reduced vulnerability, and created a stable income stream in semi-arid regions.

4. Access to Finance & Markets

This theme highlights how revolving funds, SHG federations, and agri-entrepreneur models are bridging the gap in credit and market access for smallholders.

- **Chaitanya – Access to Finance & Markets**

  Chaitanya's federated SHG model has enabled thousands of women to access formal credit, savings, and insurance, while also linking them to markets for agricultural and non-agricultural

products. This has reduced dependence on informal moneylenders and increased women's control over household finances.

- **A Proven, Scalable, and Enterprise-Led Rural Livelihoods Model – Syngenta Foundation India's Agri-Entrepreneur (AE) Model**

  Syngenta Foundation's AE model has created a network of agri-entrepreneurs who provide inputs, knowledge, and market linkages to small farmers. This enterprise-led approach has improved access to quality inputs, reduced costs, and increased incomes for thousands of smallholders.

- **Revolving Fund-Based Livelihoods Promotion**

  This model uses community-managed revolving funds to provide timely, low-cost credit for livelihood activities, from agriculture to micro-enterprises. By keeping funds within the community, it has reduced debt traps and supported sustainable livelihood diversification.

5. Technology & Digital Inclusion

This theme shows how digital tools, solar energy, and digital financial inclusion are expanding opportunities for women and marginalised groups.

- **Empowering Women's Enterprises through Solar Technology – SELCO Foundation**

  SELCO's solar-based enterprises have enabled women in remote areas to run small businesses like tailoring, food processing, and mobile charging, using solar power. This has reduced energy costs, created local employment, and improved women's economic agency.

- **eDost – Catalysing Digital Inclusion in Tribal Areas – BAIF Development Research Foundation**

  BAIF's eDost model has brought digital literacy and services to tribal communities, enabling them to access government schemes, market information, and financial services. This has reduced information asymmetry and improved access to opportunities in remote areas.

- Securing Livelihoods of Rural Vulnerable Households through Digital Financial Inclusion – The Digital Sakhi Model of AFARM

  AFARM's Digital Sakhi model has trained women as digital financial inclusion agents, helping rural households access banking, insurance, and government schemes. This has improved financial security and reduced vulnerability for the most marginalised.

Cross cutting all of the case studies is the theme of collaboration and partnerships and how how collaboration across government, foundations, and grassroots organisations is scaling impact and embedding innovations into policy. Across all these case studies, a common pattern emerges: the most effective models are those that combine community ownership with technical support, market linkages, and policy convergence. Whether it is SSP's WCRF model being scaled through MSRLM and ATMA, or the 10-Drum Theory being adopted into state SOPs, these partnerships are critical for moving from pilot to policy. They show that sustainable rural transformation is not the work of any single actor, but of a shared ecosystem of change-makers – from women farmers and Gram Sabhas to government departments and foundations.

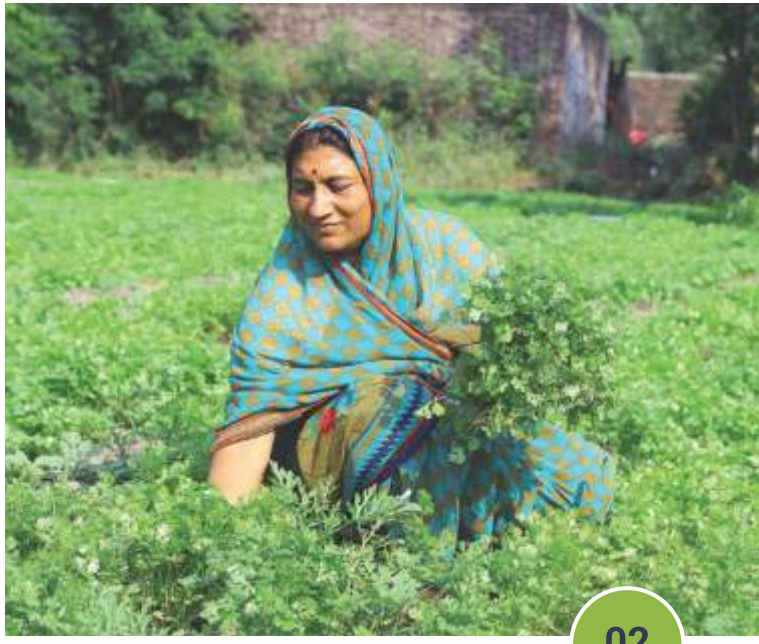
Together, these case studies form a rich tapestry of what works in Maharashtra's rural economy: community ownership, gender justice, ecological regeneration, and market linkages, all woven into locally rooted, replicable models. They are not blueprints, but invitations to learn, adapt, and scale—because the most powerful solutions often emerge not from boardrooms, but from the fields, forests, and homes of rural Maharashtra.

1 Climate-Resilient Sustainable Livelihoods

- Women-led Climate Resilient Farming (WCRF): Strengthening Sustainable Livelihoods in Drought-Prone Marathwada
- Strengthening Community-led Crop Protection and Nutrient Management through Biological Resource Centres (BRC): A View from Semi-Arid Maharashtra
- Strengthening Climate Resilient Sustainable Livelihoods through Agri Science based Interventions: The Soil Sakhi Model
- Strengthening Livelihoods through Community Forest Rights: The VNCS Model of Community-led Natural Resource Management
- Transforming Agriculture through the 10-Drum Theory - A Scalable Model for Sustainable Farming across 500 acres in Maharashtra
- Moving Towards Secure Livelihoods and Forests through Participatory Management (FRA)
- Ecosystem-based Adaptation for Resilient Livelihoods: Learnings from Bhojdari Village, Maharashtra
- Water Resource Development through Decentralization of Water Structures in Chhatrapati Sambhajinagar District - AFARM`s Approach

1.1 Women-led Climate Resilient Farming (WCRF): Strengthening Sustainable Livelihoods in Drought-Prone Marathwada

Swayam Shikshan Prayog (SSP)



The Challenge

Marathwada is among Maharashtra's most drought-prone regions, marked by erratic rainfall, high dependence on groundwater, and declining soil fertility. Recent crop failures have deepened livelihood insecurity, migration, and food insecurity and nutritional distress in rural households. Three interlocking drivers underpinned the crisis:

1. Monocropping and chemical dependency led to soil degradation, falling yields, and rising input costs.
2. Climate variability - irregular monsoon, heat waves, and dry spells - made traditional farming systems unreliable.
3. Gender exclusion limited women's participation in land ownership, decision-making, and access to resources and schemes and importantly, knowledge and extension services

For most households, these factors translated into food shortages for 3–4 months of the year, high dependence on market food, and seasonal migration to cities for work. Women's unpaid labour in household farming was unrecognized, while their voices were absent in planning or adaptation discussions.

The Approach

Swayam Shikshan Prayog (SSP) designed and evolved the Women-Led Climate Resilient Farming (WCRF) model over the last decade. The initiative grew from SSP's post-disaster recovery work after the Latur earthquake (1993) and subsequent droughts, where their learning was that centering women's leadership in rebuilding efforts was a critical lever for sustainable change. Carrying that learning forward, SSP's approach centers rural women's leadership in Marathwada's transition from climate-vulnerable farming to climate-resilient, sustainable livelihoods and food, water, and income security. This approach is at the heart of the Women-Led Climate Resilient Farming (WCRF) model.

The Intervention: The WCRF Model

The Women-Led Climate Resilient Farming WCRF initiative was first piloted in Latur and Dharashiv districts in 2015, where 80% of cultivable land is rainfed and farmers' dependence on monocrops like soybean and sugarcane had led to repeated losses and declining soil health. Leveraging local Self-Help Groups (SHGs) and trained community facilitators known as Krishi Samvad Sahayaks (KSS), SSP introduced diversified, low-cost, eco-friendly farming centered on women's agency and knowledge. At its core, WCRF mobilizes women to cultivate practice multi-cropping of 10–15 local food crops (pulses, millets, vegetables, cereals) on small pieces of family land (usually 0.5 to 1 acre) and use the produce to generate income through market-linked enterprises.

The model integrates four key components:

1. Diversified basket of food crops with nutritious, drought resistant varieties
2. Soil and water conserving cultivation practices using compost, bio-inputs, and micro-irrigation.
3. Farm-based enterprise creation such as dairy, poultry, bio-gas and goat rearing.
4. Women's Leadership and market linkages through Farmer Producer Companies and producer groups.

The model's framework seeks to address critical barriers rural women farmers face:

- To overcome normative restrictions on women's access to land, SSP's created demonstration farms showcasing the practices as well as the returns in terms of money and nutrition. The demonstrations showed increases in quantum and diversity in food production & availability, reductions in family expenses, and improved soil health.
- To address the challenge of credit and capital availability for inputs, SSP' designed the Community Resilience Fund (CRF)
- To overcome limited access to markets, the women are organized into producer groups and farmer producer organisations that enable collective bargaining with markets directly
- Gaps in technical knowledge is bridged through linkages to KVK scientists and ATMA officials. Community Resource Persons (CRPs) and Krushi Sakhis provided regular training and guidance to women farmers and ensured these practices continued and became sustainable.

The WCRF model brings together these components in the **Build-Empower-Sustain-Partner** framework

Build: Creating community institutions, farm field schools, and demonstration farms, and linkages with ATMA, KVK and government departments for technical know-how

Empower: Building women's capacity through a mix of training by local Krishi Samvad Sahayaks, exposure visits, and peer learning exchanges within the groups and villages.

Sustain: Strengthening women's producer collectives and access to finance through Community Resilience Funds (CRF) and government schemes like PoCRA and PMKSY.

Partnership: Strengthen partnership with local government, access government schemes and programmes, local advocacy and network of women farmers to scale up the activities.

SSP's 25-year track record-empowering 600,000 women across seven states-

enabled WCRF's institutionalization through SHGs and Krishi Samvad Sahayaks (KSS), from these early pilots in Latur/Dharashiv (900+ villages) to 10 districts in the state. SSP nurtures partnerships with the Maharashtra State Rural Livelihoods Mission (MSRLM), Agricultural Technology Management Agency (ATMA), Krishi Vigyan Kendras (KVKs), National Bank for Agriculture and Rural Development (NABARD), and local Panchayats for the WCRF. This ecosystem helped unlock scheme convergence (e.g., PoCRA, PMKSY), amplify resource flows by 4-5x per SHG via CRF-backed credit; address market failures: producer groups/FPCs bypassed middlemen (retaining 25-35% margins), while KVK linkages delivered 15-20% yield uplifts via bio-inputs, and ensured program fidelity - CRPs/Krushi Sakhis ensuring 85% practice retention through peer reinforcement. Income increases helped ease norms restricting women's access to family lands.

Coverage of the intervention

- In **Dharashiv district,** SSP works in **all eight blocks,** covering **more than 500 villages.** In **Latur district,** SSP works in **six blocks,** covering **over 400 villages.** Across Maharashtra, SSP operates in **10 districts** with a strong footprint in drought-prone regions.
- Till date, SSP has empowered nearly **6 lakh rural women** through its women-led models. Given that SSP's largest and longest engagement is in Marathwada, **over 4 lakh women** are from this region alone, while the remaining **2 lakh women** are from other districts.

Outcomes and Impact

Over the past decade, the WCRF model has evolved from a pilot to a statewide movement for women-led, climate-resilient livelihoods, achieving measurable change. The model's analytical premise rests on diversification economics: shifting from single-season soybean/sugarcane (vulnerable to price crashes of 40-60%) to 10-15 crop portfolios across Kharif (e.g., green gram, pigeon pea, vegetables) and Rabi (e.g., sorghum, gram, wheat) seasons. This reduced risk exposure by distributing harvest timelines and market dependencies. It also catalyzes women's unrecognized 80% contribution to farm labor into recognized identities as farmers, and mobilizes self help groups and the wider livelihoods ecosystem for optimal impact. Changes include -

- More than 200,000 women farmers across Maharashtra have adopted WCRF practices, transforming over 120,000 acres into climate-resilient farmland.
- On average, household food availability increased from 6 to 10 months per year, with women growing 12–15 varieties of food crops.
- Use of bio-inputs and micro-irrigation reduced cultivation costs by 25–30% and improved soil moisture retention.
- Over 80% of women-initiated farm-based micro-enterprises, tripling household incomes and generating employment. Enterprises cover Seed production; Vermicompost and organic input production; Poultry and goat rearing; Dal processing; Vegetable cultivation; Fodder cultivation; Dairy and milk-based value-added products; Cattle feed and poultry feed production; Kitchen nurseries and community nurseries; Bio-input production units; Food processing units across local value chains
- Increased land ownership, participation in FPCs, and leadership in local institutions.
- Women's participation in decision-making grew significantly - over 60% now hold roles in community institutions, Panchayat development committees, and Farmer Producer organizations.
- About 85% of families consume chemical-free vegetables and pulses, compared to 42% before WCRF that ensured better nutrition for women, children, and elders.

- Women farmers cultivate a diverse mix of food, nutrition, and income crops across seasons. During Kharif season, these women cultivate Green gram, Black gram, Pigeon pea (Tur), Chilli, Groundnut, Brinjal, Onion, Cluster bean, Spinach, Tomato, Sesame, Coriander etc. During Rabi season, Sorghum, Wheat, Gram (Chana), Fenugreek, Cluster bean, Peas, Flaxseed, Maize, Chilli, Lady's finger, Lentil, Cabbage, Coriander. This diversity ensures food security, risk reduction, and sustained income for women farmers
- Additionally, the approach strengthened the social capital of women's groups. Collective seed banks, shared irrigation structures, and knowledge networks ensured that no family was left behind in distress period.

SSP`s model driving social transformation

SSP's WCRF model goes beyond improving agriculture-it drives social transformation in women's lives, families, and communities. Through this approach:

- Women gain stronger access to **rights and entitlements,** including education, livelihoods, and government schemes.
- Many women and girls have **rejoined or continued higher education,** as families increasingly recognize the importance of women's education.
- WCRF highlights women's central role in agriculture-where they contribute nearly **80% of the work**-and strengthens their identity as **farmers in their own right.**
- SSP supports women to gain **access to family land** and exercise decision-making in cultivation.
- Through sustained advocacy and family-level dialogues, women are increasingly receiving **land ownership.**
- In the last 10 years, **39% of 2 lakh women farmers engaged in WCRF now have land ownership,** a major milestone in women's economic rights in Marathwada.

Lessons Learned

- Women's leadership builds resilience: Empowered women as cultivators and decision-makers ensures better resource utilization, risk management, collective action and innovative solutions.
- Diversified, bio-based farming builds food and income security and livelihoods. The shift from monocropping to multi-cropping and all seasonal availability of food created stability against drought and market shocks.

- Community Resilience Funds and Farmer Producer Companies (FPCs) reduced women's dependence on exploitative credit and strengthened income opportunities.
- Leaders and trainers like Krishi Sakhis and CRPs ensured continuous learning and adaptation across villages and network.

Future Directions

SSP aims to integrate digital agri-skilling, use of tools and technology, expand market linkages for women-led FPCs, and embed WCRF principles into state climate and livelihood policies. As Maharashtra seeks pathways that combine climate adaptation, gender equity, and rural growth, the Women-Led Climate Resilient Farming model offers a scalable solution - demonstrating that when women lead, communities thrive with dignity, food security and nutrition in climatic uncertainties.

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1.2 **Strengthening Community-led Crop Protection and Nutrient Management through Biological Resource Centres (BRC):** A View from Semi-Arid Maharashtra

Sachin Adhe - Watershed Organisation Trust

The Challenge

In recent years, the rapid increase in sucking pest infestations has become a significant challenge, with several species developing resistance to commonly used insecticides like Imidacloprid and Thiamethoxam (Patel et al., 2020). Additionally, the rising costs of chemical pesticides and fertilizers have imposed a substantial financial burden on farmers, increasing cultivation costs and threatening the long-term sustainability of farming systems. These challenges are evident in the project villages of Jalna, where farmers primarily cultivate ginger, cotton, chili, maize, soybean, and various vegetable crops. These crops are susceptible to a range of pests, and farmers are heavily dependent on chemical insecticides and fungicides (Gaikwad et al., 2025). Finally, awareness about soil health management, soil testing, and methods of preparing compost and organic formulations is limited. This excessive use of fertilizers and over-irrigation aims to maximizing productivity, but has led to the development of saline and alkaline soils and depleted nutrient status of the soil.

This case study is focused in the **Bhokardan block of Jalna district,** which falls in the semi-arid region of Maharashtra. Major commercial crops such as Ginger, Chilli, Cotton, Maize and some pulses play an important role in the local economy. Due to the dry climate and recurring stress, farmers have increasingly adopted input-intensive practices, using large amounts of chemical fertilizers and synthetic pesticides to control pests, diseases, and nutrient supply for getting maximum production. Most of the farmers in the area applied agrochemicals 5–6 times per cropping cycle. Pesticide use alone accounted for nearly 50% of the total cultivation expenses, while fertilizers contributed an additional 20–30%. Excessive use of agrochemical increases the cost of cultivation, pest and disease resistance to it and disturb the ecological balance of soil. Repeated application of insecticides from the same group of chemicals reduces their effectiveness, develop pest resistance, and pushing farmers toward higher doses or more toxic alternatives. Similarly, the overdose of fertilizers led to significant nutrient losses through leaching and volatilization, resulting in poor nutrient-use efficiency and cause eutrophication (Kole et al., 2019). This pattern also disrupted natural pest regulation, as broad-spectrum chemicals eliminated beneficial insects, contamination of water bodies, resulting in frequent secondary pest outbreaks and unpredictable pest dynamics and increasing area of problematic soils (Parven et al., 2025). This approach has contributed to rising production costs, farmer debt, and gradual ecological degradation.

Compounding these issues was the lack of practical and locally suitable alternatives. Crop advisories delivered are often generic and not tailored to the farm, phenological growth stage of the crops and more oriented toward the use of agrochemicals rather than environment friendly solutions. Commercial biological products available in the market were very expensive, low quality and incompatible for smallholder needs. These challenges reinforce one another and create a vicious cycle of rising chemical dependency, ecological imbalance, and declining farm resilience.

The Approach

To address these challenges, the Watershed Organisation Trust (WOTR) conceptualized Biological Resource Centres (BRCs) in

project villages of Jalna, Solapur, and Dharashiv districts, of Maharashtra. Three elements are critical to WOTR's approach:

- **Community ownership:** Before establishing the BRCs, WOTR conducted extensive capacity-building sessions with Self-Help Groups (SHGs), and key women and men farmers. These trainings focused on understanding the purpose of BRCs, familiarization with plant protection ingredients, plant nutrients aspects and the importance of soil health management. This participatory approach ensured strong community involvement and local ownership of the initiative.
- **In-situ resource centres** to ensure the timely and easy availability of various organic inputs: setting up village based centres that can help with effective pest and disease management, improvement of soil health,
- **Use of organic inputs** – to help in the reduction in dependency on external inputs, and promotion of sustainable, climate-resilient agriculture. The intervention is inspired by the 10-Drum Theory Unit, a structured framework that includes 10 different bio-formulations, five for plant protection (Effective Microorganisms (EM), Dashaparni Ark, EM Amil Ark, EM Vemil Ark, EM Desi Kelp, EM Fruit Ark) and five for nutrient management (EM-2, DF-1, humic acid, fulvic acid, waste decomposer, and seven-grain slurry) (Gaikwad et al. 2025). In addition to the 10-drum preparations, the BRCs also procure essential microbial inputs such as *Verticillium, Beauveria, Metarhizium consortia, Trichoderma, Pseudomonas, biofertilizer like Azotobacter, Rhizobium, Mycorrhiza,* Humic

The Intervention

WOTR set up Biological Resource Centres (BRCs) (operational since 2023) in project villages of Jalna, Solapur, and Dharashiv districts, of Maharashtra. In its design, the BRC is aimed at serving as a **village-level hub** *where farmers collectively prepare, store, and distribute low-cost biological inputs for crop protection and soil improvement*. By sustainably utilizing locally available materials such as neem leaves, cow dung, cow urine, and botanicals, the BRC enables farmers to prepare effective formulations like Dashaparni Ark, Neem Ark, Jeevamrut, Amrutpani, EM-FYM and EM rich Vermicompost for soil health improvement. The BRC model aims to reduce dependency on chemical pesticides and fertilizer, ensure the timely supply of eco-friendly inputs, and promote residue-free and climate-resilient agricultural practices in project villages. The BRC acts as a **community-owned mechanism** that strengthens low cost eco-friendly inputs available at the village level which help enhance crop health, reduce production

costs, enhance environmental safety, and empower farmers toward self-reliant and sustainable agriculture.

The establishment of Bio-Resource Centres (BRCs) offer low-cost, locally produced, and climate-resilient biological solutions to help farmers break out of this cycle and adopt sustainable pest management practices (Behl et al., 2023).The Bio-Resource Centre (BRC) model emerged as a practical solution, enabling communities to produce low-cost biopesticides, beneficial microbes, and organic fertilizers using local materials, while also serving as training and demonstration hubs. To ensure transparency, BRCs display input prices at public locations and share updates via WhatsApp. EM-based solutions cost ₹70 per litre, and microbial inputs are priced at ₹150 per litre. By using locally available bio-solutions, farmers can save up to 20% of their total chemical costs per acre, based on practical experience. It helps reduce the number of chemical spray over crops. A significant feature of the intervention was the strong leadership demonstrated by women farmers, particularly SHG members, who played a central role in day-to-day BRC operations. Their involvement strengthened community trust, ensured timely production, and enhanced the adoption of biological solutions across villages highlighting gender-inclusive agricultural innovation as a major success factor.

Table 1 BRC Implementation – Steps, Challenges, and Solutions

Components	Details
Implementation Steps	◆ Selected suitable BRC locations and trained local resource persons. ◆ Installed awareness boards or wall painting in the villages on hazards effect of chemicals on soil, plant, animal and human continuum. ◆ Promoted biological inputs through women-led SHG farmers. ◆ Trained farmers on biopesticide preparation and quality control. ◆ Conducted field demonstrations and regular trainings. ◆ Set up local distribution for BRC-produced inputs. ◆ Encouraged farmers on benefits of biological inputs for soil, crop, and environment.
Challenges Faced by BRCs	◆ Strong local preference for chemical farming. ◆ Limited technical capacity of BRC staff initially. ◆ Farmer hesitation due to doubts about biological input performance. ◆ Temperature variations affecting product quality and shelf life. ◆ Irregular supply of raw materials for production.
Solutions	◆ Delivered repeated hands-on training and technical guidance to BRC staff. ◆ Built farmer confidence through on-farm demos and visible results. ◆ Improved storage, shifted to small-batch production, and used insulated containers. ◆ Ensured consistent raw material availability through local sourcing and buffer stock.

Outcomes and Impact of BRC Implementation

A Total of 16 Biological Resource Centres (BRCs) were established, and one BRC was set up in the Bhokardan block of Jalna district. This unit demonstrated strong operational performance and community uptake. The Bhokardan BRC contributed to the collective production and distribution of 7000 L of bio-inputs, reaching 16 villages and facilitating the adoption of biological crop protection and nutrient management across 1350 ha of farmland. The intervention in Bhokardan directly reached 1700 farmers, improving their access to cost-effective, quality-controlled biological inputs and strengthening sustainable agriculture practices. The BRC network achieved a cumulative income of ₹5.4 lakhs (Source WOTR BRC 2024-25), indicating economic viability and highlighting the potential of decentralized bio-input production systems to enhance community resilience and promote ecologically sustainable farming in the region. BRC inputs are highly cost-effective because their prices are much lower than today's chemical insecticides and fungicides. Beyond just pest and disease control, BRCs help reduce chemical fertilizer expenses. By applying BRC inputs only when needed, farmers can significantly lower their overall costs.

I. Environmental Impact

The introduction of BRC-produced biological inputs resulted in clear ecological benefits across project villages. While overall crop yields remained stable, farmers reported a significant improvement in crop quality due to reduced chemical residues, allowing access to better-value and residue-sensitive markets. A local field assessment further recorded a 15% increase in beneficial insect populations, such as predators and parasitoids, on farms using BRC inputs. This rise in natural enemies indicates early ecological recovery, restoration of biological balance, and improved long-term agroecosystem health.

II. Social Impact (Voices from the Field)

- **Asha Taru, BRC Committee Member (Age: 43, Village Khaparkheda)**

Earlier, chemical pesticides were costly and affected our health. Today, we prepare our own plant protection inputs at the BRC. Expenses have reduced, and my family works in the fields without fear. We feel empowered because the solution is in our own hands.

- **Shri Gulabrao Gavali, Farmer and Early Adopter (Age :48, Village: Sonkheda)**

My harvest quantity stayed almost the same, but my input costs dropped significantly. Buyers preferred the low-residue produce. With BRC inputs, farming has become safer—and financially smarter. These testimonials highlight how BRCs have enhanced farmer confidence, reduced chemical exposure, improved health safety, and promoted financial resilience.

III. Stakeholder Perspectives on BRC Functioning

- **Farmers' Perspective:**

Farmers appreciate the substantial reduction in cost of crop protection and nutrient management and found new technology to produce their own ecofriendly agriculture inputs. This shift has improved their sense of control, reduced dependency on chemical markets, and strengthened overall farm resilience

- **Agronomists' Perspective (Local Experts):**

Agronomists recognize BRCs as an effective mechanism for localizing scientific knowledge and promoting low-cost practices for crop management. Their key focus is on maintaining strict quality assurance to ensure the reliability and performance of various organic inputs.

- **Organizational Perspective:**

For the implementing organization, the BRC represents a scalable, community-owned system that decentralizes crop protection

and nutrient management inputs at the village level. The immediate priority is to strengthen local BRC committees, thereby ensuring long-term sustainability and enabling the self-sustained expansion of the model across villages without external organizational or institutional support.

Lessons Learned

The importance of continuous capacity building, strong community ownership, and strict quality control of biological inputs are underscored.

Future Direction

The BRC model offers a resilient, community-led, and local eco-friendly pathway—powered significantly by women farmers to achieve sustainable and economically viable agriculture in semi-arid regions. Looking ahead, several opportunities and unresolved questions emerge. Strengthening local governance mechanisms, ensuring a reliable supply of raw materials, and integrating digital advisory systems will be crucial for scaling the BRC model without compromising microbial quality. Additionally, exploring long-term economic viability, monitoring soil health changes, and understanding farmers' behavioural shifts toward biological inputs will inform future improvements.

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1.3 **Strengthening Climate Resilient Sustainable Livelihoods through Agri Science based Interventions:** The Soil Sakhi Model

Mann Deshi Foundation

The Challenge

Farmers across the *drought-prone* regions of Maharashtra have been grappling with steadily **declining agricultural yields** due to unscientific farming practices, overuse of chemical fertilisers, degraded soil health, limited access to water, pest infestations, and increasingly unpredictable weather patterns. In communities such as Mann, Malshiras, Atpadi, Khatav, and Sangola, where the Mann Deshi Foundation is headquartered, smallholder farmers face severe economic hardship, often recovering barely 20% of their cultivation costs.

Limited formal training, reliance on informal advice from shopkeepers or neighbours, and restricted access to the internet exacerbate the knowledge gap. **Climate change further intensifies these vulnerabilities,** reducing productivity and pushing many farmers toward unsustainable practices.
Recognizing these challenges, Mann Deshi initiated a long-term, science-based agricultural intervention aimed at reviving soil health, increasing yields, and building climate resilience. Central questions guided this effort: How can farmers access reliable agronomic knowledge? How can climate-resilient practices replace harmful inputs? And how can rural women assume leadership roles in transforming agriculture?

The Approach

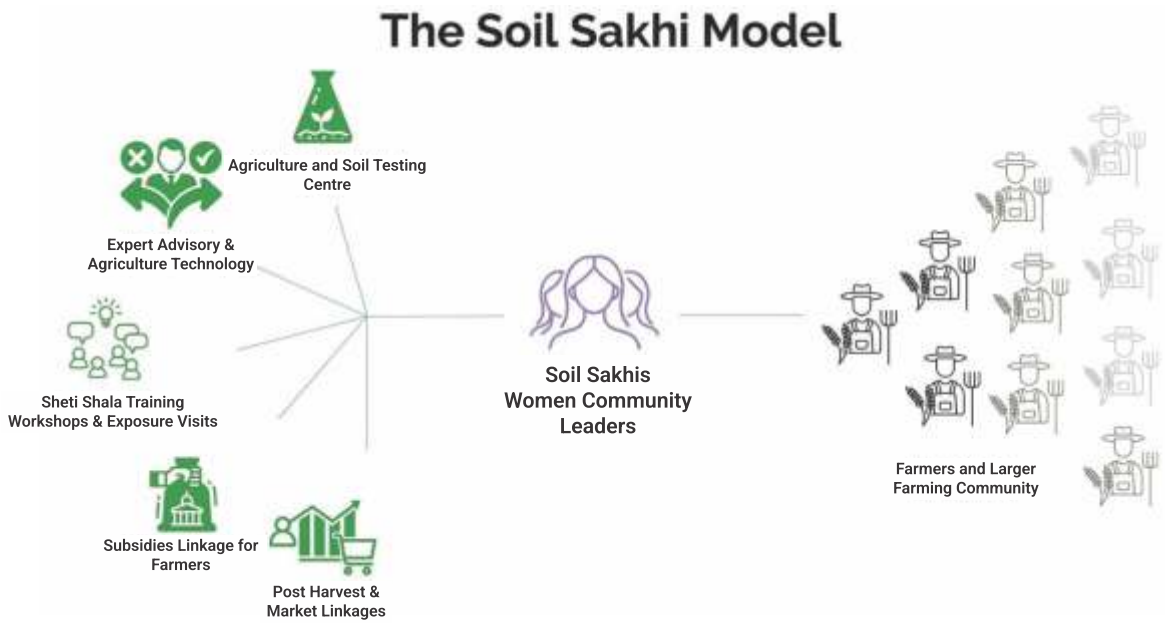
Before establishing the Agriculture and Climate Action Programme, Mann Deshi piloted multiple interventions. Drought-Relief Cattle Camps in 2012 and 2018 provided water, fodder, and silage-making training, offering temporary relief and reducing seasonal migration. Check dams were constructed along the Man Ganga River to enhance groundwater levels, while Farm-to-Market initiatives encouraged collaborative cultivation and improved market participation. Women-led Farmer Producer Company was encouraged and supported, alongside storage and cold storage facilities to reduce distress sales. Despite these efforts, none fully addressed the core challenges of soil degradation, pest management, and sustainable yields. Consolidating lessons from these programs, Mann deshi designed a comprehensive agricultural programme with the Soil Sakhi Model at its centre. The program in its design aims to be a comprehensive women-led extension system focused on soil health, climate-smart practices, pest management, and technology adoption.

The Intervention

The Soil Sakhi program has the following layered components:

- Rural women are at the centre of the program, trained to become Soil Sakhis who provide small holder farmers with soil and water testing services.
- Farmers are given access to agronomists who provide farmers with crop schedules, pest management, training on new technologies and climate change awareness.

- Capacity-building workshops through its Sheti Shala programme aim to increase the farmers scientific knowledge on agriculture and its allied businesses as well as build resilience to climate change and market volatility.
- Exposure visits are conducted, where farmers visit other farmers or businesses to become aware about different agricultural practices, be inspired and increase their knowledge base.
- Post-harvest support through training on food waste management, subsidized cold storage facilities, value addition services and market linkages.
- Technology adoption: A unique component of the intervention is the Agricultural Lab in Mhaswad, fully equipped with a chemical lab and a crop pathology centre at affordable rates. It is run by a competent team of Soil Sakhi's, Agronomists, Lab technicians and Data Operators. The Lab aims to empower farmers with access to scientific knowledge on soil, water and crop health. With the help of this knowledge, the programme aims to increase farmers income and yield while also safeguarding soil and water health. This soil to market intervention focuses on agricultural households and women farmers. It aims to initiate a dialogue within the agricultural community on the latest developments in the industry and bridge the information gap and lack of support experienced by farmers.



These interventions are aimed at empowering farmers and ensuring they earn a sustainable source of income. By empowering women leaders, the programme strengthens gender equity while improving agricultural outcomes. So far about 9,000 farmers across 3 districts have been impacted through the soil sakhi model.

Intervention processes

STEP 1 - AWARENESS AND MOBILISATION OF FARMERS

Mann Deshi's team consisting of Soil Sakhis and agronomists conduct farmer meetings in villages to identify farmers that are interested in being a part of this programme. Farmers are explained the importance of soil health, capacity building workshop opportunities like Sheti Shalas and exposure visits as well as how they can build climate change resilience.

STEP 2 - COLLECTION OF SAMPLES

Soil Sakhis visit farmers who have shown an interest in the project to collect their soil and/or water samples as well as baseline data required for testing. Farmers are

expected to pay theprice of Rs. 300 or Rs. 600, depending on the number of parameters tested, which includes a soil test report, a crop schedule and pre-sowing to harvest support.

STEP 3 - TESTING OF SOIL & CREATION OF REPORT

Each farmer's soil is tested at Mann Deshi's Agriculture and Soil Testing Lab. The soil test report provides a detailed understanding of 16+ elements. It helps farmers to understand what is lacking in the soil and what is in excess in their soil. The water test report helps farmers understand the pH level of their water and to what extent the quality of water is affecting crop yield.

STEP 4 - CREATION OF CROP SCHEDULES

Based on the soil test report, a crop schedule is prepared for each farmer. This schedule provides a detailed list of activities that farmers need to follow and complete at particular times of the crop cycle.

STEP 5 - CRITICAL MILESTONES

Soil Sakhis and Agronomists regularly visit farmers to check if they are following the activities as expected and if they are completing the critical milestones. They support the farmers to systematically document their process and experiences to build agri-business skills. Completing the three critical milestones should result in over a 20% increase in yield. Farmers who have undertaken soil testing are encouraged to participate in Sheti Shalas and Exposure Visits to learn about best practices in agriculture.

STEP 6 - POST HARVEST SUPPORT

At the time of harvesting Soil Sakhis collect data on how much yield is harvested for each farmer and extend post-harvest support to farmers that need it in the form of stalls at the Mann Deshi Mahotsav and market linkages.

The Impact

The success of the soil sakhi model can be seen in the examples of farmers such as Reshma Kalel, a progressive vegetable farmer from Andharvad with 1.5 acres of land. Reshma transformed her capsicum cultivation after facing low yields, high input costs, and poor soil health. With support from the Soil Sakhis, through soil testing, customised fertiliser plans, agronomist visits, organic input training, pest management guidance, and shade-net cultivation, she adopted sustainable practices that improved her soil, controlled thrips, and reduced chemical use. As a result, her yield rose from 8 to 25 tonnes, fertiliser costs dropped by 40%, and her net income increased from ₹2.4 lakh to ₹7.5 lakh. Today, she feels confident as a capsicum farmer and even provides employment to 10–15 women in her village.

The programme has had a multifaceted impact that can be viewed through the sustainability framework of Triple Bottom Line, namely, impact on people (social impact), impact on the planet (environment impact) and impact on profit (economic impact).

On people:

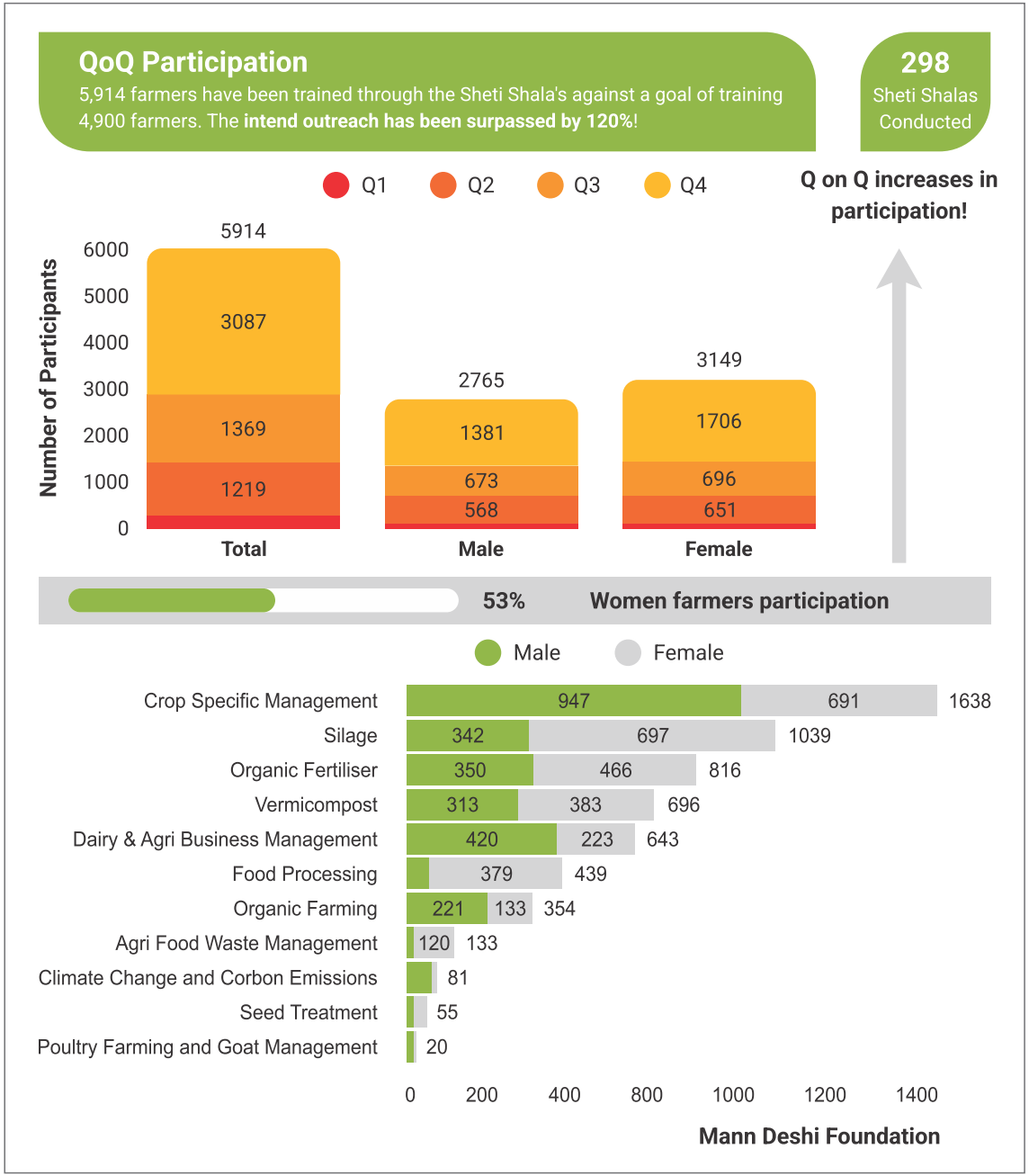
- Increased sense of hope and support for farmers.
- Created leadership and economic opportunities for women employed as Soil Sakhis.
- Increased access to scientific data and information through agronomists.
- Community building through farmers WhatsApp group.
- Increased involvement of women in agriculture related decision making.

On planet:

- Over 1,222 acres of land have been soil tested
- 22% reduction in use of chemical fertilisers across 182 farmers growing the same crop.
- 265 tonnes of Co2e emissions reduced over a sample size of 182 farmers growing the same crop.
- Transition of farmers from water intensive crops like sugarcane to pomegranate.
- 3,119 farmers have been trained on sustainability and climate change.

On profit:

- An average of 9,474 reduced per farmer in chemical fertiliser cost across 182 farmers surveyed
- Exposure and training in allied businesses and new business opportunities.
- An average of 40% increase in yield has been seen across 137 farmers growing the same crop.
- 32 farmers given access to market linkages at Mann Deshi's Mahotsav
- A 59% increase in income across 137 farmers surveyed growing the same crop.
- Mann Deshi Foundation's Agriculture and Climate Action Programme demonstrates that



Lessons learned

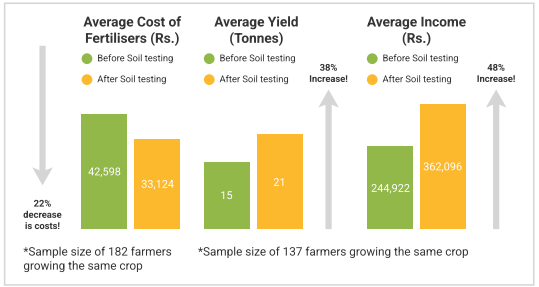
Integrating scientific knowledge, climate-resilient practices, and women-led extension services can break cycles of low productivity in drought-prone regions. By addressing soil health, pest management, irrigation, and market access holistically, the programme has improved yields, incomes, and environmental sustainability. Reshma Kalel's story highlights that empowering farmers with knowledge, not just advice, enables sustainable agricultural transformation. The programme's successes provide lessons for replication in similar geographies: combining technology, training, and community leadership creates resilient, economically viable, and environmentally responsible farming systems. **In the future we aim to** scale the Soil Sakhi model, expand exposure visits and capacity-building workshops, strengthen climate-smart crop practices, soil to market supply chain support for farmers and foster farmer-led knowledge networks to sustain community-level impact.

2,306 Visits Made by Soil Sakhi's

1,016 Soil Samples Collected

559 Agronomist Visits To Farmers Field

1,723 Farmers on WhatsApp Group



Impact of the Intervention on People, Planet and Profit.

People - 3,119 farmers trained; women employed as Soil Sakhis; increased community decision-making and peer learning.

Planet - 1,222+ acres soil tested; 22% reduction in chemical fertilisers; 265 tonnes CO2e emissions reduced; shift to less water-intensive crops.

Profit - 9,474 average cost reduction per farmer; 40% yield increase; 59% income rise; exposure to allied business opportunities.

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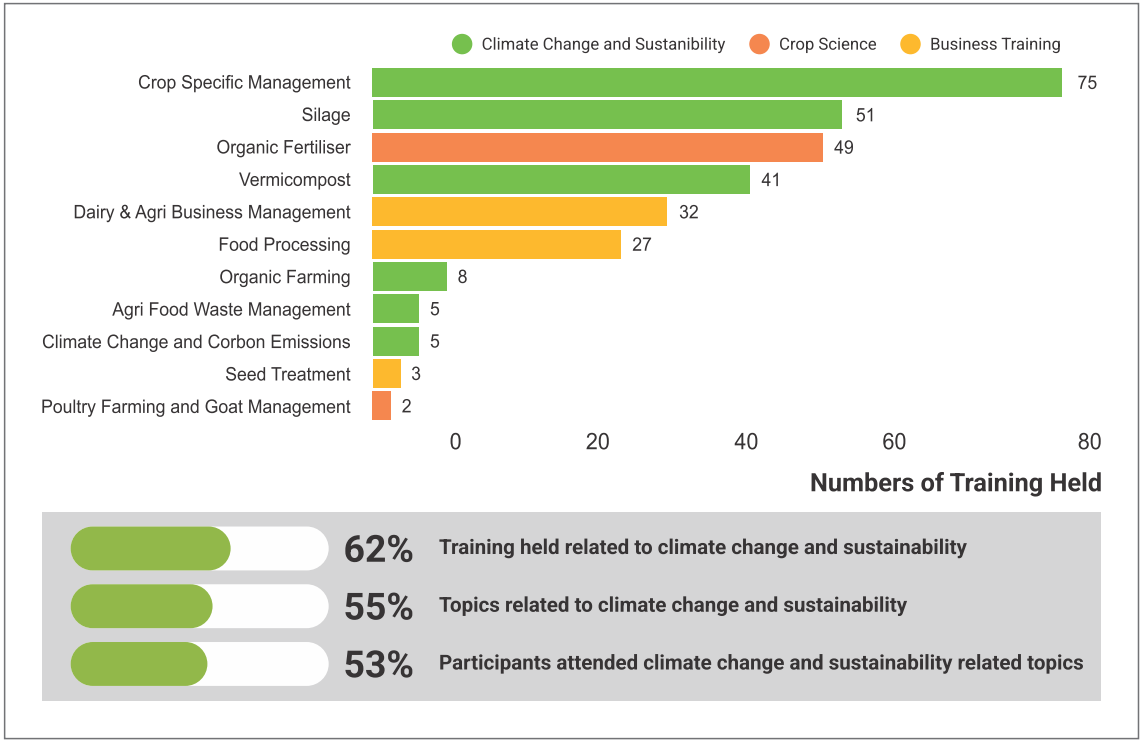

1.4 Strengthening Livelihoods through Community Forest Rights: The VNCS Model of Community-led Natural Resource Management

Umesh Sahare - Vidarbha Nature Conservation Society

The Challenge

The Vidarbha region of Maharashtra, home to a large tribal population, is endowed with rich forest resources but faces challenges of poverty, forest degradation, and limited livelihood opportunities. The implementation of the Forest Rights Act (FRA), 2006, provided an opportunity to empower local communities to manage and benefit from their forest resources. However, many villages were not aware of its provisions and benefits. Before the Act was implemented, local communities were not involved in decisions about how forests were used or managed. Even after receiving their rights, many communities did not actively participate in managing their forest resources because of limited awareness. Private traders often exploited forest dwellers by offering unfair prices for minor forest produce, and unsustainable harvesting practices caused forest degradation.

This situation forced many families to depend on seasonal labor and migrate to other areas in search of work, which led to economic insecurity and social instability. The Vidarbha Nature Conservation Society (VNCS) sought to address a key question: "How can forest-dependent tribal communities achieve sustainable livelihoods through self-governed management of forest and natural resources under the FRA framework?"

Organizational Background:

Established in Nagpur, the Vidarbha Nature Conservation Society (VNCS) is a non-profit organization that has been working across the Vidarbha region of Maharashtra for over three decades on biodiversity conservation, environmental education, and sustainable livelihood based on natural resource management. VNCS adopts an integrated approach that combines ecological restoration with community empowerment and livelihood generation. Through its initiatives in forest and wildlife conservation, watershed development, sustainable agriculture, and facilitation of Community Forest Rights (CFR) under the Forest Rights Act, VNCS has strengthened local governance and promoted sustainable use of natural resources. By collaborating with government departments, research institutions, and civil society organizations, VNCS continues to advance grassroots environmental conservation and sustainable rural development in central India.

The Approach

VNCS initiated the process "Natural Resource Based Sustainable Livelihood" to strengthen community forest governance and promote sustainable livelihoods in Gadchiroli, Gondia and Nagpur Districts. The initiative aimed to

- Empower Gram Sabhas to protect, conserve, and manage Community Forest Rights (CFR)
- Create income opportunities through non-timber forest produce (NTFPs), fisheries, water conservation, and agriculture.

The process began in 2009 and evolved into a model of community-driven conservation and livelihood enhancement, supported by the Ministry of Tribal Affairs (MoTA), UNDP, and the Maharashtra Tribal Development Department.

From 2006 to 2011, VNCS played a pivotal role in expanding awareness and strengthening capacity on the Forest Rights Act (FRA) across the Vidarbha region. During this period, the organization conducted extensive awareness and training programmes in over 200 villages, helping tribal and forest-dependent communities understand their rights and responsibilities under the Forest Right Act. To deepen community engagement, VNCS facilitated the formation of study groups in 20 villages, enabling grassroots-level learning on forest governance, community forest management, and legal entitlements.

VNCS also led a strong and sustained advocacy movement that resulted in a major breakthrough: the successful securing of Community Forest Rights (CFR) for more than 200 villages under the FRA. This achievement significantly enhanced community ownership over forest resources and strengthened their role in local forest conservation and governance.

The Intervention

VNCS recognized the potential of Community Forest Rights (CFR) as a legal and institutional foundation for sustainable, community-led development. Rather than treating livelihood and conservation as separate goals, VNCS integrated them through:

- Empowering Gram Sabhas to function as planning and implementing bodies under FRA Section 4(1) (e).
- Building capacities in forest management, business planning, and marketing.
- Developing community-based enterprises in tendu leaves, mahua flowers, and fisheries.
- Ensuring policy convergence with government schemes such as MGNREGA and Tribal Development programs.

The components of the implementation include:

1. **Institutional Strengthening:**
   - Over 200 villages facilitated to secure CFR titles.
   - 150+ Community Forest Rights Management Committees (CFRMCs) formed.
   - Capacity building for over 9,000 community leaders through 200+ workshops.
2. **Forest and Resource Management:**
   - Natural regeneration on 16,335 ha forest area with 16 lakh new saplings.
   - Tree plantation and nurseries in Deori and Armori blocks, creating 6 lakh saplings.

- Fire prevention, Ban on felling trees, Patrolling, and biodiversity protection by over 70 Gram Sabhas.

3. **Livelihood Enhancement:**

- Tendu Leaves: 80 Gram Sabhas sold 89,293 standard bags via e-auction, earning ₹58.38 crores (2013–2025). About 9500 Household benefited, including over 11000 tribal women.
- Mahua Flowers: 3,374 families earned ₹22 crores from 68853 quintal of mahua collection and sale.
- Fisheries: 42 community water bodies managed by 21 Gram Sabhas; 502 quintals of fish produced benefiting 2,102 families and generating ₹98.01 lakhs income, (These water bodies are owned by the gram sabha as they are in the community forest rights)
- Water Conservation: 59 tanks restored and 1,349 ha treated; irrigation coverage increased from 1,400 ha to 2,442 ha; agricultural yield rose by 60%.
- Energy Access: 95% of households shifted to LPG (₹25.65 lakhs investment), saving 22,500 metric tons of firewood annually.

4. **Convergence and Policy Advocacy:**

- 24+ crores mobilized through convergence with MGNREGA, Tribal, and Forest departments.
- VNCS facilitated policy dialogues resulting in major Government Resolutions (GRs) recognizing 50 CFR Gram Sabhas as implementing agencies under MGNREGA (GR Dated 30 Nov 2021).

VNCS played a key role in forming the Vidarbha Livelihood Forum (VLF) to advocate for community-centric policy reforms.

Key Solutions

Challenges	Solutions
Administrative resistance to Gram Sabha governance	Addressed through Continuous dialogue, advocacy, and transparency in decision-making
Market exploitation by traders	Solved by Direct e-auction and collective marketing through federations
Sustainability of forest use	Community-led natural regeneration, regulated harvesting, and fire prevention, Managed via reforestation, natural regeneration, and regulated harvesting protocols.

Outcomes

- Total direct beneficiaries: 31,680 individuals (19,938 men and 11,742 women).
- Total income generated from forest-based activities: ₹85+ crores.
- Employment created: over 62,000 man-days through water conservation and forest works.
- 200 Gram Sabhas now manage forest resources sustainably — a replicable governance model linking livelihoods with conservation.

Upliftment of Community

- Significant progress achieved in forestry, agriculture, and water & soil conservation activities.
- Increase in the volume of works undertaken and growth in financial income of Gram Sabhas.

- Tribal children are now pursuing higher education in different cities, reflecting improved access to learning opportunities.
- Living standards have improved, with better access to resources and livelihoods.
- Awareness among communities has increased, especially regarding environmental issues and key legislations such as the Forest Rights Act (FRA), Panchayats (Extension to Scheduled Areas) Act (PESA), and Right to Information (RTI).
- The communities are undergoing holistic transformation—economically, socially, and politically, leading to greater self-reliance and empowerment.

Lessons Learned

The VNCS initiative on Natural Resource Based Sustainable Livelihoods demonstrates how legal empowerment, community ownership, and ecological management can create a self-sustaining model of rural development. By integrating FRA implementation with livelihood enhancement, VNCS has revived degraded forests, improved incomes, and enhanced food and energy security.

- Empowering communities as resource managers ensures both conservation and equity.
- Policy convergence between FRA, MGNREGA, and livelihood schemes is critical for scaling impact.
- Women's participation in NTFP enterprises strengthens community institutions.

Future Directions

VNCS aims to replicate this community forest management and livelihood model in other forested regions of Maharashtra and beyond, with emphasis on:

- Expanding value addition in NTFPs (Mahua seeds Oil, Bamboo products).
- Scaling up climate-resilient agriculture and eco-restoration initiatives.
- Deepening youth engagement and technology-based monitoring of forest resources.

This case establishes VNCS as a pioneer in community-led natural resource governance, demonstrating a scalable and sustainable model of rural transformation rooted in local ownership and ecological balance.

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1.5 Transforming Agriculture through the 10-Drum Theory - A Scalable Model for Sustainable Farming across 500 acres in Maharashtra

Chetan Gulhane - Marathwada Navnirman Lokayat (MANAVLOK)

Background and Rationale

Changing climatic conditions have led to increased reliance on chemical inputs in agriculture, resulting in higher costs and deteriorating soil health. In recent years, farmers have faced a drastic reduction in soil organic carbon, prompting urgent questions:

- How can input costs be reduced?
- How can crop productivity be increased sustainably?
- How can soil structure and fertility be preserved for the long term?

Recognising these challenges, Marathwada Navnirman Lokayat (MANAVLOK), in partnership with Reliance Foundation, initiated a study of agricultural practices across Maharashtra. Their goal was clear: to reduce expenses, increase yields, and restore soil health. This led to the development and implementation of the innovative 10-Drum Theory.

The Approach

The 10-Drum Theory provides a holistic, regenerative approach to farming. It leverages ten specially formulated microbial and nutrient solutions to rejuvenate soil health, enhance plant immunity, and reduce chemical dependency. The method addresses key problems of soil degradation, pest outbreaks, and high input costs, especially for small and marginal farmers. The benefits include:

- Rejuvenating soil microbial biodiversity
- Increasing organic carbon and nutrient absorption
- Enhancing plant immunity and pest resistance
- Promoting synthesis of essential plant compounds (proteins, lipids, secondary metabolites)
- Reducing external chemical inputs and improving long-term farm profitability

10 Drum solutions include:

- EM Solution: Boosts crop quality and growth
- EM Amil Extract: Controls sucking pests and bugs
- EM Vemil Extract: Controls worms and mites
- EM Dashaparni Extract: Induces resistance and hormone balance (IPM)
- EM Fruit Extract: Induces flowering and fruit setting
- Humic Acid Solution: Increases organic carbon, white root formation, and soil porosity
- Fulvic Acid Solution: Improves nutrient uptake and availability

- Microbial Slurry: Increases beneficial microbes, induces disease resistance
- Jeevamruta: Provides complete nutrition for plants
- Waste Decomposer: Changes biological properties of soil

The Intervention

In 2023, the theory was rolled out across 500 hectares in six villages of Parbhani district. MANAVLOK and Reliance Foundation led the intervention, adopting a multi-tiered engagement model:

- Farmer Trainings: Intensive on-field sessions on preparation, use, and benefits of the 10-drum concoctions
- Demonstration Plots: Model farms validated improvements in yield, pest control, and soil parameters
- Continuous Support: Regular follow-ups, field visits, and feedback loops refined practice

Strategic Institutional Convergence

To further scale and institutionalise the approach:

- The Department of Agriculture launched a focused 2-Drum Unit intervention for Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) across 253 farmers in seven villages
- Funding support of ₹5 lakh ensured access to quality inputs and extension services
- ATMA officials and agriculture department teams conducted field visits, hands-on demonstrations, and capacity-building workshops for extension staff and Krishi Mitra

Role of Farmer Producer Companies (FPCs)

Two FPCs (Sailu Krushak FPC and Horbax FPC) received 2-Drum Units each to:

- Act as hubs for awareness creation and demonstration
- Conduct community-level campaigns, workshops, and field days
- Facilitate bulk procurement of inputs and collective marketing of sustainably produced crops
- Serve as training and exposure sites for farmers from neighbouring blocks and districts

The FPC-driven model promotes decentralised learning and ownership, making the practice locally relevant and easily replicable.

Policy-Level Endorsement and Recognition

Given the observable field-level impact and community acceptance, the Government of Maharashtra has formally incorporated the 10-Drum Unit methodology into its Standard Operating Procedures (SOPs) for Natural and Organic Farming. This policy endorsement paves the way for integration into schemes like Paramparagat Krishi Vikas Yojana (PKVY) and Natural Kheti initiatives.

Outcomes and Results

- Visible improvement in soil structure, pest resilience, and crop health
- Reduction in chemical input costs by 30–40% in demonstration plots
- Increased farmer interest and peer-to-peer learning within and beyond initial clusters
- Institutional backing ensuring long-term sustainability and policy alignment
- ATMA and Agriculture Department plan to extend the initiative to 5,000 hectares for vegetable crops

With the adoption of the 10-Drum Theory, soil health has improved and farmers have witnessed increased crop production, even under changing climatic conditions. As

results became visible and credible, more farmers began implementing the method. The Agriculture Department of Parbhani district has acknowledged and appreciated the concept, encouraging wider adoption by providing subsidies and support.

Description	Unit	Market Rate	Coverage	Culture Mix Price	Drum/Tank Prepared Material	Prepared Material Price
Fulvic Acid	1 Litre	₹600	1 ha/farmer	EM 1 ₹600	200 Litre	₹₹1,20,000
Humic Acid	1 Litre	₹800	1 ha/farmer	EM 1 ₹600	200 Litre	₹₹4,80,000

Labour charges for spraying are approximately ₹500 per round. One spray costs around ₹1,200–₹1,500. Using the 10-Drum Theory, farmers prepare 200 litres of solution, sufficient for both Kharif and Rabi seasons, drastically reducing annual input costs. This method improves yield and stabilises soil health.

Conclusion and Way Forward

The 10-Drum Theory and its supporting interventions showcase the power of bio-based solutions, multi-stakeholder collaboration, and community empowerment in sustainable agriculture. The integration of FPCs as promotion centres, alignment with government institutions, and incorporation into official SOPs present a scalable and replicable model for agricultural transformation. This case sets a precedent for statewide and national replication, demonstrating that grassroots innovation, when combined with institutional vision, can drive enduring change. As more farmers and groups adopt the 10-Drum Theory, its benefits continue to spread across districts in Maharashtra, building resilience and prosperity in rural communities.

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1.6 Moving Towards Secure Livelihoods and Forests through Participatory Management (FRA)

Dr. Kishor Moghe - Gramin Samasya Mukti Trust

Background

Founded in 1991, Gramin Samasya Mukti Trust (GSMT) is a non-profit organization dedicated to the holistic development of rural, tribal, and forest-dependent communities in Maharashtra's Vidarbha region. Its work spans natural resource management (NRM), sustainable livelihood development, and empowerment of Gram Sabhas—the foundational institutions of local self-governance.

Vidarbha's predominantly tribal districts face persistent challenges: insecure forest tenure, limited livelihood options, erosion of local institutions, and rising migration. Recognizing that natural resource control lies at the heart of livelihood security, GSMT adopted the Forest Rights Act (FRA), 2006 as a transformative tool. Since 2009, the organization has actively facilitated the recognition and operationalization of Community Forest Rights (CFR), positioning Gram Sabhas not just as custodians but as managers, entrepreneurs, and decision-makers of forest ecosystems.

Implementation of Community Forest Rights in Vidarbha

The Forest Rights Act (2006) and Rules (2008, 2012) recognize the historical rights of Scheduled Tribes and other traditional forest dwellers over forests and forest-based resources. Under the Act, Community Forest Rights (CFR) authorize Gram Sabhas to:

- Protect, conserve, regenerate, and manage forests sustainably.
- Exercise ownership rights over minor forest produce (MFP).
- Use forest resources for subsistence and livelihood purposes.
- Manage grazing, water, and biodiversity resources traditionally used.

The Gram Sabha is the central authority under the Act, empowered to initiate claims, manage forest areas, and enforce sustainable use practices. Following the FRA protocols, GSMT supported Gram Sabhas through a legal and participatory process to secure collective forest rights. The process—originating at the Gram Sabha itself—involved application submission, verification by the Forest Rights Committee, and district-level endorsements. Through consistent follow-up, 270 Gram Sabhas across Vidarbha received official recognition of their collective forest rights, with Records of Rights (RoR) issued as formal proof of forest ownership and management authority. Altogether, these Gram Sabhas now manage over 83,000 hectares of forest area.

To operationalize these rights, Collective Forest Rights Management Committees (CFRMCs) were established in each CFR-recognized village. Each 11-member committee ensures:

- At least 50% women's representation.
- Transparent, democratic decision-making.
- Accountability to the full Gram Sabha.

Comprehensive training-built committee members' understanding of FRA provisions, roles, forest management norms, and participatory governance. These committees prepared Conservation and Management Plans (CMPs)—each with an indicative budget of ₹2–5 crore—approved by the Gram Sabha and integrated into local development planning.

From Planning to Implementation: Leveraging Policy and Convergence

To institutionalize this process, a suite of supportive government orders was issued, including:

- Establishment and capacity building of CFRMCs (2015).
- Guidelines for preparing Management Plans under FRA (2017).
- Formation of Taluka and District Convergence Committees (2022).
- Recognition of Gram Sabhas as implementing agencies under MGNREGA (2021).

Coordination among the Gram Sabhas, Forest Department, and District Administration enabled the incorporation of CMPs into official departmental work plans. This facilitated convergence for plantation, pasture development, soil and water conservation, and bamboo regeneration. Additionally, 172 Gram Sabhas were registered as MGNREGA implementing agencies, enabling funding for bamboo cultivation, orchard development, and watershed activities. These initiatives enhanced both ecological restoration and livelihood creation.

Forest-Based Livelihoods

Sustainable utilization of non-timber forest produce (NTFPs) has emerged as a major livelihood driver. Gram Sabhas have collectively leveraged their rights to regulate extraction, issue transport permits, and launch forest-produce-based enterprises.

Key livelihood streams include:

- Tendu Leaves: Managed collectively by Gram Sabha federations through open tenders. Around 150 Gram Sabhas participated, ensuring direct income of ₹10,000–₹15,000 per family annually.
- Mahua Flowers: Managed by women's groups for local sale and small-scale processing into value-added products (e.g., laddus, Chikki). Average household income increased by ₹5,000–₹7,000 per season.
- Bamboo Craft: Youth trained to make and market bamboo-based handicrafts, fostering rural entrepreneurship.
- Chironji, Gum, Honey, and Lac: Women's groups now process and market 20–25 quintals of chironji annually, alongside other NTFPs, enhancing financial independence and gender empowerment.

The Role of Gram Sabha Federations

To sustain collaboration and advocacy, GSMT facilitated multi-tier Gram Sabha Federations at Taluka, District, and Vidarbha levels. These federations enable peer learning, policy advocacy, and collective enterprise.

Their key functions include:

- Representing Gram Sabhas in Convergence Committees.
- Coordinating collective tendu leaf tenders.
- Addressing CFR implementation challenges.

- Facilitating knowledge exchange and capacity building.

Outcomes and Impacts

Environmental outcomes

- Forest density, biodiversity, and regeneration improved through reforestation and soil-water conservation works.
- Enhanced groundwater recharge and ecosystem stability.

Livelihood outcomes

- Average household income from forest-based activities rose by ₹35,000–₹40,000 annually.
- Local employment generation significantly reduced distress migration.

Institutional outcomes

- Gram Sabhas evolved into capable governance entities effectively managing resources.
- Women's participation and leadership roles deepened.
- Legal clarity and organized federations enhanced Gram Sabhas' negotiating power with government agencies.

Lessons Learned

- Legal recognition under FRA offers institutional legitimacy and confidence to community governance systems.
- Gram Sabha-led planning effectively integrates ecological protection, livelihood security, and local knowledge.
- Forest-based enterprises generate sustained, climate-resilient incomes, while conserving resources.
- Empowered Gram Sabhas foster a sense of ownership and accountability, ensuring sustained conservation outcomes.
- Federated structures deepen cooperation, advocacy, and policy influence across administrative levels.

Insights for Replication and Scale

GSMT's experience provides several strategic insights for replication in other forested regions:

- Legal Empowerment as Entry Point: Begin by strengthening Gram Sabhas' capacity to claim and manage CFR, ensuring legal clarity before resource planning.
- Institutional Convergence: Formal recognition of Gram Sabhas as implementing agencies under schemes like MGNREGA and CAMPA can ensure sustained financing.
- Women's Leadership: Achieving minimum 50% representation in management committees is critical for equitable governance and inclusive decision-making.
- Federated Structures: District- and state-level federations of Gram Sabhas ensure peer learning, policy advocacy, and economies of scale for forest-produce enterprises.
- Sustainable Market Linkages: Support for value addition, branding, and collective marketing of NTFPs strengthens income security and forest stewardship simultaneously.
- Adaptive Capacity Building: Ongoing training modules should combine legal literacy, ecological knowledge, and enterprise management to ensure long-term self-reliance.

Together, these lessons demonstrate that community forest governance can simultaneously advance rural livelihoods, ecological restoration, and democratic decentralization—positioning Gram Sabhas as the cornerstone of India's forest-based rural economy.

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1.7 Ecosystem-based Adaptation for Resilient Livelihoods: Learnings from Bhojdari Village, Maharashtra

Dr. Dada Dadas - Watershed Organisation Trust

Introduction

In many parts of the world, climate change increases the likelihood of a worsening drought, making it a significant risk to the environment, agriculture, and human livelihoods (Andrade-Sánchez, García-Sánchez, Hernández-Castro, 2016). With global temperatures likely to increase by more than 1.5 degrees Celsius above pre-industrial levels by 2100 (IPCC 2014a), adaptation to climate change is arguably one of the biggest challenges facing humanity. Climate change is already impacting vulnerable ecosystems such as drylands, mountains and coastal areas. Drylands are suffering severe water constraints and challenges associated with increasingly variable rainfall (Swiderska, King-Okumu, and Islam 2018). Semi-arid farming systems in India are facing an increasing frequency of climate change-induced extreme weather events (Srinidhi, et. al. 2024). Study shows the effects of climate change on drought risk in semi-arid regions, including increased temperatures and altered precipitation patterns in the Indian context. Drought events are caused by several kinds of causes, including natural variability in climate, anthropogenic activities, and their synergistic interactions (Patel and Patel, 2024).

Around 73 per cent of Maharashtra's landscape is semi-arid and half of it falls under drought prone regions. Studies have indicated an average increase in India's temperature by approximately 0.89°C during the period 2015–2024 relative to 1901–1930. Maharashtra has seen a significant increase in the number of warm days and nights making heatwaves more frequent (Dhara et al., 2025). Semi-Arid landscapes are vulnerable to climatic changes, including drought, hailstorms, and fluctuations in temperature and rainfall. These circumstances create many challenges for the livelihoods for many communities that solely depend upon agriculture and allied sectors.

To reduce those vulnerabilities, many initiatives are essential to help communities adapt to climate change. To adapt to climatic changes, nature-based solutions (NbS) are essential and widely discussed. Ecosystem based Adaptation (EbA) is a subset of NbS that helps people adapt to the adverse effects of climate change. EbA actions on the ground have proven effective in mountain, coastal and dryland socioecological systems (Swiderska, King-Okumu and Islam, 2018). Watershed development interventions include a series of NbS interventions, such as ridge-to-valley treatment, afforestation in upstream watersheds to conserve topsoil, area and drainage line treatments, and enhancements to soil fertility and ecosystem regeneration, which help sustain the people and natural ecosystems. EbA is possible through the wise use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the effects of climate change. The success of EbA is made possible by a strong participatory process and equitable sharing of benefits.

On similar lines, a study was conducted in Bhojdari village located in Sangamner block, Ahilyanagar district (formerly known as Ahmednagar), India. The village lies in the rain-shadow belt of Maharashtra faced severe water shortages, recurrent crop failures, and livestock losses which lead to migration in search of livelihood opportunities. To address the issue, the Indo-German Watershed Development Project (IGWDP,

1996-2002), Climate Change Adaptation (CCA) project (2009–14) and the Water Stewardship Initiative (WSI) (2015-17) was initiated by the Watershed Organisation Trust (WOTR). Under the WSI and CCA project interventions, various EbA-aligned interventions such as agro-met based advisories, sustainable adaptive agriculture practices, livelihood diversification, water budgeting, disaster risk reduction, and use of renewable energy were introduced. A participatory operational pedagogy was established to focus on improving human and local-level institutional capacities. The key strategies adopted during the implementation of the project includes sustainable livelihood framework, gender inclusiveness and the Wasundhara approach. This case study of Bhojdari takes into account the impact and contribution of these activities.

Assessment Framework

The assessment framework used in this study is inspired by the Friends of EbA (FEBA)[Three key elements of Ecosystem-based Adaptation (EbA): Participatory governance; Healthy ecosystem services, and biodiversity; and Adaptation to climate change (Source: TMG Research gGmbH, 2019)]. The framework focuses on three major pillars, namely a) Healthy Ecosystem Services and Biodiversity; b) Peoples Adaptation to Climate Change; c) Participatory Governance

Bhojdari village was selected for the assessment based on three major criteria, I) village's watershed technique, ii) availability of primary and secondary data, iii) a minimum time frame of 5 years post implementation, iv) willingness of the community and project representatives to participate in the assessment. The assessment technique used a mixed-methods approach combining qualitative and quantitative methods to assess the effectiveness of EbA interventions.

Key Observations

I. Helping People adapt to climate change

a) **Income:** EBA-compliant project implementation has helped villagers to go for cash crops and dairy-focused livestock rearing, which has helped in gaining additional income. Income has increased by more than 30 per cent. The use of indigenous seeds has reduced input costs. There is an enhancement of climate-resilient production systems, such as crop diversity. The number of crops in 2009 (baseline year) was 3, and in 2017 (endline year), it was 10.

b) **Improved Food Security:** After the project intervention, there is an increase in food availability in the village, and food shortage is reduced by 20%. Vegetables such as spinach, soya beans, potatoes, and cauliflower are added to the diet. Increase in yield ranging from a minimum of 9% to as much as 29% (DPR-CCA project). At the same time, food crops such as pearl millet, finger millet, paddy, and wheat have registered improvements in production. The promotion of the kitchen garden has helped in the availability of diverse vegetables for consumption.

c) **Decrease in Distress Migration:** In distress migration, there was a total reduction of 5% (Fujita et al., 2019)[Fujita K, Shinde, Y and Bendapudi, R (2019) Distress migration has changed towards daily commuting, for opportunistic cash income from rising agricultural labour opportunities especially for tribal women in nearby irrigated villages.

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[1]Three key elements of Ecosystem-based Adaptation (EbA): Participatory governance; Healthy ecosystem services, and biodiversity; and Adaptation to climate change (Source: TMG Research gGmbH, 2019)

[2]Fujita K, Shinde, Y and Bendapudi, R (2019): Land, Labor, and Agricultural Innovations in a Semi-arid Region of Maharashtra, India: The Case of Bhojdari Village. INDAS South Asia Working Paper No.22.

II. Improving Ecosystems and Biodiversity

a) Increased Vegetation: Increase in forest/vegetative cover almost by 40 percent but the type of forest has reduced from dense to more open canopy.

b) Improved Water Availability: Increase in available water resources, increase of 87% in storage capacity, with effect overexploitation of groundwater led to drying up of perennial springs.

c) Increase in Biodiversity- Key observations from the village are as below:

   I) increase of 23%, planting different kinds of trees on the farm boundaries

   ii) The increasing occurrence of wildlife (e.g. wild boars) may conflict with agriculture

   iii) Rise in populations of peacocks, deer, monkeys, jackals, foxes, leopards and some species of birds

   iv) There was an increase in hybrid livestock population for dairy but decrease in the number of indigenous or local breeds of livestock which has further affected dung/manure production.

d) Increase in soil health: Conversion of 127 ha of barren lands into forest, measures of soil conservation and treatment resulted in controlling of soil erosion, as well as soil deposition on reclaimed gullies, that are now being cultivated.

IV.Strengthening Participatory Governance

Improved Community Participation and Ownership: As far as participation and representation in local institutions is concerned, there was an increase of multi-fold participation of women or members of marginalized groups participating in meetings and decision-making processes of local institutions.

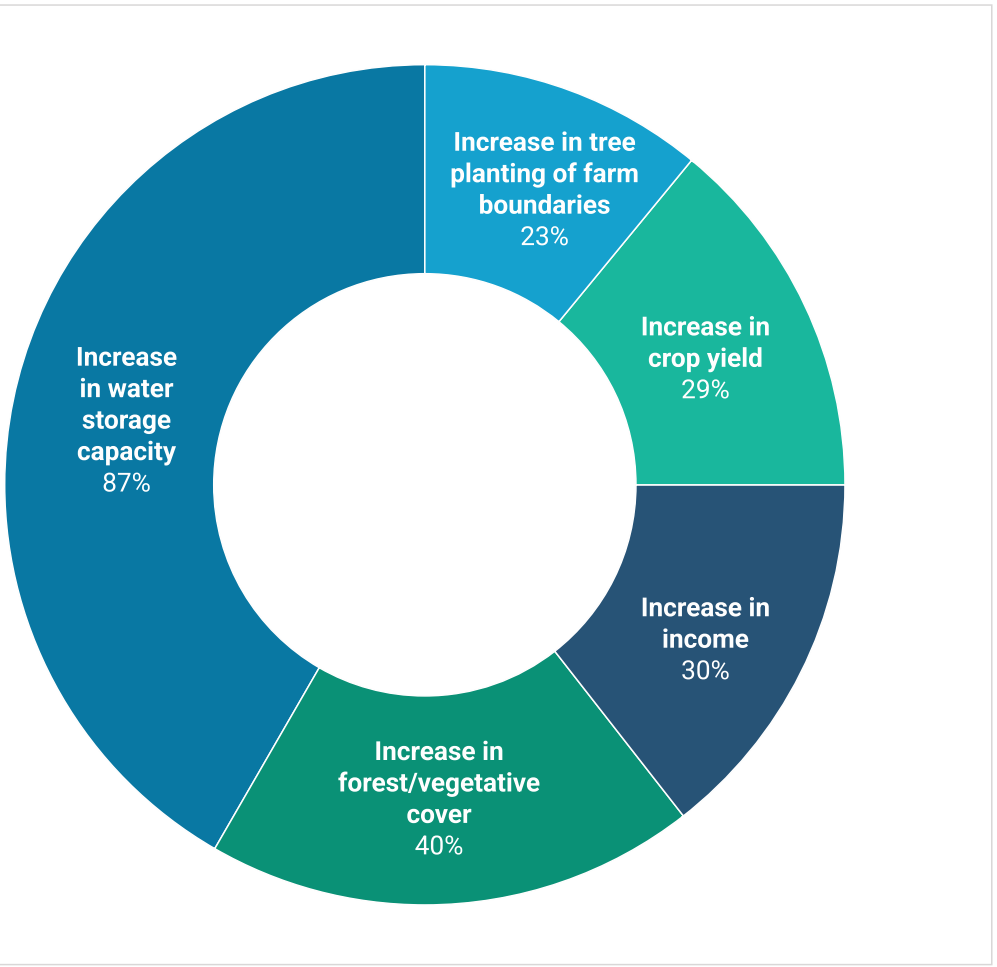
Increased Civil Society Participation: The civil society participation in local planning in Natural Resource Management (NRM) has significantly improved

Improved Institutional Collaboration: Improved institutional collaboration of Village Development Committee (VDC), Village Water Management Committee (VWMC) and Farmer Producer Company (FPC) was created as sub-committees of the Gram Panchayat, to ensure collaboration with the latter. Participation in everyday tasks such as Gram Sabha also improved as meetings were held more regularly.

Equitable access to Co-benefits: Equitable distribution of EbA benefits, like access to water, better agronomic practices, and better land productivity, has been shared by all communities and has resulted in an improved standard of living, despite the scope to provide more attention to the inclusion of the tribal community.

Conclusion

The case study findings offer compelling proof that EbA interventions have significantly improved ecological functions and improved community livelihoods in Bhojdari village. The notable improvements in local hydrology are reflected in the significant 87% increase in water storage capacity, which shows how well watershed treatments and resource-management systems work to lessen water scarcity and guarantee year-round availability. With a 23% increase in tree planting on farm boundaries and a 40% increase in forest and vegetative cover, ecological indicators support this positive trajectory and indicate successful landscape restoration and better microclimatic conditions. Diversified agricultural practices, lower input costs, and improved soil health have all contributed to the measurable socioeconomic benefits of these ecological gains: household incomes have increased by 30%, and crop yields have increased by 29%. When taken as a whole, these results demonstrate how integrative EbA strategies produce synergistic benefits that simultaneously improve ecosystem resilience and further rural development goals.



EbA can be a useful strategy for creating climate-resilient communities in semi-arid areas of India, as the Bhojdari experience amply illustrates. The village has made the transition from drought vulnerability to livelihood resilience by restoring ecosystem services, protecting water resources, and encouraging sustainable agriculture. The creation of People's Biodiversity Registers is another example of how tying conservation to local livelihoods can strengthen social and ecological benefits. The role of

participatory governance has been crucial to this success: community-led organizations have facilitated group decision-making and enhanced the democratic inclusion of women and other marginalized groups, providing a strong basis for long-term EbA results.

Future EbA governance will need to shift from traditional watershed-focused methods to more all-encompassing ecosystem viewpoints that involve a wider range of stakeholders. Long-term sustainability will depend on ensuring strong community ownership and creating plans that work even after outside organizations leave. Bhojdari's journey provides important insights for expanding EbA throughout India's semi-arid landscapes, showing that even the most climate-stressed areas can become thriving, adaptable ecosystems when ecological restoration, resilient livelihoods, and inclusive governance come together.

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1.8 Water Resource Development through Decentralization of Water Structures in Gangapur, Chhatrapati Sambhajinagar District, Maharashtra

Sandip Gade - AFARM

The Challenge

The Bajaj Water Conservation Project, implemented by AFARM from December 2017 to September 2022, aimed to mitigate chronic water scarcity in the drought-prone Gangapur block of Chhatrapati Sambhajinagar district (Maharashtra). Erratic rainfall, frequent droughts, and over-extraction of groundwater had led to a dependence on tanker water and declining agricultural productivity across 28 villages.

Before the intervention, groundwater levels averaged around 17 meters below ground level, wells and borewells were drying up early, and flood irrigation practices led to inefficient water use. Limited vegetative cover, weak soil-moisture retention, and deteriorating water harvesting structures further aggravated vulnerability. Recognizing the need for an integrated response, AFARM adopted a ridge-to-valley approach combining watershed development, groundwater recharge, soil and water conservation, and micro-irrigation interventions to ensure drinking water security, protective irrigation, and improved rural livelihoods.

Approach and Strategy

Water Resource Development: The project focused on enhancing drinking water security and expanding irrigated area through a hydrologically informed approach. Detailed drainage-line surveys of second, third, and fourth-order streams informed the siting of water harvesting structures (WHSs). Priority was given to restoring existing structures through desilting, deepening, and increasing storage capacities before constructing new ones.

Overall, 134 water harvesting and 359 recharge structures were completed. These efforts prioritized:

- Repair and augmentation of existing percolation tanks and nala bunds.
- Strengthening of drinking water sources through aquifer recharge.
- Construction of new gabion and cement nala bunds to harvest high-intensity rainfall.

Enhancing Water Use Efficiency: To ensure sustainability, Water User Groups (WUGs) were formed around each structure, trained in operation, maintenance, and water governance, and integrated into the Village Development Committees (VDCs). Given limited water availability and the dominance of traditional flood irrigation, the project addressed demand-side management through the promotion of micro-irrigation and soil health management. Further steps were taken:

- Partial financial assistance was provided for drip and sprinkler systems, prioritizing small, marginal, and women-headed farms.
- Support was aligned with government subsidy schemes to leverage convergence.
- Complementary interventions included improved agronomic practices, soil fertility management, and mulching, all aimed at achieving the “more crop per drop” goal.

Community Mobilization and Capacity Building

Each project village established a Village Development Committee (VDC) as a Gram Panchayat sub-committee to coordinate planning, implementation, and community mobilization. VDCs led community contribution, conflict resolution, and oversight of WUGs and women's groups.

The project conducted extensive training and exposure programs:

A	Motivation, Training & Capacity Building	
1	Awareness – rallies, film shows, events, etc.	2150 farmers in 41 events
2	Exposure visits	1402 men & women in 46 visits
3	Water literacy campaign	768 farmers in 12 camps
6	Training of Village Development Committees	222 members from 20 villages in 75 training programmes
7	Training of Water User Groups	1659 members from – WUGs in 224 training programmes
8	Training of Gram Panchayat Members	210 members in 15 training

B	Area Treatment and Vegetative Measures	
1	Field bunds with convergence from govt schemes	Completed under convergence
2	Grass seeding on guide bunds	6600 kg of stylo seeds
3	Plantation on guide bunds	5561 bamboo sapling

C	Water Resources Development	
1	Nalla deepening and widening	117 sites, 8958 TCM
2	Percolation tank deepening	10
3	New Cement Nala Bunds construction	38
4	New Core Wall Gabion structures construction	15
5	Repairing of existing CNB	14
6	repairing of existing ENBs	3
7	Farm Ponds	2
8	Construction of Drinking water community well	2
9	construction of Recharge shafts	72
10	Renovation of KT Weir	1

D	Efficient Water Use	
1	Drip irrigation system	11.10 Ha.
2	Sprinkler irrigation system	0.40 Ha.

Impact Analysis

Water Security and Groundwater Recharge

A major achievement was complete elimination of tanker water across all 28 villages—previously, 21 relied on government-supplied water each summer. The project created 8,958 TCM of surface storage, approximately 70% of total catchment runoff yield. This led to a substantial rise in groundwater levels and recharging of over two-thirds of previously defunct wells (215–260% increase in functional wells). Pumping hours increased from 1 to 5 hours in the rabi season and from 2 to 3 hours in summer, indicating sustained recharge.

Expansion of Irrigation Coverage

Protective irrigation expanded by 83% in rabi and 22% in kharif, representing an overall increase of 28.4%. Roughly 29% of cultivable area now benefits from seasonal and 39% from perennial irrigation, compared to negligible coverage before 2017. In parallel, the project significantly strengthened in-situ soil moisture through bunding and vegetative measures, helping crops withstand erratic dry spells.

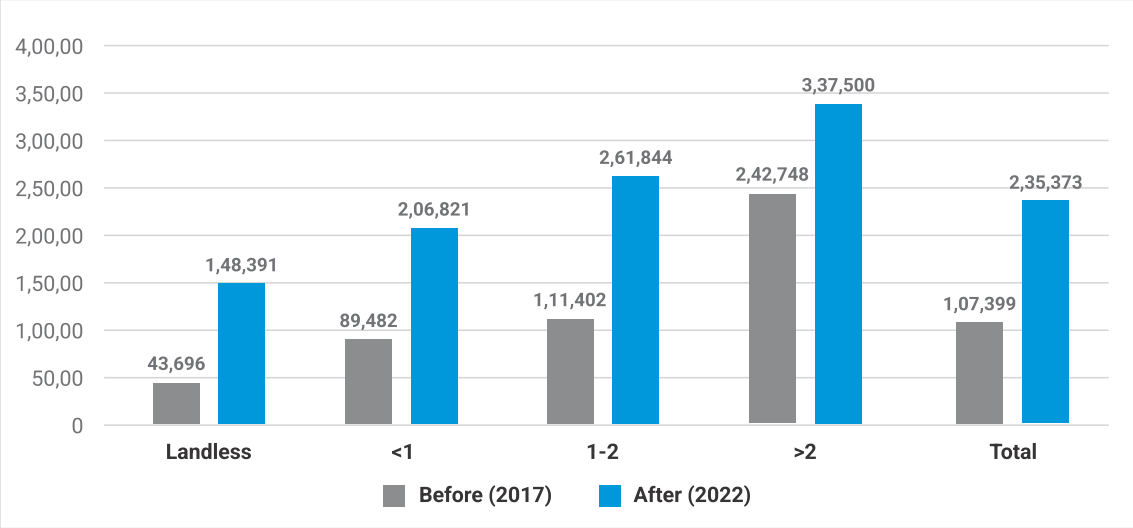
Agricultural and Livelihood Outcomes

- Cropping intensity increased from 474% to 504%, and cultivated area expanded by 12% across landholding groups.

- Crop yields rose sharply: wheat (+100%), soybean (+79%), gram (+32%), maize (+16%), and tomato (+240%).
- Livestock holding increased, with crossbred cattle up by 46% and buffaloes by 33%, primarily due to greater fodder availability.

These productivity gains translated into a 119% average rise in household income, with the strongest benefits for small and marginal farmers. Income diversification was evident: agriculture (up 118%) and livestock (up 1,182%) were key growth sectors. Younger family members also secured non-farm employment in nearby urban centers, further stabilizing incomes.

Sr. No.	Category	No. of Respondent	Before 2017	After 2022	% Changes
1	Landless	23	43,696	1,48,391	240
2	<1 ha	117	89,482	2,06,821	131
3	1-2 ha	112	1,11,402	2,61,844	135
4	>2 ha	23	2,42,748	3,37,500	39
	Total	275	107,399	2,35,373	119



Institutional Outcomes

The project strengthened collective water governance through 20 active VDCs and 116 WUGs. These community institutions now regularly prepare village-level water budgets, plan cropping strategies, and collect water user charges for operation and maintenance. Their involvement ensured high levels of community ownership and social cohesion.

Lessons Learned

- Scientific planning using hydrological data and water budgeting enabled efficient harvesting of early 70% of the available runoff.
- Series-based storage structures (linking bunds, tanks, and recharge shafts) enhanced cumulative groundwater recharge.
- Water use efficiency measures are essential to balance augmented supply with sustainable demand.
- Village institutions are central to long-term sustainability - strong VDCs and WUGs ensure local accountability and maintenance.
- Systematic capacity building and convergence with government schemes amplified project effectiveness and scalability.

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2 Sustainable Rural Enterprises

- Collective Marketing: A Successful Story of Collective Marketing of Jamun - Aamhi Aamchya Aarogyasathi
- Empowering Tribal Fishermen: The Shramjeevi Fish Seed Production Centre
- The Success Story of Nivaje Village's Dairy Enterprise Model: Transforming Rural Livelihoods through Dairy Innovation in Sindhudurg, Maharashtra
- 'Prabodhan Agri. Implement Bank' - An Innovative Experiment in Agricultural Tools
- Livelihood Enterprise Development Program on Backyard Poultry in Chandrapur
- AFARM's Tribal Enterprise Approach: Strengthening Sustainable Livelihoods in Maharashtra's Tribal Districts

2.1 Collective Marketing: A Successful Story of Collective Marketing of Jamun

Dr. Satish Gogulwar - Aamhi Aamachya Aarogyasathi

The approach

The Jamun Collective Entrepreneurship Initiative in Korchi block is a powerful model of community-led development. The vision was to build empowered, self-reliant forest-based communities where farmers and women lead sustainable enterprises, ensure fair prices, and create a dignified, equitable livelihood. What began in 2024 as a small experiment with one Gram Sabha and 20 farmers has grown into a multi-village enterprise involving four Gram Sabhas and 75 farmers.

The initiative is built on a simple yet transformative idea—when communities pool their resources, skills, and produce, they gain power over markets that once exploited them.

The intervention

- To strengthen Gram Sabhas as the primary institutions for collective marketing of forest produce, ensuring transparency, fairness, and maximum value for villagers.
- To promote women's leadership in community enterprises by enabling them to manage procurement, accounting, and decision-making processes.
- To eliminate exploitation by middle-men by establishing decentralized, farmer-led value chains rooted in trust, unity, and local governance.
- To diversify and scale forest-based enterprises—such as Jamun, Hirda, Tendu, and Mahua—through capacity building, fair market linkages, and sustainable harvesting practices.
- To demonstrate a replicable model of collective entrepreneurship that can inspire and strengthen other villages across the region.

The roots of this success trace back to the consistent support of Amhi Amchaya Arogyasathi (AAA). Initially, AAA worked with Gram Sabhas on Tendu Patta collection. But slowly, their efforts expanded, helping communities handle other forest produce like Hirda and Mahua. In fact, Gram Sabhas together managed 27 metric tons of Hirda (in 2023) last year and over 13 metric tons (In 2024) and 56 metric tons of Mahua (in 2025) this year—proving that collective entrepreneurship was no longer an experiment, but a growing movement.

Outcomes

In 2024, the initiative began with just one Gram Sabha—Mulitepadeksha. By 2025, three more Gram Sabhas—Hitkasha, Ramsaytola, and Kolupadekasha—joined the collective effort. 20 farmers joined hands and together sold 4,250 kg of produce, earning ₹2,08,084 in revenue and ₹54,184 in profit. By cutting out middlemen, they could almost double their price—a 96% increase. Encouraged by this success, more Gram Sabhas joined in 2025. Now, four Gram Sabhas with 75 farmers participated. Their collective effort was even more remarkable. They sold a massive 24,530 kg of produce, generating ₹11,43,480 in revenue and ₹4,57,392 in profit. This time, prices rose by 60% compared to what traders usually offered.

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2.2 Empowering Tribal Fishermen: The Shramjeevi Fish Seed Production Centre

Balasaheb Kolekar - Shramjivi Janata Sahayyak Mandal

Introduction

In the heart of Maharashtra's Raigad district, the Shramjeevi Janta Sahayak Mandal, Satara, through its Mahad-Poladpur branch and the Shramjeevi Fish Seed Production Centre at Khaire-Valang, has been relentlessly working to uplift rural and socially disadvantaged communities. For over forty years, this organisation has been dedicated to empowering the tribal Katkari community, focusing on transforming the lives of those reliant on freshwater fishing for their survival.

The Approach

The journey began with the recognition that the traditional, economically backward fishing community faced systemic challenges. Freshwater fishing, though vital, offered limited income and was fraught with uncertainty due to the unavailability of quality fish seed. Shramjeevi Sanstha took a decisive step by organising fishermen from the Katkari community into five cooperative societies, bringing together 486 active members. The government allocated seven filter ponds in the Mahad-Poladpur area for fishing activities, yet a critical obstacle persisted: sourcing reliable fish seed locally was impossible, compelling the community to depend on distant suppliers from Kolkata and Gujarat. This dependence led to frequent shortages, poor quality, and significant financial losses due to transportation hurdles.

The Intervention

Faced with these challenges, Shramjeevi Sanstha resolved to establish its own fish seed production centre. In 2010-11, with the support of Tata Trusts and other funding partners, the organisation inaugurated a modern gravity-fed fish seed production facility at Khaire-Walang-setting a precedent as Maharashtra's first such centre. Recognising the centre's innovative approach, the Maharashtra State Rural Livelihoods Mission (MSRLM) honoured it as an "Innovative Programme" in 2013-14. The project subsequently became a model for replication by various government agencies and institutions. Since its inception, the project has thrived for fifteen years, driven by active participation from tribal Katkari fishermen.

The Impact

The establishment of the local centre has yielded tangible benefits:

- Consistent availability of high-quality fish seed in adequate quantities
- Significant increase in fish production from local lakes
- Enhanced economic income for fishing families
- Reduction in migration rates owing to improved local employment opportunities

- Noticeable improvements in children's education, attributed to increased family income

This holistic development underscores the project's social significance and its transformative effect on the community.

Production Capacity and Species Diversification

The Khaire-Walang centre boasts an impressive production capacity of 5 crore fish seeds annually, cultivating four key freshwater breeds: Katla, Rohu, Mrigal, and Cyprinus. Each year, approximately 8 lakh fish seeds (sized 70–80 mm) are released into the cooperative societies' filtration ponds, while the surplus is sold to local farm pond owners and other cooperatives, thereby ensuring the project's financial sustainability.

Performance Analysis: Consistent Growth Amid Challenges

Year	Production (Crore Fish Seed)
2019–20	2.76
2020–21	3.86
2021–22	3.42
2022–23	3.47
2023–24	3.17
2024–25	2.96

The data reveals a commendable consistency and resilience in production, with the project maintaining steady output despite natural climatic fluctuations. This stability has reinforced the community's economic base and reduced vulnerability.

Strategic Transition and Sustainability

Looking ahead, Shramjeevi Sanstha aims to empower the tribal fishermen cooperatives further by transferring full ownership and management of the fish seed production centre to them, fostering true self-sufficiency. The organisation will continue to offer technical support and guidance, ensuring smooth operations, robust financial planning, and ongoing capacity building.

Technical Collaboration and Skill Enhancement

The ongoing success of the fish seed production project owes much to the expert guidance provided by the Fisheries Department (MFD), Fisheries College Ratnagiri, and CIFE – Versova, Andheri (Mumbai). These collaborations have led to continuous improvement in product quality and equipped local fishermen with modern fisheries skills, advancing both knowledge and practice.

Conclusion: A Model for Community-Based Development

The Shramjeevi Fish Seed Production Centre stands as a beacon of sustainable, community-driven development. By addressing supply chain barriers and harnessing local participation, the project has secured reliable income, reduced migration, and improved social outcomes for the tribal Katkari fishermen. The centre's enduring success illustrates how traditional livelihoods can be revitalised and made economically viable through collective organisation, technical guidance, and strategic planning. The narrative of Shramjeevi Sanstha's intervention offers a replicable model for empowering marginalised communities across rural India.

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2.3 The Success Story of Nivaje Village's Dairy Enterprise Model: Transforming Rural Livelihoods through Dairy Innovation in Sindhudurg, Maharashtra

Dr. Prasad Deodhar - Bhagirath Gramvikas Pratisthan

The Challenge

Nivaje Village faced significant social challenges, including high rates of child malnutrition. Under the leadership of a dynamic young sarpanch, Mr. Mahendra Pingulkar, and the guidance of Bhagirath Gramvikas Pratisthan, the community began to seek pathways for sustainable development. The partnership with Bhagirath Gramvikas Pratisthan brought new opportunities and ideas to Nivaje. The organisation facilitated exchanges and exposure visits, notably hosting 40 students from the University of Melbourne, Australia, who lived with local farmers to study rural life. This fostered a culture of collaboration and ignited interest among local youth, many of whom aspired to contribute meaningfully to their village's progress.

The Approach: Genesis of the Dairy Cooperative Model

Traditionally, Nivaje's economy relied on bamboo and rice cultivation, with limited cash flow and market connectivity. The local milk trade was informal and lacked transparency, offering little incentive for improvement. Recognising the potential for change, the villagers, with support from Bhagirath and local leaders, established the 'Shri Nivjeshwar Milk Producers Cooperative Society Marya. Nivaje' on 21/02/2018. The cooperative began with just 18 litres of milk collection and has since grown to a daily average of 800 litres. Cumulatively, over 3,12,490 litres of milk have been collected, generating an impressive Rs. 2,12,77,899 in revenue for the village. Farmers receive regular payments deposited directly into their bank accounts, and bonuses totalling nearly Rs. 12 lakh have been distributed, ensuring transparency and motivation.

The Intervention Basket

The cooperative invested in essential infrastructure—a dedicated building, godown, and a centralised facility for animal feed, medicines, and other supplies. With the support of Sindhudurg District Central Cooperative Bank, the village procured 30 improved breed buffaloes from Haryana, financed through a loan of Rs. 35 lakh. This strategic investment, coupled with the technical support of experts from 'Gokul Milk Sangha', laid a strong foundation for the dairy business. Government schemes such as NREGA enabled the construction of cattle sheds, and 140 biogas plants were established, providing both environmental benefits and energy security. Through the Prime Minister's Food Security Scheme, farmers accessed subsidised machinery for producing chicken manure, enhancing farm productivity and sustainability.

Adopting Modern Practices and Technology

Nivaje embraced innovation in both dairy and agriculture. Artificial insemination services were introduced under the 'Gopal' scheme, with local youth like Mr. Ankush Majgaonkar trained as service providers. Supported by equipment from UNDP and Gokul Dudh Sangh, Ankush now serves Nivaje and neighbouring villages, earning Rs. 16 to 18 thousand per month and contributing to livestock improvement. On the agricultural front, the adoption of SRI (System of Rice Intensification) farming practices, championed by agricultural officer Mr. Nilesh Ugwekar, doubled rice yields from 50–60 kg to 110 kg per guntha, demonstrating the power of modern techniques in bridging the gap between potential and actual productivity.

Key Outcomes and Social Impact

The dairy cooperative has become a model of collective entrepreneurship, empowering farmers and ensuring equitable profit-sharing. Infrastructure improvements and value-added services have enhanced the viability and resilience of village livelihoods. Youth engagement in the dairy sector has curbed migration, as villagers now find meaningful employment opportunities at home, with some earning up to Rs. 40,000 per month. Nivaje is recognised as an exemplar of 'Net Zero Development', achieving balanced progress in economic, social, and environmental spheres. Digital initiatives in education and community services have further strengthened the village's development trajectory.

Best Practices and Learnings

- Effective integration of science, technology, and finance is crucial for sustainable rural development.
- Community-led organisations, with transparent processes and no contentious elections, foster unity and shared purpose.
- External agencies and NGOs should act as facilitators and exit after building local capacity.
- Employment generation within the village is more valuable and sustainable than seeking opportunities in cities.
- Strategic planning, including pre-defined exit policies for supporting organisations, ensures long-term self-reliance.

Nivaje's journey offers a replicable model for rural transformation through dairy enterprise, blending traditional strengths with modern innovation. The proactive role of Bhagirath Gramvikas Pratisthan, strategic partnerships, and the enterprising spirit of the villagers have together created a thriving, self-sustaining rural economy. As highlighted by media coverage and recognition from various stakeholders, Nivaje stands as an inspiring example for villages across India aiming for holistic and inclusive development.

Notable Highlights

- CSR support from Bharat Gears Ltd., Mumbai, for biogas initiatives.
- SRI paddy farming raised rice output from 40 kg to 110 kg per guntha.
- Local processing of murghas (fodder) reduced costs by 50%.
- Artificial insemination under the 'Gopal' scheme significantly increased livestock productivity.
- UPNRM (GIZ/KFW/NABARD) project facilitated loans for dairy expansion.
- Visits by international students fostered global awareness and local pride.
- Guidance from local officials and continuous media coverage contributed to the village's success and visibility.

Conclusion

Nivaje, a remote village nestled in the Kudal taluka of Sindhudurg district, Maharashtra, has emerged as a beacon of rural transformation, largely owing to its innovative dairy enterprise model. During the partition of India and Pakistan, several families displaced from Pakistan settled in an area now called 'Nivaje Camp'. These settlers, known locally as 'Paynaik', brought with them resilience and a spirit of community. The village later garnered attention due to incidents involving wild elephants from the Tilari dam area, which led to loss of life and sparked collective action—symbolised by the construction of a Ganpati temple at the site of the elephants' arrival.This success story traces the journey of Nivaje from a village challenged by displacement, wildlife conflict, and limited livelihood options to becoming a model of sustainable rural development and community-driven economic growth. The roots of Nivaje's transformation lie in its diverse history.

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2.4 Prabodhan Agri. Implement Bank' - An Innovative Experiment in Agricultural Tools

Suresh Margale - Jnana Prabodhini, Harali

Introduction:

The term bank has now become familiar to everyone in India as a place for financial transactions—even school-going children know what a bank is. In India, when we say "bank," we usually think of a secure place to keep our savings, withdraw money when needed, or take loans to fulfil our wishes, needs, and dreams. The banking system has indeed helped middle-class families develop financial discipline and stability.

However, today, we are not talking about a money bank—we are talking about an Implement bank for agriculture.

Over the last 35 years, due to liberalization, globalization, and privatization, India has witnessed rapid technological and industrial development. As a result, agriculture has also adopted new, modern technologies. Traditional wooden tools and bullock pairs have been replaced by powerful tractors and iron implements. Every day, newer tools with advanced technology enter the market, leading to intense competition among big manufacturing companies.

Yet, the economic condition of the farmers—the end beneficiaries—has not improved enough for them to easily adopt all these technological changes. To support them, both the central and state governments (including Maharashtra) have launched several subsidy and loan schemes. The first Implement Bank experiment in India was conducted at Jawaharlal Nehru Agricultural University, Jabalpur (Madhya Pradesh), and Mahatma Phule Agricultural University, Rahuri, District Ahmednagar (Maharashtra).

The main objective of an Agri. Implement Bank is to provide agricultural tools on rent to small and marginal farmers who cannot afford to buy them. For this purpose, 11 or more farmers can come together to form a Farmer Group or a Farmer Producer Company. Such groups, having a similar background, can practice collective farming to reduce costs.

Jnana Prabodhini's Harali Centre is located in the Lohara block of Dharashiv district, while its headquarters are in Pune. Along with running a school and agriculture diploma college the centre undertakes a variety of rural development initiatives, including women empowerment, watershed development, organic farming and entrepreneurship development for rural youth.

The agriculture implement bank was started with following objectives

1.Access for Small Farmers:

Families with total landholding of less than 5 acres often cannot afford modern agricultural tools. The Tool Bank aims to make small, manually operated tools easily available to such farmers, thereby reducing their production costs.

2.Support for Tractor Owners:

The number of tractors in rural areas has increased in recent years, supported by government schemes. However, farmers also need additional implements to use with these tractors, which can cost around ₹10–12 lakhs in total—a huge financial burden. The Tool Bank helps such tractor owners get the necessary tools on rent, enabling them to expand their farm-based businesses.

3.Employment for Rural Youth:

Labor shortages in agriculture are growing every day. Young people are increasingly reluctant to work in the fields. At the same time, rural unemployment among youth is becoming a serious issue. By introducing youth to modern, power-driven agricultural machinery—like power weeders, power tillers, and sprayers—they can be trained to perform the work of 4–5 labourers using a single small machine.

The students of Jnana Prabodhini Agriculture diploma college and local youth is trained to operate these machines, creating self-employment opportunities for them.

Scope:

- The "Prabodhak Implement Bank", launched at Jnana Prabodhini, Harali Center in February 2024, currently has 77 tools of 47 different types, including:
  - 28 tractor-driven tools
  - 9 automated tools (of 5 types)
  - 40 manually operated tools (of 14 types)

Sr. No.	Beneficiary Group	Area Worked (Acres)	No. of Farmers Benefited
1	Tractor-owning entrepreneurs	750	300
2	Prabodhak Tool Operators (Youth)	300	80
3	Individual farmers	300	290
Total		1,350 acres (approx.)	670 farmers (approx.)

- In the past one and a half years, these tools have been issued and returned 1,400 times.
- 290 farmers from 25 villages have directly benefited by visiting the centre.
- A group of 15 trained youth operators has served 80 farmers across 6 new villages.
- 10 youth operators, 15 tractor-owning entrepreneurs, and 60 farmers regularly use the tools.
- Tractor owners' groups have provided services to around 300 farmers using tractor-driven tools.
- Overall, the Tool Bank has benefited 670 farmers from 31 villages, directly helping 370 and indirectly helping 300 more.

Results:

The availability of automated tools in this Tool Bank has given progressive farmers an opportunity to experiment with new techniques. Youth have also started showing initiative by joining the Young Prabodhan Tool Operator Group. During this experiment, it was observed that a youth could earn ₹800 per day for 8 hours of work, making this a desirable occupation. After paying tool rent and fuel costs, youth could earn between ₹800 to ₹2,000 per day. All opera-

tors received proper training to use and maintain the tools.

The entire Tool Bank is managed by the youth group itself—with one tractor operator, one trained mechanic for maintenance and repair, and one record-keeper/accountant. Salaries and maintenance costs are covered by the tool rental income.

In the past 18 months, about ₹7.5 lakh was earned through tool rentals.

This initiative has helped create youth employment, increase tractor owners' income, and save farmers significant time and money. Farmers were able to access tools as per their needs and complete agricultural operations on time, resulting in higher productivity and reduced investment costs. Modern tools like the BBF (Broad Bed Furrow) planter and power tillers have introduced local farmers to new agricultural techniques, and after seeing their benefits firsthand, their confidence in modern farming has grown.

Farmers Feedback:

1. Lakhan Nalwade, Dhanori

"The Implement Bank at Jnana Prabodhini, Harali (Lohara, Dharashiv) has been a blessing for farmers. Using these tools has made farming more affordable. Thanks to modern machinery and guidance from Jnana Prabodhini experts, my productivity and profit have increased. I believe every village should have its own Tool Bank."

2. Somnath Vinayak Birajdar, S. Hipparga

"The Implement Bank has been extremely useful for small farmers like me. It helped me access modern machines, making fieldwork much easier. For example, earlier no one in my village had a BBF planter, but I rented one from the Implement Bank and used it for sowing. Even after heavy rains, my crop suffered minimal damage. Also, by using a soybean harvester, I saved ₹1,500 per acre—the local rate was ₹5,000, but my cost was only ₹3,500. I sincerely thank the Implement Bank for this great help."

3. Vaijnath Gavare, S. Hipparga

"The concept of the Tool Bank by Jnana Prabodhini, Harali, is excellent and inspiring for many youth in nearby villages. I once cultivated tomatoes and needed a power tiller for intercultural operations. The Tool Bank provided it quickly and conveniently. It made my farming work much easier and saved both time and money."

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2.5 Livelihood Enterprise Development Program on Backyard Poultry in Chandrapur

NABARD

Background

The irregular income of tribal agricultural laborers in Korpana block, Chandrapur district in Maharashtra motivated NABARD and Ambuja Cement Foundation (ACF) to launch a project under the Livelihood Enterprise Development Program (LEDP) to uplift tribal women Self-Help Group (SHG) members. The intervention began in December 2020, focusing on backyard poultry farming for desi egg production to meet local demand and improve household nutrition. Initially, 150 women were trained in poultry management, feeding, disease prevention, and marketing. Gradually the project evolved with refresher training and exposure visits in December 2022, and the formation of a Women Farmer Producer Organization (FPO) branded as Safalya Deshi Eggs in February 2021.

Tribal women had irregular income and limited livelihood options. Cultural norms restricted egg sales and there was a lack of technical knowledge and market linkages.

Poultry farming was chosen keeping in view of the low investment, high local demand, and quick returns. A total of 150 women were trained in 5 batches (Jan–Mar 2021) on backyard poultry. Starter kits were provided and veterinary care and bank credit linkage was ensured. Refresher training and exposure visits were conducted in Dec 2022. FPO was created in Feb 2021 for branding and marketing.

As a result of efforts taken for a period of over two years, income of SHG tribal women increased from zero to ₹10,000–₹17,000 per month per beneficiary. Unit sizes grew from 20–50 birds to 30–150 birds. Out of them 125 women sustained activity and became entrepreneurs. Eggs are now sold in local markets and large cities, with demand outstripping supply. Most women reinvested profits to expand their businesses, and 125 beneficiaries have developed sustainable livelihoods, transforming from homemakers to entrepreneurs.

Key dilemmas faced: Overcoming cultural resistance, ensuring sustainability, and meeting growing market demand.

Conclusion: NABARD initiated LEDP in 2015–16 to promote sustainable livelihoods among SHG members. By March 2024, 3 lakh SHG members were supported through 2449 LEDPs with ₹128.41 crore in the form of grant assistance under FIF and WSHG funds. The success story from Chandrapur is one among those 2449 LEDPs which were supported by NABARD. The intervention transformed tribal women into entrepreneurs, breaking cultural barriers and creating a replicable model for rural development.

Lessons Learned

- Continuous training, cultural sensitization, and market linkage is crucial.
- This enhanced economic stability and fostered social solidarity and empowerment.
- It demonstrated how targeted interventions can enable self-reliance and uplift rural communities, creating a replicable model for development.

Recommendations

- Scaling up to other blocks.
- Introducing value-added products and diversification of products thereby strengthening.

NABARD

2.6 AFARM's Tribal Enterprise Approach: Strengthening Sustainable Livelihoods in Maharashtra's Tribal Districts

Sachin Punekar - AFARM

The Challenge: From Subsistence to Sustainable Livelihoods

Scheduled Tribe (ST) households in Maharashtra remain among the state's most economically marginalized groups. Declining forest-based income opportunities over the decades have forced these communities to depend primarily on low-yield agriculture, small livestock rearing, and irregular wage labor. The result has been precarious, subsistence-level livelihoods with minimal sources of stable, year-round income. The underlying barriers to sustainable livelihoods were multifaceted:

- Low farm productivity driven by small holdings, mono-cropping, and climate vulnerability.
- Pervasive poverty and limited capacity to take risks, constraining self-employment and enterprise formation.
- Knowledge gaps in post-harvest management and value addition, leading to distress sales and dependence on exploitative middlemen.
- High input costs and weak animal health services, reducing profitability.

The Intervention: Community Empowerment for Strengthening Livelihoods in Tribal Districts (CESLTD)

Action for Agricultural Renewal in Maharashtra (AFARM) and its partner NGOs launched the CESLTD Project (June 2022–May 2025). The initiative covered 29 tribal villages across Nashik, Dhule, and Nandurbar, reaching over 3,000 beneficiaries. The project combined intensive community engagement, targeted financial support, and convergence of public resources to address livelihood constraints holistically.

Strategic Pillar	Focus Area
1. Institution Building and Capacity Development	Formation and strengthening of Producer Groups (PGs), Village Organizations (VOs), and cluster-level Farmer Producer Companies (FPOs) to foster collective ownership and bargaining power.
Farm Productivity Enhancement	Promotion of Low External Input Sustainable Agriculture (LEISA), Good Agricultural Practices (GAP), and training through demonstrations and Farmer Field Schools (FFSs).
3. Micro-Enterprises Development (ME)	Support for farm, livestock, and non-farm enterprises through skill training, entrepreneurship development, and credit and market linkages.
Government Scheme Access and Convergence	Deployment of trained Community Resource Persons (CRPs) to facilitate documentation, entitlement delivery, and mobilization of welfare and livelihood schemes.

The Tribal Enterprise Approach

The project adopted a four-pillar strategy to integrate social organization, technical training, enterprise promotion, and institutional convergence.

Implementation Strategy

The project was executed through sequenced and participatory steps:

- Livelihood Profiling and Group Formation - Detailed household and livelihood profiling to identify diversification opportunities, followed by the formation of commodity-specific groups (e.g., agriculture, poultry, goatry).
- Skill and Financial Support - Tailored trainings and matching grant support (50:50 beneficiary contribution) to encourage ownership and sustainability.
- Post-Training Handholding - Continuous business guidance to ensure operational and financial stability of enterprises.
- Institutional and Cadre Development - Establishment of local institutional structures (VOs, PGs, FPOs) and trained cadres such as Pashusevaks, Hakdarshaks, and Market Agents for service delivery.
- Convergence and Digital Tools - Collaboration with government line departments (Agriculture, ATMA, Tribal Development) and use of digital tools (KoBo, EpiCollect, WhatsApp) for data and monitoring.

Enabling Market Linkages

The Backward-Forward Market Linkage initiative was introduced to improve input supply and product sales, enhancing efficiency and profitability across micro-enterprises (MEs). A multi-cluster Market Linkage Event held in January 2025 connected over 1,200 MEs to 6–7 vendors per cluster, formalizing supply chain partnerships.

While still recent, these linkages substantially improved liquidity, reduced input costs, and stabilized income across clusters. Continued support to FPOs and VOs will be crucial for sustaining these gains.

Objective	Description	Primary Benefit
Market Linkage	Connection with vendors for input and output transactions	Increased income and reduced intermediaries
Quality Improvement	Improved access to standardized materials and technologies	Better product quality
Collective Strength	Joint market negotiation through FPOs/VOs	Lower input cost and bargaining advantage
Market Advantage	Coordinated sales and collective marketing	Higher prices and business continuity

In less than a year, 1,222 beneficiaries transacted goods worth ₹36.88 lakh, including:

- Backward linkages: 218 quintals of agri-inputs, 17,250 saplings, and 2,300 + chicks supplied collectively.
- Forward linkages: 595+ quintals of produce and 2,435 birds sold through vendor partnerships.

Impact and Outcomes

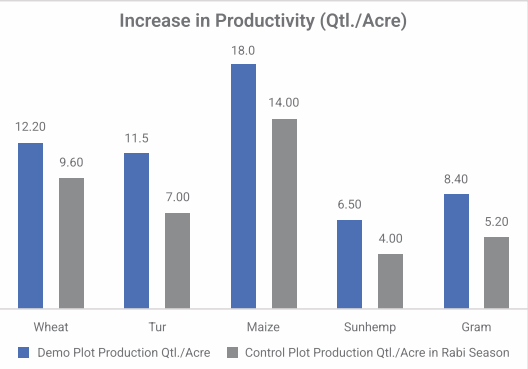
The project recorded marked improvements in income, productivity, and institutional capacity.

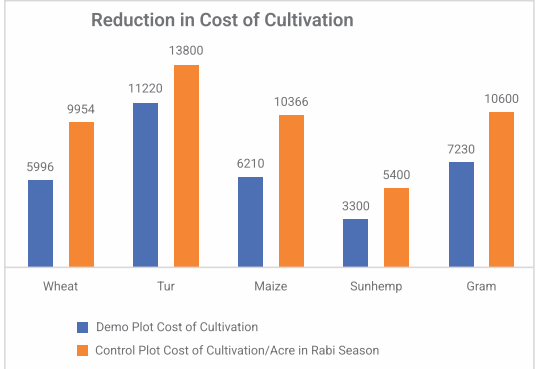
1. **Livelihood Outcomes**

- Average household income rose from 13,000 to ₹42,278 —a threefold increase within three years.
- Diversified income streams reduced seasonal migration and dependence on rainfed farming.

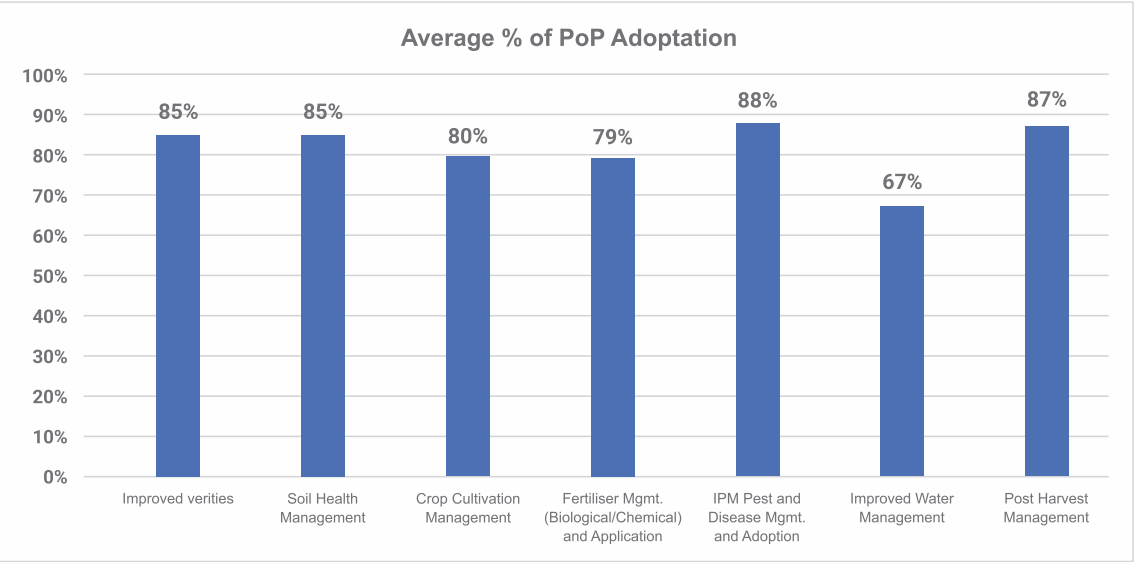
2. **Agricultural Productivity Gains**

- Paddy: +38% yield, Cotton: +72% yield.
- Average cost reduction: 31–37%.
- Rabi crops: Wheat (+27%), Tur (+64%) with 18–40% cost savings.





These outcomes reflect widespread farmer learning through 408 crop demonstrations and 290 Farmer Field Schools, exceeding targets.



3. Scheme Convergence and Entitlements

- Mobilized ₹8.87 crore in direct government benefits for 1,460 house-holds.
- Strengthened social protection via Hakdarshak-led documentation support.

4. Enterprise and Gender Impact

- 2,112 MEs supported (95.6% survival rate).
- 900 women entrepreneurs benefited, demonstrating growth in income control and household decision-making.
- Rs. 360.02 lakh invested (Rs. 249.02 lakh project support + Rs. 111 lakh beneficiary contribution).

5. Quality of Life

Rising incomes led to visible improvements in housing, machinery purchase, and mobility (vehicles for market access), signaling transition from subsistence to asset-building livelihoods.

Lessons and Recommendations

- Needs Assessment is Vital
- Conduct detailed surveys before providing machinery to ensure demand and sustainability.
- Cluster-Based Models Work

- Build cluster-level input and output supply systems anchored in FPOs.
- Irrigation Drives Growth
- Prioritize low-cost irrigation assets (pumps, pipes) for substantial income improvement.
- Targeted Scheme Convergence
- Use trained local facilitators (Hakdarshaks) to maximize government scheme uptake.
- Upscaling Yields Sustainability
- Support the expansion of existing enterprises rather than launching entirely new ones. |

Replicability and Future Directions

The CESLTD model's success rests on two transferable pillars

- Institutional and Capacity Building – Empowering local producer institutions to manage market-facing functions independently.
- Grassroots Cadre System– Creating a self-sustaining support ecosystem through trained CRPs, Pashusevaks, and Hakdarshaks.

Going forward, the focus should be on

- Strengthening market linkages through FPO-led collective marketing.
- Institutionalizing monitoring and mentorship for nascent enterprises.
- Gradually transferring financial and operational control to community institutions to ensure longevity beyond donor funding.

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3 Skill Development / Capacity Building

- Improving Nutritional and Livelihood Security in Rural Areas through Nutritional Gardens - An Initiative of KVK Kharpudi, Jalna
- Community Livestock Business Centres (CLBCs) in Maharashtra: An Enterprise-led Approach for Strengthening Small Ruminant-based Livelihoods
- StartUp Sarathi: Impact & Lessons Learnt from Vigyan Ashram's Entrepreneurship Development Program
- Reviving Goatery & Poultry in Ghatanji, Arni & Kalamb Block: A Journey from Loss to Livelihood Security
- A Community Training Camps Model | Pratham Education Foundation
- Wash Mitra initiative - Skilling with Equitable Employment to Rural Youth and Women for India's WASH Future
- AFARM`s Goatery based Livelihood Approach

3.1 Improving Nutritional and Livelihood Security in Rural Areas through Nutritional Gardens

S. N. Karhale and S.V. Sonune -
Krishi Vigyan Kendra, Kharpudi, Jalna

The Challenge

In rural areas of India malnutrition and poor health status is a common problem. For poor households, vegetables and fruits are often the only sources of micronutrients in the family diet. Nutrition garden is one of the world's most ancient food production practices and is practiced throughout the world. (Landauer and Brazil,1985). Malnutrition and Poor Nutrition Among Rural Populations- Iron-deficiency anaemia (due to lack of iron-rich foods such as leafy greens, legumes, etc.) and vitamin A deficiency (leading to poor eyesight and immune system problems) are commonly seen among rural women and children. In rural communities, women are often primarily responsible for managing household nutrition and food security. However, women in rural areas often lack access to resources, education, and decision-making power. This limits their ability to improve family nutrition and economic security.

The Approach

KVK Kharpudi aimed to improve Livelihood Security in Rural Areas Through Nutritional Gardens. The approach aimed to -

- -Raise Awareness on Nutrition and Benefits of Kitchen Gardens;
- -Provide training and Capacity Building for Garden Management including soil preparation, water conservation, Crop selection, pest management , Sustainable practices

Nutrition gardens are the easiest way of growing nutritious fruits and vegetables at the desirable place. A Nutritional Garden is a small-scale, self-sustaining agricultural plot established close to the home or community space. It typically focuses on growing a variety of nutrient-dense foods such as vegetables, fruits, and medicinal plants. KVK promoted Nutrition Gardens, also known as 'Suposhan Vatika', 'Kitchen Garden', or 'Home Garden', as a self-sustaining agricultural unit located near the home for households to have continuous access to nutrient-rich vegetables, fruits, and medicinal plants. Evidence from similar projects validates this approach. For example, in Bangladesh, home gardens helped reduce vegetable expenses, improved intake of fresh produce, and generated additional income (Zannatul et al., 2016; Talukder et al., 2002).

The objectives of the intervention were to

- Promote household-level nutrition gardens.
- Encourage year-round consumption of fresh produce.
- Improve awareness of nutrition and sustainable cultivation.
- Strengthen the nutritional and livelihood security of rural families

The Intervention

In 2021, KVK Kharpudi established a model nutrition garden on its campus. Over 4,000 farmers, including a large number of women, visited the site. More than 200 demonstration gardens were later set up in surrounding villages. KVK played a catalytic role in implementing this initiative — supplying seeds, saplings, tools, and technical guidance to participating families, while conducting training and demonstration activities. They also supported rural communities in sustainable agricultural practices, raising awareness about nutrition, and organizing training programme for farmers.

The intervention program lasted one year and included:

- Training on nutrition, organic vegetable cultivation, and garden layout.
- Exposure visits to the model garden.
- Practical demonstrations on using bio-inputs like neem extract, cow urine, vermiwash, compost, and 'Jivamrut' for residue-free cultivation.
- Information on nutrient content of vegetables and daily dietary requirements.

KVK has provided demonstrations to rural families every year to help them establish nutrition gardens on their farms. To date, more than 200 demonstrations have been given to farm families across different villages. For this program, indigenous vegetable seed kits and seasonal fruit saplings were distributed to selected farm families. These demonstrations included seeds of 27 varieties of vegetables such as leafy vegetables, fruit vegetables, creepers, roots and tubers, pods, as well as fruit seedlings like mango, papaya, jamun, custard apple, lime, curry leaves, and drumstick.

A range of capacity-building activities were planned and conducted, including trainings on the importance of nutrition, exposure visits to the model nutrition garden, and farmer–scientist interactions covering various topics. These topics included the area required for vegetable cultivation, different models of nutrition gardens, cultivation practices, and growing vegetables using organic farming methods. Homemade inputs such as neem extract, cow urine, vermiwash, vermicompost, compost, and jivamrut were promoted to produce residue-free vegetables and fruits. The activities also addressed the types of vegetables and fruits grown in nutrition gardens, their nutrient content, average vegetable consumption, daily dietary requirements for fruits and vegetables, and the nutrient contribution from nutrition gardens.

For this case study, KVK assessed the impact of Nutrition Gardens on the nutritional and livelihood security of rural households in Jalna District. 50 farm women who had established nutrition gardens on their farms were purposively selected to collect data. Baseline surveys collected data on their socio-economic status, dietary habits, and health indicators such as haemoglobin levels of women and adolescent girls. .After one year, a post-survey measured the outcomes in nutrition and livelihood parameters through structured interviews. Data were collected by using personal interview method with the help of structured interview schedule.

Result

Table1: Socio Economic Status of Farm Families (n-50)

Sr. No.	Parameters	Number		Percentages	
A	**Type of Family**				
	Nuclear family	46		92.00	
	Joint family	04		8.00	
B	**Size of Family**				
	Small (1-4)	08		16.00	
	Medium (4-7)	36		72.00	
	Large (>7)	06		12.00	
C	**Annual Income (Rs.)**				
	<50,000	07		14.00	
	50000-100000	35		70.00	
	>100000	08		16.00	
D	**Education**	**Father**	**Mother**	**Father**	**Mother**
	Illiterate	04	05	08.00	10.00
	Primary	10	27	20.00	54.00
	Middle	28	15	56.00	30.00
	High School	07	03	14.00	28.00
	Graduation	01	–	02.00	04.00
E	**Landholding**				
	Small	12		24.00	
	Medium	36		72.00	
	Large	06		12.00	

The socio-economic status of farm families was analyzed and is presented in Table 1. The data indicate that the majority (92%) of respondents belonged to nuclear families, while only 8% were part of joint families. It was further revealed that most families (72%) had medium-sized landholdings, followed by small-sized (16%) and large-sized landholdings (12%). Regarding family income, the results show that the majority (70%) of farm families fell within the income group of $50,000 to $100,000. In terms of educational status, 56% of family heads were literate up to the middle school level, while 54% of females were literate up to primary education. The findings on landholding indicate that most families (72%) had medium-sized landholdings, followed by 24% with small landholdings and only 12% with large-scale landholdings.

Prior to the intervention program, families cultivated only three to four types of vegetables, such as bottle gourd, green chili, and brinjal. However, after the intervention, they grew a total of 27 types of vegetables, including green leafy vegetables, root and tuber crops, creepers, pods, and fruits such as guava, mango, custard apple, aonla, jamun, sapota, lemon, curry patta, and drumstick. They also added medicinal plants like mint, tulsi, ginger, and turmeric to their nutrition gardens.

Table2: Annual production of vegetables and fruits of nutritional gardens (n-50)

Sr. No.	Type of Vegetables	Annual production of Vegetables (Kg)
1	Vegetables	145.31
2	Leafy vegetables	39.76
3	Roots and tubers	6.7
4	Fruits	48.55
	Total	**240.32**

The table 2 showed an average harvest of 240.32 kg/annum as produce from vegetable and fruit crops through nutrition garden. Vegetable alone accounted for the highest (145.31 kg/annum) share in the average production of food groups, followed by fruits (48.55), leafy vegetables (39.76 kg/annum) and roots and tubers (6.7 kg/annum). This is due to their dietary pattern and food habits, the majority of the respondents prefer to grow vegetables than other food groups. The dietary priority is often to consume enough vitamin and mineral rich foods to meet essential nutrients in the body. Vegetables and fruits are relatively good source of vitamins and minerals .These finding are in line with Battacharjee et al (2006).

Table 3 :Annual production and Utilization of vegetables (n-50)

Partic Ulars	Production (kg.)	Purchase (kg.)	Consumption (kg.)	Sale of Vegetables (kg.)	Saved Money (Rs.)
Before Intervention	108.25	34.52	134.26	8.51	-1623
After Intervention	240.32	18.20	230.31	28.21	7200
Change	132.07	-16.32	96.05	19.7	- -
Percent Change	122.00	-47.27	71.54	131.49	- -

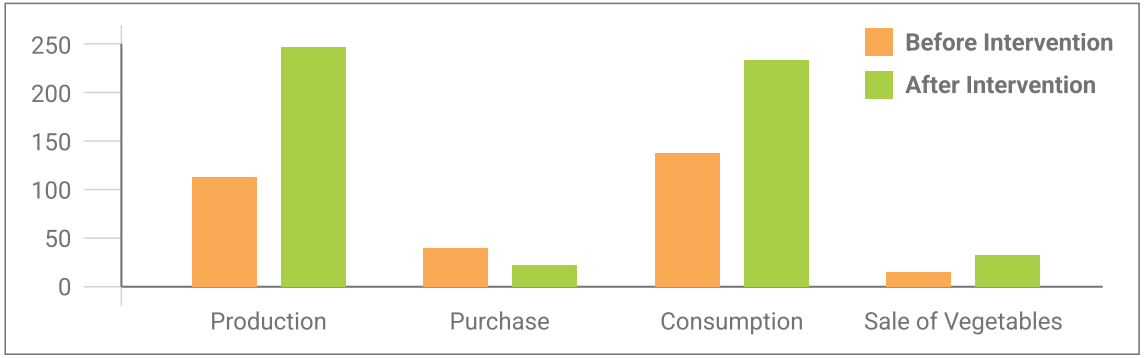

Fig. 2 Annual Production and Utilization of Vegetables

Table 3 and fig. 2 elaborated that demonstration of nutrition garden showed increase in vegetable production, consumption and also sale of excessive vegetables within village. Before intervention, farm women were practicing traditional practices and used to grow only two to three seasonal vegetables. To fulfill the requirement, they had to purchase vegetables from market for consumption of vegetables at beneficiaries increased 122 percent which resulted in increased consumption (71.54%) and sale (231.49%) and also money saving. Similar results were reported by (Nandal and Vashisth,2009, Chayal et al., 2013). The intervention significantly increased household vegetable availability, reduced dependency on market purchases, and generated modest income from sales.

Table 4: Distribution of Respondents regarding Percent Change in Hemoglobin Level (n-50)

Sr. No.	Particulars	Average Hemoglobin Level (gm /dl)		Average Increase in Hemoglobin (gm/dl)	Percent Change in Hemoglobin
		Before	After		
1	Farm women (21 to 40 yrs)	9.65	11.45	1.8	18.65
2	Adolescent Girls (13-18)	10.66	12.45	1.79	16.79

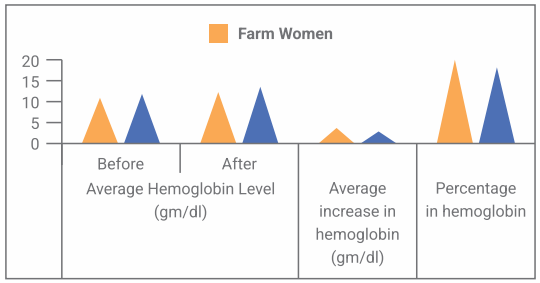

Fig.3 Distribution of Respondents regarding Percent Change in Hemoglobin Level

Table 4 and fig. 3 depicted there was 1.8 gm/dl average increase in hemoglobin of farm women, where as it was 1.79 gm/dl in adolescent girls after intervention of programme and the percent change was 18.65 and 16.79 respectively. The improved hemoglobin levels indicate a measurable health benefit from increased intake of iron-rich vegetables and fruits.

Table 5: Year wise horizontal spread of nutritional garden

Sr. No.	Year	Spread of nutritional garden (No)
1	2020	200
2	2021	2000
3	2022	500
4	2023	500
5	2024	750
6	2025	500
	Total	4450

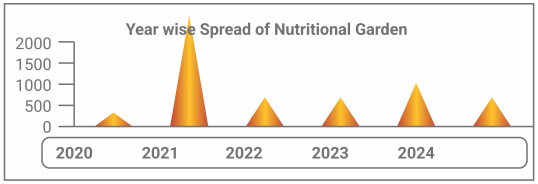

Fig. 4 Yearwise horizontal spread of nutritional garden

Table 5 and fig 4 showed the yearwise horizontal spread of nutritional garden. In 2021 KVK has developed model nutritional garden at campus for demonstration purpose and more than 4000 farm women including farmers visited this garden and demanded seeds of deshi vegetables. On an annual basis, seed kits and saplings are shared with farmers on no loss no profit basis. These kits are sold all over Maharashtra in different district for KVK and other institutes for their demonstrations purpose in rural as well as urban area at Pune, Solapur, Nashik, Kolhapur Ahilynagar, Sambhajinagar, Beed, Nanded, Parbhani and Jalna.

Lessons Learned

- Nutrition gardens are a simple and cost-effective approach to combat rural malnutrition.
- They enhance household food and nutrition security, while fostering economic resilience and community collaboration.
- The model demonstrates strong potential for replication in both rural and peri-urban areas.

Future Directions

To ensure long-term sustainability and scalability, future programs should focus on:

- Promote seasonal vegetables with indigenous seeds.
- Encourage bio-fortified crops like iron-rich beans and sweet potatoes.
- Focus on vegetables high in iron, protein, and vitamins.
- Support cost-effective, high-yield options such as spinach, okra, tomatoes, and beans.
- Use organic farming methods: composting, vermiculture, and avoiding chemical pesticides.
- Practice crop rotation and multi-season gardening.

Creating women-led seed banks and nurseries to support biodiversity.

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3.2 Community Livestock Business Centres (CLBCs) in Maharashtra: An Enterprise-led Approach for Strengthening Small Ruminant-based Livelihoods

The Goat Trust

The Challenge

Goat rearing has traditionally served as a key supplementary livelihood among landless and smallholder households in rural Maharashtra, particularly for women who manage the daily care of livestock. However, due to limited access to veterinary services, scientific management practices, quality breeding and organized markets, goat rearing remained a low-return and risk-prone activity. Despite a significant goat population in these regions, most rearers practiced traditional low-input rearing, depended primarily on open grazing and lacked access to quality breeding services. The repeated use of the same local buck led to widespread crossbreeding and declining herd quality. Preventive health practices such as vaccination and deworming were irregular due to distant and costly veterinary access. This resulted in:

Kid Mortality Rate ~20%; High financial losses; an Adult Goat Mortality Rate ~14.7%;

Household shock vulnerability; Marketable Weight Took 12–18 months; Low returns; low Average Herd Size 2–3 goats/household; and Limited income potential. For many households-especially women-goat rearing acted only as an emergency liquidity source rather than a planned livelihood. Socio-economic constraints and lack of formal support made the system fragile and unprofitable.

The Approach

To address these gaps, the Maharashtra State Rural Livelihoods Mission (MSRLM) in partnership with The Goat Trust (TGT) established Community Livestock Business Centres (CLBCs) across 13 blocks in four districts-Wardha, Gondia, Yavatmal and Osmanabad. The CLBC model focuses on promoting scientific goat management, strengthening community-based service providers, improving market linkages and converting goat rearing from a subsistence practice into a profitable, community-owned enterprise.

Intervention: Establishment of CLBCs

Between 2014–2016, MSRLM and TGT established 13 CLBCs, each serving as a block-level enterprise hub.

Key Components of the Model include –

- Goat Clubs (Village Level) Collective learning & peer support platform
- Pashu Sakhis (Last-Mile Service Providers)
- Doorstep vaccination, deworming, shed and feed advisory
- Community Livestock Managers
- Technical supervision & enterprise (CLM) management
- CLBC Governing Board Ensures community ownership & decision-making

A total of 804 Pashu Sakhis and 73 CLMs were trained and integrated within the CLBC system. The CLBCs supplied:

- Mineral feed supplements (Pashu Chaat)
- Formulated concentrate feed(Dana Mishran)
- Herbal immunity boosters (Masala Bolus)
- Vaccines and Dewormers

In March, April and May 2020—during the peak of the pandemic and nationwide lockdown—the Nagar Parishad (City Council) of Wardha issued an order for the supply of handwash for public use. Product samples were invited and evaluated alongside various chemical- based handwashes available in the mainstream market. Among all the submissions, the government selected the goat-milk-based handwash manufactured by the community through the CLBC. This recognition highlighted both the product's quality and the community's enterprise capabilities.

During this period, the CLBC in Wardha successfully fulfilled an order of approximately 600+ litres of handwash & 1300+ Goat Milk Soap. Today, this CLBC continues to serve as a vital community institution, supporting 18,000 goats across 3,000 rural households in the block.

The CLBCs evolved into community-managed enterprises, producing livestock feed supplements, operating slaughter and sale centers and supporting goat marketing. The Annual Turnover (2018–2019) is ₹1,095.49 Lakh across 13 CLBCs. This impact is driven primarily by goat sale, feed supplements, vaccinations and goat milk soap production.

Example of Income Streams

- Goat Sale (Live Animal) 15,866 goats 894.7
- Masala Bolus 6,07,697 pcs 30.38
- Goat Milk Soap 1,49,982 pcs 35.80
- Vaccines & Dewormers Over 12 lakh doses 59.19

Ranjana Tai – From Daily Wage Labourer to Master Pashu Sakhi

Ranjana Bapurao Kamadi, from Koli village in Ghatanji block of Yavatmal district, embodies the transformative power of women-led livelihoods. Married at the young age of ten and left with only one acre of non-agricultural land, she spent years working as an agricultural labourer to support her family and her child's education. Despite financial hardship, she consistently saved ₹20 every week in her SHG.

Turning Point: During an SHG meeting, a fellow member's success in goat rearing inspired Ranjana Tai to begin her own small herd using a loan from her SHG. Her skills and dedication soon made her a strong candidate for the Pashu Sakhi role under UMED–Maharashtra SRLM. Though her family initially resisted her travelling for training, she convinced them and completed the intensive animal husbandry training.

Becoming a Trusted Community Cadre: After certification, she began providing services like vaccination, deworming, improved rearing practices and promoting value-added feed products. Initially met with skepticism by villagers, she gradually earned trust through consistent support and UMED's community meetings. Her interventions led to remarkable improvements—including reducing goat mortality from 30% to 0% in her village.

Entrepreneurship & Impact: Ranjana Tai expanded her livelihood through multiple income streams in the year 2017-18 that included Health services & feed products (₹10,200 per annum) and Market facilitation, Memna Nursery & livestock sales: ₹1,04,000 per annum.

Total Annual Income of year 2018: ₹1,14,200

Today, she supports more than 49 families with a goat population of 280+ goats, runs her own goat shed financed through NRLM's livelihood loan and operates a profitable Memna (Kid) Nursery earning her ₹80,000 to ₹90,000 every cycle. She has also been promoted to Master Trainer, known for her strong documentation and dedication.

A Story of Empowerment

From long days as a daily wage labourer to becoming a respected animal health service provider, trainer, and entrepreneur, Ranjana Tai's life has transformed.

She proudly says: Despite significant progress, several challenges emerged: ***"I don't want to look back now. Those days are behind me."*** Her journey stands as a powerful example of how community-based cadres like Pashu Sakhis can create sustainable rural livelihoods and inspire hundreds of others.

Household-Level Impact

The introduction of scientific practices led to major improvements: e CLBC ter CLBC

I. Average Herd Size 2–3 5–7

ii. Kid Mortality 20% 2.5%

iii. Adult Mortality 14.7% 1.4%

iv. Age for Market Sale 12–18 months 10–14 months

v. Average Sale Price ~₹5,000 ~₹7,000 per goat

vi. Additional Income from Milk & Manure ₹0 ₹30 per goat/month

Women gained income control, mobility, leadership roles and recognition as trained livestock professionals—strengthening their social identity and decision-making power.

Scale-Up

The CLBC model has effectively transformed goat rearing into a profitable, women-led, community-owned enterprise. The approach is now being replicated under MKSP and other government livelihood programs, demonstrating its scalability and policy relevance.

- Record keeping and financial management varied across CLBCs
- Cadre attrition affected continuity in some blocks
- Breeding improvement models (AI and Buck Entrepreneurship) needed stronger incentives
- Product standardization for wider market expansion required regulatory approvals (FSSAI/CDSCO)

These challenges highlight the need for continued institutional mentoring and business governance support.

Future Direction

- A few areas that can be improved and further refined include: Actions
- Enterprise Digital bookkeeping, business planning, working capital; Strengthening mechanisms;
- Ensuring Breed Improvement
- Strengthening village-based buck services & performance-linked incentives
- Product Cluster-level processing & quality certification support
- Standardization
- Market Expansion Link to organic manure brands, herbal wellness markets, meat value chains
- Scale use of Pashubajaar for transparent goat trade

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3.3 StartUp Sarathi: Impact & Lessons learnt from Vigyan Ashram's Entrepreneurship Development Program

Ganesh Pingle and Ranajeet Shanbhag - Vigyan Ashram

The Challenge

Vigyan Ashram is located in Pabal village, about 70 km from Pune, in a belt characterized by strong agriculture and nearby industrial zones such as Ranjangaon and Chakan. Before COVID-19, most households in this region depended on steady industrial employment, supported by daily transport facilities to these hubs. The pandemic and associated lockdowns disrupted industrial work, triggering income insecurity and forcing many youth working in cities or industrial areas to return to their native villages. As the initial shock settled, Vigyan Ashram (VA) observed a surge in inquiries for skills training and entrepreneurship support from young men and women who wanted to rebuild their lives in their villages but struggled with the social stigma of being seen only as "farmers" or "villagers." The pandemic strengthened their sense of rootedness and highlighted the safety and security of rural life, while families increasingly supported village-based livelihoods.

With widespread smartphone use and heavy social media engagement during lockdowns, digital platforms became powerful channels for outreach and inspiration.

The Approach

Mahatma Gandhi's vision of Gram Swaraj placed rural entrepreneurship and appropriate technology at the heart of self-reliant village development, a philosophy that guides Vigyan Ashram's work in Pabal since 1983. The StartUp Sarathi methodology builds on this legacy to support a new generation of tech-savvy rural youth who aspire to become entrepreneurs in their own villages with dignity and long-term vision. Over four decades, VA has incubated more than 2,000 rural entrepreneurs through multi-skill programs that especially support students who may not thrive in conventional academics but show strong practical aptitude and enterprise potential. These programs help youth map their skills and home resources, understand local market needs, and gain the confidence to see entrepreneurship as a viable livelihood option. Technology-based rural entrepreneurs then act as local change agents—improving productivity and quality, adapting technologies to local contexts, and spreading the benefits of innovation within their communities

Emergence of StartUp Sarathi: Recognizing this shift, Vigyan Ashram designed a focused rural entrepreneurship initiative called "StartUp Sarathi" to cater to a new-age profile of rural youth. These young people prefer investing their own savings over relying only on subsidies; are tech-savvy, inspired by innovation, and highly active on social media; and favour short, outcome-oriented courses that quickly translate into visible progress. To reach them, VA launched aggressive social media campaigns with clear, aspirational messages and technology-focused content,

which quickly generated inquiries on new technologies, market opportunities, and business models beyond traditional poultry, tailoring, or bakery ventures. Through online surveys and consultations with trainees, trainers, partners, and management, VA evolved a new Entrepreneurship

Development Program (EDP) model with the following design principles:

- Ultra-short courses (2–7 days) with tightly focused learning objectives.
- End-to-end execution plans linking pre-training preparation, on-ground practice, and post-training incubation support.
- Content aligned to emerging trends in both farm and non-farm sectors, such as modern food processing, digital fabrication, agri-tech, and service enterprises.
- EDP teams working with an entrepreneurial mindset, measuring Social Return on Investment (SROI) for each program.
- Distinct branding and social media strategies for each course.

This framework crystallized into the StartUp Sarathi methodology: an adaptable, field-based approach to nurturing modern rural entrepreneurs.

The Intervention

To operationalize this model, Vigyan Ashram set up a dedicated StartUp Sarathi EDP section on the Pabal campus, supported by a structured training calendar, monthly targets, and a Management Information System (MIS) for tracking leads, services, and budgets. The methodology unfolds in five interconnected phases that integrate awareness, training, incubation, and services.

- **Phase I:** Awareness and lead generation: Awareness efforts begin with scanning local market trends and community needs using VA's village networks and partner organizations. The team conducts free webinars on specific technologies with experts and successful entrepreneurs, complemented by on-field demos, short videos, and WhatsApp-based outreach to stimulate curiosity and generate leads.
- **Phase II:** Lead segmentation and engagement: Following awareness activities, StartUp Sarathi promotes concise two-day introductory trainings through digital channels. Inquiries and registrations are filtered using calls, online forms, and feedback; interested youth receive clear information on technology options, investment levels, required skills, and market prospects. Each contact is categorized in the MIS for tailored follow-up and support.
- **Phase III:** Skills training: Skills training is delivered in small batches, typically 10–20 participants, through intensive hands-on sessions in functioning production units. When facilities are unavailable on campus, VA collaborates with experienced local entrepreneurs so participants learn directly from working enterprises, including technology use, operations, costing, and business models.
- **Phase IV:** Hand-holding and incubation: Post-training, participants do not return home unsupported; they are onboarded into an incubation pipeline and tagged in the MIS as super-active, active, or cold, depending on their readiness and progress. The EDP team provides periodic phone support and field visits offering technical troubleshooting, managerial guidance, and market insights, ensuring that ideas move from plan to practice.
- **Phase V:** Services and ecosystem support: StartUp Sarathi also functions as a service hub, helping entrepreneurs with business formalities such as registrations (GST, Shop Act, Udyam Aadhaar, FSSAI), branding and packaging design, social media promotion,

buyer linkages, and guidance on accessing bank finance and relevant schemes. These services are generally delivered on a break-even basis, lowering transaction costs for rural entrepreneurs. For smoother administration and partnerships, VA uses a dedicated legal

structure (Section 8 company) to enable transparent accounting and timely service delivery

Outcomes and impact (2022–2025)

An impact assessment by student volunteers from S.P. Jain Institute of Management & Research (SPJIMR), Mumbai, in early 2025 documented the early performance of StartUp Sarathi. Key quantitative outcomes included:

- Over 800 participants attended awareness programs and webinars.
- 328 youth completed structured skills trainings across 57 programs ranging from 2 to 90 days.
- 155 rural entrepreneurs launched enterprises, collectively offering more than 760 distinct products and services.
- Cumulative investment reached around Rs. 4.10 crores through self-funding and bank loans, with an average monthly turnover of approximately Rs. 2.48 lakh per entrepreneur.

- About 94% of enterprises sustained operations over three years, contributing to a visible reduction in rural–urban migration among participating youth.

Feedback from participants highlighted that practical, hands-on skills training was the most appreciated component, followed by post-training technical support and help with regulatory licenses. Remote mentoring-through phone calls, messaging apps, and online sessions—reduced travel costs and made expert guidance accessible even to youth in remote villages. These interventions improved not only enterprise turnover and profit margins but also household incomes, with benefits reaching nearly all surveyed participants. A dedicated StartUp Sarathi website now hosts training calendars, course information, success stories, and testimonials, making the program more discoverable to aspiring entrepreneurs and partners.

Key learnings and way forward

The StartUp Sarathi experience underscores that EDPs must align with the evolving aspirations of digitally connected rural youth, who expect speed, relevance, and visible outcomes rather than long, classroom-heavy courses. Demand is rising for skills in digital fabrication, value-added food products, agri-tech, and franchise or service models that combine technology with local

resources. Training institutions therefore need to continuously update curricula with new business trends and technologies to remain attractive and impactful.

The case also demonstrates that pre- and post-training support is essential in rural settings, where conventional incubators and accelerators are often urban and tech-startup centric. Rural colleges and technical institutes can significantly strengthen entrepreneurship ecosystems by integrating short skills modules, mentoring, and incubation support within their academic structures. However, rigidities in banking procedures and scheme implementation still make access to finance a major challenge, requiring ongoing advocacy and facilitation by intermediary organizations.

To scale the model, Vigyan Ashram aims to collaborate with grassroots organizations, social institutions, and CSR partners to replicate StartUp Sarathi centres in different regions. Through such partnerships, the methodology can help build resilient local economies, limit distress migration, and nurture a new generation of tech-enabled rural entrepreneurs committed to community development and self-reliance.

Acknowledgments: We are very thankful to all our students of skills-training and EDP program. We are also very thankful to Praj Foundation (Pune) for providing financial and technical assistance in design & implementation of 'Start Up Sarathi' and other skills-training programs in Vigyan Ashram. We are thankful to students' volunteers from various management institutes for supporting in data collection and processing during this study. For more information visit to - https://vigyanashram.in/

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3.4 Reviving Goatery & Poultry in Ghatanji, Arni & Kalamb Block: A Journey from Loss to Livelihood Security

Vikasganga Samajsevi Sanstha

Background & Context

Agriculture has been the key source of livelihood in the Yavatmal district which is mainly rain-fed providing a means of living to two third of the population. Lacking sources of irrigation makes living of the farmers unstable and difficult because of extensive dependency on Monsoon. As a result of frequent occurrence of dry spell, delayed onset of monsoon and early withdrawal, prospects of good crop cannot be assured. To diversify income, many families depend on agri-allied activities such as poultry, goat, and cattle rearing—usually on a small scale based on available resources and market needs. Despite their potential, these activities often yield limited returns due to poor knowledge of livestock care, diseases, and inadequate veterinary facilities. In rural Yavatmal, even minor livestock losses translate into heavy economic distress.

The Ghatanji, Arni, and Kalamb blocks (341 villages) rely mainly on agriculture, wage labor, and small livestock. For tribal and marginal households, goat and poultry farming are vital secondary incomes. These activities were traditionally informal, with a few goats or hens raised using old methods and no scientific input.

Key challenges include:

- High Livestock Mortality: Diseases like PPR, ET, FMD in goats, and Ranikhet or Fowl Pox in poultry cause 20% goat kid and up to 60% poultry deaths each year. No vaccination or disease control is available.
- Limited Scientific Practices: Farmers lack knowledge about breed improvement, balanced feeding, minerals, and proper housing.
- Poor Veterinary Access: Few trained personnel and costly medicines mean irregular support and no village-level workers.
- Market Issues: Weak market links and middlemen force farmers to sell at low prices.
- Restricted Women's Participation: Women manage animals but have limited entrepreneurship and financial involvement.

These constraints kept families trapped in low-income cycles despite persistent effort and hard work. Every year most of the households lost 20% goats, and poultry mortality remained between 40–60%, causing financial distress. Still, families held on to these activities because even small returns could help them to pay school fees, buy rice, or manage medical emergencies etc. The community had immense potential, but fails due to lack of infra structure, knowledge, and support.

The Approach

If rural households receive systematic training, access to vaccination and deworming, breed improvement, proper housing support, financial literacy, and market linkages, then goatery and poultry can evolve from risky side activities into sustainable micro-enterprises, because reduced mortality, better productivity, and

improved market structures directly enhance household income and resilience.

The Intervention

In the rural blocks of Ghatanji, Arni, and Kalamb, the prospects for goatery and poultry had long remained fraught with risk. For many households, these activities were little more than side pursuits, necessary but unreliable, shadowed by high mortality rates and limited financial gains. The persistent loss of livestock each year meant families struggled to break free from low-income cycles, despite their relentless efforts. Yet, hope began to take root when systematic training and support entered the picture. The turning point came in 2022, when Vikasganga Samajsevi Sanstha (VSSS) launched a comprehensive livestock development programme, focusing especially on women, youth, and marginalised communities. VSSS introduced a four-step development model designed to revolutionise local livestock practices and convert goatery and poultry from uncertain ventures into sustainable micro-enterprises.

- The journey began with capacity building and scientific training. VSSS reached 80 villages, training 550 women and youth in essential livestock management skills. Demonstrations covered vaccination schedules, deworming protocols, balanced feeding, fodder cultivation, shed hygiene, colostrum feeding, chick brooding, and the use of herbal remedies. These sessions laid the groundwork for healthier animals and more productive units.
- Next came the vaccination and deworming drives. Regular campaigns tackled critical diseases: goats received protection against PPR, ET, and FMD, while poultry were safeguarded from Ranikhet and Fowl Pox. To ensure continuity, VSSS trained Community Animal Volunteers, or Pashu Sakhis, who became the backbone of local animal health services. The impact was dramatic—goat mortality plummeted from 20% to just 1%, and poultry mortality dropped from 70% to between 15% and 20%.
- The third step focused on breed improvement and unit strengthening. Improved breeds such as Osmanabadi cross goats and Kaveri poultry were introduced, alongside the distribution of mineral mixtures, feed supplements, and basic shed support. Households were encouraged to expand their herds, moving from 2–3 goats to as many as 10–20, and thereby amplifying their earning potential.

- Market linkages and enterprise development formed the fourth pillar. Farmers learned how to price their livestock, engage in weight-based selling, participate in collective marketing, and maintain accurate records. These interventions paid off: the average sale price of goats increased from ₹5,000–₹6,000 to ₹8,000–₹10,000, directly boosting household incomes.

The Journey of Change

Trust had to be built from the ground up. Initially, local families were sceptical, voicing concerns that their goats rarely survived long enough to offer any real benefit. However, after the first round of vaccinations, the tide began to turn. Survival rates improved, animals grew healthier, and a newfound sense of confidence spread through the community.

Several key turning points marked the transformation:

- Nearly all goat kids survived the monsoon season—an outcome villagers described as “unprecedented”.
- Poultry units started generating weekly income from eggs and grower birds, giving households a reliable source of revenue.
- Women, previously confined to management roles without financial autonomy, began to emerge as entrepreneurs and decision-makers within their households.
- Youth joined the movement as vaccinators, helpers, and marketers, reinforcing the local value chain and securing the future of these enterprises.

Outputs and Outcomes

The Ghatanji block witnessed impressive results. A total of 450 households received support for their goatery and poultry units, with 550 women and youth trained across 80 villages. Scientific training sessions reached all villages, and vaccination drives covered 25. The functional Pashu Sakhi model became a cornerstone of community animal health.

The outcomes were equally significant:

- Goat mortality reduced by approximately 100%, while poultry mortality dropped by around 45%.
- Household monthly income rose by ₹2,500–₹5,000.
- Average herd size increased from three to eight or ten goats, and poultry units grew from ten to 25–30 birds.
- Families reduced distress borrowing and developed greater resilience to crop losses.
- There was a marked rise in women’s confidence and leadership within the community.

Conclusion: A New Livelihood Path for Ghatanji

The Ghatanji experience demonstrates that, with the right knowledge, timely interventions, and sustained support, even small-scale goatery or backyard poultry can become transformative. Structured training, effective health services, breed improvement, and market linkages have enabled these traditional activities to evolve:

- From traditional practices to scientific methods,
- From risky sidelines to secure sources of income,
- From mere subsistence to thriving enterprises, and

- From male-dominated work to women-led livelihoods.

Through this journey, rural households in Ghatanji, Arni, and Kalamb have not only enhanced their livelihoods but have also reshaped the aspirations of their communities, setting a new standard for empowerment and resilience, and reshaped community aspirations. The replication of these best practices across Yavatmal underscores a simple truth— When rural households are empowered, their livelihoods don't just survive—they thrive. Today, hundreds of families from Ghatanji block stand stronger, more confident, and better prepared for the future. "This journey proves that when rural households are empowered, their livelihoods don't just improve-they flourish."

Replication

By observing the impact of scientific rearing of Goat & Poultry, villagers from Ghatanji, Kalamb and Arni blocks from Yavatmal district (Maharashtra) were adopted these best practices and earning more money to sustain their livelihood.

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3.5 A Community Training Camps Model

Dhanashree Gurdu and Raksha Satish -
Pratham Education Foundation

The Challenge

Since 2005, Pratham Education Foundation's Vocational Skilling Vertical has trained more than 3,00,000+ first generation entrants in its Residential Vocational Skilling Model across 19 states in India. Pratham has been identifying and engaging with youth in communities located within a 100 km radius of Pratham centers, offering them digital self-paced courses about various trades, and encouraging their interest in vocational training. But we have known through surveys (ASER 2023) and our experience on the ground, all across India that adolescents and youth are unaware, unclear, and uncertain of opportunities, possibilities, and the way forward. Most start doing work they can find and learn minor skills at work. Due to the opportunity cost associated with staying away from work, these youth are not able to enroll in long training/certification programs.

The Approach

To address this, Pratham had launched a project called "Community Training Camps" in order to scale the reach of training . The Community training Camps are a high-impact, demand-driven skilling initiative designed to bring opportunities directly to rural youth across India. Implemented across clusters of 5–10 villages, each camp runs for 30-days and provides industry-relevant training tailored to local employment opportunities. The model prioritizes accessibility, gender inclusion, and strong linkages with the local employment market, making it one of the most scalable and community-responsive skilling models. Since 2023, Pratham has conducted 1,040 community camps nationally, enrolling 21,152 youth. Of these, 18,557 have completed training and 11,735 (63%) have secured employment. Courses such as Electrical, Healthcare, and Apparel have performed exceptionally well in rural communities. The average monthly income for placed youth is INR 10,000, with nearly 67% earning INR 10,000 or more.

Community Camps in Maharashtra

In Maharashtra, a total of 278 community camps has been conducted, enrolling 5,752 youth across various industries. Of these, approximately 5,060 have completed their training, and 3,479 (69%) are currently employed. Maharashtra is the leading state in the country in implementing the Community Camp model, contributing the highest number of camps nationally. This scale demonstrates the state's strong commitment to last-mile skilling and its ability to mobilize and train youth across diverse geographies.

As opposed to national average, the monthly income for Maharashtra peaks at the range of INR 10,000-15000 per month. Key Learnings from Community Training Camps 1. Women's Participation in NonTraditional Trades Community Camps have expanded women's access to trades where their presence was historically limited. Since 2016, 8,326 women have been trained in non traditional trades through center-based models. With the introduction of community camps, 1,331 women enrolled locally and 1,140 completed their training. The proximity and familiarity of camp locations reduced mobility-related concerns, enabling more women to explore sectors previously viewed as inaccessible.

Proximity Drives Higher Enrolment and Retention

Localised training remains one of the strongest enablers of participation. By removing the need for migration, Community Camps made vocational skilling feasible for youth—especially young women. Out of 21,151 youth enrolled, about 57% were women. Flexible batch timings and the presence of female trainers reinforced a sense of safety and comfort, contributing to strong attendance and higher completion rates.

Curriculum Flexibility Is Critical in Village-Based Camps

Delivery within the community demands adaptive pedagogy. Trainers used modular content, contextual language, and local examples to ensure clarity and relevance. To meet emerging local job opportunities, new courses such as Ring Frame Tenter, Finisher and Packing, and Electrical Domestic Appliance were added. This flexibility allowed the program to remain demand-driven while maintaining instructional quality.

Annexure -1 | The Case of Gadchiroli

From Residential Mobilization to Community-Based Training: For several years, Pratham mobilized youth from Gadchiroli and sent them to residential training centres in other districts. While this model worked for some, it posed clear barriers: distance, safety concerns, unfamiliar environments, high opportunity costs, and limited family willingness to allow young people— especially women—to travel far for 2–3-month programs. The Community Training Camp (CTC) model changed this dynamic entirely. For the first time, structured skill training was delivered within Gadchiroli's own villages, in familiar, accessible spaces. This shift from relocation-based training to community-based learning significantly increased participation, improved women's enrolment, and enhanced learning assimilation as training was

Industry	No. of Camps	Enrolled	Completed	Employed	Employed %
Apparel - SET	15	351	330	266	81%
Apparel - SMO	11	194	158	117	74%
Automotive 2W	12	203	192	89	46%
Automotive 4W	5	79	70	49	70%
Beauty	41	607	560	147	26%
Construction	14	965	876	874	100%
Electrical	47	886	788	436	55%
Healthcare	41	850	674	522	77%
Hospitality	30	450	365	174	48%
Plumbing	28	512	431	371	86%
Welding	28	655	616	434	70%
Grand Total	278	5752	5060	3479	69%

delivered in local languages with hands-on, practical methods.

Community Touchpoints: AOPs and Mentors as the Bridge

Area of Police (AOP) centres served as natural community anchors. Youth and their families could walk in, clarify doubts, and observe ongoing training. On-ground mentors deepened this trust by meeting families across villages including Aaldandi, Gatta, Gardewada, Halewara, Pimpri, Burgi, and Bhamaragad. Through door-to-door engagement, they reached over 2,000 households and mobilised 1,429 youths—many of whom had never considered formal skilling earlier. A major turning point was the success of the first batch. As students secured jobs, their stories travelled across hamlets, creating credibility and pride. By the second batch, a large share of enrolments came purely through community referrals, reflecting a high level of trust.

Hands-on, Lingual Training That Improved Assimilation

Because training happened locally, instructors used Marathi/Gondi for demonstrations, workplace

vocabulary, and safety instructions. Practical sessions began early in the course, enabling learners to visualise concepts and build confidence. Alumni visits, engineer-led workshops, and placement-orientation sessions enabled students to connect theory with real-world expectations.

Operational Challenges and Mitigations

- Attendance dips due to Tendu patta season and community events: This seasonal livelihood cycle disrupted attendance and retention. Mitigation: Flexible batch timings, peer motivation, and sustained follow-ups ensured students continued and completed the course.
- Rainfall-led infrastructure disruptions: Heavy rains damaged some tools and temporarily halted sessions. Mitigation: Quick repair work, temporary indoor setups, and preventive waterproofing helped maintain continuity.
- Delays in training materials: Supply delays affected practical components in some centres. Mitigation: Trainers strengthened theoretical grounding during the waiting period and compensated with extended practical hours.

Results

Despite contextual and operational challenges, the Gadchiroli CTCs trained 1,299

youth across six trades, achieving 90% of the planned target and recording a near-perfect placement rate. More importantly, the intervention demonstrated that training delivered within the community—supported by mentors, local partnerships, and hands-on lingual instruction—produces deeper engagement and better outcomes than relocation-based residential models for this geography.

Student Stories

Robin's Story: Robin Sukharam Lakada completed the 90-day Assistant Electrician training under the Pratham-Lloyds Skill Development Program. Earlier he had limited knowledge of electrical work and no formal job experience in the trade. His poverty motivated him to pursue the course seriously. During the training, Robin acquired practical skills in wiring, motor connections, circuit installation, and the use of electrical tools, along with a strong focus on safety

standards. He actively participated in hands-on sessions and was quick to grasp technical concepts. Upon successful completion of the course, Robin secured employment with LT Gondwana Skill Hub Private Limited with a monthly salary of ₹12,705. This placement not only marks his entry into the formal workforce but also offers a steady livelihood to support his family.

Shilpa's Story: Shilpa Bhiva Pungati completed 90 days of Bar Bending training through the joint initiative of Pratham Education Foundation and Lloyds Metals. Coming from a background with limited opportunities, the training gave her more than just skills-it instilled confidence, courage, and clarity to enter a male-dominated field. Shila is set to join as a bar bending worker at LT Gondwana Skill Hub Pvt. Ltd., earning ₹12,705 per month. For Shilpa, this marks a powerful shift—not just in career, but in mindset. In her village, women rarely step into trades like construction, but she is now challenging those norms and encouraging others. She proudly wears her uniform and safety gear every day. She is building not just structures—but also a strong foundation for her future. Her journey is a shining example of how targeted skilling programs can drive real change.

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3.6 Wash Mitra Initiative - Skilling with Equitable Employment to Rural Youth and Women for India's WASH Future

Yogesh Nerpagar - CYDA

Background

Across India, rural and tribal communities continue to face persistent challenges in maintaining water and sanitation infrastructure. While flagship government initiatives such as the Swachh Bharat Mission and Jal Jeevan Mission have significantly expanded access to toilets, drinking water, and sanitation systems, the sustainability of these systems has often remained fragile. Many newly constructed toilets become non-functional, hand pumps fall into disrepair, and water supply systems are left unmaintained due to the absence of locally available skilled technicians. In tribal areas and remote villages, schools, Ashramshalas, and Anganwadi's are particularly affected. Toilets without running water, broken taps, and defunct solar pumps disrupt daily functioning and compromise children's hygiene, dignity, and health. The lack of operation and maintenance (O&M) mechanisms leads to frustration among communities and dependency on external technicians from nearby towns, increasing both cost and downtime.

The Centre for Youth Development and Activities (CYDA) recognized that the challenge was not merely about constructing infrastructure but ensuring that these systems were sustained and functional through local ownership. The missing link was a skilled, community-based workforce that could take charge of O&M tasks ensuring the long-term success of India's sanitation mission. To bridge this gap, CYDA conceptualized Wash Mitra, a social and business model designed to create livelihood opportunities for youth while addressing the operational gaps in rural sanitation systems.

Intervention

The Wash Mitra initiative was launched in 2018 from Akole block to develop and strengthen operation and militance at Ashramshala level to transform the approach to water and sanitation management by combining technical training, entrepreneurship, and community service. The model aims to develop a cadre of trained youth known as Wash Mitras who can provide essential operation and maintenance services for rural infrastructure. Wash Mitra functions as a service-based model, similar in concept to Ola or Uber, but rooted in community development. Each Wash Mitra is trained in multiple technical skills such as plumbing, electrical repair, solar energy maintenance, and water filtration masonry. The goal is to equip them to respond quickly to breakdowns, support local institutions, and build sustainable microenterprises.

Every Wash Mitra receives:

- Comprehensive technical and soft-skills training conducted by CYDA.
- A toolkit worth ₹12,000 to 30000, which

includes basic plumbing, electrical, and repair equipment and advance kit

- Mentorship and business support to help them establish their local service enterprise.
- Linkages with institutions like schools, Ashramshala, Gram Panchayats, and government departments for consistent service opportunities.

To strengthen long-term sustainability, CYDA is developing a digital Wash Mitra App, which will serve as an online platform connecting trained youth with households, schools, and institutions in need of operations and maintenance (O&M) services. The app will also track performance, provide updates on job opportunities, and connect users to nearby Wash Mitras in real time.

As of now, 713 Wash Mitras have been trained across 24 districts in Maharashtra and 5 districts in Chhattisgarh, including:

- 149 women Wash Mitras
- 562 male Wash Mitras
- 102 tribal Wash Mitras, who are actively supporting Ashramshalas in operational and maintenance work

CYDA envisions this model as both a social enterprise and a community service network, blending livelihood creation with sustainable development outcomes.

Transforming Rural Communities and Youth Livelihoods Through the Wash Mitra Initiative

The WASH Mitra model has brought significant improvements in community well-being, school infrastructure, and youth livelihoods. Toilets, water systems, and lighting in schools and Ashramshalas now function reliably due to timely repairs by trained WASH Mitras, improving hygiene, reducing girls' absenteeism, and ensuring safer learning environments. Communities have gained access to local "community engineers," reducing dependence on distant technicians, with many Gram Panchayats formally engaging WASH Mitras for public infrastructure maintenance. For youth, the initiative has created stable and dignified livelihoods.

Between 2022 and 2025, CYDA trained 711 WASH Mitras across 24 districts of Maharashtra and 5 in Chhattisgarh.

A livelihood analysis of 362 youth shows strong participation among the 20–30 age group (72%). Collectively, WASH Mitras have generated ₹4.10 crore in revenue, contributing to a cumulative turnover of ₹10.67 crore, with an average monthly income of ₹24,600 and a total monthly earning of ₹88.9 lakh.

Employment sources are diverse—51.6% receive government or semi-government work, 15% serve households, 16% combine multiple sources, and 9% run Technical Service Centres. Digital and financial inclusion is rising, with 70% using online payments, 83% maintaining bank accounts, and many registering under Udyam or Shop Act. Notably, 45% started with zero investment yet built sustainable micro-enterprises, with 44% earning ₹10,000–₹25,000 monthly and 14% earning above ₹25,000. These outcomes demonstrate strong entrepreneurship potential and confirm WASH Mitra as a viable and scalable livelihood model for rural youth.

Uniqueness of CYDA in the WASH Mitra initiative

The WASH Mitra initiative stands out not only because of its impact, but because of the unique approach CYDA brings to designing, implementing, and scaling rural livelihoods models. CYDA's uniqueness in this initiative is defined by the following dimensions:

1. Converting a WASH Gap into a Livelihood Opportunity

Unlike most WASH programs that focus on infrastructure creation, CYDA identified the missing link—operation and maintenance. CYDA uniquely turned systemic gap into a sustainable, local livelihood opportunity for rural youth and women.

2. A Multi-skilled "Community Engineer" model

The WASH Mitra initiative adopts a unique multi-skilled "Community Engineer" model, where each youth is trained across a spectrum of technical competencies rather than a single trade. WASH Mitras learn plumbing, basic electrical repair, solar system maintenance, water filtration/RO servicing, and minor civil work essential for WASH infrastructure. This integrated skillset enables them to respond to WASH issues in schools, Ashramshalas, Gram Panchayats, and households without needing external specialists. By developing versatile, locally available technicians, the model ensures quick, low-cost, and reliable operation and maintenance, reducing downtime and strengthening the long-term functionality of rural WASH systems.

3. Focus on women and tribal youth in a traditionally "Male-Dominated" sector

CYDA places intentional emphasis on training rural women and tribal youth for technical WASH roles that have traditionally been dominated by men. By equipping them with practical skills in plumbing, electrical repair, and water system maintenance, the initiative breaks gender and social barriers while creating dignified local livelihoods. This inclusive approach not only expands opportunities for marginalized groups but also builds confidence, leadership, and economic independence among first-generation learners in remote and tribal communities.

4. A 'tech-enabled' rural livelihood model

CYDA is developing the **WASH Mitra App**, a digital platform that connects trained youth with households, schools, Ashramshalas, and Gram Panchayats in need of WASH operation and maintenance services. This tech-enabled matching system is a rare innovation in rural WASH ecosystems, where service delivery is usually informal and unorganized. The app will enable real-time service requests, location-based matching, digital payments, job tracking, and performance monitoring. By integrating technology into a grassroots livelihood initiative, CYDA expands market access for youth, increases transparency, and strengthens the long-term sustainability of WASH Mitra enterprises.

5. Proven scalability with measurable livelihood outcomes

The WASH Mitra model has demonstrated clear scalability, expanding across **24 districts in Maharashtra and 5 districts in Chhattisgarh** with over **700 trained youth.** CYDA tracks income, service delivery, and enterprise growth, ensuring evidence-based scaling. Since 2022, WASH Mitras have generated **consistent monthly earnings** and a cumulative turnover of over **₹10 crore,** reflecting strong market demand for their services. The model's measurable results—rising incomes, diversified work sources, and increased financial inclusion—prove its effectiveness as a sustainable rural livelihood solution that can be replicated across regions.

Key Achievements

Indicator	Value / Percentage
Total Trained Wash Mitras	711
Analysed Sample	362 (51%)
Total Turnover	10 Cr 67 Lac
Total Revenue (2022–25)	₹4,10,04,000
Collective Monthly Income	₹88,93,600
Average Monthly Income	₹24,600
Using Online Payments	70%
Have Bank Accounts	83%
Registered (Udyam/Shop Act)	33%
Started Technical Service Centres	9%
Age Group 20–30	72%
States Covered	Maharashtra, Chhattisgarh
Districts Covered	24 (5 Chhattisgarh)

SDG Goal	Alignment with Wash Mitra
SDG 1: No Poverty	Provides livelihood opportunities to rural youth and reduces income insecurity.
SDG 4: Quality Education	Improves sanitation in schools and Ashramshalas, promoting better learning environments.
SDG 5: Gender Equality	Empowers 149 women as skilled technicians and entrepreneurs in male-dominated fields.
SDG 6: Clean Water and Sanitation	Ensures continuous operation and maintenance of WASH facilities in villages and schools.
SDG 8: Decent Work and Economic Growth	Creates dignified, self-sustaining jobs and promotes entrepreneurship.
SDG 9: Industry, Innovation, and Infrastructure	Builds local service-based infrastructure systems through skilled human resources.
SDG 11: Sustainable Cities and Communities	Strengthens local infrastructure management and resilience.
SDG 17: Partnerships for the Goals	Engages CSR partners, government agencies, and local institutions in a shared development model.

Broader Significance

The Wash Mitra initiative represents a powerful blend of youth leadership, social entrepreneurship, and sustainable development. It not only addresses a critical gap in the water and sanitation sector but also creates dignified livelihoods for rural youth, fostering local ownership and resilience.

Conclusion

The Wash Mitra initiative represents a powerful example of how local solutions can address national challenges. It combines youth empowerment, skill development, and sustainable sanitation management in one holistic model. From 713 trained Wash Mitras to a vision of 5,000 by 2030, CYDA's journey demonstrates how skills, technology, and community ownership can transform India's rural infrastructure landscape. Wash Mitra is not just a livelihood program it is a movement toward self-reliance and sustainability, ensuring that every tap, toilet, and tank remains functional and every youth finds purpose and pride in serving their community.

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3.7 AFARM`s Goatery based Livelihood Approach

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Introduction

Maharashtra's drought-prone semi-arid regions, particularly in districts such as Satara, face chronic water stress, land degradation, and declining productivity of agriculture and livestock-based livelihoods. These structural constraints disproportionately affect small and marginal farmers, landless households, and women-headed families, who experience low and volatile incomes and are often trapped in intergenerational poverty. In this context, strengthening climate-resilient, low-investment, rapidly turning livelihood options such as goat farming offers a pragmatic pathway to stabilise incomes and reduce vulnerability.

Context and AFARM's holistic approach

AFARM has, over several decades, evolved a holistic rural development approach that integrates natural resource management, sustainable agriculture, livestock development, women's economic empowerment, and collective enterprise promotion. Through watershed development, climate-resilient farming, goat and dairy-based livelihoods, women's skill development, and Farmer Producer Organisation (FPO) promotion, AFARM works to enhance both the resource base and the capability base of rural communities. The Mann (Dahivadi) region in Satara emerged as an early testing ground, where AFARM sought to address drought, distress migration, and feminisation of agriculture by combining technical support with institutional innovations.

In many villages in this belt, households depend significantly on remittances from family members working in urban centres such as Mumbai, Nashik, Thane, and Pune, making local economies highly vulnerable to labour market shocks and seasonal employment cycles. Given the limited on-farm work opportunities during frequent droughts, AFARM identified goat-based enterprises as a feasible non-farm or para-farm livelihood option that could be built on existing practices, but made more productive through improved management, veterinary access, and market orientation.

Rationale for a goat-based livelihood model

Goat rearing is already embedded in local social norms and is commonly referred to as the "cow of the poor", functioning as a liquid household asset that can be quickly encashed in times of crisis. Goats are especially suitable for Maharashtra's drought-prone tracts because they tolerate water scarcity, can browse on shrubs and crop residues, and require lower fixed investment than cattle or buffalo. However, traditional goat keeping in Mann and similar regions has largely been subsistence-oriented: animals are inherited matrilineally (mother-in-law to daughter-in-law), managed as part of unpaid household labour, and not treated as a commercial enterprise.

A baseline study by AFARM with guidance from livestock experts highlighted key constraints: high kid mortality, low weight gain, limited knowledge of scientific management, weak access to timely veterinary care, and a reluctance to invest in

feed, housing, and preventive health because goats were not viewed as economic assets. These findings reinforced the need for a structured, women-centred goat enterprise development programme that would treat goatry as a business, not merely a family tradition, and position women as informed livestock managers and entrepreneurs.

Women-centred capacity building in goat management

AFARM designed a focused training and handholding package for women goat rearers, anchored in the full goat management cycle. The programme's objectives were to reduce mortality, improve productivity, and increase net income from goat rearing by strengthening women's technical, managerial, and record-keeping skills. Training modules cover:

- Goat shed design and management, including isolation of sick and pregnant animals.
- Feed and fodder planning, use of crop residues, and introduction of improved fodder varieties.
- Disease identification, timely treatment, and preventive health measures such as regular deworming and vaccination.
- Routine management practices such as weighing, temperature monitoring, and use of mineral mixtures and bricks.

- Basic enterprise management, including cost tracking, pricing, and sale negotiations.

Continuous follow-up is a core design feature, ensuring that training translates into changed on-farm practices rather than remaining one-off events. The combination of technical skills and ongoing mentoring enables women to reposition goats from a passive savings stock to an actively managed productive asset worth Rs. 10,000–15,000 per well-nourished animal, thereby reducing reliance on high-interest informal borrowing during emergencies. Over time, this shift in perception encourages households to invest more in goat care, improving both animal welfare and financial returns.

Pashu Sakhi Model: localised animal health services and women's empowerment

To address the last-mile gap in veterinary services and ensure continuity of improved practices, AFARM developed a Pashu Sakhi (female community animal health worker) cadre within project villages. Similar models in other states and programmes have shown that trained women animal health workers can significantly reduce mortality and improve goat productivity, while also earning an independent income. AFARM's Pashu Sakhis undergo:

- A three-day project foundation training on roles, responsibilities, and basic extension skills.

- A five-day technical module on goat husbandry, primary treatment, and preventive health care.
- A three-day field-based practical training under resource persons and the project veterinary officer.

Once trained, Pashu Sakhis provide low-cost, doorstep services including vaccination, deworming, weighing, temperature checks, distribution of mineral mixtures, and basic treatment. They also reinforce key husbandry messages during their monthly visits, functioning as a continuous interface between formal veterinary systems and poor goat rearers. This embedded extension structure reduces avoidable deaths, improves growth rates, and increases the adoption of recommended practices.

The Pashu Sakhi role also has strong gender and social impacts. Within their households, Pashu Sakhis transition from unpaid family workers to recognised earners, contributing to children's education, healthcare, and daily expenses. Their participation in decisions, mobility, and public interactions increases, shifting intra-household power relations towards greater equality. At the community level, they gain visibility and respect as knowledgeable, self-reliant women, and serve as role models for other women aspiring to engage in paid, skilled work.

Champion Goat Farmer and capsule training approach

AFARM further institutionalised peer learning by introducing a Champion Goat Farmer model. In each village, a goat farmer maintaining more than ten goats and demonstrating relatively better management practices is identified as a "champion" and their farm is converted into a live demonstration and training site. The champion farm is systematically upgraded to showcase improved standards:

- Adequate shed flooring using straw, properly lined walls, and compartmentalised isolation units for dry does, pregnant goats, kids, and breeding bucks using chain-link partitions.
- Separate water and feed troughs in each compartment, ensuring hygiene and controlled feeding.
- Balanced rations combining tree leaves and chick feed with crop residues such as soybean straw, maize husk, arhar and gram chaff.

AFARM developed a "capsule approach" to training, scheduling short, focused sessions around critical management points in the goat cycle—such as isolation, deworming, and vaccination—so that marginal farmers, daily wage workers, and women with multiple care responsibilities can participate without losing income. This design acknowledges opportunity costs and makes the learning process more inclusive. Trainees directly observe the physical layout, daily routines, and economic outcomes of the champion farm, reinforcing the message that goat rearing can be run as a business.

The champion farm model, combined with repeated observation and peer dialogue,

helps normalise investments in sheds, feed, and health care, while demonstrating how improved practices reduce abortions, kid mortality, and disease burden. As more households adopt similar practices, the overall quality of goat management in the village improves, and the local knowledge ecosystem becomes richer and more self-sustaining.

Addressing fodder and breed management in drought-prone areas

In Maharashtra's semi-arid tracts, breeds such as Osmanabadi are widely preferred because of their adaptability, higher immunity, and favourable twinning rates under low-input conditions. Goat rearers also experiment with mixed breeds such as Beetal, Sirohi, and Jamunapari hybrids to enhance meat production, though these require more careful management and feeding. Major constraints consistently identified in the literature and field experience include water scarcity, external parasites associated with open grazing, internal worm load, and limited access to organised goat development centres and veterinary infrastructure.

AFARM's approach builds on locally available fodder resources—thorny shrubs like babhul, palas, neem, karonda bushes, wild grasses, sorghum, millets, gram, tur, soybean residues, and cultivated fodders like maize and napier grass. In the kharif season, sorghum, millet tops, and gram chaff are used as supplementary fodder, while in other seasons, crop residues and tree leaves form the bulk of feed. Housing improvements such as wooden planks for goats to rest on during the rainy season and shade nets to protect from intense summer heat reduce stress and disease risk. Integrating breed choices, fodder planning, and simple housing adaptations creates a more resilient goat production system aligned with local agro-climatic conditions.

Enterprise management, market orientation, and risk reduction

Beyond husbandry, AFARM emphasises the enterprise dimensions of goatery. Training and on-farm coaching equip farmers to:

- Weigh goats accurately before sale and negotiate prices based on live weight rather than visual estimates, reducing exploitation by traders.
- Maintain simple records of monthly expenditure on feed, medicines, and services, alongside income from sale of goats, kids, and manure.
- Prioritise keeping does with a history of twinning to improve reproductive efficiency and returns per unit of feed.

Field experience and secondary evidence suggest that when preventive health services such as deworming and vaccination are delivered at the doorstep through community cadres, mortality and morbidity decline significantly, leading to higher sale volumes and better-quality animals. For poor households, this model performs better than waiting for sporadic government camps or travelling to distant veterinary centres. The service fees paid to Pashu Sakhis remain affordable while building a local ecosystem of responsive animal health support.

Goat rearing is particularly attractive in drought-prone, rainfed areas because it offers high returns on relatively low capital, strong market demand for meat in urban centres (Mumbai, Nagpur, Pune, Sangli, Kolhapur) and local markets, and frequent cash inflows due to staggered sales. Seasonal peaks during festivals and weekly markets can be strategically used to

optimise prices. When agriculture fails due to erratic rainfall, goat sales function as a financial buffer, smoothing consumption and reducing the need for distress migration.

Lessons learned

AFARM's goatry-based livelihood approach in drought-prone Maharashtra underscores the need for a holistic, scientific, and professional outlook to realise the full potential of small ruminant enterprises. Key lessons emerging from the experience include:

- Organisations must invest in shifting mindsets from tradition-oriented goat keeping to business-oriented goat enterprises, combining technical training with enterprise development inputs.
- Cadre-based models like Pashu Sakhi are critical for last-mile veterinary outreach, sustaining practice change, and embedding women's leadership in the livestock value chain.
- Champion Goat Farmer-based demonstration sites provide a powerful platform for peer learning, behaviour change, and practical training, especially when structured through capsule modules aligned with the goat management cycle.
- Consistent application of scientific guidelines on housing, fodder, vaccination, deworming, and record-keeping, supported by regular mentoring, can significantly enhance income and resilience for vulnerable rural households.

Insights for replicability and scalability

The AFARM goatry model offers several design features that make it replicable and scalable across similar drought-prone and semi-arid regions in Maharashtra and beyond:

- Context-fit and low capital intensity: The model aligns with existing goat-rearing traditions, uses locally adapted breeds like Osmanabadi, and relies on locally available fodder resources, reducing upfront costs and making it feasible for poor households. This context-fit increases adoption likelihood when scaled to other semi-arid blocks.
- Standardised but flexible training architecture: The capsule-based training modules linked to the goat management cycle, combined with champion farms as live classrooms, can be codified into a training package and adapted by other NGOs, SRLMs, and line departments with minor contextual modifications.
- Scalable community cadre model: The Pashu Sakhi approach mirrors broader NRLM and state-level community animal health worker initiatives, which have already demonstrated scalability across districts. Integrating AFARM's curriculum with existing government or SRLM platforms can rapidly expand coverage while maintaining quality.
- Convergence potential with public schemes: The goatry model can be layered with schemes supporting SHGs, FPOs, small ruminant development, and fodder cultivation, as well as MGNREGS for shed and fodder plot creation. Such convergence reduces cost per household and enhances sustainability at scale.
- Data and monitoring backbone: Simple record-keeping on flock size, mortality, sales, and service uptake—if standardised—can generate a robust evidence base to refine training content, demon-

strate impact to funders, and inform policy decisions as the model moves from project to programme scale.

For successful replication, organisations adopting this model should prioritise:

- Investing in robust selection, training, and incentive structures for Pashu Sakhis and champion farmers.
- Embedding behaviour change communication and gender-transformative elements alongside technical training.
- Establishing partnerships with veterinary departments, SRLMs, and financial institutions to ensure long-term service and market linkages.

With these building blocks in place, goatry-based livelihood models like AFARM's can be scaled to thousands of households, contributing to climate-resilient, women-led livelihood diversification in drought-prone regions.

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4 Access to Finance and Markets

- Chaitanya`s Access to Finance & Markets Model
- A Proven, Scalable and Enterprise-led Rural Livelihoods Model: Syngenta Foundation India's Agri-Entrepreneur (AE) Model
- Himai FPC: A Story of Collective Action and shared Dreams
- Revolving Fund-Based Livelihoods Promotion - AFARM`s Innovative Approach

4.1 Chaitanya's Access to Finance & Markets Model

Chaitnya Team

Context

For decades, women in rural Maharashtra and Madhya Pradesh have faced systemic barriers to economic empowerment — limited access to formal finance, unstable markets, weak institutional platforms, and low bargaining power. Most relied on informal credit networks and faced exploitation due to the absence of structured market linkages or digital tools.

Chaitanya, a grassroots non-profit organization founded in 1993, identified these challenges early through its engagement with Self-Help Groups (SHGs) and women-led federations. With operations spread across 1,301 villages in 14 Districts in Maharashtra(Pune, Nashik, Ahmednagar, Satara, Dhule, Nandurbar, Jalgaon, Kolhapur, Ratnagiri, Palghar, Akola, Amravati, Yavatmal, Wardha (in partnership)) and 4 Districts in Madhya Pradesh(Indore, Ujjain, Khargone and Umaria), Chaitanya recognized that women needed more than just credit; they required robust institutions, enterprise development support, and digital inclusion to thrive in an evolving rural economy.The key actors in this process included SHG women, federation team, Chaitanya project team, government programs, Sarathi Mahasangh, and enterprise groups such as Kala Maitri. The intervention evolved gradually from basic SHG strengthening to building 46 federations, promoting women-led enterprises, and linking them to finance and markets through digital systems like Microlekha.

Despite years of SHG movement growth, women in the region continued to face several economic barriers such as dependence on informal credit sources; low financial literacy and inadequate business skills; weak market networks; inconsistent product quality; limited digital access and technological capacity; and environmental and locational factors affecting production cycles and income returns.

Chaitanya is a pioneer in community-based microfinance, gender equity, and sustainable livelihoods. Its programs include IBMF(Institution Building & Micro Finance), WED(Women Enterprise Development), GECC(Gender Equity & Counselling Center), SLFR(Strengthening Livelihood & Forest Rights), Capacity Building and MEAL(Monitoring, Evaluation & Learning). Through these, Chaitanya builds financial systems, develops enterprises, strengthens gender rights, and promotes agroecology.

Chaitanya grappled with the question - "How can women's groups gain steady access to finance and markets, considering regional diversity, limited skills, and changing market needs?

Approach and Integrated Model

Chaitanya tested several alternative strategies and found that single-focus interventions — such as loans without market access; enterprise training without strong financial support; digital tools without training — were not effective or sustainable. The organization, therefore, developed an

integrated model that combined five strategic components:

- Strong SHG and Federation Structures for institutionalized access to finance.
- Enterprise Development Support for product quality, branding, and market readiness.
- Gender Equality Initiatives to foster decision-making and leadership within households and shift community gender norms
- Digital Systems (Microlekha) to ensure accountability, transparency, and scale.
- Market Linkages through corporate partnerships, exhibitions, and e-commerce platforms.

Chaitanya operationalized this model through a series of structured steps:

- Strengthening SHGs and Federations: Building credit discipline, governance, and self-management capacity.
- Enterprise Hubs: Launching centers like *Kala Maitri* to support product development and collective marketing.
- Capacity Building: Training women in costing, pricing, packaging, and digital transactions.
- Financial Linkages: Connecting federations with major banks such as SIDBI and ICICI to secure institutional finance.
- Digital Integration: Deploying the *Microlekha* platform for real-time bookkeeping and fund management.

Some challenges encountered in the implementation were: Climate variability causing production delays (SLFR); - Weak marketing channels due to limited staff capacity (WED); - High HR turnover; uneven technical expertise; and Low digital literacy requiring repeated handholding and refresher training. The organization is continuing to experiment and refine their model to smooth over these frictions.

- Strengthened SHGs and federations to build credit discipline.
- Introduced enterprise centers and product catalogue (e.g., Kala Maitri).
- Trained women in costing, pricing, digital payments, and marketing.
- Connected federations to banks (SIDBI, ICICI).
- Used Microlekha for transparent financial management

Outcomes and Impact

Chaitanya's integrated approach led to measurable progress in institutional and individual empowerment:

- 1.5 lakh women gained structured access to financial services.
- 46 federations became self-governed and sustainable bodies.
- 13,326 SHGs adopted 'Microlekha', creating transparent digital financial records.
- 45% of SHGs linked with banks, enhancing credit access.
- 81+ products launched through 7 enterprise hubs, increasing women's incomes and visibility.
- 249 women earned directly through 'Kala Maitri' enterprise activities.
- 'Microlekha' scaled up to 12.5 lakh users (across multiple organizations).
- Expanded market presence via exhibitions, fairs, online sales, and direct institutional orders.
- Enhanced confidence, leadership, and decision-making among women leaders.

Women reported increased respect within their families and communities, while federations gained recognition as credible, community-driven financial institutions.

Lessons Learned

- Finance and markets must go hand-in-hand.
- Credit access alone does not guarantee empowerment.
- Digital platforms enhance transparency but require consistent capacity building.
- Local context matters.
- Climate and socio-economic conditions must shape program design.
- Federations are key to sustainability—they ensure long-term governance and replication potential.

Future Directions

Chaitanya aims to deepen and expand its integrated model by:

- Strengthening digital marketing and e-commerce channels for women-led products.
- Supporting climate-resilient businesses across districts.
- Investing in long-term human resource development through specialized technical training.
- Building corporate and government partnerships for scalable and sustainable market integration.

This model and its elements are scalable with SRLM. Chaitanya's journey demonstrates that true rural women's empowerment requires more than access to finance — it demands interconnected systems of credit, enterprise, governance, and digital inclusion. By blending these components, Chaitanya has created resilient, women-led institutions capable of driving sustainable rural economies in Maharashtra and Madhya Pradesh

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4.2 A Proven, Scalable and Enterprise-led Rural Livelihoods Model: India's Agri-Entrepreneur (AE) Model

Syngenta Foundation

The Challenge

In India, smallholder farmers form the backbone of India's agricultural economy but continue to face deep-rooted challenges that constrain their productivity and incomes. The major issues include:

- **Land Fragmentation:** Small and scattered landholdings prevent economies of scale and hinder efficient cultivation.
- **Limited Access to Finance:** Many farmers lack access to formal credit and financial services needed to invest in inputs, technology, or risk mitigation.
- **Water Scarcity:** Inadequate irrigation infrastructure and high dependence on monsoon rainfall restrict crop diversification and productivity.
- **Climate Vulnerability:** Erratic weather patterns, droughts, and temperature extremes frequently lead to crop losses and unstable yields.
- **Market and Price Risks:** Weak access to organized markets and exposure to price volatility reduce income stability.
- **Post-Harvest Losses:** Poor storage facilities and limited knowledge of grading, sorting, and packaging lead to reduced value realization.
- **Technology and Extension Gaps:** Low awareness and limited access to modern technologies and agronomic advisory services slow innovation and adoption.

Syngenta Foundation India launched its **Agri-Entrepreneur (AE) initiative** in 2014. The program aims significantly to increase farm incomes, and to create sustainable livelihoods for young rural entrepreneurs.

Organizational Background

Syngenta Foundation India works to enable smallholders to participate meaningfully in a growing agricultural economy by enhancing their access to technology, finance, markets, and knowledge. With a presence across 13 states, SFI partners with governments, multilateral agencies, CSR institutions, and community-based organizations to create scalable and sustainable agricultural solutions.

The Agri-Entrepreneur (AE) Program is SFI's flagship initiative. In 2019, to accelerate scale and institutional strength, SFI, along with Tata Trusts, established the Agri-Entrepreneur Growth Foundation (AEGF), a dedicated Section 8 organization focused on expanding the AE Model across India.

The Approach

The Syngenta Foundation India designed a program under which it selects and trains unemployed village youth to provide products and services to 100-150 smallholders in two to three villages. The training is accredited by CCS National Institute of Agriculture Marketing (NIAM), Jaipur or National Institute of Agricultural Extension Management (MANAGE), Hyderabad both autonomous institutes of the Ministry of Agriculture and Farmers Welfare, Govt. of

India. The AE network replaces conventional and inadequate 'point solutions' with one holistic provider. The model decentralizes agricultural development by empowering rural communities themselves, creating local ownership, dignity, and sustainable livelihoods.

The Intervention

The overall objective behind the concept of SFI's AE Model is to develop and anchor self-sustainable Agri-entrepreneurs (AEs) to provide agricultural services to small farmers and increase their income. Over the years, SFI has developed a set of Standard Operating Procedures (SOPs) for developing AEs at scale. This requires process strengthening, creation of institutions and networks, defining expected outcomes, and bringing together a team of subject matter experts to deliver on each element of the journey of an AEs.

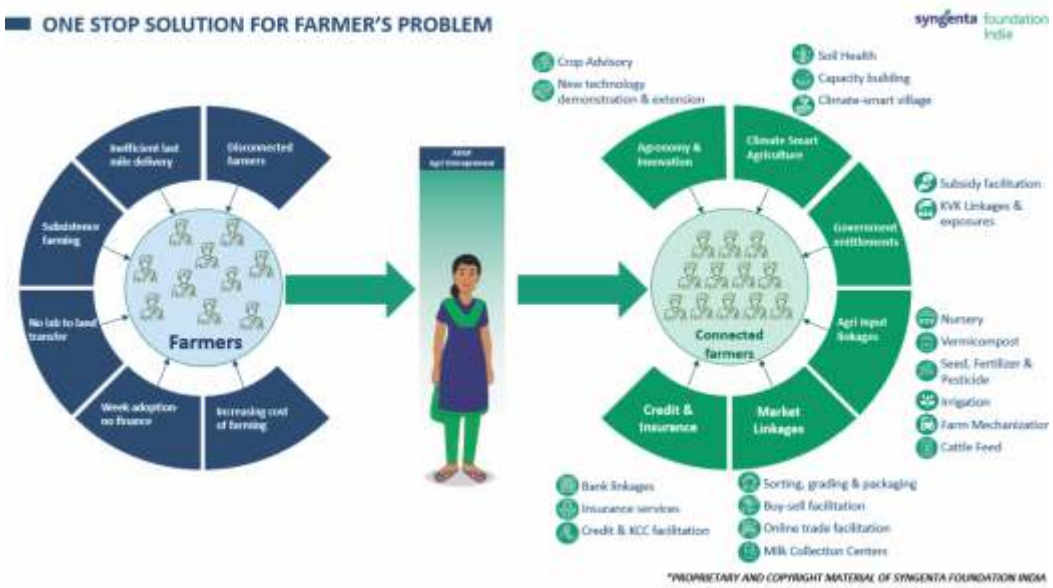
The overall functioning of the AE Program addresses eight Sustainable Development Goals (SDGs). The AE Network addresses some of the key issues of the "Indian Farmer" such as access to high-quality inputs, regenerative agriculture know-how, irrigation services, digital literacy, financial solutions, nutrition thus positively impacting yield and income of the Small Holder Farmer and her/his environment.

A. Impact on AEs

All AE's in business for more than six months reported an increase in income. Given that most AEs are previously either in low-paid jobs or unemployed, even the first phase of business operation lifts their income by 10% - 12%. A survey done by 60decibels shows an average income of AE stands as INR 10,000 per month, INR 120,000 per annum incremental income for AEs and his/her family. The impact has been explicit on following elements:

- Net Promoter Score is 63 on a -100 to 100 score. Above 50 is excellent.
- 89% of AEs accepted that their quality of life improved
- 84% of AEs reported an increase in income after joining the AE program.
- 76% of the AEs mentioned that they have used 'all' or 'most' of the training to run the business or provide services to the farmers.

"Agri Entrepreneurs voice- I learned how to interact with farmers and make them listen or respond to me. Before it was very difficult as they would just not listen to me. I also



Indicator	Achievement
AEs Trained	23,166
Women AEs	9,302 (53%)
Farmers Served	2.38 million (1.38 million women farmers)
Geographic Spread	13 states, 75+ districts, 25,000 villages
Transactions Facilitated	₹1,318 crore+ (FY 2024–25)
Average AE Income	₹1.2–1.5 lakh per year
Employment Generated	25,000+ direct & indirect livelihoods

gained respect at home as a woman.– Female, Maharashtra, 35"

The journey of an AE toward income generation

After training and certification, AEs will focus on engaging farmers in crop advisory services and low hanging business opportunities, which require minimal investment such as digital banking and rural insurance. During this phase, they earn at least 1500-2000/month. During the first agriculture season, they move into growth phase, where an enterprise such as a nursery, collection center or input shop is set-up. These businesses ensure that AEs earn up to INR 3000-8000 per month by end of year two. The journey in the first two years, i.e. till business stabilization, of a woman AE will be as follows:

A. Impact on SHF Farmers

Small holder farmers could afford the services in the respective villages and AEs could help them with the last mile access of these services. The impact on the farmers is significant.

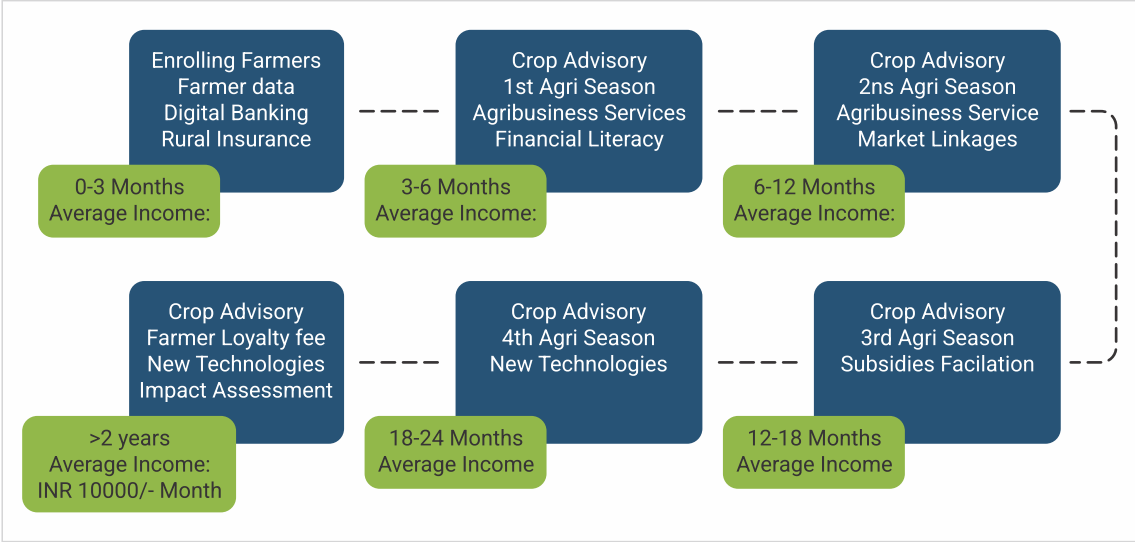
- **Net Promoter Score is 49 on a -100 to 100 score. Global average is 39 of 95 agri companies**
- 75% of the farmers accepted that their quality of life improved
- 83% stated that the way of farming has improved.
- 40% said that now they are using appropriate quantity of the fertilizers and pesticides.
- 80% reported increase in total crop/dairy production
- 79% of the farmers mentioned their income have increased after taking services of the AEs.

"Farmers Voice-The information my Agri-Entrepreneur provides is very innovative and new. This knowledge benefits all of us and I will surely recommend the program to everyone-Male, Maharashtra,41"

Institutional Collaborations

A. **ICAR:** SFI has strategically partnered with ICAR to disseminate scientific knowledge, technology, and climate-resilient farming to 2 million farmers through the Agri-Entrepreneurship network by leveraging 731 KVKs across India.

B. **Central Government collaboration:** CCS NIAM, Jaipur & MANAGE, Hyderabad (both under Ministry of Agriculture and Farmers Welfare, Govt. of India) for AE program certification



C. **Regional University Collaborations:** SFI has collaborated with various agricultural universities including MPKV Rahuri, PDKV Akola, VNMKV Parbhani, Assam Agricultural University, Aligarh Muslim University, Utkal Agriculture University, ICAR Ranchi, Palandu (for vegetable grafting technology promotion).

D. **Direct collaboration with SRLMs:** Bihar Rural Livelihood Mission (Jevika), Madhya Pradesh State Rural Livelihood Mission, Odisha Livelihood Mission, Maharashtra State Rural Livelihood Mission (UMED), Uttar Pradesh State Rural Livelihood Mission

E. **Strategic partnership with NABARD:** Supports Farmer Producer Organization initiatives in Maharashtra and Madhya Pradesh & Promotion of Climate Smart Village in Maharashtra

F. **AI & Tech Pilots:** Tested new technologies via the GATE platform in 2024, including AI-integrated solutions

G. **Drone Entrepreneurship:** Trained 552 drone pilots in Maharashtra, Bihar, Andhra Pradesh, and Madhya Pradesh. A DGCA-certified Remote Pilot Training Organization was set up at the Indo-Swiss Center of Excellence, Pune.

H. **Credit & Financial Inclusion:** Bank of India, IDBI Bank, Axis Bank, Kotak Mahindra Bank, Samunnati, Rang De, Avanti Finance, TVS Finance, Finsyst (KrishiFin), Rabo Bank, SwissRe

I. **Market Linkages:** FarMart, Mother Dairy, AgriBazaar, Dehaat, ITC, Bijak, Big Baskar, Ninjacart, NeML, Go4Fresh, Feedko, Arya Collateral

J. **Climate Smart Agriculture:** ICAR-National Institute of Abiotic Stress Management (NIASM), Environmental Defense Fund, Evergreen Innovation Platform

Way Forward

The Agri-Entrepreneur (AE) Model of Syngenta Foundation India exemplifies how local leadership, enterprise development, and last-mile service delivery can transform rural livelihoods. By enabling trained youth and women entrepreneurs with digital tools and institutional linkages, the model strengthens agricultural extension, enhances farmer incomes, and fosters resilient rural economies. Looking ahead, SFI will expand the AE network to over 45,000 entrepreneurs by 2030, reaching 3.5 million smallholder farmers. The AE Model stands as a replicable blueprint for enterprise-led, climate-resilient, and inclusive rural development, aligned with Maharashtra's vision for sustainable rural growth.

Together, SFI and AEGF have:

- Standardized AE curriculum and certification processes
- Developed a robust AE lifecycle management system
- Deployed digital monitoring through Agri-Entrepreneur Digital Diary and Training Management System
- Built national-level partnerships for market linkages, financial inclusion, mechanization, and climate-smart agriculture
- AE model is fully digitized right from the selection fo Agri-Entrepreneurs registration, selection to scoping, business plans and business incubation

This strong institutional foundation has enabled the AE Model to scale into one of India's most recognized rural enterprise development programs.

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4.3 Himai FPC: A Story of Collective Action and shared Dreams

Maharashtra Prabodhan Seva Mandal

Introduction

When communities unite and take collective action towards a common goal, economic and social empowerment becomes not just an aspiration but an achievable reality. Himai Tribal Farmer Producer Company, based in Dindori Tehsil of Nashik, Maharashtra, stands as a strong example of collective action leading to environmentally sustainable livelihood creation and economic upliftment of the rural economy by establishing value chains rooted in rural areas. Maharashtra Prabodhan Seva Mandal (MPSM) has been working with tribal communities of Maharashtra for the last six decades through direct and partnered interventions, focusing on environmental sustainability, strengthening agroecology, and supporting social entrepreneurship development through training and handholding. Himai Farmer Producer Company is one of MPSM's major interventions in the area of social enterprise development.

Famous for the scented Indrayani variety, the tribal belt of Nashik faces fundamental challenges: hilly terrain with limited and fragmented landholding, water scarcity due to geographical conditions, remoteness, and lack of quality access to resources and basic facilities and infrastructure. These factors often lead to migration among tribal communities due to inadequate livelihood opportunities, resulting in various social challenges, including economic vulnerability. MPSM began addressing these issues by identifying economic vulnerability as the root cause. In 2010, with financial support from NABARD, MPSM launched the Wadi Development Program. This initiative focused on transforming agricultural lands into sustainable ecosystems, with components such as agro-horti-forestry model of plantation (wadi), water conservation, multilayer and mixed cropping, and the introduction of sustainable farming methods. By 2017, MPSM had developed and managed 1,034 wadis (orchards) across 32 villages and aligned padas of Dindori tehsil. Over seven years, MPSM worked on orchard development while also empowering and training farmers in cost-effective, sustainable yield techniques. However, increased productivity alone was not the solution. MPSM analysed market patterns and realized they were not favourable to tribal farmers.

Problem Statement

For generations, farmers had been selling surplus produce yet remained trapped in the cycle of migration. Traders from Maharashtra and Gujarat purchased in bulk from villages, which seemed cost-effective and farmer-friendly, but farmers were consistently denied fair prices due to a lack of regulatory measures in quality checks, weighing, and delayed payments. Local markets offered little value, with much of the margin lost to processing costs. With no reliable market and only small portions of

marketable surplus, agriculture alone could not resolve the economic vulnerability of tribal farming families.

Journey of Himai FPC

Himai FPC Ltd. was established on May 25, 2018, with 150 farmer members and 10 board directors, aiming to create a value chain that would return profits to farmers. By providing markets and supportive services to strengthen both production and marketing, Himai sought to reduce production costs while opening better opportunities for farmers' produce. Himai focused on two streams of services: strengthening production and agroecology through seeds, fruit saplings, and awareness and training on LEISA techniques; and purchasing surplus rice and cashew seeds directly from farmers at fair prices. Himai then provided residue-free, nutritious Indrayani and Daftari rice to customers seeking healthier food options, making them affordable and accessible.

Challenged involved : Though the vision was promising, execution was challenging. MPSM guided the process alongside Himai's Board of Directors, themselves farmers, determined to bring change. The first step was community mobilization. Meetings, discussions, visits, and interactions were organized in every village. Initially, trust was low due to past exploitation by traders, but small demonstrations gradually built confidence. In business planning, Himai focused on Indrayani and Daftari rice, specialties of the region. Collection points were established, and procurement was organized from nearby villages to reduce costs.

Intervention

Himai marketed its products to both individual customers and businesses purchasing in bulk. In its early years, with support from NABARD and ATMA, Himai participated in exhibitions that enhanced market understanding among farmers and board members. Gradually, Himai built its own customer base and now engages in both business-to-business and business-to-customer marketing. Throughout this journey, MPSM has been the foundational agency, guiding and training the team. With support from NABARD and Yuvamitra, FPO management training was provided, while MPSM engaged in field-level training and handholding in administration, procurement, management, and marketing. In its initial years, Himai was graded "A" among the best-functioning FPOs in NABARD's assessments.

Himai is now part of the Shabari Cooperative for tribal FPOs and collective enterprises, which provides a platform for tribal collectives and their products. It has also received grant loans for infrastructural development, enabling Himai to establish effective production processes within the value chain. "When Himai started, we never thought it would grow this much. Farmers now believe in us and know they will receive fair market prices for their produce. They are more aware of processes and best practices, while also having direct access to government schemes and provisions. We've come a long way. Earlier, we had to convince farmers about the benefits of the FPC, but now they come forward on their own to become shareholders," says Chhagan Bhusare, CEO of Himai FPC.

As a matter of fact, this was not a smooth journey; the mobilization of small landholding farmers and convincing them to join Himai was more of a task of trust-building than just a mobilization of shareholders, because of their experiences with traders and insurance companies that disappeared later. Himai had to build trust one by one, through services, meetings, and actions. Building the capacities of the Board

of Directors from capable farmers to leaders of a collective was most important for the sustainability of the Himai. MPSM has achieved that through training and strength-oriented handholding of the team members. While we discuss capacities, it also encompasses the soul of any business, which is finances, where most tribal FPOs struggle, although Himai is no exception. We learned early on that the way forward is to plan and execute with the available resources and continually build upon them.

Outcome and Impact

Himai has enabled farmers to initiate collective negotiations and sell their products at competitive prices. With Himai's assurance, input costs for farmers reduced by 12–18%, selling prices increased by 10–20%, women's participation grew, and trust in government initiatives and social welfare strengthened. Direct market linkages further enhanced farmers' confidence.

Lessons learned

This model demonstrates how handholding and guidance empower not only individuals and institutions but also entire communities. Development can occur as a holistic ecosystem, aligned with environmental sustainability. The FPO model sends a clear message for rural development: transparency, collective responsibility, and public participation are the foundation of sustainable progress. The journey of Himai FPO shows that change is possible when communities come together with the right guidance and direct involvement in development decisions. This journey continues to create opportunities and stands as an effective example of sustainable rural development.

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4.4 Revolving Fund-Based Livelihoods Promotion

Shantaram Sakore - AFARM

Overview of the Initiative

During the COVID19 pandemic and associated lockdowns, large numbers of rural workers lost jobs and returned to their villages in Maharashtra, intensifying existing agrarian distress and livelihood insecurity. In response, (Action for Agricultural Renewal in Maharashtra), with financial support from the FICCI SocioEconomic Development Foundation (FICCISEDF), launched a three year revolving fundbased livelihoods promotion initiative in October 2021 across 30 villages in two districts of the Vidarbha region.

The core objective was to support returnee migrant households—especially small and marginal farmers and landless families with low, unstable incomes—to reintegrate into local economies through diversified, sustainable livelihoods. The intervention aimed not only to provide immediate income opportunities but also to build longterm community ownership, financial resilience, and institutional capacity beyond the project period.

Context and Problem Statement

Before the intervention, the target villages in Vidarbha were already grappling with structural challenges: high dependence on rainfed, dryland agriculture; fragmented landholdings; and limited access to capital and markets. The pandemic exacerbated these vulnerabilities, triggering mass return migration and pushing many households deeper into economic distress. Most returnee migrants came from belowpoverty line families, with limited savings and often only one earning member per household. Their prior livelihoods were typically low income, informal, and climatesensitive, making them highly vulnerable to shocks. Women and marginalized groups were particularly excluded from decisionmaking and ownership in livelihood activities.

A critical barrier identified was the lack of accessible, affordable capital to start or strengthen incomegenerating activities. Without a reliable source of credit, households could not diversify beyond subsistence farming or lowwage casual work, trapping them in cycles of vulnerability.

The Revolving FundBased Livelihoods Model

AFARM's intervention cantered on a Revolving FundBased Livelihoods Promotion Model, designed to address the capital gap while building community

ownership and financial discipline. The model combined:

- A communitymanaged revolving fund at the village level
- Enterprise promotion through Producer Groups (PGs)
- Technical and managerial capacity building
- Institutional anchoring within Farmer Producer Companies (FPOs)

1. Institutional Design

AFARM worked with three local partner NGOs as implementing organizations, while providing technical and managerial leadership for the initiative. FICCISEDF served as the funding partner, providing the initial grant capital. In each of the 30 project villages, a Revolving Fund Management Committee (RFMC) was established as a community institution (CI) to manage the revolving fund. RFMCs were composed of local community members, with 42% women representation among the 157 RFMC members across all villages.

Each RFMC was linked to a cluster level Farmer Producer Company (FPO), which provided a formal institutional umbrella and helped anchor the RFMC's financial services within a broader market and governance structure. At least one RFMC member from each village was made a board member of the respective FPO, ensuring local representation in financial decisionmaking

2. Fund Structure and Disbursement

A total revolving fund grant of ₹73 lakh was provided to the 30 RFMCs, averaging about ₹2.4 lakh per village. The fund was released in tranches: an initial ₹1 lakh per RFMC, followed by a second instalment (₹1.5–2 lakh) based on satisfactory performance at the village level.

Through this fund, RFMCs provided onetime loans of up to ₹10,000 per beneficiary, at a nominal interest rate of 2%, to members of Producer Groups. These loans were used to:

- Start a new livelihood enterprise
- Strengthen an existing livelihood activity (e.g., farm, livestock, or nonfarm)

The revolving nature of the fund meant that as loans were repaid, the same capital could be lent out again, creating a sustainable cycle of enterprise promotion. By the end of the project, the fund had grown to ₹1.10 crore (110 lakh) through rotation, demonstrating strong repayment discipline and community ownership.

3. Standard Operating Procedure (SoP)

To ensure transparency, equity, and accountability, a structured SoP was developed for accessing the revolving fund:

1. **Application**

- Beneficiaries had to be registered members of a local Producer Group (PG).
- They submitted a formal application to the PG, specifying the purpose of the loan (new enterprise or strengthening an existing activity).

2. **Scrutiny and Approval**

- PGs reviewed applications and recommended suitable ones to the RFMC.
- RFMCs held monthly meetings to scrutinize applications, verify eligibility, and approve loans after due diligence.

3. **Disbursement**

- Approved loans were disbursed via crossed cheques in the beneficiary's name, ensuring financial transparency.
- A peer guarantor mechanism was built in: other PG members acted as guarantors, strengthening peer accountability and reducing default risk.

4. Utilization and Repayment

- Beneficiaries used the loan to initiate or strengthen enterprises (farm, livestock, or nonfarm).
- Loans were to be repaid within one year, after which the capital became available for other members.

4. Capacity Building and Enterprise Support

AFARM provided periodic, enterprisespecific training and handholding to microentrepreneurs, focusing on:

- Skill enhancement and improved practices
- Enterprise development and market linkages
- Financial literacy and recordkeeping

This tailored support helped beneficiaries improve efficiency, expand their businesses, and build confidence in managing their enterprises.

Implementation and Reach

Over the threeyear period, the revolving fund supported 1,066 microentrepreneurs across the 30 villages, with 51% of loan recipients being women. This deliberate focus on women's participation helped strengthen their role in livelihood decisionmaking and ownership

The enterprises promoted fell into three broad categories:

- **Farmbased (30%):**
  - Land development (45)
  - Sprinkler sets (109)
  - Vermicompost units (67)
  - Livestockbased (44%):
  - Azola cultivation (31)
  - Poultry (51)
  - Goat rearing (297)
  - Dairy (57)
- **Nonfarm (26%):**
  - Grocery sho ps (52)
  - Stationery shops (29)
  - Cloth and bangles selling (26 + 22)

The project also specifically targeted returnee migrant households, of which about 6% (182 households) joined Producer Groups and accessed revolving fund support.

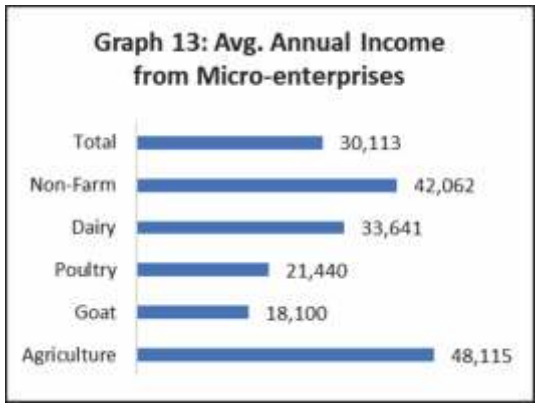
Results and Impact

1. Financial and Institutional Outcomes

- The revolving fund grew from an initial grant of ₹73 lakh to ₹1.10 crore, demonstrating strong repayment and community management.
- RFMCs opened bank accounts with nationalized banks, which began treating them as potential creditworthy customers, laying the foundation for future formal credit linkages.
- Community Resource Persons (CRPs), especially RFMC secretaries, were trained in recordkeeping and financial management, strengthening local institutional capacity.

2. Livelihood and Income Outcomes

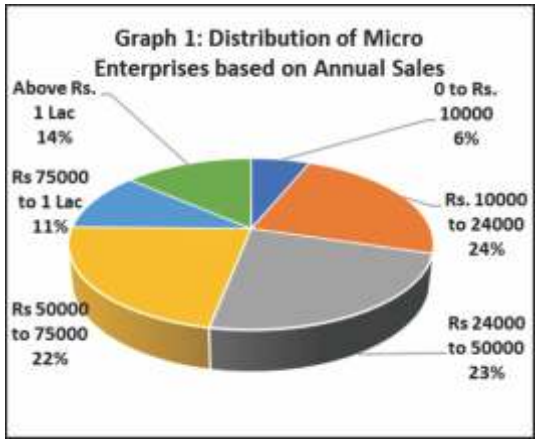
Endline assessment of a sample of project participants showed a significant improve-



ment in household income:

- Average annual household income increased from ₹62,579 to ₹1,29,193, with microenterprises promoted through the RFMC contributing substantially to this rise.

Sales data from microenterprises (operational for at least 12 months) revealed:



- 47% of entrepreneurs had annual sales above ₹50,000.
- Another 23% had sales between ₹24,000 and ₹50,000.
- Lower sales were typically associated with enterprises that were not yet fully functional.

Agrobased and nonfarm enterprises tended to generate higher incomes, with investments often used to improve irrigation, cropping intensity, or expand retail and service businesses.

3. Social and Empowerment Outcomes

- The project successfully created self employment opportunities and diversified livelihoods for vulnerable households, including returnee migrants
- Women's participation was deliberately promoted, with 42% of RFMC members and 51% of loan recipients being women, leading to greater economic agency and decisionmaking power.
- By linking RFMCs to FPOs and ensuring local representation on FPO boards, the model strengthened the institutional ecosystem for longterm financial and market support.

Analytical Insights

1. Why the Model Worked

- Community ownership: By placing the fund in the hands of locally elected RFMCs, the model ensured that decisions on lending, recovery, and risk management were made by the community itself, increasing accountability and sustainability.
- Gradual capital release: Releasing funds in tranches based on performance created incentives for RFMCs to manage the fund responsibly and build a track record before receiving larger amounts.
- Institutional anchoring: Linking RFMCs to FPOs provided a formal structure for scaling financial services and integrating them into broader value chains and market systems.
- Peer accountability: The guarantor mechanism within Producer Groups reduced moral hazard and encouraged timely repayment, while also building social capital.

2. Key Enablers

- Strong technical and managerial support from AFARM, which provided capacity building, monitoring, and backstopping to both RFMCs and partner NGOs.
- A clear, standardized SoP that ensured transparency, reduced discretion, and built trust among members and external institutions (e.g., banks).

- Deliberate focus on women and marginalized groups, which not only promoted equity but also expanded the pool of potential entrepreneurs and strengthened social cohesion.

3. Limitations and Challenges

- The model is heavily dependent on strong community institutions (PGs, RFMCs) and capable CRPs; in areas with weak social capital or high migration, replication may require more intensive institutionbuilding.
- The relatively small loan size (₹10,000) is suitable for microenterprises but may not be sufficient for larger, more capital intensive activities; scaling up may require blending with formal credit or larger grants.
- Sustainability beyond the project period depends on continued institutional support and the ability of RFMCs/FPOs to access additional capital (e.g., through bank linkages or government schemes).

Lessons for Replication and Scale

This case offers several practical lessons for designing and scaling similar revolving fund models in rural India:

1. Design Principles

- Start small, scale gradually: Begin with a modest revolving fund and release capital in tranches based on performance, allowing institutions to build capacity and a credit history before scaling up.
- Anchor in existing institutions: Link revolving funds to strong community institutions (e.g., SHGs, PGs, FPOs) rather than creating parallel structures, to leverage existing social capital and governance mechanisms.
- Standardize processes: A clear, simple SoP for application, approval, disbursement, and recovery is critical for transparency, equity, and institutional credibility

2. Institutional and Governance Lessons

- Build local ownership: Ensure that RFMCs are elected by the community and have real decisionmaking power over lending and recovery, not just as implementing arms of an external agency
- Strengthen local capacity: Invest in training CRPs and committee members in financial management, recordkeeping, and conflict resolution to ensure long term sustainability
- Integrate with formal systems: Position RFMCs as potential clients for banks and financial institutions by maintaining clean records and building a track record of repayment, enabling future formal credit linkages.

3. Financial and Operational Lessons

- Use peer mechanisms: Incorporate peer guarantees or group liability within Producer Groups to reduce default risk and strengthen social accountability
- Blend with other support: Combine revolving funds with technical training, market linkages, and access to government schemes to maximize enterprise success and income impact.
- Plan for scale: Design the model so that successful RFMCs can be replicated across clusters or districts, with a clear pathway for accessing larger capital (e.g., through FPOs, banks, or government revolving fund schemes like NRLM).

4. Equity and Inclusion Lessons

- Deliberately include women and marginalized groups: Set explicit targets for women's participation in committees and as loan recipients, and provide tailored support (e.g., womenfocused training, childcare support) to ensure meaningful inclusion
- Target vulnerable populations: Focus on returnee migrants, landless families, and small/marginal farmers who are most excluded from mainstream financial systems, using the revolving fund as a safety net and springboard for economic reintegration

Conclusion

AFARM's revolving fundbased livelihoods model in Vidarbha demonstrates how a well designed, communitymanaged financial mechanism can effectively address the immediate livelihood needs of returnee migrants while building longterm resilience and institutional capacity. By combining accessible microcredit, strong community institutions, and technical support, the model has helped over 1,000 microentrepreneurs diversify their livelihoods and significantly increase household incomes

For replication and scale, the key is to treat the revolving fund not as a standalone project intervention, but as a core financial service embedded within a broader ecosystem of Producer Groups, FPOs, and formal financial institutions. With careful design, strong local ownership, and strategic linkages to government and market systems, this model can be adapted to other droughtprone and migrationaffected regions to create sustainable, inclusive livelihoods for rural households.

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5 Technology & Digital Inclusion

- Empowering Women's Enterprises through Solar Technology - SELCO Foundation
- eDost: Catalysing Digital Inclusion in Tribal Areas - BAIF Development Research Foundation
- Securing Livelihoods of Rural Vulnerable Households through Digital Financial Inclusion: The Digital Sakhi Model of AFARM

5.1 Empowering Women's Enterprises through Solar Technology

SELCO Foundation

The Challenge

A women's self-help group, Sajrai Swayamsahayata Mahila Samuha, comprising six members, had been producing handmade papads and rotis for several years in rural Maharashtra. Despite their experience, the enterprise faced persistent constraints that raised several critical questions:

- How can production be increased without intensifying physical strain?
- What livelihood solutions can address both workload reduction and income enhancement?
- Can decentralised clean energy create a viable pathway for small rural enterprises to scale sustainably?

The group's income remained limited to ₹15,000 per month (shared among six women), with the work being physically demanding and time-intensive. Their aspiration to expand was constrained by manual processes and low productivity.

The Approach

Before the final intervention was selected, the collective and ecosystem partners considered multiple options:

- Hiring Additional Labour: This option could have increased output but required recurring monthly expenses, which the group was not confident they could sustain due to fluctuating orders.
- Electrically Powered Rolling Machines (Grid-Based): Given the village's unpredictable electricity supply and high operational costs, this option was evaluated as unreliable and financially burdensome in the long term.
- Manual Process Improvement Tools: Low-cost manual equipment was considered but found insufficient to address the scale of expansion the group desired. The physical strain would have continued, and productivity would remain low.

Ultimately, a solar-powered papad and roti rolling machine was selected due to its long-term affordability, reliability, low operating cost, and ability to eliminate dependence on erratic electricity supply.

The Intervention

Under the framework of the Prime Minister's Employment Generation Programme (PMEGP), a solar-powered Papad and Roti Rolling Machine was introduced to the enterprise with a 30% capital subsidy. This intervention aimed to enhance production efficiency, reduce physical drudgery, and strengthen the enterprise's financial sustainability through the adoption of clean energy technology.

The support package covered several components across technology access & maintenance, capacity, as well as business processes & documentation such as:

- Facilitation of documentation, bank procedures, and financial linkages.

- Resolution of delays associated with loan processing and technical approvals.
- Capacity building through training on machine operation, maintenance, and enterprise management.
- Post-installation follow-up and continuous handholding support to ensure sustained performance and adaptation.

Outcomes and Impact

The intervention yielded substantial improvements across productivity, profitability, and overall enterprise sustainability:

- Production output increased from approximately 2,000–3,000 units per month to over 10,000 units
- Net monthly profit rose to ₹50,000, contributing to improved household income stability.
- The physical strain traditionally associated with manual rolling decreased considerably.
- Working hours reduced, providing beneficiaries with additional time for family and community responsibilities.
- The enterprise demonstrated enhanced financial discipline and confidence, supported by a steady loan repayment track record (current balance: ₹51,850).

The experience underscores the potential of clean energy-based technological interventions to improve productivity, income levels, and quality of life among rural women entrepreneurs.

Stakeholder Perspectives

Women's Collectives: Participants reported a significant reduction in physical effort and a corresponding rise in comfort and efficiency. They expressed greater confidence in managing and operating modern technology, and highlighted meaningful time savings that facilitated improved business and household management.

Financial Institutions: Partner banks observed regular loan repayments and acknowledged that the combination of the PMEGP subsidy and increased earnings substantially reduced credit risk. The intervention demonstrated the effectiveness of integrating clean energy-based enterprises within formal financial systems.

Local Community: Community members recognized the enterprise as a role model for women-led, sustainable livelihood promotion. Observable outcomes included improved product quality and consistency, further strengthening the enterprise's local reputation and customer base.

Key Insights & Learnings

- Community-Centric Design Ensures Adoption: Thorough needs assessments and stakeholder consultations allowed solutions to be tailored for durability and usage patterns. Hesitations around technology were addressed through targeted training and continuous handholding.
- Financial Innovation is Essential: Affordable financing, subsidies, and micro-credit played a critical role, especially in low-income contexts where upfront costs are a barrier.
- Local Capacity Building Drives Long-Term Success: Training youth for maintenance and empowering women to manage technology-enabled businesses strengthens social and economic systems beyond the technology itself.

- Solar Energy Improves Both Quality of Life & Economic Mobility: The Maharashtra project showcased how clean energy solutions can improve economic outcomes, generate incomes, and reduce carbon footprints simultaneously.

A Blueprint for Resilient, Inclusive Rural Development

Selco's Maharashtra initiative demonstrates that solar energy is far more than an electricity source—it is a foundation for dignity, opportunity, and long-term resilience. By transforming women's enterprises, the project showcases how clean energy and inclusive financing can reshape groups of women's futures. This case is an example of how innovation, equity, and sustainability can converge to create thriving groups of women and offers a scalable model for clean energy–driven rural development across India.

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5.2 eDost: Catalysing Digital Inclusion in Tribal Areas - BAIF Development Research Foundation

Santarpana Choudhury, Pooja Majgankar and
Dr. Rajashree Joshi - BAIF

The Challenge

India's digital ecosystem is undergoing a tectonic shift that has left virtually no sector untouched: banking, business, retail and e-commerce, education, and even healthcare. The increase in the number of smartphone users and concomitant digital penetration across the length and breadth of the country can be accredited as among the major reasons driving this digital revolution. GSMA data indicates that 58% of men and 39% of women now use mobile internet. It also states that digital inclusion for women has significantly increased, from 14% in 2019 to 39% in 2024. However, barriers remain that prevent millions of people from accessing the benefits of this digital ecosystem. Remote tribal areas, in particular, remain at the periphery of this digital boom.

Geographic isolation, sparse population density, and low ARPU result in low penetration of internet service providers in these areas. Moreover, personal mobile phones are still a distant dream for many women. When there is a mobile device at home, it is typically meant for the male members or children who stay away from home. In addition, the lack of positive role models who have mastered and benefitted from the digital ecosystem inhibits these women from tapping into digital spaces. Limited digital literacy, coupled with restrictive socio-cultural norms, further excludes women from efforts towards digital inclusion, perpetuating the digital divide.

BAIF Development Research Foundation (hereafter referred to as BAIF) is a not-for-profit organisation dedicated to sustainable rural development. Established by Gandhian Dr. Manibhai Desai in 1967, BAIF works towards livelihood enhancement among the most deprived sections of society, particularly in tribal areas. The organisation's focus areas of work are livestock improvement, water-centric livelihood and agri-horti-forestry programmes integrated with community health and women-centric development.

This was the ingoing challenge BAIF identified in Palghar district. The picturesque district of Palghar comprises the Ulhas basin on the south and hilly Vaitarna valley on the north, together with plateaus and the slopes of Sahyadri. From the steep slopes of Sahyadri in the east, the land passes through a succession of plateaus in the north and centre of the district to the Ulhas valley in the south. It forms the northernmost part of the Konkan lowlands of Maharashtra. The topography of the region is diverse, consisting of hills, plateaus, and saline zones. It also receives high rainfall during the monsoon season and has patches of dense forests. Palghar is home to a large tribal population. As per Census 2011, out of the total population of 2,990,116, 37.39%, i.e. more than 11 lakh people in the district, belong to Scheduled

Tribes. Predominant ethnic groups include Kunbi, Mangela, Vaity, Macchimar, Bhandari, Warli, Katkari, Malhar Koli, Vanjari, Vadval, and Mali (Sorathi). A large part of the population is dependent on agriculture for their subsistence, growing primarily paddy and millets. Collecting forest produce like firewood, honey, and medicinal plants is a secondary livelihood source.

Despite its proximity to the financial capital of Mumbai, Palghar's economy and infrastructure leave much to be desired. The area's rich natural geography and scattered population have emerged as hindrances in its digital inclusion. The villages are located in mountainous terrain typical of tribal India, which weakens the internet signal. In Pathardi, for example, a village surrounded by hills on three sides, people must find specific spots within the village with the strongest signal to make calls.

BAIF had been working in Palghar district for several years. They identified that the tribal families of Palghar were yet to reap the benefits of Digital India. For performing essential activities like banking, utility payments, and mobile recharging, they had to travel to the nearest town of Jawhar located 20 km away. This not only meant spending additional money for travel expenses but also forgoing their daily wage for a simple task that could have been performed from the comfort of their home.

In addition, it was observed that although the women were actively engaged in routine agricultural work, they rarely earned any individual income from these activities. While some had access to smartphones, their awareness of the kinds of digital content or services they could utilise remained limited. In certain cases, women's access to the digital space was restricted, with their usage monitored by the male head of the household. These findings highlighted a clear need and opportunity to engage women more productively and create avenues for them to earn a sustainable livelihood.

The Intervention: The eDost Programme

As part of a collaborative effort between BAIF, Association for Progressive Communications (APC), and IIT Bombay to connect the unconnected, the eDost model was initiated in Palghar in 2019. APC was the funding partner for this initiative, while IIT Bombay provided crucial support in establishing a community network in Pathardi village of Palghar district. The eDost is a local woman serving as a digital catalyst and bridging the gap between the digital space and tribal community, thereby reducing their dependence on distant urban centres.

- Ability to fluently speak and write the local language, i.e. Marathi
- She should have a Permanent Account Number (PAN) Card for tax purposes
- She must have one smartphone with On-The-Go (OTG) support and have basic knowledge of how to operate it
- She should have at least another source of income
- She should be confident in handling financial transactions and cash
- She should have a bank account linked with Aadhaar
- A working knowledge of English was preferred

Interviews were conducted and finally, seven eDosts were selected to work in seven different villages. Soon after, six more eDosts were onboarded as part of a different project, who together formed the first

cohort of eDosts, reaching out to thirteen villages. Two training sessions were organised in collaboration with the fintech partner, BankIT, to orient and upskill the eDosts in using Aadhaar enabled Payment System (AePS) for financial and digital inclusion of the community. Other modules included handling and responding to customers, recordkeeping, smartphone troubleshooting, cyber safety, etc. A refresher training was held a month after the first training. In addition, regular technical support was provided to the eDosts through a WhatsApp group. Weekly trainings are now being held, as the Fintech partner continues to introduce updated modules, which the eDosts in turn communicate to their respective communities.

Today, they provide essential banking, utility, e-governance and e-commerce services at the doorsteps of the villagers for a nominal fee. Looking at the uptake and demand from the community, some of the eDosts have even diversified their service portfolio to include ticketing, printing, provision of job cards, updating land records, etc. Various government schemes are leveraged by the eDosts, like Kisan Credit Card, Ayushman Bharat Yojana, etc. for better social security of the community. A unique characteristic of this model is its emphasis on community-driven digital inclusion.

Implementation Challenges & Solutions

The implementation of the project, however, encountered a few hurdles along the way. While the eDosts were enthusiastic, many of them initially faced resistance from community members. Besides lack of trust towards the eDosts, there was also apprehension regarding the safety of using digital tools for monetary transactions. To address these concerns, sustained efforts were made to mobilise the community and build awareness about the benefits of the services offered by the eDosts. The eDosts themselves rose to the challenge, conducting demonstrations at large gatherings, MGNREGS worksites, and Gram Panchayat meetings to familiarise people with the digital services. Since the project was implemented in a tribal area with widely scattered hamlets, mobilisation efforts posed an additional challenge. To overcome this, the eDosts visited each hamlet two to three times a week, engaging with residents, addressing their concerns, and establishing the trust and rapport needed for the project to take root. Gradually, these efforts bore fruit as community members started recognising the value of the eDosts' work. The turning point came during the Covid-19 lockdown, when restricted mobility made routine tasks difficult. During this period, the eDosts' services gained enormous traction. As awareness of their critical digital and financial services grew, the number of beneficiaries increased exponentially.

Outcomes

The model has resulted in multiple benefits, both for the community as well as the eDosts. The villagers now have access to a wide range of banking, utility, and e-governance services at their doorsteps. Moreover, their time, money, and physical effort which was earlier spent in travelling to Jawhar is saved. This allows people to conduct their transactions according to their own schedules and availability. The eDost's services especially benefitted the elderly and less literate who had a fear of the unknown when it came to navigating the digital ecosystem.

Indicator	Before eDost	After eDost
Distance travelled	20 km	0 km (doorstep delivery)
Cost per visit	₹80-100	₹10-50 service fee
Time taken per visit	3-5 hours	10 minutes
Women's digital use	Very low	Regular, confident, productive
Access to Govt. Schemes	Limited	Active enrolment

By means of this model, a sustainable source of livelihood was created for the eDosts. It is noteworthy that this livelihood did not displace the women and allowed them to work in the vicinity of their homes and gave them the flexibility to manage their household and other tasks as well. The regular income generated enabled them to contribute meaningfully to their family's finances. Additionally, their communication skills, technical know-how, and overall confidence have grown by leaps and bounds. Their social standing has improved both within the community and in their own families.

Between 2019-2022, these thirteen eDosts performed 88,960 transactions in Palghar, reaching out to around 190 beneficiaries per month on average. The major services provided included AePS – cash withdrawal, balance inquiry, mini statement, money transfer; utility services like mobile & DTH recharge, electricity bill payment; e-governance services - 7/12 & 8A extract, Aadhaar and PAN Card, eShram card, insurance, and photocopying. In the three-year period, the total turnover was Rs. 2,64,64,603.00, which translated to earnings of Rs. 21,96,397. This implies that on average, each eDost earned an annual income of Rs. 56,317 between 2019-2022. The annual income ranged between Rs. 5,440 and Rs. 5,05,662 depending on the skill, entrepreneurial spirit, as well as the community's acceptance of the eDost's services.

Looking at the overall success of the programme in terms of its ability to create sustainable, dignified livelihood for tribal women while addressing a crucial gap in service delivery and digital inclusion, it is being scaled up in other parts of Maharashtra, like Nandurbar, Nagpur, Wardha, and Pune. Today, there are more than 150 active eDosts providing essential services across different districts of Maharashtra, Madhya Pradesh, and Gujarat. Every month, they undertake 150-200 transactions, earning an average monthly income of around Rs. 4,500-5,000.

An eDost's journey

Smt. Urmila Ravindra Nikode, a 28-year-old woman from Selookate village, Wardha completed her education up to the 12th standard. She always had a dream of contributing financially to her family but was unable to do so.

Her journey took a decisive turn when she learned about a livelihood programme being implemented in her village by BAIF. Motivated to overcome financial constraints in her joint family of eight, where financial matters were controlled by her brother-in-law, she sought support from the project team. Her participation in the project's digital literacy training became a pivotal moment. Equipped with the knowledge of online transactions and a smartphone, she saw potential in using digital platforms for financial activities. However, she quickly encountered a challenge- her village lacked essential services like banks and Common Service Centres (CSC). The villagers had to travel to Wardha for their financial transactions, facing multiple hurdles such as transportation issues, time delays, and even physical harassment during these trips.. Determined to solve this pressing issue, Urmila took the bold step of initiating a local service that provided financial transaction facilities within the village. This initiative saved people time, reduced transportation difficulties, and improved overall community welfare. She also played a crucial rolein educating fellow villagers about the benefits of digital financial systems, ensuring they had the tools and knowledge to use these services. Throughout her journey, Urmila's husband supported her every step of the way, standing by her decisions and encouraging her as she continued to serve the people in her village. As the volume of her financial transactions grew, her in-laws felt immense pride in her achievements. Their support became even more evident when they offered a room in their grocery shop to help her establish the Common Service Centre (CSC). This gesture provided a fillip to Urmila's efforts. In a

period of twelve months, Urmila managed financial transactions amounting to ₹29,57,625 and earned a substantial income of ₹37,165. Through her resilience and forward-thinking approach, she not only transformed her own life but also created a much-needed service that positively impacted her community, earning the admiration and pride of her family and the villagers alike.

Lessons Learned

BAIF's eDost model demonstrates how a simple digital toolkit can catalyse transformative change in alignment with national policy priorities. By equipping semi-literate tribal women with the skills and tools to serve as digital facilitators, the model promotes inclusive growth, strengthens community access to essential services, and creates meaningful livelihood opportunities. In doing so, it positions women as digital entrepreneurs who are able to participate in and shape the emerging rural gig economy. The eDosts not only deliver critical services, but also build micro-enterprises rooted in local demand, showcasing how digital inclusion can translate into sustainable, home-based economic activity in remote rural and tribal areas.

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5.3 Securing Livelihoods of Rural Vulnerable Households through Digital Financial Inclusion: The Digital Sakhi Model of AFARM

Subhash Tamboli & Ganesh Ritpure - AFRAM

Introduction

AFARM's Digital Sakhi initiative is a strong case of how digital financial inclusion, when rooted in community-based capacity building and women's leadership, can become a transformative livelihood intervention in rural Maharashtra. By training rural women as "Digital Sakhis" and supporting them to run Digital Seva Kendras, the programme has simultaneously improved digital access, strengthened women's economic agency, and created a replicable model for last-mile digital service delivery

Digital Inclusion as a Livelihood Enabler

India's financial landscape has been transformed over the last decade by rapid mobile connectivity, Aadhaar-based authentication, Direct Benefit Transfer (DBT) systems, and the expansion of digital payment ecosystems like UPI and AePS. Despite this progress, a large proportion of rural households—especially women, marginal farmers, tribal communities, and low-income groups—remain outside the effective ambit of formal financial services

Persistent barriers include low financial literacy, gender disparities in access and decision-making, weak digital infrastructure, and limited trust in formal systems, which keep many rural families dependent on informal, often exploitative, transactions. Recognizing this divide, AFARM—drawing on over 55 years of rural development experience—launched its Digital Financial Inclusion Programme in 2017 in partnership with L&T Financial Services.

The programme's core insight is that digital inclusion is not just about access to technology, but about building the capability of rural households to transact safely, manage finances, and claim entitlements. At its heart is the **Digital Sakhi** -a trained rural woman who acts as a bridge between financial institutions, digital systems, and the community. This model demonstrates how digital literacy, when combined with gender empowerment and last-mile service delivery, can become a powerful livelihood strategy for rural households

Policy Context: A Supportive Ecosystem for Digital Inclusion

The Digital Sakhi model is embedded in a strong national and state-level policy environment that has created an enabling ecosystem for digital inclusion. Flagship initiatives such as Pradhan Mantri Jan Dhan Yojana (PMJDY), Aadhaar-enabled Payment Systems (AePS), Unified Payments Interface (UPI), and DBT reforms have expanded the reach of formal financial services to rural India

However, while access has improved, **usage gaps** remain wide: many rural households have bank accounts and cards but use them minimally due to low awareness, lack of confidence, and technological barriers. AFARM's intervention directly addresses this gap by aligning with national priorities under Digital India, RBI and NPCI guidelines, and Maharashtra's governance frameworks, thereby complementing public efforts to build inclusive digital ecosystems

By positioning Digital Sakhis as local facilitators of government schemes and digital services, the programme also supports state goals of improving governance, reducing leakages in welfare delivery, and enhancing transparency in entitlements. This convergence with public systems has been critical to scaling impact and ensuring sustainability

The Digital Sakhi Model: Concept and Approach

The Digital Sakhi model is built on three strategic pillars:

- **Developing a cadre of digitally skilled rural women** who can promote a cashless economy and act as trusted intermediaries between banks, fintech platforms, and villagers
- **Nurturing these women as micro-entrepreneurs** through Digital Seva Kendras that provide essential online services within the village
- **Strengthening community capacities** to adopt digital payments, access government schemes, manage finances, and reduce dependency on informal intermediaries

Digital Sakhis function as **trusted local resource persons,** offering doorstep services, raising awareness, and providing hands-on support to households. Their embeddedness within communities-especially as women from the same villages-ensures high credibility, particularly among women, elderly citizens, and first-time digital users. This model shifts the focus from a purely technical "digital literacy" intervention to a **socially embedded, gender-transformative approach** where digital skills are linked to economic empowerment and community leadership

The Intervention: Capacity Building and Tools Provided

AFARM implemented a structured, practice-oriented training curriculum for Digital Sakhis, delivered in three phases over 15 days. The curriculum covers:

- Communication and leadership skills
- Basic financial literacy (savings, loans, interest calculations)
- Digital modes of payment (UPI, AePS, mobile banking, QR codes)
- Insurance and pension schemes
- Government entitlements and social protection
- Establishing and managing a Digital Seva Kendra

Training is supported by Marathi-language animated videos, standard operating procedures (SoPs), booklets, and calendars to aid comprehension, especially for women

with limited formal education. Each Digital Sakhi receives a **Digital Sakhi Kit,** including a tablet pre-loaded with learning modules, which they use for demonstrations and record-keeping.

A uniform and visibility materials (banners, ID cards) are provided to give them a recognizable identity and professional status within their villages. This comprehensive preparation allows Digital Sakhis to function not only as information providers but as effective catalysts of behavioural change in financial habits and digital adoption

Activities and Services Delivered by Digital Sakhis

Digital Sakhis engage communities through house visits, group meetings, village camps, and weekly interactions at community spaces. Their key responsibilities include:

- Facilitating **bank account opening,** especially for women and elderly citizens
- Supporting households in **monthly budgeting, tracking expenses, and planning savings**
- Demonstrating **digital payment methods** (UPI, AePS, mobile banking, QR payments) and helping families conduct transactions
- Creating awareness about **insurance and pension schemes** and promoting enrolment

- Ensuring s**afe digital practices, fraud prevention, and cybersecurity awareness**
- Helping families **navigate government schemes,** complete online applications, and track benefits

Over time, Digital Sakhis have evolved into respected village-level guides, gaining confidence, mobility, and recognition as economic contributors within their households and communities. Their role extends beyond transactions to becoming **financial advisors and community mobilisers** for inclusive development

Digital Seva Kendras: Entrepreneurial Opportunities for Women

To address the challenge of distance, cost, and time in accessing digital services, AFARM supports eligible Digital Sakhis to establish **Digital Seva Kendras.** These are village-level service centres equipped with computers, printers, biometric devices, lamination machines, and internet connectivity

The centres provide a one-stop shop for:

- Applications for government schemes (pensions, scholarships, subsidies)
- Bill payments (electricity, water, mobile)

- Digital banking support (AePS, cash withdrawal, balance enquiry)
- Aadhaar-enabled services (enrolment, updates)
- Insurance and pension enrolments
- Document printing, certificates, and online submissions

By bringing these services to the village, the centres significantly reduce villagers' dependence on distant taluka-level offices and save substantial time and transport costs. At the same time, they generate **sustainable entrepreneurial income** for Digital Sakhis, turning digital inclusion into a livelihood opportunity

Geographic Reach and Scale

The Digital Sakhi programme has been implemented across 7 districts of Maharashtra in partnership with 6 local NGOs. As of the latest available data, the programme has achieved the following scale:

- **283 trained Digital Sakhis**
- **150 villages** across 14 talukas
- **76,565 rural families** made digitally literate
- **122 Digital Seva Kendras** operational

This coverage demonstrates the **replicability of the model** in diverse socio-economic contexts across Maharashtra, including drought-prone and semi-arid regions where AFARM has long worked on water and agriculture. The model has also been adapted and scaled by L&T Financial Services in other states, indicating its potential for wider adoption.

Impact on Digital Sakhis: Empowerment and Income Enhancement

The programme has significantly trans-formed the lives of Digital Sakhis, turning them from homemakers into confident entrepreneurs and community leaders

- **100%** of Digital Sakhis now use digital payment modes confidently in their own lives
- **89%** report becoming active participants in household decision-making, up from 54% before the programme
- **93%** have become entrepreneurs through their Digital Seva Kendras
- Their income contribution has increased to **about one-fourth of total household income,** from negligible levels earlier
- **31%** earn more than ₹10,000 per month; **41%** earn between ₹8,000–₹10,000 per month

Beyond financial gains, Digital Sakhis report marked improvements in **self-confidence, social mobility, respect within families, and leadership roles.** Many have used their earnings to support children's education, invest in small businesses, or even resume their own education, breaking cycles of intergenerational disadvantage

Impact on Rural Communities

The initiative has generated wide-ranging benefits at the community level:

- **96%** of households became aware of government schemes and their eligibility
- **62%** began preparing household budgets regularly
- **70%** benefited from linkages to schemes and services
- **41%** of rural women began using digital banking services (up from 9% earlier)
- **11,010 households** accessed govern-ment schemes worth **₹34.75 crore** through Digital Sakhis
- **1,13,760 individuals** invested in social security schemes (insurance, pensions, health)

- **12,719 households** invested in risk-mitigation schemes after receiving guidance

These results reflect significant improvements in financial literacy, digital confidence, and access to entitlements. Villagers, especially women and elderly, now feel more secure in managing money, claiming benefits, and participating in the formal economy

Broader Livelihood Outcomes and Community Transformations: The programme has catalysed a community-wide shift from financial exclusion to digital empowerment, with ripple effects on livelihoods and social inclusion

a. Economic savings and time efficiency

Villagers save substantial time and transport costs by accessing online services locally instead of travelling to taluka headquarters, which is especially valuable for women and the elderly

b. Self-reliance and confidence

Women gain autonomy in managing finances, reducing dependence on male relatives or informal moneylenders, and are better able to plan for shocks like illness or crop failure

c. Rise in digital literacy

Smartphone use has expanded beyond communication to include online payments, applications, and transactions, creating a more digitally literate rural population

d. Support to local enterprises

Shopkeepers, artisans, and farmers have adopted QR codes and digital payments, improving business operations, record-keeping, and access to credit

e. Digital safety awareness

Communities have learned safe digital practices, enabling secure transactions and reducing vulnerability to fraud and scams

Key Success Factors

Several interlinked factors explain the success and sustainability of the Digital Sakhi model:

- **Local women as change agents:** Recruiting and training women from the same villages builds trust, enhances adoption, and ensures cultural appropriateness
- **Doorstep service delivery:** Bringing services to households and community spaces overcomes mobility and time constraints, especially for women and the elderly
- **Strong training curriculum:** A structured, practice-based curriculum aligned with RBI/NPCI norms ensures that Sakhis are technically competent and confident
- **Entrepreneurship through Seva Kendras:** Linking digital literacy to income generation makes the model self-sustaining and attractive to participants
- **Convergence with government schemes:** Integrating with DBT, pensions, and social protection schemes amplifies impact and scale, while aligning with state and national priorities

Insights and Lessons for Replication and Scalability

The Digital Sakhi model offers a robust, adaptable blueprint for digital inclusion and women's economic empowerment in rural and underserved areas. Key insights for replication and scalability include:

a. Design Principles for Replication

- **Anchor in existing community institutions:** The model works best when integrated with SHGs, FPOs, and Panchayats, which provide a ready network for mobilisation and trust
- **Focus on women as last-mile agents:** Rural women are often more trusted and accessible than external agents, and their participation directly advances gender equity
- **Combine literacy with livelihoods:** Training must be linked to income opportunities (e.g., Seva Kendras) to ensure motivation and sustainability

- **Use local language and context-specific tools:** Training materials, videos, and interfaces in Marathi (and other local languages) are critical for comprehension and adoption

b. **Scalability Pathways**

- **In tribal and remote areas:** The model can be adapted for tribal regions by partnering with tribal development departments and SHG federations, and by simplifying interfaces for low-literacy users.
- **Integration with state digital platforms:** Digital Sakhis can be trained as "digital champions" for state-level platforms (e.g., Maha e-Seva Kendra, Mahashabari.in), reducing duplication and enhancing reach.
- **Leverage CSR and public-private partnerships:** The L&T Financial Services partnership shows how CSR funding can be used to pilot and scale a model that later attracts government support.
- **Phased expansion:** Start with a cluster of villages, demonstrate impact, and then expand to new blocks and districts, using existing NGO networks for implementation

c. **Policy and Institutional Enablers**

- **Recognise Digital Sakhis as formal service providers:** States can formally empanel Digital Sakhis as banking correspondents or CSC operators, giving them legitimacy and access to commissions.
- **Incentivise digital adoption:** Link incentives (e.g., higher DBT rates, faster scheme processing) to digital transactions facilitated by local agents
- **Strengthen last-mile connectivity:** Invest in rural internet infrastructure and power supply to ensure that Seva Kendras can operate reliably.

d. **Risks and Mitigation**

- **Over-reliance on external funding:** Build in cost-recovery mechanisms (e.g., service fees, commissions) and gradually transition to government or market-based financing
- **Digital fatigue and fraud:** Continuously refresh training on cybersecurity and fraud prevention, and create community-level grievance redressal mechanisms
- **Gender norms and mobility:** Support Sakhis with mobility allowances, safety measures, and community sensitisation to overcome social barriers

Conclusion

AFARM's Digital Sakhi initiative demonstrates that digital financial inclusion can be a transformative livelihood intervention when rooted in community-based capacity building, women's leadership, and accessible service delivery. The programme has improved incomes, strengthened household decision-making, expanded digital adoption, and enabled thousands of families to claim their entitlements and manage risks better. As Maharashtra and other states strive to build resilient rural economies, the Digital Sakhi model offers a scalable, replicable pathway for empowering vulnerable households and fostering inclusive, digitally enabled development. By investing in local women as digital champions and linking literacy to entrepreneurship, this model turns digital inclusion into a powerful engine for rural transformation.

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Conclusion of Case Studies

The cases in this volume collectively show that rural livelihoods in Maharashtra can be strengthened at scale when interventions are built around strong local institutions, women's leadership, appropriate technology, and robust market and financial linkages. From tribal orchards and forest-based enterprises to goatery, dairy, digital services, and agri-entrepreneurship, a wide spectrum of viable and context-sensitive models is already in place.

We hope that several al overarching insights emerge for different stakeholders. Practitioners and CSOs are reminded that depth of institution building and cadre development is as important as the choice of livelihood activity; investing in governance, financial literacy, and peer learning platforms is crucial for long-term viability. Donors and financial institutions can see that revolving funds, blended finance, and both organization and outcome-oriented patient capital support to community institutions can catalyse significant increases in household incomes, especially when paired with technical assistance and market access. Researchers and policymakers gain evidence that integrated models – combining production enhancement, enterprise development, social protection, and digital and financial inclusion – are better suited to address the multidimensional nature of rural poverty and vulnerability.

Looking ahead, the challenge is less about inventing new models and more about scaling and adapting proven ones with fidelity to core principles while remaining responsive to local contexts. This requires long-term partnerships between communities, civil society, governments, and private actors; investment in data and monitoring systems; and continued attention to equity, especially for women, youth, and tribal communities. If this volume contributes to more grounded program design, more courageous funding of community-led initiatives, and more rigorous learning across organisations, it will have served its purpose. The experiences documented here invite all stakeholders to collaborate in building rural livelihood systems that are not only economically viable, but also socially just and environmentally sustainable.

LIVELIHOOD *of* RURAL MODELS **MAHARASHTRA**

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