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CHANGES IN THE PATTERN OF LAND UTILIZATION IN TELANGANA: AN ANALYTICAL STUDY

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I. INTRODUCTION

Land is a fundamental economic resource and its allocation among agriculture, forests, settlements, industry, infrastructure and other uses has a direct bearing on production, employment, food security, ecological stability and regional development. In a predominantly agrarian state such as Telangana, changes in land utilization are especially important because a large part of the population depends directly or indirectly on agriculture and allied activities. The creation of Telangana as a separate state in June 2014 provided a new institutional setting for land, agriculture, irrigation, urban development and industrial policy. Consequently, the period after 2014 offers an important basis for examining whether the state's land-use structure changed in response to agricultural expansion, irrigation development, urbanization, industrialization and infrastructure investment.

The present study examines the pattern of land utilization in Telangana from 2013-14, the last year before state formation, through 2020-21, with the analysis restricted to information available up to March 2021. The central purpose is to understand the movement of land among

major categories and to interpret the economic and environmental forces associated with these changes. The Directorate of Economics and Statistics (DES), Government of Telangana, follows a nine-fold classification consisting of forests; barren and unculturable land; land put to non-agricultural uses; permanent pastures and other grazing lands; miscellaneous tree crops and groves; culturable waste; other fallow lands; current fallows; and net area sown. The classification is finalized after the Rabi season, making it a useful framework for state-level land-use analysis (Directorate of Economics and Statistics [DES], n.d.).

II. OBJECTIVES OF THE STUDY

To examine the pattern of land utilization in Telangana before and after the formation of the state, using 2013-14 as the reference year and extending the analysis up to 2020-21.

To analyse the relationship between land-use change and major processes of economic transformation.

To assess the implications of these changes for agricultural sustainability, food security, employment, environmental resources and balanced regional development.

To identify the major policy issues arising from changes in land utilization and

To suggest measures for achieving a balance between productive use of land, urban-industrial development, agricultural needs and ecological conservation.

The study also aims to provide a concise evidence-based framework that can be used by researchers, students and policy planners for understanding land-use dynamics in Telangana.

III. HYPOTHESES

The pattern of land utilization in Telangana changed significantly after the formation of the state in 2014

The expansion of irrigation and agricultural support measures contributed to greater utilization of cultivable land.

The rapid urbanization and industrial development, especially around Hyderabad and its peripheral districts, increased the demand for land for non-agricultural purposes.

The changes in land utilization generated both economic benefits and environmental pressures.

IV. METHODOLOGY

The study adopts a descriptive and analytical research design. It is based primarily on secondary data obtained from the Directorate of Economics and Statistics, Government of Telangana, Telangana Socio Economic Outlook reports, official statistical publications and relevant academic studies on land-use and land-cover change.

The principal unit of analysis is the percentage share of total geographical area under different land-use categories. Where useful, the percentage data are supplemented by area figures in lakh hectares or lakh acres. The study uses 2013-14 as the baseline and 2020-21 as the terminal year. The nine-fold land-use classification followed by the Directorate of Economics and Statistics is retained because it permits comparison across years and reflects the official land-use reporting system.

The analytical method consists of year-wise comparison, percentage-point change, trend interpretation and contextual analysis. Percentage-point changes are calculated by subtracting the baseline share from the terminal share.

V. REVIEW OF LITERATURE

i. Official Statistical Literature

The Directorate of Economics and Statistics is the State Agricultural Statistics Authority in Telangana and collects land-use information through a nine-fold classification. The official system covers forests, barren and unculturable land, non-agricultural uses, permanent pastures and grazing lands, miscellaneous tree crops and groves, culturable waste, other fallow lands, current fallows and net area sown. The data are finalized after the Rabi season and are intended to provide a consistent statistical basis for agricultural and land-use planning (DES, n.d.).

The Telangana Socio Economic Outlook 2020 provides an important benchmark for the study. It reported that Telangana had a geographical area of about 112.08 lakh hectares and that in 2018-19, 24.07 percent was classified as forest, 7.44 percent as land under non-agricultural uses, 5.42 percent as barren and uncultivable land, 6.70 percent as other fallow land, 9.52 percent as current fallow and 41.58 percent as net area sown. The report also emphasizes substantial inter-district variation in agricultural land use, demonstrating that the state-level average

conceals significant spatial differences (Government of Telangana, 2020).

The Telangana Socio Economic Outlook 2021 and related statistical publications provide evidence of agricultural transformation during the period. The land-utilization profile around 2019-20 and the agricultural statistics for 2020-21 indicate the importance of paddy, cotton, maize and pulses and show the increasing role of irrigation and multiple cropping. Such developments are relevant for interpreting the rise in net sown area and the reduction or fluctuation of fallow land in the later part of the study period (Government of Telangana, 2021).

ii. Academic Literature on Urbanization and Land-Use Change

Academic research on Hyderabad demonstrates that urban expansion has important consequences for peri-urban land. Gumma et al. (2017) examined urban sprawl and agricultural land in Hyderabad using satellite-based land-use information. Their study found substantial expansion of built-up area between 2005 and 2016 and reported a corresponding loss of agricultural land within the urbanizing area. The study also documented the emergence of wastewater-irrigated agriculture near the Musi River, indicating

that peri-urban agriculture can simultaneously experience land pressure and adaptation to urban demand.

VI. ANALYSIS

i. Overall Pattern of Land Utilization

The official data presented in the source material show that Telangana's net sown area accounted for 43.26 percent of geographical area in 2013-14 and 49.07 percent in 2020-21. This represents an increase of 5.81 percentage points over the study period. The movement was not linear: the share declined to 37.3 percent in 2016-17 before recovering to 42.59 percent in 2017-18, 43.70 percent in 2018-19, 41.58 percent in 2019-20 and 49.07 percent in 2020-21. The year-to-year fluctuations suggest that agricultural land use responded to changing rainfall, irrigation availability, cropping conditions and the utilization of fallow land rather than following a smooth trend.

The forest share was reported at 23.89 percent in 2013-14 and 2014-15, declined to 22.70 percent in 2015-16 and 2016-17, and subsequently stood at 24.07 percent from 2017-18 through 2020-21 in the supplied series. The recovery and stabilization of the reported forest share is important because it indicates that the state's land-use pattern cannot be

understood solely in terms of agricultural expansion and urbanization. Forest conservation and administrative classification also shape the land-use structure.

Land put to non-agricultural uses was 7.79 percent in 2013-14, rose marginally to 8.00 percent in 2016-17 and then stood at 7.46 percent in 2020-21. Although the statewide percentage does not show a dramatic increase, this should not be interpreted as evidence that urban-industrial land demand was unimportant. Land-use conversion is spatially concentrated, and metropolitan and industrial corridors can experience substantial local changes without producing a very large movement in the statewide percentage.

Fallow land displayed considerable volatility. The supplied series reports 8.36 percent in 2013-14, 12.50 percent in 2015-16 and 14.00 percent in 2016-17, followed by 4.06 percent in 2017-18, 8.17 percent in 2018-19, 9.12 percent in 2019-20 and 9.02 percent in 2020-21. The sharp fall after 2016-17 coincided with the recovery of net sown area, suggesting that a part of previously fallow land may have been brought into cultivation. However, changes in statistical reporting and the composition of fallow categories must also be

considered before assigning a single causal explanation.

ii. Statistical Profile of Major Land-Use Categories

Year	Net Sown	Forest	Non-agri.	Fallow	Barren	Culturable Waste	Other Fallow	Source
2013-14	43.26	23.89	7.79	8.36	5.36	4.17	6.24	Supplied source
2014-15	43.20	23.89	7.79	8.36	5.36	4.79	6.24	Supplied source
2015-16	43.80	22.70	7.90	12.50	5.40	4.50	7.20	Supplied source
2016-17	37.30	22.70	8.00	14.00	5.40	4.30	7.30	Supplied source
2017-18	42.59	24.07	7.60	4.06	5.42	4.29	5.97	Supplied source
2018-19	43.70	24.07	7.44	8.17	5.42	4.30	5.91	Supplied source
2019-20	41.58	24.07	7.44	9.12	5.42	4.50	6.70	Supplied source
2020-21	49.07	24.07	7.46	9.02	5.42	—	—	Supplied source

Note: Figures are percentage shares of total geographical area. The table reproduces the series supplied in the original source document for the requested period. The supplied material does not report culturable-waste and other-fallow percentages for 2020-21 in the displayed series; therefore those cells are left blank rather than estimated.

iii. Net Sown Area and Agricultural Expansion

The increase in net sown area from 43.26 percent in 2013-14 to 49.07 percent in 2020-21 is one of the most significant features of the land-utilization pattern. The official Socio Economic Outlook 2020 recorded net sown area of 46.60 lakh hectares, or 41.58 percent, in 2018-19. The later increase to 49.07 percent indicates a

substantial expansion in the share of land reported as cultivated by 2020-21. This change should be interpreted together with irrigation development, improved agricultural support and the growing importance of multiple cropping.

Agricultural expansion in Telangana during this period was not confined to increasing the physical area cultivated. Irrigation and cropping intensity also

changed the economic use of land. The Telangana agricultural policy environment included investment support, crop insurance, irrigation projects and tank restoration. These measures reduced some constraints on cultivation and improved the capacity of farmers to use land more intensively. The increase in net sown area therefore reflects not only land availability but also changes in the profitability and feasibility of cultivation.

The 2020-21 agricultural year was also marked by the growing importance of paddy and cotton. Available state agricultural statistics indicate substantial crop area under paddy, cotton, maize and pulses. Expansion of irrigated agriculture can raise gross cropped area through multiple cropping even when net area sown changes less dramatically. Therefore, an assessment of land utilization should distinguish between net sown area, gross cropped area and cropping intensity.

iv. Fallow Land and Utilization of Cultivable Resources

Fallow land represents an important reserve of cultivable resources. The rise in the fallow share to 12.50 percent in 2015-16 and 14.00 percent in 2016-17 was followed by a sharp decline to 4.06 percent in 2017-18. Thereafter, the share rose

again but remained below the 2016-17 level. This pattern is consistent with the possibility that better rainfall, irrigation and agricultural incentives helped bring previously unused cultivable land back into production.

However, fallow land should not automatically be treated as economically wasteful land. Farmers may leave land fallow because of inadequate rainfall, soil constraints, labour shortages, market risks, lack of irrigation, crop-price uncertainty or the need to restore soil fertility. Consequently, policies aimed at reducing fallows need to address the underlying constraints rather than simply seeking a numerical reduction in fallow land.

The distinction between current fallow and other fallow land is also important. Current fallows may return to cultivation in the next agricultural season, whereas longer-term fallows can indicate more persistent constraints. A more detailed district-level analysis separating these categories would improve understanding of the geographical distribution and causes of fallow land.

v. Forest Land and Ecological Considerations

Forest land constituted about 23.89 percent of Telangana's geographical area in 2013-

14 and 24.07 percent in 2020-21 according to the supplied land-use series. The relative stability of the reported forest share after 2017-18 is notable in a period of rapid economic transformation. Nevertheless, a stable statewide percentage does not mean that forest ecosystems experienced no local pressures. Infrastructure, mining, settlements and agricultural expansion can affect forest quality and fragmentation without producing a large change in the aggregate percentage.

Forest resources perform ecological and economic functions that extend beyond recorded land area. They support biodiversity, soil conservation, micro-climatic regulation, groundwater recharge and rural livelihoods. Consequently, land-use planning must distinguish between quantitative forest coverage and the qualitative condition, connectivity and ecological value of forest landscapes.

The environmental dimension is particularly relevant to Telangana because rapid urbanization can create pressure on water bodies, drainage channels and peri-urban ecosystems. The original paper identifies loss of wetlands, deforestation and pressure on water resources as major concerns associated with rapid

urbanization. □filecite□turn0file0□L259-L263□

vi. Land Under Non-Agricultural Uses

Land under non-agricultural uses accounted for 7.79 percent of geographical area in 2013-14 and 7.46 percent in 2020-21. The percentage was relatively stable, although the intervening years showed modest variation. The official 2018-19 data reported 8.34 lakh hectares, equivalent to 7.44 percent of geographical area, under non-agricultural uses. This category includes land used for settlements, infrastructure, industrial activities and other non-agricultural purposes.

The relative stability of the statewide share needs careful interpretation. Telangana's economic development has been spatially concentrated, especially around Hyderabad and adjoining districts. The original source identifies Rangareddy, Medchal-Malkajgiri and Sangareddy as areas where agricultural land has been converted for industrial and urban purposes and notes the influence of Hyderabad's IT sector, the Outer Ring Road and integrated townships.

The economic logic behind land conversion is clear: non-agricultural

activities can generate higher returns in locations with strong market access, transport connectivity and employment opportunities. Yet conversion also involves opportunity costs, including reduced agricultural capacity, changes in groundwater recharge, loss of open space and increased infrastructure requirements. Sustainable development therefore requires that conversion decisions incorporate the full social cost of land-use change.

vii. Urbanization, Industrialization and the Hyderabad Metropolitan Region

The Hyderabad Metropolitan Region has been a major driver of land-use transformation. The development of the Outer Ring Road, industrial corridors, residential layouts, commercial centres and integrated townships has increased the accessibility and market value of peripheral land. The original paper specifically identifies the role of HMDA projects and the transformation of rural landscapes into urban corridors.

The growth of the information technology sector and associated services has generated demand for office space, housing, transport facilities and supporting infrastructure. Gachibowli, Madhapur and Shamshabad are identified in the supplied

material as locations associated with strong real-estate demand. Such development can create multiplier effects through construction, services and employment, but it can also accelerate the conversion and fragmentation of peri-urban agricultural land.

Research on Hyderabad's urban sprawl provides additional evidence. Gumma et al. (2017) found that built-up area increased substantially between 2005 and 2016 and estimated a loss of agricultural land within the Hyderabad study area. The research also observed adaptation in peri-urban agriculture, including an expansion of wastewater-irrigated agriculture to supply urban demand. This illustrates that urbanization can simultaneously displace some agricultural land and create new markets for other forms of peri-urban production.

viii. Industrial Land and Economic Diversification

Industrialization is another important force influencing land utilization. The supplied source reports that approximately 30,000 acres were allocated for industrial parks and Special Economic Zones and identifies Hyderabad Pharma City and the Kakatiya Mega Textile Park as prominent examples. Such investments can diversify the state's

economic base, generate employment and increase demand for transport, housing and services.

From a land-use perspective, industrial development requires not only factory sites but also roads, logistics facilities, power infrastructure, worker housing and service activities. The effective land footprint of industrialization can therefore exceed the area of the industrial estate itself. At the same time, industrial clusters can reduce transaction and transportation costs and create regional development opportunities.

ix. District and Spatial Dimensions

State-level averages can conceal substantial differences among districts. The Socio Economic Outlook 2020 noted that Nalgonda and Khammam had relatively large agricultural areas, while Hyderabad was essentially urban. The contrast illustrates the need for spatially differentiated policy. Agricultural districts require attention to irrigation, soil management, market infrastructure and crop diversification, whereas metropolitan districts require careful management of urban expansion, transport, drainage, housing and ecological assets.

The peri-urban districts surrounding Hyderabad face particularly complex land-

use pressures because agricultural and non-agricultural uses compete for the same land. Rangareddy, Medchal-Malkajgiri and Sangareddy are strategically positioned between the metropolitan economy and the rural economy. Their land-use planning therefore needs to accommodate employment-generating development while protecting productive agricultural land and environmental resources.

x. Land Use, Irrigation and Agricultural Productivity

The relationship between land utilization and irrigation is central to understanding Telangana's post-2014 agricultural transformation. Irrigation increases the reliability of cultivation and can permit farmers to grow more than one crop in a year. The state's investments in major and minor irrigation, tank restoration and water infrastructure therefore influence not only crop output but also the economic viability of land.

The agriculture sector's development during the period must also be interpreted in terms of public support. Rythu Bandhu provided investment support to farmers, while Rythu Bima provided life insurance. Input support, irrigation development and tank restoration were intended to strengthen agricultural resilience. These

policies can increase the opportunity cost of leaving cultivable land unused and thereby influence fallow land and cropping intensity.

xi. Economic and Environmental Implications

The changing land-use pattern has positive economic implications. Greater agricultural utilization can raise farm output, employment and rural incomes. Industrial and urban land development can create non-farm employment, attract investment and expand the state's tax and service base. Infrastructure development can reduce transaction costs and connect rural areas to markets.

The same processes can create environmental costs. Conversion of open land can increase surface runoff, reduce groundwater recharge and intensify urban heat. Loss or fragmentation of wetlands can weaken natural flood-buffering capacity. Expansion into agricultural land can reduce local food production and increase dependence on agricultural areas farther from cities. The environmental effects are therefore not captured fully by the percentage of land classified as non-agricultural.

A sustainable land-use strategy should internalize these externalities. Economic appraisal of urban and industrial projects should account for the value of ecosystem services, water recharge, agricultural production and open space. The objective should not be to freeze land use but to ensure that changes are economically productive, socially fair and environmentally sustainable.

VII. CONCLUSION

The study finds that Telangana experienced meaningful changes in its land-utilization pattern between 2013-14 and 2020-21. The most prominent statistical change in the supplied series was the increase in the share of net sown area from 43.26 percent to 49.07 percent. This was accompanied by substantial fluctuations in fallow land, while the reported forest share stabilized around 24.07 percent after 2017-18. Land under non-agricultural uses remained broadly within the range of about 7.4 to 8.0 percent during the period.

The evidence suggests that Telangana's post-2014 land-use transformation was driven by several processes operating simultaneously. Agricultural policies, irrigation development and the utilization of fallow land supported agricultural

expansion. At the same time, urbanization, industrialization, infrastructure development and metropolitan expansion increased demand for non-agricultural land, particularly in the Hyderabad region and surrounding districts.

The findings also demonstrate that statewide statistics alone are insufficient to explain land-use transformation. Land conversion is spatially concentrated, and a small statewide percentage change can conceal substantial local transformation. Therefore, district-level and village-level GIS-based monitoring should complement conventional land-utilization statistics.

The central policy implication is that Telangana needs an integrated land-use framework that recognizes agriculture, urbanization, industrialization, forests, water bodies and ecological resources as interconnected components of the state's development process. The objective should be productive and efficient use of land while minimizing irreversible environmental and social costs.

VIII. LIMITATIONS OF THE STUDY

The study relies primarily on secondary data and Statewide aggregates are used.

IX. SUGGESTIONS

Telangana should develop an integrated state land-use information system combining DES land-utilization statistics with high-resolution satellite imagery, cadastral information and GIS. Agricultural land of high productivity and strong irrigation potential should receive special protection from unplanned conversion. Fallow land should be addressed through location-specific interventions. Metropolitan expansion should be guided by planned urban growth boundaries, protection of water bodies and wetlands, preservation of ecological corridors and efficient public transport. Industrial parks and economic corridors should follow transparent land-acquisition procedures and strong environmental safeguards. Forest protection should focus not only on the percentage of forest area but also on forest quality, connectivity and biodiversity. Future research should develop district-level and mandal-level panel datasets covering land use, irrigation, rainfall, crop patterns, land prices, urban expansion, roads and industrial investment.

REFERENCES:

1. Directorate of Economics and Statistics, Government of Telangana. (n.d.). Area statistics and land utilization statistics. Government of Telangana. https://ecostat.telangana.gov.in/functional_area_des.html
2. Government of Telangana. (2017). Telangana at a glance 2017. Directorate of Economics and Statistics, Government of Telangana.
3. Government of Telangana. (2020). Socio Economic Outlook 2020. Directorate of Economics and Statistics, Government of Telangana. https://ecostat.telangana.gov.in/PDF/PUBLICATIONS/Socio_Economic_2020.pdf
4. Government of Telangana. (2021). Socio Economic Outlook 2021. Directorate of Economics and Statistics, Government of Telangana. https://ecostat.telangana.gov.in/PDF/PUBLICATIONS/Socio_Economic_2021.pdf
5. Government of Telangana. (2021). Telangana at a glance 2021. Directorate of Economics and Statistics, Government of Telangana.
6. Gumma, M. K., Mohan, S., Tewari, R., & others. (2017). Urban sprawl and adverse impacts on agricultural land: A case study on Hyderabad, India. *Remote Sensing*, 9(11), 1–20.
7. Guddeti, S. S., et al. (2023). Identification of vulnerable areas using geospatial technologies in the lower Manair River basin of Telangana, Southern India. [Study of land-use/land-cover change between 2015 and 2021].
8. Nunavath, H., Mani, A., Hema Kumar, H. V., & Vatluri, S. R. (2020). Impact of change in land use land cover on water resources in Gundlakamma Sub Basin. *Journal of Geography, Environment and Earth Science International*, 24(10), 33–46. <https://doi.org/10.9734/JGEESI/2020/v24i1030262>
9. Ministry of Agriculture & Farmers Welfare, Government of India. (2021). Agricultural statistics at a glance and related land-utilization statistics. Government of India.

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