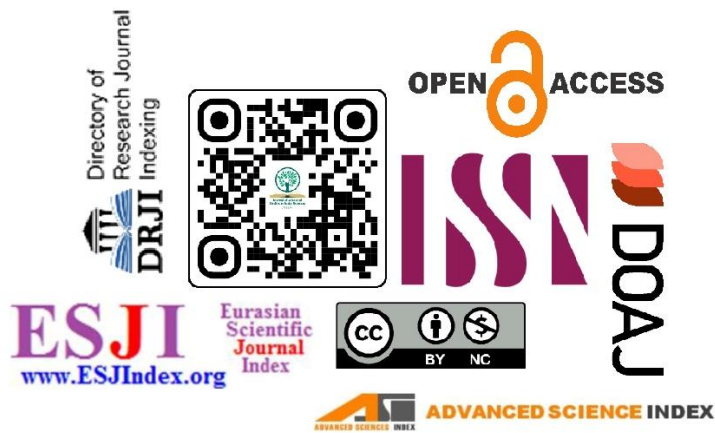
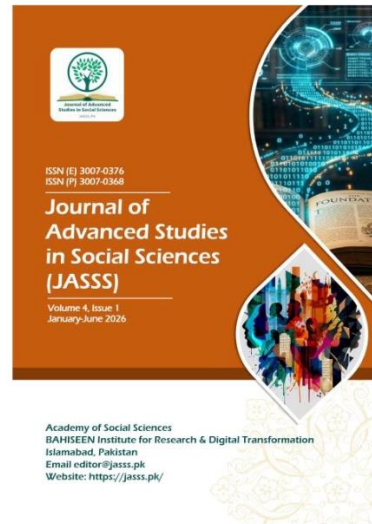


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Changes in Land Tenure System and Agricultural Practices in Mezam and Menchum Divisions of the Western Highlands of Cameroon

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Abstract

The study examines changes in land tenure and agricultural practices in Cameroon's Western Highlands, namely in the Mezam and Menchum Divisions of the Northwest Region. The primary data were collected using a mixed-methods approach that included a structured questionnaire, in-depth interviews, and observations. A multistage sampling method was utilised to choose 520 individuals. Both primary and secondary data were collected. Descriptive statistics were analysed. The results suggest that most participants either buy their land (29.5% in Mezam and almost 46% in Menchum) or inherit it (more than 32% in Mezam and 24.5% in Menchum, $p = 0.057$). Only 25% of respondents had previously acquired land rights through institutions, compared to roughly 80% (a 55% difference) at the time of the research. The percentage of participants possessing legitimate land certificates rose from about 35% to more than 66% (a 31% increase). Most people utilise their land to raise food crops (over 96%), cash crops (71%), or both (over 68%). More than 54% and 56% of respondents in the Mezam and Menchum Divisions, respectively, confirmed these modifications. In general, it appears that communities in Cameroon's Western Highlands are moving away from traditional land tenure systems.

Keywords: Agricultural Practices, Changes in the Land Tenure System, Western Highlands, Cameroon

1. Introduction

The relationship between changing land tenure systems and agriculture has been studied extensively worldwide. Land tenure is a broad term referring to the system of rules, whether legal or customary, that govern how people relate to land (Kasimbazi, 2017). It has a significant impact on social structure, the economy, and security by determining who has the right to use, control, and transfer land for how long and under what conditions (Kasimbazi, 2017; Bohannan, 2018). Tenure, therefore, refers to the ownership and rights associated with land (Bohannan, 2018). Many rural African communities express and govern ownership, possession, and access, as well as restrict usage and transfer, through what are known as "customary land tenure" systems (Rights, 2012) – systems through which property is owned, used, and managed in accordance with indigenous, unwritten, and customary practices rather than formal law are referred to as customary land tenure (RA, 2017). According to Chauveau (2007), it is widespread throughout Sub-Saharan Africa, taking up to 90% of the land in certain countries. Additionally, customary tenure is still practised by indigenous groups in parts of Asia, the Pacific, and Latin America, where it has changed over generations to accommodate different ecologies and social structures (Chimhowu, 2019). A statutory land tenure system is a government-defined framework in which land rights are formalised through laws, registration, and titles, treating land as private property with clear ownership, transferability (sale, lease, inheritance), and state-backed security against eviction. It differs from customary systems in that it provides legally enforceable individual control and economic potential, though it frequently requires reform to incorporate traditional rights (Kasimbazi, 2017). The rights one holds have a direct impact on access and control, which are critical in the agriculture sector.

Agricultural landowners with more secure land rights have been found to increase investments and agricultural productivity in Asia (Lawry, 2015) and Africa (Assede et al., 2023), where more than half of the population relies on agriculture for a living, as well as intensification in European farms, where less than 5% of the population is employed in agriculture (Schils et al., 2022). Despite this, both statutory and customary land tenure structures persist and operate concurrently in many African nations (Buabeng et al., 2025); their discrepancies continue to be a source of contention, particularly considering rising urbanisation and population expansion.

The extensive land tenure insecurity in Cameroon, worsened by increasing pressure or demand for land, highlights the clash between customary norms and "modern" land law (Cyrille & Arrey, 2024). Unfortunately, necessary reforms in institutions, laws, and policies have not always coincided with evolving patterns of land use and ownership (Assembe-Mvondo et al. 2014). The legal ambiguity of land title has already intensified land-use disputes and their negative consequences (Neba, 2025). For example, the state owns all land in Cameroon, which it can use as needed. Changes in the land tenure system have been noticed in the Western Highlands of Cameroon, as well as the Mezam and Menchum Divisions. Land access is achieved through both formal and informal means (Balgah et al., 2019). Land tenure is a critical problem since it impacts livelihoods and survival in both urban and rural communities (Essougong & Tegui, 2019).

Land is probably the most problematic resource in an urban situation. Its scarcity makes agricultural operations impracticable, especially in the Mezam Division, which is rapidly urbanising, stimulating strong competition for land, a limited resource. To address the problems associated with getting a land title in Cameroon, land reforms in 2005 decreased

the procedures and departments involved, as well as the time required to gain a land title from several years to less than one year (Essougong & Tegua, 2019; Tamasang, 2025). Reforms detailed in Decree No. 2005/481 of December 16th, 2005 (modifying and completing several measures of the decree N°76/165 of April 27th, 1976, governing the criteria of access to the land title) (Tamasang, 2025).

Before this reform, Cameroonians showed little interest in obtaining land titles due to the cumbersome and difficult land registration procedures (Enoh, 2025). Thousands of land titles were issued in Cameroon following the 2005 reforms; this was the result of a decentralised procedure aimed at increasing private property ownership rather than a fundamental change to the legal system (Javelle, 2019). However, fundamental issues such as inconsistent legislation, bribery and corruption, insufficient record-keeping, reliance on traditional organisations to transfer property rights, and delays in the production of land certificates were not resolved (Enoh, 2025). Land occupied after 1974, as well as land considered vacant or inefficiently used, remained ineligible for title (Javelle, 2019). Today, neither legal procedures nor customary tenure structures provide people with enough land security, as the government, elites, agro-industrial enterprises, and influential traditional leaders acquire additional property (Essougong & Tegua, 2019).

Changes in the land tenure system have a significant impact on agriculture; stable tenure promotes long-term investments, sustainable practices (such as soil conservation and agriculture), technology adoption, and loan access, all of which increase productivity (Tenaw et al. 2009). In contrast, insecure or inadequate systems (shared or unclear state rights) result in underinvestment, land degradation, limited access to funding, conflicts, and diminished resilience, all of which impede development. However, well-managed community structures can promote social inclusion (Tenaw et al., 2009; Assede et al., 2023). The Western Highlands of Cameroon exemplify the cohabitation of state-mandated land restrictions with traditional customs. Agriculture is the primary source of income for more than 60% of the population (Balgah et al., 2023). Changes in land tenure (ownership regulations) and agricultural practices have a significant impact on food security, economic growth, poverty alleviation, and sustainability by encouraging long-term investment, increasing productivity, advancing equity, and enabling climate resilience through secure land rights and modern techniques. Secure tenure encourages farmers to adopt sustainable practices and increase soil health, whereas improved institutions can promote land transfers for larger economic advantages, lowering inequality and increasing agricultural potential (Murken & Gornott, 2022). Unfortunately, significant knowledge gaps remain about land-related concerns and agricultural practices in the research area. There is little information available about changes in the land tenure system in the Western Highlands of Cameroon. The study investigated changes in the land tenure system and agricultural practices in the Mezam and Menchum Divisions. Specifically, it looks at (1) land use and agricultural practices, (2) land tenure systems and agricultural practices, (3) land use patterns, (4) changes in land tenure systems over time, and (5) major factors affecting changing land tenure systems in the Mezam and Menchum Divisions.

2. Literature Review

2.1 Changes in Land Tenure System and Agricultural Practices

Tenure security, investment incentives, and land fragmentation are some of the effects of changing land tenure in Europe from family farms to corporate ownership and larger plots on productivity (Alban & Willem, 2020). Secure rights encourage investments and returns,

whereas consolidation increases efficiency but endangers smallholders, resulting in a complex trend of intensification with environmental and social issues (Slaemo et al., 2026). Commercialisation of agricultural produce is an important instrument for raising farm households' standard of living and income while also aiding broader rural development processes (Baird, 2011). At the heart of this process is market integration, or connectedness, which has been a significant focus of State policy across mainland Southeast Asia (Manivong & Cramb, 2008; Phimmavong et al., 2009; Sikor, 2012). Farm households, often driven by the need for stable tenure and better livelihoods, have always actively (re)shaped local institutional arrangements and land access restrictions to meet their economic needs (Suhardiman, 2023).

Land is a critical resource for development, particularly in developing countries where rural inhabitants rely heavily on land-based extractive industries for a living (Pierri et al., 2025). According to Otieno (2025), traditional or indigenous systems of land ownership, as well as rights to private holdings with titles, must be modified to increase agricultural productivity and ensure long-term environmental conservation in Africa. In addition to providing proof of ownership, these titles are meant to increase ownership security and establish land as a commodity that can be exchanged in a volatile land market (Otieno, 2025). Land registration and titling are designed to encourage landowners to make long-term land investments, secure funding to boost agricultural output, and apply sustainable management techniques (Gedefaw, 2023). Individualisation of land ownership from predominantly customary-based systems is opposed because, while it may alleviate land productivity issues, it often does so at the expense of equality, resulting in landlessness and social tensions (Kenya Law Reports, 2010). Discussions about land tenure transformation in Africa usually lack a grasp of farming systems and their structure (Mwijage et al., 2011). Tenure alteration is commonly assumed to boost African agricultural productivity, making this disparity notable (Mwijage et al., 2011). The structure of the farming system ultimately affects the productive use of land; policy adjustments must take this into account.

Cameroon's land policy changed from communal pre-colonial institutions to colonial State authority, resulting in unstable, uneven tenure that benefits elites while excluding the majority (Henning, 2021). This resulted in recurrent conflicts, women's marginalisation, and challenges to food security and development (Fonjong et al., 2010). Postcolonial reforms mostly failed to eliminate the colonial era's centralised bureaucracy and empower local populations, resulting in ongoing informality and resource management challenges (Henning, 2021). Understanding food security and well-being is especially crucial given rising land pressures and population increase (Shu et al., 2020; Asanya et al., 2023; Neba, 2025). To be effective, these revolutions must address deeply established local dynamics, empower communities, and provide fair, transparent governance. This makes land commodification ideas important to this investigation.

2.2 Theoretical Literature Review

The theoretical foundation of this inquiry is the thesis of land commodification theories. According to these theories, the metabolic rift, which began during the colonial era and continues today under renewed capital accumulation processes (Hardt & Negri, 2001), is exacerbated by the material flow from rural areas to national and international markets (Foster, 1999. Moore, 2011). Harvey (2006, p. 6) proposes replacing Marx's standard concept of "primitive accumulation" with "accumulation by dispossession." He defines it as the commodification and privatisation of social and public wealth, driven by

globalisation and neoliberal policies. According to Harvey (2005), these processes include redefining land and marine ownership through grabbing procedures, which jeopardise traditional ways of production and consumption. Gloria et al. (2018) report that present accumulation through dispossession methods happens in regions where livelihoods are governed by open access, State or common property, low-value agricultural fields (known as marginal lands), or dry-land zones. These features are pertinent to the case being discussed. Some scholars regard the Western Highlands of Cameroon's semi-arid land as low-quality or marginal, particularly when owned by agricultural groups (Tamfuh et al., 2020). However, what was once marginal land for agriculture is now "revalued" and available for agricultural production as new technology works to overcome earlier output constraints or when a scarcity of resources or land may make what was previously marginal valuable (Gloria et al., 2018).

Small to medium-sized landowners and producers are increasingly displaced or absorbed by global capitalism to make way for large-scale mining or agricultural production enterprises. This is because capital is continually looking for new regions where it can extract products and resources and transfer the highest rents via liberalised international markets. According to Temper et al. (2015), this process uproots landowners and producers while also producing socio-environmental problems, ranging from resource extraction to waste disposal. In these circumstances, the dissociating process allows for unfettered material exchanges between the local and global (Russi et al., 2008). This bridges metabolic gaps between humans and the environment in general, as well as across different parts of the planet, particularly rural and urban areas (Foster, 1999). Even if extraction, production, consumption, and waste take place in different places of the world, they are all interconnected and part of economic globalisation. As a result, there is a dialectical relationship between predatory practices of environmental degradation and dispossession on the one hand, and capitalist expansion on the other (Moore 2011; Gordillo 2017). We agree with Hall et al. (2015) that additional empirical understanding about how these processes occur in contexts is required, even though we share the concept of the bigger capital accumulation processes stated above. To accomplish this, we had to closely monitor the various "reactions from below" as well as the range of interactions between "land deals" and other resource interventions.

Dispossession can occur through violent methods (Paret, 2023), as well as more subtle processes of participation and enrolment in "land deals" that may or may not entail resistance and/or dispossession (Hall et al., 2015). Our focus here is on how commoners in the Western Highlands agricultural community react to a variety of land agreements and resource conflicts. The sheer variety of sectoral interests and interconnections in our research areas provides fertile empirical ground for investigating the breadth and complexity of the micro-political economy of land and resources. In dealing with such factual complexities, we recognise that these land and resource transactions take many forms and have varying effects on social groups within communities. While engagement may appear to be voluntary in some cases, there may be clear signs of organised resistance in others when traditional resource rights holders attempt to defend their interests through direct action. Drawing on Hickey and du Toit (2013), Hall et al. (2015) introduce the concept of "adverse incorporation" in an introductory article in a Special Issue on Land Grabbing in the *Journal of Peasant Studies*, to explain why some actors appear to voluntarily consent to land and resource deals that appear to be detrimental to their own interests. This concept highlights the paradox that, despite people's desire for inclusion,

these connections are inherently exploitative. It suggests that "incorporation," even in less-than-adverse terms, does not question the broader trend of agricultural transformation or the globalised capital accumulation processes within which it exists (Hall et al., 2015). This is not to suggest that certain players do not benefit from being included in other people's land and resource transactions. This hypothesis is judged adequate for understanding changes in land tenure and agricultural practices in the Mezam and Menchum Divisions of the Western Highlands of Cameroon.

3. Methods

Study Area

The study was conducted in the Mezam and Menchum Divisions (Figure 1) in the Northwest Region, which is part of the Western Highlands geo-ecological zone. Mezam Division is in the country's Western Highlands, between latitudes 5° 40' and 7° 15' North, and longitudes 9° 15' and 11° 5' East. The Division is home to around 850,000 people and covers over 17,400 km² (Asanya et al., 2023). Menchum, Boyo, and Momo Divisions border it to the north and east, respectively, while the Western Region borders it to the south and west (Mamoudou et al., 2016). Mezam Division, in Cameroon's Northwest Region of the Western Highlands, has a dual land tenure system that combines a widely used, robust informal customary tenure system with formal statutory law deriving from national and colonial legislation (Bobbo et al., 2020). Tenure insecurity and competition for land use are common causes of conflict, particularly between farmers and grazers (Pelican, 2008). The study was conducted in the Mezam Division's Bafut and Tubah Subdivisions, which are classified as rural and urban, respectively. With an average temperature of 23°C and a range of 15° to 32°C, the area is recognised for its cool temperate-like climate, which is mostly influenced by challenging topography and mountainous terrain (Fon et al., 2019). According to the Mezam National Meteorological Service Agency (MNMSA (2013), the average annual rainfall ranges from 1884 to 2000 mm. It has two distinct seasons: the rainy season, which begins in mid-March and finishes in mid-October, and the dry season, which normally begins in mid-October and ends in mid-March (Mamadou et al., 2016). The current climatic conditions promote livestock breeding as well as farming activities to meet the growing population's food demands.

However, Menchum Division is located between latitudes 9°45' and 10°18' north of the Equator and 6°15' and 6°45' east of the Greenwich Meridian (Ntangti et al., 2019). It shares borders with the Federal Republic of Nigeria in the northwest, the Manyu and Momo Divisions in the southwest, Mezam and Boyo in the southeast, and Donga Mantung in the northeast (Angwafo, 2014). According to the 2005 Population and Housing Census (MINEPAT, 2012), Menchum Division has a population of approximately 161,998 people, with roughly 90% engaged in farming and 10% in grazing, a total land area of 4489 km², and an average population density of 36 people per km² (Nguh & Zeh, 2016). Agro pastoralism (mixed farming and livestock rearing), which includes both commercial and subsistence farming as well as various crop growing techniques, is the primary agricultural system in this Division (Nguh & Zeh, 2016). The location is in the savannah ecological zone, which is mostly made up of grass, shrubs, and areas of gallery forest. It is a subhumid medium altitude zone with an annual rainfall range of 1400-1700 mm (Ndenecho, 2010). There are two main seasons: the rainy season, which lasts the rest of the year, and the dry season, which begins in November and lasts four months (Ndenecho, 2010). Agricultural land use,

pastureland, farmland, and settlement land are among the various land uses, making it an appropriate location for this study.

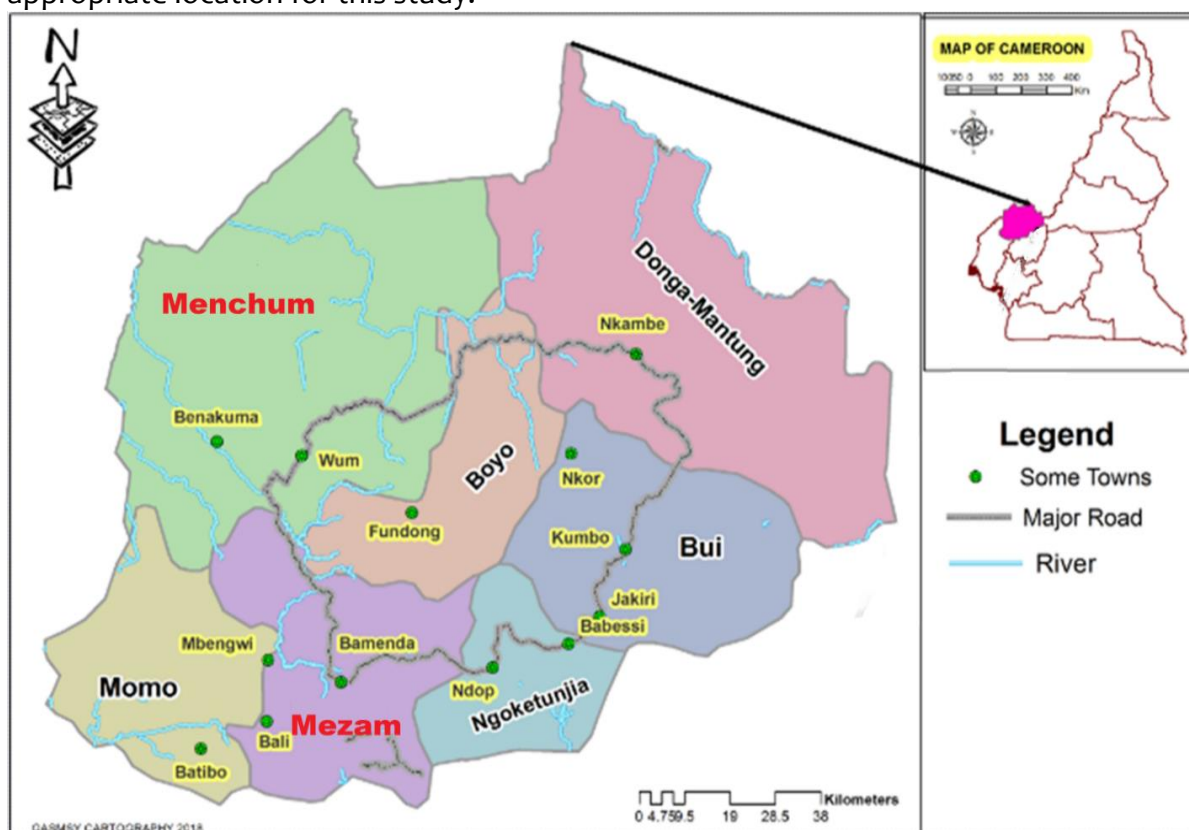


Figure 1. Map of the Northwest Region showing all Seven Divisions.

Source: Adapted from Akwanjoh & Tita (2020)

Research Design

A mixed methods design was used, which combines qualitative and quantitative approaches during data collection, analysis, or interpretation to capitalise on strengths and combat weaknesses, particularly for complex research situations when one method alone is insufficient (Ahmed et al., 2024). In the lack of baseline data, a cross-sectional survey was carried out from August 2018 through August 2019.

Study Population

The study population was made up of agricultural and non-farm households from both Divisions. The Bafut and Tubah Subdivisions of the Mezam Division were the focus of the study. According to the Bafut Council Development Plan (PNDP, 2011), there are 129,363 inhabitants, with Tubah having a population of around 52635 (Melle et al., 2016). The study was done in the Menchum Valley, which has an estimated population of 50,235 people (MINEPAT, 2012), as well as the Wum Central Subdivision, which has a population of approximately 65,484 people according to the Wum Council Development Plan (PNDP, 2011).

Sample Size and Sampling Procedures

The study had 520 participants. A multi-stage sampling procedure was adopted. In the first stage, the Northwest region in the Western Highlands was purposively chosen because changing the land tenure system from communal/customary to increasing privatisation and commercialisation exacerbates conflicts between farmers, graziers, and migrants,

which are fuelled by urbanisation and higher-value crops, while also affecting women's rights and food security.

Second, the Mezam and Menchum Divisions were purposively chosen from the seven Divisions that comprise the Northwest Region. Mezam Division was chosen because it includes the rapidly urbanising regional capital, Bamenda, whereas Menchum Division is more rural. This divide allows us to compare how agricultural practices and land tenure systems are evolving in rural and urban settings.

Third, the researchers identified all Subdivisions within each Division. To choose the Subdivisions, each Division's Subdivisions were divided into two categories based on whether they were rural or urban. Bafut and Tubah, two of the Mezam Division's seven Subdivisions, were chosen as rural and urban Subdivisions, respectively, using simple random sampling. Menchum Valley and Wum Central, on the other hand, were chosen as rural and urban Subdivisions from the four Subdivisions that comprise Menchum Division, using simple random sampling.

Fourth, the sampling frames were created by identifying the main thoroughfares in each Subdivision and, in the case of Subdivisions with multiple villages, by clustering the communities together. Because it was practically impossible to construct a sample frame for the study population, cluster sampling was used. A list of three clusters was constructed by dividing the population into three smaller, manageable groups (clusters) from each of the four Subdivisions in the Mezam and Menchum Divisions, for a total of twelve clusters. Simple random sampling was used to select two clusters from each of the four Subdivisions, yielding a total of eight clusters for the study.

Fifth, the researchers determined whether the household heads in these clusters were farmers or non-farmers. Sampling frames were made in the field using the quarter heads from the research areas. Simple random selection was used to pick 130 people until the required total of 520 participants was obtained. To replace any participants who were unable to attend an interview, all other non-selected families were placed on a waiting list. Nineteen (19) key informants were purposively identified in the field based on their relevance to the study's objectives. These include land tenure experts, local dignitaries, and community representatives. Key informants were also chosen utilising snowball sampling. To do this, numerous important informants were asked to indicate others who might be able to provide the necessary information for the study. These key informants were chosen based on the researcher's evaluation that they have a thorough understanding of the topic under investigation and are likely to give the information required to answer the research questions. Key things observed by the research team include the physical demarcation of land, the intensity of land use, and the adoption of long-term versus short-term agricultural practices.

Data Sources

Both primary and secondary data sources were used. A systematic questionnaire, in-depth interviews, and observations were employed as primary data sources. Secondary data were collected from a variety of sources, including journal articles, online research reports, textbooks from public and private libraries, published and unpublished research works, and periodicals.

Instruments of Data Collection

The key methods of data gathering were observation, an in-depth interview guide, and a structured questionnaire. Structured questionnaires were distributed to 520 participants,

including farm and non-farm households, to collect quantitative data. The following questionnaire parts comprised both closed-ended and open-ended questions: land use and agricultural practices, land tenure system and agricultural practices, land use patterns, and changes in land tenure systems over time. The qualitative data were acquired from 19 key informants utilising an in-depth interview guide. The researchers used tape recorders and other equipment, such as a notebook and a pen. Alongside other secondary data sources, participant observation was employed to collect qualitative data, particularly observing land-use practices as the researchers interacted with participants.

Data Collection

The researchers were mainly concerned with the data collection method. After arriving in the field, the researchers introduced themselves to the administrative and local authorities. While literate participants were able to complete their questionnaires, those who could not read or write were given the questions in "Pidgin" English or the lingua franca. When study participants struggled to understand the instruments, the researchers assisted them in interpreting the questions. Participants who were chosen but then declined were replaced by those on the waiting list. The same was true for literate individuals who gathered surveys but failed to return them within the specified time frame.

Validity and Reliability of Instruments

In June 2018, a pretest was administered to a limited sample of the Mezam Division's target population to validate the instruments. Thirty questionnaires and five key informant interviews were distributed in Mezam, and the data were evaluated. This was done to reduce errors before full deployment and ensure that the instruments measure what they are supposed to (content validity). The test-retest reliability was determined by presenting a series of questionnaires to the same group of participants at different time intervals and measuring the correlation between the two tests.

Methods of Data Analysis

Data were analysed using descriptive statistics. The results were presented in frequency distribution tables, and differences between means and Chi-square calculations were generated from the studies to aid in comparisons where applicable. The difference between means was used to assess Objective 1, which looked at land use and agricultural practices. Some of the variables considered include land access and control, as well as the buildup of economic wealth. The answer frequencies and percentages were calculated for Objective 2, which looked at changing land tenure systems and agricultural practices. The analysis includes factors such as dominating land ownership patterns and changes in land ownership patterns (different types of property rights). Objective three, which examined land usage patterns, was studied using a Chi-Square test, whereas objective four, which examined changes in land tenure systems over time, was analysed using frequencies and percentages. Following the interview, the researchers deidentified the participants and rapidly completed a word-for-word transcription for analysis. Codes were assigned to the identified categories, which were then operationalised and compared to highlight similarities and differences and triangulate the data.

Ethical Considerations

The researchers received permission to conduct research from the administrative and local authorities in the Mezam and Menchum Divisions. All ethical protocols for conducting research with human beings were created. The subjects granted their permission to participate in the study. Data confidentiality and anonymity were maintained throughout

the trial. The study's voluntary character was underlined, since refusing to participate had no negative social or economic consequences. The researchers took care not to reveal the interviewee's identity or any of the information they provided in the final report.

4. Results and Discussion

4.1 Land Use and Agricultural Practices

We began by analysing access to land and control, as well as the accumulation of economic capital in both Divisions, to describe the significant changes in the land tenure system and agricultural practices.

4.1.1 Access and Control over Land in Mezam and Menchum Divisions

Table 1 on access and control over land in both Divisions revealed no significant differences between the number of plots that participants had access to or controlled (on average, 2 plots each). This is most likely a result of the local culture, which favours inheritance over purchase when it comes to access and control over land. A Key informant in the Mezam Division revealed: "Over 80% of the urban dwellers in the Mezam Division have access to farmlands in the peri-urban areas, on which crops needed by the household are regularly cultivated." Very often, they have only usufruct (or temporal) use rights over such lands. This means that their desire for intensive, long-term agricultural practices is tempered by tenure insecurity, prompting these urban dwellers to avoid engaging in sustainable agricultural practices, except when they own the land.

Table 1: Access and Control Over Land

Variable	Division	Mean	Std Deviation	Std. Mean	Error	T-Distribution
Total Land Size/ha	Mezam	3.467	2.9253	.1712		p = 0.001
	Menchum	4.491	3.9994	.2649		
Plots Accessible to	Mezam	2.30	1.530	.090		p > 0.05
	Menchum	2.28	1.576	.104		
Plots Controlled	Mezam	2.15	1.437	.084		p > 0.05
	Menchum	1.94	1.364	.090		

4.1.2. Accumulation of Economic Capital

Table 2 on the accumulation of economic capital revealed that the accumulation of livestock in both Divisions was due to several factors, including economic reasons, their significance for ritual rites and funeral festivities. At the 5% level, the results show higher stocking rates of rabbits in Menchum than in Mezam Division (19 and 8, respectively, $p = 0.000$). This suggests that rearing rabbits could be more expensive in the Mezam Division since participants had to buy animal feed for rabbit rearing. Key informant interviews reveal that "it was also due to a lack of space. That few individuals in Mezam are into rabbit rearing is therefore a rational decision."

Conversely, the average number of pigs owned by each participant and his/her household was significantly higher in Mezam than in Menchum Division (53 and 13, respectively, $p = 0.011$). This suggests that taboos and religious views have less impact on the consumption of pigs, a key source of protein in the Mezam Division with more Christians. Though not significant at the 5% level, the difference in cattle and table birds in the Mezam and Menchum Divisions was significant at the 10% level. This was anticipated as the Menchum Division typically produces more cattle of larger sizes than the Mezam Division due to its higher Muslim population and availability of pastureland. On average, participants from

Menchum Division owned eleven (11) more heads of cattle than their counterparts in Mezam Division. This difference was statistically significantly higher in Menchum than their counterparts in Mezam Division (on average 33 and 22 cattle respectively at the 10% level, $p = 0.053$). However, compared to Menchum, where cattle are still mostly produced using extensive and semi-intensive systems, Mezam Division's cattle production is probably going to be more intensive due to the lack of availability of pastureland (Ngalim, 2015). Key informant interviews revealed that “some of the participants in Mezam Division had their cattle in Menchum Division.” This suggests that there will be fewer cattle reared in Mezam's Bafut and Tubah Subdivisions.

Though not statistically significant at the 5% level, participants in the Mezam Division engaged in poultry production, producing almost 50 table birds more, which was significantly higher compared to counterparts in the Menchum Division (on average 313 and 265 birds respectively, $p = 0.095$). This was anticipated because the Mezam Division is more cosmopolitan than the Menchum Division, in addition to the growing scarcity of land for agricultural practices. Compared to Wum Central Subdivision, Bamenda Central has less acreage per participant, a larger population, and better access to day-old chicks and other inputs (especially feed and medication). These elements create a ready market as well as advantageous conditions for poultry farming. Regarding the sheep and goats reared in both Divisions, no statistically significant changes were found. However, Mezam Division's results were consistently higher because sheep and goats are an extremely effective and sustainable source of food and revenue in urban areas since they require little land and can flourish on a varied, inexpensive diet of garbage and by-products.

Table 2: Distribution of Livestock

Variable	Division	Mean	Std. Deviation	Std. Error Mean	F-distribution
Cattle	Mezam	21.68	90.623	5.303	$p=0.053$
	Menchum	32.79	94.294	6.245	
Goats	Mezam	12.83	62.677	3.668	$p > 0.05$
	Menchum	10.79	53.428	3.538	
Sheep	Mezam	16.94	109.805	6.426	$p > 0.05$
	Menchum	13.26	59.440	3.936	
Rabbits	Mezam	7.83	44.492	2.604	$p=0.000$
	Menchum	18.80	80.599	5.338	
Pigs	Mezam	12.39	52.465	3.070	$p=0.011$
	Menchum	5.58	13.208	.875	
Birds	Mezam	313.42	740.071	43.309	$p=0.095$
	Menchum	265.23	503.286	33.331	

4.2 Land Tenure System and Agricultural Practices

In this section, we began by examining the dominant land ownership patterns and types of land rights used to capture the land tenure system use and agricultural practices in the study areas.

4.2.1 Dominant Land Ownership Patterns

Table 3 on dominant land ownership patterns revealed that most people either buy the land they own (29.5% in Mezam and approximately 46% in Menchum Division) or inherit the land from their predecessors (over 32% in Mezam and 24.5% in Menchum Division, $p = 0.057$). This indicates that in the study areas, community land ownership and land ownership by gift are rapidly diminishing. In their study on the impact of changing land

ownership patterns on agricultural production in urbanising spaces, Balgah et al. (2019) found that most participants, 18% in Bambui urban and 21% in Bambui rural, acquired land through purchasing, and 19% in Bambili urban and 15% in Bambili rural, respectively. This suggests that land ownership patterns have changed throughout the past 50 years or so. In both Divisions, a growing land market is replacing the patterns of inheritance and community ownership that predominated in the 1970s and 1980s. As land ownership moves from community, household, and family ownership systems to private property, this change is likely to have an impact on patterns of land usage for agricultural practices. This challenges the idea that community-based management practices are the best method to manage the commons (Ostrom, 1990).

Comparing the results from both Divisions, it was found that land ownership by purchase was higher in Menchum Division (approximately 46%) than in Mezam Division, with 29.5%, and land ownership by inheritance was higher in Mezam Division, with 32.2%, than in Menchum Division, 24.5%. This suggests that the rate at which people are investing in land is high in Menchum Division, while land is becoming scarce in Mezam Division due to an increase in population, and the inhabitants tend to depend on already acquired land. This suggests that by changing the idea of land from a social, cultural, or community resource to a transferable economic asset, the commoditization of land radically alters property rights (Hull et al., 2019). Secured property rights provide farmers with the motivation to boost productivity and maintain environmental sustainability (Séogo & Zahonogo, 2023). Most participants (32.2%) inherited their land, which can be explained by the scarcity of land in the Mezam Division. This means that to increase agricultural productivity in the study areas, family heads, as custodians of family lands, must make sure that the land is held in trust for future generations and that it stays in the family (land consolidation). These results are consistent with those of Bamire (2010) and Tsue et al. (2014), who discovered that private ownership of arable land through inheritance and purchase predominated in Nigeria. Key informant interviews revealed a contrary view of the types of dominant land ownership patterns existing in the study areas and advanced the view that *“there are five types of land tenure systems existing in the study areas (concession or direct registration, incorporation, expropriation, temporary concession and final concession)”*. According to a male senior government administrator in Mezam Division:

Case 1

There are concessions, direct registration, incorporation, expropriation, temporary concession and final concession, which are the different types of land tenure systems existing in the Region. Concession or direct registration concerns two distinct categories of land. It applies to national lands of the first and second categories. The first category refers to lands not titled before 1974, and it does not apply to everybody. Lands occupied and exploited before the 5th of August 1974 are exempted from this law, while all lands which were occupied before 1974 are affected. The second category of national land refers to all lands which were not occupied or exploited before 1974. He advances that incorporation is a land tenure system which is not very common. It is mostly used by institutions like the State, other private and public entities. For example, the State can earmark a piece of land without title for State infrastructure, and the said piece of land is already covered by State laws. With land expropriation, the State is still involved. The State may want to construct a highway, and it happens that properties are found around, and the nature of the property is evaluated and compensated, and the land becomes state land. It will be of great importance to know that incorporation and expropriation are more

procedures. He reveals that a temporary concession is a procedure whereby the State authorises any individual who so desires, be it a public or private person, be it Cameroonian or foreigner, to realise within a period of five years on a portion of the national domain of a second category. He further revealed that the final concession has to do with the State verifying whether an individual has obeyed all the conditions of the temporary phase and is given the possibility to apply for a land title. With respect to the most common type of land tenure system, the participant believed all lands belong to the State. All untitled lands are managed by the State. For one to acquire a piece of land, one must first find out whether that piece of land has a land title. An individual may occupy a piece of land for so many years before 1974, that piece of land remains yours, but that individual needs to apply for a land certificate (42-year-old key informant, Mezam Division during KIIs session, 2nd September 2019).

Table 3: Distribution of Dominant Land Ownership Patterns

Current Dominant Land Ownership Patterns	Sample	Mezam	Menchum
Communal land ownership	3.5%	3.8%	3.1%
Inherited	28.9%	32.2%	24.5%
Gift	20%	20.9%	18.9%
Purchased land	35.5%	29.5%	45.7%
Rented land	6.3%	6.8%	3.9%
Title deed	5.8%	6.8%	3.9%

4.2.2 Changes in Land Ownership Patterns (Types of Land Rights)

Table 4 shows that, from the sampled populations, while only 25% had institutional land rights before, close to 80% (a difference of 55%) now have institutional land rights. Similarly, those with legal land certificates have increased from over 35% to over 66% (a difference of 41%). This suggests that there will be more sustainable land use for agricultural practices with the use of inputs like chemical fertiliser, organic manure, and capital investments intended to boost agricultural productivity in the study areas. According to the theories of land commoditization, small and medium-sized landholders and producers are gradually displaced or absorbed by global capitalism to make land more accessible for large-scale mining or agricultural production (Magdoff, 2013). This is because capital is constantly looking for new areas where it can extract goods and resources and transfer the best rents through international markets that have been liberalised. In addition to causing socio-environmental problems from resource extraction to waste disposal, this process has the concurrent consequence of uprooting landowners and producers (Temper et al., 2015).

Overall, the study's findings show that while private ownership is likely to boost farmers' incentives to invest, land tenure rights protected by land security can have a favourable impact on the region's farmers' intensification of agricultural practices. The findings are consistent with those of Foning et al. (2014), who examined the impact of incomplete land tenure contracts on agricultural investment and productivity in Cameroon. They discovered that households with modern equipment have a higher means of productivity, with Franc CFA 168,000. In the same vein, fertiliser-using agricultural households are more productive than others, with an average of Franc CFA 196,000. Furthermore, productivity increased by CFA 0.71 in response to an increase in Franc CFA1 expenditure on the input variable. Considering these findings, we might draw the conclusion that individuals who have obtained property rights over a piece of land are more inclined than others to make investments, embrace new technology, and employ irrigation techniques, all of which boost agricultural productivity.

Comparing the results from both Divisions revealed similar situations. For example, Table 4 made it obvious that the percentage of people in the Mezam Division having valid land certificates had risen from roughly 28% to 68% (a 40% increase). In a similar vein, the percentage of Menchum Division participants with valid land certificates rose from slightly over 22% to 66% (a 44% increase). This suggests that proactive government reforms aimed at modernising land management and formalising customary land rights are responsible for the minor increase in the proportion of persons having valid land certificates in Cameroon's Mezam and Menchum Divisions (Ministry of State Property, Surveys and Land Tenure, 2025). Even though both Divisions' land tenure systems have changed, the Chi-square test statistics (X^2) indicate that these changes are not statistically significant when comparing the two Divisions ($p > 0.05$). This situation suggests that many participants in both Divisions are starting to understand the significance of secured land tenure to improve agricultural productivity by giving farmers the incentives they need to invest in land, capital, and more effective land use. To manage debt and increase income, farmers with secure tenure and credit availability may specialise in high-value, non-grain cash crops with shorter fund recovery periods.

In his research on the relationship between land tenure security and the uptake of contemporary rice technology in Odisha, Eastern India, Paltasingh (2018) made the case that land tenure security considerably raises the likelihood and degree of adoption of enhanced rice technology. The author demonstrated that farmers with legal or customary land rights are more likely than renters-farmers (pure and partial tenants) to adopt new technology. Key informant interviews supported this view, adding that *"the laws governing land in Cameroon are quite obsolete and need reformation to adapt to the present situation, as the pressure on land today is different from the period before 1974, having serious negative consequences on agricultural practices in the study areas."* Participants in Menchum Division believe that new, workable land tenure system reforms are necessary because the country's land laws are outdated for the reasons listed in this citation from a male key informant. According to him: land in the past was not a scarce resource as it is the case today. The system was very cumbersome, whereas land matters remain the source of serious conflicts between communities. Groups like farmers and pastoralists are always in conflict over land because of these changes in land tenure systems (63-year-old key informant, Menchum Division, during KIIs session, 8th May 2019).

Table 4: Distribution of Changes in Land Ownership Patterns (Types of Land Lights)

Proof of land ownership	Stage	Sample	Mezam	Menchum	Chi-Square
Had institutional land rights before	No	75%	69.4%	82%	$X^2 = 10.816$
	Yes	25%	30.6%	18%	$p = 0.004$
Have institutional land rights now	No	20.2%	17.8%	23.2%	$X^2 = 2.349$
	Yes	79.8%	82.2%	76.8%	$p > 0.05$
Had a legal certificate before	No	74.6%	72.3%	77.6%	$X^2 = 1.950$
	Yes	25.4%	27.7%	22.4%	$p > 0.05$
Have a legal certificate now	No	33.7%	33.3%	34.2%	$X^2 = 1.339$
	Yes	66.1%	66.7%	65.8%	$p > 0.05$

African Financial Community (CFA) Franc

4.3 Land Use Patterns

Table 5 on land use patterns revealed that most of the participants were using their lands to cultivate food crops (over 96%), cash crops 71% or both food and cash crops (over 68%). Similar trends were observed in both Divisions. The results show that a significantly higher proportion of the respondents in both Divisions used their land to cultivate food crops (94.5% and over

98%, respectively, $p = 0.028$). These results were expected because many food crops are needed to feed the large family sizes, as only very little is being sold by the participants to acquire other necessities. This suggests that most of the participants in both Divisions are subsistence farmers who depend a lot on their farm produce for the sustenance of their families. This result also reflects on those who used their lands for the cultivation of cash crops (approximately 67% in Mezam and over 76% in Menchum Division, $p = 0.017$).

The results also show that land used for the construction of houses was significantly higher in the Mezam Division than in the Menchum Division (over 55% and 30% respectively, $p = 0.000$, a difference of 25%). This suggests that a large portion of the Mezam Division, especially in the vicinity of Bamenda's urban centre, is being converted at the expense of agricultural land for the construction of homes and other non-agricultural uses. The implications of the theories of commoditization of land are that this process has the concomitant effect of displacing landholders/producers while at the same time creating socio-environmental conflicts from the extraction of resources to the disposal of waste (Temper et al., 2015). Under these conditions, this dissociating process allows free material flows between the local and the global (Russi et al., 2008), cleaving metabolic rifts between humans and the environment generally and between different parts of the world, most emphatically between rural and urban locations (Foster, 1999).

The results, however, reveal no significant differences in land use patterns in both Divisions with respect to the cultivation of food and cash crops (69.5% and over 66% respectively), land being used for grazing (over 41% and 42% respectively) and on land used for both grazing and crop cultivation (38% and 39% respectively). The results suggest that the farming systems are becoming more complex, with the choice of combinations depending on the individual assessments of how these combinations can reduce food insecurity shocks. In this perspective, therefore, we realise that changes in land tenure systems in both Divisions have greatly influenced agricultural practices. Interestingly, during an in-depth interview session with the Sub-delegates of agriculture for Menchum Valley Subdivision and Tubah Subdivision, a few farmers could be found practising mixed farming, bee farming and mushroom cultivation. The theories of commoditization encourage a move away from smallholder, subsistence-oriented agriculture towards large-scale, commercial production, often of cash crops.

Table 5: Distribution of Land Use Patterns

How land is used		Sample	Mezam	Menchum	Chi-Square
To cultivate food crops	No	3.8%	5.5%	1.8%	$X^2 = 4.804$
	Yes	96.2%	94.5%	98.2%	$p = 0.028$
To cultivate a cash crop	No	29%	33.2%	23.7%	$X^2 = 5.649$
	Yes	71%	66.8%	76.3%	$p = 0.017$
To cultivate both food and cash crops	No	31.9%	30.5%	33.8%	$X^2 = 0.639$
	Yes	68.1%	69.5%	66.2%	$p > 0.05$
To do market gardening	No	57.3%	52.1%	64%	$X^2 = 8.067$
	Yes	42.7%	47.9%	36%	$p = 0.018$
To plant fruit trees	No	55.6%	51%	61.4%	$X^2 = 5.583$
	Yes	44.4%	49%	38.6%	$p = 0.018$
For grazing	No	58.5%	58.9%	57.9%	$X^2 = 0.054$
	Yes	41.5%	41.1%	42.1%	$p > 0.05$
Grazing and crop cultivation	No	61.3%	61.8%	61%	$X^2 = 0.807$
	Yes	38.7%	38.2%	39%	$p > 0.05$
Construction of a house	No	55.8%	44.9%	69.7%	$X^2 = 32.113$
	Yes	44.2%	55.1%	30.3%	$p = 0.000$

4.4 Changes in Land Tenure Systems over Time

Figure 2 on changes in the land tenure system over time indicates that, over 48% of participants, more than 54% in the Mezam Division and 56% in the Menchum Division, respectively, agreed that their land tenure systems had changed. This reflects the quickly expanding land market in Menchum Division, where many people, some of whom may be residents of Mezam Division, may be rushing to seize a piece of what's left due to reduced prices, at least when compared to Mezam Division. Nevertheless, and as explained by the participants, the reasons for these changes include expanding agricultural land (over 17% and 22% for Mezam and Menchum, respectively), improving agricultural lands (over 61% and 60.5% for Mezam and Menchum, respectively), diversifying agricultural investments (over 18% and close to 16% for Mezam and Menchum, respectively) or constructing a house on the land (over 3% and 1% for Mezam and Menchum, respectively). The results suggest that to increase agricultural output in the study areas, participants in both Divisions are engaged in a variety of agricultural land management practices.

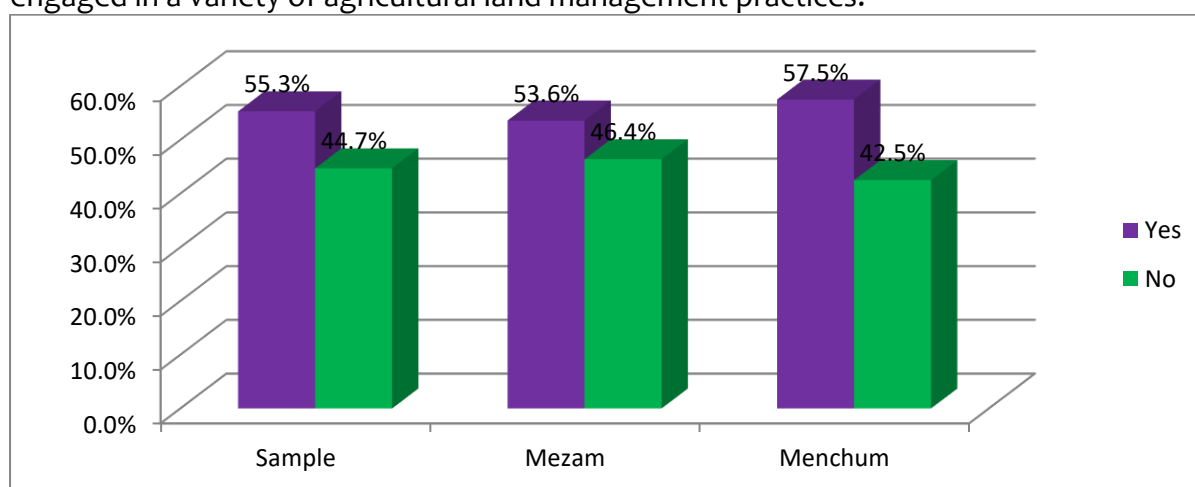


Figure 2: Changes in Land Tenure Systems over Time

A female community member in Menchum Division alerts the study team to the following during an in-depth interview:

Case 2

The land tenure system has been changing over time from the precolonial, colonial, to post-colonial period and with each period having its own impact on agriculture. During the precolonial period, land was in abundance, and there were few or no restrictions on land use for the cultivation of food crops. An individual in the community could easily exploit new fields for agricultural production once the old fields became infertile, and by then, money was not in existence and land certification was not known since all lands belongs to the community and what was used for exchange took the form of trade by barter, and this period greatly favours agricultural productivity through agricultural extensification in the Region. But during the colonial period, some major innovations were brought in by the colonialists following the introduction of cash crops like rubber, coffee, cocoa, bananas, amongst others, requiring a lot of labour and other agricultural intensification technologies which the local people were not familiar with. This period accompanied the introduction of certificates of occupancy as proof of land ownership. Many young people were recruited to work in the plantations created by the colonialists, reducing the domestic or family labour force, and this resulted in low agricultural productivity at the level of individual households because the crops cultivated at the level of the colonial

plantations were mainly exported and not locally consumed. The post-colonial period, following the introduction of a new independent government, complicated the whole issue and put into place so many regulatory instruments surrounding the issue of land ownership. This has created a lot of problems in the region, especially for the less educated ones who could not master all the rules and regulations put in place by the new government. Some community people lost their agricultural lands to the rich because they were unable to process land certificates. This period came with a mixture of so many forms of agricultural practices ranging from (extensification, intensification, and semi-intensive) amongst others and has resulted to so many land conflicts in the region with negative consequences on agricultural productivity as people scramble over land for crop cultivation, grazing and infrastructural development activities (60 years old female community member in Menchum Division during KII session, 13th May, 2019).

The current study's findings contradict those of Balgah and Zeh's (2016) study on land use dynamics and agro-pastoral conflicts in Menchum Division, Cameroon, which concluded that the Division's land use has undergone significant changes due to the growing human population. According to the evolutionary theory of land rights, when land becomes scarce, a state must implement a land titling program to formalise private property rights to reduce conflict and promote efficiency, economic growth, and political stability (Platteau, 2000). Cadastral innovators and land administrators frequently share these goals (van der Molen, 2003; Bennett et al., 2010). During an interview, a key informant clarified that Cameroon's land tenure system has evolved during the pre-colonial, colonial, and post-colonial eras. As stated by a male participant:

Case 3

During the pre-colonial period, land in Mezam land was acquired through wars, after fighting and conquering the land and pushing away the previous owner of the land. The “Fon” of the village takes note of the subjects who participated in the war, and because of their efforts to defeat the enemy, the Fon usually compensate them by dividing land among the brave men who contributed to winning the war. Large tracts of land were awarded to them, and the dimensions of the land were determined in accordance with their strength based on how far they could go. This had serious negative consequences on agricultural productivity as indigenes had to abandon their farms and other landed property and relocate for safety. Agriculture during this period was communal, and the land was so large with very few people available. Most of the time, the people practice what is called “njangi” farming. This had great advantages on agricultural farm expansion as large fields could be cultivated within a very short period with minimal labour input, resulting in an increase in agricultural output. Renounce individuals acquire land through the Fon and with the approval of their kinsmen. Those who could not acquire land had to relate with those who were able to acquire part of the land either for construction or for agricultural practices. During this period, buying and selling of land and paying cash did not exist, but sharecropping was common. During this period, for a Mezam person to call himself a man, he must possess goats, fowls, pigs, raffia bush, robusta or country coffee (farm), cassava, among others. These food items were very important during this period because they were mostly used in trade through barter. Agriculture by this time was more of communal and subsistence farming of food crops like beans, maize, sweet potatoes, cassava, yams, area yams, cowpea, among others. Plantation agriculture was not known, and so it was not practised. This was due to ignorance and a lack of manpower. Cowries

were the major currency during this period (an 80-year-old ordinary community member in Mezam, during the KII session, 30th September 2019).

These facts are further supported by another male key informant of the qualitative data in Menchum Division, who states that:

During the pre-colonial period, the first settlement, accompanied by the building of a house, gave the individual automatic ownership over a piece of land. Written agreements did not exist; fig trees and peace plants were used as boundary sticks between neighbours and villages. Agriculture was more of communal farming, hunting down of wildlife, and fishing were the main occupations of the indigenes. Agriculture depended on family labour, and this explained why many individuals in Menchum Division gave birth to so many children. Most of the food crops cultivated had great significance as they were mostly used for rites and ritual ceremonies. Direct trade was not available. During this period, for a Menchum person to call himself a man, he must possess many children, raffia bush, kolanuts, goats, fowls and coffee, among others. Plantains existed mainly around the compounds, but kolanuts were very significant (79 years old ordinary community member, Menchum, during KII session, 10th May 2019).

The conclusion that the land tenure system had changed after the colonial overlords arrived in Cameroon was corroborated by the qualitative data findings. A male crucial informant stated as much.

Case 4

“During the colonial period, following the arrival of the Germans in Cameroon, some minor changes were observed in land ownership and land use patterns. They brought in the idea of land registration and how to acquire certain rights to occupy a piece of land. Land certificates were not available at that time, but occupants of land acquired what was known as a certificate of occupancy. Those who could not acquire these certificates of occupancy still had the right to make use of their land. In case of land disputes, ownership was based on longevity and the types of crops planted on the said piece of land. The colonial period brought a change in the way land was acquired and land use patterns, with negative consequences on communal farming, following the introduction of cash crops. This period saw the introduction of money known as “gold” before the British colonial masters later came in with real money known as pounds, shillings and pence. This was the period followed by the introduction of proper buying and selling of goods and other immovable property, such as land. This was a turning point in the Region’s agricultural landscape as the colonial masters introduced a variety of seed crops for planting, like palm trees, eucalyptus trees, pines, bananas, coffee, cocoa, and rubber, among others. It was during this period that plantation agriculture was introduced in the Region. For example, the Santa tea and coffee estate and the Ndu tea estate. Most of these crops were cultivated to save the interests of the colonial masters because they were the ones in charge of selling. Hired labour was employed in most of these plantations; they built camps to accommodate most of their labourers” (80 years old ordinary community member in Mezam, during KII session, 30th September 2019).

To support these facts, a male respondent of the key informant interview emphasised the view that.

During the colonial period, the Germans brought in the idea of boundaries demarcating one village from another. The introduction of boundaries marked the beginning of individual land ownership and sparked issues of boundary disputes among individuals and villages, having serious negative consequences on agriculture. Land registration was also

introduced, but very few people could afford it, and this was mostly applicable between villages and not among individuals. Land disputes within this period were settled by the Fon. This period also brought a change in the farming system following the introduction of cash crops. Force labour was used in the plantations. Individuals were also encouraged to open individual plantations (79-year-old ordinary community member, Menchum, during KII session, 10th May 2019).

The qualitative data's conclusions showed that the land tenure arrangements have changed since independence. That was bemoaned by a male key informant.

Case 5

At independence in Cameroon in 1960, the new government introduced a new system of land occupancy. To begin with, the colonial history of the country is so complicated. The efforts put in place by the government of Cameroon to come up with land policies for the country have not been very successful until 1974, when land reforms were established. Both the communal and private ownership of land were recognised by the post-independence government. But by 1976, the government of Cameroon signed a new decree to amend the 1974 land ordinances and encourage private ownership of land in the country. This period was accompanied by the introduction of land certificates. This also negatively affects agricultural households as the procedures to acquire a land certificate were many and very complicated, adding to the high cost involved, as many farming households could not afford it, with negative consequences on agricultural productivity. This decree also stipulates that all lands belong to the State. This period further complicated the whole process of acquiring land in the Region. At independence, the agricultural system also changed. This was followed by the integration of and training of indigenes on the technical know-how on how to manage the large plantations established by the colonial masters. The post-independence government now had to come in with the creation of so many institutions, such as the Community Development School in Santa, Cooperative School in Mankon, and the Regional College of Agriculture in Bambili (Dschang Antenna), to help train experts who could manage the plantations left behind by the colonial masters. The introduction of private ownership of land facilitated the process of individual ownership of farmlands with some positive consequences on agriculture, such as intensification. From here, various farming systems and processing methods (the milk processing industry and the coffee processing industry at Mile 3 Nkwen in Mezam Division were created even though they are not operational (60-year-old key informant in Mezam during KII session, 27th September 2019).

4.4.1 Major Factors Affecting Changing Land Tenure Systems in Mezam and Menchum Divisions

This section starts with a diagnosis of land conflicts in the area and the peak periods of conflict before analysing the causes of land conflicts. Figure 3 indicates that most of the respondents, both in the Mezam and Menchum Divisions, have been involved in land conflicts in the past (61% and close to 57% respectively). This was expected to be so because the recurrence of land conflicts affecting agriculture in the Region is not new, and added to the fact that conflict is inevitable in society. This difference of 4% in the proportion of respondents who have been in a conflict situation in the past between those from the Mezam and Menchum Divisions seems not to be statistically significant ($X^2 = 1.016, p > 0.05$).

The figure further indicates that a smaller proportion of the respondents (43.4% for Menchum and 39% for Mezam) expressed the view that they have not been involved in

land conflicts in the past. The results suggest that this proportion of respondents in Menchum and Mezam Divisions who have not witnessed land conflicts before may not be involved in agricultural practices. Lesser conflicts in Mezam could be due to higher private property rights under legal legislation sanctioned by land certificates. Key informant interviews supported this view, adding that there is a popular belief among the graziers that once the cattle feed on crops (especially maize), the cattle yield tends to increase. The graziers usually do this intentionally, resulting in crop destruction and eventually, farmer-grazier conflict.

In general, the findings of the qualitative data agreed with the findings of the quantitative data and revealed some types of land conflicts before. The results indicate that farmer/grazier conflicts were very prominent in the study area before, with great implications for agricultural productivity.

A male respondent of the key informant interview opined that:

Farmlands and grazinglands should be made known because during transhumance, graziers always allow their cattle to feed on food crops, resulting in perpetual farmer-grazier conflicts **(45-year-old key informant, Menchum Division during KIIs session, 31st May, 2019)**.

Another female respondent of the key informant interview reiterated that these graziers are very wicked. She advanced the view that:

There is this popular belief among the graziers that once the cattle feed on crops (especially maize), the cattle yield tends to increase". The graziers usually do this intentionally, resulting in crop destruction and eventually, farmer-grazier conflicts accompanied by assault **(50 years old key informant, Menchum Division during KIIs session, 31st May, 2019)**.

This same trend was observed in both male and female respondents and across age groups in an in-depth interview session. This youth explained that:

Farmer-grazier conflict was predominant, but conflict between co-spouses of the same husband on who owns the farmland and frequent complaints of trespassing are other types of conflicts affecting agriculture in the Region **(45-year-old key informant, Mezam Division during KIIs session, 9th September 2019)**.

It was also discovered during the key informant interview session with a female respondent that:

Boundary disputes between neighbours, inter-village disputes, and communal disputes were prominent in the region, affecting agricultural productivity **(49-year-old key informant, Tubah Subdivision during KIIs session, 24th September 2019)**.

In the same vein, a male respondent of the key informant interview upheld the view that: Crop destruction by small ruminants, farmer-grazier conflicts, farmer-farmer conflicts, and grazier-grazier conflicts are among the types of conflict affecting agriculture in the Region **(75-year-old key informant, Wum Central Subdivision during KIIs session, 31st May, 2019)**.

Succinctly, another male said:

Mortgages of land, inheritance, multiple sales/allocation of land, unlawful expropriation without compensation and competing uses of land are all causes of insecurity affecting agriculture in the Region **(46 years old key informant, Bafut Subdivision during KIIs session, 21st September 2019)**.

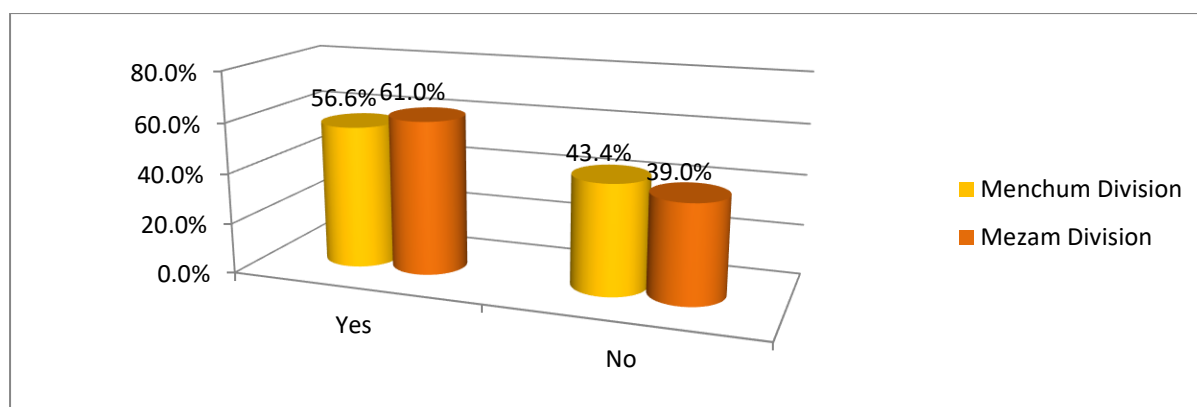


Figure 3: Respondent has been involved in Land Conflicts before

Chi-square = 1.016, $p > 0.05$

4.4.2. Partners involved in Land Conflicts in the Study Areas

Results of the analysis of land conflict partners are presented in Figure 4. As can be inferred from Figure 4 on land conflict partners, respondents from Mezam and Menchum Divisions have had conflicts with their village traditional councils (5.2% in Mezam and 7.9% in Menchum), landlords (10.5% in Mezam and 7.1% in Menchum), investors (25.6% in Mezam and 27.8% in Menchum), farmers (33.7% in Mezam and 21.4% in Menchum), and pastoralists (33.7% in Mezam and 21.4% in Menchum), respectively. For instance, it was observed that close to 34% and 21% in the Mezam and Menchum Divisions, respectively, have had conflicts over land with other farmers. Key informant interviews suggest that this was because of unclear boundary demarcations and identity claims caused by tenure insecurity.

The results are in harmony with previous findings in the Region. According to Kimengsi (2017), for instance, Bafut Subdivision in Mezam Division registered a total of 147 farmer–farmer conflicts and 76 farmer–grazier conflicts between 2003 and 2010, resulting in enormous monetary damages whose monetary amount amounted to FCFA 71,113,775. Key informant interviews further revealed that in Menchum Division (particularly in Bu and Befang villages), the poor farmers have very limited resources and cannot foot the cost of constructing cattle-proof barbed wire fences around their fields. The graziers, on their part, are relatively wealthy, but they have been tied down by cultural inertia, which limits the possibilities of constructing paddocks or introducing improved pasture species like *guatamala*, *kikuyu* and *bracharia* (Kimengsi, 2017). Their inability to adopt these improved farming techniques makes it impossible for the peaceful coexistence of these farming systems, which are in constant conflict. The unruly attitude of graziers, which often goes unchecked by the authorities, has often been resisted through the regular writing of petitions about damages incurred in farmlands, injuries inflicted on cattle and people, prolonged strikes, boycotts and women's demonstrations. According to Ngwa *et al.* (2007), this often culminates in armed confrontations, negatively affecting agricultural productivity in the study areas.

According to Kimengsi (2015), a predictable 400,000 farmers and 5,000 graziers lived in Menchum between 1943 and 2005, and during this period, a projected number of 21,074 conflicts were registered, for an average of 339 hostilities a year. The results are like those of Sone (2012), who attributed the recurrence of farmer-grazier conflicts in the Western Highlands of Cameroon to scarcity of land as well as the poor application of laws guaranteeing land ownership. Nnoko-Mewanu (2018) in his study on farmer-herder conflicts on the rise in Africa, buttress this point by adding that increased frequency of violent conflict has been linked to intense pressures on land because of expansion of

commercially cultivated areas, corporate mining activities, and competitive overuse of common resources, such as forests, pastoral rangelands, and water sources, exacerbated by climate change.

The results corroborated with the earlier findings of Tellen *et al.*, (2016) on conflicts over land and pasture in North West Cameroon: listening to the voices of farmers and graziers found that problem of conflict between farmers and graziers is well-established and identify factors such as land ownership, climate change, water shortages, lack of land rights and level of education, were the major causes of conflict over land with other farmers in the study areas and tend to reduce agricultural productivity due to changes in the land tenure systems. Sone's (2012a) study on conflict over land ownership: the case of farmers and cattle graziers in the Northwest Region of Cameroon emphasised the potential impact of climate change on the fertility of land with negative implications on agricultural productivity in the Region.

According to Nchinda *et al.* (2014), in their study on "in search of common ground" for farmer-grazier conflicts in the Northwest Region of Cameroon, only 16% of farmers have secondary education or above compared to 7% of graziers. This implies that the level of education of the respondents was a key variable contributing to conflicts in the study areas, with negative consequences on agricultural practices. Also, over 10% and 7% in the Mezam and Menchum Divisions, respectively, have had conflicts over land with their respective landlords. Key informant interviews suggest that when the value of land was not appreciating in the past, most landlords sold their land at very low prices. As the value of land tends to appreciate, many of them are going back to their tenants expecting them to add money for parcels of land they bought many years ago or to quit the said parcels of land for them to resell and reimburse them if they are not willing to add money and so conflicts are prone to occur with negative implications on agricultural productivity in the Region. Some landlords are going back to charging for those lands, and this has always resulted in conflict, having negative consequences on agriculture. At times, family members may come out to protest the sales of family land by family heads, resulting in conflicts affecting agriculture. These results are like the earlier findings of Deininger and Castagnini (2006) on the incidence and impact of land conflict in Uganda, who found that rural households experience small-scale land conflicts with relatives, neighbours, landlords, or local governments, and that such small-scale conflicts may have significant impacts on their agricultural productivity.

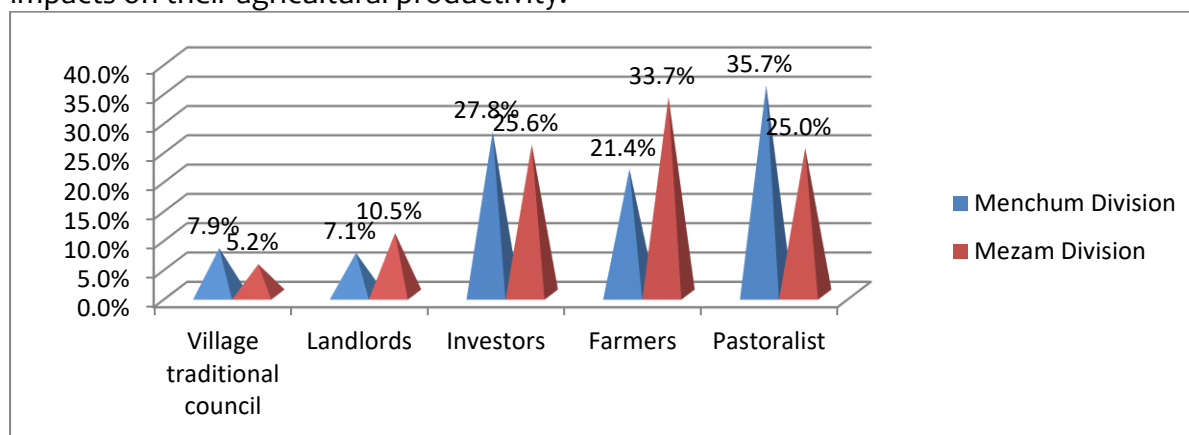


Figure 4: Land Conflict Partners

Chi-square = 8.532, $p = 0.074$

4.2.3 Peak Period of Conflict

Irrespective of the conflicts, Figure 5 above on the peak period of conflict reveals that most conflict situations in both Mezam and Menchum Divisions occur all year round (46.5% and 45.6% respectively, $2.462, p > 0.05$). These conflicts occurred in the dry season (over 24% in Mezam and 29% in Menchum Division) as well as in the rainy season (over 29% in Mezam and 25% in Menchum Division). This implies that land conflicts are more common in the Mezam Division in the rainy season and in the Menchum Division in the dry season. This exposes the view that land conflicts are common in the Mezam Division in the rainy season because farmers scramble over land as a limited resource for farming. In Menchum Division, land conflicts are more common in the dry season, probably because graziers need pasture and water to fatten their cows and the need for them to move down the valleys, by so doing encroaching into farmlands.

It will seem that when private property regimes dominate in a context of land fragmentation (as is the case in Mezam Division), respondents tend to cultivate more crops at the expense of large livestock, such as cattle. This may lead to conflicts among crop farmers. However, when land ownership patterns (e.g. communal lands) encourage cattle production (as in Menchum Division), there is a high likelihood of farmer – grazier problems. In the latter situation, the dry season can catalyse conflicts with crop farmers. The current study's findings are consistent with those of a previous study by Bahta and Myeki (2022) on the effects of agricultural drought on smallholder livestock farmers: empirical evidence insights from the Northern Cape, South Africa. According to this survey, 79% of smallholder livestock farmers could not withstand agricultural drought. The results also showed that agricultural drought has a major impact on government policies, food security, and resources. This suggests that already vulnerable smallholder livestock producers dealing with a severe agricultural drought were impacted by a lack of resources, food insecurity, and inadequate government policies.

The results however contradict the earlier findings of Ntangti *et al.*, (2019) in their study on spatial typology and cause-effect analysis of recurrent agro pastoral conflicts in Menchum, North West Cameroon who found that Conflicts are frequent in Menchum Division in the rainy season because the rainy season coincides with the farming period of the study area where there are potential clashes between land users over land resources. However, the review of literature showed that Homer Dixon (1999) and Ndenecho and Balgah, (2007), all emphasized the fact that pressure on natural resources, finite land, is a potential source of land degradation, land use intensification and fragmentation, marginalization of weaker segments of the population and migration and conflicts, which are very much evident in the North West Region.

The findings of the qualitative data supported the findings of the quantitative data, confirming that the peak period of conflicts affecting agriculture in the region was confirmed through the key informant interviews. A male respondent thought that:

Most of these conflicts occur year-round but most often during farming periods, especially in farm areas, while farmer-grazier conflicts occur during the planting season **(54-year-old key informant, Menchum Division during KIIs session, 10th May, 2019).**

Contrary to this view, a female respondent of the in-depth interview said:

Farmer-grazier conflicts are very common during the dry season, when pasture and cattle are scarce, and are bound to move around carelessly, while the other types are very common during the planting season” **(40 years old key informant, Menchum Valley Subdivision during KIIs session, 15th May, 2019).**

Succinctly, another female respondent emphasized that:

These conflicts in the Region affecting agriculture are very common in the rainy season from March to September (**49-year-old key informant, Tubah Subdivision during an in-depth interview session, 24th September, 2019**).

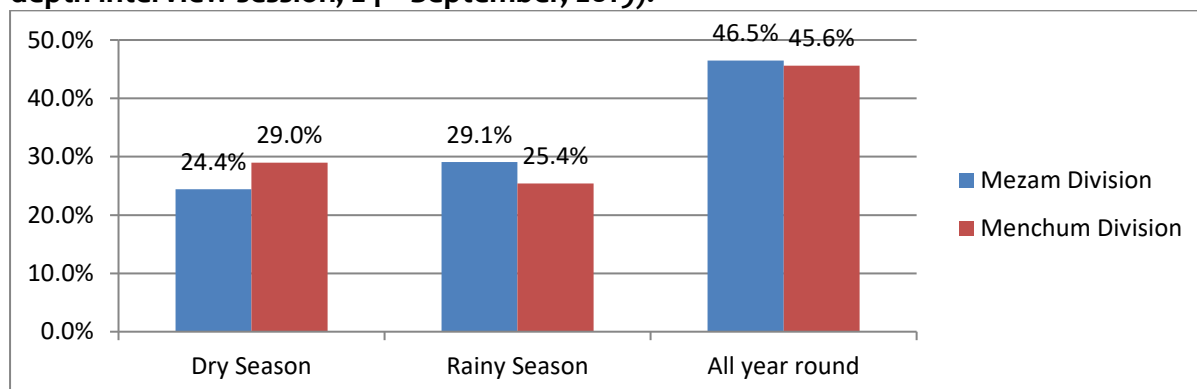


Figure 5: Peak Periods of Conflicts

Chi-square = 2.462, $p > 0.05$

4.2.4 Causes of Land Conflicts

A summary of the causes of land conflicts affecting agriculture in the study areas is presented in Table 6. In descending order of importance, land conflicts arise in the study areas because of poor land administration (reported by close to 89% of the respondents), poor land distribution by responsible authorities (reported by close to 84% of the respondents), jealousy due to high farm productivity (reported by over 73% of the respondents), poor demarcation of village boundaries (reported by close to 72% of the respondents), scarcity of agricultural land (reported by close to 63% of the respondents) and general scarcity of resources (reported by close to 60% of the respondents).

The results differ with the findings of Siddik, Rahman and Moniruzzaman, (2018), who in their study on the causes and consequences of land disputes in the coastal area of Bangladesh found that the main causes of land conflict in the coastal area of Bangladesh are succession problem, possession by force, false documents, miss information in records, selling more than one times, unavailable record documents to the possessor, lack of updated record or documents amongst others. The findings suggest that policymakers should take into consideration the negative effects of these causes of land conflicts on agriculture in the Region and design strategies that will help to improve agricultural practices by so doing, thereby boosting agricultural productivity in the Region. Key informant interviews also supported this view, adding that the zile to exploit land/competition over landed resources, cultural differences and perceptions of land ownership, inadequate grazing land, encroachment into farm lands by graziers through the destruction of fences, non-availability of water, and non-availability of pasture, especially in the dry season are some of the causes of conflict in the Region. Double selling of the same piece of land to more than one person, conflict over ownership of the same piece of land, village/communal, tribal, and individual supremacy over land are some of the root causes of conflict affecting agricultural productivity in the Region.

Review of literature contends that the problems of fluid boundaries that are often made and remade, the conqueror and subjugative spirit of most tribes, the increasing human population and land scarcity have been the major factors behind the upsurge of violent inter-ethnic conflicts in the Region (Kimengsi, 2017). Key informant interviews also supported this view, adding that during the pre-colonial period, land in Mezam was

acquired through wars after fighting and conquering land and pushing away the previous owner of the land. Intra-ethnic conflicts often arise due to the increasing individualisation of agroforestry plots or home gardens (Ndenecho and Balgah, 2007) and the persistent encroachment of graziers into arable farmlands (Lambi and Ngwa, 2009). In another case, conflicts arise between landowners and those who rent the land for farming, especially when the yields are consistently high for several years (Kimengsi, 2017). Conflicting claims over access to and ownership of land have led to inter-ethnic conflicts and disputes that have a bearing on agricultural performance and aggravate the poverty situation of most communities in the Northwest Region (Amungwa, 2009). To make matters worse, attempts to resolve these land-related conflicts have always followed a distinctly centralised top-down approach without due consideration of the historical and cultural systems and values of the indigenous communities involved by so doing, igniting tension between the parties (Kimengsi, 2017).

According to Pelican (2012), at the beginning of the dry season, it is common for Mbororo herders to drive part of their cattle to administratively defined zones where they put up camp for several months. This is also the period when conflicts over crop damage accumulate, as animals frequently venture into respondents' dry-season farms. Thus, the relationship between Mbororo herders and farmers is somewhat wrought with tension, as the issue of farmer-herder conflict has a long history in this Region. Its occurrence was already noticed by the British colonial administration¹ and has since been met with a variety of administrative measures, none of which have produced enduring solutions (Harshbarger, 1995; Njeuma & Awasom, 1988). The implications of the Marxist development theory are that as individuals and groups within society struggle to maximise their share of the limited resources that exist and are desired by humans, they are always in perpetual conflict (Saroji & Dhanju, 2019). These struggles, added to inequality in access and control over land, can lead to conflicts when everyone or the community opposes the other to attain scarce resources, with negative consequences on agricultural productivity. A comparative analysis of the causes of land conflicts between the two Divisions showed mixed results. For instance, while poor land management was significantly higher in Menchum Division than in Mezam Division (93% and close to 86% respectively, $p = 0.008$), scarcity of resources such as land for agricultural practices was higher in Mezam Division than in Menchum Division (61% and 53.5% respectively, $p = 0.088$). The results suggest that the poor land management in Menchum Division could be attributed to population growth, increase in agricultural extensification and the rise in land markets which has led to the destruction of natural resources (e.g, forest areas and water catchments, etc) for the construction of houses to accommodate the growing population, coupled with the poor implementation of land use planning leading to poor land management with negative implications on agricultural productivity. Key informant interview reveals that poor farming practices, such as the cutting down and burning of forest areas and hill sides, are some of the factors responsible for poor land management in Menchum Division. The results agree with the findings of Ntangti *et al.* (2019), who found that the "Ebegha" farming system, which is a traditional farming system in Menchum Division, often causes graziers to develop grievances and allow their cattle to feed on crops because the land was initially grazing land, thus leading to clashes between both parties.

¹. Cameroon has a triple colonial legacy. Initially administered by the Germans, it was split in 1919 and placed under the mandate of the French and British colonial powers. North-west Cameroon was part of the British mandate area.

The findings of the qualitative data agreed with the findings of the quantitative data on the causes of land conflicts in the Region. According to a male respondent:

Scarcity of land was one of the major causes of these conflicts as it hinders the capability of the community to adopt sustainable agricultural practices, resulting to low agricultural output as can be proven with a lot of household farming around houses/homes and that agricultural lands should be well defined to avoid the problem of farmer-grazier conflicts (**60 years old key informant, Bafut Subdivision during the KIIs session, 26th September, 2019**).

During the Key informant interviews, a female respondent of the qualitative data thought that; Double selling of the same piece of land to more than one person, conflict over ownership of the same piece of land, village/communal, tribal, and individual supremacy over land are some of the root causes of conflict affecting agriculture in the Region (**49-year-old key informant Tubah Subdivision during KIIs session, 24th September, 2019**).

In a key informant interview, this male respondent supported that:

There is no proper delimitation between farm lands and grazing lands, no definite boundaries resulting to so many complaints against trespassing and conflicts on ownership especially after the demise of the father, and the lack of land use maps with updated plans of these areas defining land for crop cultivation, plantations and pasture lands (**58 years old Key Informant Menchum Valley Subdivision during KIIs session, 15th May, 2019**).

Succinctly, a female respondent thought that:

The zile to exploit land/competition over landed resources, cultural differences and perceptions of land ownership, inadequate grazing land, encroachment into farm lands by graziers through the destruction of fences, non-availability of water, non-availability of pasture especially in the dry season are some of the causes of conflict in the Region (**40 years old key informant Menchum Valley Subdivision during KIIs session, 15th May, 2019**).

Table 6: Distribution of Causes of Land Conflicts

Variables		Sample	Mezam	Menchum	Chi-Square
Scarcity of Resources	No	42.3%	39%	46.5%	$X^2 = 2.911$
	Yes	57.7%	61%	53.5%	$p = 0.088$
Poor Land Distribution	No	16.3%	18.8%	13.2%	$X^2 = 3.018$
	Yes	83.7%	81.2%	86.8%	$p = 0.082$
Poor Demarcation of Boundaries	No	28.1%	28.1%	27.6%	$X^2 = 1.290$
	Yes	71.9%	71.9%	72.4%	$p > 0.05$
Poor Land Administration	No	11.2%	14.4%	7%	$X^2 = 7.082$
	Yes	88.8%	85.6%	93%	$p = 0.008$
Jealousy	No	26.9%	27.7%	25.9%	$X^2 = 1.031$
	Yes	73.1%	72.3%	74.1%	$p > 0.05$
Scarcity of Agricultural Land	No	37.1%	33.9%	41.3%	$X^2 = 3.009$
	Yes	62.9%	66.1%	58.7%	$p > 0.05$

5. Conclusion

The study examined how the land tenure system and agricultural practices have changed in the Mezam and Menchum Divisions in the Northwest Region of the Western Highlands of Cameroon. Land use and agricultural practices, land tenure systems, land use patterns, and changes in land tenure systems throughout time were investigated. The findings on land usage and agricultural practices began by examining access to land and control, as well as the buildup of economic capital in both Divisions. The results show that there were

no significant differences in the number of plots that participants in both Divisions could access or control. The results of the economic capital accumulation revealed that the accumulation of cattle in both Divisions was due to a variety of variables, including economic considerations as well as their importance in ritual rites and funeral festivals.

The findings on land tenure system use and agricultural practices in the study areas investigated dominant land ownership patterns, changes in land tenure systems (types of property rights) used in the study areas, and how the various Divisions manage their lands. According to prevalent land ownership patterns, most people either buy or inherit their land. The findings on the types of land rights used in the study areas revealed that the proportion of people with institutional land rights and legal land certificates has increased in both Divisions. This suggests that many participants in both Divisions are growing aware of the value of protected property rights, such as land for agricultural practices. Most of the participants used their land to grow food, cash crops, or both.

The findings on the changes in land tenure systems over time demonstrated that the land tenure system had changed in both Divisions. The causes for these changes include increasing agricultural land, enhancing agricultural lands, diversifying agricultural investments, and building a dwelling on the farm.

Results on the major factors affecting changing land tenure systems in Mezam and Menchum Divisions started with a diagnosis of land conflicts in the study areas, partners involved in land conflict, and peak periods of land conflict, before analysing the causes of land conflicts. The findings revealed that most of the respondents, both in the Mezam and Menchum Divisions, have been involved in land conflicts in the past. Respondents from the Mezam and Menchum Divisions have had conflicts with their village traditional councils, landlords, investors, farmers, and pastoralists, respectively. Most conflict situations in both the Mezam and Menchum Divisions occur all year round. Land conflicts arise in the study areas because of poor land administration, poor land distribution by responsible authorities, jealousy due to high farm productivity, poor demarcation of village boundaries, scarcity of agricultural land and general scarcity of resources. Land commoditisation fundamentally alters its perception from a social or communal asset to a traded economic commodity, resulting in considerable changes to the land tenure system and agricultural practices. Individualised private property rights, increased land insecurity for disadvantaged groups, and a shift from subsistence to commercial agriculture are all common features of this transition. The ramifications of altering land tenure systems for agriculture and associated issues include increased community involvement in ensuring land tenure security, which will raise agricultural productivity.

Suggested Area for Further Research

Given the study's findings, the researchers recommend that more research be conducted on "changing land tenure systems and socioeconomic development: This study will benefit from a multifaceted approach that takes into account the transition from communal to private ownership, the role of gender and inequality, and the influence of policy on investment and sustainability is necessary when studying changing land tenure systems and socioeconomic development. Analysing the formalisation of customary rights, the repercussions on vulnerable populations, and the long-term consequences for food security, environmental management, and agricultural productivity are some of the major ramifications in this study.

Data Availability

Before the researchers could discard the data for this study, it was stored on a computer with a password that prevented anyone else from accessing it for ten years.

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