Proceedings Report

Telangana Agriculture Futures Workshop (2034 & 2047)

Achieving Telangana Rising 2047 through Reality-Anchored Pathways

Workshop Date: 27th January 2026 | **Time:** 9:30 AM – 5:30 PM
Venue: Conference Hall, Burgula Rama Krishna Rao Bhavan, Hyderabad

Organizers: Telangana Agriculture and Farmers Welfare Commission (TGAFWC); Centre for Sustainable Agriculture (CSA); Deccan Development Society (DDS); University of Hyderabad

1. Background and Objectives

The Telangana Agriculture Futures Workshop was convened to deliberate on the future of agriculture in Telangana for the milestones of 2034 and 2047. The workshop sought to surface ground realities faced by farmers, examine gaps between state and central schemes, and develop reality - anchored pathways for an inclusive and sustainable agricultural transition. The discussions drew on field insights as well as scenario analysis using AI and modelling approaches.

2. Opening and Context Setting

In the welcome address, Dr. G. V. Ramanjaneyulu (Executive Director, CSA and Advisor, TGAFWC) emphasized that farmers' challenges and lived realities, and the gaps between Central and State policies, often remain unaddressed in mainstream platforms. The workshop aimed to create a space for frank deliberation on Telangana's agricultural future, supported by primary and secondary data and future scenario analysis.

Shri Kodanda Reddy (Chairman, Telangana Agriculture and Farmers Welfare Commission) highlighted the role of the Commission in bringing up and addressing farmers issues. He stated that farmers are continuing to farm in the face of multiple stressors including low and uncertain incomes, erratic rainfall, and market failures. Shri Reddy also mentioned the measures being taken to address such issues, such as the expansion of Farmer Producer Organisations (FPOs) in the state from 700 to 2,200, and cited emerging examples of branding and exports (such as grapes and tomato branding initiatives) as opportunities that require strengthening.

The Chairman also underscored the need to address:

- exploitative market structures and middlemen
- excessive urea use

- strengthening seed systems and public research outreach
- annual soil testing as a minimum requirement for sustainable productivity

M. Sunil Kumar, Advocate and Member, TGAFWC, emphasised that discussions on agriculture often overlook soil and land issues, and called for stronger support not only for tenant farmers but also for landowning farmers, especially through improved land records and land rights policies. He noted that recent central policies have not benefited small farmers, and argued that effective planning requires better understanding of farmer demographics and landholding trends up to 2047. With agriculture becoming more legally complex, now involving 24 different laws, Mr. Kumar highlighted the need for simpler, targeted policies and new schemes, including incentives like those used in Europe (such as scholarships) to attract youth into farming and ensure long - term sustainability.

3. Session I: Current Status of Agriculture in Telangana

Facilitator - Divya Veluguri (Executive Director, DDS & Research and Policy Lead, CSA)

This session used interactive methods including mentimeter - based questions to explore land distribution, cropping trends, and tenancy patterns. The session surfaced the increasing complexity of land records and data gaps, including discrepancies between departmental land records and socio - economic survey findings. Key points highlighted included:

- **Tenancy has increased significantly**, raising questions on how policies can support cultivators who do not hold formal ownership records.
- **Gross cropped area and irrigated area have increased**, reflecting intensification trends. As a result, area under **paddy production** has also increased by 240% since 2014 - 15.
- Telangana agriculture is highly groundwater - dependent, with **around 90% of groundwater used for agriculture**, slightly above the national average.
- **85% of Telangana lies in hard - rock regions**, limiting groundwater recharge potential.
- Soil health indicators are alarming, with **85% of soils deficient in nitrogen** and **45% deficient in soil organic carbon (SOC)**.
- The **disparity between rural and urban incomes** has been rising, with Rangareddy becoming the richest district in the country while average farmer incomes remained between ~₹10,000 - 14,000 per month.
- The age gap between the average ages of a farmer (52 years) and an Indian citizen (29 years) is **22 years**, indicating a **rapidly aging farmer population**.

The session further linked agricultural futures to broader human development outcomes. Participants discussed high rural indebtedness, malnutrition indicators, and anemia levels

among children and women, reinforcing the argument that agricultural transformation must also be nutrition and health sensitive.

4. Panel Discussion I: Current Agricultural Realities

Moderator: Panthangi Rambabu, Sakshi News
Panelists: Dileep Reddy, Senior Journalist; Dr Lakshmi Durga Chava, Senior Advisor, RYSS

4.1 Farmers Livelihoods

The first panel focused on the lived realities shaping Telangana agriculture today. Panelist and senior journalist Dileep Reddy stressed that headline economic numbers such as GDP and per capita income can be misleading if inflation, cost of living, and rising cultivation costs are not accounted for. He raised concerns about rising income disparities between urban and rural incomes, and increasing input costs (reported to have risen 100–200%) without corresponding increases in farmgate prices, contributing to indebtedness and distress among farmers. Mr. Reddy also pointed to changes in land use as one of the major factors affecting farmers' livelihoods, with agricultural and grazing lands being brought under commercial or private use. He called for land use reforms and procurement support to bolster farmers' incomes.

4.2 Nutrition - sensitive Agriculture

A strong theme emerging from the panel was the need to shift from production - only narratives to nutrition - sensitive food systems. Dr. Lakshmi Durga Chava, an expert in health and nutrition, highlighted worrying trends in nutrition within the state: such as the coexistence of undernutrition and overnutrition, low dietary diversity, and widespread and rising anaemia (70%) and stunting (33%) among children. These were the outcomes of current food system choices and lifestyle patterns. Dr. Chava also emphasized the link between nutrition in food and nutrients in soils, arguing that monocropping patterns had depleted soil nutrients and therefore the nutritional quality of crops. She called for agricultural policy to integrate a nutrition sensitive approach rather than treating nutrition solely as a welfare issue.

Participants also brought up the issue of state imports of crops such as pulses, vegetables and oilseeds. Currently, pulses have a shortfall of 4 lakh tonnes and for oilseeds it is 10 lakh tonnes. Participants also requested the government to encourage crop diversification towards pulses, oilseeds and millets, especially in rainfed and upland areas.

5. Presentation: Future Scenarios and Pathways (2034–2047)

Presenter - Dr. G. V. Ramanjaneyulu, Executive Director, CSA, and Advisor, TGAFWC

This session focused on Telangana's future scenarios for agriculture under different conditions. Using the analogy of the elephant, Dr. Ramanjaneyulu highlighted how stakeholders often think in silos, with each actor describing only their own identified problems or institutional failures rather than viewing the system as a whole. He noted that while nominal farmer incomes increased from ₹10,218 to ₹14,500 between 2018 and 2024, inflation and rising input costs meant that farmers were effectively "running on empty," with ecological debt accumulating invisibly.

Key risk signals identified included:

- Groundwater levels are approaching critical thresholds, and the policy window for action is narrow (before 2030).
- Soil organic carbon decline and nutrient imbalance: 13% of land has already lost SOC, with only around 2% restorable SOC remaining.
- Crop income remains poorly diversified: as of 2024, crop income is only 48% of household income. The economics of crop production creates large gaps between costs of cultivation, MSP, and actual returns for major crops in Telangana.
- A structural shift in agriculture where tenancy is becoming a dominant survival mechanism rather than a marginal feature.

Two broad pathways were outlined for future scenarios:

1. **Business-as-Usual (BAU) approach** - If Telangana agriculture were to continue on its current trajectory, the following are likely to occur:
   a. Currently, 91.4% of operational holdings are classified as small and marginal, and this number has been increasing. Average landholding sizes are projected to contract to 0.48 hectares (from 0.89 ha.) by 2047.
   b. 22% of agricultural households will exit farming by 2034, with migration and ageing trends likely to intensify.
   c. The groundwater extraction baseline of 7.72 mbgl in 2024 will rise to 13 mbgl by 2034, pushing the system toward a threshold of no return.
   d. Direct losses due to these impacts are estimated at ₹2.85 lakh crore by 2047.

2. **Regenerative Agricultural Transformation (RAT)** pathway emphasizing soil restoration and crop diversification. Several solutions were proposed that would help set Telangana on the RAT pathway
   a. Policies to reverse the incentive gap in crop production including price parity, assured procurement, volumetric water pricing, and stronger institutional architecture.
   b. To address tenancy and feminisation of agriculture, policies such as granting ownership rights to those actually cultivating the land rather than absentee owners, creating

alternative livelihoods for women transitioning out of agriculture, providing direct support to actual cultivators, and driving investments toward agricultural transformation should be formulated.

6. Panel Discussion II: Pathways towards Sustainability

The second panel deliberated on sustainability pathways and institutional reforms required for 2034 and 2047.

Moderator: Kurmanath KV, The Hindu Business Line
Panelists:

- Shri Kodanda Ram, MLC Telangana
- Dr. D. Narasimha Reddy, Advisor, TGAFWC
- Dr. Rukmini Rao, Director, Graamya Resource Centre for Women
- Dr. Duvvuri Narasimha Reddy, Retd. Professor, HCU

6.1 Recognition of Women Farmers

Dr. Rukmini Rao emphasised that women contribute substantially to agriculture but remain institutionally invisible. She proposed issuing women farmers identity cards to enable access to institutional credit and to reduce indebtedness. She also recommended strengthening women's collectives, cluster - level planning (40–50 villages), and shifting from subsidies toward investments in collectives.

6.2 Long - Term Sustainability of Agriculture

Shri Kodanda Ram noted that agriculture is vital to the economy of Telangana, but insufficient attention is being paid to large areas that require improvement. Rising production costs have placed a heavy burden on farmers, and stronger MSP and marketing price mechanisms are required to improve farmer incomes. He emphasized that the system must be supportive, as technology alone cannot address these challenges, and even FPOs require additional institutional support.

6.3 Land Rights and Support Systems for Small Farmers

Prof. Duvvuri Narasimha Reddy highlighted the importance of land rights for small and marginal farmers. He explained that 40 years ago, tenant farmers were able to purchase land over time, as they received nearly 60% of income from crop production. This is no longer possible because farming has become economically unviable and involves substantial unpaid labor. He stressed that there is no substitute for small farmers in India and warned that without adequate support

mechanisms, the rural economy would collapse. Therefore, robust support systems must be established.

6.4 Soil Restoration and Input Cost Reduction

Dr. D. Narasimha Reddy emphasized that soil health is rapidly deteriorating and that Telangana must prioritize soil restoration. They also highlighted the importance of forest policy and common forest rights.

These three focus areas were identified as essential for planning toward 2034: institutional recognition and support for women farmers, protection of small farmers' rights, and policies oriented toward reducing input costs.

Roundtable contributions reinforced that technology alone cannot solve structural issues without supportive market and policy systems. Dr. Srijit Mishra highlighted the need for aligning technology adoption and institutional changes with budgetary priorities through data - driven policymaking. Other participants raised concerns about declining horticulture area, rising human - wildlife conflict, and risks from climate variability.

7. Key Insights and Policy Recommendations

Insights

1. **Soil health is collapsing under a chemical intensive rice centric production system.**
    - Soil organic carbon has declined sharply, with 85% of soils deficient in nitrogen and 45% deficient in SOC. Excessive urea usage and mono cropping of paddy dominate Telangana agriculture.
    - Policy incentives favour paddy due to assured MSP and procurement, while soil testing infrastructure is inadequate and underutilised. Traditional and indigenous soil management knowledge has been marginalised, and universities lack dedicated curricula on organic and regenerative practices.
    - Declining soil fertility is increasing input dependence, reducing nutrient density in food, escalating costs, and pushing agriculture towards ecological thresholds that may become irreversible by 2030.

2. **Farmer incomes are rising nominally but declining in real terms**
    - Farm incomes increased from ₹ 10,218 to ₹14,500 between 2018–2024, while inflation and input costs rose by over 6% annually. MSP does not account for real cost escalation, market prices lag behind rising cultivation costs, and procurement is limited largely to

paddy. Middlemen capture significant margins, while farmers bear production and market risks.

- Farmers are "running on empty," accumulating invisible ecological and financial debt, leading to indebtedness, distress, and exit from farming, with 22% of agricultural households projected to leave agriculture by 2034.

3. **Tenancy has shifted from a marginal phenomenon to the dominant survival strategy**
    - Tenancy has increased significantly, with many cultivators lacking ownership rights, access to institutional credit, insurance and formal recognition. Existing tenancy laws (2011) are outdated and do not reflect current realities where absentee landownership and informal leasing dominate. Schemes are designed around land ownership rather than actual cultivation.
    - Tenant farmers remain excluded from state support systems, deepening vulnerability and discouraging long-term investments in soil, water, and sustainability.
4. **Women are the backbone of agriculture but remain institutionally invisible**
    - Women constitute nearly 60-70% of the agricultural workforce, yet most lack land titles, formal recognition, or access to credit and insurance. Policies continue to treat farmers as male landowners. Feminisation of agriculture remains low, and institutional mechanisms have not adapted to this demographic reality.
    - Women farmers face higher indebtedness, limited bargaining power, and exclusion from decision-making, weakening both household resilience and collective agricultural outcomes.
5. **Market systems**
    - Farmers report delayed procurement, lack of MSP for non-paddy crops, absence of local markets, and high commissions captured by middlemen. Decentralised marketing infrastructure is weak, cold storage and processing facilities are inadequate, and FPOs lack a strong enabling policy framework. Crop diversification remains economically unattractive, post-harvest losses persist, and farmers are forced into distress sales, reinforcing dependence on paddy.

Policy Recommendations

1. **Transitioning from rice-centric incentives to diversified assured procurement:** Currently, paddy dominates in Telangana, driven by increased MSP procurement. However, farmers have shown willingness to grow other crops if there is an assured MSP. Hence, assured

procurement and bonuses for non-paddy crops, especially millets, pulses and oilseeds, would support farmers in diversification.

- **Procurement Parity (State Marketing Departments)**
  - **Assured Buy-back:** Institutionalise mandatory procurement targets for non-paddy crops (Millets, Pulses, and Oilseeds) at the state level, matching the logistical efficiency of the paddy procurement system.
  - **Decentralised Collection:** Utilise Primary Agricultural Credit Societies (PACS) to set up dedicated collection centres for diversified crops to reduce "farm-to-mandis" transport costs for smallholders.
  - **Transition Bonuses:** Implement a per-acre "Diversification Bonus" paid directly to farmers who shift land from paddy to water-efficient alternatives.
  - **Input Subsidies:** Redirect a portion of fertiliser/power subsidies toward providing high-quality seeds and bio-stimulants specifically for oilseeds and pulses.
  - **Public Procurement Synergy:** Integrate procured millets and pulses into the Mid-Day Meal (MDM) scheme and the Integrated Child Development Services (ICDS). This creates a guaranteed "captive market" that justifies state procurement expenses.

2. **Establishment of a dedicated Telangana FPO Policy:** To transition Farmer-Producer Organisations (FPOs) from fragmented entities into robust, commercially viable enterprises through a unified state-level institutional framework.
   - NABARD, in strategic collaboration with the government of Telangana, should formulate a comprehensive “Telangana FPO Policy”. The key policy pillars are Institutional governance, credit & financial inclusion, market & infrastructure integration, and digital & export enablement. This policy will formalise the FPO ecosystem across the state.
   - By implementing a statewide initiative to build and support FPOs to give small and marginal farmers better economic leverage and collective bargaining power.
   - Conducting a comprehensive mapping of FPO coverage and functionality in Telangana to identify priority regions.

3. **Institutional recognition of women farmers**

Despite contributing 60–70% of total agricultural labor, women farmers remain "invisible" within official policy frameworks and financial systems. This lack of formal status prevents access to credit, subsidies, and land rights.

- Recommendation: The department of agriculture must issue mandatory women farmer ID cards, direct benefit transfer (DBT) integration, gender sensitive lending from banks. This formal recognition will shift women from “invisible labor” to “independent economic actors,” driving higher productivity and equitable growth in the agricultural sector.

4. Reform of tenancy and cultivator recognition frameworks

The current legal and administrative framework ties agricultural benefits exclusively to land ownership. To decouple agricultural support systems from land ownership, ensuring tenant farmers gain equitable access to credit, insurance, and state-led welfare schemes.

- Rising informal tenancy reflects cultivators' limited access to land ownership, driven by high land prices and a lack of institutional credit. Owner-centric systems exclude actual tillers, rendering them invisible to state revenue and agriculture departments.
- Recommendation: Update the Telangana Land Licensed Cultivators Act 2011 and design schemes based on cultivator identity rather than land ownership.

5. Strengthening soil health infrastructure and regenerative practices

The productivity of Telangana's agricultural sector is currently bottlenecked by acute soil degradation. Evidences are infrastructure deficit, degradation trends (systemic depletion of macro and micro nutrients across major agro climatic zones), and economic impact (imbalanced fertilizer application, driven by a lack of data, is inflating cultivation costs and damaging local ecosystems). In addition, the use of heavy machinery for farm operations such as ploughing and puddling, especially in paddy cultivation, is leading to soil compaction and reduced water percolation, and thus impacting long term soil health.

- Focus on Soil Health and Organic Matter: Shift the policy focus from merely distributing chemical fertilisers to restoring organic matter in the soil to improve declining yields. By focusing on decentralised testing labs, mobile soil clinics, and systematically integrating traditional regenerative techniques.
- Promote effective and regenerative soil health management techniques such as mulching, cover cropping, green manuring, and application of Farm Yard Manure (FYM), among others.

6. Revitalising state seed systems:

Seed systems have become highly privatised in the state, especially in commercial crops such as paddy, maize, cotton and horticulture. These seeds are also bred to prioritize yield over pest and disease resilience. Cases of large scale seed production failure, as seen in Mulugu district for maize in 2025, are also recurring. To eliminate farmers' dependence on unreliable private seed providers and mitigate the risks of seed adulteration and germination failure, the following measures are suggested:

- Strategic investment in public sector seed research and development, by redirecting funding toward Agricultural Universities specifically for the development of high-yielding, climate-resilient non-paddy varieties (pulses, oilseeds, and millets).
- Utilise unused lands of the Department of Agriculture (1600 acres) to establish seed farms and conduct seed research into diverse varieties.
- Decentralised seed production models need to be established, and subsidised distribution of diversified varieties needs to be introduced

- Targeted subsidies for the adoption of public-bred non-paddy seeds to incentivise farmers to move away from private-sector paddy monopolies.
- By bringing seed control back to public institutions, the state can ensure a reliable seed supply, support better crop yields, and protect farmers from unstable and unregulated private markets.
- Promote traditional seed varieties and certify them. Encourage traditional systems of seed exchange and community seed banks.

7. **Decentralised storage and marketing infrastructure:**

   Establish decentralised marketing infrastructure such as community and FPO-managed mini godowns and cold storages for perishables. Provide decentralised markets through building effective linkages to village and local marketplaces.

8. **Integrate agriculture with nutrition and public food schemes:** Institutionalise decentralised procurement by linking millets and diverse crop procurement from local farmers to Mid-Day Meals, Anganwadi (ICDS), and PDS. By this policy change, the following are the expected outcomes
   - Health: Reduction in stunting, wasting, and prevalence of anemia among children and lactating mothers.
   - Agriculture: Enhanced soil health through crop rotation and reduced water consumption (via millets).
   - Economic: Increased income for smallholder farmers through direct institutional demand.

9. **Address water stress through crop planning and regulation:** Current agricultural practices rely on unsustainable groundwater extraction, driven by the cultivation of water-intensive crops in water-scarce regions. Projections indicate that primary aquifers are nearing critical thresholds, threatening long-term food security and rural stability.
   - Recommendation: Promote agro-ecologically suitable crops and regulate water-intensive cultivation. The policy should focus on agro-ecological mapping & crop zoning, regulatory measures on water extraction, licensing, and incentive realignment towards climate resilient crops (millets, pulses, oilseeds)

10. **Establish a Comprehensive Land Use Policy:** Agricultural land, especially near Hyderabad and state highways, are coming under increased pressure from rapid commercial development. Develop a comprehensive land use policy to streamline regularization for agricultural lands, prevent the loss of agricultural land to real estate and ensure that land is used sustainably.

11. **Address climate change vulnerability:** Climate change related erratic weather (especially heat stress) and irregular rainfall have led to crop failures in several districts in 2025. Measures to mitigate climate risk can include:
    - Crop planning based on climate risks and vulnerability mapping
    - Risk mitigation through development of climate-resilient crop varieties and promotion of sustainable agriculture practices
    - Address the critical absence of crop insurance mechanisms in Telangana by instituting a comprehensive compensation and insurance coverage policy in cases of crop failure.

8. Closing Reflection

The Telangana Agriculture Futures Workshop (2034 & 2047) established that the state's agricultural sector confronts a nexus of structural vulnerabilities that necessitate urgent policy recalibration. The empirical evidence synthesized during the workshop - including groundwater depletion zones expanding at 36% annually, soil organic carbon deficiency affecting 45% of agricultural lands, and child malnutrition indices increasing despite nominal economic growth - implies that prevailing policy architectures oriented solely toward maximising production have systematically entrenched resource extractive patterns that are incompatible with the long-term sustainability objectives articulated in Telangana Rising 2047.

Through the scenario modeling for 2034 and 2047, the workshop emphasised that the temporal window (2026-2030) for implementing a managed, equitable agricultural transition is constrained and rapidly diminishing. Workshop participants achieved consensus on the imperative for a regenerative agricultural transformation anchored in evidence-based policy interventions that address systemic inequities and ecological degradation. The ten actionable recommendations emanating from multi - stakeholder deliberations constitute a comprehensive policy framework encompassing: institutional recognition of women cultivators through formal identification systems; comprehensive tenancy reform enabling tenant farmers' access to credit and insurance mechanisms; subsidy realignment prioritizing soil health restoration and agroecological practices; and the establishment of assured procurement frameworks for nutritionally significant, water efficient crops beyond the current paddy centric regime.

These recommendations represent a fundamental paradigm shift towards farmer centric, nutrition-sensitive, and ecologically restorative agricultural systems. Decisive policy action before 2030 is crucial to catalyse a transition toward sustainable prosperity and regenerative agriculture. The strategic choices adopted now will fundamentally shape rural livelihoods, nutritional security, ecological resilience, and the broader socioeconomic development of Telangana through 2047 and beyond.