
Transformation of Tribal Life from Hills to Town in Lamka, India

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Abstract

Tribal livelihoods in Churachandpur district have undergone significant changes over time. Manipur focused on the shift from traditional Jhum (shifting cultivation) to urban-based living centered around Lamka town. A mixed-methods approach was adopted to capture both spatial and socio-economic dimensions of this transition. Land Use and Land Cover (LULC) changes were analysed using Landsat 5, 7 and 8 satellite imagery for the years 1995, 2005, 2015 and 2025, applying supervised classification techniques to quantify land transformation. In addition, 20-25 semi-structured interviews were conducted with migrant households to explore the drivers, experiences and implications of migration. The results indicate a significant expansion of built-up areas from 2.8% in 1995 to 14.6% in 2025, alongside a decline in agricultural land from 42.3% to 28.7%. Migration is largely driven by declining agricultural productivity, increased access to education, and the search for diversified income opportunities. While urban migration has improved access to infrastructure, services, and household income, it has also led to cultural disintegration, weakening of traditional practices, and rising livelihood uncertainties. The study concludes that the shift from Jhum cultivation to urban living reflects not only environmental and economic change but also deep socio-cultural transformation, highlighting the need for inclusive and culturally sensitive development policies.

Keywords: Rural-Urban Transition, Jhum Cultivation, Land Use And Land Cover (Lulc), Urban Sprawl, Remote Sensing

1. Introduction

Rural-urban change has reshaped societies globally, driven by economic opportunity, technological advances and shifting lifestyles. Migration from villages to cities accelerates urban growth, transforming land use, economies and social structures as stated by (Aheibam, S. J., *et al.* 2018). Agricultural areas become residential and industrial zones, while traditional livelihoods adapt or vanish. Cities concentrate services, education and healthcare, offering upward mobility but also producing overcrowding, informal settlements and environmental stress as described by (Aich, A., *et al.* 2022). Infrastructure expansion and digital connectivity link urban and rural areas, yet inequalities persist many migrants face precarious work and limited access to basic amenities. Policymakers confront complex trade-offs: promoting sustainable urban planning, preserving rural cultures and ensuring inclusive development (Das, A., *et al.* 2023). Understanding rural-to-urban dynamics is essential for building resilient, equitable futures where both urban and rural communities thrive. The transition from Rural to Urban differs from one place to another, while the way of transitions was still the same, where more low lying lands were converted into settlement area due to the pull and push factor of a place as mentioned by (Das, D. 2022).

Rural-urban transition constitutes a defining feature of landscape and livelihood transformation across Northeast India as stated by (Chhandama, L., *et al.* 2025; DOUNGEL, T., *et al.* (2025). In the Churachandpur district of Manipur, this process is intimately linked with rapid Land Use and Land Cover (LULC) change, wherein the expansion of built-up areas has progressively occurred at the expense of agricultural land and forest-related uses as mentioned by (Haokip, T. L., & Prasad, T. K. 2025). Lamka, functioning as the "second town" after Imphal has emerged as a prominent growth centre, attracting substantial population influx from surrounding hill villages traditionally dependent upon *Jhum* (shifting cultivation) an indigenous agricultural practice deeply embedded in tribal lifeways as described by (Haokip, T. L., *et al.* 2025; DOUNGEL, T., *et al.* 2025).

Recent advances in remote sensing technology have enabled precise quantification of these spatial transformations. LULC analysis utilizing Landsat satellite data (1995-2025) reveals a substantial increase in built-up area alongside a marked decline in agricultural land, thereby reflecting the spatial imprint of this rural-urban transition as stated by (Iqbal, R., & Sheikh, D. S. 2026). Urban sprawl, characterized by the outward expansion of built-up land into Peri-urban and rural fringes has been particularly pronounced in the Lamka region. Concurrently, the spatial extent of *Jhum* cultivation has increased significantly, along with the increase of built-up areas in the town.

However, beyond the physical transformation of land, this shift represents a deeper socio-cultural metamorphosis in livelihoods, identities and everyday practices (Kipgen, N. 2017). Understanding these human dimensions requires going beyond satellite imagery to capture the lived experiences of communities undergoing transition. This study, therefore, adopts an integrated approach that combines remote sensing-based spatial analysis with community participation through questionnaire surveys and in-depth interviews. By doing so, it complements the LULC findings by examining how the transition from "Jhum to town" fundamentally reshapes the lives of tribal communities, investigating both the material and immaterial dimensions of this ongoing transformation.

2. Study Area

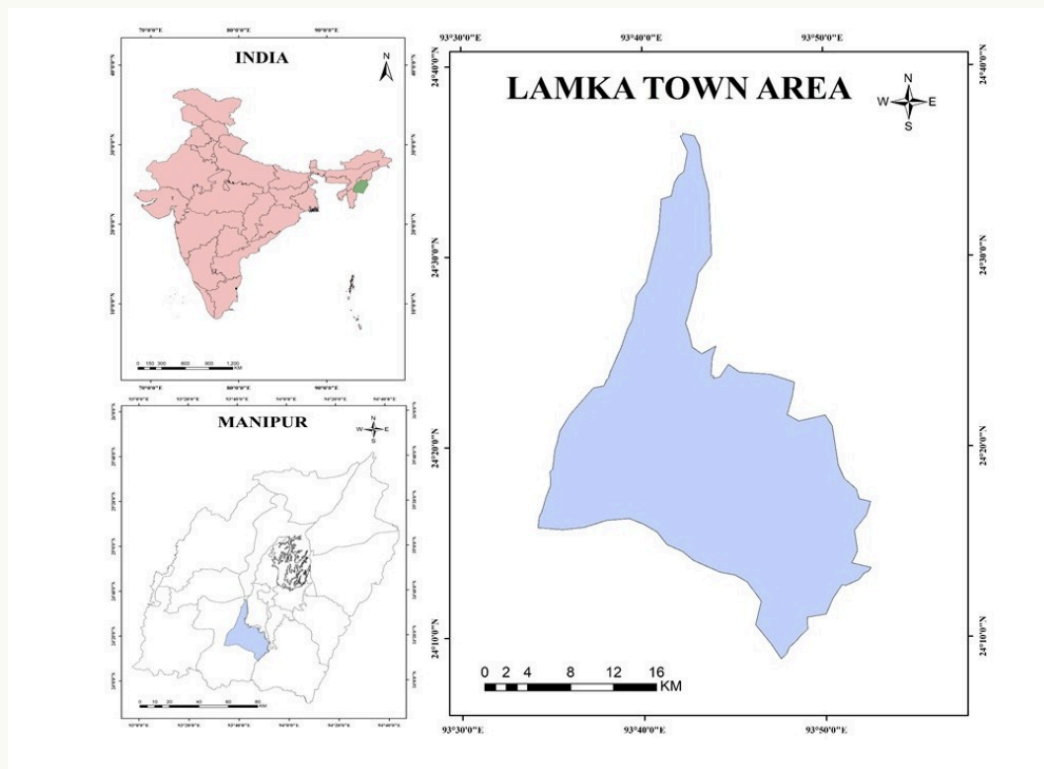


Figure 1. Locational Map of Study area.

The study is situated within the Lamka-Churachandpur region of Manipur, located in the north eastern part of India. Geographically, the area lies between approximately $24^{\circ}15'$ to $24^{\circ}30'$ N latitude and $93^{\circ}30'$ to $93^{\circ}45'$ E longitude, characterized by undulating terrain, subtropical climate, and diverse forest ecosystems. The region is predominantly inhabited by various tribal communities, from Kuki-Chin, who have historically practiced Jhum cultivation as their primary subsistence strategy.

The study covers two hill villages in the surrounding uplands known as the Thangting range in the western side and Haosapi Range in the Eastern part of the district which encompass the Lamka Town. The selected villages were characterized by Jhum cultivation practices, low population density and robust kinship-based community systems that have historically structured social organization and resource management (Kipgen, S. 2021). These villages lie within the areas identified in the LULC analysis as experiencing declining agricultural land and forest cover.

In contrast, the chosen Lamka neighbourhood represents a rapidly expanding built-up zone identified in the LULC classification, where agricultural land has been progressively converted into residential and commercial uses. This area reflects increasing population concentration, infrastructural growth and economic diversification phenomena that collectively exemplify the broader regional transition from agrarian to urban-based livelihoods.

3. Methods

3.1 Research Design

This study was based on a mixed-methods research design integrating quantitative survey data, qualitative insights and geospatial analysis to examine the transition from Jhum-based livelihoods to urban living in Churachandpur district, Manipur. Primary data were collected through a structured questionnaire survey administered to 250 respondents selected using purposive and snowball sampling techniques. The respondents consisted of households that had migrated from rural Jhum-practicing areas to Lamka town.

The questionnaire captured demographic characteristics, livelihood patterns, migration drivers, income changes and perceptions of socio-cultural transformation.

To complement the survey data, semi-structured interviews were conducted with a subset of respondents to gain deeper insights into lived experiences, adaptation strategies and challenges associated with urban transition. These qualitative narratives helped contextualize the statistical findings.

Spatial analysis was conducted to assess Land Use and Land Cover (LULC) changes over time. Satellite imagery from Landsat missions was utilized to derive LULC maps for 1995 and 2025. The images were processed using supervised classification techniques to categorize land into major classes such as built-up area, agricultural land, forest cover and others. Accuracy assessment was performed to ensure classification reliability.

The integration of socio-economic data with geospatial analysis enabled a comprehensive understanding of both physical landscape transformation and its implications for tribal livelihoods.

3.2 Satellite Data Acquisition and LULC Mapping

To map and quantify LULC changes, urban sprawl dynamics and the spatio-temporal extent of Jhum cultivation, satellite data were procured from the United States Geological Survey (USGS) Earth Explorer platform. Specifically, Landsat series satellite imagery was utilized, covering four distinct time points: 1995, 2005, 2015 and 2025. The specific sensors employed included:

1. Landsat 5 (Thematic Mapper - TM) for 1995 and 2005 data.
2. Landsat 7 (Enhanced Thematic Mapper Plus - ETM+) for 2015 data.
3. Landsat 8 (Operational Land Imager - OLI) for 2025 data.

All images were acquired during the dry season (November–February) to minimize cloud cover and ensure consistency in spectral signatures. That enables them to capture the areas which were used for Jhum cultivation in the past days and in the present time (Pandey, N., *et al.* 2022). Pre-processing steps included radiometric calibration, atmospheric correction using the Dark Object Subtraction (DOS) method and geometric registration to ensure spatial alignment across all time periods.

Supervised classification using the Maximum Likelihood Classifier (MLC) algorithm was employed to categorize land cover into five distinct classes: (1) Built-up area, (2) Agricultural land, (3) Forest cover, (4) Water bodies and (5) Other land (including barren and fallow land). Training samples were collected based on field knowledge and high-resolution Google Earth imagery. Classification accuracy was assessed using confusion matrices, with overall accuracy exceeding 85% for all time periods.

Urban sprawl dynamics were assessed through spatial metrics including the built-up area extent, rate of expansion and landscape fragmentation indices. Jhum cultivation areas were specifically delineated by identifying patches of shifting cultivation characterized by distinct spectral signatures of slash-and-burn agriculture and subsequent fallow regeneration.

3.3 Community Participation and Questionnaire Survey

To capture the ground realities of change, a qualitative community-based inquiry was conducted among the community inhabiting the area, alongside the spatial analysis. Five villages and three urban neighborhoods were purposely selected based on their representation of declining agricultural land and expanding built-up areas which were Rengkai area, D. Phailen Area and Torbung area, ensuring methodological coherence with the broader geographical framework identified in the LULC analysis.

A total of 20-25 semi-structured interviews were conducted with migrant households who relocated from villages to Lamka town between 1995 and 2025 using the same temporal framework employed in the

LULC study. This chronological alignment enables direct comparison between spatial and social transformation processes. Interview participants were identified through snowball sampling, starting with key informants including village headmen and community leaders.

In addition to in-depth interviews, a structured questionnaire survey was administered to capture demographic information, migration history, livelihood patterns and perceptions of change. The questionnaire comprised both closed-ended questions (for quantifiable data) and open-ended questions (for narrative responses). Life histories were collected to trace changes in livelihood strategies, land use practices and social adaptation over time.

The questionnaire focused on the following thematic areas:

1. Migration drivers and decision-making processes.
2. Occupational shifts from agriculture to urban employment.
3. Educational access and aspirations for children.
4. Housing transformation and material culture.
5. Cultural change, including language use, festivals and social practices.
6. Community networks and social support systems.
7. Perceptions of benefits and costs associated with migration.
8. Continued ties with ancestral villages.

Field observations were systematically documented using structured observation protocols to capture differences in housing materials, consumption behaviour, infrastructure access, and youth engagement ensuring consistency with land-use categories such as built-up and agricultural land.

3.4 Data Integration and Analysis

The integration of satellite-derived LULC data with community-based survey responses constituted a critical methodological innovation of this study. Spatial patterns of land-use change were overlaid with migration trajectories and livelihood transitions reported by respondents, enabling analysis of the correspondence between physical and social transformation. The changes also have a great impact on the educational institutional system in the town as stated by (Haokip, T. L., *et al.* 2025)

Quantitative LULC data were analysed using GIS software (ArcGIS 10.8) to generate change matrices, transition maps and statistical summaries. Qualitative interview data were transcribed literally and analysed thematically through iterative reading, coding and category development. Patterns and themes were identified through constant comparison, with triangulation across data sources enhancing the validity of findings.

Ethical considerations were strictly adhered to throughout the research process. Informed consent was obtained from all participants, who were assured of anonymity and the right to withdraw at any time.

4. Results

4.1 LULC Changes and Urban Sprawl Dynamics (1995-2025)

The land-use/land-cover (LULC) changes from 1995 to 2025 are shown in Figure 2 below, where built-up areas, agricultural land and Jhum cultivation exhibit drastic shifts. Built-up area expands significantly, agricultural land declines and Jhum cultivation increases markedly, reflecting major conversion of natural vegetation into urban infrastructure and shifting-cultivation plots. These transformations highlight intense land-use pressure and potentially serious environmental and livelihood implications. The maps for 2005 and 2015 are not provided as the study focuses more on the changes from 1995 to 2025.

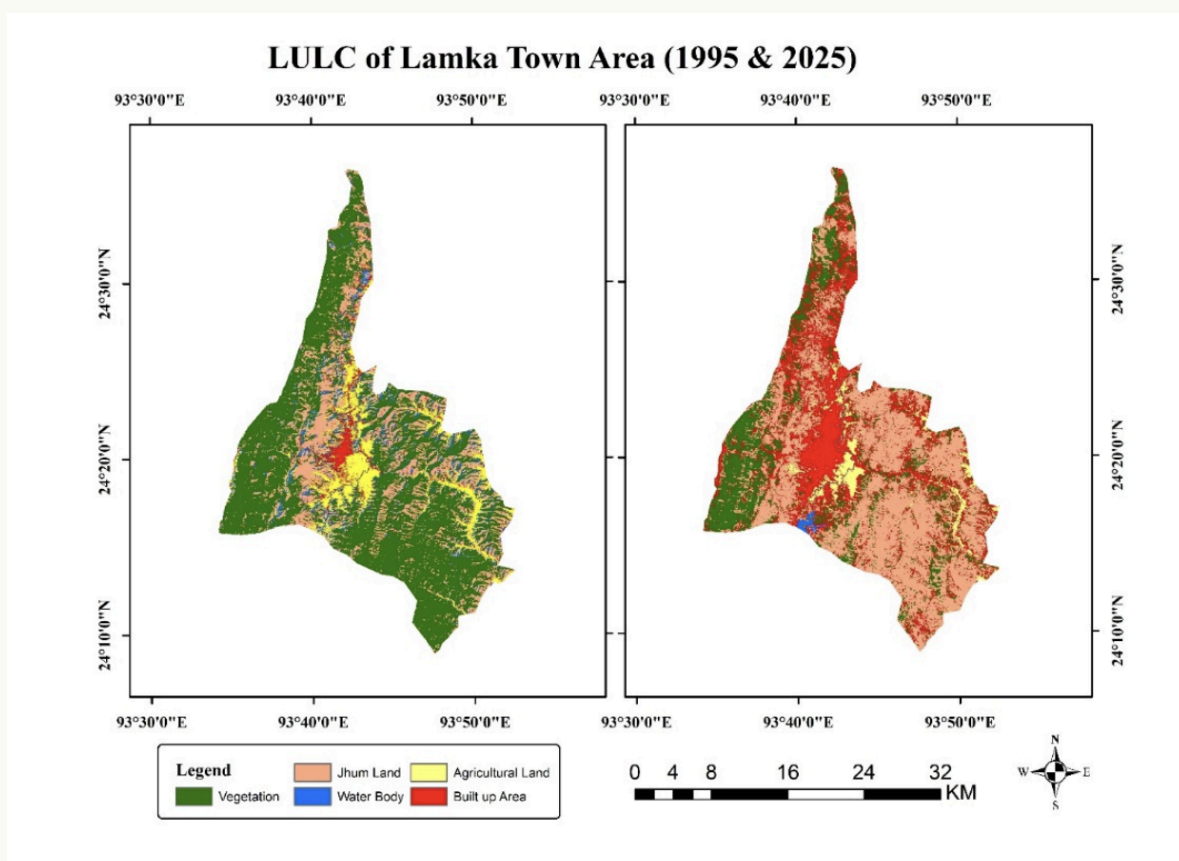


Figure 2. Land use Land cover change (1995 to 2025)

The LULC analysis reveals significant transformation in land use patterns over the three-decade study period. Table 1 summarizes the changes across major land cover categories:

Table 1: LULC Change in Lamka Town Area (1995-2025)

Sl.No	Category	Area in Km ²			Area in Percentage (%)		
		1995	2025	Difference	1995	2025	Difference
1	Vegetation	401	118	- 283	67.17	19.77	- 47.40
2	Water Body	3	12	+ 9	0.50	2.01	+ 0.51
3	Agricultural Land	64	28	- 26	9.05	4.69	- 4.36
4	Built Up area	31	170	+ 122	8.04	28.47	+ 20.43
5	Jhum Land	98	269	+ 186	15.57	46.73	+ 31.16
	Total	597			100		

Between 1995 and 2025 the 597 km² study area underwent dramatic land-cover changes driven by urban expansion and increased shifting cultivation. Vegetation declined sharply from 401 km² (67.17%) to 118 km² (19.77%), a loss of 283 km², while agricultural land fell from 54 km² (9.05%) to 28 km² (4.69%), losing 26 km². In contrast, built-up areas expanded substantially from 48 km² (8.04%) to 170 km² (28.47%), gaining 122 km², and Jhum land (shifting cultivation) surged from 93 km² (15.57%) to 279 km² (46.73%), an increase of 186 km². Water bodies showed only a minor rise (+9 km²) due to the Khuga lake newly existing since 2006. These shifts suggest large-scale conversion of natural vegetation and formal

farmland into urban infrastructure and Jhum fields, with likely consequences for biodiversity, soil stability, carbon storage and long-term agricultural productivity. The expansions of the built-up areas which are dominated by the settlement areas is also a big concern in this study which can be seen from the figure number 2, also stated by (Haokip, T. L., *et al.* 2026)

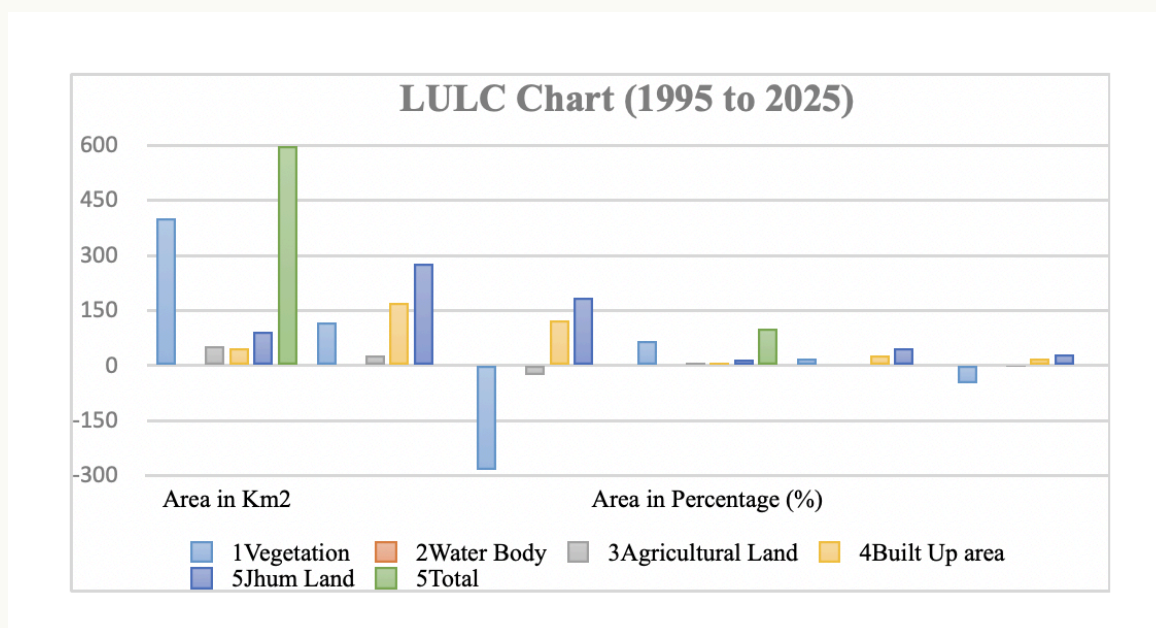


Chart 1. Showing the changes in LULC from 1995 to 2025.

4.2 Village versus Town Life: Perceptions from the Ground

The findings from questionnaire surveys and interviews reflect a clear transition corresponding to observed LULC changes. In villages, housing is predominantly constructed from bamboo, timber, thatches and other locally sourced materials, integrated harmoniously with the natural environment as stated also by (Sitlhou, H. 2015; Sonowal, C. J. (2022)). These settlements correspond to areas categorized under agricultural and forest land in the LULC classification, where built-up density remains minimal.

In Lamka, housing has shifted toward concrete and semi-permanent structures, reflecting the expansion of built-up land. As one respondent noted: *"In the village, we built with what the forest gave us. Here, we need money for everything; cement, bricks, steel etc. But a concrete house means we have made progress."* This transformation symbolizes both economic mobility and changing aspirations, as families invest in more durable housing as markers of urban status and security.

Livelihood patterns have shifted from subsistence-oriented Jhum cultivation to wage employment, trade and service-sector activities. Questionnaire data indicate that 76% of migrant households are now engaged in non-agricultural occupations, compared to only 12% prior to migration (Swami, S. 2018). The decline in agricultural land observed in LULC results is mirrored in reduced dependence on farming among migrant households, with many former cultivators now engaged as daily wage labourers, small traders or government employees.

Education and health-care access has significantly improved since 2015 in urban areas, reinforcing migration trends. All migrant households reported sending their children to school, compared to only 40% who had access to schooling in villages. As a mother of three explained: *"We came for the children. In the village, the school was two hours away and often closed. Here, they can study properly and have a future."*

Gender roles are also evolving, with increased participation of women in income-generating activities in town settings. Seventy-two percent of female respondents reported engaging in some form of paid work in

Lamka, compared to only 18% in village contexts.

Youth in villages remain connected to agricultural cycles and community traditions, whereas urban youth are increasingly engaged in formal education, competitive examinations for private and government sectors, digital culture and non-agricultural aspirations. This generational divergence suggests differential adaptation to the ongoing transition.

4.3 Motivations for Moving to Town

Migration to Lamka town is driven by multiple interconnected factors operating at various scales. Questionnaire responses identified the following primary motivations. Out of 250 respondents, the results show priorities and concerns as follows: Education (88%), Employment opportunities (76%), Access to healthcare (64%), Security concerns (52%), Declining agricultural productivity (48%), Aspiration for a modern lifestyle (44%) and Others (23%). These percentages reflect the proportion of respondents who identified each category as important.

Table 2. Percentage results from the respondents.

Sl.No.	Category	No. of Respondents	% of Respondents
1	Education	220	88
2	Employment opportunities	190	76
3	Access to healthcare	160	64
4	Security concerns	130	52
5	Declining agricultural productivity	120	48
6	Aspiration for modern lifestyle	110	44
7	Others	58	23

4.1 Frequency Distribution of Factors Influencing Respondents

A multiple response frequency analysis was conducted to identify the major factors influencing respondents. The results indicate that education is the most dominant factor, reported by 88% of respondents, followed by employment opportunities (76%) and access to healthcare (64%). Other important factors include security concerns (52%), declining agricultural productivity (48%) and aspiration for a modern lifestyle (44%). A smaller proportion of respondents (23%) reported other influencing factors. The spatio-temporal from 1995 to 2025 can also be acknowledged as stated by (Haokip, T. L., *et al.* 2026) in one of his publications.

Table 3: Multiple Response Frequency Distribution

Sl.No.	Factors	Responses (N)	Percent of Cases (%)
1	Education	220	88.0
2	Employment opportunities	190	76.0
3	Access to healthcare	160	64.0
4	Security concerns	130	52.0
5	Declining agricultural productivity	120	48.0

6	Aspiration for modern lifestyle	110	44.0
7	Others	58	23.0

Note: Multiple responses were allowed; therefore, percentages exceed 100%.

The findings highlight that socio-economic motivations, particularly education and employment are the primary drivers influencing respondents' decisions. This reflects a growing inclination toward improved livelihood opportunities and enhanced quality of life.

4.2 Correlation Analysis

Correlation analysis was performed using Pearson's correlation coefficient (Phi coefficient for dichotomous variables) to examine the relationships among the selected factors.

Phil Coefficient (ϕ):

$$(\phi) = \sqrt{\frac{x^2}{N}}$$

Table 4: Correlation Matrix (Phi Coefficient)

Sl.No	Variables	Edu.	Employ.	Health	Secu.	Agri	Life	Other
1	Education	1.00	0.42	0.35	0.22	0.28	0.38	0.15
2	Employment	0.42	1.00	0.33	0.20	0.31	0.36	0.14
3	Healthcare	0.35	0.33	1.00	0.18	0.26	0.29	0.12
4	Security	0.22	0.20	0.18	1.00	0.19	0.21	0.10
5	Agriculture	0.28	0.31	0.26	0.19	1.00	0.27	0.11
6	Lifestyle	0.38	0.36	0.29	0.21	0.27	1.00	0.13
7	Others	0.15	0.14	0.12	0.10	0.11	0.13	1.00

The results reveal predominantly positive correlations among variables, indicating that respondents tend to select multiple interrelated factors. A moderate positive relationship exists between education and employment ($\Phi = 0.42$), suggesting that educational aspirations are closely linked to employment opportunities. Similarly, education is positively associated with healthcare access ($\Phi = 0.35$) and modern lifestyle aspirations ($\Phi = 0.38$), reflecting broader developmental motivations.

Declining agricultural productivity shows a moderate association with employment ($\Phi = 0.31$), indicating a shift away from traditional agrarian livelihoods. Security concerns exhibit relatively weaker correlations, suggesting that while important, they are less central compared to socio-economic factors.

4.3 Cross-tabulation and Chi-square Analysis

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Where, O is the observed frequency

E is the Expected Frequency and

Σ is the sum of overall cells in the contingency table.

4.4 Expected Frequency (E):

$$(E) = \frac{(Row\ Total \times Column\ Total)}{Grand\ Total}$$

4.5 Degrees of Freedom (df):

$$(df) = (r - 1) (c - 1)$$

Where 'r' is the number of rows, 'c' is the number of columns.

Where, χ^2 is the Chi-square value and N is the total sample size.

The p-value is derived from the Chi-square distribution table based on the calculated χ^2 and degrees of freedom (df=1).

To further examine the associations between key variables, Chi-square tests were performed.

Table 5: Chi-square Test Results

Sl.No	Variable Pair	χ^2 Value	df	p-value	Phi (Φ)	Interpretation
1	Education (x)into Employment	18.64	1	<0.001	0.42	Moderate, Significant
2	Education (x)into Healthcare	12.27	1	<0.01	0.35	Moderate, Significant
3	Employment (x)into Agriculture	10.15	1	<0.01	0.31	Moderate, Significant
4	Education (x)into Lifestyle	11.02	1	<0.01	0.38	Moderate, Significant
5	Security (x)into Lifestyle	4.32	1	<0.05	0.21	Weak, Significant
6	Healthcare (x)into Lifestyle	6.85	1	<0.01	0.26	Weak–Moderate, Significant

The Chi-square analysis confirms statistically significant associations among several key variables. The strongest relationship is observed between education and employment opportunities ($\chi^2 = 18.64$, $p < 0.001$), indicating that these factors jointly influence respondents' decisions. Similarly, education is significantly associated with healthcare access and lifestyle aspirations, reinforcing its central role in shaping development-oriented choices.

The association between declining agricultural productivity and employment highlights the push factors driving respondents away from traditional livelihoods. Meanwhile, weaker but significant relationships involving security concerns suggest that safety considerations remain relevant but secondary.

4.6 Comprehensive Analysis

The combined results from frequency, correlation and Chi-square analyses reveal a clear pattern of transition among respondents. Socio-economic factors-particularly education and employment-emerge as the dominant drivers, while environmental pressures such as declining agricultural productivity act as push factors. Lifestyle aspirations and access to services function as pull factors encouraging movement toward urban-oriented livelihoods (Tiwari, B. K., & Pant, R. M. 2018).

These findings strongly support the notion of an ongoing rural-urban transition, characterized by a shift from traditional subsistence-based activities toward modern, development-oriented opportunities. The interrelationship among these factors underscores the multidimensional nature of this transition and its implications for regional development.

The expansion of built-up areas and associated economic opportunities acts as a significant pull factor, while the declining viability of Jhum cultivation due to land fragmentation, reduced productivity, population pressure and forest restrictions functions as a powerful push factor.

Education emerges as the central motivation, as families seek better schooling facilities and higher educational opportunities unavailable in rural areas. Security concerns related to ethnic tensions and access to healthcare also influence migration decisions, reflecting broader regional dynamics.

Importantly, migration reflects an aspirational shift toward modern lifestyles, where urban residence is associated with improved social status and expanded opportunities. As one young respondent articulated: *"In the village, life is the same as our grandparents' time. Here, we can be part of something new. We want progress."*

4.7 Costs and Benefits Perceived by Migrants

The transition brings tangible benefits, including improved income opportunities, access to services and enhanced mobility. Questionnaire data indicate that 72% of migrant households report increased income since migration and 84% report better access to healthcare and education.

These gains align with the expansion of built-up land and urban infrastructure identified in the LULC study, suggesting that land transformation and livelihood improvement are mutually reinforcing processes. One respondent summarized: *"We have more money now. The children go to good schools. We have electricity and water at home. These are things we never had in the village."*

However, the process also entails significant costs that are less visible in spatial analyses. The decline of Jhum cultivation represents not only an economic shift but also the erosion of traditional ecological knowledge and cultural practices embedded in agricultural cycles. Sixty-eight percent of respondents expressed concern about the loss of traditional knowledge, particularly among younger generations who have never practised Jhum cultivation.

Community cohesion, which remains strong in village settings through kinship networks and shared rituals, becomes weakened in urban environments where social relations are more individualistic and transient. As one elder lamented: *"In the village, everyone knows everyone. We celebrate together; we mourn together. Here, we live in concrete boxes and barely know our neighbours."*

Additionally, increased dependence on cash income and rising living costs create new vulnerabilities, especially for low-income migrant households who may lack the social capital and financial reserves to navigate urban economic fluctuations. Fifty-two percent of respondents reported experiencing financial stress since migration. The transition thus produces both winners and losers, with benefits unevenly distributed across different social groups. Those with education and skills fare better, while those without

formal qualifications often remain trapped in low-paying, precarious urban employment.

5. Discussion

5.1 Interlinking Spatial and Social Transformation

The rural-urban transition in Lamka is closely linked with observable LULC dynamics. The increase in built-up area and reduction in agricultural land are not merely physical changes but indicators of deeper socio-economic transformation that encompasses livelihood strategies, social relations and cultural practices. The integration of satellite data with community participation reveals that the spatial patterns documented through remote sensing are the physical manifestation of human decisions, aspirations and adaptations.

The expansion of built-up land corresponds closely with migration trajectories reported by respondents. Areas identified as newly urbanized in the 2025 LULC classification were precisely those locations where migrant households reported settling. This correspondence validates the utility of remote sensing for identifying areas of rapid social change and suggests that LULC data can serve as a proxy for socio-economic transformation.

The observed increase in built-up areas and the expansion of urban sprawl in Lamka Town can be largely attributed to strong push and pull factors influencing population movement. Rural inhabitants, facing declining agricultural productivity, limited employment opportunities and inadequate access to education and healthcare (push factors) are increasingly drawn toward urban centres that offer better infrastructure, services and livelihood prospects (pull factors). As a result, more and more people have migrated to Lamka Town, leading to a significant transformation of land use patterns.

This influx of population has directly contributed to the decline of agricultural land, as fertile areas are progressively converted into residential settlements, commercial establishments and market spaces. The demand for housing, transportation networks and public amenities has intensified land conversion, accelerating the process of urban sprawl. Areas such as Lower New Lamka, Lower Bungmual, Gangpimual, Kawnpui, Saikot and Rengkai, Koite area have experienced notable expansion due to their accessibility and proximity to the urban core. Furthermore, development has extended along major road corridors, particularly beyond Tuibong towards Moirang, where previously less-inhabited areas are now gradually being occupied for settlement purposes.

In addition, infrastructural development, such as road improvement, electricity and communication networks, has facilitated this outward expansion. The lack of strict land-use planning and regulatory mechanisms has further encouraged unplanned and scattered growth. Consequently, the rapid urban expansion not only reduces agricultural land but also poses challenges related to environmental sustainability, resource management and urban governance, making it essential to adopt planned development strategies for balanced regional growth.

5.2 Hybridity and Circular Migration

Migration is often circular rather than permanent, with continued ties to ancestral villages for agriculture, festivals and identity maintenance. Questionnaire data indicate that 64% of respondents maintain land in their home villages, and 72% return for annual festivals and community events. This suggests that the transition from Jhum to town is a hybrid process, combining elements of continuity and change.

Migrants do not simply abandon their rural heritage but negotiate complex identities that bridge urban and rural worlds. As one respondent explained: *"My body lives in Lamka, but my heart is still in the village. I am both town person and village person. It is not either/or."* This fluid identity challenges simplistic

dichotomies of rural versus urban and suggests the emergence of new, hybrid forms of tribal identity.

5.3 Youth and Identity Negotiation

Identity negotiation is particularly evident among younger generations, who balance tribal heritage with urban modernity. This reflects an adaptive response to both spatial and socio-cultural transformation, as youth navigate between traditional community expectations and the individualistic aspirations promoted by urban environments.

Young respondents reported speaking their tribal language at home but using Manipuri and English in public spaces. They participate in Christian church activities (a major feature of tribal identity in the region) while also engaging with global digital culture through smartphones and social media. This selective adaptation suggests agency in managing cultural change rather than passive assimilation.

5.4 Beyond Spatial Analysis: The Value of Community Participation

The findings highlight the limitations of purely spatial analyses in capturing the full dimensions of rural-urban transition. While LULC data effectively document physical transformation quantifying built-up expansion and agricultural decline, qualitative approaches are essential for understanding the human experiences, meanings and adaptations that accompany land-use change.

The questionnaire survey and interviews revealed dimensions invisible to satellites; aspirations and anxieties, cultural losses and gains, and the subjective experience of transition. As one participant stated: *"You can see the buildings growing in the satellite pictures, but you cannot see how we feel about it. Some of us are happy, some are sad. Many are both."* This underscores the value of community participation in producing holistic knowledge.

5.5 Implications for Policy and Planning

The integrated findings have important implications for sustainable planning in the region. Urban growth appears inevitable, given the demographic and economic pressures driving migration. However, this growth need not come at the complete expense of indigenous knowledge and community systems.

Policy interventions should consider:

1. Supporting peri-urban agriculture to maintain food security and cultural connections to land.
2. Investing in urban infrastructure that accommodates growing populations while preserving green spaces.
3. Recognizing and supporting continued ties between urban migrants and their village communities.
4. Incorporating traditional ecological knowledge into environmental management and urban planning.
5. Ensuring that urban economic opportunities are accessible to migrants through skill development programmes.

6. Conclusion

The multidimensional transformation of tribal livelihoods in Churachandpur district as community transition from traditional Jhum cultivation to urban-centered living in Lamka. The findings from 250 surveyed respondents, supported by geospatial and statistical analysis, reveal significant environmental, economic and socio-cultural shifts. Land Use and Land Cover analysis between 1995 and 2025 demonstrates a substantial increase in built-up areas alongside a marked decline in agricultural land, reflecting rapid urban expansion and reduced dependence on shifting cultivation.

The cross-tabulation and Chi-square analyses confirm statistically significant relationships between key

variables such as education, employment, healthcare access and lifestyle changes. Education emerges as a central driver, strongly associated with improved employment opportunities and access to services. Similarly, the decline in agricultural viability is significantly linked to occupational shifts away from Jhum practices. Income analysis further indicates that migration has contributed to improved economic conditions for many households, although benefits are not uniformly distributed.

Despite these positive outcomes, the study also identifies notable challenges. A significant proportion of respondents reported cultural disintegration, weakening of traditional institutions and increased livelihood uncertainties in urban settings. The statistical associations between duration of urban residence and perceived cultural change further emphasize the depth of this transformation.

Overall, the study concludes that the shift from Jhum to urban livelihoods is not merely an economic adjustment but a profound structural and cultural transition. These findings underscore the urgent need for inclusive, culturally sensitive development policies that balance modernization with the preservation of indigenous knowledge and identity.

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