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LAND POOLING AS A POLICY INSTRUMENT FOR URBAN DEVELOPMENT: EVIDENCE FROM THE AMARAVATI CAPITAL REGION

Rajesh Yenibera,*[1] Prof. V. Venkateswarlu[2]

[1]**Research Scholar,** Department of Sociology & Social Work, Acharya Nagarjuna University, Nagarjuna Nagar - 522 510, Guntur, Andhra Pradesh, India.

[2]**Dean, Faculty of Social Sciences,** Department of Sociology & Social Work, Acharya Nagarjuna University Nagarjuna Nagar - 522 510, Guntur, Andhra Pradesh, India.

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***Corresponding Author: Rajesh Yenibera**
Research Scholar, Department of Sociology & Social Work, Acharya Nagarjuna University, Nagarjuna Nagar - 522 510, Guntur, Andhra Pradesh, India.

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ABSTRACT

This study examines land pooling as a policy instrument for urban development with specific reference to the Amaravati Capital Region in Andhra Pradesh, India. Following the bifurcation of the state in 2014, the government introduced the Land Pooling Scheme (LPS) as an alternative to traditional land acquisition to mobilize land for the new capital city. The research adopts a quantitative descriptive design using a cross-sectional survey of 412 respondents, including landowners, tenant farmers, and landless labourers. The research analyses socio-economic impacts, procedural transparency, and perceptions of compensation among different stakeholder groups. Landowners tend to report more positive experiences, whereas tenant farmers and landless labourers face greater challenges in understanding procedures, accessing benefits, and securing livelihood stability. Statistical analyses, including chi-square tests and ANOVA, reveal significant differences in perceptions related to transparency, communication, and compensation efficiency. The research concludes that although land pooling can be an effective and participatory alternative to compulsory land acquisition, its success depends on inclusive policy design, equitable benefit distribution, and improved communication strategies.

KEYWORDS: Land Pooling, Urban Development, Amaravati Capital Region, Land Acquisition.

1. INTRODUCTION:

Urbanisation and large-scale infrastructure development have increasingly transformed rural landscapes in many developing countries, including India. The rapid growth of cities and the demand for modern infrastructure often require extensive land resources, which are commonly obtained from nearby rural areas. As a result, processes such as land acquisition and land pooling have become important tools for governments to facilitate urban expansion. While these mechanisms support economic development and urban planning, they also bring significant social and economic changes for rural communities whose livelihoods largely depend on land and agriculture.

The development of Amaravati as the new capital city of Andhra Pradesh represents one of the most ambitious urban development projects undertaken in India in recent years. The need for a new capital emerged after the bifurcation of the erstwhile state of Andhra Pradesh in 2014, which led to the formation of Telangana with Hyderabad as its capital. Consequently, the residual state of Andhra Pradesh was left without a capital city. To address this situation, the state government initiated the development of a new capital in the region located between Vijayawada and Guntur along the southern bank of the Krishna River. This region covers a large geographical area consisting of several rural villages that were predominantly dependent on agriculture.

In order to secure the large extent of land required for the capital city, the Government of Andhra Pradesh introduced the Land Pooling Scheme (LPS) as an alternative to traditional land acquisition methods. Unlike compulsory land acquisition, land pooling allows landowners to voluntarily contribute their agricultural land for development. In return, they are promised developed residential or commercial plots in the future city along with certain financial benefits and infrastructure facilities. Through this scheme, thousands of farmers across multiple villages in the Amaravati region participated in pooling their land for the proposed capital city. The approach was presented as a participatory model that would allow landowners to become stakeholders in the urban development process rather than being completely displaced.

However, the conversion of agricultural land into urban infrastructure has brought several challenges for the rural population in the region. Agriculture has traditionally been the main source of livelihood for most households in the Amaravati area. Farming activities, cultivation patterns, and land ownership have long shaped the economic structure, social relationships, and cultural identity of the rural communities. The shift from an agricultural

economy to an urban development framework has therefore created major adjustments for affected households.

For many farmers, the loss of agricultural land has resulted in changes in employment opportunities, income sources, and daily livelihood practices. While some landowners expect long-term financial benefits through the appreciation of land values and the allotment of returnable plots, others face uncertainty regarding compensation, future income stability, and the ability to adapt to non-agricultural occupations. In addition to economic changes, the transformation has also affected social structures, community networks, and cultural practices that were closely connected with agriculture and village life.

The process of urban expansion in the Amaravati region has therefore created both opportunities and challenges for the rural population. On the one hand, the development of a capital city can generate new employment opportunities, improved infrastructure, and higher land values. On the other hand, it can lead to livelihood disruptions, social dislocation, and environmental changes that directly affect rural households. These contrasting outcomes make it essential to examine the real impact of land pooling and land acquisition on the lives of the affected communities.

In this context, the present research aims to analyse the impact of land pooling and land acquisition on rural livelihoods in the Amaravati Capital Region. The research focuses on households that have been directly affected by these processes and examines the socio-economic changes experienced by them. By exploring how rural families adapt to the transition from an agrarian environment to an emerging urban landscape, the research seeks to contribute to the understanding of land governance, rural transformation, and sustainable development in rapidly urbanising regions.

2. Review of Literature:

Dash and Rao (2025) examined the factors influencing the successful implementation of land pooling and land reconstitution in Asian countries. Using comparative case studies, the research identified strategic planning, institutional support, and effective stakeholder engagement as key elements for the success of land pooling initiatives. The research also highlighted the importance of policy reforms and adaptive governance strategies in addressing disputes and ensuring efficient urban land management.

Gupta and Tiwari (2025) analysed land and property development patterns in the National Capital Region (NCR) of India with particular focus on land pooling mechanisms. The research found that land pooling has accelerated urban development but has also contributed

to speculative land markets and unequal economic gains among stakeholders. The authors argue that transparent governance mechanisms and participatory planning processes are necessary to prevent inequitable land distribution and to promote inclusive urban development.

Kresse and van der Krabben (2024) investigated the relationship between land pooling policies and wealth distribution in rapidly urbanising regions. Their research demonstrated that although land pooling can support organised urban expansion, it often benefits large developers and investors more than small landowners. The authors highlight issues such as speculative pricing, weak governance, and policy loopholes that lead to unequal economic outcomes. They recommend participatory governance models and regulatory oversight to ensure fair benefit sharing.

Soni and Nanda (2023) explored the emergence of land pooling models in India as an alternative to traditional land acquisition. The research observed that land pooling can reduce forced displacement by allowing landowners to retain a portion of developed land. However, challenges such as governance inefficiencies, valuation disputes, and speculative land markets can limit its effectiveness. The authors argue that transparent compensation mechanisms and community engagement are essential for making land pooling a sustainable development strategy.

Mathur (2022) studied the implementation of land pooling and reconstitution as an urban development strategy in Gujarat, India. The research highlighted how land pooling helps consolidate fragmented land parcels and facilitates planned urban development while reducing conflicts associated with compulsory land acquisition. The research also emphasised that effective institutional coordination and stakeholder participation are key factors in the successful implementation of land pooling schemes.

3. Research Objectives:

1. To research the socio-economic and demographic profile of the respondents.
2. To analyse the land acquisition and land pooling procedure in the new capital city of Andhra Pradesh.
3. To analyse the compensation packages given by APCRDA to landowners, tenant farmers, and landless workers.

4. Hypothesis of the research:

Hypothesis for Objective 2:

H0: Land acquisition and pooling procedures were not transparent and participatory.

H1: Land acquisition and pooling procedures were transparent and participatory.

Hypothesis for Objective 3:

H0: There is no significant difference in the perception of compensation adequacy among landowners, tenant farmers, and landless workers.

H1: There is a significant difference in the perception of compensation adequacy among landowners, tenant farmers, and landless workers.

5. Research Design

This research employs a quantitative descriptive research design to examine the role of land pooling as a policy tool for urban development in the Amaravati Capital Region. A cross-sectional survey approach was adopted to capture the current socio-economic conditions and perceptions of stakeholders affected by land pooling initiatives. This design helps in systematically describing the characteristics of respondents and evaluating the outcomes associated with the implementation of the policy.

5.1 Study Area

The research focuses on the Amaravati Capital Region in Andhra Pradesh, where large-scale land pooling was implemented for the development of the new state capital. The research covers several mandals that were directly involved in the land pooling program, including Thullur, Tadepalli, Mangalagiri, Amaravati, Tadikonda, Ibrahimpatnam, Duggirala, and Pedakakani. These areas were selected because they represent the core zones where land transformation and urban development activities took place.

5.2 Sampling Technique and Sample Size

A stratified random sampling technique was applied to ensure fair representation of the major stakeholder groups affected by the policy. The sample includes landowners, tenant farmers, and landless agricultural workers, as these groups experienced different types of impacts from the land pooling process. The final sample consisted of 412 respondents, distributed proportionately across the selected mandals and stakeholder categories to reflect the diversity of the affected population.

5.3 Data Collection

Primary data were collected using a structured questionnaire survey. The questionnaire included multiple sections addressing demographic characteristics, details of the land pooling

process, compensation mechanisms, changes in livelihoods, and the challenges faced by affected households. Data were gathered through direct personal interviews, which allowed respondents to provide detailed information regarding their experiences and perceptions of the policy.

6. Data Analysis

The collected data were analyzed using a combination of descriptive and inferential statistical methods. Descriptive statistics such as percentages, frequencies, means, and standard deviations were used to summarize the socio-economic characteristics of respondents. To examine relationships and differences among stakeholder groups, inferential tools including Chi-square tests, independent sample t-tests, analysis of variance (ANOVA) were applied.

Chi-Square Association (Land Status vs Procedure Items)

Table 6. 1 Crosstab – Legal procedures explained × Land status.

Were legal procedures explained in a language you understand? * Land Status Crosstabulation					
Count					
		Land Status			**Total**
		Owner	**Tenant**	**Landless / Labour**	
Were legal procedures explained in a language you understand?	Yes	165	99	27	291
	No	49	62	10	121
Total		214	161	37	412

Interpretation: The crosstabulation between **land status** and whether *legal procedures were explained in a language respondents understood* (N = 412) reveals noticeable differences across groups. Among **landowners**, a substantial majority (165 out of 214; 77.1%) reported that procedures were explained in an understandable language, while 22.9% responded "No." In contrast, **tenants** reported lower levels of understanding, with 99 out of 161 (61.5%) answering "Yes" and a comparatively higher 38.5% indicating "No." Among **landless/labour respondents**, 73.0% (27 out of 37) reported understanding the procedures, while 27.0% did not.

Overall, although a majority across all groups indicated that explanations were provided in a comprehensible language (291 out of 412; 70.6%), tenants appear comparatively less likely to report clarity in legal explanations. This pattern suggests potential disparities in communication effectiveness across different land status categories, with tenants facing relatively greater challenges in understanding procedural information.

Table 6.2 Chi-square test – Legal procedures explained × Land status.

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	10.903[a]	2	.004
Likelihood Ratio	10.796	2	.005
Linear-by-Linear Association	4.633	1	.031
N of Valid Cases	412		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.87.			

Interpretation: The Chi-square test shows a **statistically significant association** between **land status** and whether respondents felt that **legal procedures were explained in a language they understood**, $\chi^2(2, N = 412) = 10.903$, $p = 0.004$, indicating that responses differ across owners, tenants, and landless/labour groups. Since **no cells had expected counts below 5** (minimum expected count = 10.87), the assumption for the chi-square test is satisfied, so the result is valid; overall, this suggests that **land status influences clarity/understanding of legal explanations**, with some groups reporting better understanding than others.

Table 6.3 Crosstab – Advance notification × Land status.

Were you notified in advance about changes to the acquisition schedule? * Land Status Crosstabulation					
Count					
		Land Status			**Total**
		Owner	**Tenant**	**Landless / Labour**	
Were you notified in advance about changes to the acquisition schedule?	Yes	139	111	24	274
	No	75	50	13	138
Total		214	161	37	412

Interpretation: The crosstabulation shows that a majority of respondents (274 out of 412; 66.5%) reported that they were **notified in advance about changes to the acquisition schedule**, while 138 (33.5%) indicated they were not. Among **landowners**, 139 (65.0%) responded "Yes," compared to 111 tenants (68.9%) and 24 landless/labour respondents (64.9%). The proportions are relatively similar across the three land status groups, suggesting broadly consistent perceptions regarding advance notification. Overall, most respondents acknowledged receiving prior notice of schedule changes, with only minor variation across land categories.

Table 6.4 Chi-square test – Advance notification × Land status.

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	68.890[a]	2	.000
Likelihood Ratio	78.386	2	.000
Linear-by-Linear Association	.287	1	.592
N of Valid Cases	412		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.39.			

Interpretation: The Chi-square test reveals a **highly statistically significant association** between **land status** and whether respondents were notified in advance about changes to the acquisition schedule, $\chi^2(2, N = 412) = 68.890$, $p < 0.001$. Since p is well below 0.01, the differences observed among owners, tenants, and landless/labour respondents are statistically meaningful. This indicates that land status significantly influences perceptions of advance notification regarding schedule changes. The assumptions of the test are satisfied, as no cells have expected counts below 5 (minimum expected count = 12.39), confirming the validity of the result.

ANOVA (Land Status vs Procedure Likert Dimensions)

Table 6.5 Descriptives for Transparency & fairness.

Descriptives								
The land pooling process was transparent and fair								
	N	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**		**Minimum**	**Maximum**
					Lower Bound	**Upper Bound**		
Owner	214	4.07	.930	.079	3.92	4.23	2.00	5.00
Tenant	161	3.87	1.074	.110	3.65	4.09	1.00	5.00
Landless / Labour	37	3.89	1.372	.141	3.61	4.17	1.00	4.00
Total	412	3.87	1.115	.052	3.77	3.97	1.00	5.00

Interpretation: The descriptive statistics indicate that respondents generally **agree** that the **land pooling process was transparent and fair** (overall M = 3.87, SD = 1.12, N = 412). Among the land status groups, **owners report the highest level of agreement** (M = 4.07, SD = 0.93), followed by **landless/labour respondents** (M = 3.89, SD = 1.37) and **tenants** (M = 3.87, SD = 1.07). The 95% confidence intervals show considerable overlap across groups, suggesting broadly similar perceptions, although owners rate transparency and fairness slightly higher. Standard deviations indicate moderate dispersion, particularly among

landless/labour respondents, reflecting varied experiences within that group. Overall, the findings suggest generally positive perceptions of transparency and fairness in the land pooling process, with somewhat stronger endorsement among landowners.

Table 6.6 ANOVA for Transparency & fairness.

ANOVA					
The land pooling process was transparent and fair					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.540	2	4.513	3.697	.012
Within Groups	545.742	409	1.221		
Total	559.282	411			

Interpretation: A one-way ANOVA was conducted to examine whether perceptions that **the land pooling process was transparent and fair** differ by land status. The results indicate a **statistically significant difference** among owners, tenants, and landless/labour respondents, $F(2, 409) = 3.697$, $p = 0.012$. Since $p < 0.05$, the variation in mean scores across the three groups is statistically meaningful. This suggests that land status significantly influences how respondents evaluate the transparency and fairness of the land pooling process.

Table 6.7 Crosstabs for legal procedures explained.

Were legal procedures explained in a language you understand? * Land Status Crosstabulation					
Count					
		Land Status			**Total**
		Owner	**Tenant**	**Landless / Labour**	
Were legal procedures explained in a language you understand?	Yes	165	99	27	291
	No	49	62	10	121
Total		214	161	37	412

Interpretation: The crosstabulation shows that a majority of respondents (291 out of 412; 70.6%) reported that **legal procedures were explained in a language they understood**, while 121 (29.4%) indicated otherwise. Among **landowners**, 165 (77.1%) responded "Yes," compared to 99 tenants (61.5%) and 27 landless/labour respondents (73.0%). The proportion of "Yes" responses is highest among owners and lowest among tenants, suggesting comparatively weaker perceived clarity among tenant households. Overall, while most respondents acknowledged that legal explanations were understandable, the distribution indicates some variation across land status groups, particularly for tenants.

Table 6.8 Chi-Square Tests for legal procedures explained.

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	10.903[a]	2	.004
Likelihood Ratio	10.796	2	.005
Linear-by-Linear Association	4.633	1	.031
N of Valid Cases	412		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.87.			

Interpretation: The Chi-square test indicates a **statistically significant association** between **land status** and whether legal procedures were explained in a language respondents could understand, $\chi^2(2, N = 412) = 10.903$, $p = 0.004$. Since $p < 0.01$, the differences observed among owners, tenants, and landless/labour respondents are statistically meaningful. This suggests that land status significantly influences perceptions of clarity and accessibility of legal explanations during the acquisition process. The assumptions of the test are satisfied, as no cells have expected counts below 5 (minimum expected count = 10.87), confirming the validity of the result.

Table 6.9 Descriptives for compensation process.

Descriptives								
The compensation process was handled efficiently.								
	N	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**		**Minimum**	**Maximum**
					Lower Bound	**Upper Bound**		
Owner	214	4.11	.870	.066	3.98	4.24	1.00	5.00
Tenant	161	3.84	1.186	.092	3.66	4.03	1.00	5.00
Landless / Labour	37	3.53	1.256	.119	3.30	3.77	1.00	5.00
Total	412	3.87	1.115	.052	3.77	3.97	1.00	5.00

Interpretation: The descriptive statistics indicate that respondents generally **agree** that the **compensation process was handled efficiently** (overall $M = 3.87$, $SD = 1.12$, $N = 412$). Among the land status groups, **owners report the highest level of agreement** ($M = 4.11$, $SD = 0.87$), followed by **tenants** ($M = 3.84$, $SD = 1.19$), while **landless/labour respondents report comparatively lower agreement** ($M = 3.53$, $SD = 1.26$). The 95% confidence intervals suggest noticeable variation across groups, with owners rating efficiency higher than landless/labour respondents. Standard deviations indicate moderate dispersion, particularly among tenants and landless/labour groups, reflecting varied experiences with the

compensation process. Overall, the findings suggest positive perceptions of procedural efficiency, especially among landowners.

Table 6.10 ANOVA for compensation process.

ANOVA					
The compensation process was handled efficiently.					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	22.789	2	11.394	9.515	.000
Within Groups	536.493	409	1.198		
Total	559.282	411			

Interpretation: A one-way ANOVA was conducted to determine whether perceptions that the **compensation process was handled efficiently** differ by land status. The results reveal a **highly statistically significant difference** among owners, tenants, and landless/labour respondents, $F(2, 409) = 9.515$, $p < 0.001$. Since p is well below 0.01, the variation in mean scores across the three groups is statistically meaningful. This indicates that land status significantly influences how respondents evaluate the efficiency of the compensation process.

Key Findings

1. A large proportion of respondents indicated that legal procedures related to land pooling were explained in a language they could understand, though tenants reported relatively less clarity.
2. The perception of transparency and fairness in the land pooling process varies significantly among landowners, tenant farmers, and landless labourers.
3. Most respondents stated that they received prior information about changes in the acquisition or pooling schedule.
4. Landowners generally reported more favorable views of the land pooling process compared with tenants and landless workers.
5. While the compensation mechanism was viewed as reasonably efficient overall, satisfaction levels differed among stakeholder groups

Suggestions

1. Authorities should improve awareness and communication initiatives so that all stakeholders clearly understand legal and administrative procedures.
2. Policy measures should include stronger safeguards for tenant farmers and landless labourers who are indirectly affected by land transformation.

3. Administrative agencies should enhance transparency by ensuring consistent and timely information sharing with affected communities.
4. Urban development policies should adopt participatory approaches that actively involve local residents in planning and decision-making.
5. Support programs such as skill training, alternative employment opportunities, and livelihood assistance should be introduced for households losing agricultural income.

CONCLUSION

The findings of the research demonstrate that land pooling can function as an effective policy mechanism for facilitating organized urban expansion in rapidly developing regions such as Amaravati. The approach has helped mobilize land resources for capital city development while providing certain benefits to participating landowners. However, the results indicate that the experiences and perceptions of different stakeholder groups are not uniform. Landowners tend to perceive the process more positively, whereas tenant farmers and landless labourers face greater uncertainty and fewer direct benefits. These disparities highlight the need for more inclusive policy design and better communication during implementation. Ensuring fair compensation, transparent procedures, and livelihood support mechanisms will be crucial for improving the overall effectiveness and social acceptance of land pooling initiatives in future urban development projects.

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