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Resilience in Transition: Coping Strategies of Landholding Families in Karu Peri-Urban Transformation

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ABSTRACT
This study examined the coping strategies adopted by indigenous landholding families following tenure transformation associated with informal land delivery in the Karu peri-urban area of Nasarawa State, Nigeria. Specifically, it assessed the coping strategies employed and examined the socio-economic factors associated with their adoption. A mixed-methods design was employed across 25 purposively selected communities in five political wards. From a sampling frame of 1,071 landholding families involved in informal land sales, 383 valid questionnaires were analysed, supplemented by key-informant and in-depth interviews. Quantitative data were analysed using frequencies, percentages, Chi-square tests, Cramer's V and binary logistic regression, while qualitative data were thematically analysed and triangulated. Tenancy farming was the most reported coping strategy (84.1%), followed by distress sales of assets (77.6%), relocation (52.3%), small-business activities (38.3%) and kinship support (29.9%). Significant associations occurred between relocation and age group (χ^2=12.84, p=0.012), distress sales and occupation (χ^2=15.46, p=0.009), and small business and education (χ^2=9.83, p=0.021). Logistic regression identified age group (OR=0.637, p=0.018), occupation (OR=1.362, p=0.026) and land sold (OR=0.684, p=0.025) as significant correlates of relocation, with Nagelkerke R^2=0.23. The study concludes that households combine adaptation with livelihood vulnerability. It recommends integrated livelihood support, transparent agricultural tenancy arrangements and livelihood-impact assessment in peri-urban development planning.
Keywords: Informal land delivery; Tenure transformation; Landholding families; Livelihood coping Strategies; Peri-urbanisation

1.0 INTRODUCTION

Rapid urban expansion is transforming peri-urban areas across Sub-Saharan Africa, where agricultural and customary lands are increasingly incorporated into expanding urban land markets. This process has altered the economic and institutional significance of land, as customary landholding systems increasingly interact with market-oriented transactions, formal planning institutions and rising demand for urban development. Although land commodification can create opportunities for investment and income generation, its distributional effects are uneven and may weaken customary rights, reduce access to productive land and expose indigenous households to livelihood insecurity (Rieff et al., 2021).

These processes are particularly evident in Nigerian peri-urban areas, where the expansion of major urban centres has generated intense competition for land between indigenous landholders, developers,

households and public institutions. Evidence from Enugu demonstrates that rapid urbanisation can produce tensions between customary and statutory tenure systems, with changing institutional arrangements contributing to displacement and struggles over land rights (Onyebueke et al., 2020). Similar evidence from peri-urban Ibadan indicates that increasing participation in land markets and urbanisation can alter household livelihood structures, including a shift away from land-based activities as agricultural land becomes increasingly incorporated into urban development (Alawode & Olayemi, 2023). The transformation is particularly significant along the Abuja–Keffi development corridor, where continuing urban expansion has intensified development pressure on formerly rural and agricultural landscapes. Research on the corridor has documented substantial physical expansion and increasing spatial agglomeration of settlements, illustrating the wider process through which urban development is extending into adjoining areas. Within Karu, informal land delivery has also become an important component of the urban land market, with landholding families playing a significant role in supplying land for development. Consequently, the conversion and transfer of ancestral land may affect not only ownership and tenure arrangements but also the livelihood foundations of families whose economic and social systems have historically depended on land.

The livelihood implications of such transformation extend beyond the physical loss of agricultural land. Landholding families may experience declining agricultural opportunities and increasing dependence on non-farm activities as urban development changes the economic value and accessibility of land. Evidence from peri-urban Ghana shows that land sales and land-use conversion can coexist with continued dependence on farming, thereby producing livelihood diversification rather than a simple transition from rural to urban livelihoods (Armah et al., 2022). Similarly, evidence from peri-urban Ibadan associates urban land acquisition with reduced agricultural opportunities and changes in farmers' livelihood options (Alawode & Olayemi, 2023). These findings suggest that tenure transformation should be examined not simply as a change in land ownership, but as a process capable of restructuring household livelihood strategies.

Importantly, landholding families are not necessarily passive recipients of these changes. Households may respond through livelihood diversification, tenancy arrangements, non-farm enterprises, rental activities, social networks and other adaptive strategies. However, the capacity to adopt such strategies is likely to differ according to household resources, access to alternative employment, education, land remaining in family ownership and the institutional environment governing land transactions. The literature therefore provides substantial evidence on peri-urban land conversion, customary tenure transformation and livelihood change, but comparatively less attention has been given to the specific coping strategies adopted by indigenous landholding families following tenure shifts associated with informal land delivery in the Karu peri-urban context. This gap is important because the same land transaction that creates capital or development opportunities for one household may simultaneously reduce the productive asset base and future livelihood options of another.

Against this background, this study examines the coping strategies employed by landholding families in the Karu peri-urban area in response to changes associated with informal land delivery and tenure transformation. Specifically, it assesses the strategies adopted by affected families and examines the socio-economic factors associated with their adoption. By focusing on household responses rather than land conversion alone, the study contributes empirical evidence to the wider debate on peri-urban land governance, customary tenure transformation and livelihood adaptation in rapidly urbanising Nigerian settlements. The findings are intended to provide a basis for understanding how landholding families navigate changing land markets and for informing approaches to peri-urban land management that recognise both the requirements of urban expansion and the livelihood interests of indigenous landholding communities.

2.0 MATERIALS AND METHODS

The study was conducted in the Karu peri-urban area of Nasarawa State, Nigeria, covering 25 purposively selected communities across the five political wards. The communities were selected based on evidence of active informal land transactions and the presence of indigenous landholding families. A preliminary exercise identified 1,071 landholding families who had participated in informal land sales, which constituted the sampling frame.

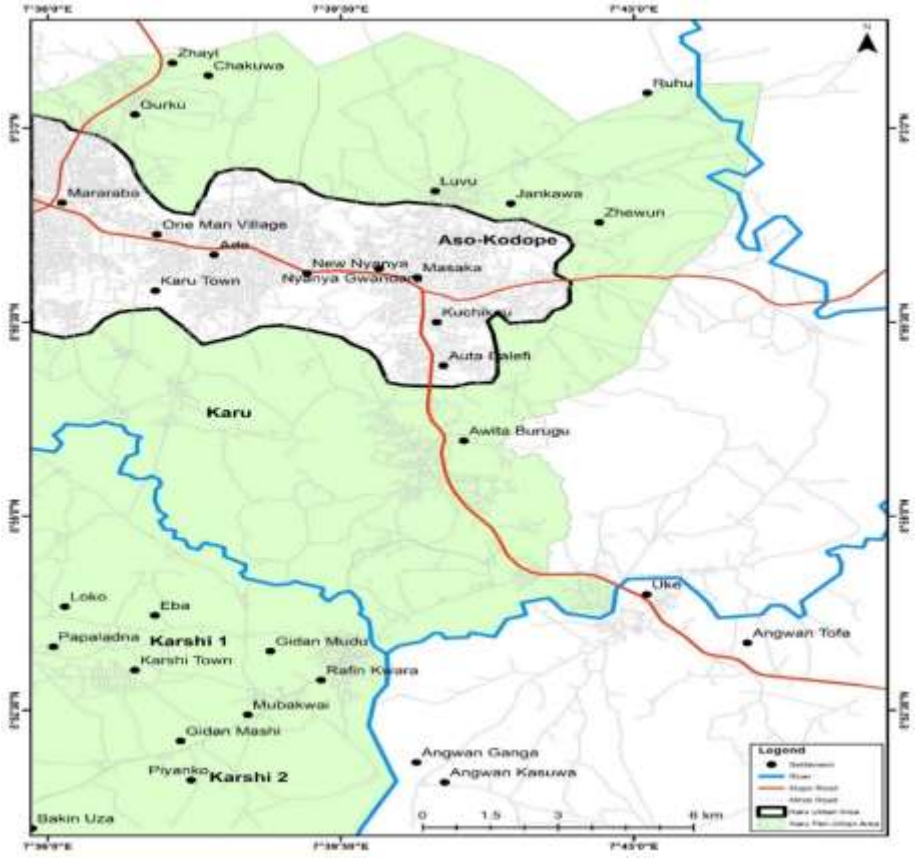

Fig. 1 Study Area

Source: Source: Grid3 Nigeria, 2024

A mixed-methods research design was adopted, combining a quantitative survey with qualitative interviews to examine household coping strategies associated with tenure shifts arising from informal land delivery. Mixed methods are appropriate where quantitative patterns require contextual explanation from participants' experiences (Creswell & Creswell, 2023). The quantitative sample size was determined using Cochran's formula at a 95% confidence level, 5% margin of error and 50% assumed population variability, followed by finite population correction for the known population of 1,071 families (Cochran, 1977). The calculation produced a minimum sample of 283 respondents. However, 383 valid questionnaires were administered and retrieved, representing 35.8% of the identified population and providing a larger basis for analysing variations in coping strategies.

Data were collected through structured questionnaires covering socio-demographic characteristics, landholding status, informal land transactions, and tenure-shift experiences and coping strategies. Key informant and in-depth interviews with selected landholding families provided complementary information on the motivations, experiences and consequences of informal land transactions.

Quantitative data were analysed using IBM SPSS Statistics Version 27. Frequencies, percentages and cross-tabulations were used for descriptive analysis, while the Chi-square test examined associations between categorical variables. Cramer's V was used to assess the strength of significant associations

(McHugh, 2013). Binary logistic regression was further employed to identify factors associated with the adoption of specific coping strategies, with results interpreted using odds ratios, Wald statistics, significance levels, 95% confidence intervals and Nagelkerke's R^2 (Bewick et al., 2005).

Interview data were transcribed and analysed thematically following systematic coding, identification of recurring patterns and development of themes (Braun & Clarke, 2022; Byrne, 2022). Quantitative and qualitative findings were integrated through triangulation to provide both statistical evidence of coping patterns and contextual explanations of how households responded to tenure transformation.

3.0 Results and Discussion

This section presents and interprets the key findings of the study, drawing on both quantitative and qualitative data collected from landholding families and key informants. It explores how affected households have responded to the socio-economic and spatial disruptions caused by Karu's rapid peri-urban transformation. The discussion is structured around the major themes identified during data analysis, including livelihood adaptation strategies, access to social safety nets, and shifts toward alternative income sources. Findings are examined in relation to the study's theoretical framework and supported by statistical evidence, direct quotes, and summary tables to provide a holistic understanding of resilience dynamics in the context of informal land tenure change.

3.1 Coping strategies employed by landholding families

The profound impacts of informal land delivery on the livelihoods of landholding families have necessitated a range of coping strategies aimed at sustaining household welfare. As tenure insecurity, economic instability, and social displacement intensify, affected families adopt diverse responses to mitigate the negative consequences. This section presents and analyzes the various economic, agricultural, and social strategies employed by households in Karu peri-urban area, drawing connections to broader trends identified in recent scholarly literature.

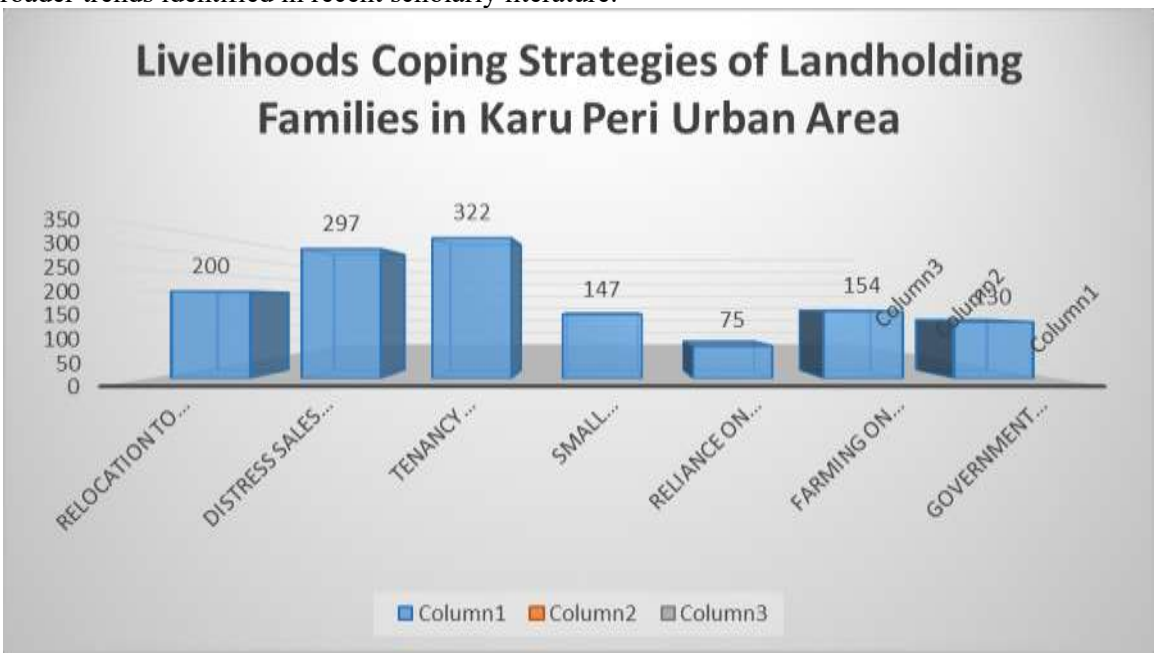

Figure 2: Coping Strategies

Source: Author's Field Survey, 2025.

Tenancy farming was the dominant coping strategy, reported by 84.1% of respondents, indicating the continued importance of agriculture despite changes in land ownership and control. Rather than abandoning farming, households retained access through rented or leased plots. This agrees with evidence from peri-urban Ghana, where households continued farming while diversifying their livelihoods despite agricultural land conversion (Abdulai et al., 2022), and peri-urban Kumasi, where declining farmland

encouraged intensification, diversification and off-farm activities (Cobbinah et al., 2020). As one respondent stated, *"I now lease a small plot every season... it's our only way,"* while another noted, *"I don't own the land, but I work on it... Farming is still the backbone of our survival."*

Distress sales of assets were reported by 77.6% of respondents, reflecting the conversion of household assets into immediate financial resources. One respondent explained, *"I had to sell two rooms from my compound... it brought temporary relief, but deep down, it felt like we were losing pieces of our family's history."* Although such sales provide short-term relief, they may reduce future livelihood assets, consistent with evidence linking informal land delivery and tenure insecurity in Nigeria with household insecurity and relocation (Agheyisi, 2020; Daramola & Aluko, 2022).

Relocation was reported by 52.3% of respondents. Respondents attributed movement partly to declining access to productive land: *"My father... eventually had to leave because we could no longer farm,"* while another explained that his brother was *"forced to move... to a nearby village where land was still available for cultivation."* This finding corresponds with evidence of displacement pressures associated with urbanisation and customary–statutory tenure tensions in peri-urban Enugu (Onyebueke et al., 2020) and tenure insecurity in Lagos (Daramola & Aluko, 2022).

Small-business activities were reported by 38.3% of respondents, indicating diversification into non-farm livelihoods as agricultural opportunities declined. Similar patterns have been reported in peri-urban Tamale, where declining farmland accompanied increased non-farm activities (Iddrisu et al., 2025), and north-western Ghana, where peri-urbanisation created alternative livelihood opportunities alongside declining farm-based activities (Toku et al., 2024).

Kinship support was reported by 29.9% of respondents. One respondent noted, *"my elder brother in town sent money regularly for us to survive."* Such support provides an additional livelihood buffer where household resources and formal support are limited, consistent with evidence on the role of social and human capital in peri-urban livelihood responses (Cobbinah et al., 2020).

In a nutshell, coping in Karu combines productive-resource access, livelihood diversification, asset conversion, spatial mobility and social support. Tenancy farming demonstrates the continued importance of agriculture, while asset sales and relocation reflect tenure-related pressures; small businesses and kinship networks demonstrate efforts to adapt to the changing peri-urban economy.\

3.2 Socio-economic differentiation of coping strategies

The Chi-square results in Table 4.22 demonstrate that coping strategies were not evenly distributed across the study population. Relocation was significantly associated with age group ($\chi^2 = 12.84$, df = 4, p = 0.012; Cramer's V = 0.184), while distress sales were associated with occupation ($\chi^2 = 15.46$, df = 5, p = 0.009; V = 0.201). Small-business activity was significantly associated with education ($\chi^2 = 9.83$, df = 3, p = 0.021; V = 0.159), and kinship reliance was associated with age group ($\chi^2 = 11.92$, df = 4, p = 0.017; V = 0.177). Farming on owned land was associated with the amount of land sold ($\chi^2 = 13.05$, df = 6, p = 0.042; V = 0.190), while government employment was associated with education ($\chi^2 = 8.66$, df = 3, p = 0.034; V = 0.150).

Table 1: Chi-Square Test Results

Coping Strategy	Independent Variable	χ^2	df	p-value	Cramer's V	Significance
Relocation	Age Group	12.84	4	0.012	0.184	Significant
Distress Sales	Occupation	15.46	5	0.009	0.201	Significant
Tenancy Farming	Land Sold	10.27	6	0.114	0.163	Not Significant
Small Business	Education	9.83	3	0.021	0.159	Significant
Kinship Reliance	Age Group	11.92	4	0.017	0.177	Significant
Farming on Owned Land	Land Sold	13.05	6	0.042	0.190	Significant
Government Employment	Education	8.66	3	0.034	0.150	Significant

Source: Author's field work, 2025

The Cramer's V statistics indicate relatively modest associations. Thus, the significant relationships should not be interpreted as evidence that any single socio-economic characteristic determines household coping behaviour. Rather, they demonstrate that the choice of coping strategy varies systematically across different household circumstances. This is consistent with peri-urban livelihood research showing that household responses to land-use transformation are differentiated by the resources and capabilities available to them. In peri-urban Kumasi, for example, human and social capital were found to influence the outcomes of livelihood strategies adopted by affected households (Cobbinah et al., 2020).

The association between education and small-business activity is particularly relevant. The result suggests that education is linked to participation in certain non-farm livelihood activities, although the present analysis does not establish causality. The finding is compatible with recent evidence from Ghana showing that new non-farm livelihoods can emerge in peri-urban areas as households respond to land-use transformation and changing economic opportunities (Toku et al., 2024).

The relationship between occupation and distress sales similarly indicates that households with different livelihood bases do not experience tenure transformation in identical ways. Households whose occupations provide limited or unstable income may have fewer alternatives when agricultural land is lost or sold and may therefore depend more heavily on existing assets. This interpretation is consistent with evidence from peri-urban Ibadan, where participation in the land market and engagement in non-farm activities were associated with differences in household livelihood income (Alawode & Olayemi, 2020).

3.3 Predictors of relocation

The binary logistic regression provides further evidence concerning the factors associated with relocation. Age group was statistically significant (B = −0.45, p = 0.018; OR = 0.637; 95% CI: 0.441–0.920), as were occupation (B = 0.31, p = 0.026; OR = 1.362; 95% CI: 1.037–1.790) and land sold (B = −0.38, p = 0.025; OR = 0.684; 95% CI: 0.490–0.957). Education was not statistically significant in the model (B = 0.22, p = 0.089; OR = 1.246; 95% CI: 0.968–1.602).

Table 2: Logistic Regression Predicting Relocation

Predictor	B	S.E.	Wald	df	p	Exp(B)	95% CI for Exp(B)
Age Group (Ref: 25-34)	-0.45	0.19	5.59	1	0.018	0.637	0.441–0.920
Education	0.22	0.13	2.89	1	0.089	1.246	0.968–1.602
Occupation	0.31	0.14	4.94	1	0.026	1.362	1.037–1.790
Land Sold	-0.38	0.17	5.03	1	0.025	0.684	0.490–0.957

Source: Author's field work, 2025

The age result indicates that relocation varied systematically across the coded age categories. Because the precise coding of the age categories determines the substantive direction of the odds ratio, the result is best interpreted as evidence of age-differentiated relocation rather than as proof that younger respondents necessarily relocate more than older respondents. This is consistent with the Chi-square result and suggests that household mobility is differentiated by demographic position.

Occupation also emerged as a significant predictor. The odds ratio of 1.362 indicates that a one-unit increase in the coded occupational variable was associated with approximately 36% higher odds of relocation, holding the other variables constant. The substantive meaning of this result depends on the occupational categories and their coding. It nevertheless demonstrates that livelihood position is relevant to spatial responses to tenure transformation. This finding is consistent with evidence from peri-urban areas where households' dependent on land-based activities experience livelihood disruption as agricultural land is converted to urban uses (Abdulai et al., 2022; Iddrisu et al., 2025).

Land sold was also statistically significant. The odds ratio of 0.684 indicates that an increase in the coded land-sale category was associated with a reduction in the odds of relocation, holding the other predictors constant. However, the substantive interpretation of the direction depends on how the land-sale categories were coded. It would therefore be inappropriate to describe this result simply as showing that "smaller landholdings increase relocation" unless that coding is explicitly established.

Education was not statistically significant in the logistic model despite its significant association with small-business activity in the Chi-square analysis. This distinction is important because it demonstrates that a variable may be associated with one coping strategy without independently predicting another. Education therefore appears to have greater relevance to livelihood diversification in this dataset than to relocation.

The Nagelkerke R^2 of 0.23 indicates that the variables included in the relocation model explained approximately 23% of the variation in relocation. The remaining variation may reflect factors not included in the model, such as household wealth, remaining family land, household size, access to social networks, proximity to employment opportunities, compensation received from land transactions and characteristics of alternative locations. The model should therefore be interpreted as identifying significant correlates rather than providing a complete explanation of relocation decisions.

3.4 Significance of the findings for peri-urban livelihood transformation

The combined findings demonstrate that informal land delivery in Karu has consequences that extend beyond the transfer of land rights. The process is associated with changes in how landholding families obtain food, generate income, maintain assets, access social support and decide where to live. This makes tenure transformation simultaneously a land-market process and a livelihood process.

The prominence of tenancy farming is particularly important. It demonstrates that landholding families may lose ownership without immediately losing their connection with agriculture. Similar evidence from Wa, Ghana, shows that land commoditisation and conversion can substantially transform peri-urban landscapes while farming remains an important livelihood activity (Abdulai et al., 2022).

At the same time, the high prevalence of asset sales and relocation indicates that adaptation is not necessarily synonymous with improved welfare. Some coping mechanisms preserve livelihood activities, whereas others may reduce the household asset base or require spatial displacement. The distinction is important for interpreting resilience in Karu: the ability of households to respond to tenure change does not necessarily mean that the consequences of that change are economically neutral.

The emergence of small businesses further demonstrates the differentiated character of peri-urban transformation. Recent research in Tamale and north-western Ghana shows that urban expansion can reduce agricultural opportunities while creating new non-farm livelihoods (Iddrisu et al., 2025; Toku et al., 2024). The Karu findings similarly indicate that some households are repositioning themselves within an increasingly urban economy. However, the coexistence of business diversification, tenancy farming, asset sales and relocation suggests that households occupy different positions within the transformation process.

The findings therefore contribute to the literature by showing that the livelihood consequences of peri-urban land commodification cannot be adequately captured by measuring land conversion alone. In Karu, the consequences are expressed through changes in access to productive land, household assets, occupation, mobility and social support. This complements Nigerian evidence showing that informal land delivery and tenure insecurity involve complex interactions between customary institutions, land transactions and household security (Agheyisi, 2020; Daramola & Aluko, 2022).

The overall evidence suggests that landholding families in Karu are responding to tenure transformation through a mixture of adaptation and vulnerability. Tenancy farming and entrepreneurship demonstrate continued livelihood agency, while asset liquidation and relocation reveal the pressures associated with declining access to ancestral land. The significant associations and regression results further show that these responses are differentiated by household characteristics rather than uniformly experienced across the population. Consequently, peri-urban land management in Karu needs to consider not only the supply of land for urban development but also the livelihood consequences of changing access to land for the families from whom that land originates.

4.0 CONCLUSION

The study concludes that tenure transformation associated with informal land delivery has substantially reshaped the livelihood strategies of landholding families in the Karu peri-urban area. Tenancy farming (84.1%) and distress sales of assets (77.6%) were the most reported coping strategies, while relocation (52.3%), small-business activities (38.3%) and kinship support (29.9%) reflected additional responses to changing access to land and livelihood resources. The significant associations and regression results further demonstrate that coping strategies vary across socio-economic circumstances, particularly age, occupation, education and land sold. Overall, the findings indicate that households are adapting through a combination of livelihood diversification, continued agricultural engagement, asset conversion, mobility and social support, but some strategies may also weaken their longer-term livelihood security.

5.0 RECOMMENDATIONS

1. Establish a Karu Peri-Urban Livelihood Support Programme to provide targeted training, small-enterprise support and agricultural assistance to affected landholding families. The programme should aim to enrol at least 50% of identified vulnerable households within three years, with participation and livelihood outcomes reviewed annually.
2. Promote accessible tenancy and smallholder farming arrangements by establishing community-level mechanisms for identifying available agricultural land and facilitating transparent short- to medium-term leases. Local planning authorities and community landholding institutions should target annual documentation of available agricultural plots and tenancy agreements to reduce uncertainty for households that continue farming.
3. Introduce livelihood-transition and financial-management training for families involved in land transactions, with emphasis on investing land-sale proceeds in sustainable income-generating activities rather than relying predominantly on distress asset sales. A measurable target should be for at least 60% of participating households to develop a documented livelihood or investment plan following major land transactions.
4. Integrate indigenous livelihood protection into peri-urban development planning. Karu planning authorities should require major development schemes affecting indigenous landholding communities to include a livelihood-impact assessment and mitigation plan before approval, covering agricultural access, relocation, employment and affected household assets.
5. Create a household livelihood monitoring system for landholding communities through collaboration among local planning authorities, community leaders and relevant development institutions. The system should track land sold, remaining agricultural land, relocation, tenancy farming, business diversification and household livelihood conditions at least annually, providing evidence for adjusting land-management and livelihood-support interventions.

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