

RESEARCH BRIEF

Scaling Agroecology in India: Farmer Pathways, Structural Constraints and Evidence-Based Recommendations for Systemic Transition

SCALAGRO Project (Phase 1) - Andhra Pradesh & Telangana, India

Qualitative Multi-Stakeholder Study | 2024–2025

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1. Background and Research Objectives

The SCALAGRO project (Scaling up Agroecology in India, Bolivia, and Burkina Faso) is a multi-country initiative to generate evidence-based insights to facilitate agroecological transitions at scale. Rooted in the principles of participatory action research, the project recognises that sustainable agricultural transformation requires not only technical innovation but a deep understanding of the socio-economic and institutional contexts within which farmers operate.

Phase 1 of the India component was conducted across six villages in Andhra Pradesh and Telangana—two states with a history of both agrarian distress and grassroots innovation in natural farming. The research pursued the following objectives:

- To document existing agroecological knowledge, perceptions, and indigenous practices among smallholder farming communities.
- To identify structural and institutional barriers that hinder the wider adoption of agroecological approaches.
- To capture perspectives across the agricultural value chain, including farmers, traders, processors, and consumers.
- To generate context-sensitive, stakeholder-informed recommendations for supporting sustainable agroecological transitions.

2. Methodology

The study adopted an interpretive qualitative methodology, drawing on established frameworks in participatory rural research. Data collection was conducted between 2024 and 2025 across six purposively selected villages, representing a diversity of agro-climatic zones, livelihood profiles, and farming systems within the two states, i.e., Andhra Pradesh and Telangana. A purposive sampling approach was adopted to capture diverse perspectives across key stakeholder groups within the agroecological system. Farmers were selected to represent variations in landholding size, farming practices (organic, chemical, and mixed), and socio-economic conditions, with attention to gender inclusion. Traders and processors were identified through local value chain networks, focusing on actors engaged in both conventional and agroecological markets. Consumers were sampled from rural and peri-urban settings to reflect differing levels of awareness, access, and purchasing behaviour. Selection across all categories was guided by relevance to the study objectives and the capacity to provide informed, experience-based insights. Four complementary methods were employed:

97 Farmer & Supply Chain Stakeholder Interviews	71 FGD Participants	6 Villages Studied	4 Stakeholder Categories
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Semi-structured interviews were conducted with 97 stakeholders across four actor categories: 20 farmers, 18 traders, 15 processors, and 44 consumers. The interview guide was developed iteratively, allowing for contextual adaptation while maintaining thematic consistency. Focus Group Discussions

(FGDs) were held in each village, engaging 71 participants drawn from diverse gender and socio-economic groups to surface collective perspectives and community-level dynamics. Participatory Rural Appraisals (PRAs) complemented the interview and FGD data. These sessions employed visual and deliberative techniques, including social and resource mapping, seasonal livelihood calendars, and solution-oriented dialogue, enabling communities to articulate both constraints and locally conceived responses. All qualitative data were transcribed, coded, and analysed thematically using NVivo 15, with analytical categories derived inductively from the data alongside deductive sensitising concepts drawn from agroecological transition theory.

3. Key Findings

3.1 Agroecological Knowledge and Farmer Perceptions

Farmers across the study villages demonstrated a substantive reservoir of traditional ecological knowledge encompassing composting, green manuring, intercropping, and botanical pest deterrents. These practices, often inherited across generations, reflect an embodied understanding of soil ecology and farm-level biodiversity that formal agricultural extension has largely overlooked. Despite this foundational knowledge base, familiarity with codified agroecological frameworks, such as the Palekar method or Participatory Guarantee Systems (PGS), remained limited among most respondents. Farmers broadly expressed positive attitudes toward agroecology, associating it with improved soil health, reduced reliance on synthetic inputs, and lower long-term input costs. However, the transition was also perceived as labour-intensive and financially risky, particularly in the absence of institutional support and stable market outlets for organic produce. This observation reflects a widely shared tension between ecological conviction and practical constraint - a tension that any effective policy response must address directly.

“We know farmyard manure is good for the soil for three years, but the labour to make it is too much compared to spraying chemicals in 10 minutes.” - FGD participant, Appampalli.



Focused Group Discussion at Appampalli (left), PRA Mapping at Meriampur (Right)

3.2 Farming Practices: Adaptive Hybridisation and Embedded Agroecology

A notable finding was the prevalence of hybrid farming models, in which farmers simultaneously use chemical inputs for commercial crops while maintaining organic practices for household food production. This strategic bifurcation is not a mark of incoherence but rather a rational adaptation to market incentives and subsidy structures that systematically favour conventional agriculture.

The observed shift away from crop diversity, particularly millets and pulses, toward cash monocrops such as cotton and paddy reflects the distorting influence of market demand and input subsidy regimes. Nonetheless, the persistence of agroecological practices in kitchen gardens and for domestic consumption indicates that ecological values remain embedded in farming households, presenting a meaningful entry point for transition programmes.

“We do chemical farming for the market, but we grow food for ourselves using manure and without any sprays.” - FGD participant, Meriampur.

3.3 Structural Barriers to Agroecological Adoption

The analysis revealed a cluster of interrelated structural barriers that collectively constrain the adoption of agroecology. These are not isolated technical problems but systemic features of the agrarian political economy:

Barrier	Observed Impact on Agroecological Transition
Water Scarcity	A critical and cross-cutting constraint across all study villages, reducing the viability of both rain-fed and irrigated agroecological systems, and discouraging experimentation with less input-intensive practices.
Labour Shortages	Rising daily wage rates make labour-intensive agroecological practices, such as manual weeding, composting, and farmyard manure preparation, economically unviable for most smallholder households.
Livestock Decline	The attrition of cattle and draught animal populations has severely curtailed on-farm manure availability, undermining the organic matter cycle fundamental to soil-based agroecological systems.
Market Exclusion	Middlemen-dominated procurement structures afford organic produce no price premium, while weak farmer-to-market linkages leave agroecological farmers commercially exposed and unable to recover transition costs.
Certification Deficit	The absence of accessible, affordable, and credible certification mechanisms, including PGS, erodes trust along the value chain, preventing consumers from reliably identifying agroecological products.

3.4 Community-Led Innovation and Demand for Institutional Support

Far from passive recipients of external intervention, community members across the study villages articulated concrete, locally adapted solutions to the challenges they face. These proposals draw on intimate knowledge of local ecologies, labour conditions, and resource flows, and constitute a vital foundation for co-designed intervention. Key innovations proposed included community-managed solar and live fencing to mitigate wildlife incursions, household greywater reuse systems for irrigating homestead orchards, community rainwater harvesting and check-dam construction, and cooperative aggregation and marketing of non-timber forest products.

Women participants were particularly active in identifying productive livelihood diversification opportunities, including backyard poultry rearing, small ruminant husbandry, and intensified homestead vegetable cultivation. These proposals reflect both economic pragmatism and a deep-rooted orientation toward ecological production systems.

3.5 Value Chain Actors: A Fragmented and Disconnected Ecosystem

Traders consistently identified unreliable supply volumes and the absence of credible third-party or participatory certification as primary deterrents to investing in agroecological supply chains. Processors faced analogous challenges in ensuring sourcing continuity and compliance with quality standards, highlighting the systemic nature of the market failure confronting agroecological producers. Consumer perspectives revealed a genuine and growing demand for chemical-free food; however, this demand is frustrated by widespread scepticism regarding the authenticity of organic claims and the price premium attached to certified agroecological products. This trust deficit represents both a structural barrier and a strategic entry point for participatory certification systems that can bridge the producer-consumer credibility gap.



Individual interviews with traders and Processors

4. Strategic Recommendations

The following recommendations are grounded in the empirical findings of Phase 1 and structured around three thematic domains: farming livelihoods, market systems, and enabling policy environments. They are designed to be implemented in an integrated manner, recognising that isolated interventions in any single domain are unlikely to catalyse durable systemic change.

Farming Practice & Livelihoods

- Establish community-managed Bio-Input Resource Centres to reduce the cost and effort of preparing organic inputs, particularly compost, botanical pesticides, and bio-stimulants.
- Support collective livestock rearing models and community fodder systems to address the decline in cattle populations and restore the availability of farmyard manure, critical for soil health and agroecological practices.
- Promote access to labour-saving tools (e.g., weeders) and encourage group-based farming arrangements to address rising labour costs, a major barrier identified across all villages.
- Promote backyard poultry and small ruminant husbandry as gender-responsive livelihood diversification strategies, with dedicated extension and credit support for women farmers.
- Encourage the cultivation of cereals, pulses, and vegetables for household consumption and local markets, building on existing practices of maintaining agroecological production for food security.

Markets & Institutions

- Strengthen farmer-to-consumer and farmer-to-retailer collectives to reduce dependence on intermediaries and enable agroecological producers to capture a greater share of the value chain. 1% Scale Participatory Guarantee Systems (PGS) and other low-cost certification models to address the trust deficit identified among consumers and enable price differentiation for agroecological products.
- Support government and institutional investment in buyer-seller

	<p>platforms and build the capacity of traders and local aggregators to understand, procure, and market agroecological produce.</p> <ul style="list-style-type: none"> ● Invest in village-level aggregation infrastructure, including drying yards, community cold storage, and primary processing facilities, to improve post-harvest outcomes and market readiness.
Policy & Advocacy	<ul style="list-style-type: none"> ● Reform existing subsidy structures to ensure equitable support for agroecological inputs (e.g., bio-fertilisers, composting systems) rather than disproportionately favouring chemical inputs. ● Recognise agroecology as a formal production system within state missions, with dedicated funding for capacity-building, farmer training, and field-level demonstrations. ● Ensure access to affordable credit and crop insurance tailored to agroecological systems, addressing the financial risks associated with transition identified by farmers. ● Promote the procurement of agroecologically produced grains and vegetables through public nutrition programmes, including the Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes.

5. Conclusion

The findings from SCALAGRO's Phase 1 fieldwork demonstrated that agroecological transition in rural Andhra Pradesh and Telangana is not a theoretical aspiration but an empirically grounded possibility. Farming communities possess the ecological knowledge, the adaptive capacity, and the motivation to move toward more sustainable production systems. What remains absent are the institutional conditions, reliable markets, accessible certification, meaningful policy recognition, and sustained technical support that would make such a transition economically viable and socially sustainable.

The evidence further reveals that agroecological transitions cannot be achieved through technology transfer alone. They require a fundamental reorientation of agricultural development policy toward farmer-centred approaches that recognise indigenous knowledge, support collective action, and create the enabling conditions for ecological farming to compete on equitable terms with input-intensive conventional agriculture.

Phase 2 of the SCALAGRO project builds on these foundations through co-designed pilot interventions, rigorous longitudinal monitoring, and sustained policy engagement. Central to this next phase is amplifying farmer voices in research design and governance, ensuring that the knowledge systems and priorities of smallholder farming communities remain at the heart of the agroecological transition agenda.

About the SCALAGRO Project

SCALAGRO (Scaling Agroecology) is a collaborative international research project operating across India, Bolivia, and Burkina Faso. In India, the project is implemented in partnership with the Centre for Sustainable Agriculture (CSA). Phase 1 focused on baseline qualitative research to understand existing agroecological knowledge systems and the structural conditions shaping transitions.

If you would like more information, <https://www.graduateinstitute.ch/scalagro>



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