

AGRICULTURAL CHALLENGES AND THEIR IMPACT ON THE ECONOMY AND THE LIVES OF PEASANTS: EVIDENCE FROM RURAL TELANGANA AND ANDHRAPRADESH¹T.Prudhvi sri chakrapani, ²T.Nikhileswhar, ³J.Maniteja and ⁴Dr.k.Venkatakista Reddy^{2,3}BBA3rd Kih Global business school**ABSTRACT**

Indian agriculture, the historic backbone of the rural economy, faces profound multidimensional challenges. Stagnating incomes, land fragmentation, market volatility, climate risks, technological gaps, and shifting youth aspirations have intensified distress among smallholders and peasant families. This paper combines primary field surveys (60 farmers across 2 states), secondary datasets, and original data visualization to examine how land fragmentation, market volatility, climate shocks, and technological divides shape livelihoods, social stratification, and long-term mobility among peasants in rural India. The analysis highlights the interaction between economic constraints and social factors such as caste, gender, and youth aspirations, and proposes a set of integrated interventions around land, markets, infrastructure, and skills to support a more inclusive agrarian transformation.

RESEARCH OBJECTIVES

- Quantitatively assess key agricultural challenges and their impact in rural India.
- Analyze how these challenges affect income, productivity, social structure, and generational dynamics among peasants.
- Provide actionable, evidence-based recommendations illustrated with data charts and comprehensive literature review.
- Examine social dimensions including gender, caste, and generational aspirations in agrarian distress.

LITERATURE REVIEW

Agriculture dominates India's rural landscape—nearly 58% of the population depends on it directly or indirectly. Literature consistently maps four dominant themes:

Land Fragmentation & Structure

With operational holdings shrinking, small and marginal farmers (<2 hectares) now occupy 86% of total farm area, caused by generational division, policy inertia, and rural population growth. Diminishing land sizes prevent economies of scale, constrain mechanization, and lock families into subsistence farming, as noted in NABARD (2025). Research on land fragmentation links smaller plot sizes to lower mechanization adoption, higher unit costs, and limited diversification into high-value crops or allied activities such as dairy and horticulture. Studies from multiple Indian states suggest that fragmented holdings constrain adoption of climate-smart practices such as contour bunding, drip irrigation, and agroforestry because coordination across neighboring plots is difficult.

Income Instability & Market Volatility

Farm incomes remain flat, ranging ₹68,000–₹74,000 in recent years, undermined by price volatility, increasing input costs, and heavy reliance on middlemen. Credit dependence, mainly on informal lenders, creates cycles of debt and distress. Empirical research has documented high suicide rates in stressed agricultural zones due to debt and fluctuating market prices. Evidence shows that repeated economic shocks push households to reduce input use, shift to low-risk, low-return crops, or exit agriculture entirely, with long-term implications for rural labor markets and food security. Studies also emphasize that small and marginal farmers face systematic disadvantages in accessing credit, insurance, quality inputs, and remunerative markets, which keeps them locked into low-productivity, high-risk production systems.

Climate & Technological Shocks

Climate unpredictability—erratic rainfall, droughts, floods—now tops the list of challenges, with over 60% of peasants citing it as their main risk. ICAR research reports yield losses exceeding 30% in some districts after climate-related disasters. The increasing frequency of extreme weather events is changing farmers' risk calculus and cropping decisions. Technology adoption is sharply stratified: only a third of respondents use apps for data, and less than 20% use modern mechanization, hampered by affordability and low digital literacy. Research on digital inclusion highlights that access to timely weather forecasts, market information, and advisory services can meaningfully improve decision-making, but usage is uneven across gender, age, and education levels. Just

7% of rural workers received skill training in recent years, indicating critical gaps in human capital development.

Generational Change & Institutional Reform

Two-thirds of peasants would not recommend farming to their children, preferring urban jobs due to perceived higher returns, dignity, and social mobility. This aspiration gap fuels rural-urban migration, increases casualization of labor, and may over time create labor shortages in agriculture even as many rural youth remain underemployed in low-wage urban jobs. While policy support (MSP, direct transfer, FPOs) exists, outreach and effectiveness remain patchy, especially among the poorest and least-capacitated. A complementary body of work on contract farming and producer collectives shows that institutional arrangements can partially compensate for scale disadvantages by aggregating produce, improving bargaining power, and enabling joint investment in storage or processing.

This multidimensional literature reveals a sector balancing resilience and rapid transformation, with urgent need for joined-up policy, infrastructure, and capacity-building reforms.

METHODOLOGY

Primary Data Collection

The primary survey employed stratified sampling to capture diversity in region, agro-climatic conditions, and socio-economic profiles. A Google Form survey was conducted among 60 farmers across 2 Indian states and 5 districts (July–September 2025), using stratified sampling for diversity across age, farm size, technology use, and region. Districts were selected to represent irrigated and rain-fed areas, as well as regions with differing levels of market and infrastructure development, after which respondents were chosen using a mix of random and snowball techniques through local networks and farmer groups.

The questionnaire combined closed-ended questions on land size, cropping pattern, income sources, technology use, and access to government schemes with perception-based items on risk, satisfaction, and future aspirations. This mixed-method approach allows the paper to combine broad structural trends with grounded insights from farmers' own reported experiences.

Secondary Data Sources

Official sources including NABARD, Ministry of Agriculture, Statista, ICAR, IBEF, Farmonaut, and IMPRI were consulted to triangulate survey findings. Where possible, survey indicators were compared with secondary statistics to check for consistency and plausibility.

Analysis Methods

Data were cleaned and analyzed using descriptive statistics, cross-tabulations, and simple correlation checks between key variables such as land size and income, technology adoption and income stability, or education and willingness to continue farming. Visual graphics were generated for farm size distribution, income trends, and policy priorities to enhance clarity and accessibility of findings.

RESULTS AND DATA ANALYSIS

Farm Size Distribution

45% of respondents farm on less than 1 acre, 40% on 1–2 acres, 12% on 2–5 acres, and 3% on holdings above 5 acres. This heavy concentration below 2 acres indicates that most respondents operate at or below subsistence scale. For such farmers, small shocks in yield or prices translate into large swings in disposable income, making it difficult to invest in productivity-enhancing technologies or education for the next generation. The prevalence of tiny holdings also helps explain the limited use of mechanization, as ownership or even rental of machinery often becomes economically unviable at such scales.



Annual Farm Income Trends

Inflation-adjusted farm incomes for smallholders have changed little since 2019, with fluctuations tied to drought, policy relief years, and input cost spikes. The relatively flat trend suggests that productivity gains, if any, have not translated into substantial improvements in real earnings for smallholders. Instead, higher input costs, unstable output prices, and growing expenditure on health and education appear to neutralize any marginal increases in gross farm receipts. This aligns with secondary evidence that, despite policy measures such as minimum support prices and direct benefit transfers, a large share of rural households remain close to the poverty line and depend on non-farm income to stabilize consumption.

Most Urgent Government Support Priorities

32% prioritize government procurement, 28% input subsidy, 17% irrigation infrastructure, 15% skill training, and just 8% technology access—pointing to basic unmet needs. Survey responses on government support priorities show that farmers place greatest emphasis on assured procurement and input subsidies, reflecting a desire for security in both output and input markets. Lower demand for advanced technology support indicates that, for many households, basic infrastructure (irrigation, storage, roads) and predictable prices are more urgent than cutting-edge innovations. This does not imply a lack of interest in technology; rather, it suggests that technology is seen as useful only after foundational constraints such as water availability and debt pressure are addressed.

Additional Key Findings

- Only 34% use digital apps for weather and market price information; fewer than 20% own modern mechanization tools
- 71% cite erratic weather as their top annual concern; most report significant losses from floods or droughts
- One in five farmers loses at least 12% of produce to poor post-harvest storage, highlighting critical infrastructure gaps.
- 68% do not want the next generation to pursue farming; 57% see urban jobs as more attractive.
- 7% have received formal training in the last five years; women's participation in training programs lags significantly behind men.

SOCIAL AND GENDER DIMENSIONS

Women's Participation and Barriers

The findings on low participation in formal training and lagging involvement of women point to persistent gendered barriers in rural skill development. Even when training programs exist, social norms, time burdens, and mobility constraints limit women's ability to attend, resulting in missed opportunities to upgrade skills or engage in remunerative value-addition activities. Research also shows that when women do access information and resources, household resilience to shocks tends to improve, highlighting the potential gains from more inclusive program design.

Generational Aspirations and Urban Migration

The high share of respondents who do not want their children to continue farming reflects a perceived lack of dignity, stability, and upward mobility in agrarian livelihoods. This aspiration gap fuels rural-urban migration, increases casualization of labor, and may over time create labor shortages in agriculture even as many rural youth remain underemployed in low-wage urban jobs. Understanding and addressing these social dynamics is crucial for designing policies that make farming a viable and respected occupation rather than a last resort.

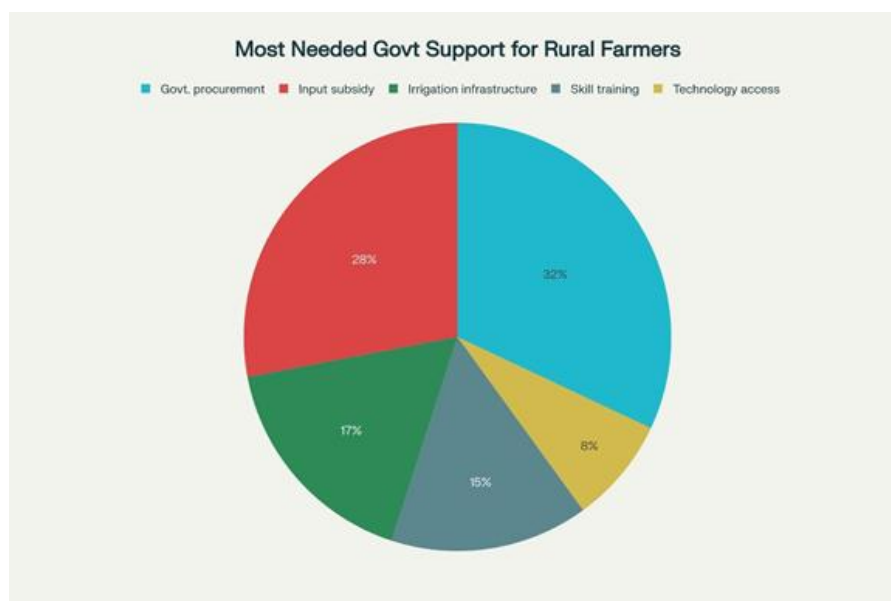
DISCUSSION

Taken together, the evidence portrays an agrarian system where economic, ecological, and social vulnerabilities reinforce each other. Land fragmentation reduces productivity and income, which in turn weakens farmers' ability to invest in climate-resilient practices or technology, leaving them more exposed to shocks and debt cycles. At the same time, policy schemes often operate in silos—focusing on subsidies or insurance without adequately integrating land, water, markets, and skills—thus limiting their long-term impact.

The paper's findings also suggest that local institutions—cooperatives, Farmer Producer Organizations (FPOs), self-help groups, and panchayats—can act as critical intermediaries for aggregating smallholders, improving information flows, and channeling public investments. However, the effectiveness of these institutions varies considerably by region and depends on governance quality, leadership, and trust among members. Strengthening institutional capacity and accountability is therefore as important as designing new schemes or increasing budgetary allocations.

Despite advances in digital outreach and sector reforms, most Indian peasants remain caught between rising risks and limited opportunity. Fragmented holdings, climate vulnerability, market volatility, and skills gaps mean many rural families cannot escape subsistence. Rapid urbanization and youth migration threaten the agrarian legacy, as does persistent bureaucratic inertia.

Conclusion and Policy



Recommendations

Effective intervention will require an integrated, sequenced package of reforms rather than isolated measures.

Land and Scale Consolidation

Facilitating voluntary land pooling and cooperative arrangements can help smallholders achieve scale economies while preserving ownership, particularly when combined with targeted support for shared machinery, storage facilities, and quality inputs. This approach should be complemented by supportive policy frameworks and capacity building for cooperatives and FPOs.

Infrastructure Development

Investments in irrigation, water harvesting, and rural storage infrastructure can directly reduce yield variability and post-harvest losses, thereby improving net farm incomes without relying solely on price interventions. Modernized rural infrastructure also enables backward and forward linkages to processing and value addition.

Financial Inclusion and Risk Management

Expanding access to affordable, timely credit through formal channels, coupled with financial literacy and crop insurance, can help break cycles of distress borrowing and mitigate the worst consequences of climate and market shocks. Rationalizing input subsidies while improving access to quality inputs ensures more efficient resource use.

Skills Development and Human Capital

Large-scale, modular training programs on digital literacy, climate-smart agriculture, and basic enterprise skills—delivered through local institutions and tailored to women and youth—can build the human capital needed for diversification and innovation in rural economies. Emphasis should be placed on making these programs accessible to the most marginalized populations.

Market Linkages and Procurement Reforms

Strengthening direct procurement channels and farmer-to-market linkages can reduce reliance on middlemen and improve price realization. This should include support for establishing market information systems and aggregation infrastructure at the village level.

Governance and Policy Outreach

Improving policy outreach, grievance redressal, and transparency at the village level can increase uptake of existing schemes and restore trust among peasants who often feel excluded from decision-making processes. Special attention should be given to reaching the poorest and most marginalized communities, particularly women and scheduled castes/tribes.

Youth Engagement and Rural Dignity

Creating pathways for dignified, remunerative work in agriculture and allied sectors—through improved incentives, technology access, and value addition opportunities—can help reverse the generational aspirations gap and build long-term sustainability in farming communities

India's agriculture will only thrive with coordinated action across these six domains, backed by adequate resource allocation, institutional strengthening, and a genuine commitment to the dignity and prosperity of rural farming communities.

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