Report: Status of Agriculture in Telangana

Prepared for the ***'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; Centre for Sustainable Agriculture (CSA); Deccan Development Society (DDS); University of Hyderabad

Executive Summary

Telangana's agricultural sector faces a critical convergence of challenges. While agriculture employs 47.3% of the workforce and contributes 17% to state GDP (₹14.64 lakh crore), farmers confront mounting pressures from groundwater depletion, extreme land fragmentation, and India's highest rural indebtedness at 92%. With 70.60 lakh operational holdings averaging just 0.89 hectares and 91.4% classified as small and marginal, the sector operates under severe structural constraints.

At the same time, current agricultural practices are placing immense pressure on natural resources of the state. Soils are degrading at a worrying rate and losing their fertility rapidly. Groundwater stress affects 500+ villages, with critical depletion zones expanding 36% annually despite above-normal rainfall. Child malnutrition worsened between 2015-16 and 2019-21, with stunting at 28% and anemia affecting 61% of children. The income disparity between farmers (₹13,874 monthly) and government employees (₹36,020 monthly) reflects deep structural inequities. Business-as-usual projections indicate that by 2047, average landholdings could shrink to 0.48 hectares and incomes from farming could decrease in real terms, while resource extraction climbs and malnutrition potentially doubles.

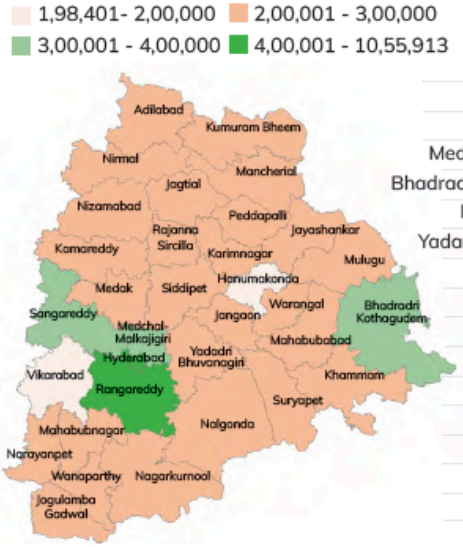
This workshop brought together government officials, farmer organizations, civil society, research institutions, and funders to chart pathways toward regenerative agricultural transition using the Three Horizons framework and scenario planning, balancing productivity, farmer welfare, environmental sustainability, and nutrition security within Telangana Rising 2047. The insights and policy recommendations from the consultation are documented in the Proceedings and Summary Report.

Part I: Current Agricultural Status

1.1 Incomes and Livelihoods

1. **Demographic Characteristics of Farmers** - Telangana's agricultural sector employs approximately 47% of the population (around 1.5 crore people[1]), with small and marginal farmers constituting 87% of farming households. 72% of rural women are involved in agriculture activities. As in other states of India, the average age of farmers in Telangana is increasing, while the proportion of youth entering agriculture continues to decline. According to the ASER survey 2017, only 1.2% of youth are interested in agriculture as a profession[2]. According to the Agriculture Census of 2015-16, the average age of farmers is 51 at the national level, while the average age of an Indian citizen is 29. This clearly indicates an ageing farmer population.
2. **Urban-Rural Income Gap** - Agriculture contributes significantly (17%) to the state's gross domestic product (GSDP) of ₹14.64 lakh crore (2023-24)[3], despite the state's rapid industrialization centered around Hyderabad and Rangareddy districts, which account for 40% of GSDP. This skewed economic development is reflected through the disparity in annual per capita income between districts: ranging from Rs. 10,55,913 in Rangareddy to Rs. 1,98,000 in Vikarabad, with the state average at Rs.3,46,457.

Fig 2.7 District wise Per Capita Income (PCI) at Current Prices for the year 2023-24 (Rs.)



District	PCI	Rank
Rangareddy	10,55,913	1
Hyderabad	5,54,105	2
Sangareddy	3,45,478	3
Medchal-Malkajgiri	3,43,130	4
Bhadradri Kothagudem	3,21,281	5
Mahabubnagar	2,93,823	6
Yadadri Bhuvanagiri	2,88,599	7
Peddapalli	2,84,661	8
Medak	2,83,567	9
Siddipet	2,78,352	10
Nalgonda	2,76,273	11
Jayashankar	2,57,851	12
Karimnagar	2,50,243	13
Khammam	2,49,517	14
Mulugu	2,49,338	15
Suryapet	2,48,429	16
Warangal	2,44,278	17

District	PCI	Rank
Nirmal	2,34,640	18
Jangaon	2,33,215	19
Nagarkurnool	2,29,649	20
Mancherial	2,27,716	21
Wanaparthy	2,27,422	22
Nizamabad	2,23,282	23
Adilabad	2,22,233	24
Kumuram Bheem	2,21,456	25
Jogulamba Gadwal	2,14,861	26
Kamareddy	2,14,230	27
Rajanna Sircilla	2,13,725	28
Mahabubabad	2,12,232	29
Narayanpet	2,07,784	30
Jagtial	2,05,273	31
Hanumakonda	1,99,490	32
Vikarabad	1,98,401	33

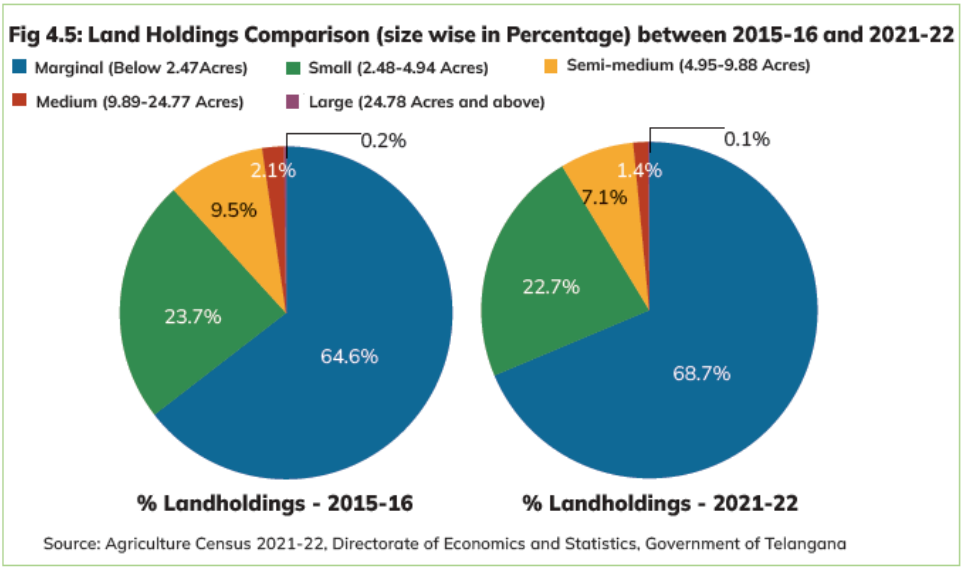
Source: Directorate of Economics and Statistics, Government of Telangana

[1] 'Agri at the Core', Feb 2025, Sribala Vadlapatla, Times of India; https://timesofindia.indiatimes.com/city/hyderabad/agri-at-the-core-how-t-balances-tradition-with-growth/articleshow/118338496.cms

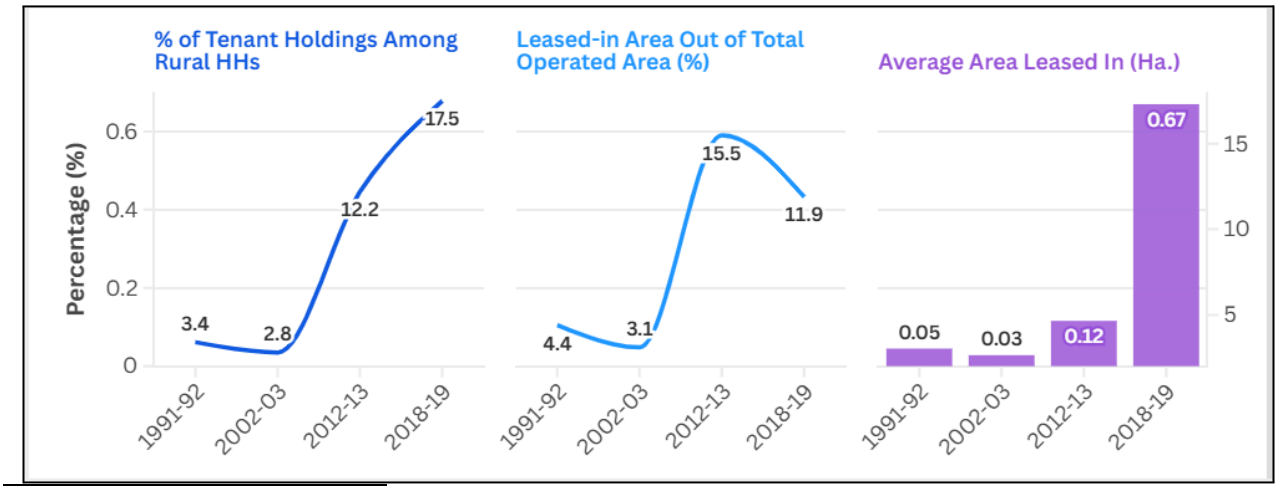
[2] 'Farmers ageing, new generation disinterested: Who will grow our food?', July 2019, Down to Earth https://www.downtoearth.org.in/agriculture/farmers-ageing-new-generation-disinterested-who-will-grow-our-food--65800

[3] *Telangana Socio Economic Outlook 2025*, Planning Dept., Govt. of Telangana, p.14

3. **Agrarian Crisis and Landholding** - The widening rural-urban gap is due to the mounting economic pressures faced by the rural and agricultural workforce. While the service sector dominates state GDP at 66%[4] rural areas remain overwhelmingly dependent on agriculture and allied activities. Average farm sizes continue to decline, with operational holdings falling to 0.89 ha. as land subdivision intensifies across generations. 91.4% of all holdings (as of 2021-22) are small and marginal, up from 88.3% in 2015-16[5]. Small and marginal farmers make up 86.7% of rural households in Telangana. This fragmentation compounds vulnerability to market shocks, climate variability, and input price fluctuations.



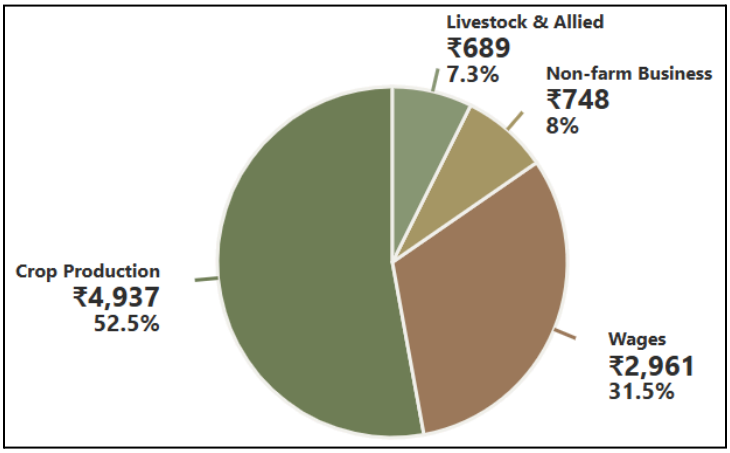
4. **Tenancy** - According to the NSS data, the extent of tenancy is 17.5% in Telangana, reflecting a steadily increasing trend over the past two decades. As of 2018-19, 11.9% of total operational holding area is being leased in, while 12.7% of rural households in Telangana report leasing in of land[6]. The true extent of tenancy, however, can be much



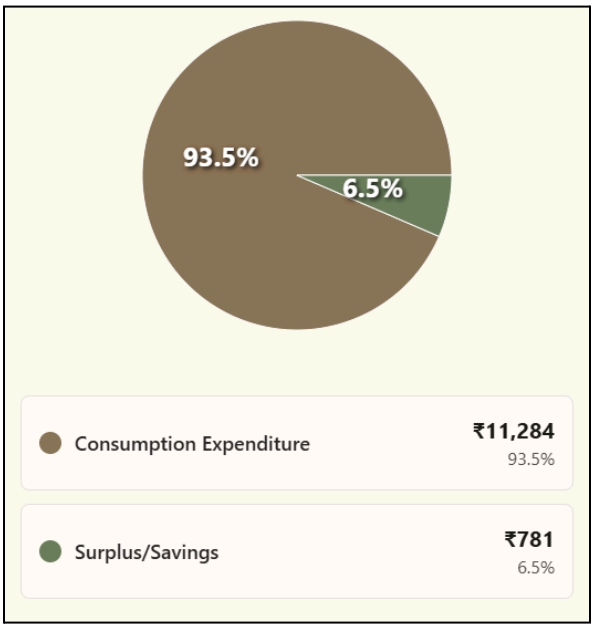
[4] *Telangana Socio Economic Outlook 2025,* p. 42
[5] *Telangana Socio Economic Outlook 2024,* p. 64
[6] *NSS 77th Round,* p. 115, 121.

higher due to the informality of tenancy contracts. A survey conducted by the NGO Rythu Swaraj Vedika (RSV) found that 36% of farmers were leasing in land for cultivation[7]. The average land leased in Telangana according to the NSS is 0.67 ha., however according to the survey cited above, it is 2 ha. Data from our field areas shows that the average land leased in is closer to **1.4 ha**. The profile of tenant farmers are usually small farmers from marginalised caste groups leasing-in land to supplement increasingly marginal landholdings. Landless tenant farmers also do not have access to government support schemes such as the Rythu Bharosa.[8]

5. **Farmer Income and Distribution** - Average monthly income for rural households in Telangana as of 2021-22 stands at ₹12,065, slightly lower than the national average of ₹12,698. For agricultural households, average monthly income is ₹13,874, slightly higher than the national average of ₹13,661. However, a monthly expenditure of ₹11,284 leaves only ₹781 in savings for most rural households[9]. The distribution of income from different sources has changed over time, with the proportion of crop income decreasing while the contribution of wage income increases, in line with national trends[10]. For comparison, the salary of a government employee at the lowest pay grade is ₹36,020/ month (according to 7th Pay Commission) and is predicted to increase to ₹51,480 in the 8th Pay Commission. This leaves a monthly parity gap of ₹22,146, implying that farmers earn only 38% of the salary of a government employee.



Share of income distribution by source for agricultural households (NSS 2018-19)

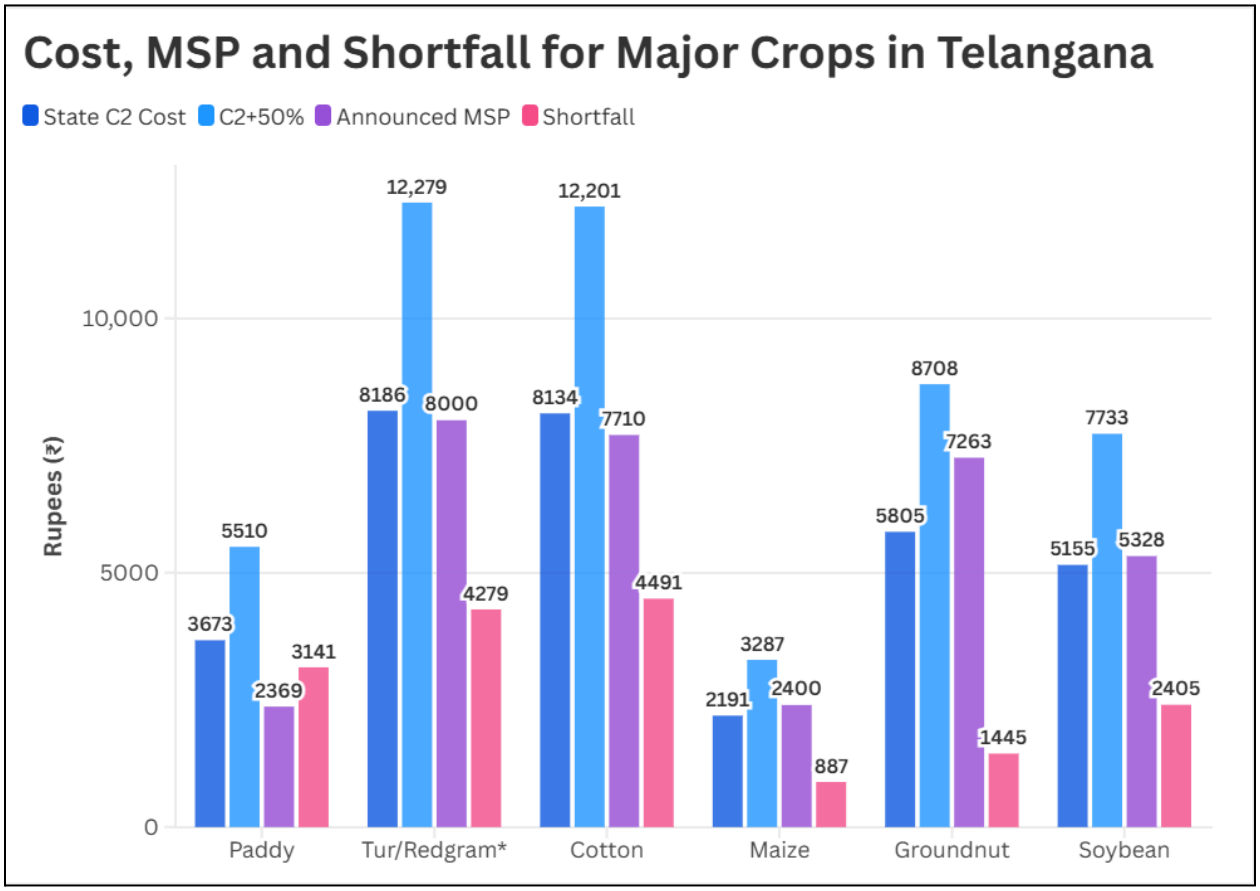


6. **Indebtedness** - It is not surprising then, that Telangana reports India's highest household indebtedness at **92%**, with average outstanding debt of **₹1,29,599**. This has

[7] 1 out of 3 farmers are tenants in Telangana; are excluded from any government support; Dec 2022, Down to Earth
[8] 'Agricultural Tenancy in Contemporary India', 2018, Bansal et al, SSER Monograph 18/1
[9] NABARD All India Rural Financial Inclusion Survey 2021-22 (NAFIS 2.0)
[10] *NSS 77th Round*

marginally decreased from ₹1,52,113 in 2018-19, but still continues to be much higher than the national average of ₹90,372[11]. The access to credit for agricultural purposes is also high, with our primary data from the field reflecting that 90% of farmers had availed credit in the last year (2024-25). Telangana leads in the association with microfinance institutions (63%) in rural areas.

7. **Economic of Crops** - The cost of cultivation for the major crops have been increasing in Telangana, as in the rest of India. However, the costs of cultivation of major crops such as paddy, maize, groundnut and cotton are higher in Telangana than the national average. Telangana has the highest costs of production for cotton among major producing states. As MSPs are calculated on the basis of average costs of cultivation, this implies that Telangana farmers face a higher shortfall in major crops such as paddy, cotton and maize. Although the state government has been providing a bonus of ₹500/qtl. for fine paddy varieties, this still does not help farmers recover their cost of cultivation of ₹3,673/qtl.



8. **Farmer Suicides** - Telangana has been known to have a high incidence of farmer suicides. From 2014-2022, NCRB recorded 6,658 farmer suicides (14.4% women), with civil society reporting 7,064 (2014-2023). Leading districts include Nalgonda (931),

[11] NAFIS 2.0, NSS 77th Round

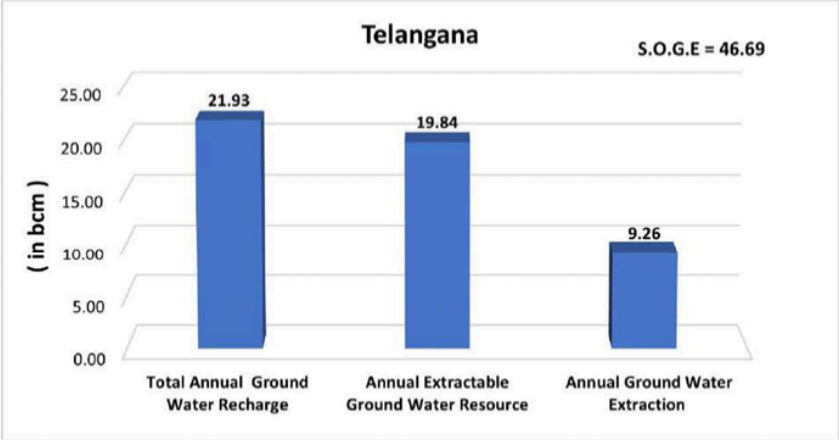
Khammam (508), Karimnagar (501) and Rangareddy (438). Only 19.96% of families received ex-gratia (2014-2020), which has nearly stopped since 2018. From the picture outlined above, rising input costs, stagnant prices, high indebtedness and a declining natural resource base, including land, are pushing farmers in Telangana towards the brink.

1.2 Natural Resource Status and Quality

1. Water Resources Crisis

Groundwater Depletion

Groundwater depletion represents Telangana's most critical agricultural challenge. The state utilizes 48% of its dynamic groundwater resources, comparable to national usage rates. However, recent trends show accelerating decline:

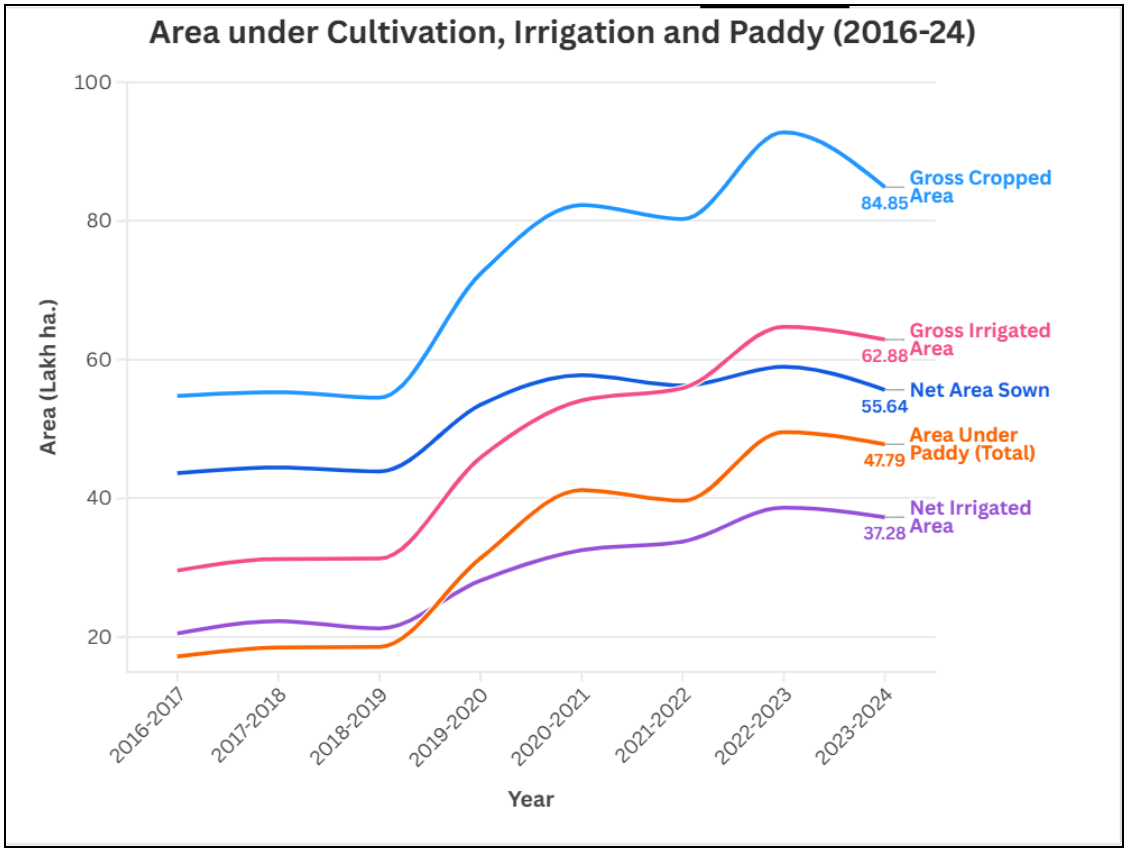


Dynamic Ground water Recourses Scenario 2025– Telangana

- As of July 2025, the groundwater level in Telangana is 8.37 mgbl. The decadal average of groundwater levels during July is 9.45 mgbl. The slight increase can be attributed to 22% excess rainfall in 2025, however this failed to arrest overall depletion trends.
- According to the Central Ground Water Board (CGWB), groundwater extraction for agriculture increased from **235 tmc ft (thousand million cubic feet) in 2019-20 to 256 tmc ft in 2022,** showing increased reliance on groundwater resources. This is almost **twice the maximum storage capacity of the Kaleshwaram Lift Irrigation Project (KLIP)**.
- The area under **extreme depletion (red zone >20m depth)** grew by **36%** from 3,452 sq km (April 2024) to 4,714 sq km (April 2025). **500** plus villages are overexploiting groundwater.
- Districts like **Nalgonda, Vikarabad, and Nagarkurnool** face the most severe depletion, with farmers drilling 70+ borewells in desperate attempts to access water.
- By 2025, **groundwater extraction reached over 46.7%,** up from 38% in 2022-23, with nearly **88% of this water used for irrigation**.
- On the other hand, the rate of groundwater recharge is limited by Telangana's hard rock geology, which makes up around 85% of its geographical area.

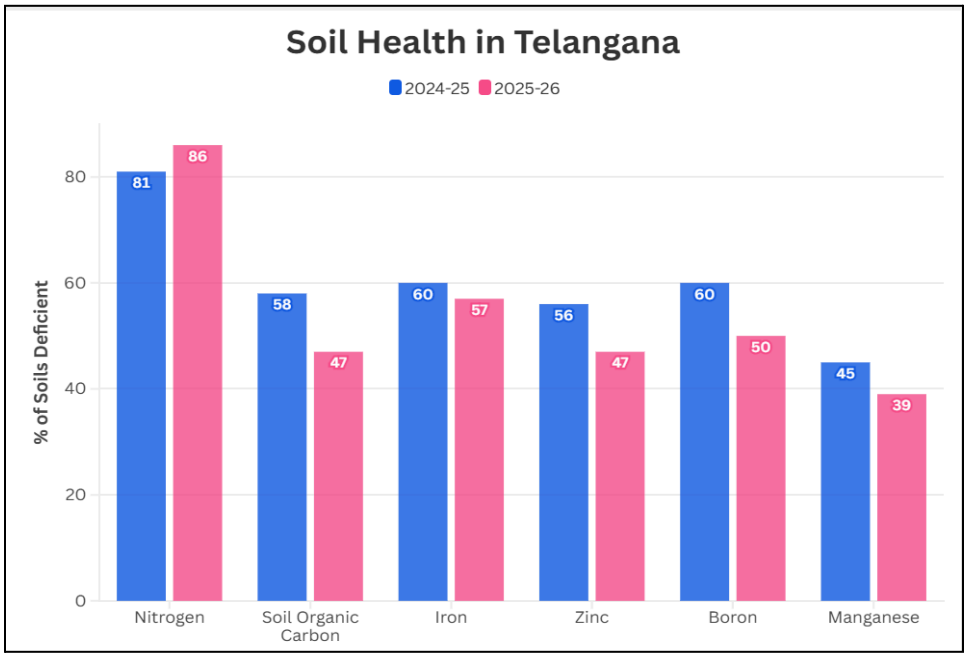
Irrigation

- Irrigated area has grown by more than **125%** between **2014-15 and 2022-23**. Major irrigation projects, such as Mission Kakatiya, which focused on restoring traditional tanks and water bodies, and multiple lift irrigation projects including the massive Kaleshwaram Lift Irrigation Project, have significantly expanded the net irrigated area.
- Canal irrigation, a traditional surface irrigation method, declined slightly from 11.49 lakh hectares in 2015-16 to 10.99 lakh hectares in 2021-22. In contrast, **tube well irrigation more than tripled** from 5.88 lakh hectares to 19.01 lakh hectares in the same period. Currently over **26.97 lakh agricultural borewell connections** pump water, with more than half of cropped area dependent on groundwater.
- This boom in tubewell irrigation has also been incentivised through the power subsidy. In 2018, Telangana became the only state in India to implement 24x7 free power supply to all farmers. This has been costing the government between ₹10,000 crore and ₹13,500 crore annually. It has also led to a boom in groundwater withdrawal for agricultural use, most of it to irrigate paddy especially in the winter (Yasangi) season.
- Surface water availability also faces constraints. The Kaleshwaram Lift Irrigation Project (KLIP), designed to irrigate over 40 lakh acres, has been non-operational since October 2023 due to structural concerns at the Medigadda barrage. This has forced farmers back to groundwater dependency and monsoon reliance, creating a vicious cycle of aquifer depletion.



2. Soil Health Degradation

Soil quality degradation stems from multiple interacting factors. Intensive monoculture, particularly paddy cultivation in water-stressed regions, depletes soil organic matter and disrupts nutrient cycles. The state's predominance of Chalka-type soils (70% in drought-prone districts like Mahabubnagar) presents inherent challenges due to poor water retention capacity.



Key soil degradation patterns:

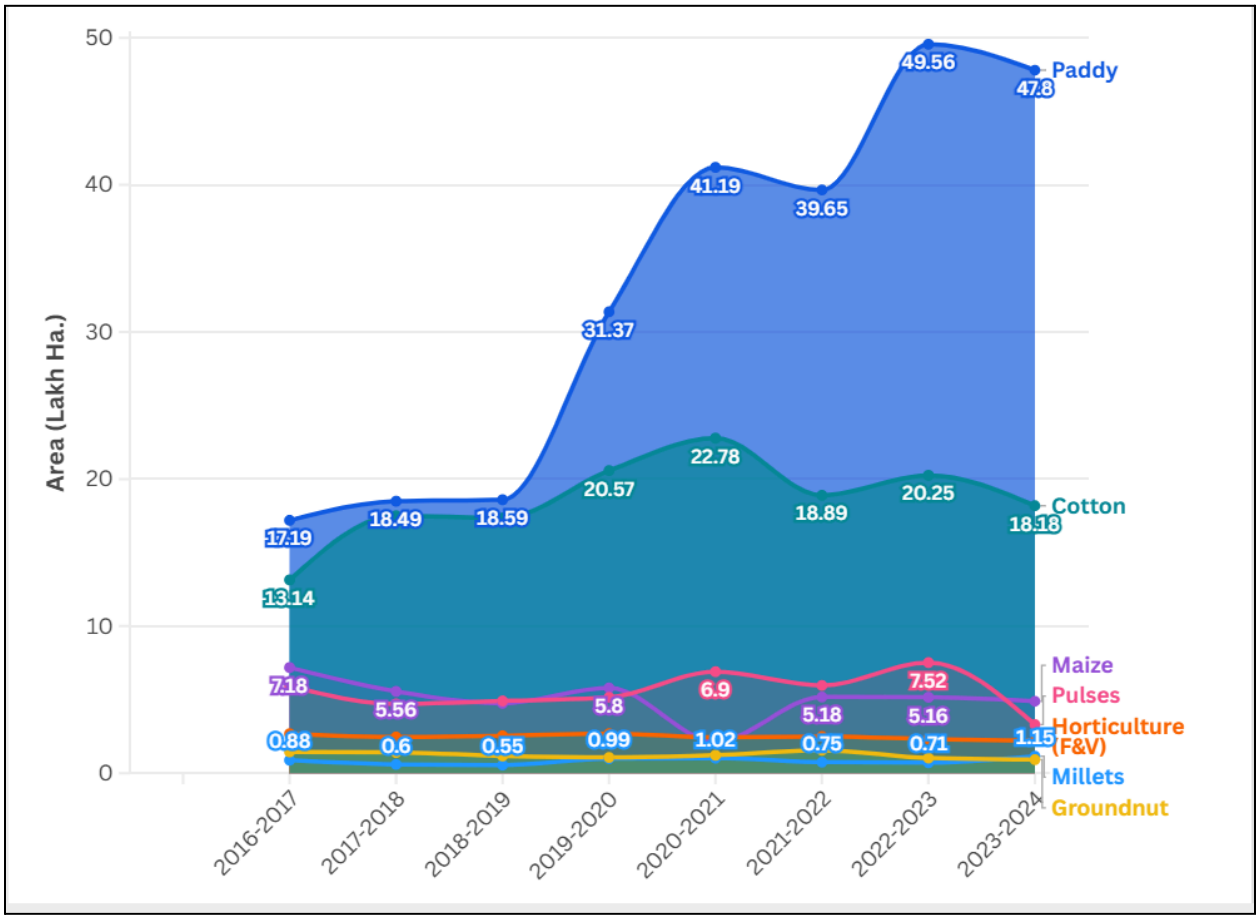
- Declining soil organic carbon (SOC) content due to crop residue removal and limited organic amendments. Currently 47% soils are deficient in SOC.
- Nutrient imbalances from over-reliance on chemical fertilizers, particularly nitrogen, without corresponding attention to secondary and micronutrients. 86% of soils in Telangana are deficient in nitrogen, as well as micronutrients including Iron 57%, Zinc 47%, Boron 50%, and Manganese 39%.
- Telangana's soils are undergoing desertification and land degradation at a rate of 31.68%. The primary cause is water erosion, exacerbated by removal of vegetation cover.
- Salinization in areas with poor drainage and excessive irrigation.
- Soil compaction from heavy machinery use and loss of soil structure.

3. Cropping Pattern Shifts

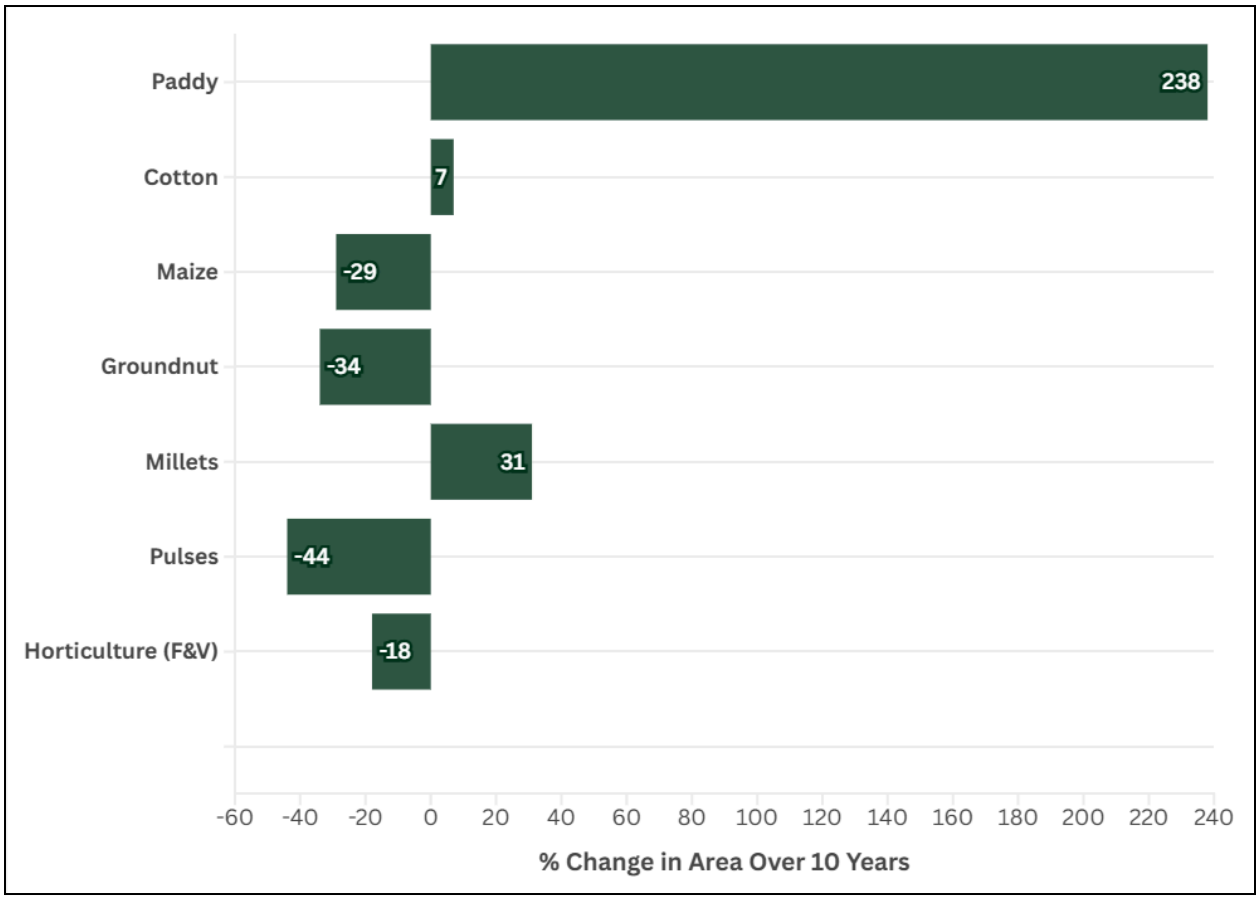
Telangana cultivates 27 major crops across Kharif and Rabi seasons, covering approximately 59.48 lakh hectares. Despite this, Telangana's Crop Diversity Index remains alarmingly low: 0.31 (2020-21) to 0.41 (2021-22). Rice dominates as the primary food crop and staple, with paddy cultivation concentrated in districts with irrigation access. The area under rice cultivation has expanded by 240% in the past 10 years. In 2022-23, paddy accounted for 44% of the area sown in Vanakalam and 76.7% of area sown in Yasangi. The Vanakalam (Kharif) season (June-September) accounts for the majority of cropped area, heavily dependent on monsoon timing and intensity.

Major crop categories and trends:

- **Cereal crops:** Paddy production shows a steep upward trend since 2016, while maize shows an overall decline. Millets have shown a slight increase, however they still make up only around 1.15% of Gross Cropped Area.
- **Pulses and Oilseeds** - Bengal gram, red gram, green gram, and groundnut show a declining trend in the past 10 years. Overall, pulses have seen a steep decline since 2016, from occupying 10.8% of GCA to now 3.9%.
- **Non-food crops:** Cotton production shows variable growth, however it is the second most dominant crop after paddy, occupying ~30% of area sown in Kharif. Groundnut and sunflower exhibit declining trends.
- **Horticulture:** Mango, grapes, and gherkins have been identified as export potential crops, with dedicated agri-export zones proposed. However area under horticulture as a whole has declined, with area under vegetable falling to only 0.56% of GCA.



Change in Area Under Major Crops



4. Agrochemical Use

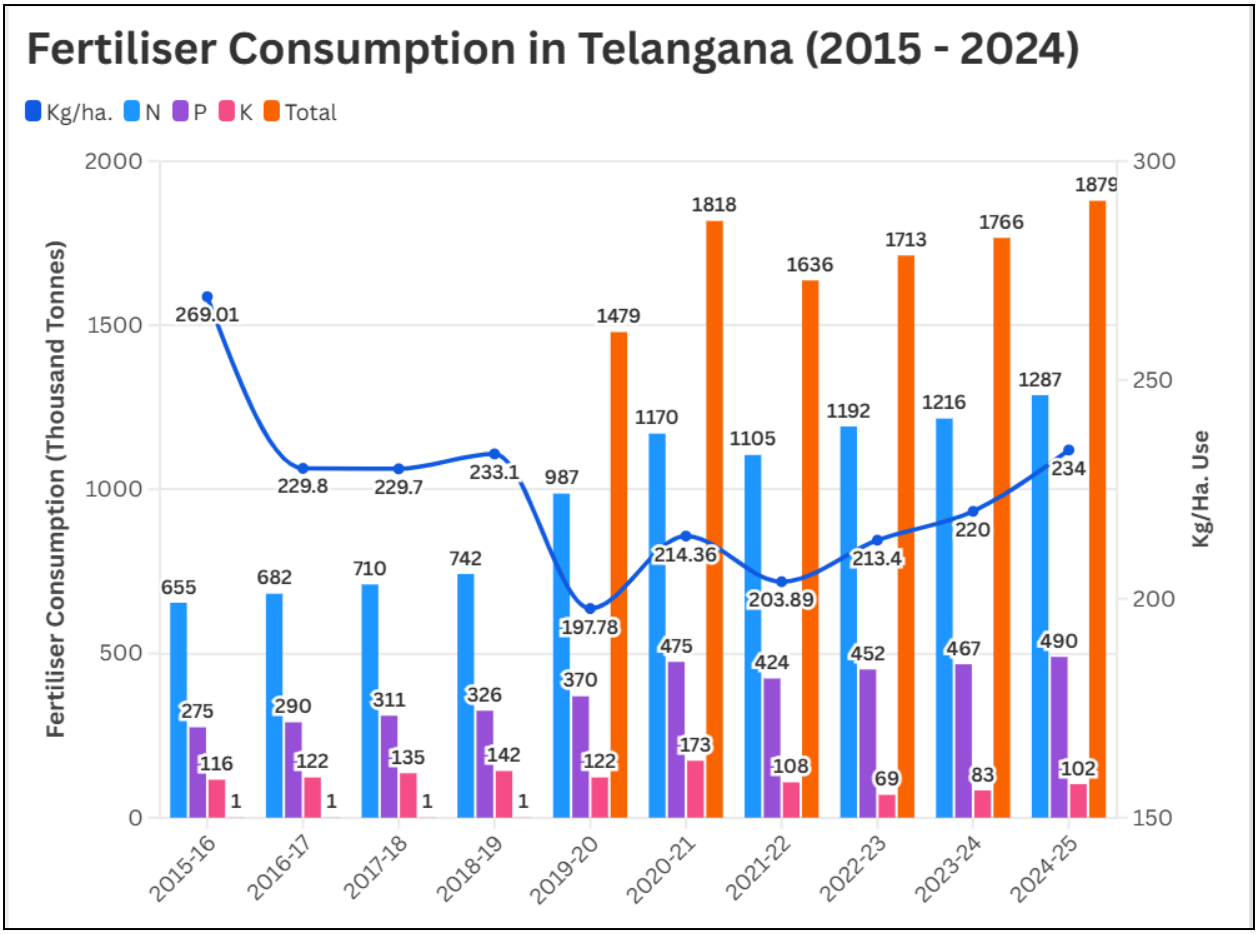
Telangana is one of the highest consumers of fertilisers and pesticides in the country. As of 2024, it is the 3rd highest consumer of pesticides behind Haryana and Punjab. As of 2022-23, it is also the fourth highest consumer of all fertilisers in terms of per ha. use, behind Andhra Pradesh, Punjab and Bihar.

Fertiliser Consumption Trends

Total Consumption - The state's total fertiliser consumption has seen a significant overall increase, rising from around 10 lakh metric tonnes (LMT) in 2015-16 to 18.79 LMT in 2023-24, an increase of over 80%. During the same period, however, the gross cropped area of Telangana has also increased by 54% and irrigated area by 125%..

Per-Hectare Consumption - In 2015-16, per-hectare fertiliser consumption was 269.01 kg, nearly double the national average of 135.03 kg. However, by 2021-22, per hectare

consumption had dropped by 24%, reaching 203.89 kg/ha. This gradual reduction could be due to increased awareness of green manure crops and soil enrichment. However, our calculations based on more recent figures show per ha. consumption going up again from 2022-23, reaching 234 kg/ha. in 2024-25. This shows a worrying trend in overall fertiliser consumption.

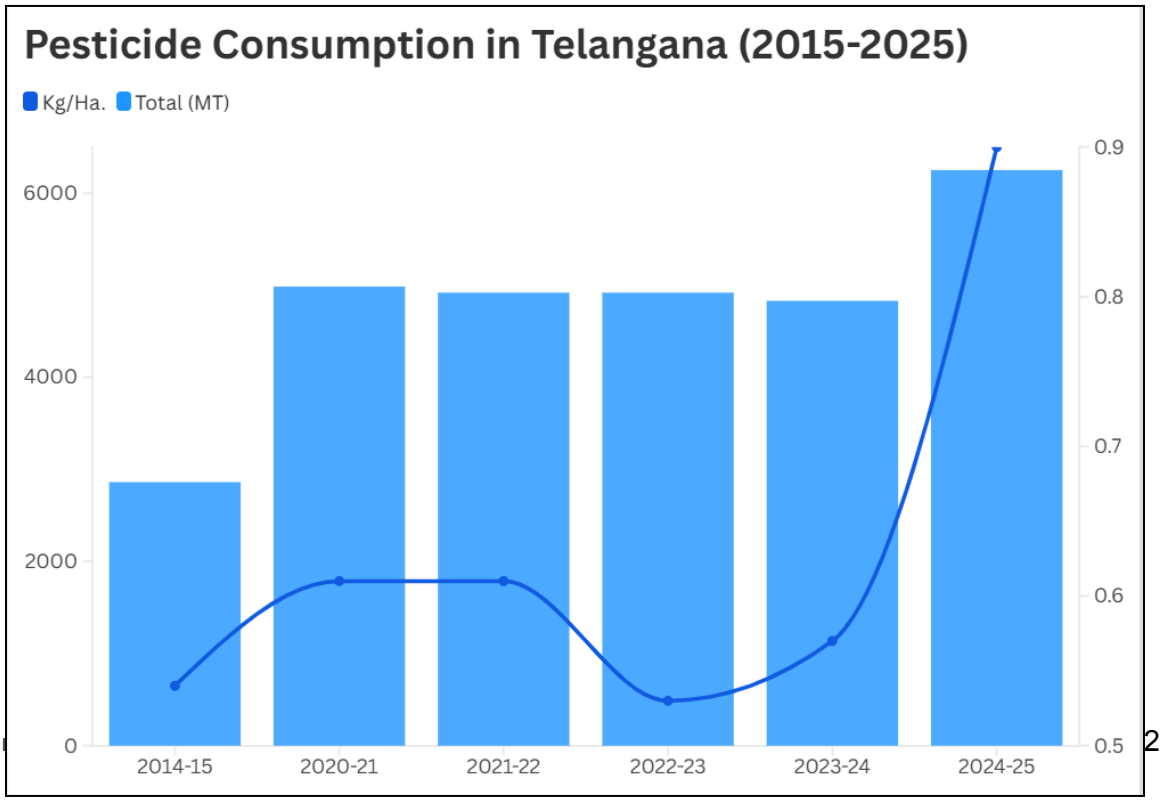


Imbalanced Use and Declining Efficiency - Fertiliser application in India, and in Telangana specifically, is highly skewed towards urea application, due to its highly subsidised price (Rs. 242 per 45 kg bag) and nitrogen-deficient soils. The below table shows the N:P:K ratio of Telangana compared to the national average over the past few decades. Excessive urea use has been raising concerns, crossing 20 LMT in 2024-25 (TOI, Jan 14, 2026). This not only makes the state more vulnerable to global supply chain disruptions (as with the Middle East conflict) but also increases nitrogen pollution through leaching of excess fertiliser. Fertiliser use efficiency has also been declining steadily in India, with urea efficiency being only 30-45% (some sources cite 15%). The remaining nitrogen leaches into the soil and groundwater, while contributing to nitrous oxide emissions.

Financial Year	Nitrogen (N)	Phosphorus (P)	Potash (K)	National Average (India)
1985-86	10	4	1	6 : 2.4 : 1
2014-15	17	6	1	6.7 : 2.4 : 1
2021-22	10.3	3.9	1	7.7 : 3.1 : 1
2022-23	17.2	6.5	1	11.8 : 4.6 : 1
2023-24	14.7	5.6	1	10.9 : 4.4 : 1
2024-25 (Est.)	12.6	4.8	1	9.3 : 3.5 : 1

Pesticide Consumption

Since its inception as a state, Telangana's total pesticide consumption has increased by 118% (from 2,862 MT to 6,251 MT), and it has consistently ranked among the top 5 states in both total consumption volume and per hectare intensity. In the same period, gross cropped area has increased by 54% and irrigated area by 125%, leading to cropping shifts towards high value crops such as paddy, cotton and chilli. The graph below shows the increase in total volume and per hectare use since 2014-15.



Causes: The primary driver of increased pesticide use in Telangana is increased monocropping of commercial crops such as paddy, cotton, maize and chillies. Monocropping leads to increased vulnerability and reduced resilience to pest attacks. Hybrid cotton crops are highly susceptible to sucking pests such as thrips, whiteflies and aphids, while chillies are vulnerable to thrips, mites, and various fungal wilts. These two crops account for a high proportion of insecticide consumption nationally, as well as in Telangana. Paddy is also one of the largest consumers of agrochemicals in the country (26-28%) and has led to increased fungicide and herbicide use in Telangana. In addition, herbicide use for all crops has been rising in Telangana due to increasing labour costs. Thus, the combination of land fragmentation and monocropping has led to farmers applying more and more insecticides as pests develop resistance, leading to a 'pesticide treadmill'. Another major factor behind increased pesticide use in the state is the spread of agrochemical dealers and agents who routinely recommend cocktails of pesticides or excessive dosages.

5. Climate Change Impacts and Vulnerability

Climate change amplifies existing agricultural vulnerabilities in Telangana. The state has witnessed a 0.81°C increase in average annual temperatures over the past century. Agricultural scientists in the state identify several critical climate-related challenges:

- **Temperature extremes:** Summer temperatures regularly exceed 45°C in districts like Adilabad and Nizamabad, creating heat stress during critical growth phases. Increased frequency of heatwaves impacts pollination, grain filling, and overall crop productivity.
- **Rainfall unpredictability:** Despite 80% of annual rainfall occurring during monsoon months, distribution has become increasingly erratic. Shifts in sowing seasons and prolonged dry spells within the monsoon period disrupt traditional cropping calendars.
- **Vulnerability projections:** Climate assessments indicate the number of vulnerable mandals will increase from 28% currently to 45% by early century and 59% by mid-century, affecting the majority of agricultural areas.
- **Crop sensitivity:** Both Kharif and Rabi crop yields show high sensitivity to maximum temperature, minimum temperature, and rainfall variations. Non-weather variables like fertilizer and irrigation cannot fully compensate for climate impacts. In 2025, extreme weather events caused significant crop failures, such as drought-like conditions in March 2025 in Jangaon and Jogulamba Gadwal districts, and hailstorms in April 2025 in Kamareddy and Nizamabad districts that destroyed paddy and maize crops.

1.3 Food and Nutrition

Telangana faces significant challenges in food and nutrition security, with all 31 districts showing public health concerns across multiple nutrition indicators. Between 2015-2016 and

2019-2021, the state witnessed trends in child malnutrition, with increases in stunting, wasting, and anemia rates.

Indicator	Prevalence (2019-2021)	India Average (2019-2021)	Change from 2015-2016 (percentage points)	BAU by 2034	BAU by 2047
Stunting	28%	33%	+5	43%	54%
Wasting (children under 5 years of age who are acutely undernourished)	18%	18%	+4	30%	38.8%
Severe Wasting	8%	8%	+3	17%	23.6%
Underweight	28%	32%	+4	40%	48.8%
Anemia	61%	70%	+9	88%	107.8%

Districts with Highest Burden:

Stunting: Ranga Reddy (173,073), Mahbubnagar (155,653), Hyderabad (102,126)

Anemia: Ranga Reddy (311,768), Mahbubnagar (271,114), Hyderabad (191,931)

Prevalence of Selected Health Indicators (%)					
Population Group	**Indicator**	**2015–2016 (%)**	**2019–2021 (%)**	**BAU by 2034**	**BAU by 2047**
Children (<5y)	Overweight / Obesity	1	3	8.2	13.4
Women (15–49y)	Overweight / Obesity	29	30	32.6	35.2
	Hypertension	13	26	59.8	93.6
Men (15–54y)	Overweight / Obesity	24	32	52.8%	73.6%
	Hypertension	29	31	36.2%	41.4%

Minimum Dietary Diversity (MDD)

According to the WHO, Minimum Dietary Diversity (MDD) was defined as the consumption of five or more food groups out of eight recommended food groups within 24 hours for children aged 6–23 months. The eight referenced or recommended food groups were (1) breast milk; (2) dairy products (milk, infant formula, yogurt, and cheese); (3) flesh foods (meat, fish, poultry, and organ meats); (4) grains, white/pale starchy roots, tubers, and plantains; (5) Vitamin A-rich fruits and vegetables; (6) eggs;(7) other fruits and vegetables, and (8) beans, peas, lentils, nuts, and seeds.[12]

Results and Discussion:

- **59.06%** of the children between the ages of 6 and 23 months consumed five or more food categories, and hence **attained MDD.**
- The study found a direct correlation between children attaining MDD and mothers who were educated, who had good nutritional status, who were of a higher socioeconomic status, who had no history of infection, and who were of the first birth order
- **Underweight, stunting, and wasting** were significantly associated with **absence of Minimum Dietary Diversity**. **Mothers** should be regularly educated and motivated to use a diverse diet for their child feeding. Even **angawadi teachers and ASHA workers** should be made aware about the dietary diversity so that they can interact with mothers.

1.4 Market Risks and Economic Vulnerabilities

Farmers face dual production and marketing risks. Price volatility in commodity markets, delayed procurement, and inadequate storage infrastructure create income uncertainty. The dominance of middlemen in agricultural value chains captures significant value, leaving producers with minimal margins.

Specific market challenges include:

- Limited access to processing facilities and value addition opportunities
- Inadequate rural transportation and cold storage infrastructure
- Weak farmer producer organizations (FPOs) with limited bargaining power
- Information asymmetry regarding market prices and demand patterns
- Export market access constraints despite identified potential in gherkins, mangoes, and grapes.

[12] Jayakumar, K., L. Vijayasree and B. Kiranmai (2025). A cross sectional study on minimum dietary diversity and nutritional status among the Children aged 6-23 months in the urban field practice area of Osmania Medical College, Hyderabad, Telangana. *MRIMS Journal of Health Sciences*, [online] 13(4), pp.223–227. doi:https://doi.org/10.4103/mjhs.mjhs_16_24.

1.5 Structural Lock-Ins and System Inertia

Several structural factors perpetuate unsustainable practices despite their recognized limitations:

- **Subsidy structures:** Free or heavily subsidized electricity for agriculture incentivizes groundwater overexploitation. Chemical fertilizer subsidies create path dependency on synthetic inputs.
- **Procurement policies:** Government procurement focuses primarily on rice and cotton, disincentivizing diversification to less water-intensive or more nutritious crops.
- **Extension service gaps:** Agricultural extension remains oriented toward productivity maximization through external inputs rather than ecological farming approaches. Staff lack training in regenerative methods.
- **Credit access:** Formal credit mechanisms favor conventional farming packages. Organic certification and transition periods create cash flow challenges without supportive financing.
- **Knowledge systems:** Agricultural universities and research institutions primarily focus on high-input agriculture. Indigenous knowledge and farmer innovations receive limited recognition.