



Effects of land tenure system changes on agricultural practices in the Western Highlands of Cameroon

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Abstract

The study investigates the effects of land tenure system changes (LTS) on agricultural practices (AP) in rural and urban settings in the Western Highlands of Cameroon (WHC), as no comparative studies had been conducted on this topic in the WHC. This study challenges the urban-rural dichotomy in land governance, demonstrating how it influences agricultural practices. Primary data were collected from 520 respondents in rural and urban settings using a mixed-methods approach, including a semi-structured questionnaire, key informant interviews, and observations. Descriptive statistics and binary logistic regression were used to analyse data. Results revealed that, except for increased inter-ethnic conflicts (mean scores of 1.72 in urban and 1.62 in rural, $p > 0.05$) and resolving land disputes (mean scores of 1.77 in urban and 1.67 in rural, $p = 0.011$), the mean scores for all tested effects of LTS changes were higher in rural settings. A comparative analysis showed an increase in land prices in rural and urban settings (mean scores of 3.86/4 in rural and 3.61/4 in urban, respectively; $p = 0.009$). Regression analysis revealed that respondents' religious affiliation had a significant impact on LTS changes in urban settings ($B = 0.726$, $p < 0.05$), while in rural settings, respondents' educational levels were the most significant determinant ($B = 0.528$, $p = 0.000$). This implies that differences in LTS and APs in rural and urban settings suggest a strong influence of institutions in shaping such relationships.

Keywords: *agriculture, urban-rural dichotomy, land governance, inter-ethnic conflicts*

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1. Introduction

In the Global South, changes in land tenure systems are regarded as a vital component of achieving food security, reducing poverty, and supporting sustainable development (Ningrum & Nurfaiziya, 2026). Between 1999 and 2009, agriculture contributed to half of all job growth in Sub-Saharan Africa (Schaffnit-Chatterjee et al., 2014). South Asian agriculture, like that of other Asian countries, is largely smallholder-based and still employs a sizable fraction of the workforce as compared to Latin America (Takeshima et al., 2021). Agricultural employment is declining in industrialised economies such as East Asia, Latin America, and the Caribbean (Weller & Velásquez, 2014; CEPAL, 2022). Secured land rights are essential for long-term development, as governments and their legal systems have considerable obligations for land access, management, and usage (Land Portal, 2024). Land tenure system changes include more than only legal or administrative adjustments (Finnegan, 2016). They are novel strategies for ensuring fair access, protecting tenure, and encouraging sustainable land use among poor communities. According to Sustainable Development Goal 2 (SDG 2), secure and equitable land tenure is a critical driver of socioeconomic progress (Ekesa et al., 2020).

Agricultural practices are farming methods and techniques that have a significant impact on geo-environmental conditions (Sharma, 2024), such as water resources, ecosystems, and crop output, necessitating long-term solutions to food security concerns (Tiwari et al., 2022). Empirical data demonstrate that more secure land tenure frequently leads to higher agricultural productivity and better food security outcomes (Murken & Gornott, 2022; Mbudzya et al., 2022; Mochesane, 2024; Dabessa & Han, 2025; Ningrum & Nurfaiziya, 2026). For example, land certification schemes in Ethiopia have increased agricultural output by pushing farmers to invest more aggressively in their land (Ajefu & Abiona, 2020; Tesfaye et al., 2023).

Land tenure system changes and agricultural practices in the rural and urban settings of the Western Highlands of Cameroon have resulted in major land-use disputes, environmental degradation, and food security concerns. The juxtaposition of uncoded customary practices and state statutory regulations (particularly the 1974 Land Ordinances) generates legal difficulties that leave indigenous people, farmers, and pastoralists with insecure tenure (Enoh, 2025). The region's low agricultural productivity is primarily due to a lack of secure land tenure (Joel & Bergaly, 2020). The conflict between statutory laws and customary

tenure in the Western Highlands of Cameroon revolves around legal titling (which requires state registration) vs ancestral communal rights (Enoh, 2025). This duality frequently causes resource conflicts and social isolation, which have a negative impact on agricultural practices.

There have been no studies on the effects of land tenure system changes on agricultural practices in the rural and urban settings of the Western Highlands of Cameroon. This research will help to fill a knowledge gap in the domains under consideration. Specifically, the study looks at the effects of land tenure system changes on agricultural practices in rural and urban settings in the Western Highlands of Cameroon.

2. Literature Review

2.1. Effects of Land Tenure System Changes on Agricultural Practices

Changes in land tenure systems influence agricultural practices by determining who owns, governs, and benefits from land and, consequently, the extent to which farmers are willing and able to invest in its long-term productivity (Dabessa & Han, 2025). A shift from customary arrangements toward formal or more secure tenure systems generally provides farmers with greater confidence to make long-term investments in soil conservation, irrigation, and agroecological practices (Mkandawire et al., 2025). This relationship is also reflected in farmers' preferences and investment decisions. The World Bank (2023), in its investigation of land tenure changes among farmers in the Philippines, found that most farmers preferred individual land ownership over collective arrangements. Similarly, Akram et al. (2019) found that land tenure arrangements affect sustainable agricultural production, with agribusiness landowners more likely than farmers operating under lease contracts to invest in soil improvement and productivity-enhancing measures. Landowners obtained substantially higher returns per hectare than sharecroppers, which reflects the relatively low efficiency associated with sharecropping arrangements.

The relationship between tenure security and agricultural sustainability is further demonstrated by evidence on farmers' adoption of sustainable agricultural practices. Nkomoki et al. (2018), examining the effects of land tenure on sustainable farming and food security in Zambia, found through probit regression analysis that land ownership significantly influenced the adoption of sustainable agricultural practices. Households operating under traditional land tenure were 17.4%, 17.2%, and 9.1% less likely to adopt agricultural diversification, agroforestry, and planting basins, respectively, than households with statutory tenure. Greater

tenure security may encourage farmers to adopt practices whose benefits accrue over a longer period, particularly when such practices require sustained investment and confidence that farmers will continue to benefit from the land.

However, the effects of tenure reform are not necessarily uniformly positive. While formalisation and individualisation may strengthen incentives for investment, changes that disrupt established customary arrangements can also create competition and uncertainty over land use. Mwijage et al. (2011), examining subsistence agriculture and farm productivity in Tanzania's Bukoba District, found that tenure reforms that enabled individuals to acquire previously communal lands destabilised customary tenure and existing land-use patterns. Similar to experiences elsewhere in Africa, these reforms intensified competition for land and contributed to the targeting of low-productivity land in Bukoba. The agricultural effects of tenure reform depend not only on whether land rights become more formal or individualised, but also on how reforms are implemented and how they interact with existing customary institutions and patterns of land access.

Land tenure is an important institutional factor shaping agricultural investment, productivity, and the adoption of sustainable farming practices. Secure and clearly defined land rights can strengthen farmers' incentives to invest in long-term improvements and sustainable production, whereas poorly implemented reforms may disrupt established land-use arrangements and generate competition for productive resources. Thus, the relationship between land tenure and agricultural practices should be understood not simply in terms of formal ownership, but in terms of the security, stability, and practical benefits that tenure arrangements provide to farmers.

2.2. Theoretical Framework

This study is grounded in Marxist Development Theory, which critiques the imperialist roots of capitalist development that exacerbate structural inequalities and promote Eurocentric biases (Linklater, 1990). Economic theorists introduced the "structuralist" concept to address the unique challenges faced by Third World economies reliant on industrialised nations (UK Essays, 2018). In response, Third World governments utilised policy measures such as subsidies and tariff protection to counteract this dependency (Cherif & Hasanov, 2024). Nevertheless, the Marxist approach to development often mirrored the growth-centric paradigm of the modernisation theory it aimed to oppose (Kyianytsia, 2021).

The main theoretical distinction was how the resulting economic gains should be owned and managed. Over time, however, these economic and political systems became known as 'State capitalism', in which the wage labour system persisted, but the economic gains (surplus value) were appropriated by the State and members of the party and State bureaucracies (Lane, 2023). Marxist development theory successfully explains the structural disparities, class struggles, and power dynamics that underpin land tenure system changes in rural and urban settings of the Western Highlands of Cameroon. It demonstrates how privatisation and state-centric land regulations deprive rural farmers of the advantage of elites and agro-pastoralists. State laws (such as Cameroon's 1974 land ordinance) frequently commodify and alienate land from subsistence farmers. Powerful elites and cattle graziers use legal loopholes to acquire enormous swaths of customary land, thereby privatising community resources.

Individuals and groups in society compete for a share of the limited resources available to humanity (Prayogi, 2023). These problems, combined with inequality in access and control over land, can lead to conflicts as individuals or communities compete for finite resources. The current imbalance between females, small-scale subsistence farmers, wealthy, politically connected elites, and commercial cattle graziers has allowed the wealthy class to obtain titles or state leases, while marginalised farmers have more fragmented and insecure holdings.

The Western Highlands of Cameroon, notably the rural and urban settings (which extend from major centres like Bamenda to rural places like Wum and Bafut), are defined by a complex dual system of land ownership. The Marxist framework gives an important perspective on how the environment influences agricultural realities on the ground. All these underscores the relevance of the Marxist Development Theory in understanding the effects of land tenure system changes on agricultural practices in the rural and urban settings of the Western Highlands of Cameroon.

3. Methodology

3.1. Research Design

The effects of land tenure system changes on agricultural practices in rural and urban settings in Cameroon's Western Highlands were investigated using a mixed research design combining quantitative and qualitative methods. Because land tenure issues include both hard economic data and complicated cultural factors, a single technique cannot capture the entire

complexity of the situation, and so the mixed method design is appropriate. Two Divisions (Mezam and Menchum) were purposively chosen, representing urban and rural settings in the Western Highlands of Cameroon, respectively. Due to the lack of official baseline data, a cross-sectional survey was undertaken in the research areas between 2018 and 2019, as is common for preparatory data collection.

3.2. Participants of the Study

Participants in the study comprised households from both agricultural and non-farm sectors in the urban and rural settings. In the urban setting, the study was conducted in the Tubah and Bafut Subdivisions. Tubah, with a population of approximately 52,635, experiences significant land pressure due to its proximity to the University of Bamenda. In contrast, Bafut, home to about 129,363 residents, maintains a stronger, centralised authority over land distribution. In the rural setting, Menchum Valley and Wum Central Subdivision also featured in the study, with estimated populations of 50,235 and 65,484, respectively. Menchum Valley offers better agricultural potential due to its lower elevations, while Wum Central faces high density and conflict driven by land demand. Both urban and rural settings operate under customary and statutory land tenure systems.

A study with 520 respondents utilised a multi-stage sampling method to address time, budget, and security limitations. The sample was divided equally between two settings, urban and rural, purposively chosen in the Western Highlands of Cameroon, ensuring geographical representation. These settings exemplify conflicts between statutory and customary land laws, facilitating a comparative analysis of land tenure system changes on agricultural practices in urban and rural areas. Second, two Subdivisions were purposively chosen from each setting, for a total of four Subdivisions.

Cluster sampling was utilised in the study due to the challenges in developing a sampling frame. The primary thoroughfares of each Subdivision were identified, and villages with more than one was pooled to create sampling frames. Eight clusters were randomly selected from a total of twelve, with three clusters taken from each of the four Subdivisions.

Researchers classified villages into clusters and identified individual household heads within each cluster, using a simple random sampling technique without replacement to obtain the necessary number of respondents.

Nineteen key informants were purposively selected due to their significance to the study's objectives, including land tenure experts, local government representatives, and community leaders. Additionally, snowball sampling was employed, where initial informants recommended others who could provide relevant data. This selection was based on the researchers' belief in their extensive knowledge of the topic and their capacity to contribute to the research questions.

3.3. Instrumentation and Data Gathering Process

The study utilised three primary data collection instruments: a semi-structured questionnaire, a key informant interview (KII) guide, and observation. A one-month pilot study in August 2018, aimed to gather data under challenging sociopolitical conditions characterised by frequent lockdowns, was conducted to create familiarity with the study areas. During this time, the researchers received the requisite licenses from Divisional Officers and Traditional Chiefs for fieldwork and arranged for lodging. The lead investigators recruited three qualified research assistants and taught them how to collect data using the semi-structured questionnaire, KII guide, and observational guide. They spent nine months in the field, collecting data from 520 respondents and important informants.

3.4. Data Analysis

The study involved cleaning data in an Excel spreadsheet and analysing it with SPSS Version 25. Descriptive statistics and binary logistic regression were applied to comparatively assess the effects of LTS changes on APs in urban and rural settings in the WHC. KII data were transcribed verbatim as soon as possible following the interview. Identified categories were explicitly defined and operationalised, with codes allocated to each. The interviews' coded data were compared to identify differences and similarities; the findings were analysed and presented.

3.5. Research Ethics

This study was conducted in accordance with the ethical guidelines set by the University of Buea, Cameroon. The conduct of this study was approved and given relative clearance(s) by the Senior Divisional Officers (SDOs) for Mezam and Menchum Divisions.

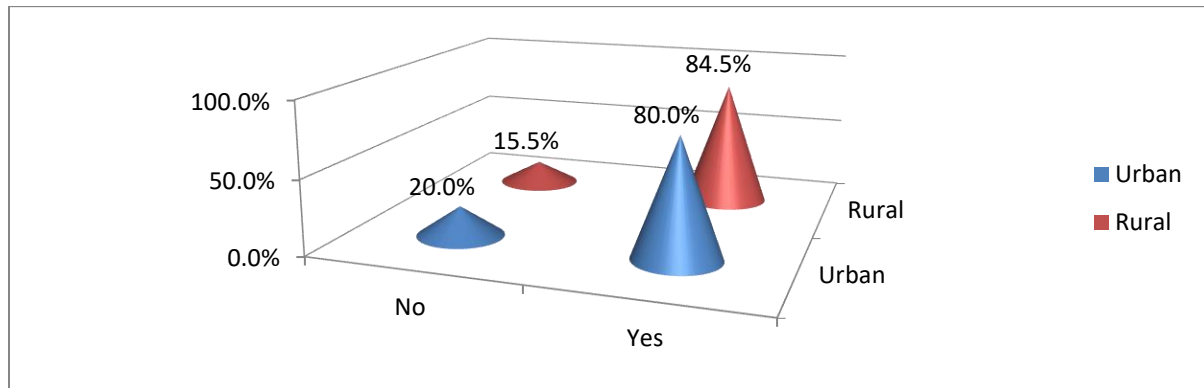
4. Findings and Discussion

4.1. Effects of Land Tenure System Changes on Agricultural Practices

Figure 1 shows the examination of the effects of land tenure system changes on agricultural practices, as well as the anticipated effects of such changes in both settings.

Figure 1

Sociological effects of land tenure system changes



Source: Field Data (2021)

Results indicate that, while 82% of respondents agreed to a change in their land tenure system, 18% believe nothing has changed in their land tenure system in the entire sample, with no statistically significant differences between responses from urban and rural settings (80% and 84.5% respectively, $p > 0.05$). The results suggest rapidly changing LTS in both urban and rural settings in the WHC, with implications for agricultural practices. Since private ownership encourages economic investments (Barzel, 1997), agriculture is likely to increasingly become intensive over time in both urban and rural settings. Key informant interview supported this view and added that:

“Most farmers in urban settings use inputs such as improved seeds and fertilisers, and often engage in two cropping seasons per annum, on the same piece of land.”

(65 years old key informant, Mezam (urban) during KIIs session, 20th October 2018)

The result lends credibility to Kenfack and Teguia's (2019) empirical findings, which revealed that tenure security promotes sustainable land use practices, long-term investment, and improves livelihood strategies and poverty reduction across space and time. The findings also support Mdoda and Gidi (2023), on the role of land ownership in increasing agricultural

productivity in rural areas of the Eastern Cape Province, South Africa, that totally owned small farms produced more agriculturally than rented large farms.

4.2. Effects of Land Tenure System Changes on Agricultural Practices in Urban and Rural Settings

Participants were asked to give a score (0-4) indicating the extent to which land tenure system changes had an impact on specific social activities (Table 1).

Table 1

Effects of land tenure system changes on agricultural practices in urban and rural settings

Effects	Settings	Mean	Std. Deviation	Std. Error Mean	F-Distribution
Resulted in land boundary conflicts	Urban Setting	2.18	1.795	.105	F= 6.750
	Rural Setting	2.41	1.673	.111	p = 0.010
Helped resolve land disputes	Urban Setting	1.77	1.907	.112	F= 6.477
	Rural Setting	1.69	1.752	.116	p = 0.011
Increased inter-ethnic conflicts	Urban Setting	1.72	1.691	.100	F= 0.784
	Rural Setting	1.62	1.581	.105	p > 0.05
Increased land corruption	Urban Setting	2.86	1.800	.106	F= 2.567
	Rural Setting	3.24	1.666	.110	p > 0.05
Increase in land grabbing	Urban Setting	3.04	3.601	.211	F= 0.347
	Rural Setting	3.56	4.440	.294	p > 0.05
Scarcity of farmlands	Urban Setting	2.89	1.885	.111	F= 0.866
	Rural Setting	2.96	1.943	.129	p > 0.05
Increase in land prices	Urban Setting	3.61	1.722	.101	F= 6.817
	Rural Setting	3.86	1.537	.102	P = 0.009
Weakened individual relationships	Urban Setting	2.13	1.717	.101	F= 0.713
	Rural Setting	2.22	1.646	.109	p > 0.05

Std. =Standard Deviation; Standard Error of the Mean; Frequency Distribution

As shown in Table 1, except for increased inter-ethnic conflicts and the resolution of land disputes, the mean scores for all tested effects of land tenure system changes were generally higher in rural settings than in urban settings. Land is the foundation of the rural economy and the major means of subsistence. In urban settings, farming is typically a side activity (e.g., modest backyard gardens or community plots), with official employment or trade providing the primary source of revenue. One hypothesis which emerges from this result is

that social community-based institutions are probably still playing a stronger role in governing society, in rural settings, as compared to the urban settings, where legal institutions play a much stronger role. This study's findings are congruent with those of Suchá et al. (2020), who studied land tenure security and its consequences for investments in urban agriculture in Soweto, South Africa. Land tenure security for urban farmers is often framed as a narrow concept, focusing solely on legal tenure security while overlooking other dimensions, such as perceived and de facto tenure security.

Findings also revealed that the main effect of land tenure system changes was an increase in land prices (a mean score of 3.86 in rural settings and 3.61 in urban settings, $p = 0.009$). The increase in land prices in rural settings suggests a recent growth in the land market with negative consequences on agricultural practices. The results are consistent with a study conducted in South Africa's Eastern Cape, Limpopo, and KwaZulu-Natal, which reveals that this manifests itself as urban-to-rural migration, with politicians and civil servants constructing expensive homes on customary property (Molepo, 2023). This raises land values and promotes the commercialisation of rural property. As land values grow, farmers may be compelled or tempted to sell their land, with major consequences for agriculture. Marxist Development Theory implies that the rising cost of land concentrates ownership in the hands of the bourgeoisie (rich investors and commercial agro-enterprises), while rural majority populations become proletarianised (Rummel, 1977). Smallholder peasants become landless wage workers or tenant farmers. Therefore, while there was a huge increase in land prices in both rural and urban settings, the effect was significantly higher in rural than in urban settings, as the land rush is relatively recent and therefore is viewed by the inhabitants of rural settings as a key social change.

Key informant interviews supported these results, adding that *“the increase in land prices in rural settings is just a recent issue, and this has been fuelled by those living abroad and their families as a means of investing their money back at home through remittances”*. In other words, the participants in rural settings have realised the financial value of land in the recent past and tend to attribute more value to land acquisition than respondents in urban settings, where a land market has existed for a longer time, given its rapid urbanisation. In the study areas, this process of increase in land prices is affecting land relations in the Western Highlands of Cameroon.

The increase in land grabbing is higher in rural settings (3.56) than in urban settings (3.04), even if the difference does not seem to be statistically significant ($p > 0.05$). In rural areas, land is frequently owned under customary tenure or ancestral rights. These rights are typically unwritten and rarely documented in formal government cadasters (Ribar, 2026). When tenure arrangements shift, such as through privatisation reforms or state-led modernisation, these lands are frequently labelled as "vacant," "idle," or "state-owned" (Ribar, 2026). This legal loophole enables governments or companies to quickly acquire or lease land while avoiding local populations. Marxist Development Theory emphasises "primitive accumulation," in which the state or powerful economic elites privatise previously communal or customary land, depriving smallholders of their means of survival (Özsu, 2019). As a result, policy reforms are required to identify and safeguard traditional land rights while also improving overall land resource governance.

Key informant interviews support the quantitative data findings regarding the increases in land grabbing in rural settings. According to a male respondent:

"It could result to food insecurity, increase poverty and hardship, low standard of living, encourages ethnic wars, destruction of property and lives and an over halt in development initiatives, destroys individual relationships, jealousy, hatred and envy, cruelty on human beings and also on animals, family cohesion and a rise in joblessness and disunity among the population" (46 years old key informant, Mezam Division during KIIs session, 25th September 2019).

4.3. Ranking the Effects of Land Tenure System Changes on Agricultural Practices in Urban and Rural Settings

Table 2 revealed that in both urban and rural settings, the major effects of land tenure system changes were ranked in ascending order and increased in land prices, increased in land grabbing, and scarcity of farmlands ranked (1st, 2nd and 3rd) positions for both settings. Land tenure system changes often trigger land market commodification and privatisation in both rural and urban settings. This accelerates the value of land, necessitating illegal land grabbing, and causes severe scarcity of farmland, displacing local and marginalised populations in both rural and urban settings. The results are consistent with Tione and Holden's (2020) study on urban proximity, land demand, and land shadow prices in Malawi. The fast increase in demand for large-scale land transfers following the significant spike in energy and food prices had an impact on rural smallholders' land valuations, even in Malawi's remote rural districts. Marxist

Development Theory implies that scarcity and land grabbing are aspects of what Marx referred to as "primitive accumulation." Wealthy elites, corporations, or the state forcibly or economically dispossess smallholder farmers and urban poor, depriving them of their means of production to consolidate land into private ownership (Scoones, 2021).

Table 2

Effects of land tenure system changes on agricultural practices by ranks in urban and rural settings

Variables	Settings	Rank
Increase in land prices	Urban setting	-
	Rural setting	1 st
Increase in land grabbing	Urban setting	-
	Rural setting	2 nd
Increased land corruption	Urban setting	4 th
	Rural setting	3 rd
Scarcity of farmlands	Urban setting	-
	Rural setting	4 th
Resulted in land boundary conflicts	Urban setting	-
	Rural setting	5 th
Weakened individual relationships	Urban setting	-
	Rural setting	6 th
Helped resolve land disputes	Urban setting	-
	Rural setting	7 th
Increased inter-ethnic conflicts	Urban setting	-
	Rural setting	8 th

4.4. Factors Influencing Land Tenure System Changes and Agricultural Practices in Urban and Rural Settings

Thirteen (13) explanatory variables were used in the regression analysis to identify key factors influencing land tenure system changes and agricultural practices in rural and urban settings in the WHC. The results are presented in Tables 3 and 4.

The attributes presented in Table 3 indicate that the model explains 35.8% of the decision to change their land tenure systems in urban settings and 32.5% of the socio-economic factors affecting land tenure system changes in rural settings; representing an increase of over 31 percentage points for urban and over 22 percentage points for rural respectively, as compared to a limited focus on factors only. Overall, the factors (sample mean = 7.85%) and

socio-economic ones (sample mean = 34.15), when combined, explain 42% of the total decision to change their land tenure systems in the urban and rural settings. The regression output is presented in Table 4.

Table 3

Model summary for land tenure system changes decision

Settings	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
Urban	305.076 ^a	.268	.358
Rural	242.466 ^b	.242	.325

Table 4

Factors influencing land tenure system changes decision in urban and rural settings in the Western Highlands of Cameroon

Other Factors	Sample	Settings	Beta	Std. Error Mean	Df	Exp(B)
Sex	.068	Urban setting	.370	.313	12	1.447
		Rural setting	-.218	.358	12	.804
Age	-.038***	Urban setting	-.038**	.014	12	.963
		Rural setting	-.035**	.017	12	.966
Marital Status	.185**	Urban setting	.373**	.114	12	1.452
		Rural setting	.017	.125	12	1.017
Family Size	.079*	Urban setting	.116*	.064	12	1.123
		Rural setting	.024	.075	12	1.024
Educational Level	.404***	Urban setting	.357*	.126	12	1.429
		Rural setting	.528***	.490	12	1.696
Religious Affiliations	.303	Urban setting	.726**	.344	12	2.067
		Rural setting	.273	.359	12	1.314
Main Occupation	.234***	Urban setting	.246**	.086	12	1.279
		Rural setting	.256	.101	12	1.292
Estimated Monthly Income	.000	Urban setting	.000	.000	12	1.00
		Rural setting	.000	.000	12	1.00
Longevity in the Community	-.001	urban setting	.003	.014	12	1.003
		Rural setting	.001	.008	12	1.001
Total Land Size	.212***	Urban setting	.322**	.073	12	1.381
		Rural setting	.178**	.064	12	1.195
Number of Plots having Access To	.016	Urban setting	-.008	.169	12	.992
		Rural setting	-.034	.201	12	.967
Number of Plots Controlled	-.264**	Urban setting	-.287	.181	12	.751
		Rural setting	-.276	.223	12	.759
Position in the Community	.127	Urban setting	.552**	.250	12	1.736
		Rural setting	-.308	.270	12	.735
Constant	-3.147**	Urban setting	-6.286	.378	12	.002
		Rural setting	-1.281	.531	12	.445

Note: * = (Significant at 10%), ** = (Significant at 5%) and *** = (Significant at 1%)

Of significant importance are the marital status of the respondent ($B = 0.185$, $p < 0.05$), family size ($B = 0.079$, $p < 0.1$), educational attainment ($B = 0.404$, $p < 0.01$), the main occupation of the respondent ($B = 0.234$, $p = 0.000$) and the total land size owned by the respondent ($B = 0.212$, $p = 0.000$). While three of the variables (age of respondent, longevity in the community and number of plots controlled by the respondent) did not lend themselves as crucial variables affecting land tenure system changes, the estimated household income did not affect land tenure system changes ($B = 0.000$).

Comparatively, the marital status ($B = 0.373$ for urban and $B = 0.017$ for rural), the size of the family ($B = 0.116$ for urban and $B = 0.024$ for rural), educational level ($B = 0.357$ for urban and $B = 0.528$ for rural), religious affiliations ($B = 0.726$ for urban and $B = 0.273$ for rural) the main occupation of the respondents ($B = 0.246$ for urban and $B = 0.0256$ for rural), the longevity in the community ($B = 0.003$ for urban and $B = 0.001$ for rural) and the total land size ($B = 0.322$ for urban and $B = 0.178$ for rural) were robust in affecting land tenure system changes in both urban and rural settings with positive effects on agricultural practices.

Because the (B) coefficients are consistently higher in urban settings compared to rural settings, socioeconomic and demographic shifts have a stronger, more volatile impact on urban land tenure system changes and agricultural practices. The findings are comparable to those of Giri and Chatterjee (2021) on the factors influencing changes in the insured status of rural and urban households over two time periods in India. The results of the logistic regression models demonstrate that income and socioeconomic status have the largest impact, both positively and adversely, on insurance acquisition and termination. Financial inclusion, as measured by bank relationships, boosted insurance coverage in rural households but not in urban households (Giri and Chatterjee, 2021). According to Marxist Development Theory, these changes reflect class dynamics as well as structural power imbalances over the means of production (land) (Patnaik, 2016). The main lesson is that policymakers should develop agricultural and land reform using decentralised, location-specific solutions rather than a "one-size-fits-all" approach.

Of significance to both settings was the educational level of the respondent and the total land size. For instance, it was hypothesised that as the respondent's educational level increases by one unit, the probability that the respondent will change his or her land tenure system increases by 1.429 times in urban and 1.696 times in rural settings. Similarly, as the total land size increases by one unit, the probability of the land tenure system changing significantly increases by 1.381 times in the urban settings and 1.195 times in the rural settings.

The effect of education on land tenure system changes can be attributed to the fact that more educated respondents are likely to change their land tenure system than less educated ones. More educated participants are aware of land tenure policies in the country, as well as the importance of having land titles, which is one of the key conditions (collateral) of securing loans from financial institutions such as commercial banks. The Marxist Development Theory implies that educational levels reflect the division of labour (Ford, 2014). Lower educational levels provide a submissive, unskilled manual workforce, but higher, credentialed education produces management that serves bourgeois interests (Ford, 2014). These changes in the land tenure system, due to more education, guarantee their ability to invest more due to land formalisation and certification.

In addition to achieving more education, increasing land size by participants was also a significant factor affecting land tenure system changes. By acquiring more land, households tend to change their land tenure system, shifting from communal to private ownership. Because accumulation of natural capital (land) is one of the key factors for agricultural production, households with larger land sizes with secure property rights tend to invest more than those without secure property rights. This probably explains why those with larger land sizes tend to shift from communal to private ownership through the acquisition of individualised titles.

While the strongest and most significant contributor to land tenure system changes in urban settings was the religious affiliation of the respondent ($B = 0.726$, $p < 0.05$), the most significant contributor to land tenure system changes in rural settings was rather the educational level of the respondent ($B = 0.528$, $p = 0.000$). Even though the religious affiliations show the strongest contribution, probably through informal education from the various religious denominations or through the introduction of the notion of capitalism by the religious denomination, participants who believe in these religious denominations will tend to change their land tenure system more than those who still believe in their traditional land tenure system. Irrespective of whether respondents receive formal or informal education through religious affiliations, their decisions to change their land tenure systems result from being educated about the importance of private land ownership. This probably explains why the educational level of the respondents (formal or informal) is the most significant attribute that contributes to land tenure system changes in the urban and rural settings.

The age of the respondent, just as was the case in the entire sample, does not lend itself as a crucial variable affecting land tenure system changes in both settings ($B = -0.038$ for urban

and $B = -0.035$ for rural, $p < 0.05$). This is probably because community members, whether old or young, need land for either agricultural production or for construction. Therefore, land tenure system changes cannot be determined by the age of the respondent in the study areas.

4.5. Anticipated Effects of Land Tenure System Changes and Agricultural Practices in Urban and Rural Settings

The anticipated effects of land tenure system changes in the study areas, as reported by the participants through the semi-structured questionnaire, are summarised in Table 5.

Table 5

Future effects due to land tenure system changes

Anticipated Effects	Settings	Mean	Std. Deviation	Std. Error Mean	F-distribution	Rank
Destruction of Crops	Urban setting	2.66	1.719	.101	$F = 7.9213$	2 nd
	Rural setting	2.93	1.497	.099	$p = 0.005$	1 st
Destruction of individual relationships	Urban setting	2.80	1.521	.089	$F = 0.110$	1 st
	Rural setting	2.70	1.481	.098	$p > 0.05$	2 nd
Violent inter-ethnic conflicts	Urban setting	2.29	1.763	.103	$F = 0.600$	3 rd
	Rural setting	2.29	1.725	.114	$p > 0.05$	4 th
Destruction of animals	Urban setting	2.10	1.840	.108	$F = 1.430$	6 th
	Rural setting	2.33	1.737	.115	$p > 0.05$	3 rd
Destruction of community relationships	Urban setting	2.25	1.507	.088	$F = 0.198$	4 th
	Rural setting	2.09	1.555	.103	$p > 0.05$	7 th
Loss of prestige	Urban setting	2.10	1.758	.103	$F = 1.794$	7 th
	Rural setting	2.21	1.651	.109	$p > 0.05$	5 th
Displacement of farm households	Urban setting	1.94	1.566	.092	$F = 2.691$	8 th
	Rural setting	2.10	1.674	.111	$p > 0.05$	6 th
Displacement of persons and families	Urban setting	2.11	1.695	.099	$F = 0.937$	5 th
	Rural setting	1.93	1.628	.108	$p > 0.05$	8 th
Loss of property	Urban setting	1.77	1.607	.094	$F = 0.334$	9 th
	Rural setting	1.92	1.577	.104	$p > 0.05$	9 th
Loss of human lives	Urban setting	1.22	1.509	.088	$F = 0.917$	11 th
	Rural setting	1.42	1.595	.106	$p > 0.05$	10 th
Destruction of traditional ritual sites	Urban setting	1.34	1.503	.088	$F = 1.527$	10 th
	Rural setting	1.37	1.431	.095	$p > 0.05$	11 th

Legend: Std. =Standard Deviation; Standard Error of the Mean; Frequency Distribution

Table 5 shows that two main effects are expected to happen in the future because of land tenure system changes, with negative consequences on agriculture in the study areas: the destruction of crops and the destruction of individual relationships in the community. While the main effects in urban settings were the destruction of individual relationships and the destruction of crops (ranked first and second respectively), those in rural settings were rather the destruction of crops and the destruction of individual relationships (ranked first and second respectively). Of least importance to the respondents was the destruction of traditional ritual sites, loss of human lives and loss of property.

4.6. Model Summary for Anticipated Effects of Land Tenure System Changes on Agricultural Practices

The attributes presented in Table 6 indicate that the model explains 22.8% of the possible anticipated effects of land tenure system changes affecting agriculture in urban settings (Nagelkerke R Square) and 19.4% of the possible anticipated effects of land tenure system changes in rural settings.

Table 6

Model summary for anticipated effects of land tenure system changes on agricultural practices

Settings	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
Urban	346.364 ^a	.171	22.8%
Rural	275.414 ^b	.144	19.4%

The results from the logistic regression on the anticipated effects of land tenure system changes by Division are presented in Table 7. The results show that there is a possibility of witnessing displacement of farm families ($B = 0.186$), loss of property ($B = 0.293$), destruction of crops ($B = 0.187$), destruction of community relationship ($B = 0.511$), displacement of persons ($B = 0.937$) and violent inter-ethnic conflicts ($B = 0.653$) in the study area as a result of future land tenure system changes. Of significant importance are the destruction of community relationships ($p < 0.1$), displacement of persons ($p = 0.000$) and violent inter-ethnic conflicts ($p < 0.05$).

Comparing both settings, only the displacement of farm households ($B = 0.353$ for urban and $B = 0.005$ for rural), destruction of crops ($B = 0.049$ for urban and $B = 0.450$ for rural), destruction of community relationships ($B = 0.322$ for urban and $B = 1.13$ for rural) and

displacement of persons ($B = 1.196$ for urban and $B = 0.630$ for rural appeared positive to future effects of land tenure system changes on agricultural practices.

Table 7

Variables in the equation for anticipated effects of land tenure system changes on agricultural practices in both settings

Anticipated Effects	Sample	Settings	Beta	Std. Error Mean	Df	Exp(B)
Displacement of farm households	0.186	Urban setting	0.353	0.341	10	1.447
		Rural setting	0.005	0.411		1.005
Loss of property	0.293	Urban setting	-0.018	0.373	10	0.982
		Rural setting	.903**	0.403		2.467
Loss of human lives	-1.05***	Urban setting	-1.153**	0.326	10	0.316
		Rural setting	-1.094**	0.327		0.335
Destruction of crops	0.187	Urban setting	0.049	0.433	10	1.051
		Rural setting	0.45	0.542		1.569
Destruction of animals	-0.24	Urban setting	-0.113	0.385	10	0.893
		Rural setting	-0.279	0.421		0.756
Destruction of individual relationships	-0.247	Urban setting	0.045	0.421	10	1.046
		Rural setting	-0.573	0.538		0.564
Destruction of community relationships	.511*	Urban setting	0.322	0.398	10	1.379
		Rural setting	1.13**	0.48		3.095
Displacement of persons	.937***	Urban setting	1.196**	0.356	10	3.307
		Rural setting	.630*	0.0378		1.877
Destruction of traditional ritual sites	-0.087	Urban setting	-0.189	0.306	10	0.828
		Rural setting	0.265	0.395		1.304
Loss of prestige	-.929***	Urban setting	1.042***	0.275	10	0.353
		Rural setting	-1.125**	0.437		0.325
Violent inter-ethnic conflicts	.653**	Urban setting	1.043***	0.274	10	2.839
		Rural setting	-0.437	0.425		0.646
Constant	-.592*	Urban setting	-.854*	0.439	10	0.426
		Rural setting	-0.361	0.601		0.697

Note: * = (Significant at 10%), ** = (Significant at 5%) and *** = (Significant at 1%)

The urban environments rely extensively on land restructuring to solve inefficiencies, with the displacement of people ($B = 1.196$) and farm households ($B = 0.353$) serving as major reform drivers. In rural settings, the focus shifts to destruction of community relationships ($B = 1.13$) and destruction of crops ($B = 0.450$), likely because land rights disputes often uproot indigenous or historical communal farming setups. The results differ from those of Mkodzongi (2013), who investigated the prospects and restrictions of fast-tracking land reform and rural livelihoods in Zimbabwe's Mashonaland West Province from 2000 to 2013. According to the findings, resettlement farmers now have access to higher-quality land as well as options for

employment at mines and gold panning, which have improved their livelihoods overall. Land reform has numerous benefits that extend beyond its utility as a tool of production (Mkodzongi, 2013). Fast-track land reform enabled people to reclaim ancestral lands lost during colonial-era forced removals, as well as reconcile with ancestral tombs and other spiritual symbols (Mkodzongi, 2013). Marxist Development Theory implies that land tenure system changes, as well as the displacement of farm households, are planned processes of capitalist expansion.

Of significant importance for both settings is the displacement of persons ($p = 0.000$ for the urban and $p < 0.1$ for the rural setting). Thus, if the land tenure system changes for an individual, the probability that there will be displacement of persons because of that land tenure system change increases by about 3.307 times in the urban setting and 1.877 times in the rural setting. Marxist Development Theory implies that displaced persons are changed from self-sufficient farmers into a "floating" or "latent" surplus population (Marx, 1867). They become low-wage, vulnerable labourers in cities, mines, and commercial farms. This oversupply of labour decreases overall wages, increasing corporate profits and structural inequity (Marx, 1867).

There were, however, mixed results with some of the anticipated effects in both settings. For instance, while it was observed that loss of property was a significant future threat because of land tenure system changes in rural settings ($B = 0.903$, $p < 0.05$), it was not a threat in urban settings ($B = -0.018$). While violent inter-ethnic conflicts were expected to be significantly higher in urban settings ($B = 1.043$, $p = 0.000$), it is not of serious concern in rural settings ($B = -0.437$) and tends to negatively affect agricultural practices. This is probably because land is scarcer for agriculture or construction in urban settings than in rural settings due to an increase in population, which has drastically reduced land for agriculture. As a result of this, there is more demand for the limited land in the urban setting than in the rural setting, which may result in conflicts over who owns the land and to whom to sell the land. In addition to this, conflicts may be higher in urban than rural settings because of double selling of the same piece of land to more than two individuals, as well as the production of fraudulent land titles.

5. Conclusion

The effects of land tenure system changes on agricultural practices in the urban and rural settings of the Western Highlands of Cameroon were investigated. Findings revealed that

the main effect of land tenure system changes was an increase in land prices in both settings. The effect was significantly higher in rural settings than in urban settings, as the land rush is relatively recent and therefore is viewed by the inhabitants of rural settings as a key social change. The increase in land prices in rural settings indicates a recent growth in the land market, in rural settings with negative consequences for agricultural practices. This process of increase in land prices is affecting land relations in the Western Highlands of Cameroon. The increase in land grabbing was higher in rural settings than in urban settings, even if the difference does not seem to be statistically significant. Except for an increase in inter-ethnic conflicts and resolving land disputes, the mean scores for all the tested effects of land tenure system changes were generally higher for rural settings than for urban settings. The study concludes that in rural settings, social community-based institutions are probably still playing a stronger role in governing society, as compared to the urban settings, where legal institutions play a much stronger role. Further research is, however, necessary to ground these contentions.

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AI Declaration

The author declares the use of Artificial Intelligence (AI) in writing this paper. In particular, the author used Quill Bot Paraphrasing tool in paraphrasing the manuscript and grammar checker. The author takes full responsibility in ensuring proper review and editing of content generated using AI.

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