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STATE OF MARGINAL FARMERS OF INDIA – 2025

*Assessing Cooperative Societies' Engagement and Their
Business Diversification Strategies Across India*

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FOREWORD

India's agrarian story is, at its heart, the story of the marginal farmer. Constituting nearly 70 per cent of our agricultural households, these cultivators owning less than one hectare are the silent custodians of our national food security and rural resilience. Yet, a profound paradox defines their existence: while they are numerically dominant, they remain economically peripheral, constrained by fragmented landholdings and limited access to the formal markets that drive modern agriculture.

For decades, the discourse on rural development has sought a sustainable solution to the structural disadvantages of small-scale subsistence farming. Time and again, the answer has pointed toward **cooperation**. Cooperative institutions, specifically Primary Agricultural Credit Societies (PACS), serve as the vital bridge designed to connect the dispersed power of millions of smallholders to the solidity of formal economic systems. By aggregating demand, pooling resources, and amplifying collective voice, cooperatives offer the only viable pathway to convert the vulnerability of the marginal farmer into the strength of a collective enterprise.

This report, "**The State of Marginal Farmers Report 2025**," arrives at a pivotal moment. As the world observes the **International Year of Cooperatives 2025** and India operationalises its new **National Cooperation Policy 2025**, the need for granular, ground-level evidence has never been more urgent. We must move beyond the theoretical promise of cooperatives to understand their practical efficacy on the ground.

Based on a rigorous mixed-method assessment across six diverse states, Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Tripura, and Uttarakhand, this study provides the necessary diagnosis. It offers an unvarnished look at the "last mile" engagement between marginal farmers and cooperative institutions, revealing both the immense potential and the persistent gaps in our ecosystem.

Two critical findings from this report demand our immediate attention. First, the engagement gap remains stark. Despite the ubiquity of the cooperative network, our data reveal that less than one-fourth of the surveyed marginal farmers are active members of agricultural cooperatives. Second, and perhaps more importantly, **cooperation works when access is secured.** The report highlights that nearly 45% of marginal farmers who successfully joined cooperatives reported an increase in household income, and over 42% reported improved crop yields. This data serves as definitive proof that when the structural barriers to entry are removed, the cooperative model delivers tangible economic mobility for the poorest cultivators.

It is my belief that this report serves not just as a mirror to our current discourse but as a navigational tool for policymakers, cooperative leaders, and development partners. By addressing the disparities in awareness and simplifying the pathways to membership, we can ensure that the vision of "*Sahkar-se-Samriddhi*" (Prosperity through Cooperation) becomes a tangible reality for the last farmer in the last village.



Dr. Sanjeev Chopra
Chairperson, Forum of Enterprises for Equitable Development (FEED)

PREFACE

Agriculture in India is not merely an economic sector; it is the lifeblood of the nation, deeply interwoven with culture, heritage, and the livelihoods of millions. It operates as a complex ecosystem involving stakeholders ranging from village-level farmers and agri-tech start-ups to government bodies, research institutions, and civil society organizations. While the sector projects a robust growth of around **4% in 2025–26**, it faces persistent structural challenges such as shrinking farm sizes and climate change impacts. The latest Situation Assessment Survey (77th Round, 2019) confirms that despite digital advancements, small landholdings severely constrain farmers' ability to diversify and enhance production.

Marginal farmers constitute a vast majority of the agrarian population and are pivotal to national food security. Yet, they remain vulnerable due to limited land, inadequate credit access, and exposure to market and climatic volatility. Addressing their needs is essential for inclusive growth. In this landscape, cooperatives, particularly *Primary Agricultural Credit Societies (PACS)* have historically served as vital vehicles for financial access and collective marketing. As democratic, member-owned entities, they possess the potential to enhance bargaining power, reduce costs, and promote equity.

The New Cooperative Policy 2025 marks a paradigm shift towards a mission-driven, farmer-first approach, envisioning cooperatives as vibrant, technology-enabled enterprises. This report, *The State of Marginal Farmers in India 2025*, offers a rapid assessment of the untapped potential to integrate marginal farmers into the cooperative fold. It explores how cooperatives can enable marginal farmers to leverage the strength and power of aggregation to access information, extension services and training, credit facilities, market linkages, and the expanded range of 25 business activities envisaged under the Model Bye-laws for PACS.

Drawing on primary data, case studies, and policy reviews, the report identifies strategic interventions to improve governance, operational efficiency, and financial viability within cooperatives. Theoretically, the research is underpinned by frameworks such as Human Capital Theory, Collective Action Theory, Social Capital Theory, Market Access Theory, and Information Asymmetry. It also identifies strategic interventions required to enhance governance, operational efficiency, financial viability, and member engagement within cooperative institutions.

The conceptualization of this report involved a rigorous consultative process. We extend our deepest gratitude to the Board for their extensive deliberations under the guidance of Chairman **Dr. Sanjeev Chopra**. We acknowledge the support of **Mr. P. V. Suryakumar, Mr. Anish Kumar, Dr. Baskar Reddy, Dr. Prasun Kumar Das, Dr. S. K. Goel, Dr. Suhas Wani, Dr. V. Sadamate, Mr. Kuluranjan Kujur, and Mr. Ravi Gupta**. We also thank invited members **Dr. Hema Yadav, Mr. Sumit Singh, Ms. Rina Soni, Mr. Nishi Kant Dixit, and Mr. Gagan Sinha**.

The objective of this report is to inform policymakers, development practitioners, cooperative federations, training and capacity-building institutions, and other stakeholders engaged in the agricultural sector, with a particular focus on the inclusion of marginal farmers. It seeks to contribute to the development of a pro-farmer policy framework by identifying actionable steps and interventions for translating the New

Cooperative Policy 2025 into contextually grounded and forward-looking strategies with a clear focus on marginal farmers.

We further acknowledge the valuable individual inputs provided by **Dr. Raka Saxena (NITI Aayog) and Col. Himanshu (NCDC)**.

This study was made possible through the collaboration of our partner institutions, including **Syngenta Foundation, PGPL, DIU, VAMNICOM, SIS, ISS, TRI, Ambuja Foundation, IDOBRO, & ISAP**. We particularly recognise the voices of marginal farmers who participated through interviews, focus group discussions, key informant consultations, and surveys; their narratives bring authenticity and urgency to the findings presented.

We commend the core research team efforts at FEED comprising of **Mr. Shubham Dubey, Mr. Apaar Wadhwa, and Mr. Bharat Bali**. The technical support of DIU team led by **Mr. Sandeep Ghosh**, supported by **Dr. Akshya Patro, and Mr. Saikat Ghosh** was invaluable in completion of this report.

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Finally, we thank the research and editorial teams for their dedication in designing, analysing, and compiling this report within a demanding timeline. Their commitment has ensured that this document serves as a meaningful reference for policy advocacy, knowledge dissemination, and on-ground action in support of marginal farming households in India.

This report is dedicated to the millions of marginal farmers whose resilience and contributions sustain India's agricultural economy. Their challenges remain the guiding force behind this initiative.



Mr. Suryamani Roul
Managing Trustee
Forum of Enterprises for Equitable Development (FEED)

EXECUTIVE SUMMARY

Marginal farmers constitute a significant majority of the farming community in India and remain among the most vulnerable due to constraints related to landholding size, access to credit, inputs, markets, and public services. For this farming Community Segment, Primary Agricultural Credit Societies (PACS) and agricultural cooperatives serve as the most proximate and consequential institutional touchpoints for meeting essential agricultural and livelihood needs. Positioned at the village level as the foundational tier of the cooperative structure, PACS influence marginal farmers' access to credit, input distribution, procurement and marketing support, and increasingly, digital and public service delivery. Given the centrality of PACS in the everyday economic lives of marginal farmers, it is critical to understand how these farmers engage with cooperatives and the extent to which PACS are able to respond to their needs.

This study examines marginal farmer's cooperative engagement and service delivery experiences across six states i.e., Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Tripura, and Uttarakhand based on household-level data, cooperative member interactions, and participatory discussions. The major objectives are, to assess the engagement of marginal farmers with co-operatives, to evaluate their business diversification strategies, and to understand the levels of awareness, participation, digital adoption, challenges in access, and opportunities for strengthening PACS as inclusive rural service hubs.

Across the survey regions, awareness of cooperatives among marginal farmers is relatively high, with particularly strong awareness reported in **Andhra Pradesh (86.2 per cent) and Uttarakhand (71.9 per cent)**. This higher visibility can be attributed to the presence of government-linked cooperative service centres and agriculture support programmes that have strengthened cooperative outreach in these states. However, awareness does not consistently translate to participation. In states such as Bihar and Tripura, cooperative membership remains limited, reflecting historical governance challenges, localised trust deficits, weak service relevance, or limited outreach by cooperatives. Participation patterns also suggest that cooperatives remain male-dominated spaces, even in regions where women are core contributors to agriculture and household economic activity.

Access to cooperative services varies significantly by state. In Andhra Pradesh and Uttarakhand, cooperatives are more frequently used for input procurement (seeds, fertiliser) and crop marketing, whereas in Himachal Pradesh and Maharashtra, cooperatives serve as platforms for horticulture support, dairy services, and linkages to procurement agencies. Tripura and parts of Bihar show lower levels of cooperative service uptake, influenced by limited local capacity, fewer trained staff, and geographic or logistical barriers. Across states, members highlighted that cooperatives are most effective when they offer multiple services under one platform, reducing transaction costs and the need to travel to distant markets or government offices.

A key area of change relates to the emerging role of digital tools in cooperative function-

ing. The study found varied adoption across states: Andhra Pradesh and Uttarakhand demonstrate growing use of WhatsApp groups, digital recordkeeping, SMS alerts, and online payments, while in Bihar and Tripura, digital use remains minimal. Digital tools are valued for improving communication, transaction transparency, and faster access to market information, particularly for crop sales and procurement announcements. However, limited digital skills, especially among older members and women, restricts the benefits of such tools. Where cooperatives have not received structured training, digital processes remain under-used, despite availability of devices and connectivity.

Common barriers identified across states include:

- Lack of awareness of available cooperative services
- Distance to cooperative offices for remote or hilly communities
- Complex procedures and documentation requirements
- Insufficient credit availability or capital support at PACS level
- Limited staff capacity and inadequate digital systems
- Members' lack of trust where transparency has historically been weak.

Women additionally reported lower access to cooperative membership and decision-making, citing mobility constraints, time burden, and socio-cultural norms limiting their participation in village-level institutions.

When asked about support needs, respondents across states prioritized:

- More training and awareness programs
- Simplified membership and service access procedures
- Strengthening cooperative infrastructure and storage/handling facilities
- Better market linkages and price information mechanisms
- Improved digital systems along with hands-on digital literacy support
- Gender-inclusive mobilization and representation measures

Taken together, the findings point to a clear conclusion: PACS are relevant and widely recognized institutions, but the degree to which farmers benefit depends on how accessible, transparent, well-staffed, digitally enabled, and service-diversified the cooperative is. In states where cooperatives are integrated with broader agricultural service platforms, members experience more consistent benefits. In contrast, where cooperatives remain single-function, under-capitalized, or poorly staffed, their presence has limited impact.

Strengthening PACS therefore requires a combined focus on organizational capacity, member engagement, and digital enablement, alongside targeted inclusion strategies for women and marginal farmers. The evidence suggests that cooperatives are best positioned to function as multi-service rural access points, supporting agriculture, livelihoods, entitlements, and public services when supported by adequate training, financing, and management systems.

CHAPTER - 01

Introduction: Marginal Farmers, Cooperative Institutions and the Emerging Policy Landscape

1.1 Marginal Farmers at the Core of India's Agrarian Economy

Marginal farmers, defined as cultivators owning less than one hectare of land, constitute approximately 60–70 percent of India's agricultural households and form the structural backbone of the country's agrarian economy. Their role extends beyond production alone, encompassing food security, rural employment generation, maintenance of agrobiodiversity, and the sustenance of local economies. Yet, paradoxically, this numerically dominant segment remains structurally disadvantaged and economically vulnerable, positioned at the margins of modern agricultural markets and institutional systems.

The inherent limitations associated with small and fragmented landholdings constrain production scalability, mechanisation, and technology adoption. As a consequence, marginal farmers often remain confined to subsistence-oriented production systems characterised by low productivity, minimal surplus, and limited profitability. These structural constraints are compounded by restricted access to institutional credit, quality inputs, modern extension services, post-harvest infrastructure, storage facilities, market intelligence, and formal marketing platforms. The resulting dependence on informal intermediaries and exploitative market relationships perpetuates cycles of indebtedness and income volatility.

The marginalisation of this segment is not merely an economic concern but a critical policy challenge, with direct implications for national objectives related to inclusive growth, poverty reduction, rural employment, and sustainable agricultural development. Strengthening institutional mechanisms that enhance marginal farmers' access to markets, finance, and productive resources is therefore central to India's agrarian transformation agenda. Within this context, cooperative institutions, particularly Primary Agricultural Cooperative Societies (PACS), emerge as strategic platforms to integrate marginal farmers into formal economic and governance systems.

This report situates marginal farmers at the centre of its analytical framework and examines their engagement with PACS as a critical pathway for enhancing participation, resilience, and socio-economic empowerment.

1.2 Marginal Farmers and the Imperative for Cooperative Engagement

Marginal farmers represent nearly 70 percent of India's total agricultural population, yet their participation in organised value chains remains limited. The constraints posed by

small landholdings inhibit access to irrigation, technology, institutional finance, and stable markets, resulting in heightened vulnerability to income shocks, climatic uncertainties, and price volatility.

Cooperative institutions offer an institutional response to these structural limitations by enabling collective action, pooling of resources, and aggregation of demand and supply. Engagement with cooperatives allows marginal farmers to access institutional credit, reduce dependence on informal intermediaries, strengthen market negotiations, and improve integration with input and output markets. In policy terms, cooperatives represent a bridge between marginal farmers and formal economic systems, converting dispersed individual producers into organised economic actors.

Primary Agricultural Credit Societies (PACS) and agricultural cooperatives continue to be central institutional mechanisms for supporting small and marginal farmers in India. As the closest tier of the cooperative structure to the village, PACS play a critical role in input distribution, credit access, procurement, marketing, and more recently, digital and public service delivery.

The present report explores the patterns, depth, and effectiveness of marginal farmers' engagement with PACS and assesses the capacity of cooperative institutions to function as agents of rural inclusion and agricultural modernisation.

1.3 Structural Challenges Confronting Marginal Farmers

Marginal farmers face a complex and interconnected set of challenges that restrict their productivity, income stability, and growth potential. Fragmented and small landholdings prevent efficient mechanisation and limit the viability of crop diversification. Inadequate access to institutional finance forces reliance on informal credit sources, often at high interest rates, delaying timely agricultural investments and increasing indebtedness.

Weak integration into structured value chains further marginalises marginal farmers, who frequently sell produce at the village level to local traders at unfavourable prices. The lack of access to organised platforms such as regulated markets, digital trading systems, and value-added processing units restricts opportunities for price realisation and quality-based incentives. Additionally, limited access to extension services and modern agricultural technologies hampers productivity enhancement and climate adaptability.

Heightened exposure to climatic variability, market fluctuations, and unorganised supply chains exacerbates the precariousness of marginal farmers' livelihoods. These vulnerabilities underline the urgent need for institutional frameworks that enable collective risk mitigation, resource mobilisation, and market integration.

1.4 Collective Action and the Institutional Role of Cooperatives

Collective action through cooperative institutions has long been recognised as a foundational mechanism for empowering small and marginal farmers. Cooperatives function as member-owned, democratically governed enterprises that integrate

The **Food and Agriculture Organization (FAO)** defines a *cooperative as an autonomous association of individuals who voluntarily unite to meet their common economic, social, and cultural needs through a jointly owned and democratically controlled enterprise.*

Similarly, the **International Cooperative Alliance (ICA)** characterises *cooperatives as people-centred organisations governed by the principle of one member, one vote, ensuring equity, accountability, and participatory governance.*

This institutional architecture enables cooperatives to operate as vehicles for economic aggregation, risk sharing, and social inclusion. Their resilience during periods of economic stress and market volatility is attributed to principles of shared ownership, democratic participation, and collective responsibility, making them uniquely suited for addressing the systemic challenges faced by marginal farmers.

1.5 Relevance of Cooperatives in Agricultural Policy and Rural Development

Agricultural cooperatives occupy a strategic position in the rural development paradigm by facilitating access to inputs, credit, storage, market linkages, and knowledge systems. They enhance farmers' bargaining power, reduce transaction costs, and improve price realisation through collective marketing and procurement mechanisms. Furthermore, cooperatives contribute to broader development goals including poverty reduction, food security, employment generation, and environmental sustainability.

In the Indian context, the cooperative ecosystem encompasses PACS, dairy cooperatives, Farmer Producer Organisations (FPOs), and various commodity-based and self-organised groups. PACS, forming the foundational tier of the cooperative credit structure, operate at the village level and provide credit, input supply, procurement support, and increasingly diversified services such as storage, processing, and digital facilitation. Their extensive rural outreach positions them as critical institutional interfaces for marginal farmers.

Through aggregation, cooperatives reduce input costs, enhance access to institutional finance, facilitate technology dissemination, enable market integration, and strengthen local governance structures. These functions collectively contribute to the economic empowerment and social inclusion of marginal farmers.

1.6 The Indian Cooperative Ecosystem (An Overview and Global South Benchmark)

India's cooperative ecosystem globally unmatched in scale and density forms the backbone of the rural economy, comprising over **8.2 lakh cooperatives with 29.98 crore members, covering 98% of rural India.** These institutions play a decisive economic role, contributing **31% of national sugar production, 25% of fertilizer production, and managing 35% of fertilizer distribution.** The financial footprint is equally significant, with rural and urban cooperative banks holding deposits of ₹6.53 lakh crore and ₹5.5 lakh crore, respectively. **At the grassroots, PACS, with over 13 crore members, procure 20% of India's paddy and 13% of its wheat, anchoring national food security.**

Hosting over one-fourth of the world's cooperatives, India offers a scalable model for the

Global South, addressing challenges of fragmented landholdings and limited market access. Flagship institutions such as **IFFCO ranked the world's top cooperative by GDP per capita and Amul, the largest dairy cooperative, exemplify "production by the masses" as a viable alternative to purely capitalist models.** India's leadership in South-South cooperation, reflected in the 2025 Action Plan to support cooperative federations in Africa, Central Asia, and the Gulf, positions its ecosystem as a data-driven template for inclusive growth demonstrating how collective action generates 13% of direct employment and integrates marginal farmers into global value chains.

1.7 The Transformative Potential of the Cooperative Sector

India hosts one of the world's most extensive cooperative systems, spanning agriculture, dairy, fisheries, housing, and other sectors. Despite this expansive network, the sector has historically faced challenges related to governance inefficiencies, limited capitalisation, inadequate digital integration, and weak market linkages, particularly at the primary level.

In an era marked by technological transformation, climate stress, and market restructuring, cooperatives are increasingly recognised as strategic instruments for decentralised development, rural entrepreneurship, and inclusive growth. Their potential lies in reinforcing democratic participation, strengthening agricultural value chains, promoting local employment, and enhancing rural resilience.

Policy-driven revitalisation of the cooperative sector has thus become integral to India's broader agricultural reform agenda.

1.8 National Cooperative Policy (2025): An Institutional Reset

The New National Cooperative Policy, introduced in 2025, represents a substantive shift in India's approach to cooperative development. It seeks to modernise, professionalise, and digitally transform cooperatives, positioning them as dynamic institutions aligned with contemporary agricultural and economic realities.

The policy prioritises strengthened governance structures, enhanced transparency, and professional management within primary cooperatives. Digital integration through cooperative registries and unified platforms aims to streamline operations and improve service delivery. Financial empowerment measures focus on expanding affordable credit access, strengthening capital bases, and encouraging innovation in cooperative finance. The policy further emphasises market integration through value addition, improved logistics, and linkages with domestic and international markets while promoting inclusive participation of women, youth, and marginalised communities.

By redefining cooperatives as strategic economic institutions rather than merely service delivery mechanisms, the policy framework seeks to position them as drivers of rural transformation and agricultural competitiveness.

1.9 Policy Pathways for Inclusive Agrarian Transformation

Marginal farmers remain central to India's agricultural sustainability and rural socio-economic stability. Their persistent vulnerabilities, rooted in structural inequalities and institutional exclusion, necessitate sustained and systemic policy intervention. Cooperative institutions, particularly PACS, provide a viable institutional architecture to integrate marginal farmers into formal economic systems, enhance their resilience, and promote inclusive growth.

The New Cooperative Policy (2025) offers a renewed strategic direction by reinforcing governance, technological modernisation, and financial inclusion within the cooperative framework.

Beyond institutional strengthening, the policy explicitly repositions cooperatives as integral actors within India's broader agricultural reform and rural development architecture. It aligns the cooperative sector with national priorities such as doubling farmers' incomes, promoting sustainable agriculture, enhancing food system resilience, and achieving inclusive economic decentralisation. In this sense, cooperatives are no longer viewed as peripheral service mechanisms but as core instruments of state-led development and market facilitation.

A critical dimension of the policy lies in its emphasis on revitalising Primary Agricultural Cooperative Societies as multi-service, commercially viable, and professionally managed institutions. By enabling PACS to diversify beyond traditional credit provision into areas such as input distribution, storage infrastructure, custom hiring centres, processing units, and digital agri-services, the policy seeks to create comprehensive rural service hubs capable of addressing the complex needs of marginal farmers.

Furthermore, the policy promotes institutional convergence between cooperatives and other rural development frameworks, including Farmer Producer Organisations, self-help group federations, agri-startups, and digital governance platforms. This convergence is expected to foster integrated rural value chains, strengthen last-mile service delivery, and enhance the institutional capacity of cooperatives to respond effectively to evolving agricultural and market dynamics.

Taken together, these reforms signify a structural transition of the cooperative sector from a predominantly state-dependent and administratively oriented system to a more autonomous, market-responsive, and farmer-centric institutional model. Such a transition is particularly significant for marginal farmers, for whom strengthened PACS can serve as stable interfaces with formal credit, organised markets, technology ecosystems, and policy support mechanisms. By realigning PACS and other cooperative institutions with contemporary development imperatives, India is creating a transformative pathway where marginal farmers can evolve from subsistence cultivators to empowered participants in structured agrarian markets.

This chapter lays the conceptual and policy foundation for examining marginal farmers' engagement with PACS, setting the stage for deeper analysis of institutional effectiveness, implementation challenges, and strategic recommendations in the subsequent sections of this report.

CHAPTER - 02

Rationale, Objective & Methodology

Primary Agricultural Credit Societies (PACS) and agricultural cooperatives continue to represent the most proximate and institutionalised mechanism through which rural households, particularly small and marginal farmers, access credit, inputs, procurement channels, and increasingly, digital and public services. As the lowest tier of the cooperative structure, PACS occupy a strategic position in shaping farmers' interaction with formal institutions and state-led agricultural interventions. This study situates itself within this context and seeks to examine how marginal farmers engage with PACS, what factors determine their participation, and how these institutions can be strengthened as inclusive rural service hubs.

The study examines cooperative engagement and service delivery experiences across six states Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Tripura, and Uttarakhand with a specific focus on small and marginal farmers' engagement with Primary Agricultural Credit Societies (PACS).

2.1 The Primary Objectives of the Study

The primary aim of this report is to move beyond theoretical benefits and provide a granular, ground-level diagnosis of how well the cooperative ecosystem is currently serving this critical demographic. It aims to deliver:

- **A Detailed Assessment of Engagement:** A rigorous quantitative analysis of marginal farmers' awareness of, participation in, and depth of engagement with Primary Agricultural Cooperative Societies (PACS) and other cooperative structures, identifying where the "last mile" connection is broken.
- **Insights into Governance and Inclusion:** A critical examination of leadership composition and governance systems to determine if they are truly representative. This includes a specific focus on gender participation, identifying the structural barriers that prevent women and marginalised groups from assuming decision-making roles.
- **Evaluation of Economic Impact:** An evidence-based evaluation of the tangible benefits of membership, specifically measuring service access, productivity outcomes, income changes, and overall satisfaction levels among cooperative members versus non-members.
- **Analysis of Digital Readiness:** An assessment of the penetration of digital tools within cooperatives, evaluating the effectiveness of training programs and the actual capacity outcomes, to understand if digitisation is translating into operational efficiency for the farmer.
- **Documentation of Best Practices:** A qualitative repository of successful models derived from Key Informant Interviews (KIIs) and state-specific case studies. This

includes a comparative analysis of operational efficiency between PACS and Farmer-Producer Companies (FPCs) in Bihar, drawing on specific insights from PGPL-supported programmatic interventions under the BSLD Project.

- **Identification of Systemic Gaps:** A diagnostic outline of operational bottlenecks, governance deficits, and resource gaps that currently hinder the cooperative ecosystem from reaching its full potential.
- **Strategic Recommendations:** A set of actionable, policy-relevant recommendations tailored for policymakers, cooperative leaders, civil society, and development partners to re-engineer the cooperative framework for the specific benefit of the marginal farmer.

2.2 Why Focus on Marginal Farmers and PACS

The emphasis on marginal farmers is both intentional and analytically important, as this group represents the most populous yet most vulnerable segment of India's agrarian society. Marginal farmers are defined as those cultivating up to one hectare of agricultural land, whether as owners, tenants, or sharecroppers. Evidence from national-level surveys highlights their overwhelming numerical dominance alongside persistent structural disadvantages. The Situation Assessment Survey (SAS) of Agricultural Households conducted by the National Sample Survey Office (NSSO) under the Ministry of Statistics and Programme Implementation (MoSPI) during the 77th round (2019) reports that 89.4 per cent of agricultural households own less than two hectares of land. Further, the **All-India Agriculture Census 2015–16 indicates that marginal farmers constitute 65.4 per cent of total cultivators, yet their operational holdings account for only 24 per cent of the total cultivable land area.** This disparity results in an average landholding size of merely 0.38 hectares for marginal farmers, a figure that has remained virtually stagnant for the past four decades.

Despite their numerical preponderance, marginal farmers thus control only a limited share of productive land, reinforcing enduring inequalities in access to agricultural resources, credit, technology, and institutional support. Their constrained land base limits economies of scale, reduces investment capacity, and heightens economic vulnerability, underscoring the need for targeted policy and institutional interventions that address their specific structural constraints.

This skewed land distribution has remained largely unchanged for decades and continues to shape the lived realities of marginal cultivators. Their limited land base constrains the ability to achieve economies of scale, invest in quality agricultural inputs, or absorb risks associated with climatic variability, crop failure, and price volatility. Small asset ownership also restricts their eligibility for formal credit, often pushing them towards informal moneylenders and reinforcing cycles of indebtedness and socio-economic insecurity.

Climate change further intensifies these vulnerabilities. Marginal farmers, largely dependent on rain-fed agriculture and limited irrigation, are disproportionately exposed to erratic monsoons, droughts, floods, and temperature extremes. These weather uncertainties directly affect crop productivity, income stability, and food security, making institutional support systems central to their survival and adaptive capacity.

In this context, Primary Agricultural Credit Societies (PACS) emerge as a crucial institutional mechanism. PACS represent the foundational tier of India's cooperative credit system and function as the closest formal interface between marginal farmers and the broader financial and agricultural governance structure. Their village-based presence enables the delivery of essential services such as short-term credit, input distribution (seeds, fertilisers), procurement facilitation, and marketing support functions that mainstream financial institutions or private actors often fail to provide equitably to smallholders.

For marginal farmers, PACS offer potential advantages in accessibility, affordability, and trust. Their proximity reduces transaction costs related to travel, paperwork and procedural complexity, while their cooperative structure fosters local accountability and social embeddedness. As decentralized institutions, PACS also have the capacity to promote savings habits, strengthen community participation, and support livelihood resilience.

Furthermore, contemporary policy directions increasingly position PACS as multi-functional rural service platforms capable of delivering digital banking, insurance facilitation, welfare services, storage infrastructure, and e-governance initiatives. Evaluating how marginal farmers experience and engage with these expanding roles is therefore essential to understanding whether such transformations are truly inclusive and responsive to the needs of the most vulnerable rural populations.

In sum, the dual realities that marginal farmers constitute the majority of cultivators yet remain structurally disadvantaged, and that PACS represent their most accessible formal institutional channel, together provide a compelling rationale for centring this study on marginal farmer–PACS engagement.

2.3 Methodology

The study adopts a mixed-method research design integrating both quantitative and qualitative approaches to generate a comprehensive understanding of marginal farmers' engagement with Primary Agricultural Credit Societies (PACS). The quantitative component consists of a large-scale **telephonic survey covering 1,951 marginal farmer households across six selected states, along with an additional 100 samples from Bihar for a dedicated special chapter.**

Complementing this, the qualitative component includes in-depth interviews with approximately key stakeholders, including members of the Boards of Directors of PACS, representatives from Farmer Producer Organisations (FPOs) and Federations (FFPOs), and other functionaries within the cooperative ecosystem. This mixed-method approach facilitates both statistical generalisation and contextual interpretation, enabling the study to capture patterns of engagement alongside the experiential and institutional dimensions shaping cooperative participation.

To ensure representativeness, robustness, and policy relevance, a triangulated sampling framework was adopted. The sample selection process drew upon three critical data sources:

(a) the DIU database on marginal farmers,

(b) state-wise penetration data on FPOs and PACS from the Mission Antyodaya Survey 2022–23, and

(c) the National Cooperative Database.

The convergence of these datasets enabled the identification of regions with varying degrees of cooperative presence, institutional outreach, and marginal farmer concentration, thereby strengthening the analytical validity of the sample design.

Quantitative data collection was undertaken through a structured questionnaire administered via telephonic interviews. The survey instrument captured multiple dimensions, including awareness and understanding of PACS, membership status, frequency and nature of engagement, access to credit and allied services, digital readiness, constraints in service utilisation, and overall satisfaction with cooperative support. The telephonic mode allowed for extensive geographic coverage while maintaining operational efficiency, standardisation, and data consistency. Concurrently, qualitative interviews generated deeper insights into governance practices, financial management systems, leadership dynamics, institutional challenges, and diversification strategies pursued by PACS and affiliated cooperative bodies.

Data validation constituted a central methodological pillar. The survey tool was pilot-tested to improve clarity, sequencing, and relevance of questions. Continuous supervision of field processes, random verification callbacks, and logical consistency checks were conducted to enhance data reliability and minimise response bias. Quantitative data were analysed using descriptive and inferential statistical techniques, while qualitative data were thematically coded to identify patterns, institutional gaps, and emergent insights. The integration of both data streams enabled triangulation of findings and enhanced the credibility and policy utility of the study's conclusions.

2.4 Rationale for the selected six states

States were selected to reflect regional diversity, agro-climatic variation, and differing trajectories of cooperative development, covering the Indo-Gangetic plains, Himalayan mid-hills, peninsular plateau, and the northeastern region. Within each state, districts and villages were selected through a stratified sampling approach to capture heterogeneity in accessibility, institutional density, and farming systems. Respondents were systematically screened to ensure conformity with the marginal farmer category, with deliberate efforts made to ensure diversity across gender, livelihood profiles, cropping patterns, and levels of cooperative engagement. This selection allows the study to cover five distinct geo-economic zones (North, South, East, West, and North-East) and analyze the cooperative sector across three critical dimensions: Institutional Maturity, Sectoral Dominance, and Reform Trajectory.

1. Andhra Pradesh: The "Digital & Gender-Inclusive" Model

Rationale: Andhra Pradesh is selected to represent the Southern Zone and serves as a case study for technological integration and women-led development.

Evidence from IYC Action Plan: The state is pioneering a massive "Membership and Aadhaar Seeding Campaign" and is launching the "Women's Cooperative Scheme". It leads in the PACS sector with over 2,048 institutions and 54.64 lakh members, focusing on computerization.

External Credibility: Government data confirms Andhra Pradesh as a top recipient of central funds for PACS computerization, making it the ideal testbed to study the impact of digitization on transparency.



2. Bihar: The "Scale & Procurement" Model

Rationale: Bihar represents the Eastern Zone and provides a critical insight into mass-scale mobilization and the role of cooperatives in food security.

Evidence from IYC Action Plan: With a massive membership base of 1.61 crore (the second largest in this list), Bihar is focusing on "Financial Literacy Camps" and "State-level Summits for Youth and Women" to deepen engagement.

External Credibility: Unlike other states, PACS in Bihar are the primary agencies for wheat and paddy procurement at Minimum Support Prices (MSP), making them essential for studying the link between cooperatives and farmer income security.



3. Maharashtra: The "Diversified Powerhouse" Model

Rationale: Maharashtra represents the Western Zone and is the benchmark for cooperative maturity. It allows the study to focus on "second-generation" challenges like urban housing and export-oriented processing.

Evidence from IYC Action Plan: It has the highest number of societies (2.23 lakh) and members (8 crore). The state's action plan focuses on complex issues like "Redevelopment of Cooperative Housing Societies" and "Digital Banking/Cybersecurity," reflecting its advanced status.

External Credibility: Maharashtra is globally recognised for its sugar cooperatives, which are now diversifying into ethanol and green energy production. Including Maharashtra ensures the study captures the "industrial" scale of Indian cooperatives.



4. Himachal Pradesh: The "Hill Economy & Horticulture" Model

Rationale: Himachal Pradesh represents the Northern Hill Zone, offering insights into how cooperatives function in difficult terrains where private players are often absent.

Evidence from IYC Action Plan: The state is organising "Regional Cooperative Conferences" in specific divisions (Kangra, Shimla, Mandi) and focusing on "Organic Farming" training, catering to its niche agricultural output.

External Credibility: Comparative studies highlight Himachal's superior performance in fruit cultivation productivity compared to other hill states, driven largely by cooperative marketing of apples and other horticulture products.

5. Tripura: The "North-East Frontier" Model

Rationale: Tripura represents the North-Eastern Zone and highlights the role of cooperatives in developmental frontiers with tribal populations.

Evidence from IYC Action Plan: The state has a unique dominance in the Multipurpose sector (604 institutions). Its plan includes specific "Fish Festivals" and "Exposure Visits" to modernise its 3,155 institutions.

External Credibility: Union government data shows Tripura is a priority focus for funding under the PACS computerisation scheme for the North-East, making it a key site to evaluate the "Look East" cooperative push.



6. Uttarakhand: The "Agri-Tourism & Youth" Model

Rationale: Uttarakhand provides a comparative counter-point to Himachal Pradesh in the Northern Hill Zone, with a stronger focus on Dairy and Tourism integration.

Evidence from IYC Action Plan: The state leads in the dairy sector (2,815 institutions). Uniquely, its action plan emphasises "Youth Cooperative Leadership" and "Run for Cooperatives" marathons, positioning it as a hub for next-gen cooperative engagement.

External Credibility: External reports indicate Uttarakhand has a higher percentage of net irrigated area than Himachal, allowing for different cooperative interventions in sugarcane and diverse crops, providing a necessary contrast in the hill-state analysis.



2.5 Limitations

Despite its comprehensive design and multi-state coverage, the study is subject to certain methodological and contextual limitations that should be considered while interpreting its findings.

- **Non-pan-India Representation:** The study covers six strategically selected states to reflect regional and institutional diversity; however, the findings should not be assumed to represent the situation of all states and Union Territories. Conclusions therefore remain indicative rather than nationally generalisable.
- **Reliance on Self-Reported Data:** Several indicators, including income levels, productivity, service utilisation and satisfaction, are based on farmer self-reporting. In the absence of complete verifiable records, responses may be influenced by recall bias or subjective perception.
- **Heterogeneity of Cooperative Ecosystems:** Significant variations exist across states in terms of the operational capacity, governance quality, financial health and service diversification of PACS. Consequently, inter-state comparisons should be interpreted cautiously, as differences may reflect structural disparities rather than performance alone.
- **Telephonic Survey Constraints:** The use of telephonic interviews, while ensuring wide geographic reach and operational efficiency, may have limited in-depth probing in certain cases, particularly where respondents faced connectivity challenges or low communication literacy.
- **Dynamic Policy and Institutional Context:** Ongoing reforms in the cooperative and agricultural sectors may influence PACS functioning and farmer engagement patterns, which may not be fully captured within the temporal scope of this study.



CHAPTER - 03

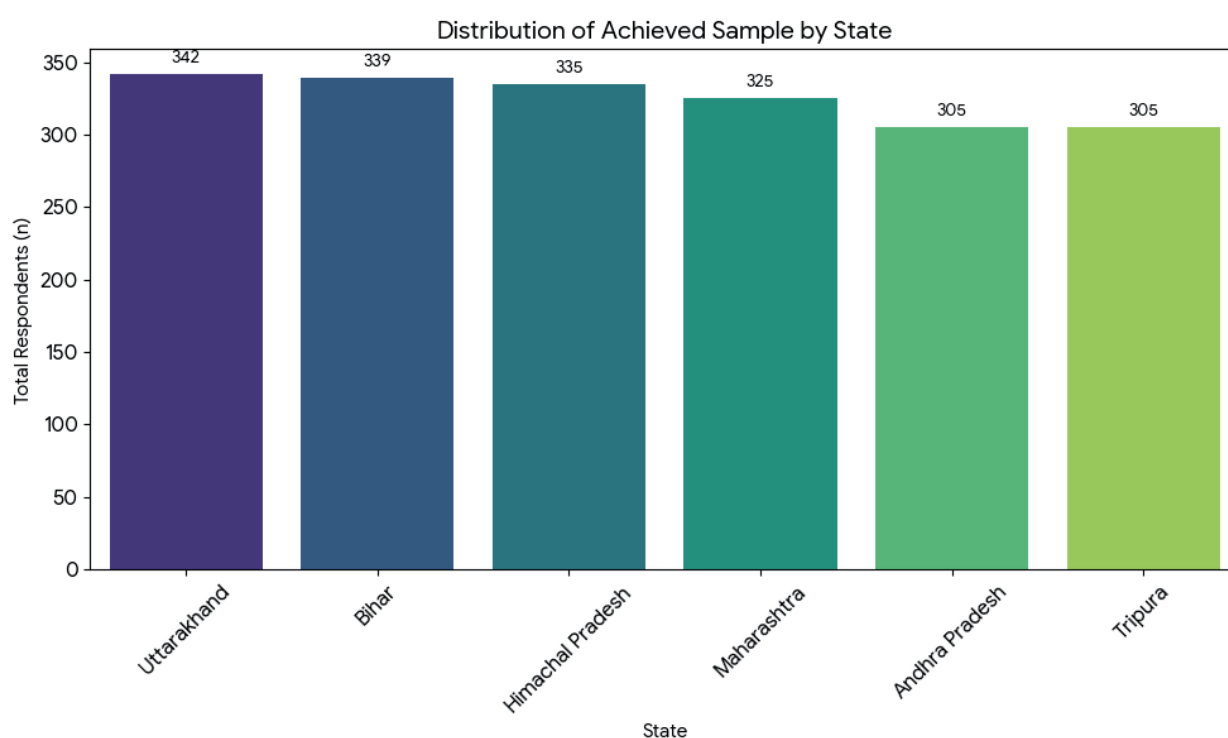
Respondent Profile of Marginal Farmers

3.1 Introduction

Understanding the demographic and livelihood profile of marginal farmers is essential for contextualizing their engagement with Primary Agricultural Credit Societies (PACS) and other cooperative structures. This section analyses the survey data from 1,951 respondents across six Indian states, viz Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Tripura, and Uttarakhand, to outline key socio-economic characteristics such as gender composition, livelihood diversification, landholding patterns, crop profiles, and institutional participation. The descriptive interpretation draws upon both empirical findings and existing scholarship on rural livelihoods and agrarian institutions (NABARD, 2022; Government of India, 2021; NITI Aayog, 2023).

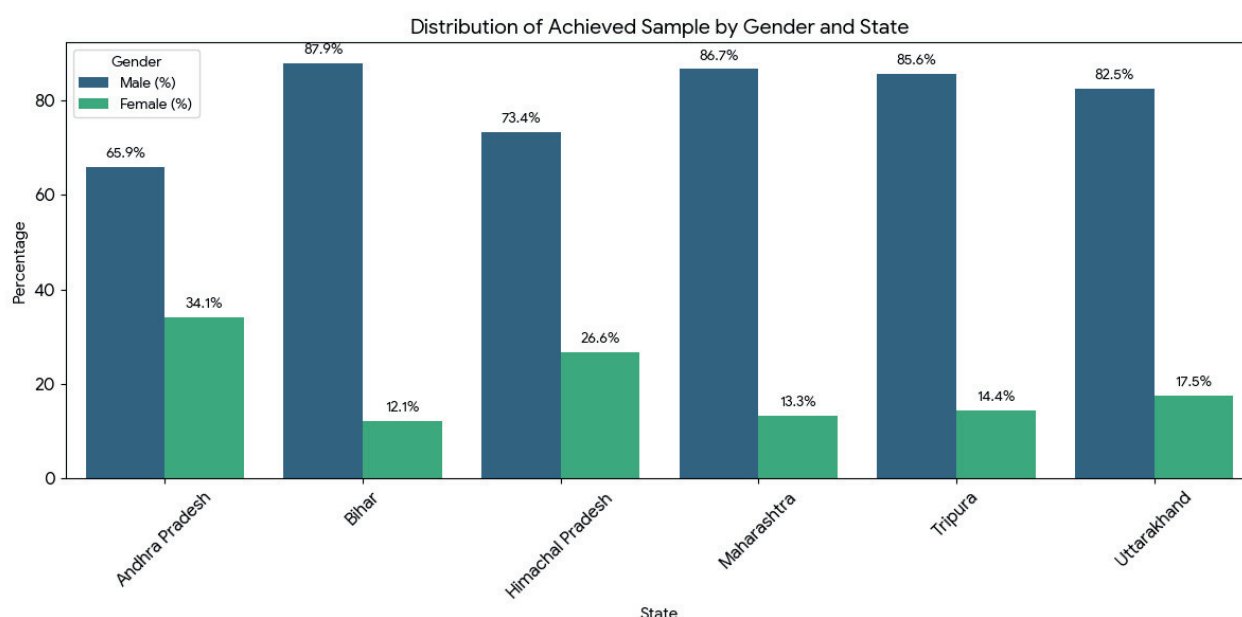
3.2 State Distribution of Respondents

The survey covered a total of 1,951 respondents distributed almost evenly across the six selected states, ensuring both geographic and agro-ecological representation. Bihar (17.4%) and Uttarakhand (17.5%) recorded the highest share of respondents, followed closely by Himachal Pradesh (17.2%) and Maharashtra (16.7%). Tripura and Andhra Pradesh each contributed 15.6% of the sample. This spread captures diversity across the Indo-Gangetic plains, Himalayan mid-hills, and the northeastern region, each with distinct cooperative and agrarian trajectories.



3.3 Gender Composition

Gender disparities in agricultural participation remain a consistent feature of India's rural economy. Across the study states, males constituted approximately four-fifths (80%) of all respondents. Bihar (87.9%), Maharashtra (86.7%), and Tripura (85.6 %) exhibited particularly male-dominated samples, while Andhra Pradesh showed a relatively balanced pattern (65.9% male, 34.1% female). This distribution reflects broader national patterns wherein women's roles in agriculture are often under-recognized despite significant contributions as cultivators and labourers (FAO, 2020; Mehta & Sarma, 2022).



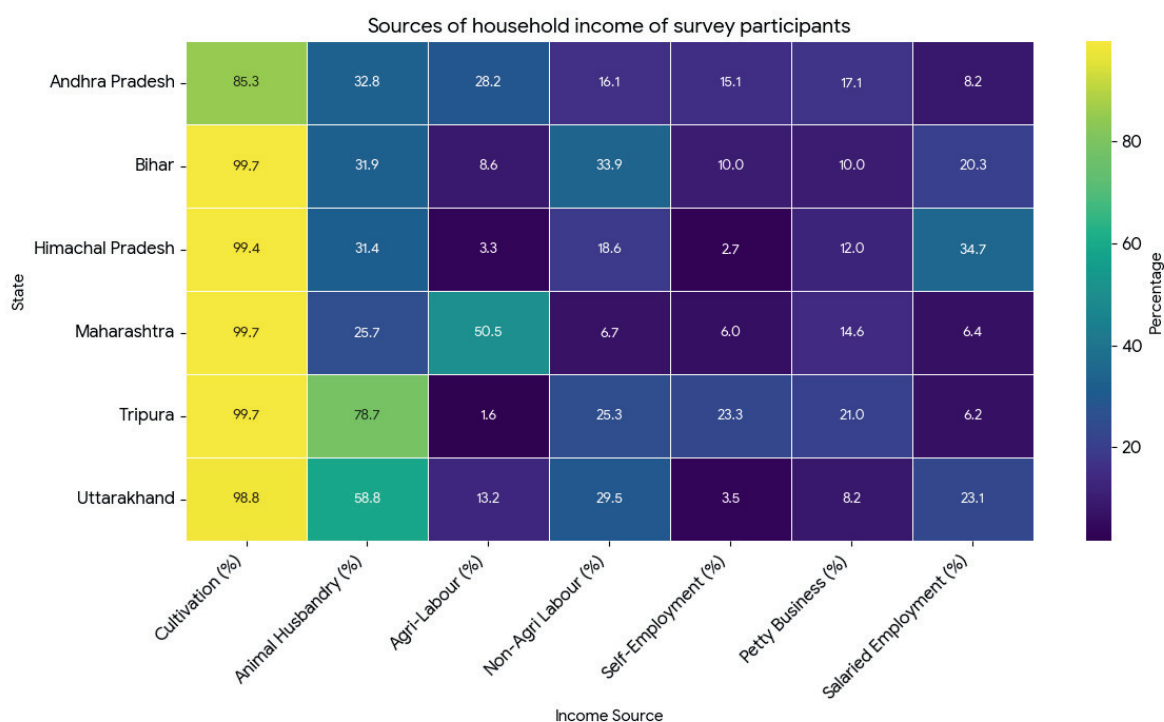
3.4 Sources of Household Income

Cultivation remains the backbone of livelihood portfolios across all states. More than 95% of households report farming as a primary source of income, followed by animal husbandry (32% on average) and non-agricultural wage labour (around 22 %). Tripura shows notably high level of engagement in animal husbandry (78.7 %), while Maharashtra exhibits the highest reliance on agricultural wage work (50.5 %). This aligns with national findings on livelihood diversification among smallholders seeking income stability amid agrarian distress (Chand et al., 2019; NSSO, 2022).



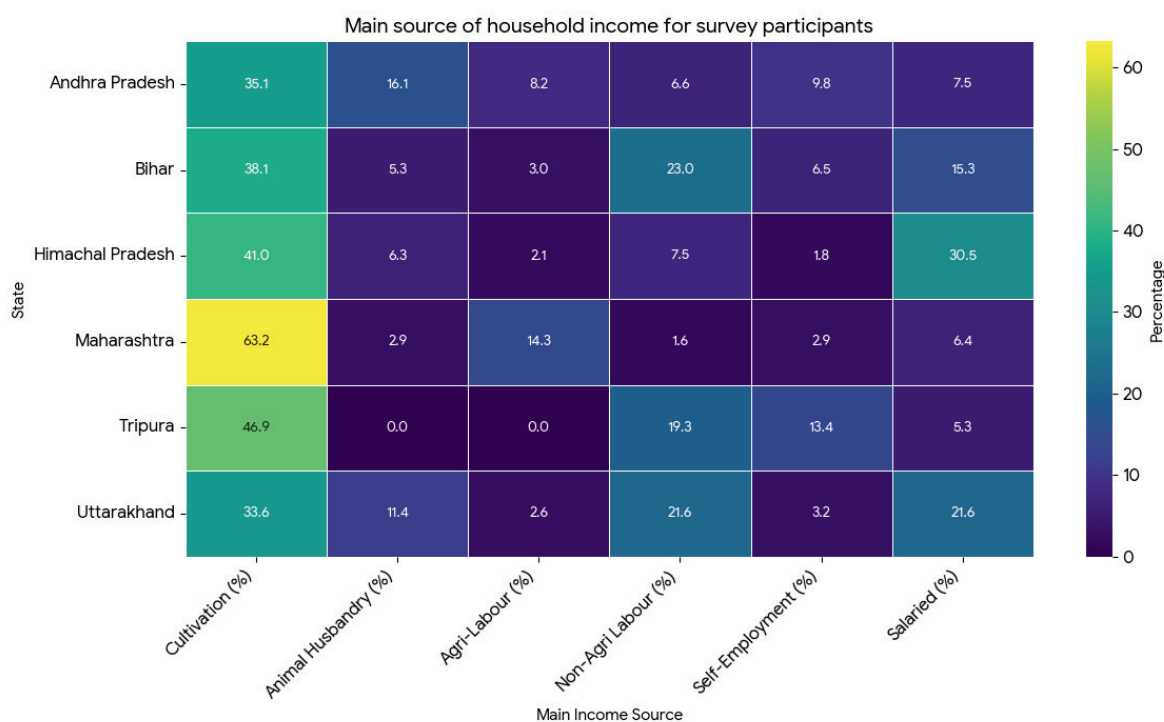
Table I : Sources of household income of survey participants

State	Cultivation (%)	Animal Husbandry (%)	Agri-Labour (%)	Non-Agri Labour (%)	Self-Employment (%)	Petty Business (%)	Salaried Employment (%)	Total Respondents (n)
Andhra Pradesh	85.3	32.8	28.2	16.1	15.1	17.1	8.2	305
Bihar	99.7	31.9	8.6	33.9	10	10	20.3	339
Himachal Pradesh	99.4	31.4	3.3	18.6	2.7	12	34.7	334
Maharashtra	99.7	25.7	50.5	6.7	6	14.6	6.4	315
Tripura	99.7	78.7	1.6	25.3	23.3	21	6.2	305
Uttarakhand	98.8	58.8	13.2	29.5	3.5	8.2	23.1	342



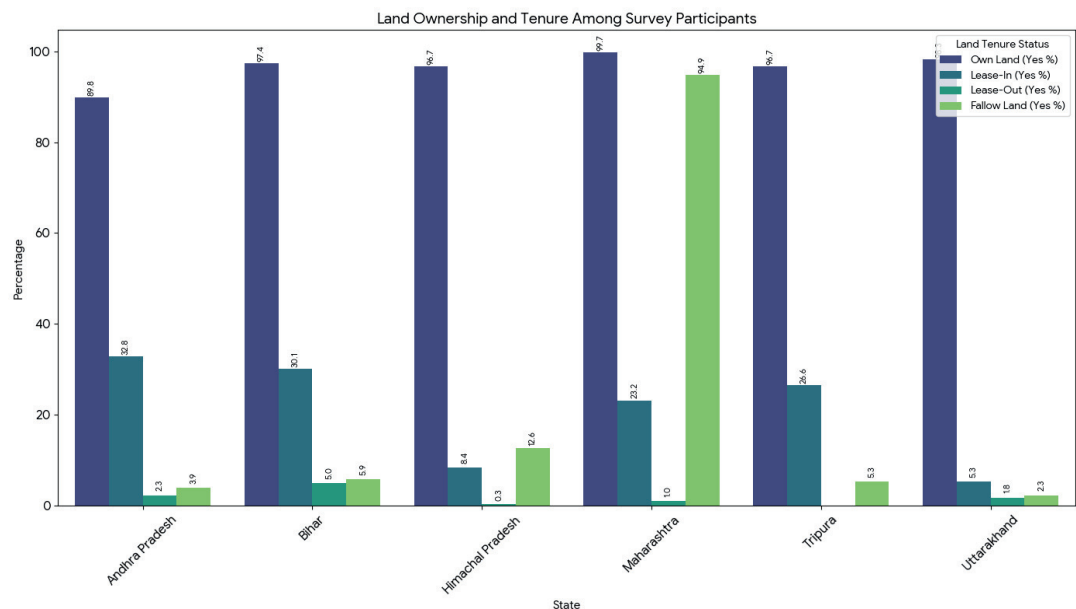
3.5 Highest-Earning Occupation

Across most states, crop cultivation emerges as the dominant income source, representing over one-third of primary earnings in all regions except Himachal Pradesh, where salaried work accounts for nearly 31 % of households. This indicates structural diversification toward non-farm employment in hilly regions, consistent with earlier observations by the Institute for Rural Management Anand (IRMA, 2021) on occupational shifts among smallholders.



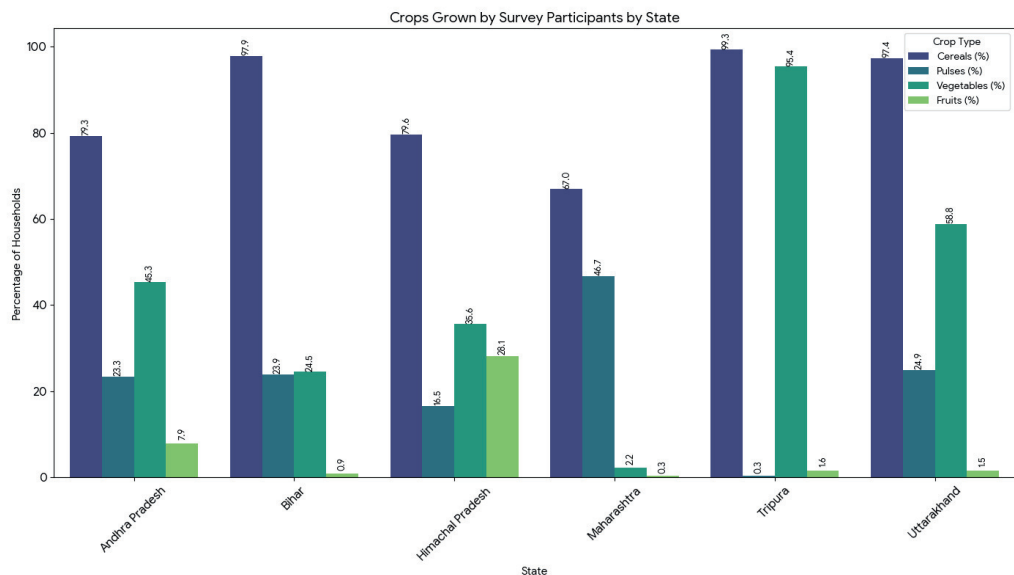
3.6 Land Ownership and Tenure

Land ownership is widespread, with 96% of households reporting owned land. Leasing-in practices are significant in Andhra Pradesh (32.8%) and Bihar (30.1%), suggesting tenancy as a coping strategy for land-poor farmers. Leasing-out is negligible (below 2%), aligning with prior evidence that marginal farmers rarely disengage from cultivation due to livelihood dependence on land (ICRIER, 2022).



3.7 Crop Profiles

Cereal cultivation dominates across all states, reported by nearly 87% of farmers. Vegetables are grown by 43%, especially in Uttarakhand (58.8%) and Tripura (95.4%), while pulses remain significant in Bihar and Himachal Pradesh. Maharashtra stands out for oilseed cultivation (9.8%) and diversified crop portfolios. This reflects both agro-climatic diversity and evolving market-orientation trends among smallholders (DAC&FW, 2023).



3.6 Land Ownership and Tenure

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Table II : Land ownership and tenure among survey participant

State	Own Land (Yes %)	Lease-In (Yes %)	Lease-Out (Yes %)	Fallow Land (Yes %)	Total Respondents (n)
Andhra Pradesh	89.8	32.8	2.3	3.9	305
Bihar	97.4	30.1	5	5.9	339
Himachal Pradesh	96.7	8.4	0.3	12.6	334
Maharashtra	99.7	23.2	1	94.9	315
Tripura	96.7	26.6	0	5.3	305
Uttarakhand	98.3	5.3	1.8	2.3	342

3.7 Crop Profiles

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Table III : Crops grown by survey participants

State	Cereals (%)	Pulses (%)	Vegetables (%)	Fruits (%)	Total Respondents (n)
Andhra Pradesh	79.3	23.3	45.3	7.9	305
Bihar	97.9	23.9	24.5	0.9	339
Himachal Pradesh	79.6	16.5	35.6	28.1	334
Maharashtra	67	46.7	2.2	0.3	315
Tripura	99.3	0.3	95.4	1.6	305
Uttarakhand	97.4	24.9	58.8	1.5	342

3.8 Membership in Community-Based Organisations

Membership patterns show strong participation in Self-Help Groups (SHGs), particularly in Tripura (77.7 %), Maharashtra (58.7 %), and Andhra Pradesh (58.7 %). However, membership in PACS remains modest, averaging 6–8 %. The relatively lower cooperative engagement in Bihar and Himachal Pradesh may indicate limited awareness or perceived benefits, echoing recent findings by NABARD (2023) on uneven cooperative penetration across India.

Table IV : Membership in CBOs

State	SHG (%)	JLG (%)	Farmer Club (%)	Panchayat (%)	PAC (%)	FPO (%)	Credit Coop (%)	None (%)	Total Respondents (n)
Andhra Pradesh	58.7	21.6	31.5	25.6	21.6	3.9	2.3	6.9	305
Bihar	46	1.8	1.5	3	4.1	1.8	0.3	45.1	339
Himachal Pradesh	23.1	0	0.3	5.4	6.3	8.1	0.3	65.9	334
Maharashtra	58.7	0	0	2.2	0.3	0.3	33.7	32.4	315
Tripura	77.7	0	0	2.3	0.7	0.3	0.3	21.6	305
Uttarakhand	47.7	0.3	7.9	11.1	3.2	4.4	5.9	47.9	342



3.9 Capacity Building through Farmers' Field Schools

Participation in Farmers' Field Schools (FFS) remains limited, averaging 17.6 %. Andhra Pradesh (51.2 %) and Uttarakhand (23.7 %) lead in exposure to FFS training, reflecting stronger extension networks. Capacity-building activities primarily focused on climate-smart agriculture and marketing skills, demonstrating alignment with national training priorities under ATMA and Krishi Vigyan Kendra programs (MoA&FW, 2023).

Table V: Exposure to Farmers' Field Schools

State	FFS Participation (%)	Climate-Smart Agri (%)	Post-Harvest Handling (%)	Marketing & Business Skills (%)	Total Respondents (n)
Andhra Pradesh	51.2	55.8	41	32.7	305
Bihar	4.7	87.5	43.8	31.3	339
Himachal Pradesh	9	50	30	70	334
Maharashtra	18.1	80.7	49.1	1.8	315
Tripura	0.7	50	50	50	305
Uttarakhand	23.7	88.9	19.8	74.1	342

3.10 Summary

Overall, the respondent profile underscores the persistence of smallholder agriculture as the primary livelihood for marginal farmers, complemented by gradual diversification into non-farm work and salaried employment in select states. Land ownership remains nearly universal, though tenancy and leasing-in practices indicate structural constraints in land distribution. The low levels of institutional participation, particularly in PACS and FPOs, highlight the need for targeted cooperative strengthening and capacity-building programs tailored to marginal producers.



CHAPTER - 04

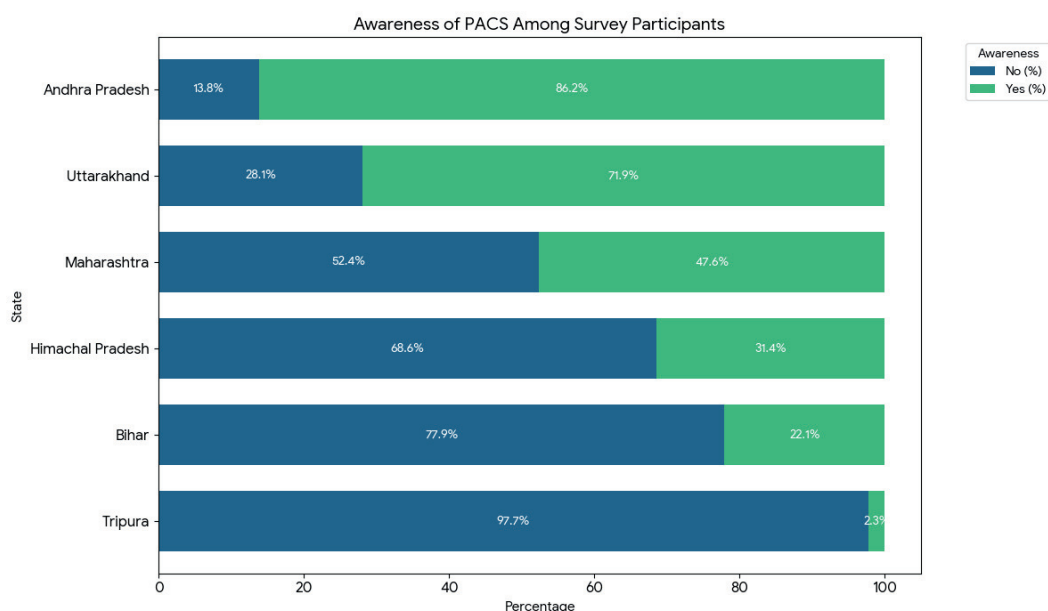
Farmers' Awareness and Engagement with PACS

4.1 Introduction

Understanding farmers' awareness of Primary Agricultural Credit Societies (PACS) and the channels through which they learn about cooperative services is critical for designing outreach and strengthening institutional linkages. This chapter presents descriptive findings from **1,940 respondents across six Indian states** viz. Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Tripura, and Uttarakhand, on three survey modules: (a) awareness of PACS, (b) how farmers first learned about PACS, and (c) awareness of specific services provided by PACS. The interpretation draws on the empirical data collected and situates key patterns relevant to cooperative outreach and service design (NABARD, 2022; Government of India, 2021).

4.2 Awareness of PACS

This section reports the percentage of respondents in each state who indicated whether they were aware of primary agricultural cooperative societies (PACS) operating in their area. The figures below show the state-wise proportion of respondents responding negatively or affirmatively.



Awareness levels show marked state-wise variation.

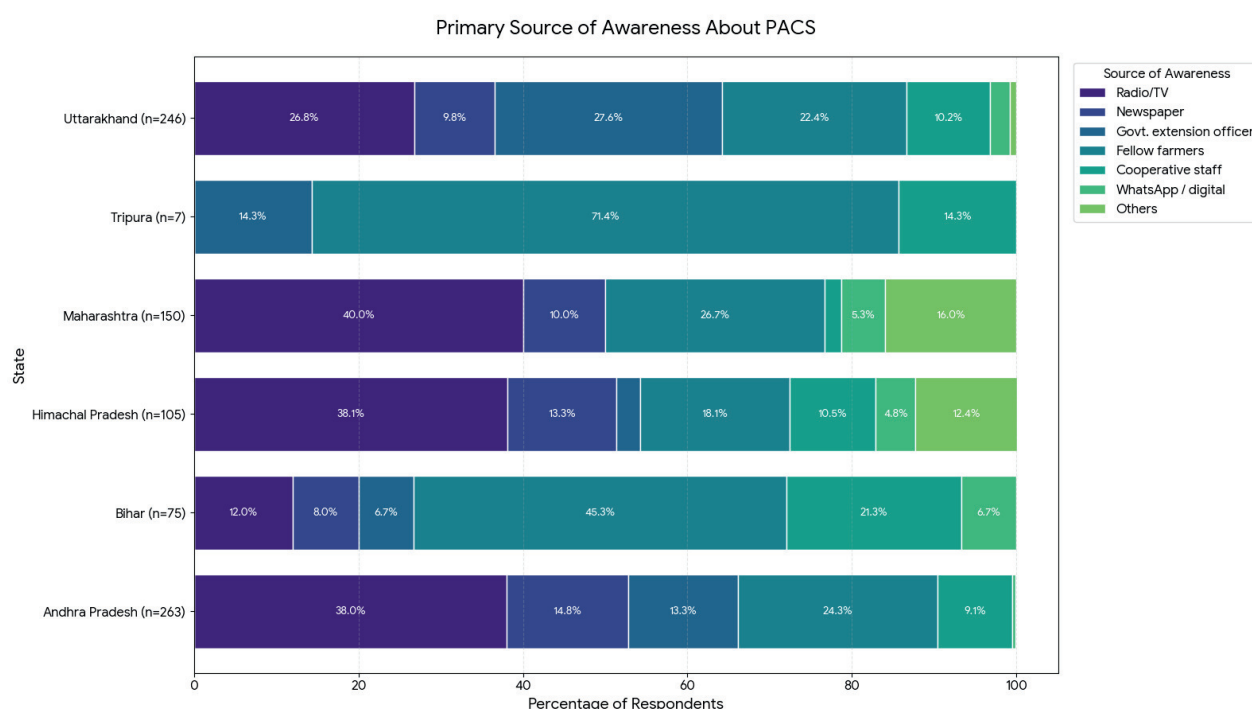
- Andhra Pradesh and Uttarakhand record the highest levels of awareness, reflecting strong cooperative penetration and integration with broader agricultural support systems. The prominence of Rythu Bharosa Kendras and cooperative marketing federations likely contribute to regular farmer interaction.

- Maharashtra displays moderate awareness, consistent with the state's long-standing cooperative traditions, particularly in dairy and sugarcane, but with uneven visibility among marginal farmers outside established crop sectors.
- Bihar, Himachal Pradesh, and Tripura show very low awareness. In these states, cooperatives are either organisationally weak, limited in service coverage, or less embedded in rural advisory networks. Awareness gaps are often compounded by limited field-level outreach and fewer downstream service centers.

The distribution suggests that institutional maturity and visibility, rather than simply the presence of PACS, determine awareness among smallholders.

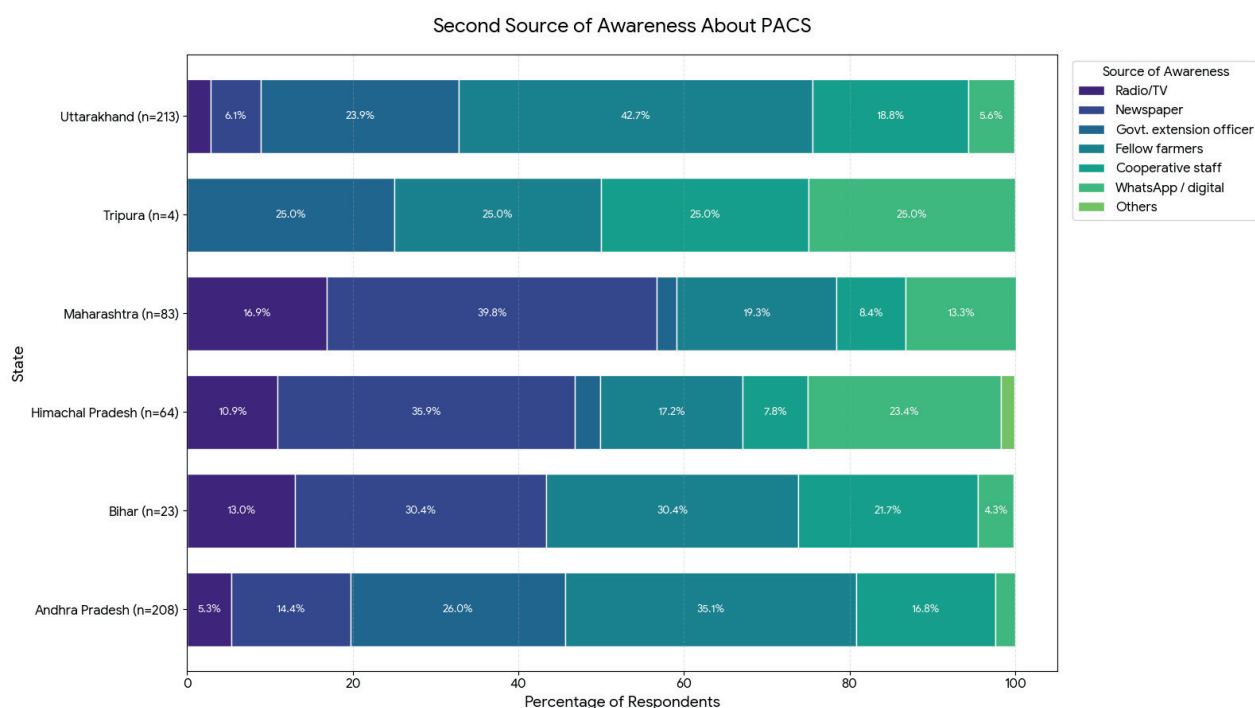
4.3 Sources of Information on PACS

Respondents who reported awareness of PACS (**n = 846**) were asked how they first learned about PACS. The question allowed up to three responses.

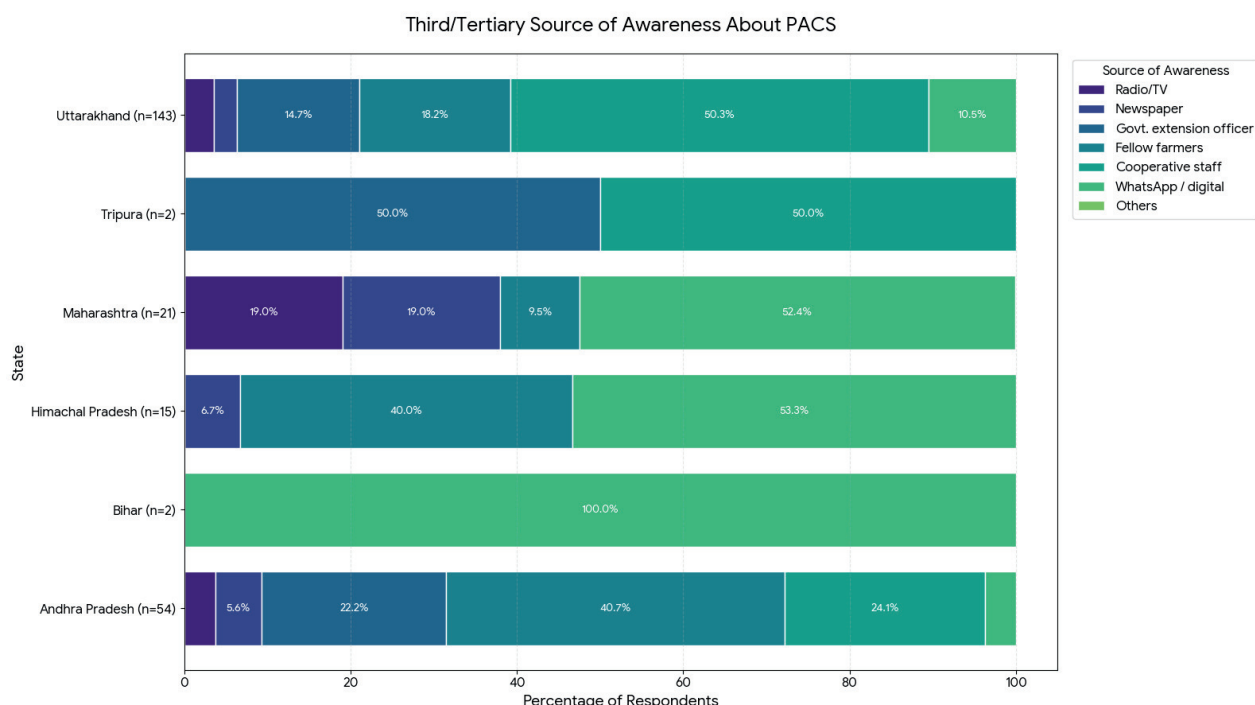


Traditional mass media (radio/TV) and peer networks (fellow farmers) emerge as leading primary channels across multiple states. Andhra Pradesh, Maharashtra, Himachal Pradesh and Uttarakhand show particularly strong radio/TV presence as a primary source. Bihar and Tripura demonstrate stronger peer-to-peer diffusion (fellow farmers). Government extension officers and cooperative staff are important in Uttarakhand and select pockets of Andhra Pradesh, but overall institutional outreach as a primary source is limited.

When considering secondary channels, fellow farmers and newspapers appear more frequently, while government extension officers and cooperative staff also surface as secondary sources in Andhra Pradesh and Uttarakhand. Digital channels (WhatsApp) register a stronger role in Himachal Pradesh and Maharashtra for secondary exposure, indicating that digital media act more as reinforcing channels than primary ones.

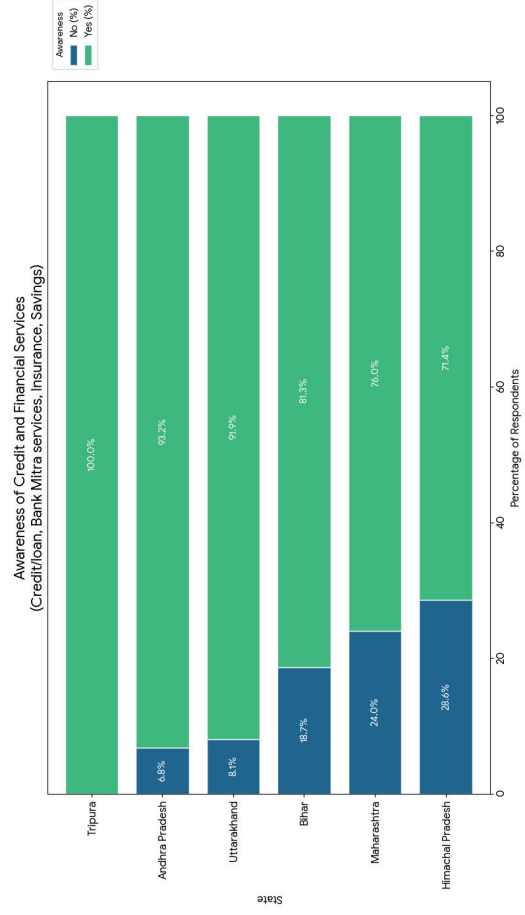


Tertiary exposures show an increasing role for cooperative staff (notably in Uttarakhand) and WhatsApp/digital media (Himachal Pradesh, Maharashtra) as reinforcing channels. This pattern suggests a layered awareness process: mass media and peers often generate initial awareness, while cooperative personnel and digital platforms consolidate that knowledge through follow-up interactions.

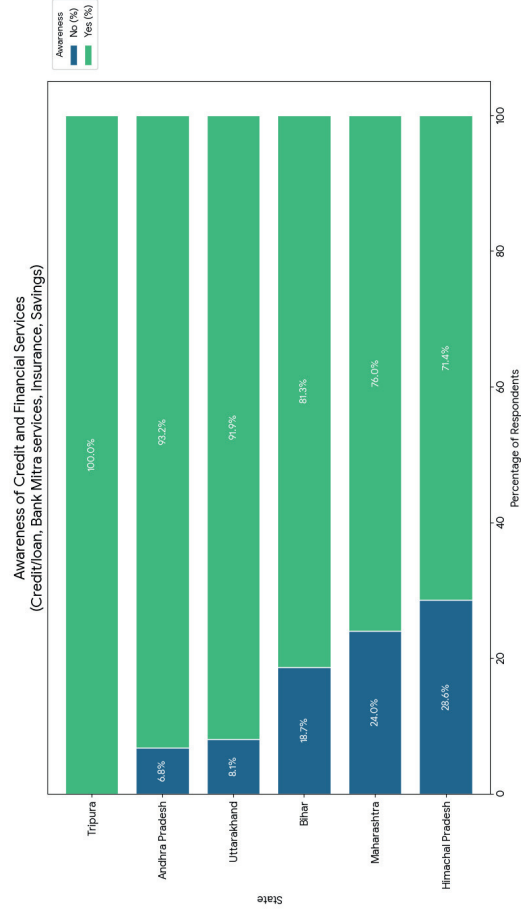


4.4 Awareness of Services Provided by PACS

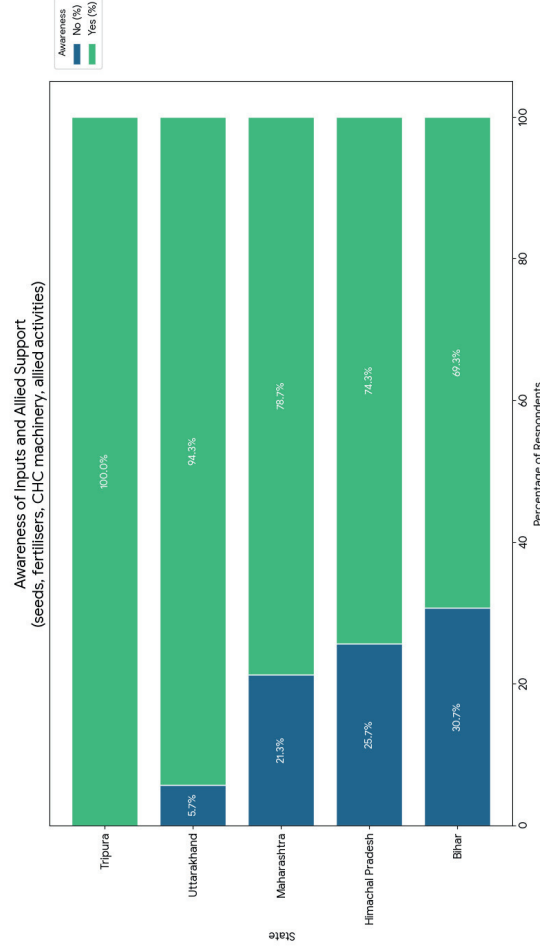
Respondents who were aware of PACS (state-level totals shown) were asked whether they knew PACS provided specific service categories. The tables show state-wise percentages of different responses



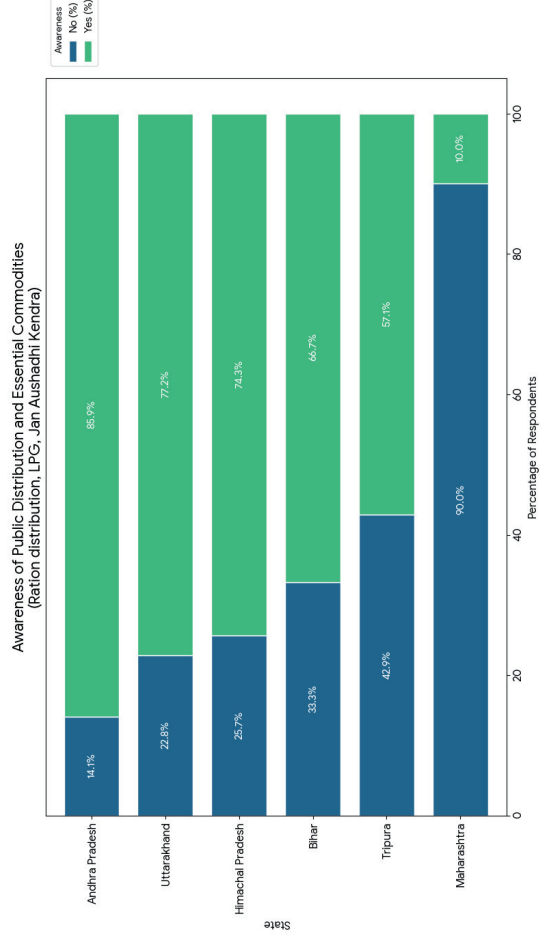
Awareness that **PACS provide financial services is high across most states, exceeding 70% in five states**. This aligns with PACS' traditional role as credit institutions.



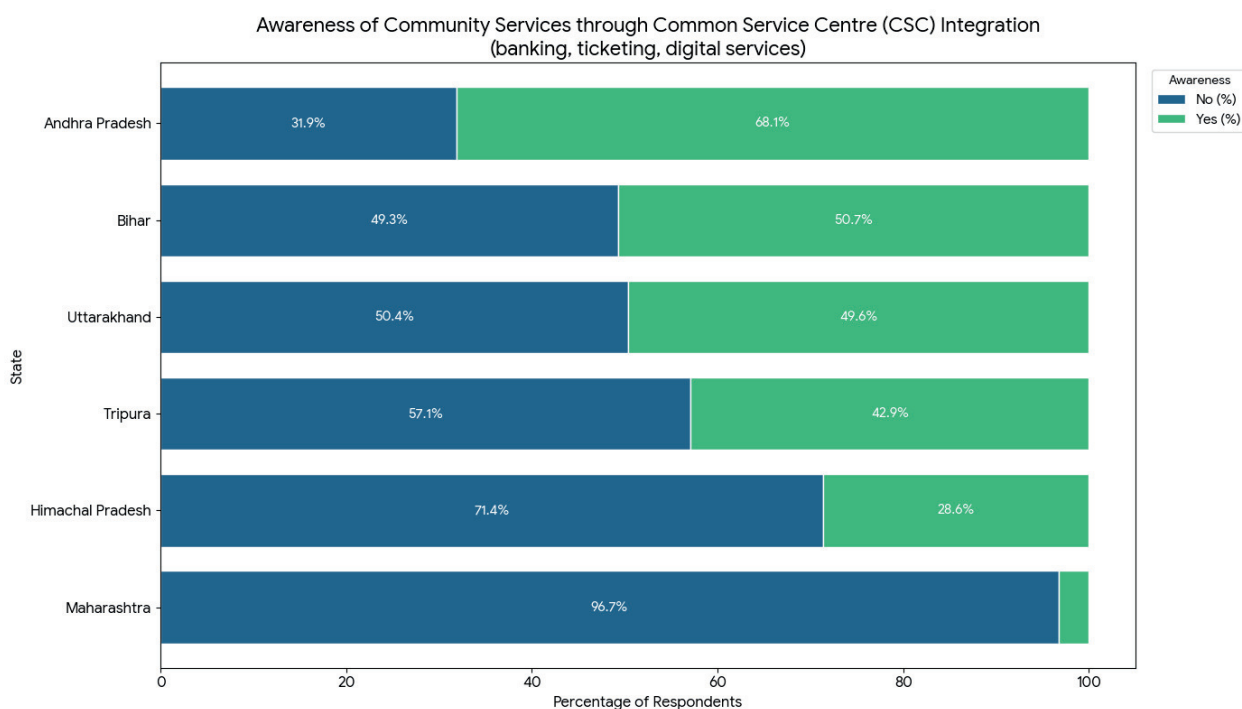
A majority recognise PACS' role in procurement and marketing, though recognition is lower than for credit/inputs in some states. Uttarakhand and Andhra Pradesh again show higher familiarity with these value-chain functions.



A large share of aware respondents associate PACS with input supply and allied services; awareness is particularly high in Andhra Pradesh, Uttarakhand and Maharashtra.



A majority recognise PACS' roles in PDS and distribution of essential commodities in Andhra Pradesh, Uttarakhand, Bihar, and Himachal Pradesh, while Maharashtra reports low awareness of PACS acting in this capacity.



Common Service Centres (CSCs) are village-level digital access points that provide government services, banking, payments, and information support to rural communities. Operated by local entrepreneurs, they help reduce travel burdens, improve service access, and promote digital inclusion at the last mile. Awareness of PACS offering CSC-type community/digital services is mixed and considerably lower than for credit or input services. Maharashtra and Himachal Pradesh show particularly low recognition of CSC integration. This highlights scope for expanding PACS visibility as providers of non-agricultural digital and community services.

A majority recognise PACS' roles in PDS and distribution of essential commodities in Andhra Pradesh, Uttarakhand, Bihar, and Himachal Pradesh, while Maharashtra reports low awareness of PACS acting in this capacity.

1. Andhra Pradesh

- Andhra Pradesh has actively converted PACS into multi-service centres, enabling them to manage Fair Price Shops (FPS) in several districts.
- Many PACS are already involved in paddy procurement under the Rythu Bharosa Kendram system, and this infrastructure is being leveraged to distribute PDS grains to eligible ration card holders.
- Pilot initiatives in Chittoor and Guntur districts show PACS integrating fertilizer supply, credit, and ration distribution at the same premises.

2. Bihar

- Bihar has empowered PACS to act as PDS ration dealers in several blocks, especially where private dealers were absent or non-compliant.
- Under Bihar Cooperative Societies Rules, district administrations have assigned FPS operations to PACS

3. Uttarakhand

- In hilly districts like Pauri, Chamoli and Uttarkashi, PACS operate multi-commodity distribution centers, combining:
 - o Fair Price Shops (ration)
 - o Seed and fertilizer supply
 - o Jan-Aushadhi medicine counters, in partnership with district health societies
- This is particularly impactful in mountain regions, where distance to markets is a longstanding barrier.

4. Himachal Pradesh

- Several PACS in Kangra and Mandi districts operate Fair Price Shops and supply essential commodities to fruit-growing households, especially during off-season when income is low.
- The state cooperative federation supports PACS to run Jan Aushadhi pharmacy counters where private pharmaceutical shops are limited

4.5 *Summary and Key Insights*

- 1 Large state-level variation in basic awareness.** Awareness of PACS is high in Andhra Pradesh (86.2%) and Uttarakhand (71.9%), moderate in Maharashtra (47.6%), and very low in Bihar (22.1%), Himachal Pradesh (31.4%) and Tripura (2.3%). These patterns indicate uneven cooperative visibility and outreach across regions.
- 2 Traditional and interpersonal channels dominate initial awareness.** Primary sources show radio/TV and fellow farmers as the most frequently cited first channels. Government extension officers and cooperative staff play a supporting but uneven role across states.
- 3 Layered information pathways.** Secondary and tertiary sources indicate that newspapers, extension staff, cooperative personnel and digital platforms act as reinforcement channels. Cooperative staff and WhatsApp/digital media are more prominent in later exposures.
- 4 Core service awareness is strong for financial and input-linked services.** A high proportion of aware respondents associate PACS with credit inputs, and procurement/marketing. By contrast, awareness of PACS as CSC/community-digital service providers and as PDS/essential commodity outlets is more variable.
- 5 Programmatic implications.** Strengthening PACS visibility in low-awareness states (Bihar, Tripura, Himachal Pradesh) requires a combination of: (a) broadcast and community-level campaigns (radio/TV + peer learning), (b) concerted extension and cooperative staff engagement, and (c) selective use of digital tools to reinforce messages after initial exposure. Promoting diversified PACS roles (CSC services, PDS linkages) could enhance their relevance to smallholders beyond finance and inputs.

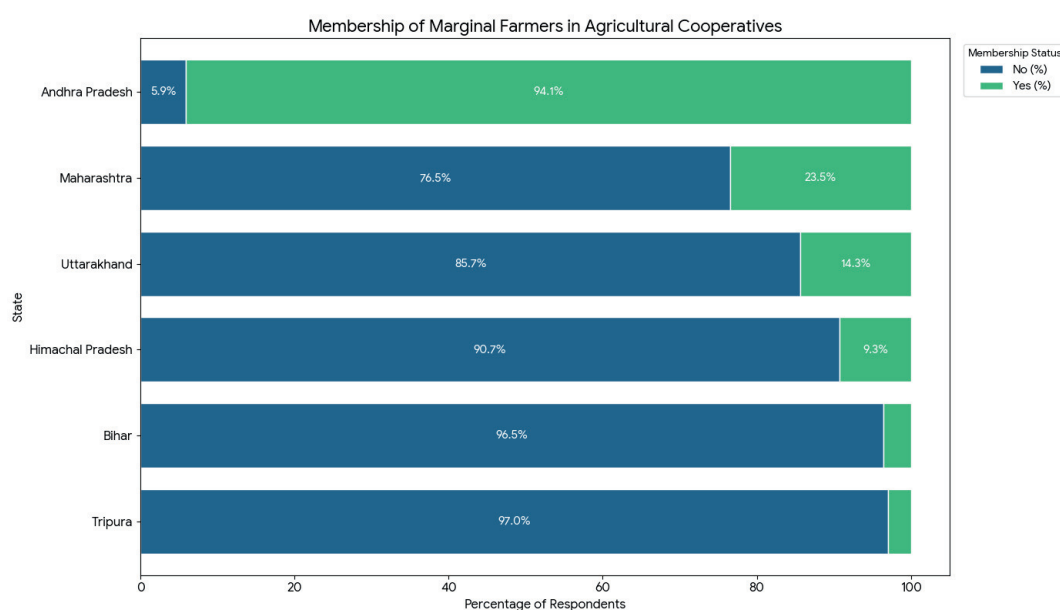
CHAPTER - 05

Agricultural Cooperative Membership and Participation

5.1 Introduction

This chapter examines farmers' participation in agricultural cooperatives across six states viz. Andhra Pradesh, Bihar, Himachal Pradesh, Maharashtra, Tripura, and Uttarakhand. It explores the extent of membership, duration of association, reasons for joining, participation patterns, and the barriers faced by non-members. Cooperatives are crucial in linking smallholders to input, finance, and markets, enabling economies of scale and collective bargaining. However, participation varies widely by region due to socio-economic, institutional, and informational factors.

5.2 Membership in Agricultural Cooperatives

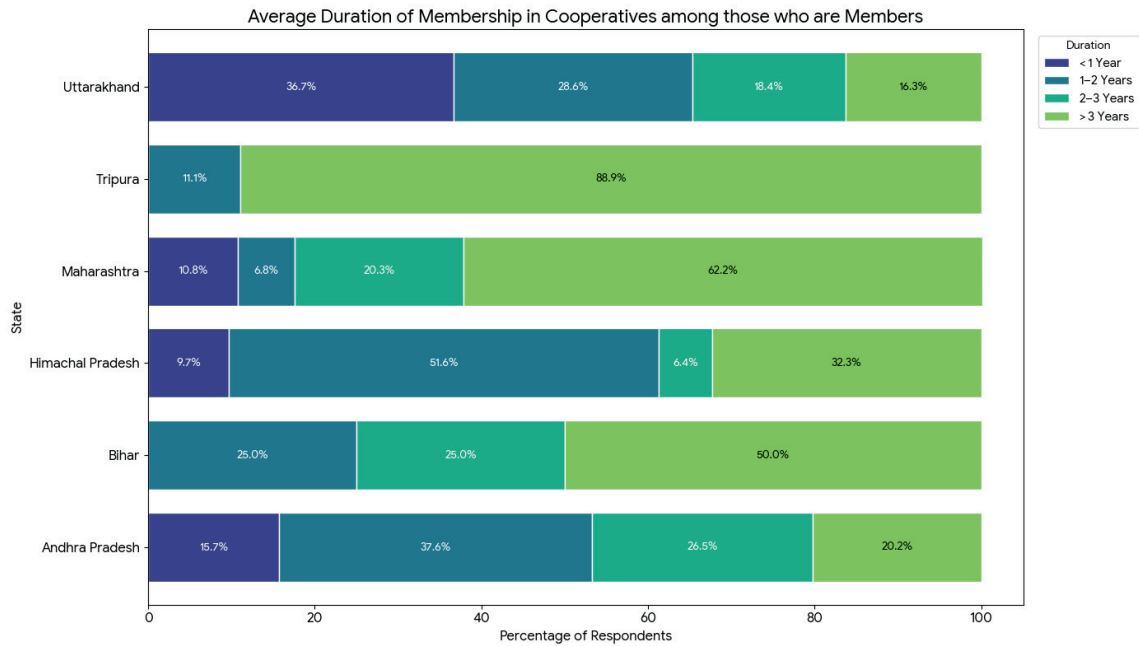


Membership levels show strong regional variation. Andhra Pradesh stands out with over 94 percent of respondents belonging to cooperatives, reflecting the state's robust cooperative ecosystem and institutional support through programs such as Rythu Bharosa Kendras. In contrast, Bihar, Tripura, and Himachal Pradesh record minimal participation, likely due to weaker cooperative infrastructure and lower awareness. Overall, less than one-fourth of all surveyed farmers were members, pointing to limited inclusivity.

5.3 Duration of Membership

Roughly **one-third of members have joined within the last two years**, suggesting there is

growing interest in cooperative structures. Long-term membership (> 3 years) is highest in Maharashtra and Tripura, consistent with mature cooperative traditions. Shorter tenure in Uttarakhand and Andhra Pradesh may reflect recent program expansions or newly registered societies.



5.4 Motivations for Joining

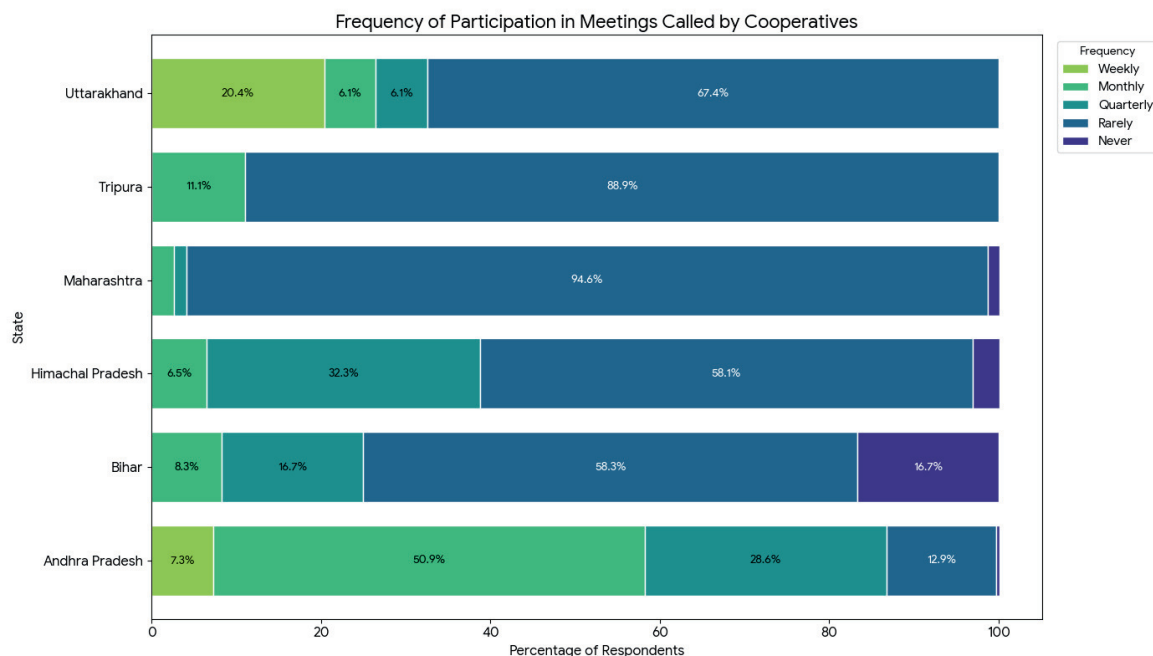
Table VI : Motivations behind Marginal farmers joining Cooperatives

State	Access to Credit (%)	Bulk Inputs (%)	Farm Equipment (%)	Better Prices (%)	Technical Advice (%)	Digital Services (%)	PDS Goods (%)	Peer Encouragement (%)	Respondents
Andhra Pradesh	39.4	60.6	40.8	49.1	28.6	4.5	6.6	4.2	287
Bihar	58.3	50	16.7	83.3	41.7	16.7	8.3	8.3	12
Himachal Pradesh	35.5	35.5	12.9	64.5	41.9	3.2	6.4	19.3	31
Maharashtra	54.1	23	10.8	33.8	32.4	1.3	1.3	12.2	74
Tripura	77.8	33.3	100	33.3	88.9	0	0	22.2	9
Uttarakhand	49	44.9	28.6	65.3	36.7	18.4	4.1	8.2	49

Access to credit, bulk input purchase, and assured markets remain the most compelling incentives. Technical support and mechanization access were notably cited in Tripura and Andhra Pradesh. Limited uptake of digital or PDS-linked benefits indicates that digital-cooperative integration is yet nascent.

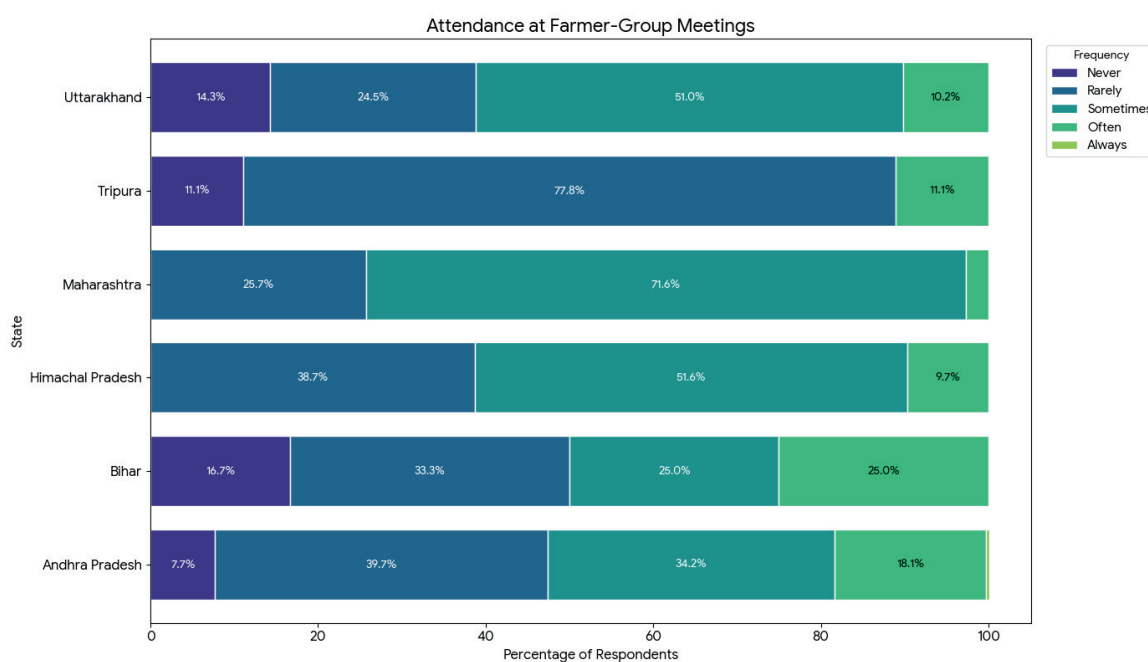
5.5 Participation in Cooperative Meetings

Andhra Pradesh reports the most frequent engagement, with over half attending monthly. In other states, especially Maharashtra and Tripura, participation is sporadic, reflecting possible governance or communication gaps within cooperatives.



5.6 Attendance at Farmer-Group Meetings

Around 42 percent attend such meetings “sometimes,” while regular attendance remains limited. States with stronger extension ecosystems, such as Andhra Pradesh, demonstrate higher engagement. Weak institutional follow-through elsewhere reduces peer learning potential.



5.7 Reasons for Non-Membership

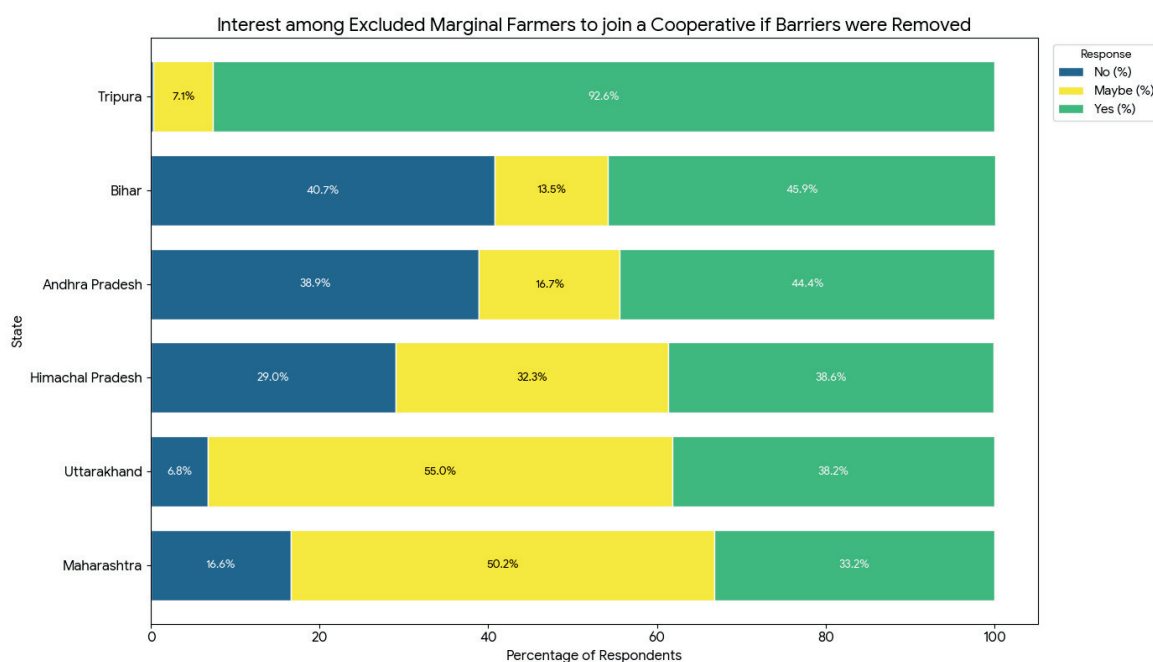
Lack of awareness is the dominant barrier across all states, consistent with national findings that only about one-fourth of farmers know of local cooperatives. Administrative complexity and perceived low benefit also deter potential members. These underline the need for simplified registration and stronger communication campaigns.

Table VII : Reasons behind Marginal Farmers not taking Membership in Cooperatives

State	Lack of Info (%)	Distance (%)	High Fee (%)	Complex Process (%)	No Benefit (%)	Other (%)	Respondents
Andhra Pradesh	44.4	27.8	38.9	44.4	5.6	0	18
Bihar	71.3	17.7	10.4	9.8	16.8	6.4	327
Himachal Pradesh	73.6	18.8	6.9	14.9	14.5	1.7	303
Maharashtra	83.8	9.5	9.5	21.2	4.2	3.3	241
Tripura	52	51.7	6.1	35.5	34.8	0	296
Uttarakhand	59.7	33.8	26.6	56.3	9.6	2.7	293

5.8 Interest in Joining if Barriers Removed

Half of all non-members would consider joining if constraints were removed, especially in Tripura and Uttarakhand. This latent interest indicates significant potential for cooperative expansion, provided outreach and process simplification improvement.



5.9 Preferred Support to Enable Membership

Awareness drives, credit facilitation, and simplification of procedures emerge as critical enablers. The interest in digital enrolment, though still moderate, reflects growing openness to technology-driven cooperative registration platforms. Tripura's high emphasis on lower fees suggests economic barriers are prominent among smallholders.

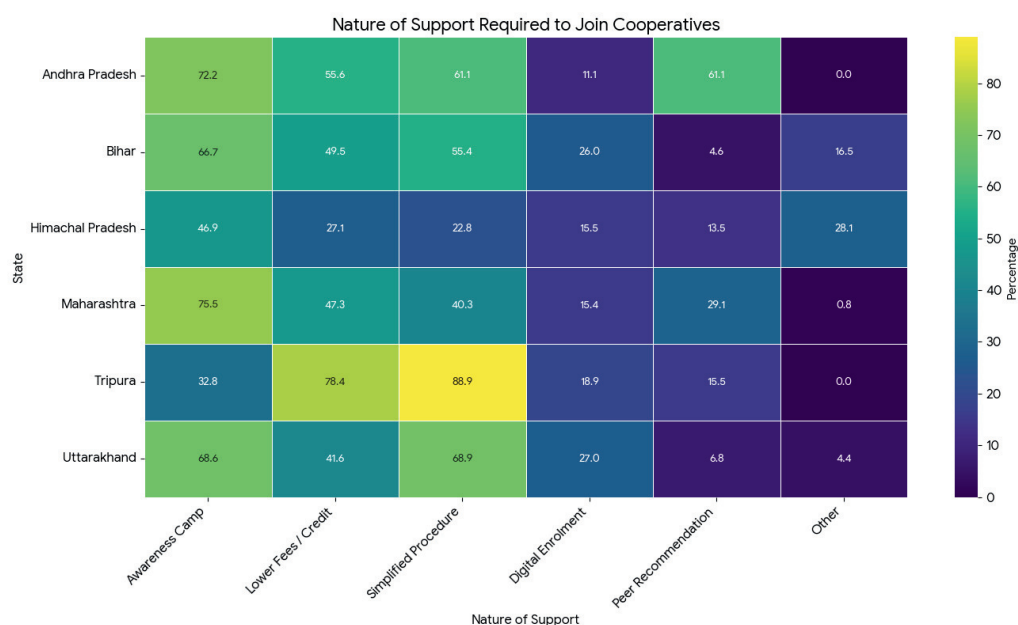


Table VIII : Preferred Support to Enable Membership

State	Awareness Camp (%)	Lower Fees / Credit (%)	Simplified Procedure (%)	Digital Enrolment (%)	Peer Recommendation (%)	Other (%)	Respondents
Andhra Pradesh	72.2	55.6	61.1	11.1	61.1	0	18
Bihar	66.7	49.5	55.4	26	4.6	16.5	327
Himachal Pradesh	46.9	27.1	22.8	15.5	13.5	28.1	303
Maharashtra	75.5	47.3	40.3	15.4	29.1	0.8	241
Tripura	32.8	78.4	88.9	18.9	15.5	0	296
Uttarakhand	68.6	41.6	68.9	27	6.8	4.4	293

5.10 Conclusion

Cooperative participation in India remains uneven, with high concentration in states that have institutionalized support structures. Strengthening farmer awareness, reducing administrative hurdles, and promoting financial and digital inclusion could dramatically enhance membership and participation. Future policy must build on these insights to reinforce cooperative resilience under the broader agenda of inclusive rural transformation.

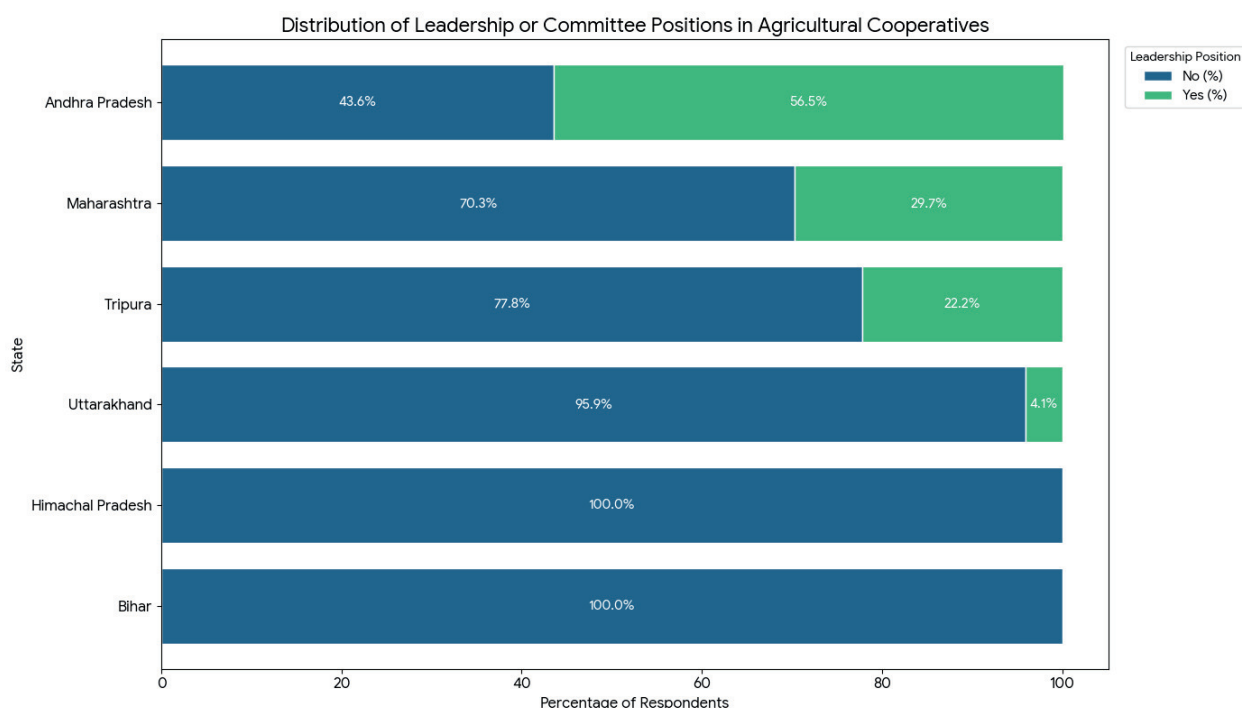


CHAPTER - 06

Leadership Structures and Gender Participation in Agricultural Cooperatives

6.1 Awareness and Participation in Leadership Roles

Agricultural cooperatives are designed to strengthen farmers' collective agency by ensuring participatory decision-making and equitable leadership representation. However, the extent of farmers' leadership participation within these cooperatives varies significantly across states, influenced by local governance structures, gender norms, and institutional capacity. The stack chart below summarises the distribution of leadership or committee positions held by farmers across the six study states.



The findings indicate that overall, 40.7% of respondents reported holding a leadership or committee position within their agricultural cooperative. This level of participation is driven primarily by Andhra Pradesh, where 56.45% of surveyed farmers reported active leadership roles. In contrast, Bihar and Himachal Pradesh reported no representation in cooperative leadership structures, suggesting institutional or operational inactivity in local cooperative governance.

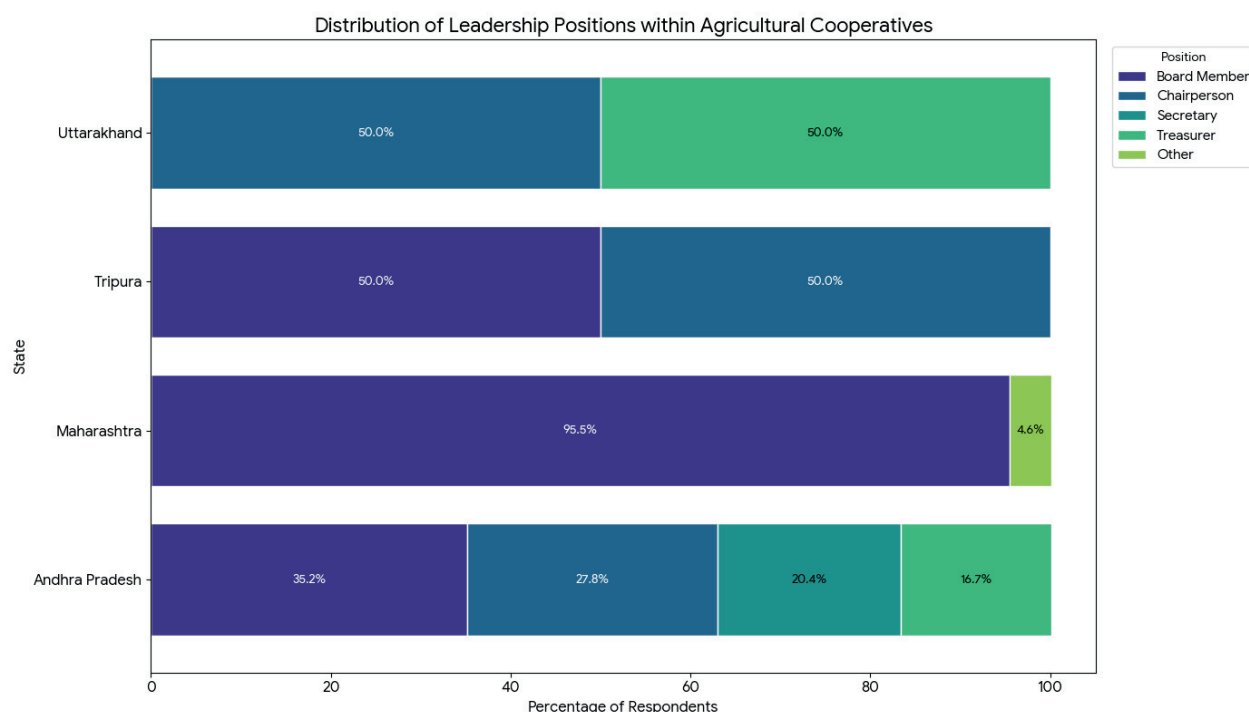
- 1 These trends mirror broader national patterns, where states with robust cooperative movements and active Primary Agricultural Credit Societies (PACS), such as Andhra Pradesh & Maharashtra, demonstrate higher rates of farmer leadership engagement. In Andhra Pradesh, for instance, the revitalisation of PACS

through the Andhra Pradesh State Cooperative Bank and integration with digital platforms has enhanced inclusivity and transparency in governance.

- 2 Meanwhile, states like Uttarakhand and Tripura show limited participation, largely due to smaller cooperative membership bases, weaker institutional frameworks, and limited awareness among farmers about cooperative governance opportunities. The lack of leadership involvement in northern and northeastern regions highlights structural challenges, including restrictive eligibility norms, low awareness, and entrenched gendered barriers that reduce women's visibility in formal leadership roles.
- 3 **The data thus underscores a critical policy gap:** while cooperatives exist in most rural areas, participatory governance and leadership democratization remain concentrated in a few states. Strengthening cooperative literacy, leadership training, and gender-sensitive institutional reforms are essential to ensure equitable participation across socio-economic groups.

6.2 Positions Held within Cooperative Leadership Structures

Leadership within agricultural cooperatives is usually stratified across multiple levels, including board membership, chairpersonship, secretarial duties, and treasury functions. The nature of these positions reveals both the operational hierarchy of cooperatives and the gendered dynamics of participation. The figure below presents a state-wise distribution of leadership positions among respondents who reported holding a leadership or committee role.



The data suggests that board membership positions are the most common leadership role across states, comprising 42% of all leadership roles reported. This is followed by chairperson positions (25%), and secretarial roles (17.5%). Andhra Pradesh again emerges as the most diverse in leadership role distribution, reflecting an operationally active and inclusive cooperative environment.

In contrast, Maharashtra's leadership concentration is almost entirely in board positions (95.45%), indicating hierarchical rigidity and limited decentralisation of leadership roles. This pattern aligns with earlier studies showing that while cooperatives in western India often exhibit strong financial and organisational structures, they also tend to have limited participatory diversity within their governance.

According to the National Cooperative Development Corporation (NCDC), although 21.25 lakh women are registered as cooperative members, only 3,355 women serve as Directors on boards of management nationwide. This stark disparity indicates that women's membership has not yet translated into proportional representation in leadership, pointing to persistent socio-cultural and institutional barriers that restrict their upward mobility within cooperative structures.

Recognising these gaps, the 2025 National Cooperative Policy emphasises enhanced participation of women, youth, small and marginal farmers, Scheduled Castes/Scheduled Tribes, and persons with disabilities, with a specific focus on enabling their entry into decision-making roles.

Overall, the observed distribution of leadership roles suggests that while cooperatives offer formal avenues for participation, real influence remains concentrated among a relatively small set of typically male, often better-resourced farmers. This concentration reflects both structural constraints and deep-rooted socio-cultural norms that limit democratisation of governance processes.

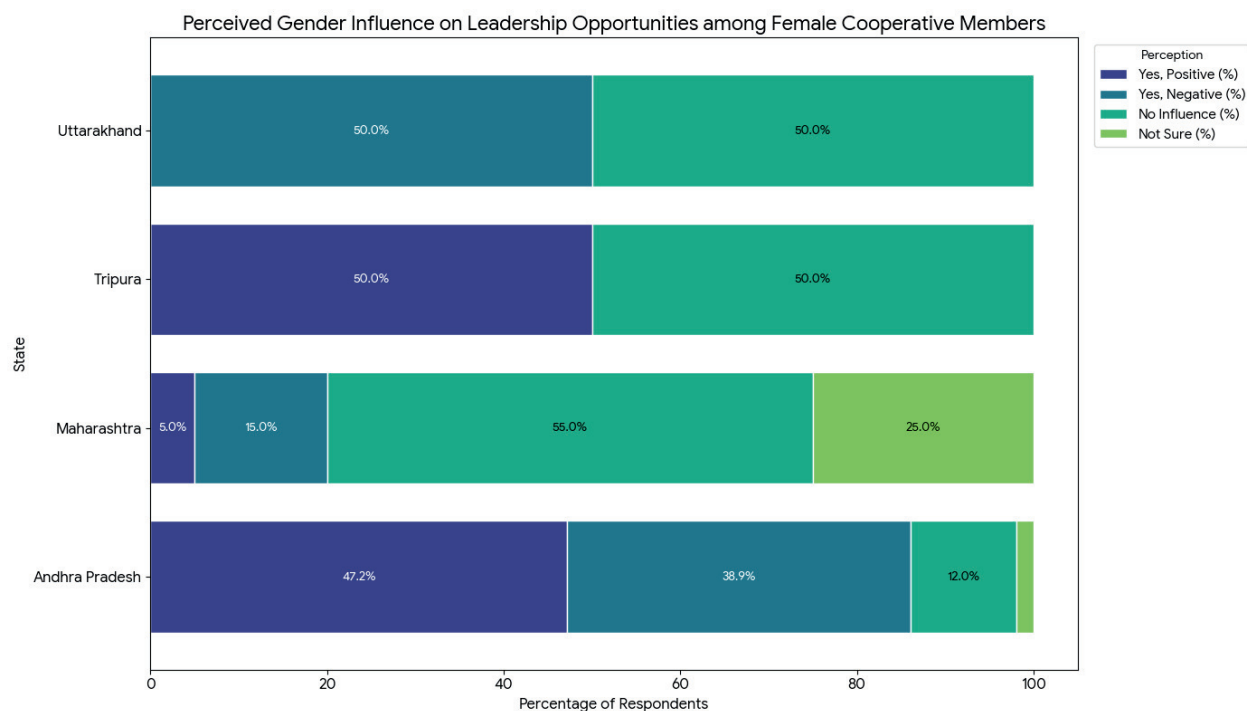
Strengthening leadership pathways through targeted training, reserved leadership positions, transparent election mechanisms, and gender-sensitive institutional reforms will be essential to ensuring that cooperatives genuinely fulfill their mandate of inclusive, member-driven governance.

6.3 *Gender Influence on Leadership Opportunities*

Women's representation in cooperative leadership serves as a critical marker of inclusivity, institutional equity, and the democratisation of rural governance. Globally, cooperatives are recognised as catalytic platforms for advancing gender equality and broader development goals. The Committee for the Promotion and Advancement of Cooperatives (COPAC) identifies cooperatives as key contributors to the 2030 Sustainable Development Agenda, particularly across SDG 1 (No Poverty), SDG 5 (Gender Equality), SDG 8 (Decent Work), SDG 13 (Climate Action), and SDG 17 (Partnerships). This makes gendered participation within cooperatives not only a governance issue but a development imperative.

The findings reveal a nuanced landscape: 40 percent reported a positive gender influence, suggesting growing recognition of women's contributions and a gradual opening of leadership spaces within cooperatives. At the same time, 35 percent reported negative experiences, underscoring entrenched social and cultural biases that continue to constrain women's access to decision-making positions.

In Andhra Pradesh, nearly half of the women respondents experienced a positive influence, aligning with the state's strong history of women-centric cooperative movements, particularly under the Society for Elimination of Rural Poverty (SERP). These



initiatives have integrated women-led Self-Help Groups (SHGs) into producer cooperatives and federations, thereby promoting women’s confidence and collective agency.

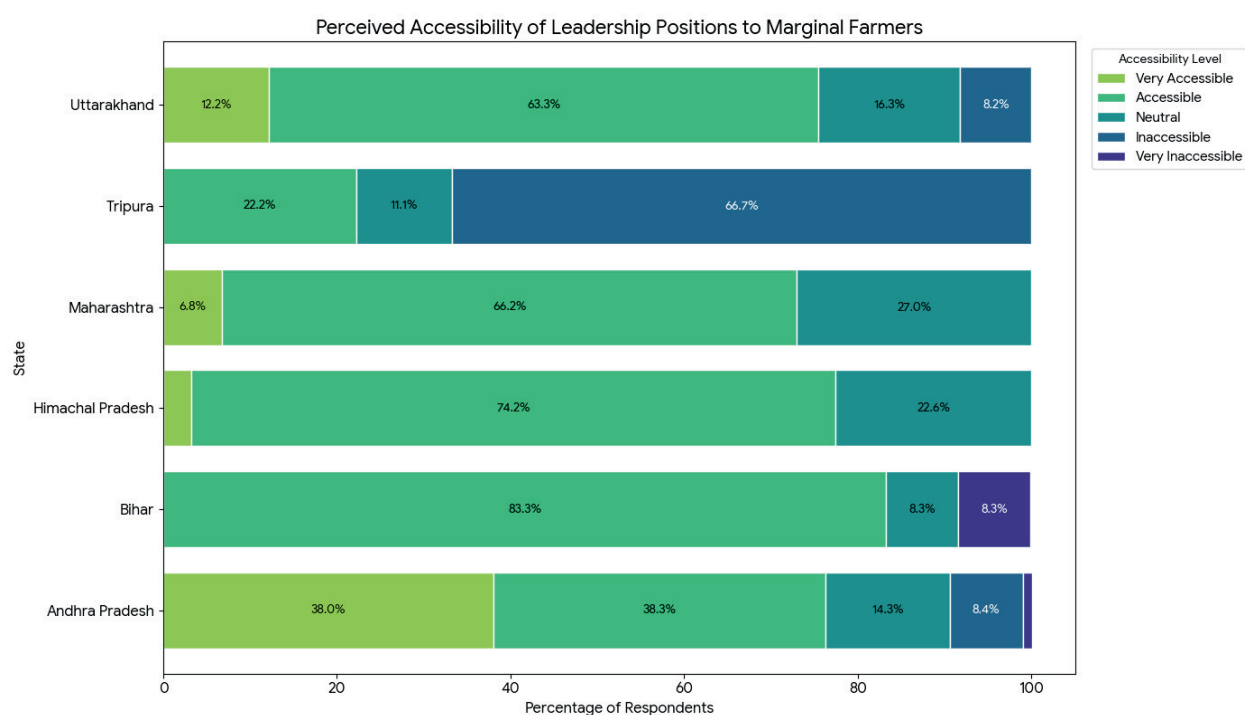
Conversely, states such as Maharashtra and Uttarakhand reflect more conservative institutional dynamics, where women remain underrepresented in decision-making bodies. The fact that 55% of respondents in Maharashtra reported no gender influence, either positive or negative, might suggest a formal neutrality that conceals structural barriers rather than genuine equality.

Interestingly, Tripura’s data, though based on a small sample, shows a balanced perception, with equal proportions of respondents identifying positive gender influence and no influence. This aligns with broader northeast trends where women’s community leadership is more socially accepted.

The findings collectively suggest that while policy and institutional frameworks increasingly recognize gender equity, the translation of these principles into local cooperative governance remains inconsistent. Strengthening gender sensitization programs, mentorship initiatives, and leadership training for rural women could serve as essential mechanisms to address this gap.

6.4 *Accessibility of Leadership Positions to Marginal Farmers*

Equitable access to leadership within cooperatives is central to ensuring that the voices of marginal and smallholder farmers who constitute the majority of India’s agricultural population are meaningfully represented in governance structures. This section attempts to capture respondents’ perceptions of the accessibility of cooperative leadership to marginal farmers across the surveyed states. The findings offer an important window into both the inclusiveness of cooperative institutions and the barriers that may silently shape leadership pathways.



The majority of respondents (nearly 49%) considered leadership positions in cooperatives to be “accessible” to marginal farmers, while a further 26% described them as “very accessible.” Together, these figures suggest that three-fourths of the respondents perceive a relatively open governance environment within their cooperatives. However, about 8% of respondents rated leadership opportunities as inaccessible, underscoring persistent challenges in inclusion and representation.

Andhra Pradesh once again stands out with over 76% respondents describing leadership as accessible or very accessible. This reflects the success of the Rythu Bharosa Kendras and producer company models, where smallholders are systematically integrated into cooperative leadership structures through federated tier systems.

In Himachal Pradesh and Uttarakhand, the accessibility perception is also high, exceeding 75%, likely reflecting the smaller scale and community-based nature of cooperatives in hilly regions. These cooperatives tend to be participatory due to tight-knit community structures and smaller membership bases.

By contrast, Tripura reports a strikingly different trend, with two-thirds (66.67%) of respondents describing leadership roles as “inaccessible.” This finding points to a disconnect between cooperative institutions and the most marginalized farmers, possibly due to political capture and urban dominance of cooperative governance in certain districts.

Overall, the data points to a mixed reality: while formal structures of cooperatives promote inclusiveness, actual leadership representation for marginal farmers remains uneven and deeply context-dependent. Strengthening governance reforms such as reserved positions for marginal farmers, transparent electoral processes, grassroots leadership training, and proactive outreach could help bridge the gap between perceived accessibility and genuine representation. Such efforts are crucial for ensuring that cooperatives fulfill their mandate as democratic, member-driven institutions capable of empowering the most vulnerable farmers in India’s rural landscape.

6.5 Summary

The analysis of leadership participation and accessibility within agricultural cooperatives highlights important structural and socio-cultural patterns that shape inclusiveness across regions. Three core insights emerge from the findings:

State-level variation in inclusivity remains significant: Andhra Pradesh stands out for its strong institutional architecture that actively integrates women, marginal farmers, and smallholders into cooperative governance. By contrast, states such as Maharashtra, Uttarakhand, and Tripura display varying degrees of limited participation, reflecting the influence of local institutional maturity, historical cooperative movements, and state-led support mechanisms.

Gender-based barriers persist despite numerical improvements in women's participation: Although female membership has expanded, gendered norms continue to restrict leadership prospects for many women. The coexistence of positive experiences (due to SHG-led mobilization and women-centric institutions) alongside persistent negative biases indicates that structural change remains uneven, with leadership pathways still shaped by socio-cultural hierarchies and limited institutional incentives for gender equity.

Marginal farmers face constrained leadership access, particularly where cooperatives are bureaucratized or politically influenced: While perceptions of accessibility appear relatively high, actual representation of marginal farmers in executive roles remains low. In states like Tripura, respondents highlighted considerable governance barriers, suggesting that formal institutional inclusiveness may not translate into genuine decision-making power without structural reforms.

Overall, the findings point to a disconnect between participatory intent and practical realization. Agricultural cooperatives in India retain democratic foundations, yet leadership remains concentrated among more advantaged groups. To close this gap, cooperative reforms must prioritize active democratization of governance through targeted capacity-building programs, transparent electoral processes, mandatory representation quotas, and gender- and equity-sensitive institutional design.

As India moves toward strengthening its cooperative ecosystem, especially with the expansion of multi-state cooperative institutions, future strategies must place equal emphasis on collective participation, representation, and empowerment. Ensuring that leadership bodies reflect the diversity of the farmer base across gender, economic status, and social identity is essential for building resilient, inclusive, and community-driven cooperative institutions.

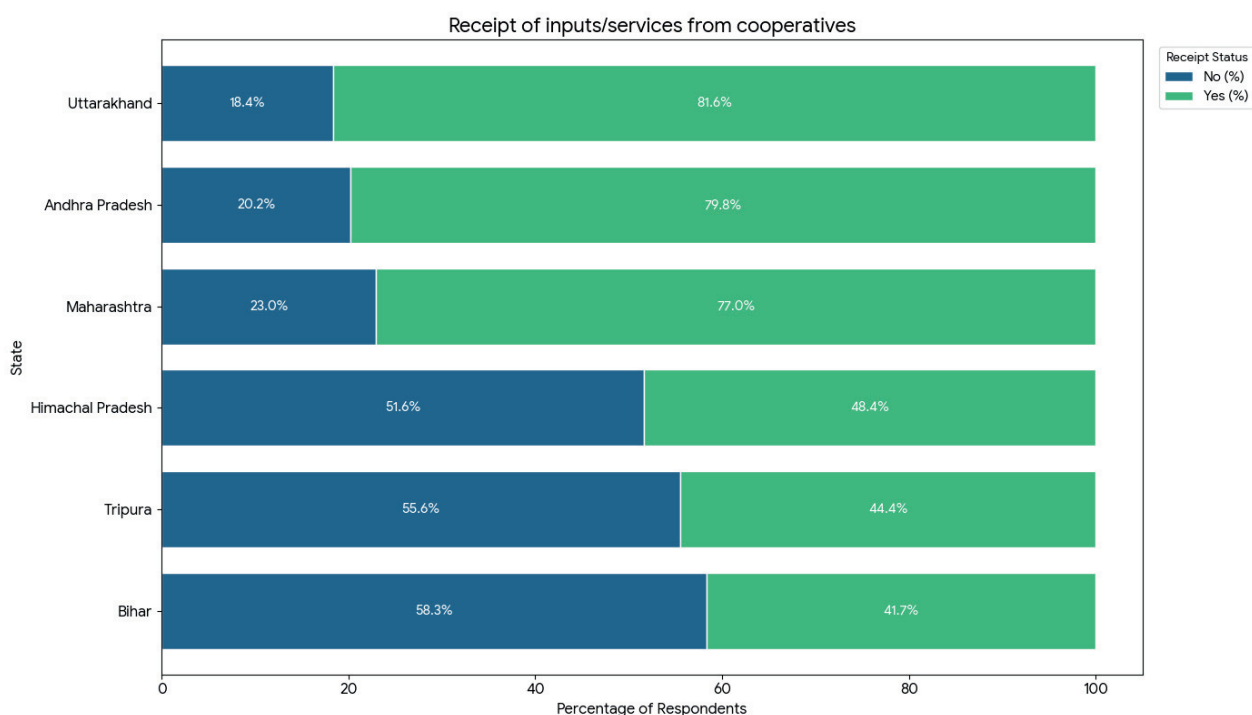


CHAPTER - 07

Access to Cooperative Services, Productivity Outcomes, and Capacity Building

7.1 Receipt of Agricultural Inputs and Services through Cooperatives

Three out of four respondents (75.8%) report receiving agricultural inputs or services through their cooperative, indicating a substantial role for PACS/FPOs as service delivery channels in our sample. States differ markedly: Uttarakhand (81.6%), Andhra Pradesh (79.8%), and Maharashtra (77.0%) show the strongest delivery performance, while Bihar (41.7%), Himachal Pradesh (48.4%), and Tripura (44.4%) record much lower utilisation. These intra-state differences likely reflect variation in cooperative capacity, supply-chain linkages (e.g., custom-hiring centres, input procurement), and outreach intensity.



1

High uptake in Andhra Pradesh and Uttarakhand aligns with evidence that regionally coordinated cooperative networks and proactive extension support increase timely input distribution and service uptake among smallholders. Conversely, the lower figures in Bihar and Tripura suggest gaps in either availability of services through cooperatives or farmers' awareness/trust in cooperative channels, both common barriers identified in national assessments of PACS and FPO effectiveness.

2

Taken together, the data indicate that while cooperatives are functioning as important supply channels in several states, targeted interventions, such as strengthening procurement mechanisms, improving last-mile delivery, and building farmer awareness in lagging states, are needed to make cooperative-mediated services more uniformly accessible.

7.2 Types of Agricultural Inputs and Services Accessed through Cooperatives

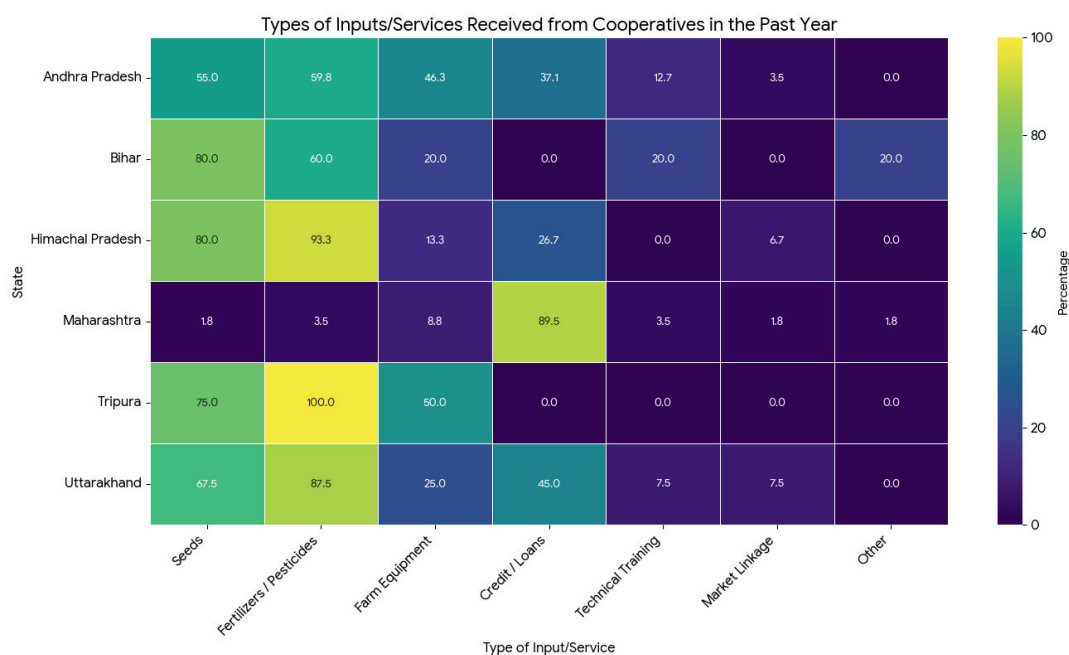


Table IX : Types of inputs/services received from cooperatives in the past year

State	Seeds (%)	Fertilizers / Pesticides (%)	Farm Equipment (%)	Credit / Loans (%)	Technical Training (%)	Market Linkage (%)	Other (%)	Total Respondents (n)
Andhra Pradesh	55	59.8	46.3	37.1	12.7	3.5	0	229
Bihar	80	60	20	0	20	0	20	5
Himachal Pradesh	80	93.3	13.3	26.7	0	6.7	0	15
Maharashtra	1.8	3.5	8.8	89.5	3.5	1.8	1.8	57
Tripura	75	100	50	0	0	0	0	4
Uttarakhand	67.5	87.5	25	45	7.5	7.5	0	40

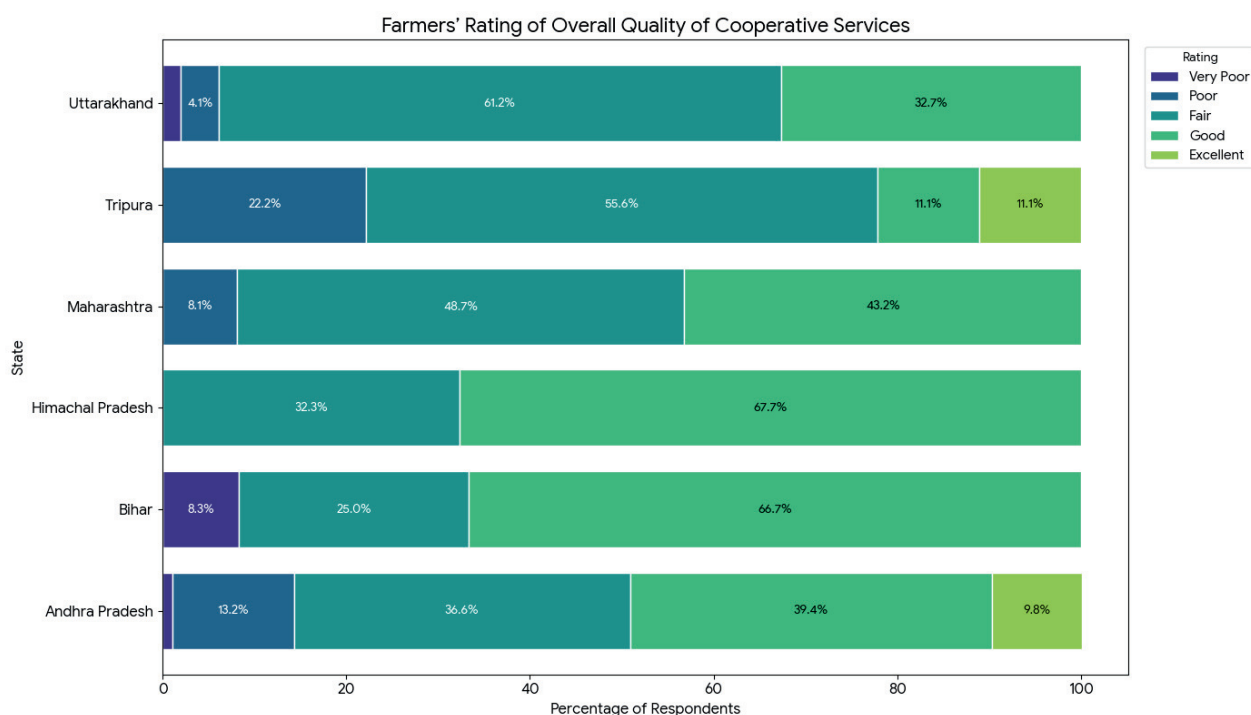
Patterns of input and service delivery vary considerably across states. Andhra Pradesh and Uttarakhand exhibit broad-based cooperative support, providing both input supplies and capacity-building services, reflecting the mature institutional architecture of PACS and FPOs in these states. Over 59% of farmers in Andhra Pradesh report receiving fertilizers and pesticides, while 46% accessed farm equipment and 37% received credit. Such diversity in services is indicative of integrated cooperative operations supported by state-level input federations.

In Maharashtra, the dominant service provided through cooperatives is credit access (89%), aligning with the historical prominence of cooperative banking and credit societies in the state. Comparatively, Himachal Pradesh and Tripura emphasize input delivery, notably fertilizers/pesticides (93% and 100%, respectively), but limited access to market linkage or technical training, implying that cooperatives there still function primarily as supply entities rather than as holistic service providers.

The marginal presence of market linkage services (below 8% in all states except Uttarakhand) underscores a persistent gap in value-chain integration and market facilitation – functions that well-performing FPOs typically prioritize. Moreover, technical training remains underprovided across states, averaging below 10%, suggesting weak convergence between cooperatives and agricultural extension systems.

Overall, the data reveal that while cooperatives have achieved considerable outreach in input delivery, there is a need for greater diversification toward credit, technical training, and market services to ensure comprehensive agrarian support and income resilience.

7.3 Quality of Cooperative Services



Overall, 82% of respondents rate their cooperative services as fair or good, indicating moderate to strong satisfaction levels with service delivery. States like Bihar (66.7%) and

Himachal Pradesh (67.7%) stand out with the highest share of farmers rating services as good, while Tripura and Uttarakhand show mixed responses with a higher share in the fair category (55–61%).

In Andhra Pradesh, nearly 49% rate cooperative performance as good or excellent, a pattern consistent with that state's established cooperative and FPO ecosystem, which integrates credit, input, and procurement services under single management structures. The results from Maharashtra, where nearly half of the respondents rate services as fair, suggest that while credit access remains strong, operational diversification (e.g., input supply or training) may be weaker, influencing overall satisfaction levels.

The relatively small proportion (1–10%) of poor or very poor responses suggests that while service gaps exist, most farmers perceive cooperatives as valuable local institutions for accessing inputs and market support. However, Tripura's 22% 'poor' rating signals capacity constraints in smaller or less networked cooperatives, where scale and resource limitations restrict service efficiency.

Cumulatively, these findings reinforce the broader literature suggesting that *service quality in cooperatives is strongly correlated with managerial competence, financial liquidity, and linkages with federated institutions and agribusiness ecosystems*. Targeted capacity-building of cooperative boards and stronger monitoring systems can further improve service standards and member satisfaction.

7.4 Impact of Cooperative Membership on Crop Yield

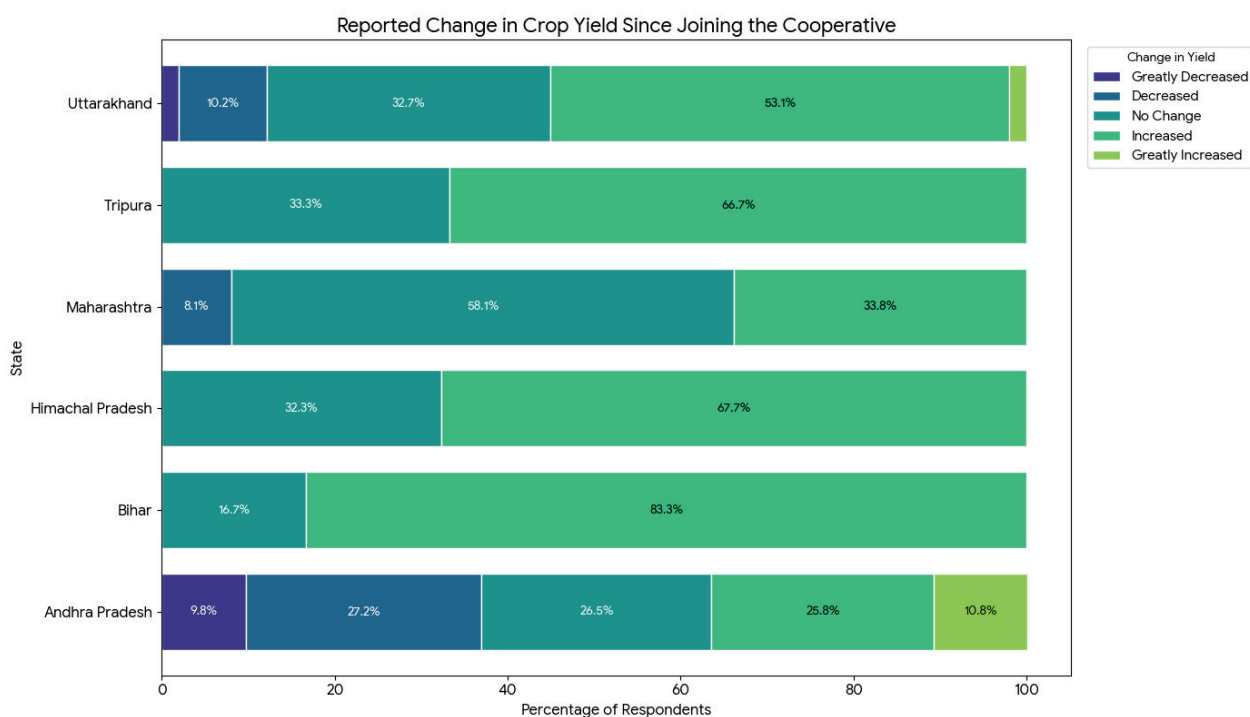
Across the six states surveyed, 42% of farmers reported an increase or great increase in crop yield following their association with cooperatives, while only about 25% indicated a decline or no improvement. These findings highlight the important production-level benefits derived from cooperative membership, particularly in states with more integrated service delivery systems.

Andhra Pradesh stands out with a significant share of respondents (36.6%) reporting yield improvements, consistent with its robust Primary Agricultural Credit Societies (PACS) and Farmer Producer Organisation (FPO) network that provide timely inputs, collective marketing, and access to extension services. Bihar, Himachal Pradesh, and Tripura demonstrate even stronger positive responses, with between 65–83% of farmers noting improved yields. This suggests that even in relatively resource-constrained regions, cooperatives can drive productivity when they actively facilitate access to improved seeds, fertilizers, and technical knowledge.

By contrast, Maharashtra's moderate improvement levels (34% increased, 58% no change) may reflect a plateauing effect common in mature cooperative systems, where early efficiency gains are already realized and further yield improvements depend on technology adoption and irrigation support. Uttarakhand, with more than 55% reporting yield increases, benefits from PACS integration with watershed management and dairy cooperatives that diversify members' income sources and enhance resilience against climate variability.

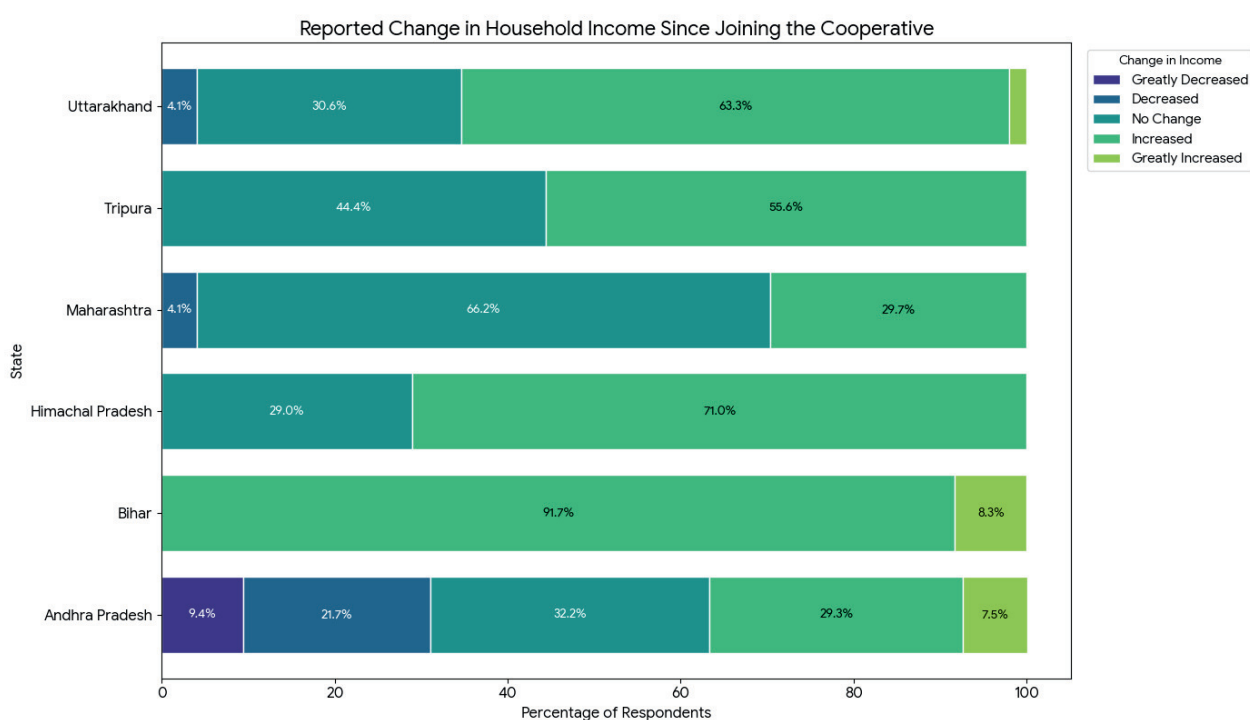
In sum, the data suggest that cooperative membership contributes positively to productivity through better access to inputs, credit, and agronomic guidance. However, regional disparities persist due to differences in agro-climatic conditions, institutional

maturity, and resource endowment. Strengthening input-delivery linkages and enhancing localized technical support could further amplify these productivity impacts.



7.5 Impact of Cooperative Membership on Household Income

The findings clearly suggest that cooperative membership has a positive impact on household income for a majority of respondents. Across all six states, 45% of cooperative members reported an increase or great increase in income, compared to roughly 21% who noted a decline or stagnation. This demonstrates that cooperatives are functioning not only as input and marketing intermediaries but also as effective economic vehicles for enhancing household welfare.



In Andhra Pradesh, about 37% of respondents reported an income increase, while 31% saw no change. This pattern mirrors the state's diversified cooperative ecosystem, where PACS are integrated with dairy, fisheries, and marketing societies. Income enhancement here is often linked to improved price realization through collective marketing and reduced transaction costs in credit access.

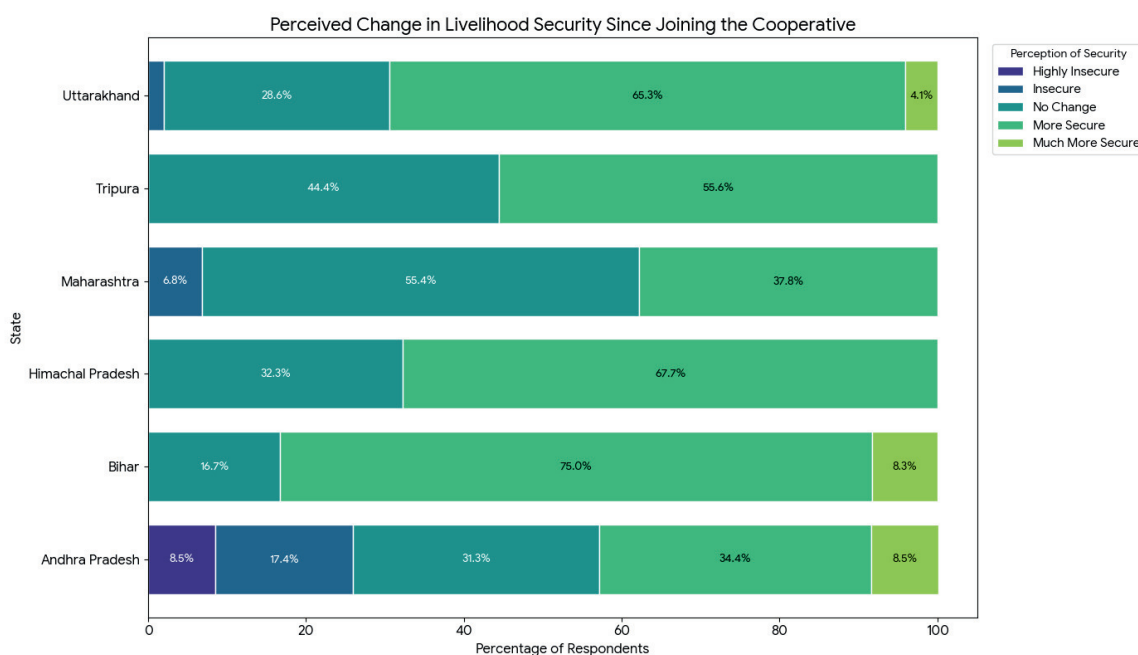
Bihar and Himachal Pradesh demonstrate the strongest gains, with over 70–90% of members reporting higher incomes. In Bihar, this can be attributed to targeted interventions under state-supported FPO promotion and the facilitation of aggregation for smallholder farmers. In Himachal Pradesh, horticulture and dairy cooperatives have provided members with stable market linkages and enhanced bargaining power, translating into steady income growth.

Uttarakhand similarly shows encouraging outcomes, where 65% of respondents noted income improvement. The region's cooperatives often combine agricultural services with microfinance and women's self-help activities, amplifying their socioeconomic impact. Tripura follows a similar pattern, with 56% reporting higher incomes despite small sample size, underscoring that even smaller cooperatives can yield tangible financial benefits when access to local markets is assured.

In Maharashtra, however, the picture is more moderate, only 30% reported income gains, while two-thirds reported no change. This may indicate income stabilization rather than growth, reflecting the maturity of cooperative institutions where basic needs have already been met but diversification opportunities are limited.

Overall, the evidence supports that cooperatives enhance household income through collective action, improved access to credit and inputs, and better market participation. Yet, the intensity of impact varies by region and cooperative maturity. Strengthening institutional capacity and value-chain integration could further magnify income outcomes, particularly in states where effects remain modest.

7.6 *Perceived Changes in Livelihood Security*



Across the surveyed states, nearly half (49%) of cooperative members reported improved livelihood security after joining, while about 16% felt their situation remained insecure or highly insecure. These results emphasize that cooperatives contribute meaningfully not just to income gains but also to the stability and predictability of rural livelihoods, particularly in regions with diversified agricultural activities.

In Andhra Pradesh, over 42% of respondents felt more secure, reflecting the long-standing success of cooperative federations that support members through credit, marketing, and crop insurance schemes. These institutions have enhanced resilience against seasonal price shocks and market volatility.

Bihar shows a similarly strong pattern: 83% of respondents reported enhanced security. This can be attributed to the state's focus on Farmer Producer Organizations (FPOs) under JEEViKA and the Bihar State Rural Livelihoods Mission, which integrate smallholders into collective procurement and marketing systems. Access to stable buyers and pooled risk mechanisms have visibly strengthened livelihood security for participating households.

In Himachal Pradesh and Uttarakhand, both hill states with smaller agricultural holdings, over 65% of respondents experienced greater livelihood security. Cooperatives in these regions often combine agriculture, animal husbandry, and microenterprise diversification, offering multiple income streams that buffer climatic and market risks. The perception of "more secure" livelihoods aligns with improved access to financial services, social safety nets, and collective bargaining capacity.

Maharashtra and Tripura present more moderate outcomes. In Maharashtra, 56% reported no change, likely due to cooperatives' already entrenched systems, especially in sugar and dairy sector, where baseline security is relatively high but incremental improvements are limited. In Tripura, a smaller sample shows that over 55% felt more secure, underscoring how emerging cooperatives in the Northeast still manage to deliver meaningful risk reduction even at small scales.

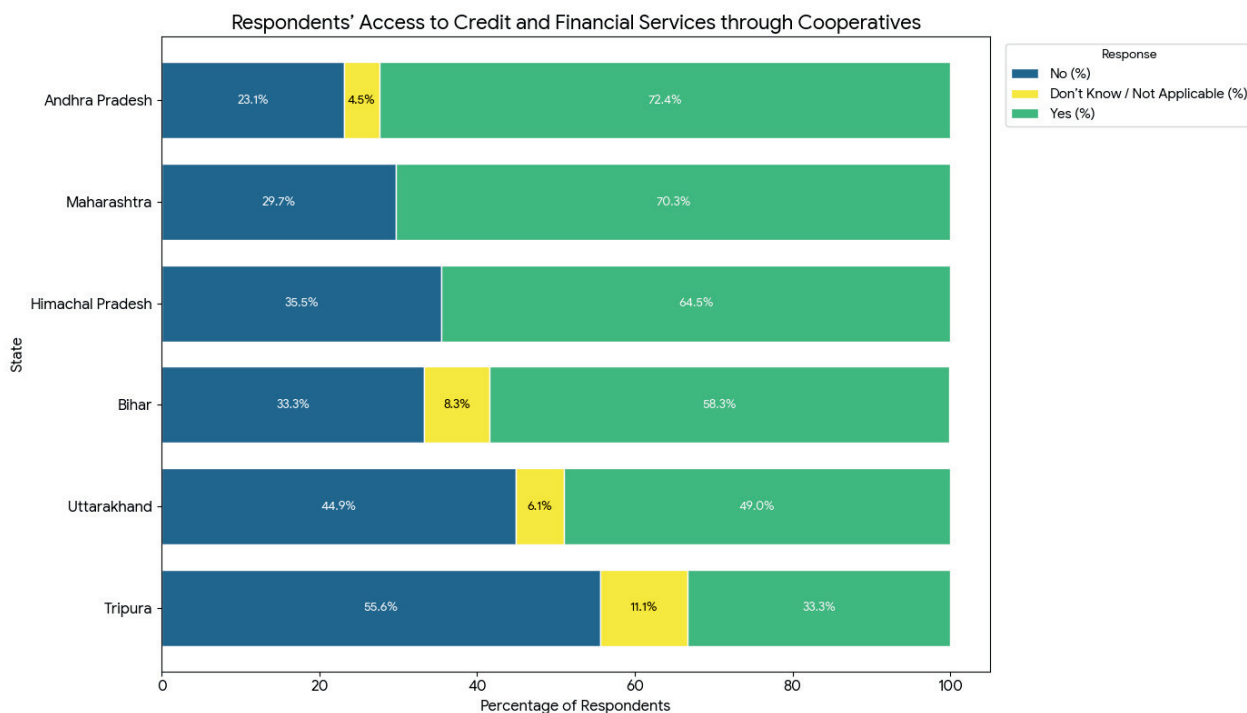
Overall, the perception of enhanced livelihood security correlates strongly with active participation, market access, and financial inclusion within cooperatives. However, the persistence of insecurity for around one in six respondents highlights the need for capacity-building, governance reform, and targeted interventions, particularly in marginal and resource-poor cooperatives.

7.7 Access to Credit and Financial Services through Cooperatives

Across all six surveyed states, two-thirds (67%) of cooperative members reported access to credit and financial services through their cooperatives, reflecting the institution's enduring role in expanding rural financial inclusion. The results underscore the importance of cooperatives as intermediaries for credit delivery, savings mobilization, and insurance linkages, functions that remain central to the inclusive growth agenda in rural India.

In Andhra Pradesh, nearly three-quarters (72%) of respondents confirmed access to credit. This high figure mirrors the extensive integration between Primary Agricultural Cooperative Societies (PACS), Stree Nidhi Credit Cooperatives, and SHG federations

promoted by SERP (Society for Elimination of Rural Poverty). The digitalization of cooperative credit operations and linkages with district cooperative banks have significantly reduced dependency on informal lenders.



Maharashtra also reported a robust 70% access rate, consistent with the state's strong cooperative banking ecosystem. The presence of district cooperative banks and urban credit societies provides extensive outreach, particularly for smallholders engaged in cash crops and dairy. However, limited access among certain marginalized groups and small farmers points to persisting inequalities in credit distribution, echoing findings from NABARD's All India Rural Financial Inclusion Survey.

In Himachal Pradesh, 65% of respondents benefited from cooperative credit. Many of these societies operate as multi-purpose cooperatives, offering both savings and credit facilities, often tied to agricultural marketing and procurement systems. This reflects the dual role cooperatives play in hilly regions, supporting both production and financial stability.

Uttarakhand presents a more moderate pattern, with 49% reporting access and 45% without. The gap likely reflects operational challenges of cooperatives in remote hill blocks, including limited capital base and inadequate linkage with apex cooperative banks. Strengthening institutional capacity and ensuring gender-sensitive credit access could substantially improve financial inclusion outcomes here.

Bihar (58%) and Tripura (33%) highlight the regional disparity in cooperative credit delivery. In Bihar, weak capitalization of PACS and limited banking linkages often constrain access, despite strong mobilization under JEEViKA. Tripura's lower figure, meanwhile, reflects the early stage of cooperative development in the state, where many cooperatives are still registered but not financially functional.

Overall, the data reaffirm that cooperatives continue to be a critical instrument for financial inclusion, but their effectiveness varies across states depending on governance,

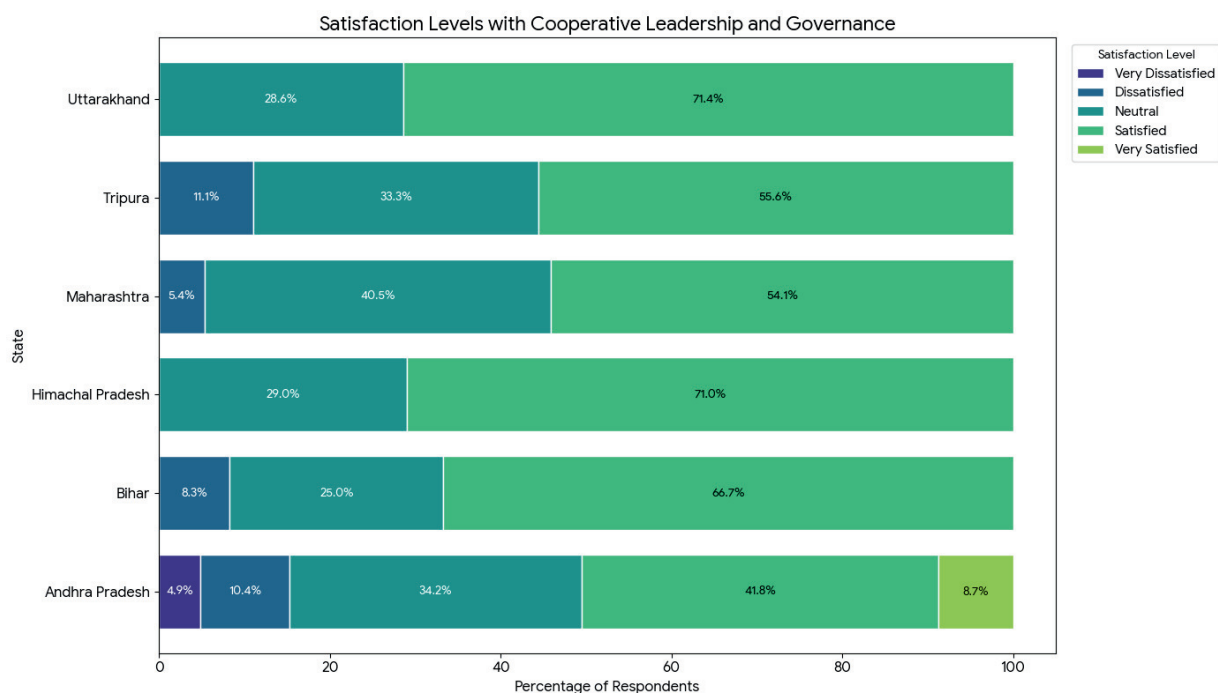
capitalization, and integration with the formal banking system. Enhancing transparency, leveraging digital finance platforms, and aligning cooperative credit with broader livelihood missions can help close the remaining inclusion gaps.

7.8 *Satisfaction with Cooperative Leadership and Governance*

The survey reveals that nearly 59% of respondents (Satisfied or Very Satisfied) expressed positive views about the leadership and governance of their cooperatives, reflecting moderate confidence in the institutional mechanisms managing rural producer organizations. Leadership satisfaction is a key indicator of cooperative health, affecting both member participation and collective performance.

Andhra Pradesh demonstrates a diverse response distribution, with over 50% satisfied or very satisfied, but about 15% dissatisfied. This suggests a functional cooperative environment with room for improvement in participatory governance. The relatively high “neutral” responses (34%) point to limited awareness or engagement of members in governance processes – a trend noted in other studies on PACS reforms.

Himachal Pradesh (71% satisfied) and Uttarakhand (71%) show very strong approval of cooperative governance. These states benefit from smaller cooperative sizes and stronger social cohesion, factors which often enhance accountability and transparency in local decision-making. In hilly terrains, cooperatives often function as multipurpose entities with active member meetings, strengthening trust and inclusion.



Maharashtra’s satisfaction rate of 54% reflects the state’s long-standing cooperative culture, especially in the dairy and sugar sectors. However, the share of “neutral” responses (40%) signals waning participation in governance activities, likely due to bureaucratic formalism and elite capture in some larger cooperatives, an issue well-documented in Maharashtra’s cooperative banking and sugar industries.

Bihar and Tripura show mixed patterns. In Bihar, despite a modest sample, two-thirds

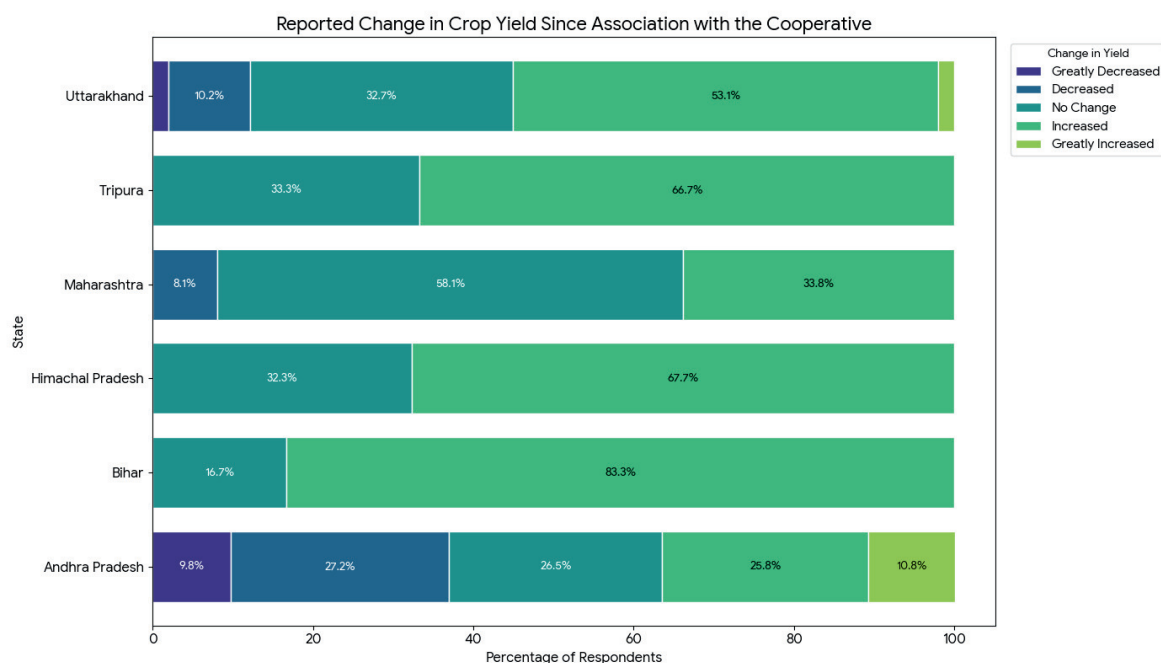
(67%) expressed satisfaction, which aligns with recent cooperative revitalization efforts and convergence with JEEViKA's producer group models. Tripura's 56% satisfaction rate similarly indicates a positive, if nascent, cooperative culture. Yet, both states display governance fragility due to limited training, poor financial literacy, and low female representation on cooperative boards.

The data overall suggest that states with stronger cooperative traditions and decentralized participatory structures (e.g., Himachal Pradesh, Uttarakhand, Maharashtra) tend to report higher satisfaction levels. In contrast, states with weaker cooperative capital or limited democratic engagement (e.g., Tripura, parts of Andhra Pradesh) exhibit more neutral or dissatisfied responses.

Moving forward, capacity-building for cooperative leaders, regular general body meetings, and enhanced member representation, especially of women and marginalized farmers, are essential to sustain trust and performance.

7.9 Impact of Cooperative Membership on Crop Yield

The graph below indicates a generally positive association between cooperative membership and crop yield improvements across the surveyed states. Approximately 42% of respondents reported that their yields have either increased or greatly increased since joining a cooperative, compared to only 25.5% reporting any decline. This pattern underscores the potential role of cooperatives in enhancing agricultural productivity through access to better inputs, services, and information systems.



Andhra Pradesh, the largest sample group, reflects a balanced distribution of outcomes. While 36% reported increases, a notable 37% experienced decreases, and 26% reported no change. These mixed responses may be attributed to regional differences in irrigation access, soil health, and market exposure. Cooperatives in Andhra Pradesh often play key roles in input supply and collective marketing, yet gaps in extension services and uneven leadership capacity may moderate impact outcomes.

Bihar and Himachal Pradesh present strongly positive results, with 83% and 68% of respondents respectively reporting yield increases. This improvement is likely linked to integration with state-supported livelihood missions such as JEEViKA and Himachal Pradesh's Dairy and Horticulture Cooperatives, which focus on improving access to quality seeds, credit, and post-harvest value addition. These initiatives enhance productivity and reduce risk for smallholders.

Maharashtra's case is more nuanced. While nearly 34% report yield increases, a majority (58%) observed no significant change. This may reflect a saturation effect in long-established cooperatives, where productivity gains plateau once basic services are stabilized. The limited marginal returns could also be due to constraints in water availability and increasing dependence on cash crops with volatile markets.

Tripura and Uttarakhand exhibit encouraging trends, with 66% and 55% respectively reporting improved yields. In these states, cooperatives function as critical channels for distributing subsidized fertilizers and supporting organic or climate-resilient practices. Uttarakhand's cooperative networks in particular have promoted diversification into high-value crops such as vegetables and floriculture, which often leads to higher per-acre returns even without proportional increases in yield volume.

Overall, the data reflect that membership in well-functioning cooperatives contributes positively to yield performance, though the extent of benefit varies depending on the maturity, inclusiveness, and service mix of the cooperative. The heterogeneity across states underscores the importance of context-specific strategies, including:

- Strengthening last-mile agricultural extension support;
- Improving input quality assurance;
- Enhancing coordination between cooperatives and agricultural universities; and
- Promoting adoption of climate-smart and integrated farming systems.

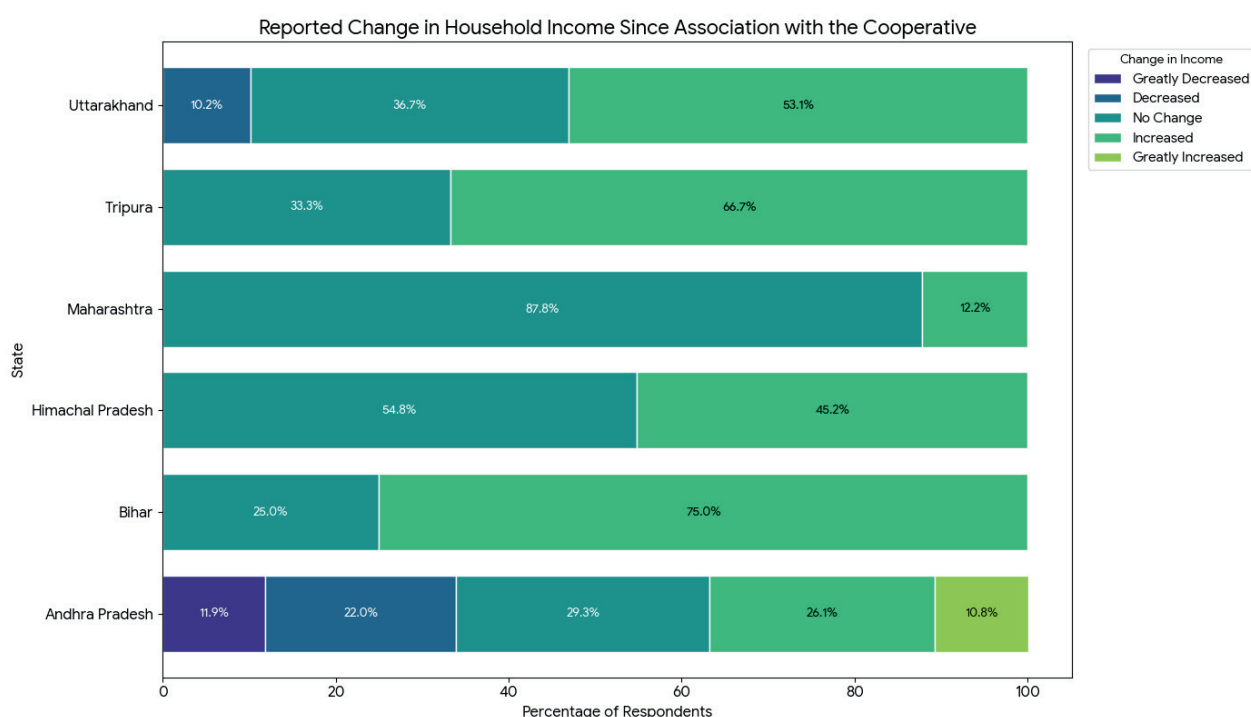
The evidence aligns with broader findings from national-level studies indicating that cooperatives enhance both productivity and income stability when combined with effective technical assistance and market access mechanisms.

7.10 Impact of Cooperative Membership on Household Income

The findings show that nearly 37% of respondents reported an increase in household income since associating with their cooperative, while 41% reported no change. Only about 22% reported a decline, suggesting that cooperative participation has had a moderately positive income effect overall.

Andhra Pradesh stands out with a diverse distribution, 7% reported increased or greatly increased income, while 34% noted declines, and 29% saw no change. These figures reflect a complex interplay between cooperative benefits and external constraints such as fluctuating input costs, market instability, and exposure to climate risks. Previous studies note that PACS and FPOs in Andhra Pradesh have improved income stability through collective procurement and digital platforms like e-NAM, but such benefits often depend on farmers' scale of engagement and crop type.

Bihar and Tripura report the most encouraging outcomes, with 75% and 67% of respondents respectively indicating income gains. This trend mirrors the success of the



integrated livelihood and women's cooperative models such as those promoted under JEEViKA, which link members to microcredit, input supply, and producer group-based value chains. These models demonstrate how social mobilization through cooperatives can contribute to both farm and non-farm income enhancement.

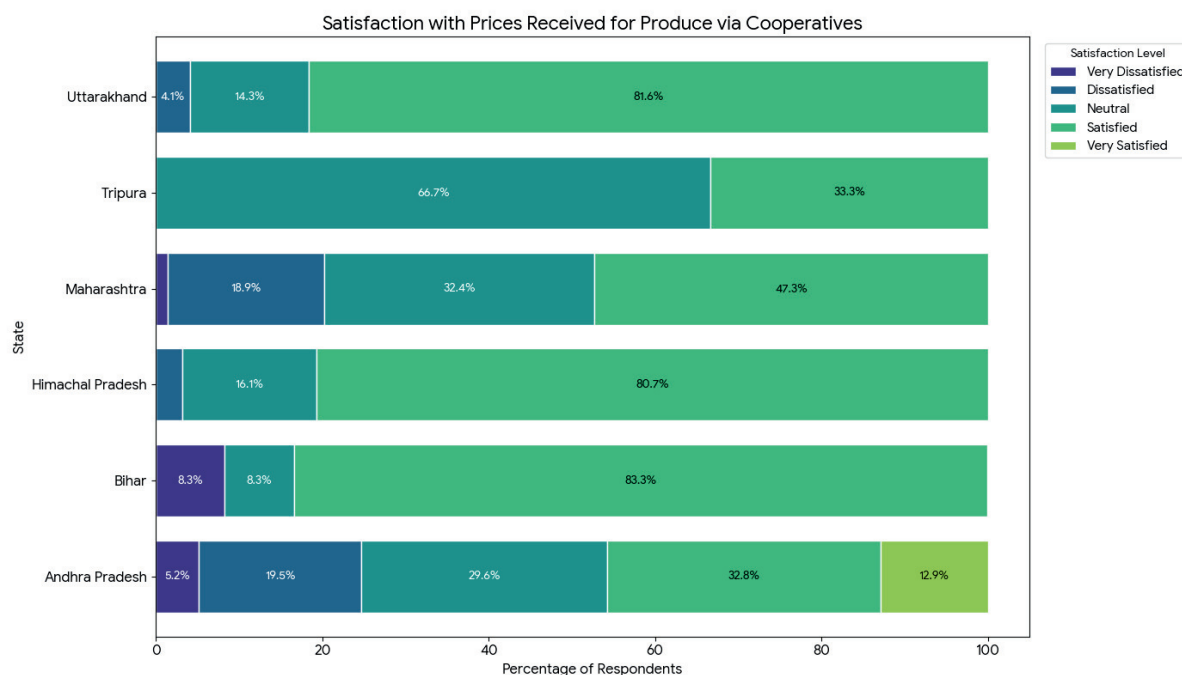
In Himachal Pradesh and Uttarakhand, where cooperatives are often tied to horticultural and dairy value chains, 45% to 53% of respondents reported income increases. These cooperatives are typically supported by state agricultural departments and rural livelihood missions to facilitate aggregation and marketing of perishable produce. The positive outcomes reflect how participation in value-added commodity cooperatives (e.g., apple, milk, and vegetables) can significantly enhance rural incomes through better bargaining power and assured market linkages.

Maharashtra, in contrast, exhibits the weakest improvement pattern. Nearly 88% of respondents reported no income change, and only 12% reported increases. This is consistent with earlier findings suggesting that many traditional cooperatives in Maharashtra, particularly older PACS, remain focused on credit disbursement rather than diversification into value-adding services. Without stronger input-output integration, such cooperatives may have limited capacity to influence household-level incomes.

At the aggregate level, the data reveal that cooperatives contribute to income enhancement when they go beyond basic input delivery to provide marketing, credit, and capacity-building services. The degree of income impact depends heavily on the cooperative's internal governance, inclusiveness, and ability to connect members to remunerative markets. Strengthening financial literacy, improving access to working capital, and incentivizing cooperatives to operate as farmer-producer enterprises could further consolidate income gains.

7.11 Satisfaction with Prices Received for Produce through Cooperatives

Overall, over half of respondents (52.8% — Satisfied + Very Satisfied) express positive views about the prices they obtain for produce through their cooperative, while roughly 19.5% are dissatisfied or very dissatisfied. This indicates that, on balance, cooperatives are playing a constructive role in price discovery and market access for many members, but important gaps remain in some states.



State-level contrasts are pronounced:

- Uttarakhand and Himachal Pradesh report the strongest satisfaction: over 80% of respondents in each state are satisfied, reflecting effective local procurement arrangements or strong linkage to regional value chains (horticulture/dairy) that yield stable price realization for members.
- Bihar shows exceptionally high satisfaction (83.3% satisfied), though the sample is small (n=12). This likely reflects targeted aggregation and buyer linkages under state-run producer-group initiatives which secure better prices for smallholders.
- Maharashtra demonstrates a moderate-to-high satisfaction level (47.3% satisfied), but also a substantial neutral cohort (32.4%). This suggests that while many farmers benefit from cooperative price channels (notably in sugar and dairy value chains), a sizable segment perceives limited improvement in price outcomes – possibly due to market volatility or unequal benefit-sharing within larger cooperatives.
- Andhra Pradesh has mixed responses: roughly one-third satisfied and around 25% dissatisfied/very dissatisfied. The variation may stem from crop heterogeneity (rice, cotton, horticulture) and differences in how well cooperatives are linked to remunerative markets or price-support schemes.
- Tripura reports mostly neutral responses (66.7%) with a third satisfied, reflecting nascent cooperative-market linkages where price benefits may be modest but not perceived negatively.

Implications and programmatic considerations:

1

Market linkages matter. States with stronger value-chain integration (horticulture, dairy) report higher satisfaction, pointing to the importance of procurer relationships, aggregation, and cold-chain or processing support for better price realization. Strengthening linkages to institutional buyers and e-market platforms (e.g., e-NAM) can improve outcomes.

2

Transparency and price-discovery. Neutral responses in several states indicate uncertainty or uneven benefit distribution. Transparent posting of procurement prices, regular market price updates, and member-led price committees can improve trust and perceived fairness.

3

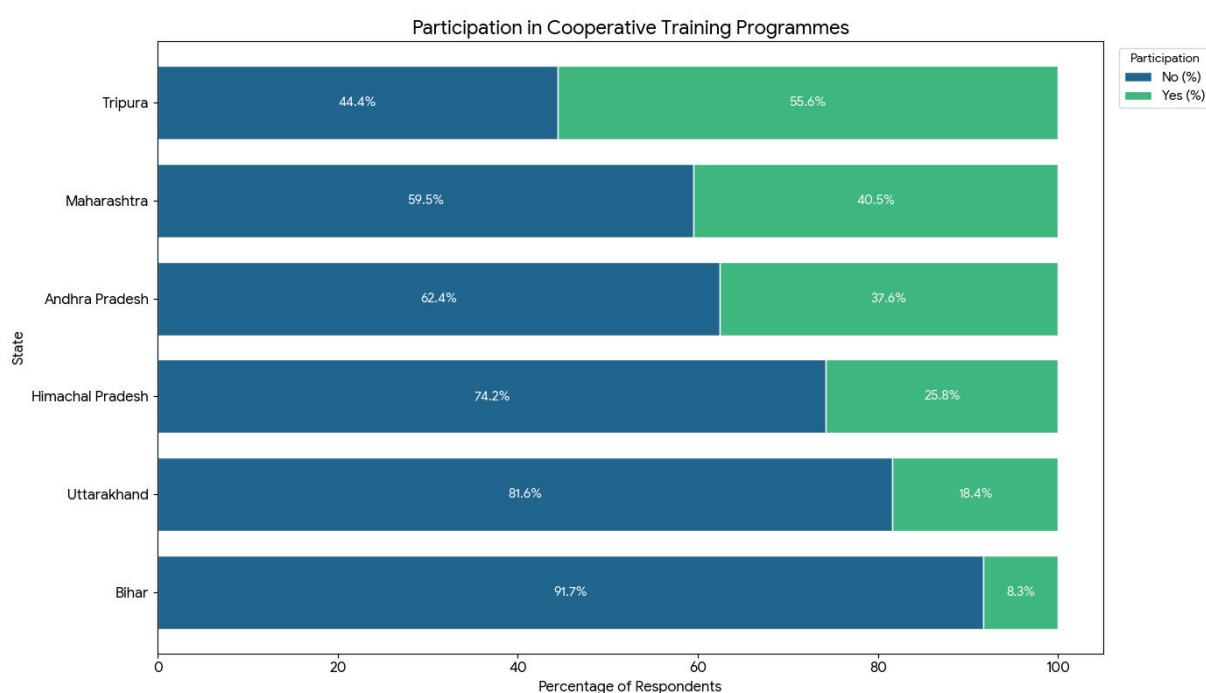
Differentiated interventions. In states with lower satisfaction, program emphasis should be on improving grading/quality-assurance, post-harvest logistics, local processing, and collective branding, which tend to secure premium prices.

4

Scale and governance. Larger cooperatives can secure bulk contracts but must manage intra-member equity to avoid elite capture of gains. Capacity-building on collective marketing, contract negotiation, and financial management will help translate higher sales volumes into equitable member benefits.

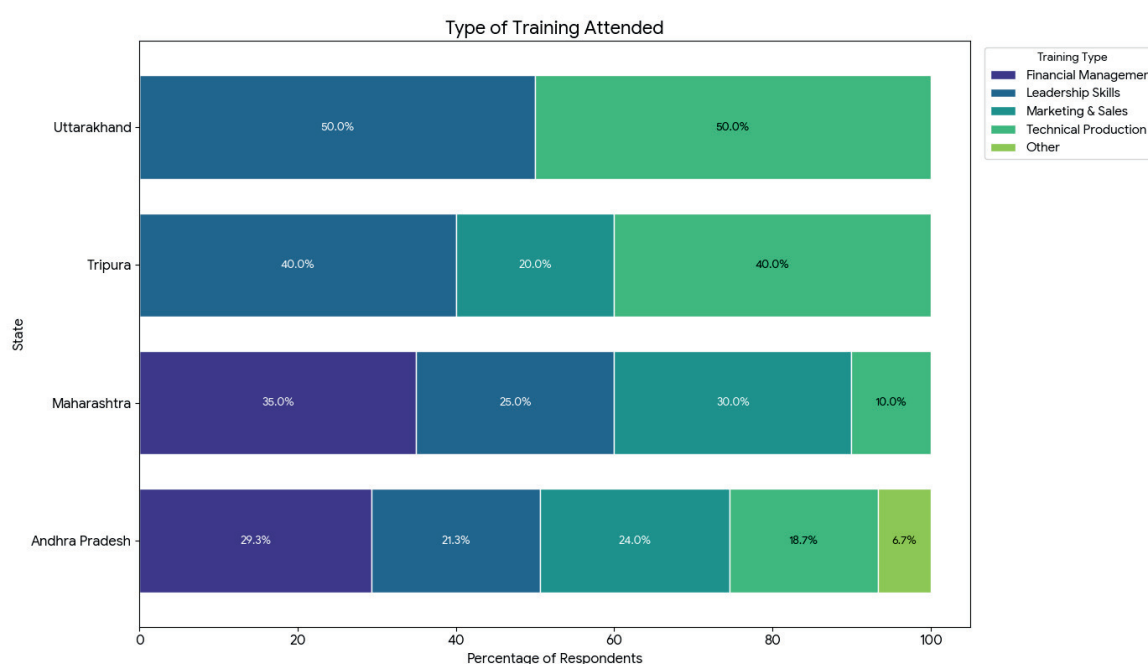
7.12 Participation in Training and Capacity-Building Initiatives

Across all six study states, only about one-third (31.8 %) of cooperative members report ever attending a training or capacity-building programme. This low participation rate underscores a continuing gap in skill and knowledge transfer within India's cooperative ecosystem.



State-level differences

- Tripura exhibits the highest training exposure (55.6 %), reflecting targeted interventions by state departments and donor projects that emphasise women's inclusion and enterprise promotion.
- Maharashtra (40.5 %) and Andhra Pradesh (37.6 %) also show relatively strong participation, linked to active cooperative federations, dairy and sugar unions, and producer companies that routinely conduct technical and managerial training.
- Uttarakhand, Himachal Pradesh, and Bihar trail behind, with fewer than one-fourth of respondents trained. Mountain states often face logistical barriers to organising on-site sessions, while Bihar's low exposure may be due to weaker extension networks and limited convergence between cooperatives and state training institutes.



Nature of trainings attended

Among those trained ($n = 152$), the largest shares report courses in financial management (28 %), leadership skills (27 %), and marketing and sales (25 %). Technical production-oriented training constitutes about 18 %, while miscellaneous topics (digital record-keeping, group dynamics) make up the remainder. This distribution suggests that cooperative training is still skewed toward administrative and soft-skill themes rather than production, value-addition, or market-integration skills that could directly improve member income.

Gender and inclusivity aspects

Although the present dataset does not disaggregate by sex, earlier chapters show limited female leadership representation. Evidence from national evaluations indicates that when women do participate, they disproportionately attend leadership-skills sessions rather than finance or technical modules, which constrains their influence in operational decisions.

Programmatic implications

- **Institutional convergence:** Greater coordination among the National Cooperative Development Corporation (NCDC), Agricultural Skill Council of India, and State Cooperative Training Institutes could expand coverage and standardise curricula.
- **Demand-driven design:** Training content should reflect members' expressed needs; for example, digital-marketing, value-chain analytics, and post-harvest management, rather than routine governance modules.
- **Decentralised delivery:** Mobile-based or cluster-level training using farmer-to-farmer facilitation can overcome travel barriers in hilly or remote regions.
- **Gender mainstreaming:** Dedicated quotas for women trainees, female master-trainers, and timing sensitive to care responsibilities would enhance participation.



7.13 Summary of Key Findings

1

Access to Agricultural Inputs and Services: Nearly three-fourths (75.8%) of respondents reported receiving agricultural inputs or services through their cooperatives. Participation was especially strong in Andhra Pradesh (79.8%) and Uttarakhand (81.6%), where state-level cooperative networks have greater reach and integration with agricultural extension systems. In contrast, participation was modest in Bihar (41.7%), Himachal Pradesh (48.4%), and Tripura (44.4%), indicating structural and organisational gaps in smaller or weaker cooperatives. Among the types of inputs received, fertilizers and pesticides (59.8%), seeds (55.0%), and farm equipment (46.3%) ranked highest, followed by credit and loans (37.1%). This pattern underscores that cooperatives remain central in input supply chains but less developed as financial or knowledge intermediaries.

2

Quality and Satisfaction with Cooperative Services: Overall satisfaction with cooperative services was high. A combined 47.6% rated them as “good” or “excellent,” while only 11.5% reported dissatisfaction (“poor” or “very poor”). High satisfaction in states like Himachal Pradesh and Bihar reflects relatively cohesive cooperative structures with limited membership, whereas larger federations (e.g., in Andhra Pradesh) show greater variation in quality perception. Farmers cited timely access to inputs, transparent pricing, and proximity of services as key satisfaction drivers, while delayed delivery and limited product range were common concerns in weaker states.

3

Crop Yield and Household Income Outcomes: Since joining cooperatives, 42% of respondents experienced an increase or great increase in crop yields, while about 25% reported no change, and 19% reported declines. The highest positive responses were observed in Bihar, Himachal Pradesh, and Tripura, suggesting that smaller, producer-focused cooperatives can drive measurable productivity improvements. Income gains were also notable: 36.8% reported increased household income, with an additional 6.7% reporting great increases. Positive shifts were strongest in Uttarakhand and Tripura, reflecting the impact of cooperatives in aggregation, value addition, and collective marketing. However, nearly 22% of respondents experienced stagnant or declining incomes, often linked to market fluctuations, post-harvest losses, or low-margin crops. This underlines the need for diversified income streams, risk insurance, and improved marketing linkages.

4

Price Satisfaction and Market Linkages: A majority (52.8%) of cooperative members expressed satisfaction with the prices received for their produce, though regional disparities were evident. Andhra Pradesh and Maharashtra reported balanced satisfaction levels, while Himachal Pradesh and Uttarakhand showed particularly high satisfaction (80%+), likely due to niche-market produce (e.g., fruits, spices, dairy) where cooperatives play a strong aggregation role. Despite this, respondents noted a need for better market intelligence, transparent pricing mechanisms, and direct buyer access to reduce dependency on intermediaries.

5

Training and Capacity Building: Participation in training remains a critical bottleneck: only 31.8% of members reported attending any training in the past year. Among those trained, most attended modules on financial management, leadership skills, or marketing, while fewer accessed technical production training (18%). State-wise, Tripura (55.6%), Maharashtra (40.5%), and Andhra Pradesh (37.6%) performed better, reflecting the presence of active cooperative federations and external donor partnerships. Expanding training access, especially for women and smallholders, can significantly enhance cooperative productivity and inclusivity.



CHAPTER - 08

Digital Adoption, Usage Patterns, and Capacity Outcomes in Agricultural Cooperatives

Digitalisation is increasingly recognised as a critical enabler of cooperative efficiency, transparency, and market competitiveness, particularly where members are distributed across rural geographies. This chapter examines patterns of digital adoption among cooperatives and members, frequency of usage, perceived benefits, and training access across six states. The analysis draws from survey responses and is contextualised with insights from national and international research on digital agriculture and cooperative development.

8.1 Adoption of Digital Tools by Cooperatives

Table X : Use of Digital Tools by Cooperatives

State	WhatsApp (%)	Mobile App (%)	SMS Alerts (%)	Online Payment (%)	E-Market (%)	No Digital Tool (%)	Respondents (n)
Andhra Pradesh	63.1	30.7	27.9	30.7	16.7	12.9	287
Bihar	41.7	41.7	0	8.3	0	25	12
Himachal Pradesh	58.1	48.4	0	9.7	6.5	9.7	31
Maharashtra	67.6	4.1	1.4	0	2.7	31.1	74
Tripura	22.2	0	11.1	0	0	77.8	9
Uttarakhand	73.5	59.2	30.6	42.9	20.4	10.2	49

Digital adoption among cooperatives is heterogeneous, shaped by state-level institutional ecosystems and prior exposure to digital extension systems. Andhra Pradesh and Uttarakhand demonstrate broad-based adoption across communication, payment, and application-based interfaces. This aligns with documented state-level efforts to integrate cooperatives with e-governance and market-linked digital infrastructure.

In Maharashtra and Himachal Pradesh, digital adoption is concentrated around WhatsApp, indicating familiarity with communication tools but limited advancement toward structured management systems. Research suggests that when digitalisation is

not connected to cooperative enterprise functions (record-keeping, procurement, member services), its impact remains informational rather than transformational.

Tripura and Bihar show the widest digital divide, with 25–78% reporting no digital tool usage. These patterns mirror broader challenges identified in northeastern and eastern India, where cooperatives often lack IT infrastructure, trained staff, and intermediary institutions to support digital transitions.

Overall, WhatsApp serves as the digital entry point for cooperatives nationwide, consistent with findings from digital agriculture studies indicating that low-literacy, low-cost communication platforms diffuse more rapidly than enterprise software systems.

8.2 *Personal Use of Digital Tools by Cooperative Members*

Table XI : Personal Use of Digital Tools

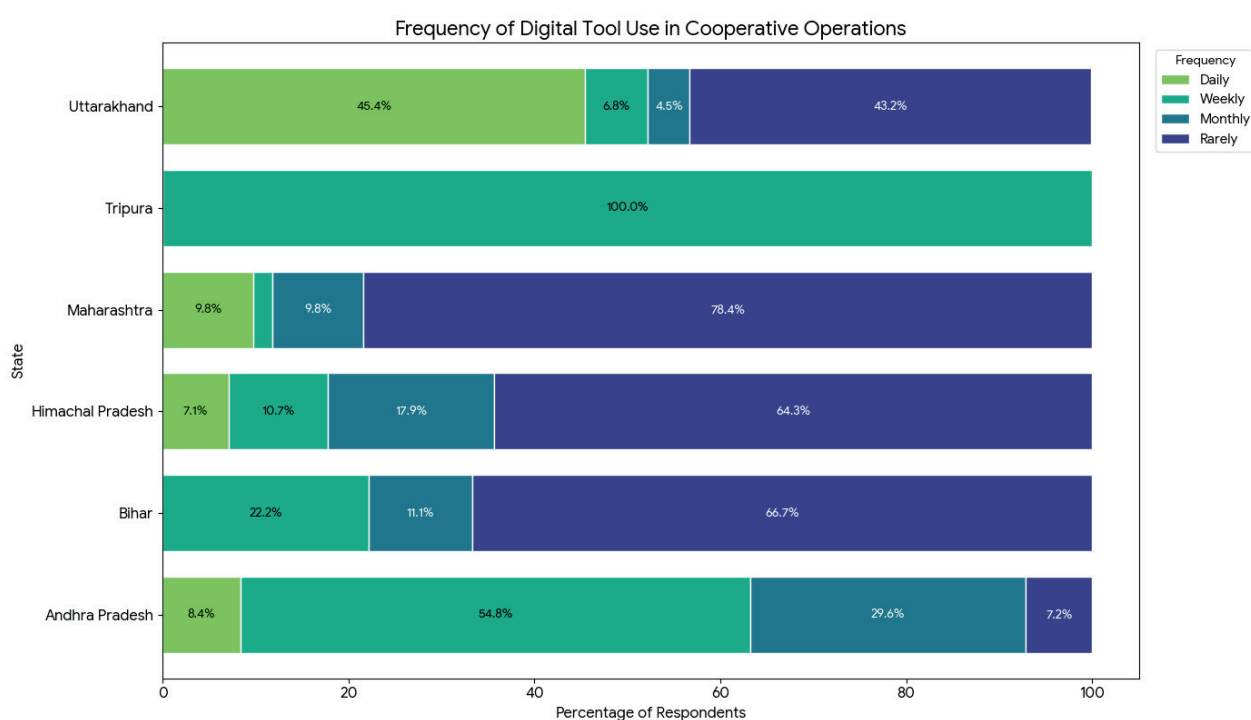
State	WhatsApp (%)	Mobile App (%)	SMS Alerts (%)	Online Payments	E-Market (%)	Respondents (n)
Andhra Pradesh	36.4	34	48.4	38.4	12.4	250
Bihar	77.8	44.4	0	0	0	9
Himachal Pradesh	82.1	42.9	3.6	0	0	28
Maharashtra	100	41.2	11.8	19.6	2	51
Tripura	100	0	50	0	0	2
Uttarakhand	81.8	59.1	34.1	52.3	6.8	44

Personal usage largely mirrors cooperative-level digitalisation. Uttarakhand’s relatively high use of digital payments among members (52%) is notable and reflects the successful penetration of UPI-based rural finance systems. Studies from MeitY and RBI also highlight Uttarakhand as an early adopter of village-level digital banking correspondents, which likely facilitated this pattern.

In Maharashtra and Himachal Pradesh, individual WhatsApp usage exceeds cooperative-level adoption of digital systems, suggesting a latent digital readiness that can be activated through targeted training and workflow restructuring.

In contrast, Bihar and Tripura show extremely limited personal engagement with digital payments or market platforms, reinforcing earlier findings that digital access alone (i.e., smartphone ownership) is insufficient without institutional onboarding and trust-building mechanisms.

8.3 Frequency of Digital Tool Use in Cooperative Operations



Digital use becomes routine only where it is embedded into core cooperative workflows such as payment disbursement, procurement scheduling, stock management, or advisory messaging. This explains daily/weekly use in Andhra Pradesh and Uttarakhand, where cooperatives are more tightly integrated with state departments and banking systems.

Where cooperatives operate primarily as credit societies or procurement intermediaries without digitised processes, usage remains rarely or occasionally (Himachal Pradesh, Maharashtra). Prior studies on cooperative performance suggest that digitalisation succeeds only when tied to institutional incentives, not simply technology availability.

8.4 Benefits Experienced from Digitalisation

Digitalisation correlates most strongly with market-facing benefits (better price discovery and faster information flow). This pattern aligns with global findings that digital platforms most directly enhance bargaining power and market transparency rather than yield or input cost outcomes.

The consistently high benefits in Andhra Pradesh and Uttarakhand indicate that digitalisation improves income outcomes when combined with procurement and market linkages. In contrast, states with limited or partial digital workflows report fewer benefits, reinforcing that digitisation must be process-deep, not surface-level to generate value.



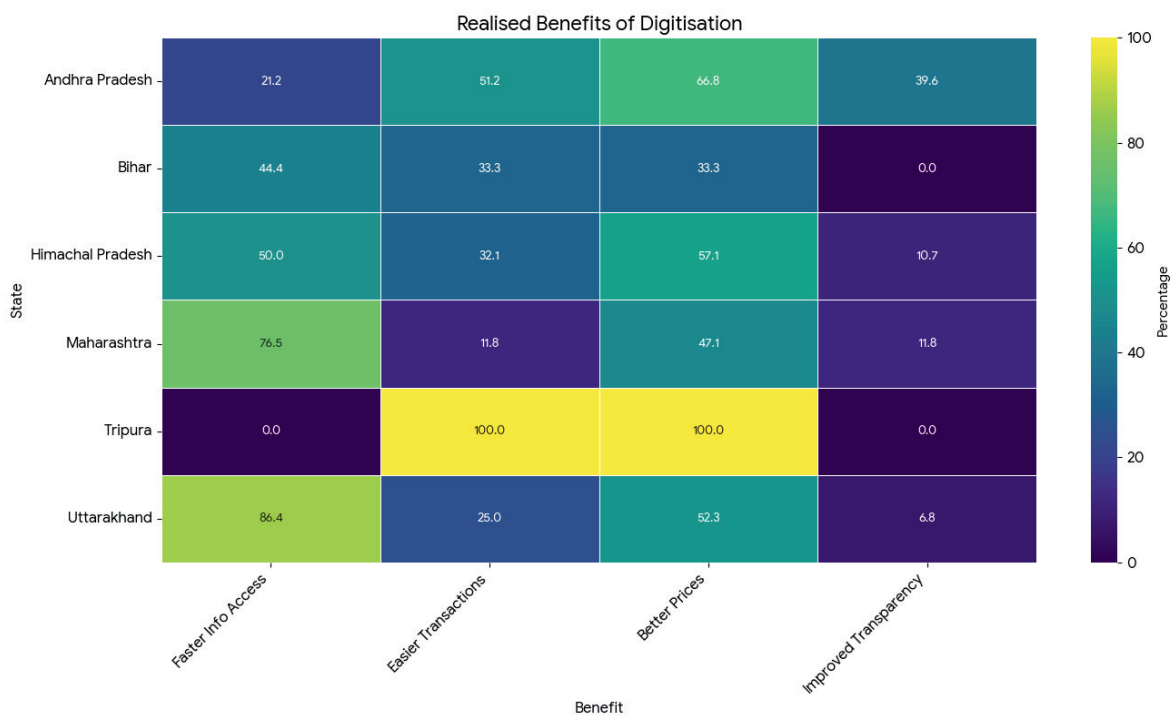
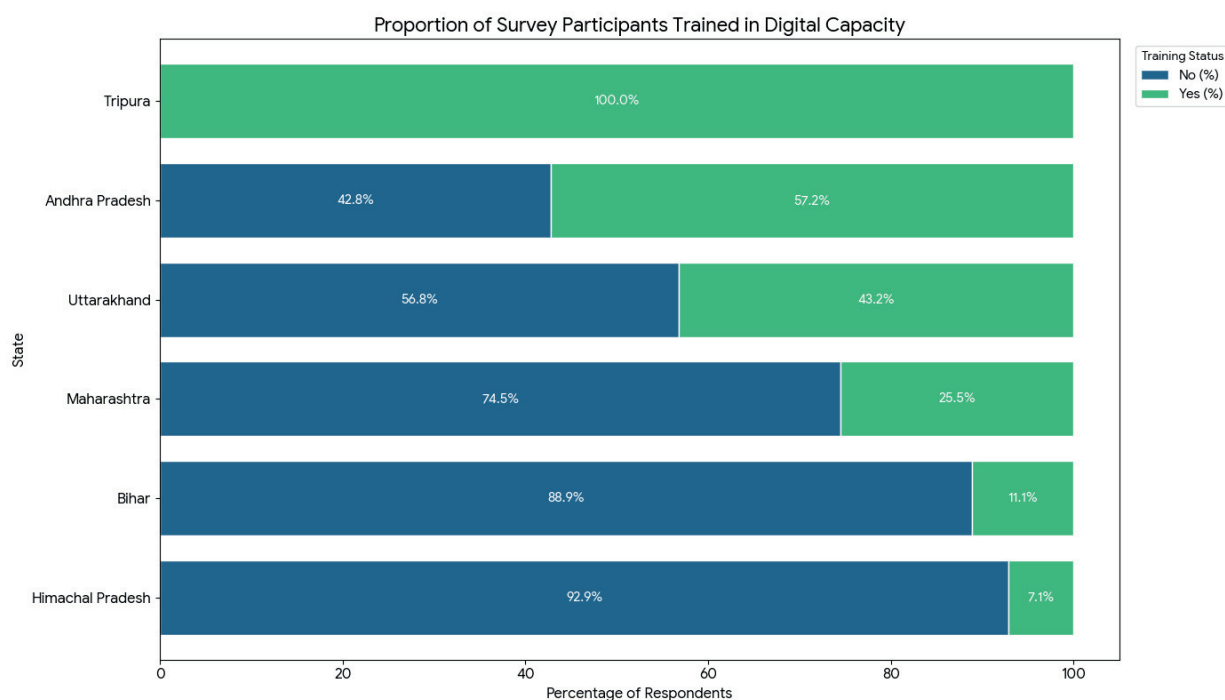


Table XII : Realised benefits of digitisation

State	Faster Info Access (%)	Easier Transactions (%)	Better Prices (%)	Improved Transparency (%)	Respondents (n)
Andhra Pradesh	21.2	51.2	66.8	39.6	250
Bihar	44.4	33.3	33.3	0	9
Himachal Pradesh	50	32.1	57.1	10.7	28
Maharashtra	76.5	11.8	47.1	11.8	51
Tripura	0	100	100	0	2
Uttarakhand	86.4	25	52.3	6.8	44

8.5 Training and Digital Capacity



Training is the strongest predictor of actual digital usage, a finding which is echoed by national evaluations of Common Service Centres and international cooperative digitalisation pilots. Where training is continuous and applied (Andhra Pradesh, Uttarakhand), digitalisation is institutionalised. Where training is episodic or absent (Bihar, Himachal Pradesh), digital adoption remains fragmented or symbolic.

8.6 Summary of Key Insights

- Digital adoption follows institutional strength, not just device ownership.
- WhatsApp is universal, but e-payment and e-market usage is uneven.
- Training and organisational support determine whether digitalisation becomes routine.
- Digitalisation improves transparency and market prices only when integrated into cooperative procurement systems.



CHAPTER - 09

Barriers and Support Needs for Strengthening Cooperatives

Understanding constraints faced by both members and cooperatives is critical for designing systemic reforms that enhance equitable participation and support to marginal farmers. This chapter examines (i) members' personal challenges in accessing cooperative services, (ii) key institutional barriers encountered by cooperatives in serving small and marginal farmers, and (iii) priority improvements that members believe would strengthen cooperative performance. The findings reveal that awareness, procedural complexity, digital literacy gaps, and funding constraints are the most significant bottlenecks, trends that are consistent with broader literature on cooperative development in rural India.

9.1 Personal Barriers in Accessing Cooperative Services

Table XIII : Top Personal Challenges in Accessing Cooperative Services

State	Lack of awareness (%)	Distance to office (%)	Complex procedures (%)	Insufficient funds (%)	Gender-related issues (%)	Lack of digital skills (%)	Poor service quality (%)	Respondents (n)
Andhra Pradesh	46	46	43.6	46.3	23	16	15.3	287
Bihar	50	41.7	41.7	8.3	0	16.7	16.7	12
Himachal Pradesh	54.8	38.7	25.8	16.1	6.5	6.5	3.2	31
Maharashtra	87.8	18.9	39.2	12.2	1.4	10.8	5.4	74
Tripura	77.8	66.7	22.2	66.7	0	44.4	11.1	9
Uttarakhand	83.7	32.7	63.3	34.7	20.4	16.3	2	49

Across states, the most significant barriers relate to awareness, distance, procedural complexity, and affordability, consistent with evidence from national cooperative performance reviews.

- Lack of awareness is highest in Maharashtra (88%) and Uttarakhand (84%), suggesting that awareness campaigns, member onboarding, and regular communication are insufficient. This pattern echoes earlier studies showing that cooperatives often fail to build continuous member engagement and transparency mechanisms.
- Complex procedures are a barrier particularly in Uttarakhand (63%) and Andhra Pradesh (44%), implying that cooperatives may retain bureaucratic norms inherited from older PACS structures.
- Distance to cooperative offices is a major constraint in Tripura (67%), reflecting geographical isolation and limited institutional presence.
- Lack of digital skills is highest in Tripura (44%), consistent with low uptake of digital platforms in Chapter 6.
- Gender-related issues are relatively lower overall but notable in Andhra Pradesh (23%) and Uttarakhand (20%), aligning with studies showing that women in cooperatives face mobility constraints and underrepresentation in leadership.

Overall, the findings indicate that physical access, process design, and communication deficiencies act as systemic barriers. Simply expanding cooperative services is not sufficient without member-oriented outreach, simplified procedures, and targeted inclusion initiatives.

9.2 System-Level Challenges in Cooperatives

Table XIV : Institutional Challenges Faced by Cooperatives in Serving Marginal Farmers

State	Limited Funding (%)	Inadequate Staff Training (%)	Poor Infrastructure (%)	Weak Digital Systems (%)	Policy Constraints (%)	Coordination Issues (%)	Respondents (n)
Andhra Pradesh	64.5	41.8	45	31	29.3	12.5	287
Bihar	25	33.3	0	16.7	33.3	0	12
Himachal Pradesh	38.7	29	22.6	41.9	9.7	3.2	31
Maharashtra	59.5	35.1	23	18.9	20.3	28.4	74
Tripura	33.3	100	66.7	33.3	22.2	11.1	9
Uttarakhand	75.5	40.8	44.9	42.9	26.5	2	49

The data reveal structural limitations in cooperative functioning that restrict service delivery to marginal farmers.

- Limited funding is the most prevalent constraint, particularly in Uttarakhand (76%) and Maharashtra (59%), consistent with earlier assessments showing that PACS often operate with insufficient working capital and dependence on higher-tier cooperatives or district banks.
- Inadequate staff training is most severe in Tripura (100%) and significant in Andhra Pradesh (42%), indicating gaps in professionalisation. Prior research demonstrates that cooperatives with trained managers achieve stronger governance and market integration outcomes.
- Poor infrastructure challenges in Tripura (67%) and Uttarakhand (45%) reflect the rural terrain and logistical constraints typical of hill and frontier regions.
- Weak digital systems are especially prominent in Himachal Pradesh (42%) and Uttarakhand (43%), reinforcing the findings from Chapter 6 that digitalisation remains uneven and institutionally shallow.
- Policy constraints are moderately acknowledged, highlighting that cooperative reform and regulatory frameworks remain fragmented across states.

These challenges indicate that cooperative strengthening must focus on both financial restructuring and capacity building, rather than solely digital or market solutions.

9.3 Support Measures Requested by Farmers

Table XV : Improvements Suggested by Members

State	More Training Programs (%)	Simplified Procedures (%)	Lower Membership Fees (%)	Better Infrastructure (%)	Enhanced Digital Platforms (%)	Gender-Inclusive Initiatives (%)	Stronger Market Linkages (%)	Respondents (n)
Andhra Pradesh	33.5	48.4	48.1	54.7	25.8	11.2	9.1	287
Bihar	33.3	58.3	33.3	8.3	8.3	0	8.3	12
Himachal Pradesh	41.9	54.8	29	35.5	12.9	3.2	12.9	31
Maharashtra	56.8	59.5	62.2	17.6	16.2	0	17.6	74
Tripura	77.8	88.9	77.8	88.9	0	11.1	11.1	9
Uttarakhand	67.4	59.2	59.2	38.8	24.5	10.2	24.5	49

Respondents emphasize three primary reforms:

- Simplifying procedures (especially in Maharashtra, Tripura, Himachal Pradesh): This aligns with research showing that bureaucratic processes discourage participation, particularly among women and marginal farmers.
- Better infrastructure and funding support, particularly in Tripura and Andhra Pradesh, indicating the need for physical expansion and modernization of cooperative service points.
- More training and human capacity development, strongly requested in Uttarakhand, Maharashtra, and Tripura, confirming that capacity is as critical as capital in cooperative development.

Demand for gender-inclusive initiatives is moderate but notable in Andhra Pradesh (11%) and Uttarakhand (10%), suggesting emerging recognition rather than systemic integration, which is consistent with broader findings that women's participation remains structurally constrained.

9.4 Policy and Programmatic Implications

Dimension	Key Issue	Implication	Policy Direction
Member Access	Awareness, process complexity, distance	Low participation of marginal farmers	Community outreach + mobile/doorstep service delivery
Institutional Capacity	Limited funding, weak staff capabilities	Cooperatives operate below potential	Dedicated state-level cooperative revitalization funds + training institutes
Digital Enablement	Weak system integration, low digital skills	Digital benefits remain uneven	Training-linked digital onboarding + shared cooperative MIS systems
Inclusion	Moderate acknowledgment of gender barriers	Women's participation still structurally limited	Gender-targeted membership & leadership pathways

CHAPTER - 10

Best Practices from Bihar — Emerging Farmer Institution-Based Models for Sustainable Livelihoods

Bihar presents a distinctive institutional landscape where long-established cooperative structures particularly Primary Agricultural Credit Societies (PACS) operate alongside an expanding network of Farmer Producer Companies (FPCs), creating a unique coexisting ecosystem of collective farmer institutions. This dual architecture offers an opportunity to understand how traditional cooperatives and newer producer-owned enterprises can jointly contribute to strengthening the livelihoods of marginal farmers. Within this evolving context, the Bihar Smallholder Livelihoods Development (BSLD) project has emerged as a significant driver of institutional transformation by supporting FPCs with a strong base of women self-help groups (SHGs) through a suite of integrated and strategic interventions. These include the promotion of women-led FPCs as engines of rural economic growth, the integration of livelihood and institutional strengthening approaches, off-farm livelihood interventions e.g., Goat rearing, Poultry, Nutri-garden, Farmer field school model, and climate-resilient agricultural planning embedded within community institutions. In this process, the Farmer Producer Company setup itself is emerging as a protective institutional structure shielding women farmers from spurious seeds and agri-inputs, providing reliable extension support that reduces dependence on unauthorized agro-advisory sources, facilitating stronger market linkages and access to credit, and creating local work opportunities that enhance income generation.

The BSLD project also advances gender-responsive agribusiness policy frameworks and works to strengthen formal financial inclusion pathways for FPCs, thereby reinforcing their economic viability and governance capacities.

To capture the on-ground evidences and effects of these interventions, an additional survey of 100 women marginal farmers associated with BSLD-supported FPCs (10 FPCs out of 18 BSLD supported FPCs) were undertaken and the results are captured as part of this chapter. Their experiences across income changes, service access, institutional participation, resilience practices, and market engagement provide critical insights into how project-supported FPCs are reshaping the economic and organisational landscape for smallholders especially women farmers in Bihar. The findings highlight a crucial point of FPCs have achieved significant success in promoting market orientation, enterprise development, and gender-inclusive growth pathways. When we consider the larger sample from Bihar particularly the engagement of marginal farmers with PACS it becomes evident that there is substantial scope for collaboration between the two institutions.



The analysis further shows that both FPCs and PACS provide a variety of services to marginal and smallholder farmers, especially women. This creates an opportunity to develop stronger linkages so that the two institutions can complement each other's efforts, ultimately delivering greater benefits to marginal farmers.

Together, the Bihar experience demonstrates how strengthened producer companies and organisations, supported by targeted livelihood and institutional interventions, can contribute to building a more resilient, equitable, and farmer-centric rural economy.

10.1 BSLD: A Strategic Enabler of Women-Led Agribusiness

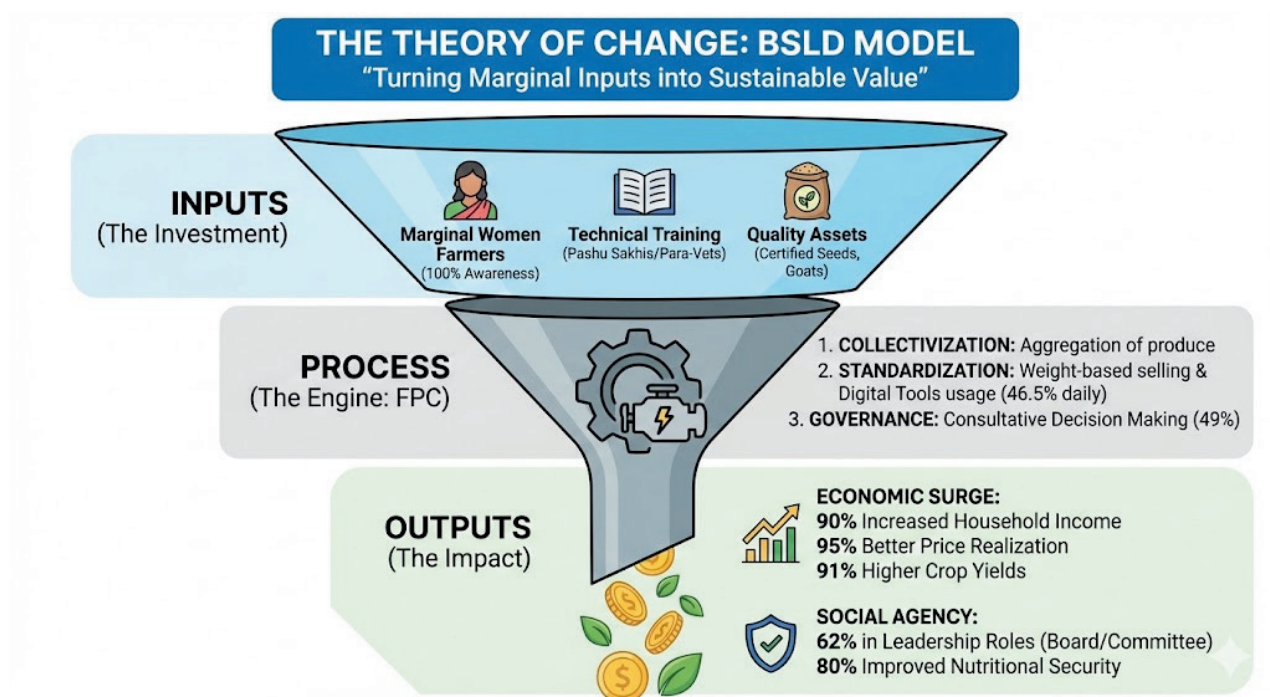
From Vulnerable Collectives to Resilient Economic Engines

The Bihar Sustainable Livelihood Development (BSLD) Project implemented by Passing Gift Private Limited (PGPL) acts as a catalyst for institutional transformation in Bihar's rural economy. By **supporting 18 Farmer Producer Companies (FPCs) predominantly comprised of marginal women farmers**, the project has mainstreamed these collectives into formal institutional frameworks.

The transition from subsistence-based livelihoods to organized economic entities requires sustained effort. Through a "dual-engine" approach of Institutional Strengthening and Livelihood Densification, BSLD has successfully positioned these FPCs as scalable models for inclusive development, enhancing institutional capacity, climate resilience, and women's agency.

The Emerging Hybrid Model Findings from the ground point toward a complementary future:

- **PACS provide proximity, established trust, and essential credit linkages.**
- **FPCs inject market orientation, enterprise development, and gender-inclusive growth pathways.**



Institutional Strengthening: The Governance Shift

From Informal Groups to Accountable Boards The robustness of these FPCs is a direct result of continuous, module-based capacity building. BSLD interventions have moved beyond basic mobilization to focus on high-level governance reforms.

1

- **Board Professionalization:** Structured interventions have enhanced the functional capacities of Boards of Directors (BoDs), enabling informed decision-making, regulatory compliance, and efficient operational management.
- **Organisational Maturity:** This investment has transformed FPCs into performance-driven entities, ensuring long-term sustainability and inclusivity within the rural agribusiness ecosystem.

Livelihood Densification & The "CAVE" Innovation

Professionalizing the Livestock Economy BSLD has anchored income stability in agriculture–livestock integration, with goat rearing emerging as the economic backbone for member households.

2

- **The "CAVE" Model (Innovation):** Going beyond the traditional Pashu Sakhi (community animal care provider) approach, BSLD introduced the Community Agro Vet Entrepreneurs (CAVEs) model. Through Entrepreneurship Development Programs (EDPs), participants are trained not just in animal health but in agri-horti practices and business skills, enabling them to operate as comprehensive, independent service providers.
- **Market Transparency:** The project facilitated a critical shift from informal "hunda" (visual estimation) trading to weight-based livestock sales, ensuring transparency and fair price realization for women farmers.
- **Production Efficiency:** In agriculture, the promotion of Custom Hiring Centres, certified seeds, and crop diversification has significantly reduced vulnerability to climatic shocks while cutting dependence on exploitative intermediaries.

Climate Resilience as a Core Principle

Embedding Ecology into Economics Climate resilience is not an add-on but a core operating principle of the BSLD model.

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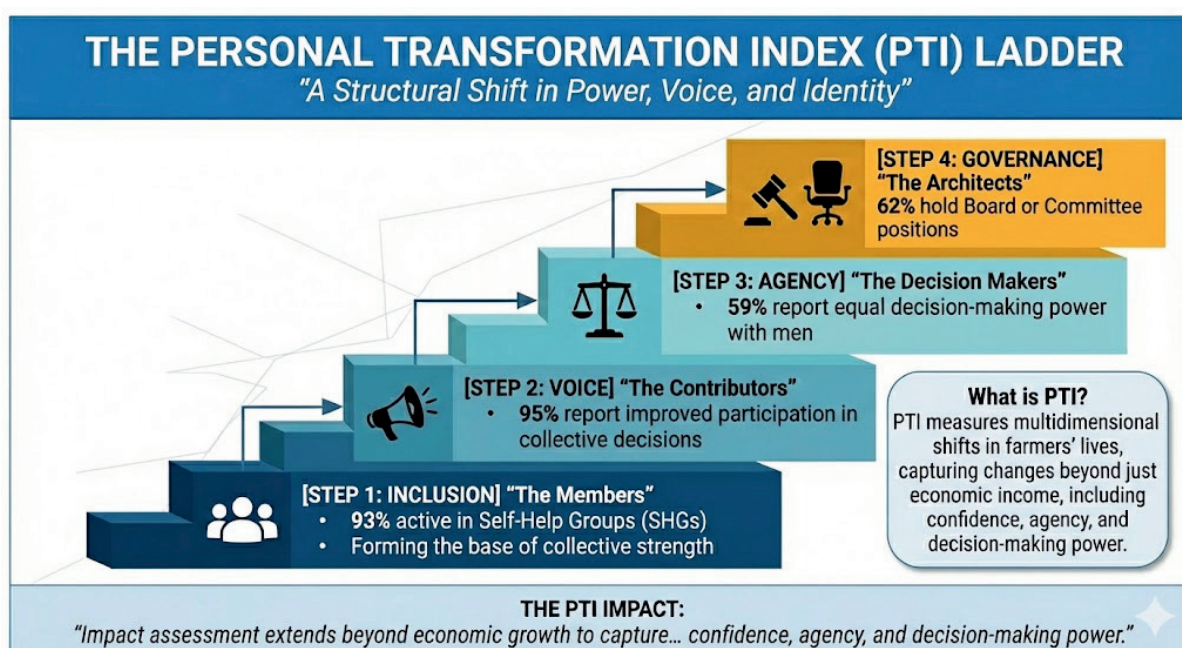
- **Adaptation:** In flood-prone geographies, farming practices have been adapted to local ecological conditions through water-efficient cropping systems and soil health management promoted by Farmer Field Schools (FFS).
- **Food Security:** The extensive promotion of Nutri-kitchen gardens has strengthened household food security, creating a buffer against volatile market systems and improving nutritional outcomes.

The Personal Transformation Index (PTI) & Women's Agency

Measuring the Shift from *"Invisible"* to *"Influential"* The impact of BSLD extends beyond conventional economic metrics. The project integrates the **Personal Transformation Index (PTI)** to capture multidimensional shifts in confidence, agency, and social inclusion.

4

- **Agency Building:** Women have transitioned from invisible contributors to recognized shareholders and enterprise leaders. Their increased participation in financial decision-making and business negotiations reflects a structural shift in intra-household power dynamics.
- **Holistic Measurement:** By incorporating PTI, BSLD recognizes that sustainable livelihood improvement is a process of personal empowerment, fostering peer-based solidarity and sustained behavioral change.



The Road Ahead: Enterprise, Policy & Scale

From **Pilot to Policy Architecture** BSLD has supported the evolution of FPCs into market-oriented institutions through value-chain innovations like **feed production units, seed aggregation, and oilseed processing**.

5

While challenges such as limited credit access and infrastructural deficits persist, BSLD's role as a facilitator of convergence linking FPCs with NABARD and line departments has been pivotal in mitigating these gaps. The successes of this model offer a replicable policy architecture for national-level formulation, particularly in:

- Promoting women-led FPCs as engines of growth.
- Integrating livelihood and institutional strengthening.
- Developing gender-responsive agribusiness frameworks.

As Bihar moves toward scalable models of inclusive growth, the BSLD framework stands as a best-practice model to institutionalize women as central economic actors in rural development.

10.2 The "Method": How Change Happens

Engineering Resilience through Enterprise and Ecology

The transformation observed across the project landscape is not accidental; it is the result of a structured methodology that integrates livelihood densification with institutional strengthening. The BSLD approach does not merely distribute assets; it builds ecosystems. This "Method" relies on two powerful engines of change: the professionalization of livestock (The "Goat ATM") and the embedding of climate intelligence into community practice.

Engine 1: The "Goat ATM" Model (From Activity to Enterprise)

Goat rearing has historically been a scattered, subsistence activity for women in Bihar. The BSLD project transformed this into a structured enterprise, now widely referred to by members as their "Household ATM" due to its ability to provide immediate liquidity for health, education, and emergencies.

Engine 2: Climate Resilience (From Vulnerability to Adaptation)

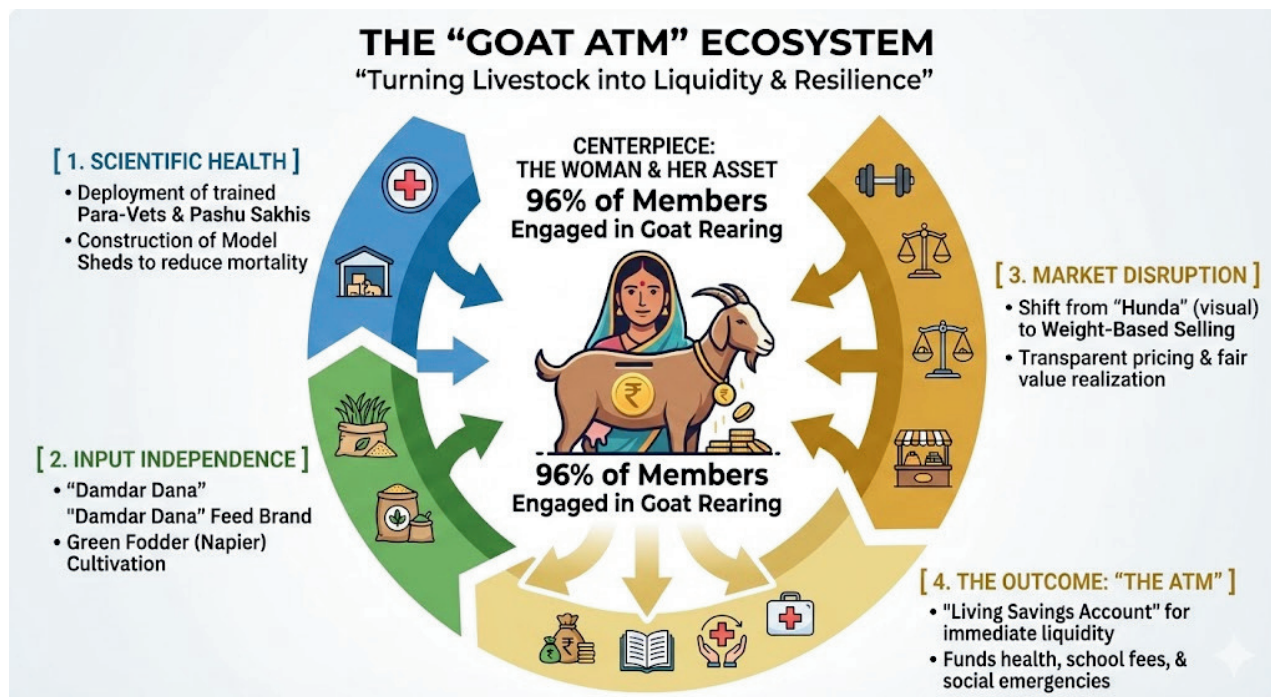
In a region prone to both floods and erratic monsoons, economic gain cannot sustain without ecological security. The "Method" integrates Climate Smart Agriculture (CSA) directly into the FPC governance and operational structure.

The Classroom in the Field: Through **Farmer Field Schools (FFS)**, the project disseminated knowledge on climate-resilient crop varieties and pest management, replacing ad-hoc farming with informed decision-making.

The Transformation Mechanism:

- **Scientific Management:** The project replaced traditional practices with scientific rigor. The deployment of trained CAVE didi and Pashu Sakhis (community animal health workers) provided continuous veterinary care, significantly reducing neonatal mortality and improving herd health. Importantly, Community Agro Vet Entrepreneurs (CAVEs) model introduced under the BSLD extends beyond the traditional Pashu Sakhi approach through structured Entrepreneurship Development Programs (EDPs), participants receive training in scientific animal management, gain exposure to agri-horti practices, and build essential entrepreneurship skills, enabling them to operate as comprehensive livestock service providers within their communities.
- **Infrastructure Upgrades:** The construction of model goat shelters moved livestock from open, vulnerable environments to hygienic, covered spaces, directly impacting productivity.
- **Market Disruption (The Weight-Based Shift):** Perhaps the most critical structural change was the transition from 'Hunda' (visual estimation) to weight-based selling. Though initially met with resistance, this shift introduced transparency and ensured fair price realization, breaking the hold of exploitative traders.

- **Value Addition:** The "Method" extends to value-chain innovation. For example, the Parihar FPC launched its own feed brand, "Damdar Dana," selling nearly 80 tonnes in a year, turning a cost center (feed) into a profit center.



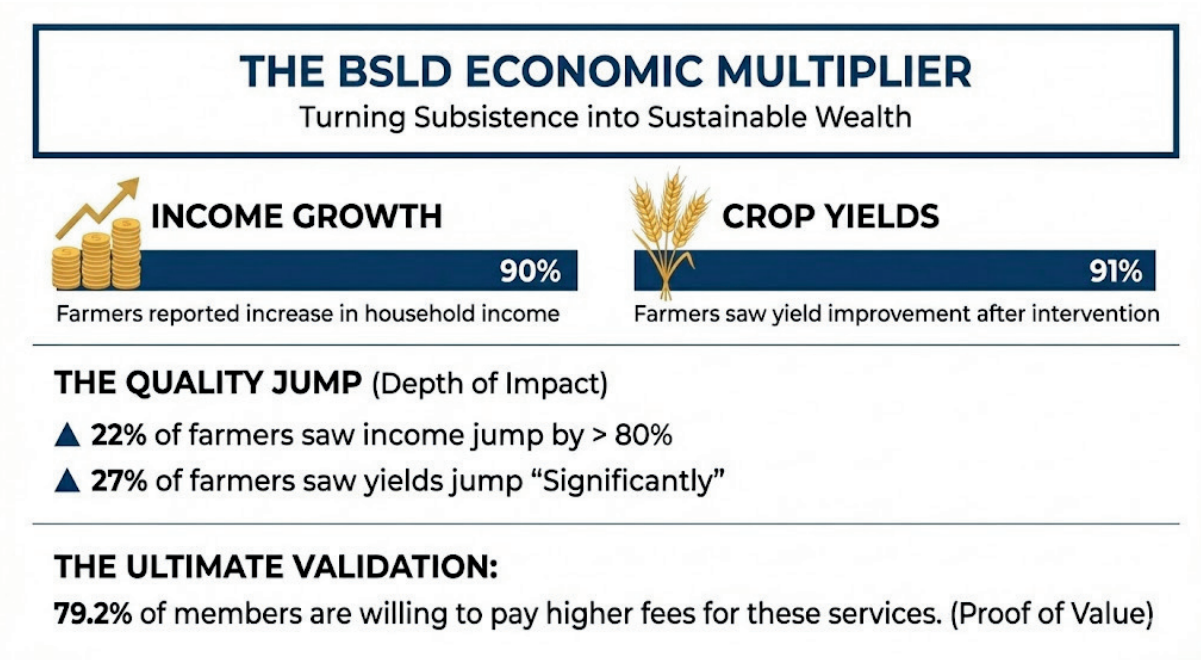
Engine 3: Institutional Convergence

The final pillar of the "Method" is the role of BSLD as a facilitator of convergence. By linking FPCs with financial institutions like NABARD and NABKISAN, the project has unlocked capital that was previously inaccessible to marginal farmers. This institutional mentoring ensures that the FPCs are not just functionally competent but financially bankable entities capable of long-term survival.

10.3 Measuring Transformation: From Subsistence to Stability

To capture the on-ground effects of BSLD interventions, a survey of 101 marginal farmers across ten FPCs was conducted. The data reveals a decisive shift: women are moving from vulnerable, low-input farming to organized, market-linked enterprise. The findings are categorized into three core impact dashboards: Economic Surge, Service Delivery, and Social Agency.

Dashboard A: The Economic Surge



The **most critical indicator of the FPC model’s success is the tangible improvement in household economics**. The data confirms that collectivization is directly translating into higher yields and better incomes, breaking the cycle of stagnation.

- **Depth of Impact:** For 64% of these members, the income rise was substantial, ranging between 60–80%.
- **High-Growth:** Over 22% experienced income growth exceeding 80%, demonstrating strong economic mobility.

Dashboard B: Redefining Service Delivery

Prior to joining the FPC, members relied heavily on local traders and middlemen. The FPC has fundamentally restructured this supply chain.

- **Input Access:** 91% of members now receive seeds and fertilizers directly through their FPC, ensuring quality and timeliness. Additionally, 96% reported an improvement in the quality of these inputs compared to previous sources.
- **Knowledge Transfer:** 40% of members now access technical training and advisory services, replacing informal, unscientific practices.

FROM VULNERABILITY TO STABILITY

The Structural Shift in Service Delivery

BEFORE JOINING (The Struggle)

AFTER JOINING (The Solution)

✗ **79%** Faced Low Prices
(Weak Bargaining)



✓ **95%** Improved Price Realization
(Collective Power)



✗ **65%** Lacked Market Access
(Isolation)



✓ **97%** Improved Market Access
(Institutional Linkage)



✗ **45%** Relied on Middlemen
(Local Traders)



✓ **91%** Direct Seed/Fertilizer Access
(Quality Input Supply)



THE "GOAT ATM" (Economic Backbone)



96% of members are now engaged in Goat Rearing
Creating a liquid asset for emergencies & daily needs.

➔ **Satisfaction:** 86% of members rate the quality of FPC services as "Good" or "Excellent". Respondents who acknowledged improvements in access to markets, among them 42% categorised this improvement as "significant".

Dashboard C: Agency, Resilience & Governance

Beyond economics, BSLD has catalyzed a social transformation. Women are no longer just "helpers" on the farm; they are governance leaders and active participants in climate resilience.

EMPOWERING THE INVISIBLE

From "Farm Helpers" to "Decision Makers"



VOICE & DECISION MAKING	<ul style="list-style-type: none"> • 59% of women report being involved in decision-making "equally with men". • 49% describe the decision-making process as "consultative," involving members rather than just the Board.
NUTRITIONAL SECURITY	<ul style="list-style-type: none"> • 80% of members report that Nutri-kitchen gardens have led to moderate or significant improvements in household nutrition.

10.4 Detailing out Insights 101

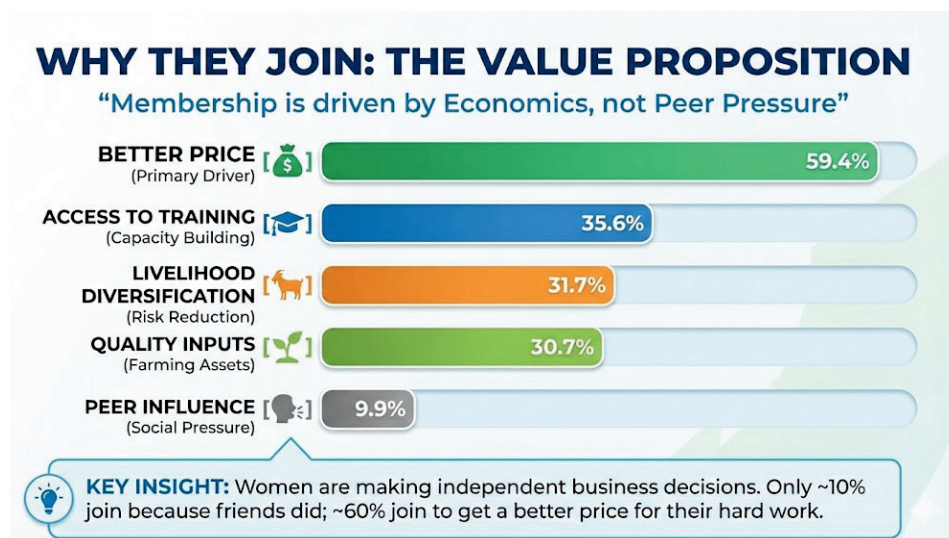
Membership & Participation: Building a Stable Community

The strength of an FPO lies not just in its numbers, but in the depth of its member engagement. The survey data reveals that the BSLD-supported FPOs have successfully transitioned from an initial mobilization phase to a period of sustained retention. Women are joining not out of social obligation, but due to clear economic incentives, and they are maintaining a disciplined, manageable rhythm of participation.

Duration of Membership: A Blend of Growth and Stability

The membership profile reflects a healthy institutional lifecycle a dynamic mix of fresh energy and experienced stability.

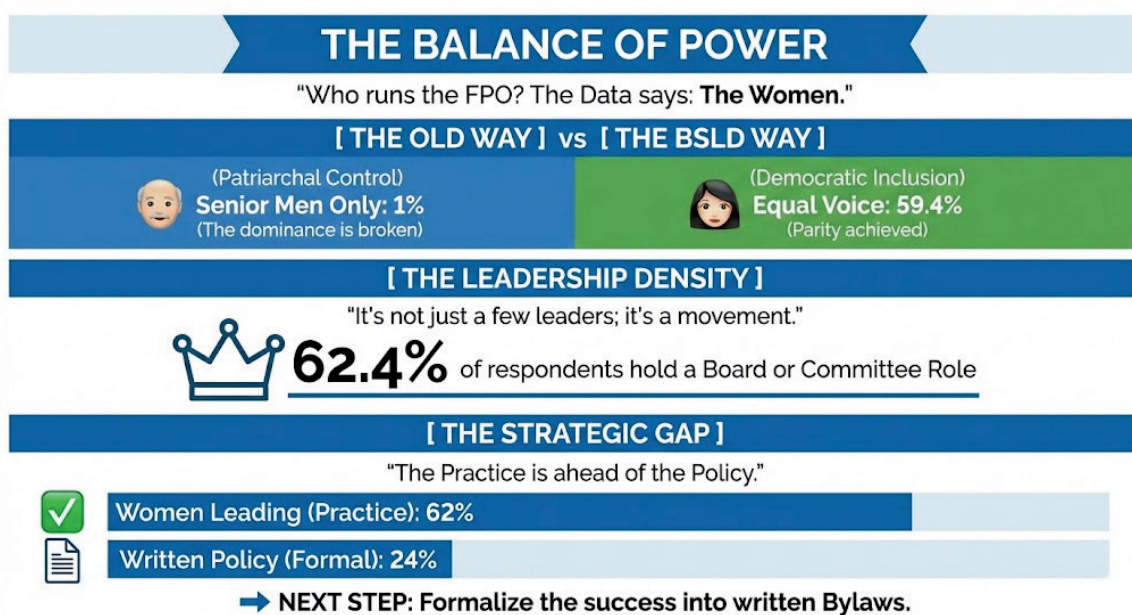
- **Rapid Expansion:** The majority of respondents (**51.5%**) have been members for 1–2 years. This spike indicates successful recent mobilization drives and the growing appeal of the FPO model in new geographies.
- **Institutional Memory:** Crucially, nearly a quarter (**24.8%**) have remained with the FPO for over 3 years. This high retention rate serves as a proxy for satisfaction; members stay because they see value.
- **Market Rationality:** The single strongest motivator is the expectation of "Better Prices". This confirms that women view the FPO primarily as a commercial instrument to improve farmgate realizations.



Gender Inclusion in Governance: From Participation to Power

The most profound metric of the BSLD project's success is not just economic; it is structural. The survey data confirms that women in these FPOs have moved beyond being passive beneficiaries to becoming the active architects of their own institutions. The governance model emerging is democratic, consultative, and surprisingly resilient against traditional patriarchal norms. In many rural development projects, women remain at the periphery of governance. In BSLD-supported FPOs, they are the core.

- **Active Governance:** A striking **62.4%** of survey respondents actively hold a Board or Committee position within their FPO. This high proportion indicates that leadership is not concentrated in the hands of a few but is shared broadly among the membership.
- **Consultative Culture:** The dominant mode of decision-making, reported by 48.5% of members, is "Consultation with Members". This suggests a grassroots approach where the Board does not rule by decree but by consensus.
- **Perception of Equality:** Consequently, 59.4% of women report being involved in decision-making "equally with men".
- **The Policy Gap:** While 62.4% of women are leaders in practice, 61.4% of FPOs still lack a formal written policy to promote gender balance.



Changes & Impact: The BSLD Dividend

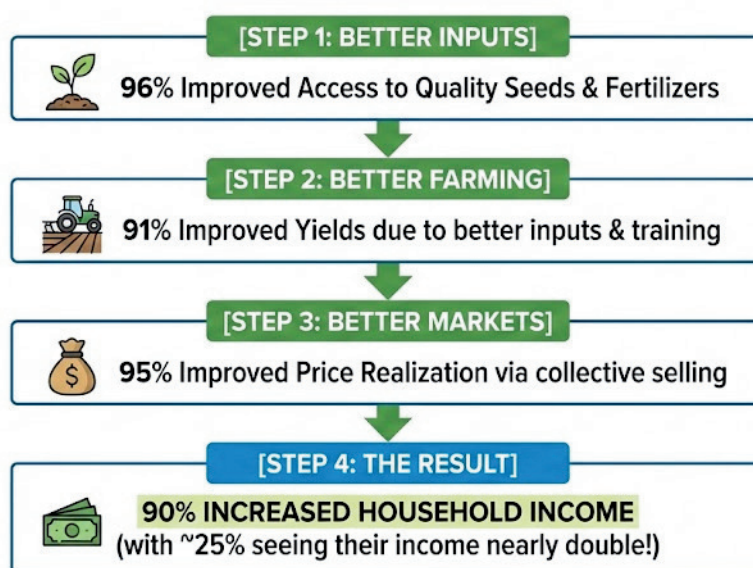
The ultimate test of any development intervention is the tangible difference it makes in the lives of its beneficiaries. The survey data overwhelmingly confirms that joining an FPO is a transformative event for women farmers. The impact is visible across three critical dimensions: Operational Efficiency, Market Power, and Economic Mobility.

- **The Input Revolution:** A staggering 96% of members reported improvements in access to quality inputs. Specifically, 93.1% received seeds and 57.4% received fertilizers directly through their FPO in the last year, effectively bypassing unreliable local dealers.

- **Knowledge Transfer:** The FPO is not just a shop; it is a school. 87% of members reported an improvement in their technical knowledge , and 91% have adopted better post-harvest management practices. This shift from traditional to technical farming is a key driver of yield improvements.
- **Price Realization:** 95% of members reported receiving better prices for their produce after joining the FPO.
- **Market Access:** Similarly, 97% saw improvements in market access , with 41.6% categorizing this improvement as "Significant". By aggregating produce and negotiating collectively, women are finally capturing a fair share of the value chain.

THE BSLD IMPACT CASCADE

How Inputs Turn into Income



Economic Mobility: The Income Multiplier

The operational and market improvements have translated directly into financial gains, validating the economic logic of the FPO model.

- **Yield Growth:** 91% of farmers reported an increase in crop yields, with over a quarter (26.7%) seeing a "Significant Increase".
- **Income Surge:** Consequently, 90% of respondents reported a rise in household income. The depth of this impact is profound:
 - 70.3% of beneficiaries saw their income rise by 60–80%.
 - 24.2% experienced an income jump of 80–100%.

This data presents a compelling case: The BSLD-supported FPO is not merely a social support group; it is a high-impact economic engine that doubles incomes and secures livelihoods.

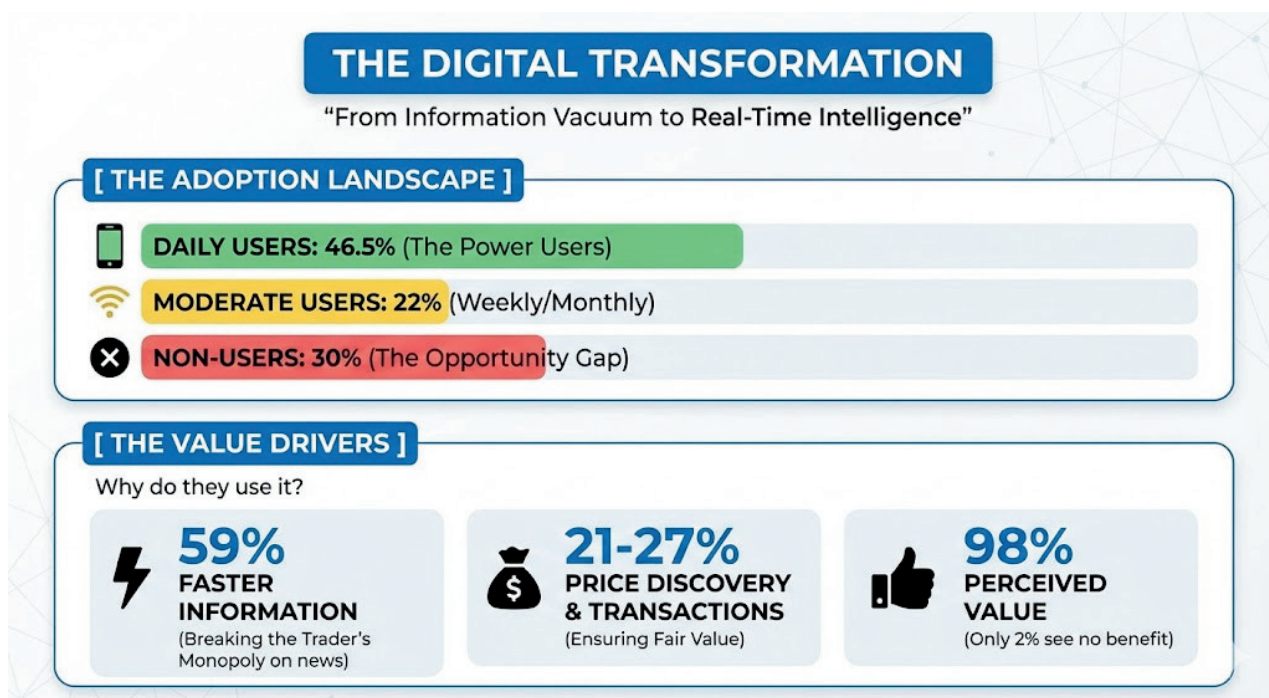
Digital Adoption: Bridging the Information Divide

In rural markets, information is power. Historically, marginal farmers have operated in an information vacuum, relying on hearsay or traders for price data. The BSLD project is actively dismantling this asymmetry by integrating digital tools into the FPO ecosystem. The survey results indicate a strong, albeit evolving, culture of digital engagement. The digital transition is well underway, with nearly half of the members integrating technology into their daily routine.

- **Daily Engagement:** A significant 46.5% of respondents use digital tools every single day. This high frequency suggests that for these women, digital connectivity has moved from a novelty to a necessity.
- **The Adoption Curve:** While daily usage is high, a "digital divide" persists, with nearly 30% of members not yet using these tools. This gap represents a clear opportunity for the next phase of capacity building, targeting the most marginalized segments who are yet to come online.
- **Moderate Users:** Another 22% engage with digital platforms on a weekly or monthly basis, indicating a gradual uptake trajectory.

The Value Proposition: Why Digital Matters

- **Information Asymmetry:** The most widely cited benefit, reported by 59% of users, is "Faster and Better Information". Digital tools are providing real-time updates that allow farmers to make informed decisions rather than reactive ones.
- **Market Intelligence:** approximately 21–27% of members specifically value digital tools for transactions and market price discovery. This is critical for the FPO's commercial success, as it allows members to verify fair prices before selling.



BSLD Impact: A Multidimensional Transformation

Beyond Income: Building Health, Resilience, and Voice

The impact of the BSLD initiative extends far beyond simple economic metrics. The survey data reveals a holistic transformation where financial gains are reinforced by improved nutritional security, climate adaptation, and a profound deepening of women's agency. The results depict a community that is not only earning more but living better and planning for the future.

The Prosperity Pillar: Livestock as the Economic Engine

The primary objective of livelihood strengthening has been met with decisive success.

- **Income Growth:** The most widely observed impact is a tangible increase in income, reported by 70.3% of beneficiaries.
- **The "Goat" Strategy:** This economic surge is almost exclusively driven by the project's focus on small livestock. 96.0% of FPO activities are centered on goat rearing, confirming its status as the dominant, scalable livelihood model for the region.
- **Asset Satisfaction:** Consequently, 85.2% of members are either "Highly" or "Moderately" satisfied with the change in their asset ownership and agency, signaling that the goats act as effective wealth creators.

The Resilience Pillar: Health & Climate Readiness

BSLD has successfully embedded "safety nets" into the community structure, protecting gains from health shocks and climate disasters.

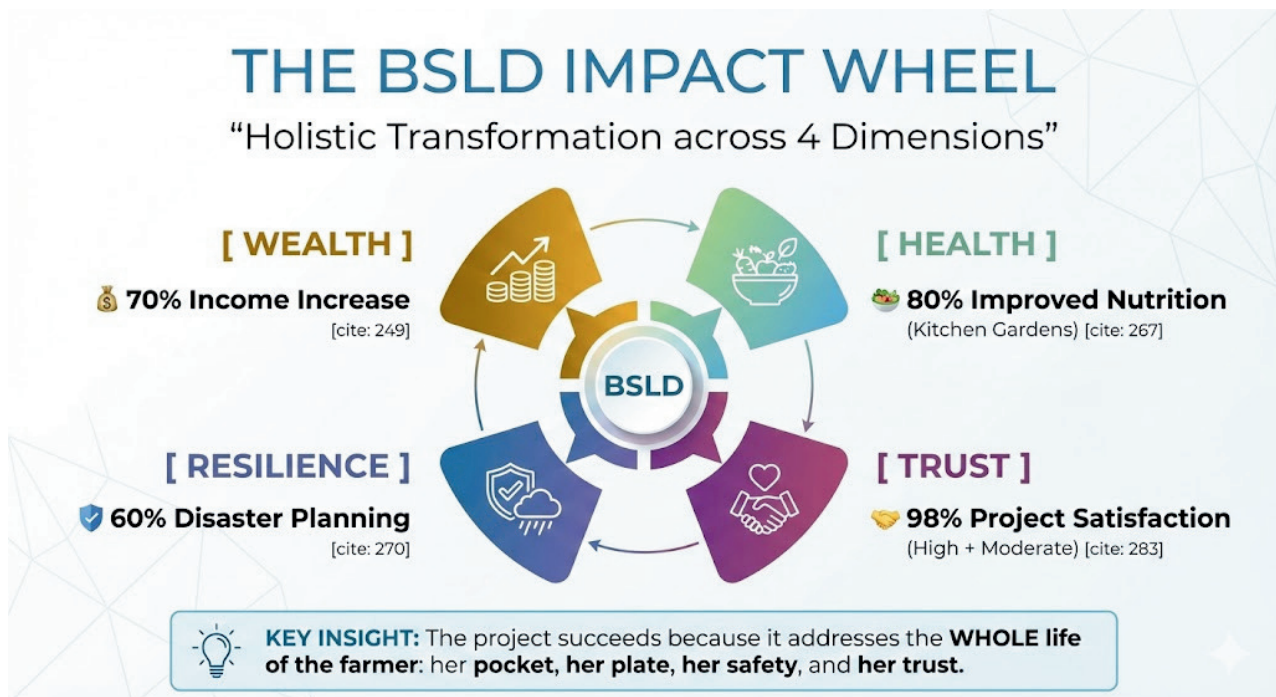
- **Nutritional Security:** The promotion of Nutri-kitchen gardens has been a standout success. 80.2% of respondents reported "Moderate" to "Significant" improvements in the nutritional outcomes of their households.
- **Disaster Preparedness:** In a flood-prone region, preparedness is survival. 60.4% of women have actively participated in developing community-led disaster reduction plans, indicating high engagement in risk mitigation.
- **Climate Smart Agriculture (CSA):** Farmers are beginning to adapt their field practices. The strongest adoption rates are seen in climate-sustainable tillage (36.6%) and green fodder promotion (30.7%), which directly supports the livestock economy.

The Agency Pillar: Leadership & Satisfaction

The project has translated "beneficiary status" into "leadership roles," though the journey toward total inclusion continues.

- **Empowerment:** A remarkable 41.6% of participants have been promoted to leadership positions within their FPO, a strong indicator of empowerment.
- **Overwhelming Trust:** The overall satisfaction with BSLD support is exceptionally high. 98% of respondents expressed satisfaction (76.2% Highly Satisfied + 21.8% Moderately Satisfied), reflecting deep trust in the project's interventions.

- **The Inclusion Gap:** While leadership is growing, 60.4% of members feel that "some efforts" or "significant additional efforts" are still needed to provide sufficient opportunities to diverse backgrounds. This honest feedback highlights a desire for even deeper inclusion.



Future Horizons: Where Support is Needed Next

The feedback on "additional support required" provides a clear roadmap for the next phase of funding and intervention.

- **Access to Finance:** The top request, cited by 37.6% of members, is for better financial linkages, suggesting that the FPOs are ready to graduate from grants to credit.
- **Government Convergence:** 19.8% of members requested help in availing government schemes, highlighting the FPO's role as a bridge to the state.
- **Technical Deepening:** 15.8% requested more technical expertise, confirming the "hunger for knowledge" seen in previous sections.
- **Infrastructure:** Interestingly, only 2.0% prioritized infrastructure, suggesting that "soft" support (finance/knowledge) is currently more valued than "hard" assets.

10.5 Case Studies : From Vulnerability to Vision: A Lifecycle of Transformation

While the survey data quantifies the breadth of the BSLD impact, the true depth of transformation is best understood through the journeys of the Farmer Producer Companies (FPCs) themselves. These institutions are at different stages of evolution from emerging collectives building trust to mature enterprises driving regional economies.

Together, they illustrate a clear trajectory of growth, resilience, and female leadership.

Case Study 1: Parihar FPC – From Invisible Laborers to Owners of the "Damdar Dana" Brand

In the rural landscape of Parihar block, women have traditionally been the "invisible engine" of the agricultural economy working tirelessly on farms but rarely recognized as farmers or decision-makers. With minimal land ownership and fragmented income sources, their identity was confined to that of unpaid helpers or daily wage laborers.

Parihar Farmer Producer Company (FPC) has dismantled this narrative. Established 2.5 years ago, this women-led collective has grown into a robust enterprise with **954 active shareholders** and a broader **outreach of nearly 2,067 women farmers**. What makes this achievement remarkable is the demographic depth of the change: **75% of these shareholders are marginal farmers, and a significant number are landless women dependent on wage labor**.

Today, supported by the BSLD project, these women have transitioned **from laborers to owners, shareholders, and entrepreneurs**.

The Innovation Engine: The "Damdar Dana" Success Story

While many FPCs focus solely on aggregation, Parihar FPC has successfully ventured into manufacturing and branding.

- **Brand Creation:** The FPC launched its own goat feed brand, "Damdar Dana", turning a recurring input cost into a profitable revenue stream.
- **Market Proof:** In the last year alone, the FPC sold nearly 80 tonnes of this feed.
- **Ownership:** The production is managed entirely by the women members, reinforcing their role as manufacturers rather than just consumers.
- **The Opportunity:** Current demand outpaces supply, signaling an immediate opportunity for scaling production capacity.

The Economic Backbone: Professionalizing Goat Rearing

With BSLD support, goat rearing has evolved from a backyard activity to a scientific enterprise managed by **1,400 women overseeing approximately 3,700 goats**.

- **Scientific Management:** The deployment of CAVE Didis and Pashu Sakhis ensured continuous livestock care, significantly reducing mortality rates.

- **Infrastructure:** The establishment of model goat sheds transformed rearing practices, moving livestock from vulnerable open conditions to hygienic, productive environments.
- **Holistic Growth:** Beyond livestock, the FPC promoted Nutri-kitchen gardens, with 80% of women adopting them to ensure household food security and reduce market dependency.

The BSLD Catalyst: Building Institutional Muscle

The transformation from scattered Self-Help Groups (SHGs) to a legally recognized company was driven by BSLD's "handholding" approach.

- **Governance:** Women were trained in shareholding, business planning, and compliance, enabling them to conduct meetings and lead financial discussions confidently.
- **Resilience:** Through Farmer Field Schools (FFS), the project introduced climate-resilient agricultural practices and quality seeds, reducing water usage and input costs while boosting productivity.

Impact Snapshot: The ROI of Collectivization

- **Financial Turnover:** INR 54 Lakhs achieved in annual turnover.
- **Household Income:** Members now earn an average annual income of INR 1.6–2.4 Lakhs.
- **Asset Creation:** 954 women are now active shareholders with a stake in the company.
- **Social Capital:** Women who once hesitated to speak now manage company affairs as Board Directors (BoDs) and negotiate market strategies.

Future Vision: The Path to Scale

Parihar FPC has moved beyond the survival phase and is now poised for rapid expansion. The roadmap for the next 4–5 years focuses on industrializing their success:

- **Scaling Manufacturing:** Establishing a dedicated fodder and feed processing unit to scale production to **10 tonnes per month**.
- **Diversification:** Expanding into oilseeds and pulses to reduce reliance on a single value chain.
- **Market Integration:** Introducing structured buy-back mechanisms and formalizing buyer networks to ensure price stability.

The Investment Opportunity: Current challenges such as **insufficient working capital and lack of storage (godowns)** are effectively "growth bottlenecks". Strategic investment in infrastructure and affordable institutional credit will unlock the FPC's ability to meet existing market demand and cement its status as a model of women-led rural enterprise.

Case Study 2: Kamla FPC – The Blueprint for Resilience

If the newer FPCs represent the promise of the BSLD project, Kamla Farmers Producer Company Ltd. represents the proof. Established in 2016 in the flood-affected district of Darbhanga, Kamla FPC has navigated the difficult journey from a grassroots collective to a structured, forward-looking enterprise.

Today, with **3,926 dedicated shareholder members**, it stands as a model of organizational discipline and financial stability. Operating in the borderlands of the Kosi river where agriculture requires immense adaptability the FPC has transitioned from survival mode to becoming a master of its own destiny.

The Context: Building Assets in a Flood Zone

The baseline for these women was precarious. Most members are marginal farmers or landless, with women historically owning only 3–5% of the land. Frequent floods from the Kosi river forced farmers to restrict cropping to limited paddy varieties, causing chronic income instability.

However, through consistent institution-building, Kamla FPC has reversed this narrative of vulnerability.

Pillar 1: The "Household ATM" (Wealth Creation)

The most transformative impact has been the professionalization of goat rearing. With support from the project, **nearly 9,000 goats** now form the economic backbone of member households.

- **Liquidity:** Often referred to as the "household ATM," these assets provide immediate liquidity during medical crises and seasonal gaps.
- **Asset Accumulation (The Lalu Devi Effect):** The shift from labor to ownership is best symbolized by members like Lalu Devi, who purchased 3 kattha of land purely through income generated from goat rearing. This marks a profound transition from landless laborer to land-owning asset holder.
- **Market Reform:** The FPC successfully transitioned members from informal 'andaz se' (visual estimation) trading to transparent weight-based pricing, significantly reducing trader manipulation.

Pillar 2: Agricultural Modernization

Kamla FPC has systematically upgraded the agricultural capacity of its members.

- **Seed Sovereignty:** The FPC transitioned farmers from unreliable dealers to certified seed varieties. Over 3–4 years, this standardized approach has improved productivity and restored farmer trust in quality inputs.
- **Mechanization:** A Custom Hiring Centre, established with an INR 8 lakh subsidy, now houses tractors, rotavators, and zero-tillage machines. This infrastructure reduces dependency on external operators and lowers cultivation costs for members.

Pillar 3: Institutional Maturity (The Bankable Entity)

Unlike early-stage collectives dependent on grants, Kamla FPC has achieved a level of

financial maturity that funders seek.

- **Self-Sustainability:** The FPC has achieved consistent operational self-sustainability, covering annual operational costs of INR 4–5 lakhs with 10–20% growth.
- **Creditworthiness:** Its governance strength enabled it to secure a **NABKISAN loan of INR 5 lakhs**, creating a credit history that paves the way for future expansion.
- **Ownership Culture:** Shareholding is standardized with a structured contribution model (INR 1,000 share + INR 500 fee), fostering a deep sense of ownership among the women

Future Vision: The Road to INR 1 Crore

Kamla FPC is no longer just surviving; it is planning for scale. The strategic vision for the next phase includes:

- **Financial Scale:** Achieving a turnover of **INR 1 Crore**.
- **Expansion:** Scaling goat-based enterprises and strengthening inter-FPC collaborations.
- **Resilience:** Scaling climate-resilient practices and enhanced green fodder systems to flood-proof the local economy.

Conclusion: Kamla FPC is a living demonstration that sustainability is built on participation, perseverance, and purpose. It serves as a replicable blueprint for how long-term support, when combined with women's agency, can build resilient institutions capable of weathering both market fluctuations and monsoon floods.

The Legacy: "Kamla FPC stands today not as a victim of geography but as a master of its destiny... A living model of rural resilience."

Case Study 3: Bandra Mahila FPC – The "Goat ATM" and Beyond

Bandra Mahila Farmer Producer Company Limited (BMFPC) represents the energetic new wave of women-led institutions in Bihar. Established just 1.5 years ago (September 2023), this collective has rapidly organized 1,835 women farmers into a cohesive economic force.

The demographic profile of this FPC underscores the depth of its impact: **90% of members cultivate very small landholdings**, while the rest depend entirely on wage labor and livestock. For these women, who previously existed as invisible contributors to household farming, the FPC has become a platform for identity, transforming them into recognized shareholders and aspiring entrepreneurs

The Economic Backbone: The "Goat ATM"

Given the vulnerability of its members, the FPC focused on an asset that provides immediate liquidity. Goat rearing has emerged as the most trusted livelihood, referred to by members as their "ATM" because it meets urgent needs like health expenses and school fees.

- **Scale of Impact:** Under the BSLD project, **800 households** have received goats and model sheds, laying the foundation for a sustainable enterprise.
- **Market Reform:** The FPC is driving a critical behavioral shift from the traditional "Hunda" (visual estimation) rate to **weight-based pricing**. Despite initial resistance, women are now actively advocating for this transparent system within their communities.

The Innovation: Feed Entrepreneurs

Unlike many early-stage FPCs that stick to primary production, Bandra Mahila FPC is venturing into manufacturing.

- **Home-Grown Industry:** Women farmers are preparing fiber-based goat feed at the household level using scientific formulas.
- **Revenue Stream:** This feed is not just for internal consumption; it is packaged and sold, creating an additional income source for the members.
- **Input Independence:** Simultaneously, the cultivation of Napier grass (green fodder) is reducing dependence on external fodder markets.

Governance: Learning to Lead

The transition from a group to a formal enterprise followed a transparent, democratic process.

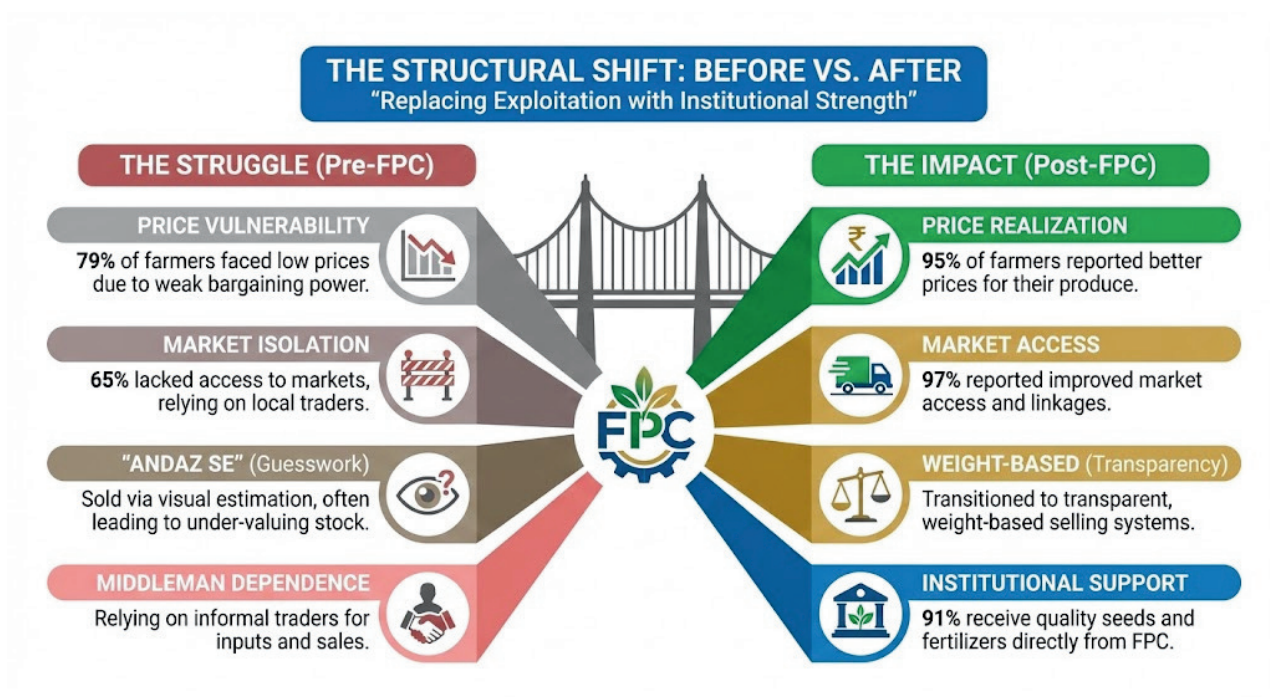
- **Democratic Roots:** Members participated in democratic elections for the Board of Directors (BoDs), introducing them to concepts of ownership and collective decision-making.
- **Capacity Building:** Through continuous handholding, the BoDs have undergone intensive training in **agri-business development, financial systems, and compliance**, ensuring that these first-generation entrepreneurs can manage a formal company.
- **Confidence:** Women who once hesitated to speak in public now actively question market rates and contribute to planning decisions.

Future Vision: Diversification and Value Addition

Despite being in its formative stage, the FPC has a sophisticated roadmap for the next 3–5 years:

- **Processing Units:** Establishing **fodder processing and small oil extraction units** to capture more value locally.
- **High-Value Crops:** Promoting vegetables like **beetroot and carrot** through exposure visits.
- **Financial Scale:** Applying for a **NABKISAN** loan to expand the working capital base.

The Investment Opportunity: To realize this vision, the FPC requires strategic support to overcome structural constraints. The absence of **godown facilities** currently restricts bulk marketing, and dependence on microloans limits capital. Investments in infrastructure and advanced agri-business training will allow Bandra Mahila FPC to evolve from a promising collective into a scalable model of agrarian enterprise.



Case Study 4: Tirhut Mahila Goatery FPC – The "Living Savings Account"

In the flood-affected plains of Vaishali district, where the unpredictable moods of the Ganga River often dictate survival, Tirhut Mahila Goatery Producer Company Limited (est. June 2024) stands as a defiant new model of rural enterprise.

Unlike older FPCs that have had years to stabilize, Tirhut FPC represents the "**rapid emergence**" phase of the BSLD project. In a region where **90% of members are marginal farmers** and nearly a quarter face annual flooding, this **young collective of 1,470 shareholders** is transforming agriculture from a struggle for survival into a structured business defined by vision, planning, and discipline.

The Strategy: Flood-Proofing Livelihoods

For farmers in Vaishali, fixed assets are vulnerable to floods. The FPC's strategy is to build **mobile assets** specifically goats that function as insurance systems and stepping stones toward economic dignity.

- **The "Living Savings Account":** The FPC manages a massive cluster of **24,000 goats**. For women, these animals are liquid assets that can be sold to meet education costs or medical emergencies without distress borrowing.
- **Scientific Rearing:** To protect this asset base, the FPC has **constructed 1,500 model goat sheds** and deployed a network of **CAVE Didis and Pashu Sakhis** to provide ongoing health support.
- **Rapid Financial Inclusion:** In a major milestone for a young institution, **51 Joint Liability Groups (JLGs) have already accessed loans from Canara Bank (₹20,000 per group)**. This proves that even in a high-risk flood zone, organized women are bankable.

Business Operations: Early Steps Toward Sustainability

Despite being in its infancy, Tirhut FPC is generating revenue and proving its commercial viability.

- **Business Turnover:** Within a short span, the FPC has achieved a turnover of approximately **₹9 Lakhs**.
- **Diversified Streams:** Revenue is generated through goat trading, sale of kitchen garden kits, and wheat aggregation.
- **Social Responsibility:** Demonstrating its role in community resilience, the FPC facilitated the **supply of 3.5 tons of wheat for emergency flood relief**.

Governance: The Culture of Participation

The FPC was built on a democratic foundation, moving from scattered individual efforts to collective strength.

- **Participatory Leadership:** Decision-making has evolved into a culture where women actively discuss pricing and production strategies.
- **Digital Coordination:** The Board of Directors (BoDs) utilizes **WhatsApp-based coordination** to manage operations transparently.
- **Capacity Building:** Under BSLD support, the leadership has completed structured training modules on roles, responsibilities, and agri-business fundamentals.













Future Vision: Scaling with Stability

While challenges such as limited working capital and flood-induced crop losses persist, the FPC views them as learning opportunities. The vision for the future includes:

- **Formalized Marketing:** Establishing collective goat marketing systems to maximize price realization.
- **Aggregation:** Scaling up wheat aggregation and fodder cultivation.
- **Infrastructure:** Developing storage solutions to insulate members from market and climate volatility.

FPC ACHIEVEMENTS: A SPECTRUM OF SUCCESS

"Diverse Journeys, Shared Transformation Under BSLD"

PARIHAR FPC "The Brand Builders"	KAMLA FPC "The Mature Model"
 "Damdar Dana" Feed Brand (80 Tonnes Sold)	 3,926+ Shareholder Members (Scale & Reach)
 INR 54 Lakhs Annual Turnover (Economic Engine)	 NABKISAN Loan (INR 5 Lakhs) (Creditworthiness Proven)
 954 Women Entrepreneurs (Ownership & Identity)	 Vision: INR 1 Crore Turnover (Future Ambition)
BANDRA MAHILA FPC "The Rising Innovators"	TIRHUT MAHILA GOATERY FPC "The Resilient Emerging"
 "Goat ATM" Model (800+ Households)	 Flood-Proof Assets (24,000+ Goats as Insurance)
 Weight-Based Selling Shift (Market Reform)	 Rapid Financial Inclusion (51 JLGs linked to Loans)
 Feed Entrepreneurs (Home-grown Value Addition)	 ₹9 Lakhs Turnover (Early) (Immediate Commercial Viability)

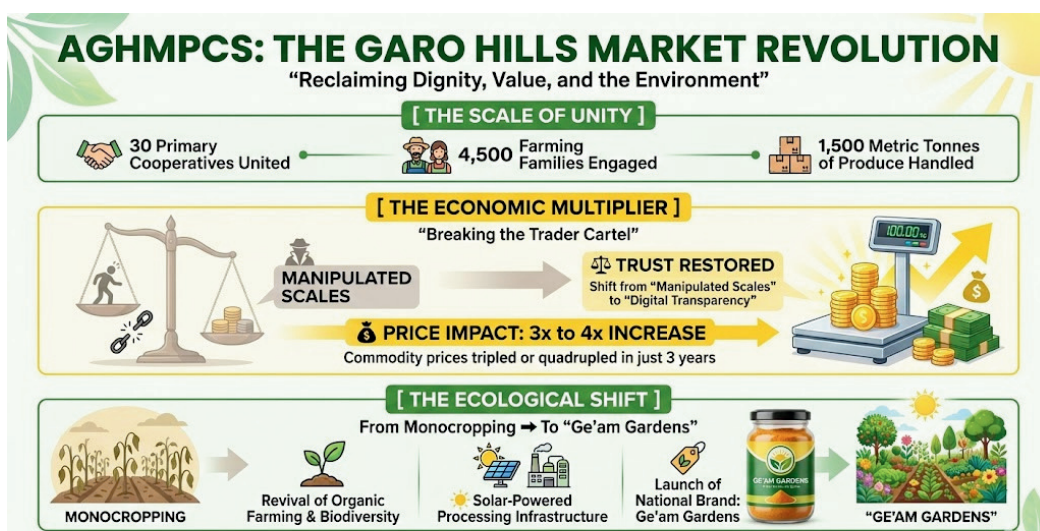
KEY TAKEAWAY: Each FPC represents a unique stage of growth—from building resilience in flood zones to creating brands and aiming for massive scale.

Case Story 5: AGHMPCS – Reclaiming the Market in Garo Hills

For decades, the fertile landscape of the Garo Hills in Meghalaya was a paradox: rich in biodiversity but impoverished in value. Farmers were trapped in an exploitative market system dominated by outside traders who controlled pricing, manipulated weighing scales, and delayed payments. This dependency forced cultivators into ecologically damaging monocropping, degrading the very soil that sustained them.

The Intervention: **A United Front (AGHMPCS) In 2021**, the narrative changed. **Over 30 primary cooperatives united to form the All-Garo Hills Multipurpose Cooperative Society Ltd. (AGHMPCS)**. This wasn't just a union; it was a structural disruption of the old market order.

- **Taking Control:** Instead of distress selling, the cooperative introduced collective procurement, transparent weighing, and digital payments, restoring trust in the trade.
- **Value Addition:** Moving beyond raw produce, AGHMPCS established solar-powered processing units and launched the **"Ge'am Gardens"** brand, positioning Garo farmers as players in the national market.
- **Ecological Stewardship:** The cooperative pivoted back to sustainable practices, promoting organic farming and crop diversification to heal the land.



The Impact: The 3x Income Multiplier The results of this unification have been immediate and measurable:

- **Scale:** The cooperative now handles over **1,500 metric tonnes of produce, directly engaging 4,500 farming families**.
- **The Price Jump:** The most significant economic indicator is the dramatic rise in commodity prices several crops have witnessed a **three- to fourfold increase over just three years**.
- **Ripple Effect:** Even private traders have been forced to improve their practices to compete with the cooperative's ethical standards.

AGHMPCS has proven that when farmers control the value chain, the region transforms from a space of exploitation into a hub of economic dignity and resilience.

Case Story 6: Haridwar's Organic Revolution – From Soil to Shelf

Building a Cooperative Ecosystem for 15,000 Farmers

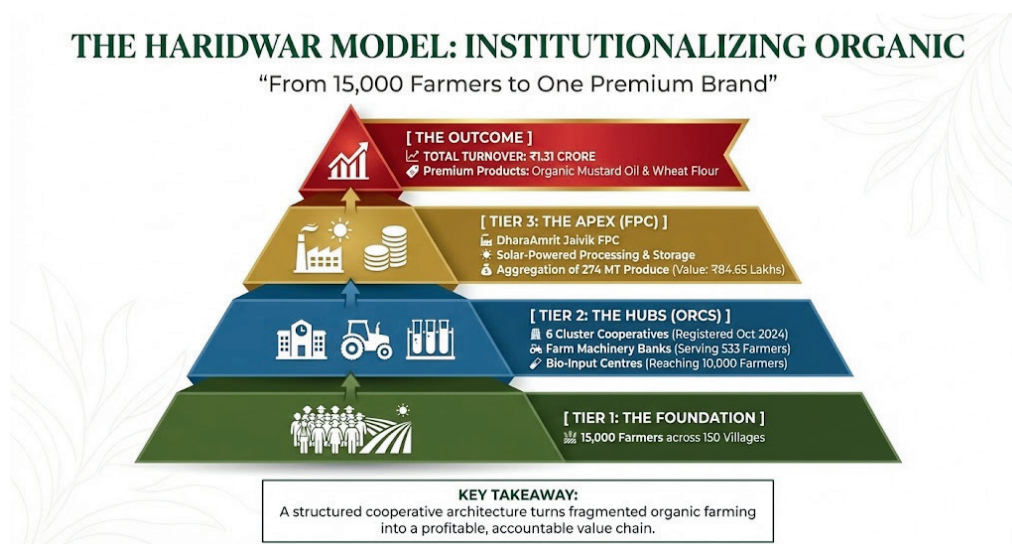
Context: The Gap Between Production and Market

In October 2021, the **Organic & Natural Farming Project**, supported by HDFC Bank, launched with an ambitious goal: to **transition 150 villages and 15,000 farmers** in Haridwar toward sustainable agriculture. While the project successfully improved soil health and reduced chemical dependency, a critical structural gap remained. Farmers were growing organic, but they lacked an organized, farmer-led institution to manage quality inputs, aggregation, and value addition.

Without a formal structure, the organic dream risked being fragmented and unsustainable.

The Intervention: A Two-Tier Institutional Architecture

To solve this, the project engineered a shift from simple "facilitation" to "institutional ownership" through a robust three-tier cooperative model:



Results: The Economic Engine Kicks In

The transition to a cooperative model has generated immediate financial traction.

- **Scale:** The six ORCs now have a combined membership of **2,096 farmers**.
- **Turnover:** Collectively, they achieved a business turnover of **Rs. 1.31 Crore**.
- **Aggregation:** The cooperatives consolidated **274 MT of organic produce (wheat, mustard, paddy), generating Rs. 84.65 Lakhs in business**.
- **Service Reach:** The Agri-input centres **served over 10,000 farmers** (Rs. 43 Lakhs business), while machinery banks supported 533 farmers.

Impact: From Project to Stewardship

The evolution of these ORCs represents a shift from "project beneficiaries" to "market stewards." By offering price incentives above mandi rates and ensuring traceability, the cooperatives have built a resilient, accountable ecosystem. They have successfully institutionalized access to markets, reducing dependency on unregulated service providers.

Case Story 6: Andhra Pradesh – The Digital Pivot

Transforming Credit Societies into Multi-Service Rural Hubs

Andhra Pradesh has emerged as the national benchmark for revitalizing Primary Agricultural Credit Societies (PACS). While many states are still in the planning phase, AP has successfully executed a coordinated strategy of policy reform, digitization, and service diversification.

The core of this transformation is the "Common ERP Platform." By digitizing operations and integrating them with District Central Cooperative Banks (DCCBs), the state has replaced opaque ledgers with transparent, real-time accounting.

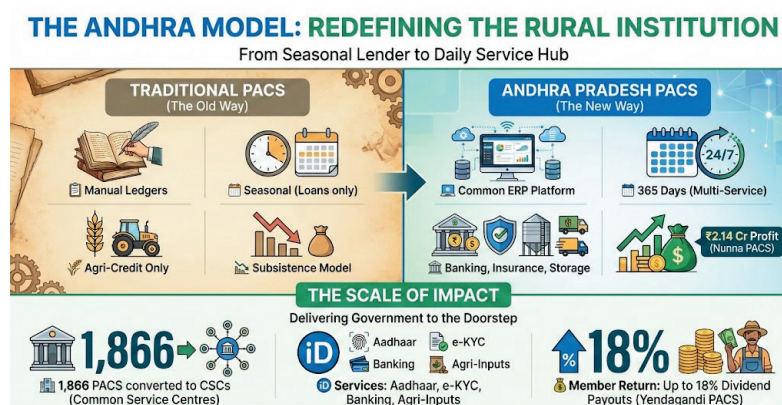
The Shift: From "Credit Only" to "One-Stop Shop"

The traditional PACS model open only during planting season for loans is obsolete in Andhra Pradesh.

- **The New Model:** PACS have evolved into "Multi-Service Rural Institutions" acting as localized conglomerates.
- **The Service Portfolio:** Today, a single PACS provides agricultural inputs, manages storage and procurement, sells banking and insurance products, and functions as a Common Service Centre (CSC) for digital citizen services.

Scale: The 1,866 Hubs

This transformation is happening at scale. As of early 2025, approximately 1,866 PACS in the state have transitioned into Common Service Centre (CSC) mode. These hubs now offer Aadhaar/e-KYC and banking services, effectively bridging the digital divide for millions of rural citizens.



Evidence of Success: Profit & Dividends

The model is not just theoretical; it is generating hard cash for rural communities.

- **The Profit Engine (Nunna PACS, NTR District):** This society reported a record profit of **₹2.14 Crore** in FY 2024–25. This success was driven by diversified business activities and disciplined financial management, proving that a cooperative can be as profitable as a private enterprise.
- **The Member Benefit (Yendagandi PACS, West Godavari):** Success here is measured in returns to the farmer. By mobilizing member deposits and investing in storage infrastructure, this PACS declared an 18% dividend payout to its members. This high return strengthens member trust and reduces reliance on external borrowings.

Conclusion: The Andhra Pradesh experience offers a clear lesson: **Digitization + Diversification = Viability.** By leveraging state-level coordination and sound governance, AP has turned PACS into financially viable platforms that serve the marginal farmer not just as borrowers, but as customers and shareholders.

10.6 Future Roadmap: From Foundation to Scale

Investing in the Next Decade of Rural Transformation

The BSLD project has successfully laid the "foundational systems" for scalability and commercial viability. The women of Bihar have transitioned from unorganized producers to shareholders of functioning companies. However, to transform these emerging institutions into robust, self-reliant market leaders, the next phase of intervention must address systemic gaps through strategic investment.

The roadmap for the next 3–5 years focuses on three critical growth pillars:

Pillar 1: Infrastructure & Capital Deepening

Turning Production into Wealth While production capacity has increased, the physical and financial infrastructure to manage it lags behind.

- **The Investment Opportunity:** Currently, infrastructural deficits, specifically the lack of godowns and processing facilities limit the ability of FPCs to aggregate produce and manage bulk marketing.
- **The Strategy:**
 - Establish **feed and fodder processing units** to scale production (e.g., Parihar FPC aims for 10 tonnes/month).
 - Construct storage facilities to prevent distress sales and enable price negotiation.
 - **Financial Inclusion 2.0:** Transition FPCs from dependence on high-interest micro-loans to affordable institutional credit and policy-backed financial instruments.

Pillar 2: Market Integration & Diversification

Beyond the Farm Gate To insulate farmers from market volatility, FPCs must control more of the value chain.

- **The Investment Opportunity:** Weak market linkages and the absence of assured buy-back mechanisms currently affect price stability.
- **The Strategy:**
 - **Diversification:** Move beyond staples into high-value crops like oilseeds, pulses, and vegetables to spread risk.
 - **Processing:** Establish oil extraction units and value-added processing to capture higher margins.
 - **Formal Networks:** Strengthen structured buy-back mechanisms with larger institutional buyers.

Pillar 3: Digital & Governance Maturity

Building Institutions that Last For long-term sustainability, the "soft infrastructure" of the FPC must be as robust as its physical assets.

- **The Investment Opportunity:** While women participate in governance, formal gender-balance policies are rare , and digital literacy remains low.
- **The Strategy:**
 - **Digitalisation:** Strengthen MIS systems and digital literacy to ensure transparent, data-driven management.
 - **Inclusive Governance:** Formalise policies that mandate gender balance in leadership to institutionalize women's agency permanently.

Conclusion: A Replicable Model for India

The findings from this chapter confirm that the BSLD model is a "best-practice institutional model" for women-led rural economic transformation. By integrating livelihood security with institutional strengthening, the project has not only increased incomes for 90% of its members but has redefined their social identity.

The Bihar experience demonstrates that when women are supported by targeted interventions from "Goat ATMs" to boardroom training they become the central economic actors of the rural economy. Strategic policy integration of this model at the national level offers a clear pathway to achieving sustainable livelihoods, gender equity, and resilient agrarian economies.

The foundation is built. The women are ready. The path to scale is clear.

CHAPTER - 11

Conclusions and Recommendations

India's marginal farmers—who constitute nearly two-thirds of all farming households—stand at the centre of the nation's food systems, yet remain the most vulnerable segment within the agricultural economy. For them, **cooperatives are not merely an institutional alternative but a developmental necessity**. When Primary Agricultural Credit Societies (PACS) and other grassroots cooperatives operate as **democratic, transparent, and professionally managed institutions**, they become powerful catalysts of poverty reduction, livelihood security, and rural transformation.

Across rural India, Primary Agricultural Credit Societies (PACS), Farmer Producer Organisations (FPOs), and other cooperative institutions have demonstrated potential for improving livelihoods. Successful models exist across states and sectors, showcasing how collective action can reduce risks, increase bargaining power, and build sustainable pathways to prosperity. Yet these successes remain uneven, fragmented, and limited in scale justifying immense untapped potential of collectivisation—improving access to extension & training, credit, markets, technology, infrastructure, and capacity building. The field study findings across six states covering **2051 sample** along with opinion of key informants provide a glimpse of the prevailing situation on their awareness, participation, leadership, expectations and gaps in cooperative sector providing impetus to put policy actions upfront.

With the **New Cooperative Policy 2025** in hand and mandate to set up 2 lakhs more PACS, the challenge now is to **incubate, accelerate, scale up what works, fix governance and structural flaws, and ensure the movement truly serves marginal farmers**, who form the backbone of India's food security and rural economy.

The case studies in Bihar, Meghalaya and Uttarakhand and field observations through the sample survey make it clear that Cooperative action is thriving and their potential is immense as well as transformative when supported through strong, democratic, and professionally managed cooperatives.

The need of the hour is a **Reimagined Cooperative Architecture** that places marginal farmers at the centre, strengthens grassroots institutions, digitises systems, modernises governance, and integrates value chains. The New Cooperative Policy 2025 brings a decisive shift—re-orienting cooperatives towards a farmer-first agenda through mission-mode reforms, digitalisation, professionalisation, and ecosystem convergence. Converted to action, this policy framework would best serve the purpose making convergence of efforts across departments.

The following recommendations summarise the policy direction and required actions.

Mission-Mode Approach: Farmer-First, “Sahkar Se Samridhi” through a Cadre of Sahkar Shakti–Sakha/Sakhi Model

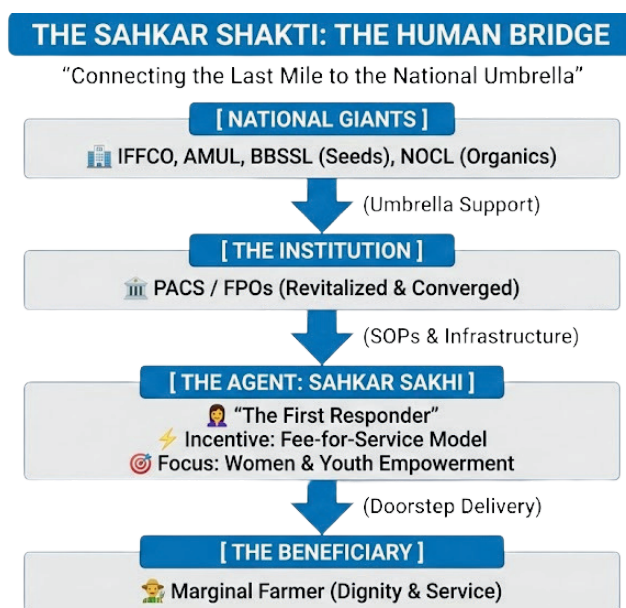
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A central recommendation is the adoption of a mission-mode action strategy that prioritises the needs, aspirations, and dignity of marginal farmers. The proposed “Sahkar Shakti–Sakha/Sakhi” model seeks to strengthen the village, Panchayat, Block District as well as Cluster(s) delivery system, enabling cooperatives to function as first-response institutions for farmers. Reviving existing PACS and nurturing new PACS (envisioned for 2 lakhs more PACS) on strong institutional foundations become essential steps in this direction. Collaboration with Farmer Producer Organisations (FPOs), rather than competition, is fundamental to ensuring that both systems complement each other in achieving scale and efficiency. The Multi State Cooperatives formed recently on Seeds (BBSSL) and Organic (NOCL) and national level cooperative networks like IFFCO, KRIBCO, AMUL and existing formats would have much larger umbrella support with the strong basic structures like PACS. The proposed cadre can very similar to the model already in place in many states like Krishi Sakhi. Pashu Sakhi etc. under the banner of DAY NRLM.

It would also entail to have Block, District and State level structures to build, nurture and sustain this proposed structure with a farmer-centric approach to-

- Strengthen last-mile presence through village-level Sahakar Sakhas/Sakhis enabling doorstep services.
- Functionalising standard operating procedures for business operations, mapping investment outlays and infrastructure facilities, and implementing policies that emphasise gender-inclusive governance across the cooperative architecture.
- Focus on revitalising PACS, forming new PACS where needed, and deepening cooperation with FPOs and federations.

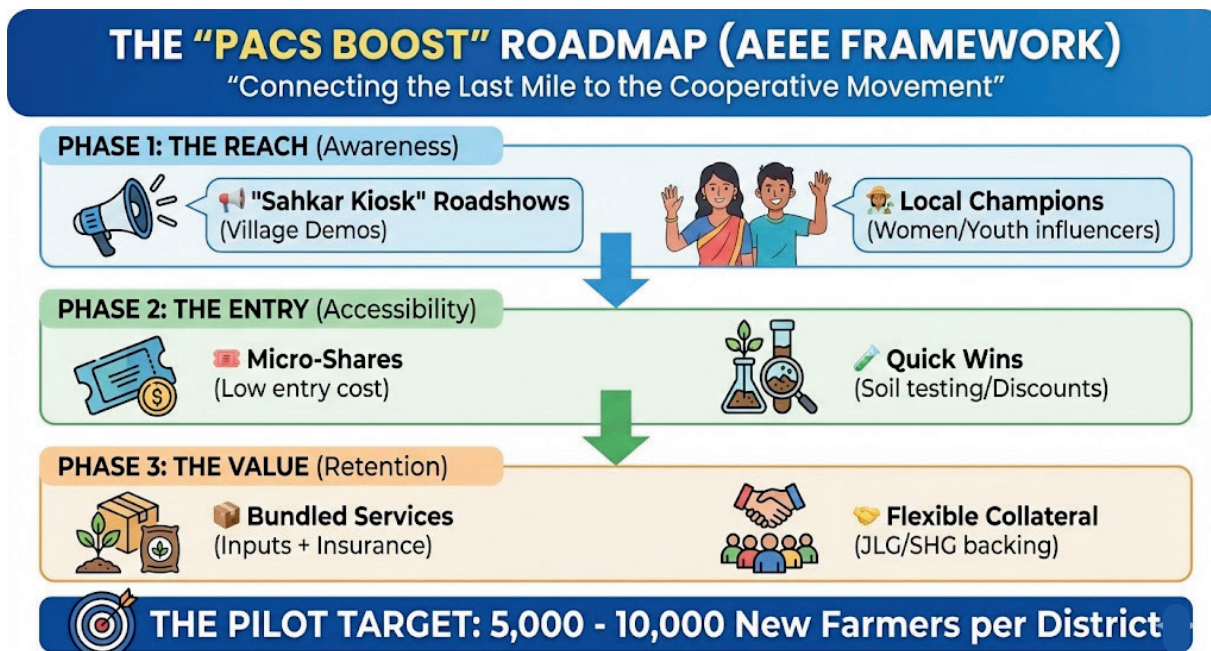
A proper Incentive System with Fee/ commission for Service Approach can be adopted and bringing the focus on women and youth would be crucial.



Big Push on Awareness, Education, Extension and Exposure

Another pillar of transformation lies in dramatically enhancing awareness, education, extension, and exposure. Today's agricultural landscape is rapidly evolving, with new technologies, markets, sustainability demands, and climate risks. For cooperatives to remain relevant, farmers must be fully equipped through robust training systems-ranging from sector-specific modules to real-time exposure on best practices. The idea of village-level Krishi Sakhis and Pashu Sakhis creates a decentralised extension mechanism that brings knowledge directly to farmers' doorsteps. This also hinges on collaboration with existing ecosystem of agri extension starting from KVKs, ICAR Institutions, Agri universities, Horticulture Centres and Universities CSO and CSR initiatives, apex training organisations on cooperatives like VAMNICOM, network of ICMs, NIAM, MANAGE, LINAC. IRMA and newly set up Tribhuvan Sahkari University and others engaged in cooperative movement.

A well-structured, crisp, and actionable framework on Awareness, Education, Extension, and Exposure (AEEE) for motivating marginal farmers to join and actively participate in PACS is a desired step. It would have lasting impact on increased PACS membership among marginal farmers, better awareness of rights & entitlements, improved access to credit, inputs, and markets, higher productivity through extension services, stronger PACS due to active member participation, greater trust and transparency in cooperative functioning. To begin with, a yearlong drive can be sketched on AEEE focusing on-



A. Awareness & trust building (12 months)

- **Village-level campaigns** - "Sahkar Kiosk" roadshows: short, practical demonstrations (how to join, member benefits, one-pager enrollment forms in local language). The campaign mode approach can use panchayat meetings, FPOs, SHGs, extension staff, and Anganwadi/ASHA networks.

- **Quick-win services** - Offering immediately visible benefits for new members: discounted seed/inputs, priority access to seasonal loans, doorstep soil testing. Early, tangible benefits build trust.
- **Local champions** - Recruiting and training women and youth village champions (one in each large hamlet) to sign up members and explain benefits- similar to the policy's youth/women emphasis.

B. Making membership attractive - product & service design

- **Micro-share / graded membership:** Allowing tiny nominal share amounts or staggered share contributions (so that marginal farmers can join immediately with small payments).
- **Bundled services centered on farming calendar:** Pre-kharif input kits + Crop insurance + Small seasonal working capital loan - Delivered through PACS/M-PACS.
- **Flexible collateral models & group guarantees:** Leveraging SHGs and joint liability groups so marginal farmers get working capital without heavy formal collateral.

The idea can be piloted with a **6-month 'PACS Boost' in each of the States and UTs with at least 3 districts with a targeted enrollment of 5,000-10,000 marginal farmers per district.**

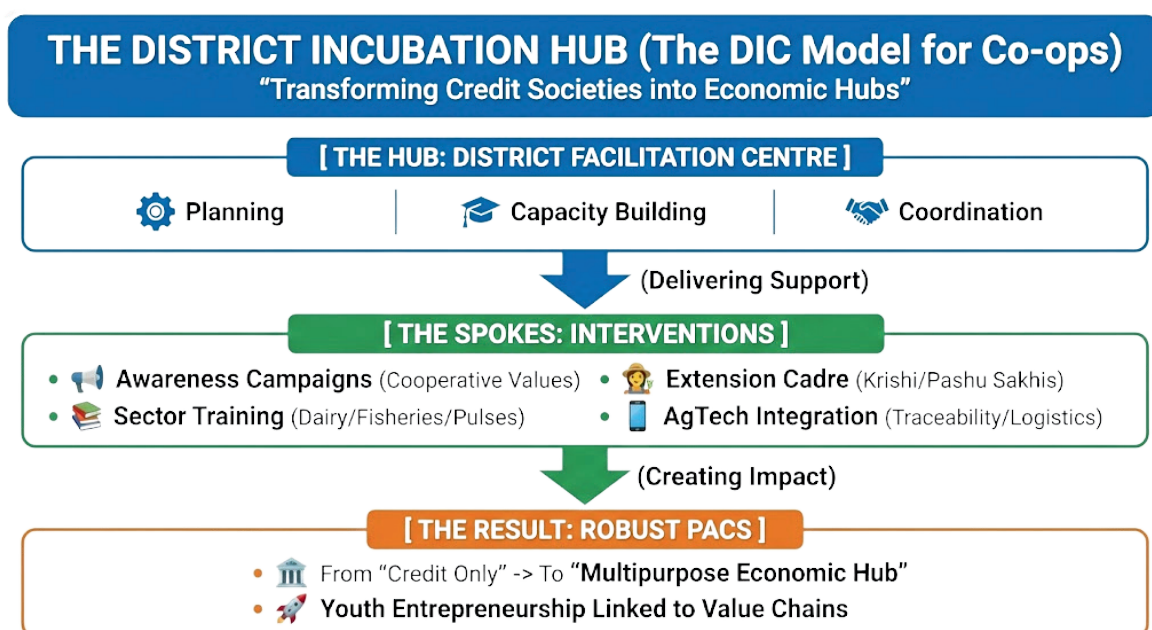
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District-level facilitation centres for Incubation and Acceleration

structured much like the DIC (District Industries Centres) model, to serve as support hubs for capacity building, planning, and coordination is suggested to have all a complete Cooperative Stack system functional nationwide. The key recommendations include:

- Structured awareness campaigns on cooperative values and benefits.
- Sector-specific training modules (dairy, horticulture, pulses, fisheries, NTFP, etc.).
- Capacity building through **extension cadres** such as *Krishi Sakhis* and *Pashu Sakhis*.
- Strengthen existing PACS and ensure **robust foundation building** for new PACS.
- Foster **PACS-FPO and Multi State Cooperative collaboration**, not competition, across value chains.
- Promote value-chain clusters and business planning supported by professional management.

The idea of Incubation and Acceleration support to PACS offers a transformative pathway to strengthen the cooperative ecosystem and uplift millions of small and marginal farmers. When supported with structured governance reforms, digital systems, professional management, and diversified business planning, PACS can evolve from traditional credit societies into **robust rural economic hubs** that deliver credit, markets, technology, and opportunities at the village level.



Leveraging from the existing system can be looked at in order to smoothening the operations and optimise the outcomes. The need **Incubation and Acceleration Support is critical in view of weak Governance & Member Participation, limited Business Diversification, Digital & Data Gaps, low Service Value for Marginal Farmers and new Policy push and plan to create 2 lakh new multipurpose PACS.**

Additionally, in the era of Agri-StartUps and AgTech solution providers, the Incubation cum Acceleration support can be a local Platform bringing integration of several tech solutions in the food system. A strengthened **start-up ecosystem** around cooperatives can unlock innovations in storage, traceability, logistics, processing, financial services, and market access. This entrepreneurial dimension is critical for making cooperatives competitive in a rapidly globalising world bringing youth entrepreneurship linked to cooperative value chains.

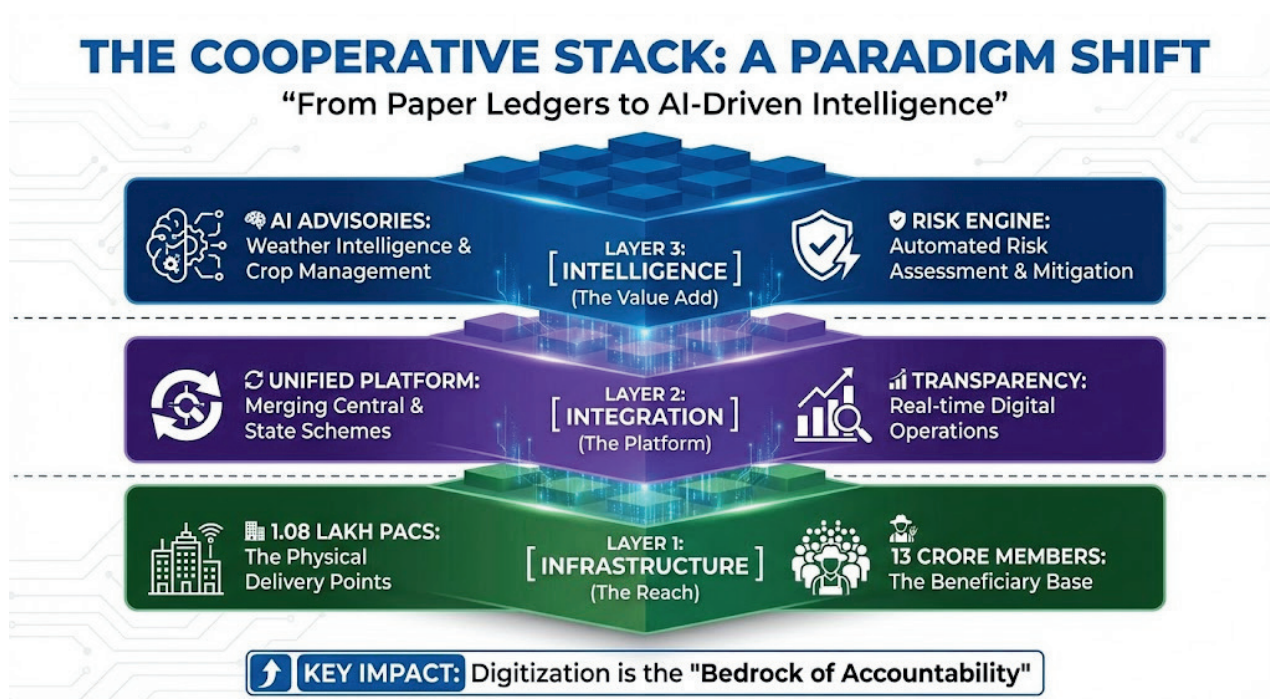
Optimal approach for the inclusion of Marginal Farmers in PACS-PRI Framework

In February 2023, the Government of India approved an ambitious plan to establish two lakh new multipurpose Primary Agricultural Credit Societies (PACS), dairy, and fishery cooperatives over five years, with the objective of covering every Gram Panchayat in the country. In this context, to enhance the inclusivity, responsiveness, and accountability of PACS in serving marginal farmers, the report recommends strengthening formal operational linkages between PACS and Gram Panchayats. Experiences from states such as Kerala, Maharashtra, Telangana, Odisha, and Karnataka indicate that such convergence improves farmer identification, targeting of small and marginal cultivators, coordination during climatic shocks, and alignment of PACS activities with Gram Panchayat Development Plans (GPDs). State-level guidelines and initial facilitation by government or cooperative institutions can help scale these practices while preserving cooperative autonomy.

Digital Public Infrastructure (DPI) and Cooperative Stack

Perhaps the most transformative shift is unfolding through the development of Digital Public Infrastructure (DPI) for cooperatives, embodied in the emerging Cooperative Stack. This digital backbone promises to unify schemes, strengthen transparency, enhance service delivery, and introduce AI-driven decision support tools-such as weather intelligence, risk assessment, and customised advisories. With over 1.08 lakh PACS and 13 crore members poised to benefit, digitalisation becomes the bedrock of accountability and modernisation. As PACS transition into digital institutions, they become more efficient, more accessible, and more capable of managing diversified businesses. The emerging **Cooperative Stack** marks a paradigm shift in rural institutional architecture. As it is in making, the key features look very tech-savvy for-

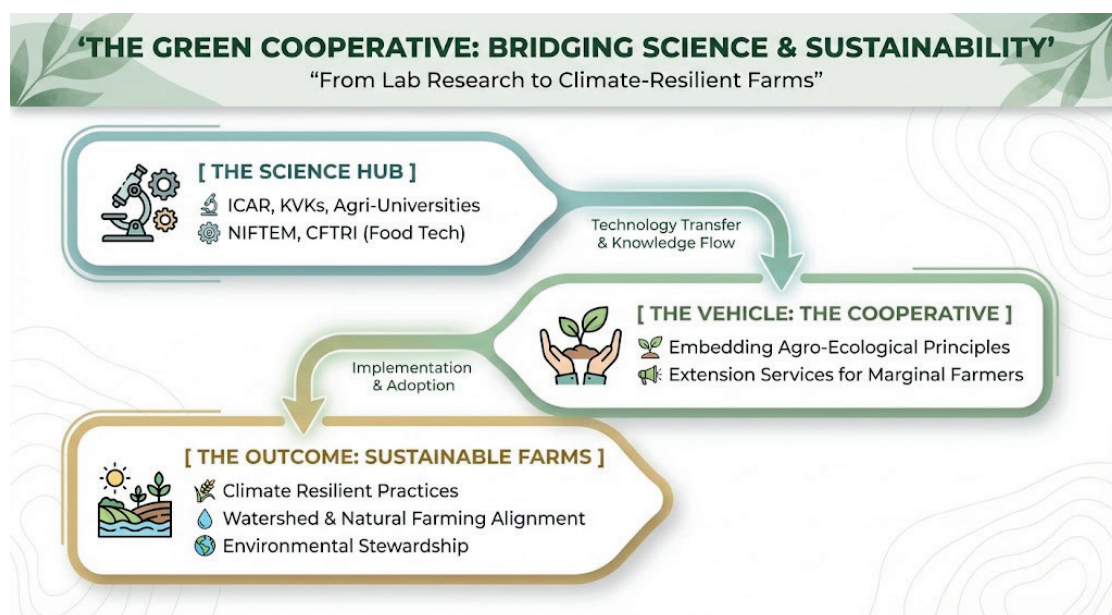
- Integration of central and state schemes through PACS on a unified digital platform.
- Complete digitisation of PACS operations to enhance efficiency, transparency and accountability.
- Leveraging AI-enabled tools (weather advisories, risk mitigation, crop management).
- Prioritising the digital transition for the targeted **80,000–1,08,000 PACS** covering 13 crore members and adding on with new formation of cooperatives
- Positioning PACS as the backbone for delivering digital public infrastructure in rural India.



Integration with Agro-Ecology, Natural Farming, Regenerating and Sustainable Agriculture

The narrative of cooperative reform cannot be separated from the growing emphasis on agro-ecology and sustainable agricultural practices. Integration with the networks of ICAR institutions, State Agricultural Universities, KVKs and R&D centres is crucial for pushing climate-resilient, resource-efficient, and farmer-friendly technologies. This convergence ensures that cooperatives become vehicles not only of economic growth, but also of environmental stewardship and long-term agricultural sustainability.

- Embed **agro-ecological principles** and climate-resilient practices into cooperative extension.
- Strengthen linkages with ICAR institutions, State Agricultural Universities, and KVKs, Sector Councils, Food and Technology Institutes like NIFTEM, CFTRI, etc. on new technologies including those in allied and secondary agriculture sectors.
- Promote convergence with national missions on natural farming, millet, watershed, livestock, and horticulture.



Cluster and Value Chain Development and Public-Private Partnership Promotion

Organising farmers into commodity clusters creates economies of scale and strengthens processing, marketing, and branding. Public-private-people partnerships, supported by both CSR and commercial investment, will be instrumental in deepening market linkages and improving sourcing and procurement systems. By organising farmers around commodities and regions, cooperatives can unlock economies of scale, improve bargaining power, build processing capacities, and tap into domestic and export markets. The push towards PPP-based value chain development will further strengthen market linkages and investments. Equally important is the emphasis on **value chain and cluster development** on a scale similar to ODOP list and potentially in the identified PMDDKY(Pradhan Mantri Dhan Dhaanya Krishi Yojana) districts and

Aspirational Districts and Blocks as per the Niti Ayog sources. The Food park programme under the Ministry of Food Processing, Cluster Development Programme of NHB and Van Dhan Vikas Yojana of Ministry of Tribal Welfare, Agriculture Production Cluster initiative of Government of Odisha and Ministry of Rural Development provide opportunities of such integration in public space and growing private sector interest.

Food Systems Approach

A broader food systems approach is needed to move beyond production-centric thinking. Emphasising nutrition, processing, retail, diversification, logistics, and climate adaptation ensures that PACS with membership inclusion of marginal farmers are aligned with future market demands and sustainable development priorities. Convergence with various government departments, development partners, federations, and private institutions completes the institutional architecture needed for impact at scale. It would also help attracting mobilisation of investment for rural infrastructure, cold chains, and modern storage both by public and private sectors.

If implemented with discipline, the recommendations outlined in this document can transform cooperatives into powerful engines of inclusive economic growth, with marginal farmers at their core. The future of rural India will depend not only on strengthening these institutions, but also on ensuring that every marginal farmer feels a sense of ownership, participation, and empowerment. The pathway ahead is ambitious, but its success will redefine India's rural development trajectory for decades to come.

To realise this promise, India must strengthen grassroots governance, invest in farmer awareness-building and education, adopt sustainable practices, leverage digital innovation, deepen value chains, encourage partnerships, and cultivate leadership within communities, while integrating a gender lens throughout the scope.

Ultimately, the cooperative movement will succeed when every marginal farmer experience ownership, participation, and empowerment within these institutions. Achieving this vision will require collaborative action and sustained commitment, but the destination holds the potential to reshape India's rural economy for generations. To truly benefit marginal farmers who constitute nearly two-thirds of farming households' adequate investment and financial outlay are essential to strengthen cooperatives as democratic, professionally managed, multi-service institutions that integrate credit, inputs, aggregation, processing, and marketing. A value chain-oriented, technology-enabled, and inclusive cooperative ecosystem will be critical for enhancing incomes, building resilience, and ensuring the long-term sustainability of marginal farmer livelihoods.

LIST OF ABBREVIATIONS

- **AEEE:** Awareness, Education, Extension, and Exposure
- **ATMA:** Agricultural Technology Management Agency
- **BBSSL:** Bhartiya Beej Sahakari Samiti Limited (implied context: Multi State Cooperative on Seeds)
- **BoD:** Board of Directors
- **CBO:** Community-Based Organisation
- **CFTRI:** Central Food Technological Research Institute
- **CHC:** Custom Hiring Centre
- **CSA:** Climate Smart Agriculture
- **CSC:** Common Service Centre
- **CSO:** Civil Society Organisation
- **CSR:** Corporate Social Responsibility
- **DA&FW:** Department of Agriculture, and Farmers Welfare
- **DAY-NRLM:** Deendayal Antyodaya Yojana - National Rural Livelihoods Mission
- **DIC:** District Industries Centre
- **DPI:** Digital Public Infrastructure
- **FAO:** Food and Agriculture Organisation
- **FFS:** Farmers' Field Schools
- **FPC:** Farmer Producer Company
- **FPO:** Farmer Producer Organisation
- **FPS:** Fair Price Shop
- **GDP:** Gross Domestic Product
- **ICA:** International Cooperative Alliance
- **ICAR:** Indian Council of Agricultural Research
- **ICM:** Institute of Cooperative Management
- **ICRIER:** Indian Council for Research on International Economic Relations
- **IFFCO:** Indian Farmers Fertiliser Cooperative
- **IRMA:** Institute of Rural Management Anand
- **IYC:** International Year of Cooperatives
- **JEEViKA:** Bihar Rural Livelihoods Project
- **JLG:** Joint Liability Group

- **KII:** Key Informant Interview
- **KRIBCO:** Krishak Bharati Cooperative Limited
- **KVK:** Krishi Vigyan Kendra
- **LINAC:** Laxmanrao Inamdar National Academy for Cooperative Research and Development
- **MANAGE:** National Institute of Agricultural Extension Management
- **MeitY:** Ministry of Electronics and Information Technology
- **MIS:** Management Information System
- **MoA&FW:** Ministry of Agriculture and Farmers Welfare
- **MoSPI:** Ministry of Statistics and Programme Implementation
- **MSP:** Minimum Support Price
- **NABARD:** National Bank for Agriculture and Rural Development
- **NCCT:** National Council for Cooperative Training
- **NCDC:** National Cooperative Development Corporation
- **NHB:** National Horticulture Board
- **NIAM:** National Institute of Agricultural Marketing
- **NIFTEM:** National Institute of Food Technology Entrepreneurship and Management
- **NOCL:** National Organics Cooperative Limited
- **NSSO:** National Sample Survey Office
- **NTFP:** Non-Timber Forest Product
- **ODOP:** One District One Product
- **PACS:** Primary Agricultural Credit Society
- **PDS:** Public Distribution System
- **PGPL:** Passing Gift Private Limited
- **PHT:** Post-Harvest Technology/Management
- **PMDDKY:** Pradhan Mantri Dhan Dhaanya Krishi Yojana
- **PPP:** Public-Private Partnership
- **PTI:** Personal Transformation Index
- **RBI:** Reserve Bank of India
- **SAS:** Situation Assessment Survey
- **SERP:** Society for Elimination of Rural Poverty
- **SHG:** Self-Help Group
- **SOP:** Standard Operating Procedure
- **UPI:** Unified Payments Interface
- **VAMNICOM:** Vaikunth Mehta National Institute of Cooperative Management

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