

Review Article

Peri-urbanization and Housing Challenges in Sub-Saharan Emergent Cities: Case of the Bamenda 3 Local Council Area in Cameroon

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Abstract

Peri-urbanization in sub-Saharan emergent cities has triggered housing challenges accrued. Access to affordable housing has become a herculean task leading to urban anarchy. This article posits that the development of substandard housing infrastructures, high cost of decent housing, over crowdedness as well as the construction of houses in risk-pruned zones are some of the challenges observed. Some 277 questionnaires were administered to households of the Bamenda 3 local council area to have first-hand data on the housing challenges and its consequences. A multispectral land satellite imagery on the land use/land cover situation for three different periods was used to determine the rate of spatial expansion in the peri-urbanization process of the area. Field observations and interview sessions were organized to have information on the mundus operandi aground. ArcGIS 10.0 and MapInfo software were used in the production of maps in this work. An in-depth secondary data collection was done to gather information on the rate of urbanization and its challenges to Bamenda 3. Results from findings propound that rapid population growth (32.8%) political factor (23.4%) economic activities (18.4%), urban expansion (14.4%) and relief factor (10.3) were identified as determinants of peri-urbanization in the area. This has triggered a change in the land use/land cover situation of Bamenda 3 over time from (13.16%) in 2000 to (29.22%) in 2020 of the built-up space. The change in built-up space has been accompanied by housing challenges leading to water scarcity, limited power supply, poor roads as well as unhealthy environment. The inhabitants of Bamenda 3 are faced with high cost of living, drop in household consumption, development of substandard housing and overcrowding. The paper adheres to the fact that the State should put more effort into financing affordable housing either through subventions or loan purchases to reduce substandard constructions. Furthermore, the legal and judicial system should ensure contract enforcement and promote transparency with the hope of curbing housing challenges in Bamenda 3 and beyond.

Keywords

Peri-urbanization, Housing Challenges, Affordable Housing, Planning, Development, Bamenda 3

1. Introduction

The quest for space and affordable housing and living conditions has triggered mutations in most African cities with that of Sub-Sahara being a major call for concern. Peri-

urbanization is generally understood as a set of multifaceted processes of transformation from predominantly rural to a mix of rural and urban landscapes and livelihoods [1]. This pro-

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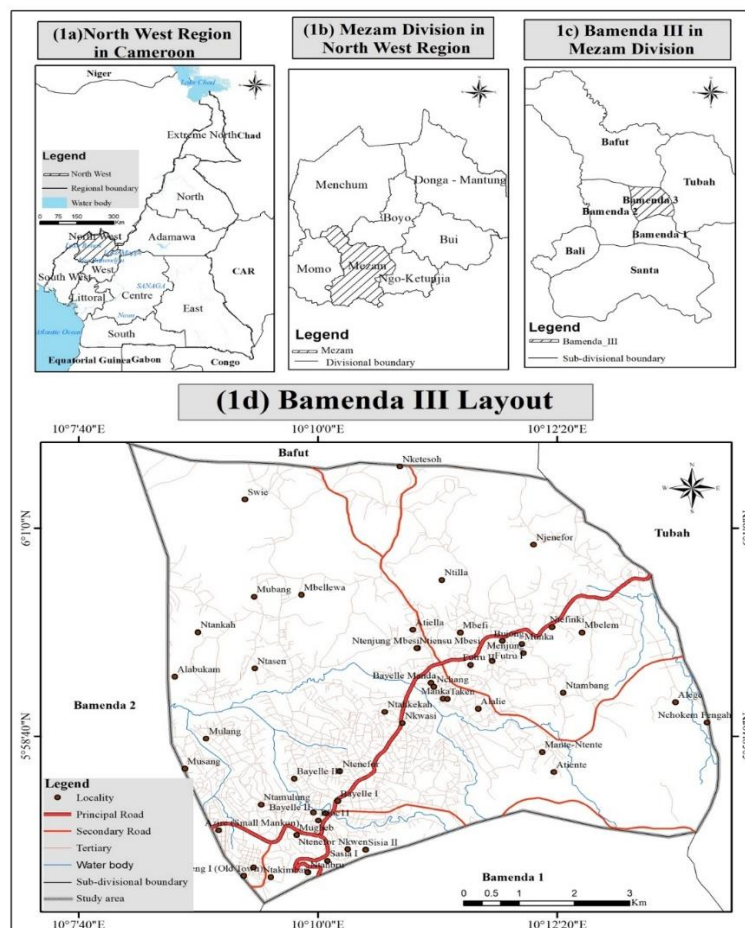
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cess, which nowadays is persistent in developing countries, is more felt in Sub-Saharan Africa. Housing is a residential structure where man live and grows. It is therefore generally approved as one of the most important basic human needs for survival on the earth. The increased demand for housing in sub-Saharan Africa remains one of the most challenging issues facing urban dwellers. The most negatively affected by inadequate housing are the urban poor, who comprise the majority in developing countries. Housing challenges are the major hindrances to economic development and the welfare of the citizens. This is the case with the city of Bamenda in general and the Bamenda 3 local council area in particular which has witnessed rapid population increase for the last three decades and this increase in human number results especially from rural urban migration as well as natural population growth. The rapid growth of urbanization in Bamenda has kept pace with housing resulting to challenges such as the

development of slums, limited houses, increase in the cost of house rents and over crowdedness. The rate and speed of urbanization in the Bamenda III municipality challenges the capacity of the national and local authorities to adequately plan and meet the needs of the growing number of urban dwellers. As Bamenda 3 municipality continues to grow, meeting housing needs become more complex thus mounting pressure on housing demand. Therefore, attending to housing needs of the urban poor will ensure sustainable housing in the Bamenda 3 which ties with goal number 11 of the Sustainable Development Goals (SDGs). These are serious housing challenges which need to be addressed and ensure sustainable housing for all in Bamenda 3. It is in furtherance to these problems that this article seeks to address the housing challenges that accrue from peri-urbanization in the Bamenda 3 local council area.



Source: Modified by Tende from the National Institute of Cartography

Figure 1. Location of the study area.

Bamenda 3 is located between latitude 6°15' and 6°25' North of the equator and longitude 10°02' and 10°15' East of the Greenwich meridian. It has a surface area of 22.9 km² with a population of more than 150,000 inhabitants with population

density of 1,584/km². Bamenda 3 municipality is situated at the western highlands precisely in the Bamenda plateau. Bamenda 3 municipality is found in Mezam Division of the Northwest Region of Cameroon, it is the gateway to and from

the Division of Boyo, Ngokentunjia, Bui and Donga Mantung. Bamenda 3 is bounded to the north by Bamenda 1, to the south by Bafut, west by Tubah sub-division and east by Bamenda 2 sub-division [2]. Bamenda 3 municipality has two main villages which are Nkwen and Ndzah with quarters such as Atielah, Mubang, Mbelewa, Frutru, Menteh, Nkwenjang, Sisia, Menda, Njenefor among others (Figure 1).

2. Literature Review

This paper draws inspiration from the numerous literatures written on urbanization and its challenges to housing and more in cities. It articulates on some which were of uttermost interest to the study and draws the line between the ideas of other authors and what comes in new as contribution to science. Peri-urbanization which occurs from the development of new urban centers expanding outwards from the city center is more recurrent in the developing countries than the developed ones [3]. The author posits that Small urban centres and peri-urban areas were formed because of proximity to big urban centres. As concern administrative hierarchy, the authors underscored that regional city proclamation had given urban centres larger responsibilities for service delivery, including administrative and municipal functions. The author focuses more on the extension of the urban space towards the periphery, while the present article will focus on the influx of population which has triggered peri-urbanization. It's worth nothing that population growth rate and migration are major determinants of urbanization as well as peri-urbanization nowadays. This is the case with the work of [4], who challenged the phenomena on several factors with dominance from population growth and migration. The authors advanced that the possible causes of urbanization are natural increase in population which accounts for about 60% of the growth in urban population, net migration to urban areas, which accounts for about 20% of the escalation as well as reclassification of settlement as towns or declassification as a result of changes in the nature of economic activities and acquisition of urban characteristics and lastly, the extension of boundaries to cities and towns which accounts for about 20% of the increase. These factors are no doubt like what is observed in the study of this article with much emphasis on the impacts of urbanization to the Bamenda 3 local council area and beyond. Furthermore, structural changes have an impact on peri-urbanization that occur in cities [5]. These structural changes also have impacts on the distribution of population in the urban areas. The increasing role of the city Centre for commercial purposes forces population shift to outlying districts. This is the same thing that is happening in Bamenda III municipality where the concentration of population and employment are mostly in Bamenda III. More so some scientific and medical knowledge like the medical school at Mile III (St Louis) has foster the growth of this urbanization. Rapid urbanization and the expansion of cities towards the peripheries have triggered several urban challenges with housing being a

major call for concern [6]. The author revealed that though many countries or city-level reports offer insight into the housing challenges of specific places, little is known regional pattern affecting housing market. This lack of clear knowledge on the relative importance of the factors influencing household demand in countries of sub-Sahara Africa inhibits policy makers, researcher, the private sector, and development partners from making decision when addressing affordable housing provision and rapid increase in growth of informal settlements. The settlement pattern is in constant mutation emanating from spatial dynamics. This is revealed in the work of [7], which propounds that rapid urbanisation taking place in Nigeria has made demand for housing to escalate especially among low-and middle-income families. The authors added that the current supply of housing has fallen short to meet demand, thus leading to various challenges such as housing shortages, slum proliferation and inadequate infrastructure. Affordable housing plays a vital role in addressing these challenges and promoting sustainable urban development. The authors were more concerned in exploring the existing policies and intervention aimed at promoting affordable housing, evaluating their effectiveness and impacts as well as successful initiatives and implemented strategies. This article focuses on peri-urbanization and housing challenges with the hope to address the situation. Nowadays, land use and land cover analyses are used to determine the percentage of increase in built-up area in urban spaces [8]. The author revealed how land use analyses through satellite images have helped urban planners in the organization of urban spaces. Such is the case with this article on the Bamenda 3 municipality. Several other others have written papers and books on the urban development of Bamenda and its challenges such as that of [9], which focused on the challenges of garbage disposal in the city of Bamenda. The authors revealed that the lapse in legal implementations is fast dragging the city into urban anarchy. This present article drew inspiration from the numerous write ups which have been done on urbanization and housing challenges. The paper makes a clear distinction between the works of other authors and the present in research work. The paper revealed that much might have been said about urbanization but little on peri urbanization and housing challenges. The paper thus introduces new methods of managing housing challenges in urban spaces, especially with the results gotten from the field.

3. Materials and Method

Data collection was done through primary and secondary sources for qualitative and quantitative research. In the primary data collection, multi-spectral satellite imagery for three different periods was used to determine the spatial expansion of the area in the peri-urbanization process. The Landsat MSS of 2000, Landsat OLI of 2010 and of 2020 were used to determine spatial expansion of the Bamenda 3 local council area over a period of 20 years. These images were chosen because

they were available at the time of the research and could be easily treated for results and analyses. The images were treated through ArcGIS 10.0 and MapInfo software which facilitated their interpretation and the production of maps.

Some 277 questionnaires were administered to households of the Bamenda I local council area to have first-hand data on the sprawl consequences. This percentage was chosen from a 4% sample size of the total number of 4548 households who were found in that area at the time. The total number of households corresponded to the data from the 2005 to 210 projections of the population and housing census results for Cameroon [10]. Owing to the large number of households in the area, a 4% sample of this household was chosen to facilitate questionnaire administration and yield maximum results. The questionnaires were administered to the households of the nine neighbourhoods (Bayelle-Manda, Bayelle 3, Mughreb, Mante Ntente, Ntahbru, Nchang, Ntilla, Nkwen and Sisia 1) that make up the study area as first-hand information was

gotten for analysis (Table 1).

Field observation and interview sessions were also carried out in the further primary data collection. Field observation was done in 2021 to determine the major sprawl areas of the Bamenda 3 council. In this process, useful pictures were taken as proof of the various phenomena of expansion and sprawl in Bamenda 3. Aside from field observation, interview sessions were also carried out to match proposals to realities to some selected authorities and inhabitants of Bamenda 3. The Divisional Officer for the Bamenda 3 sub-division, the Government delegate representative of the Bamenda city council as well as the first deputy mayor of the Bamenda 3 council were interviewed. Some selected traditional heads and quarter heads of the various quarters in Bamenda 3 were interviewed to have their view on the expansion and peri-urbanization process. Some selected migrants and indigenes of the local council area were as well interviewed to have first-hand information on movement and settlement in Bamenda 3.

Table 1. Sampling procedure and effective respondents

N ^o	Name of neighbourhood	Total household	4% sample of household	Effective respondents
1	Bayelle-Manda	239	9	9
2	Nkwen	2891	115	85
3	Ntilla	29	2	2
4	Mante Ntente	113	5	5
5	Nchang	103	5	5
6	Bayelle III	2701	108	80
7	Mugbreb	1680	67	50
8	Ntahbru	505	20	20
9	Sisia I	669	26	21
Total		8930	357	277

Source: NPHCC, 2005, and 2010 projections and Field work, 2024

Data collected from the Cameroon census and housing unit coupled with field analyses was done to determine the sample size and effective respondents in the sampling procedure. Owing to the large number of households in Bamenda 3 and with the impossibility to sample every one, a 4% sample size was chosen to facilitate data collection with minimal bias. This was done for the nine neighbourhoods that make up the local council and the results got were analyzed for results presentation. Out of the 357 questionnaires administered to the household, 277 effective responses were received and used for analyses.

In-depth documentary research was done in the form of secondary data collection. Documents on planning on Bamenda, Bamenda 3 local council area and other areas were

consulted to understand the stakes involved in urban development and peri-urbanization and what could be done to upgrade the area. Several research centers and other online libraries were consulted to have contemporary information on peri-urbanization and its ramifications to an area. Data collected through primary and secondary sources yielded both qualitative and quantitative treatment and analysis. The Microsoft Excel Spread sheet was used to treat statistical data and generated tables and charts for analysis. The GPS was used to collect development center points for map realization. This was done through the digitalization and superimposition of data collected and updating of existing data for map production and results. ArcGIS 10.0 and MapInfo software were used in the realization of maps in the research work. The data

was treated and analyzed and presented as results for discussions.

4. Results and Analyses

Peri-urbanization and challenges in the Bamenda 3 local council area have resulted from rapid urbanization and spatial expansion of the area.

4.1. Rapid Urbanization and Influence on Peri-urbanization in Bamenda 3

The urbanization process of Cameroon has witnessed a proliferation of spatial expansion and the emergent of new urban spaces which leaves much to be desired. These urban spaces have unfortunately developed in mostly an unplanned than planned manner [11]. Such is the case with the Bamenda 3 local council area, which has witnessed an accelerated growth in its population over the years (Table 2).

Table 2. Population evolution in Bamenda 3 local council area.

Year	1976	1987	2005	2025 projections
Population	16358	37448	91852	105244

Source: NPHCC, 2005, and 2010 projections

Results from findings in Table 1 revealed that the population of Bamenda 3 local council area has moved from 16,358 in 1976 to 37,448 in 1987 with a more than 50% increase in ten years. This increase was further observed as the population changed from 91,852 in 2005 to 105,244 in 2025 projections. Such a tremendous change in population over the years

has triggered pre-urbanization in the area as the people who come in have opted for the available space in the peripheries. Results from findings revealed that several factors have triggered urbanization in the Bamenda 3 local council area (Table 3).

Table 3. Factors of urbanization in the Bamenda 3 local council area.

Number of clusters	Number respondents	Factors of urbanisation				
		Population growth	Urban expansion	Socio-economic factors	Political factor	Relief factors
Northeast	95	28	15	19	21	12
West	12	3	2	3	3	1
Southwest	170	60	23	29	41	17
Total	277	91	40	51	65	30
In percentages	100	32.8	14.4	18.4	23.4	10.8

Source: Field work, 2024

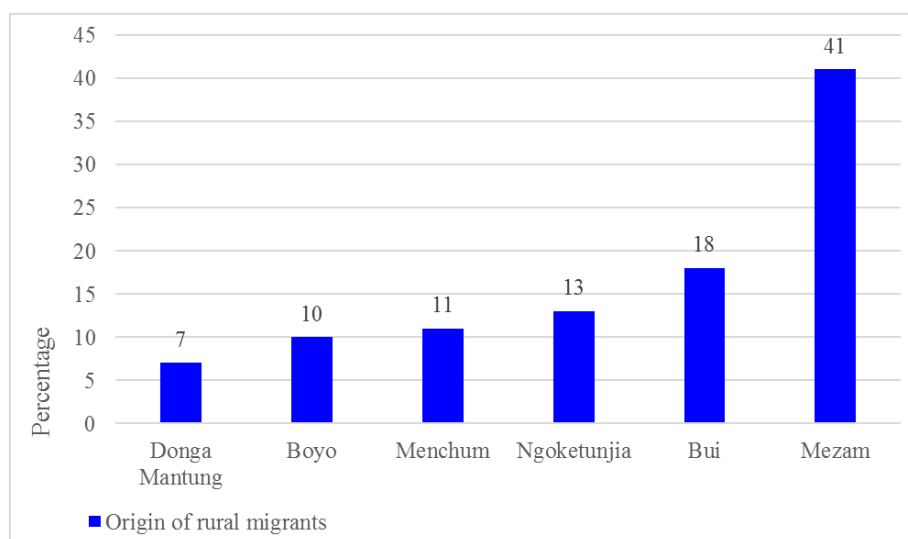
Results from table 2 adhere to the fact that population growth represents 32.8% amongst the factors of urbanisation. This population growth result from rural exodus and natural population increase. Political factor constitutes 23.4% of the factor the factors of urbanisation. This political factor is government policy that transforms the status of a town. This government policy are presidential Degrees organising the administrative set up of regions and towns as well as Degree setting council. The government also stipulates criterion of urban settlement. Degree No 2007/115 of 23 April creating

Bamenda 3 Council accelerated urbanisation process of Bamenda 3. Socio-economic activities represent 18.4% of factors of urbanisation. This is explained by the fact that the city of Bamenda over the four last decades has witnessed a multiplication of economic activities such as commerce, services and transformation sector as well social facilities and higher institutes of learning that have pulled in population from her surroundings. All these economic activities have been extended in Bamenda 3 and thus accelerating urban growth. Urban expansion made up 14.4% of the factors of

urbanisation in Bamenda 3. This is justified by the fact that the town of Bamenda in general and Bamenda 3 has been rapidly expanding and absorbing rural fringe, thus transforming urban peripheries into urban status. While relief factor represents 10.8% amidst the factors of urbanisation. This due relief has facilitated the construction of settlements, the escarpment of Bamenda has enabled the construction of settlements at the foot of the escarpment because of its relatively low surface.

Furthermore, rapid population growth through to natural increase and in-migration is seen as one of the factors responsible for urbanization in Bamenda 3. Results from the first official population and housing census conducted in Cameroon in 1976 revealed that, the population of Bamenda was 16358 inhabitants. While the second official population and housing census of 1987 gave Bamenda 3 a population of 37448. According to the results of the 2005 official population and housing census, the population of Bamenda was 91852 with a population growth rate of 6% [9]. Since 2005, no offi-

cial population and housing census has been conducted in Cameroon and as such, the population can be projected up to 2035 during which Cameroon is expected to emerge. Based on a report from Bamenda 3 council, the population of Bamenda 3 in 2008 was 47000 and 48000 in 2009, while recent figures show that the current population is more than 150000 inhabitants. This population growth results from rural exodus and natural increase. Rural exodus has predominantly occurred from migrants of the surrounding Divisions around the Northwest Region and from Mezam Division itself. The Bamenda 3 local council area serves as gateway to four administrative divisions of the Northwest Region, notably; Boyo, Ngokrtunjia, Bui and Donga Mantung. The people of these areas easily migrate and settle in this municipality. Find from field survey shows that migrants in this municipality come from Mezam, Bui, Menchum, Boyo, Ngoketunjia, Momo, Donga Mantung and from West region (Figure 2).

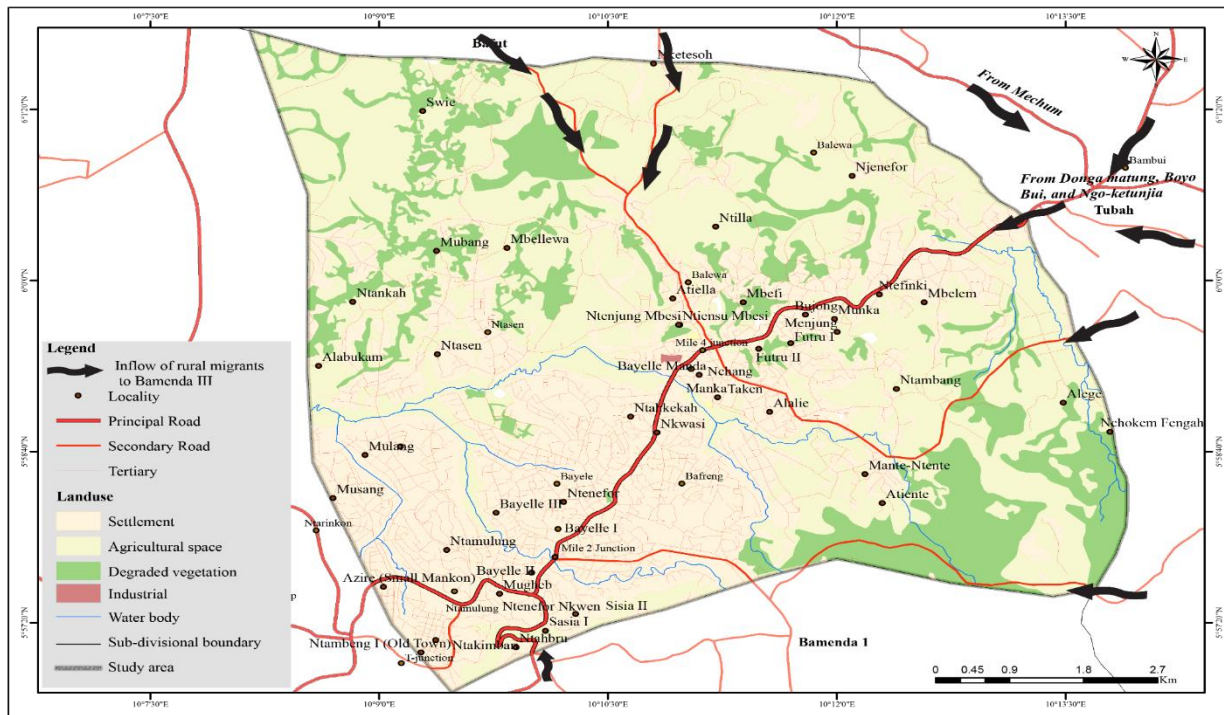


Source: Field work, 2024

Figure 2. Migration supply zones to Bamenda 3.

Revelations from figure 2 propound that a greater percentage of the migrants come from Mezam, (41%). These are migrants from areas such as Bafut, Santa and other rural areas of Mezam. Inflow of migrants from Bui Division represent 18%, this is the main area where migrants out of Mezam Division come from. The uprising socio-political crisis of 2016 in the Northwest and Southwest of Cameroon, Bui Division is one of highly affected area. The conflict in this zone has caused people to flee into Bamenda 3 and other parts of Bamenda for safety. Ngoketunjia made up 13% of the areas where most of the rural migrants come from. This is due to proximity with Bamenda 3 that permit people from Ngoketunjia to easily move to Bamenda 3 in search of jobs and schooling. Also, the socio-political crisis has pushed people to move to Bamenda 3. Migrants from Menchum represents 11%,

these migrants are also attracted by better opportunities in Bamenda 3. The socio-political crisis has also forced migrants to move to Bamenda 3. Migrants from Boyo (10%) and Donga Mantung (7%) moved to Bamenda to search of better life. These areas have been hit by socio-political crisis also; thus, the movement is also explained by push factors resulting from the crisis Figure 8 (next page) shows main areas where rural migrants come from. Above all the high inflow of rural migrants from Bui, Menchum, Boyo, Ngoketunjia and Donga Mantung Divisions into Bamenda 3 are motivated by quest for better opportunities such as jobs and learning in university and higher institutes. However, the uprising of the socio-political crisis suddenly forced high number of migrants to move to Bamenda 3, especially from areas as Bui, Boyo, Menchum and Ngoketunjia Divisions (Figure 3).



Source: Fieldwork, 2024

Figure 3. Migration influx areas into Bamenda 3.

Results from [figure 3](#) reveal that migrant's influx into the northeast of Bamenda 3 are from Bui, Donga Mantung, Boyo and Menchum Divisions. The movement of migrants into Bamenda 3 from the east are migrants from other parts Bamenda such as Akum, Awing and Santa. The inflow of migrants from the southwest are from Bamenda I. While the movement of migrants from the north into Bamenda 3 are from Bafut and Netesoh. Thus, high population growth for the last past four decades is due to high inflow of rural migrants into Bamenda 3. Apart from high rural-urban migration that has contributed to high population growth, natural increase is also responsible for population increase in Bamenda 3.

In another development, political evolution in the north-west region of Cameroon and in the Bamenda 3 local council area also plays a role in the urbanization process. The political dynamics in the status of Bamenda from 1973-2023 have also contributed to the increase in urbanization in Bamenda. The change in the status of Cameroon from federal to unitary state through a referendum in 1972 brought great changes in Cameroon and Bamenda in particular. With the creation of the unitary state in 1972, the Bamenda Town Council (Mankon Area council) was changed to Mankon Rural Council [12]. In November 1977, the status of the council was raised to an urban council. This brought significant infrastructural development like roads linking the central business district (CBD) and residential quarters like Nkwen, Mughem, and Bayelle 3. This attracted more people into the town, leading to urbanization. Equally, the presidential Decree of January 2008

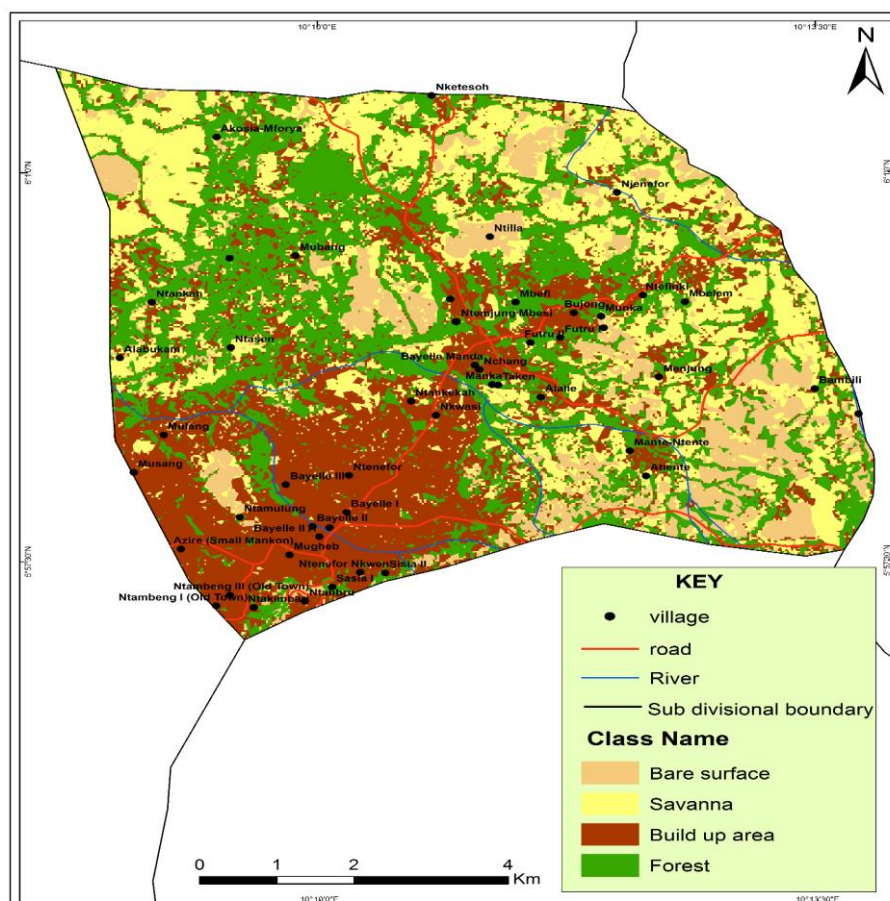
which upgraded Bamenda from urban to a city council and Ministerial Decision No. 2007/115 of 23rd April 2007 creating Bamenda 3 council contributed to the increase urbanization and subsequently transforming the urban landscape of Bamenda. This brought significant changes in terms of infrastructural development like roads (the tarring of road, from Tubah-Nkwen, Bafut to Bamenda 3 and the extension of pipe born water and electricity to quarters that lacked these facilities (for example Bangshie and Ntahnka). These facilities attracted more population into the town opening flood gate for uncontrolled urban expansion. This led to an increase in urbanization as more people, especially from Bui, Boyo and Ngoketunjia moved into Bamenda 3. Prior to the crisis, Bamenda being the head quarter of the northwest region of Cameroon, acted as a receiving town to those that left the interior villages in search of work, educational opportunities. The crisis forced many people from the region to Bamenda due to insecurity. These crises attracted many people into leading to an increase in urbanization. This increase in urbanization resulted in uncontrolled expansion of the town into the periphery, thereby further absorbing the periphery and transforming into urban status.

4.2. Space Colonization and Effect on Peri-urbanization

Spatial extension is also responsible for peri-urbanization in the Bamenda 3 local council area. As town grow outward

into the periphery, settlements around the urban periphery are being absorbed by urbanisation process. Consequently, these settlements at the urban fringes are transformed into urban status due to delocalisation and movement of people from the

city centre to the periphery. The expansion of Bamenda 3 has been gradual since the year 2000, where much of the land that was covered by vegetation has been colonized by built-up space triggered by population growth (Figure 4).



Source: Landsat image of 2000 adopted from NIC, 2024

Figure 4. Land use/ Land cover situation of Bamenda 3 in 2000.

With regards to the results of the land use/landcover situation of the Bamenda 3 local council area in figure 4, the vegetation and bare surfaces were predominantly dominant as opposed to the built-up area (Table 4).

Table 4. Land use/landcover situation of Bamenda 3 in 2000.

Designation	Surface area in Km ²	Percentages
Built-up	10.96	13.16
Forest	42.59	41.50
Bare surface	57.12	43.38
Savannah grassland	42.66	15.22
Water	1.87	2.25

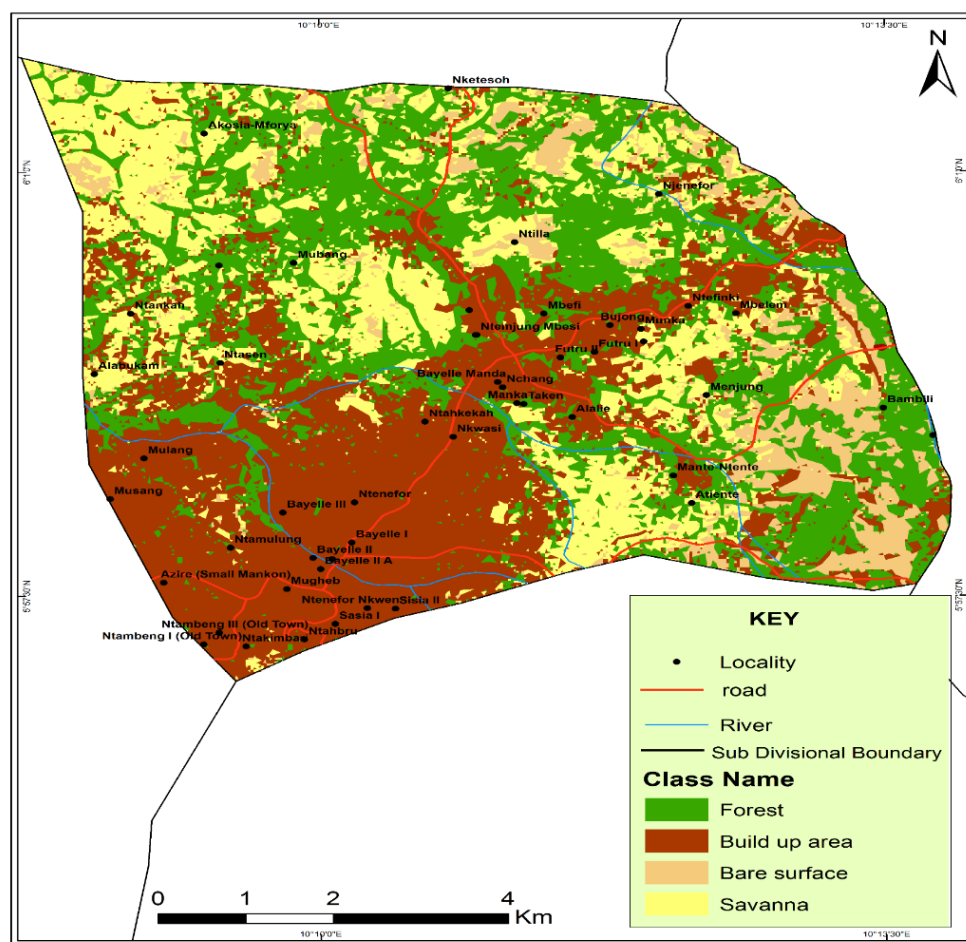
Designation	Surface area in Km ²	Percentages
Total	83.29	100.0

Source: Data treatment from Landsat image for Bamenda 3 in 2000

The results revealed that built-up area experienced a slight increase as opposed to the other surfaces in the expansion process of the area. Despite the improvement in road network in Bamenda 3, the economic crisis that hit Cameroon in the late 1980s was accompanied by a negative growth rate 3% to 4%. The government had to apply very strict budgetary policies which led to the reduction on public investment on social infrastructures and facilities. In 1993, there was a 70% reduction in the salaries of public servants which was escalated by the 50% devaluation of the CFAF in January 1994, thereby

increasing the rate of inflation in Bamenda 3. This was followed by the closure of restructured, semi public and private enterprises, retirements and lay-offs of staff. This led to low investments in housing development and high expenditure on consumers' goods. In addition, this resulted in a sharp increase in urban poverty pushing a large proportion of the population to unauthorized locations such as on steep slopes in Ndza Sisia, Mante-Ntente, Ntilla among others. This situation incited spontaneous settlements by low-income earners on steep slopes and neighborhood such as Bambili and Atiente with

accompanied consequences. To curb the unplanned development that was emerging, the authorities were compelled to draw up the first Master Plan of Bamenda in 1985. The Master Plan was aimed at organizing and planning housing and socio-economic, cultural, and environmental activities, monitoring and controlling land use and eliminating incompatible land uses in the town. Nevertheless, this immediate action occurred when settlement had preceded planning thereby worsening the housing opportunities of the area.



Source: Landsat image of 2000 adopted from NIC, 2024

Figure 5. Land use/ Land cover situation of Bamenda 3 in 2010.

In the course of time, population growth increased, and urban sprawl emerged causing a perpetual expansion of the city of Bamenda with more incidence on the Bamenda 3 local council area [13]. With this, Bamenda consolidated multiple administrative functions as Divisional capital, Sub-divisional capital and regional capital of the Northwest Region which acted as a pulling force, attracting many people to work in Bamenda 3. This further fueled the creation of several schools ranging from primary, secondary to university level which contributed to swelling up the population of Bamenda 3,

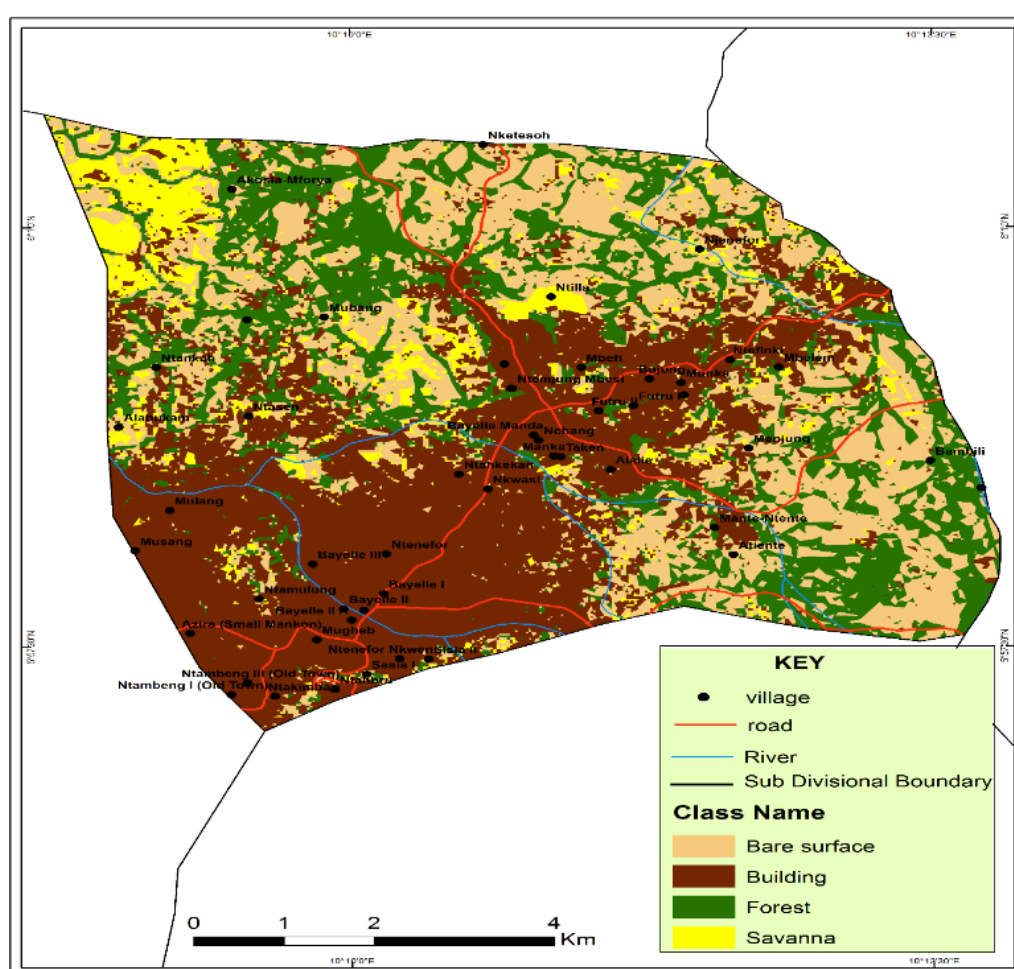
implying an increase in demand for housing. This resulted in the growth of neighborhoods like Ntasen and Nkwen Sisia II as the land in these areas was very cheap and closer to the market. The Bamenda 3 local council area thus witnessed a change in the built-up space from 13.16% in 2000 to 23.10% in 2010 (Figure 5).

As the built-up area increased, the vegetation reduced indicating a gradual but steady colonization of space by infrastructure (Table 5).

Table 5. Land use/landcover situation of Bamenda 3 in 2010.

Designation	Surface area in Km ²	Percentages
Built-up	23.71	23.10
Forest	16.49	12.52
Bare surface	17.87	19.74
Savannah	19.88	19.37
Water	1.18	1.5
Total	102.62	100.0

Source: Data treatment from Landsat image for Bamenda 3 in 2010



Source: Landsat image of 2000 adopted from NIC, 2024

Figure 6. Land use/ Land cover situation of Bamenda 3 in 2020.

Results from [table 3](#) revealed that the forest, bare surfaces and savannah spaces which were dominated in 2000 have now been colonized by built-up space in constant mutation. With a constant increase in the population of Bamenda 3, the built-up areas have increased rapidly to meet the needs of the rising population. There has been the proliferation of so many

schools, hospitals, churches, banks among other services. This development has facilitated the expansion of the town from the Centre towards the urban fringes. The periods saw an increase in land values especially within the urban space resulting in spatial expansion and intensification of land uses. As a result, the new arrivals, especially the poor displaced by

housing market have little alternative than to occupy marginal areas along riverbanks, hilly slopes, and swampy areas, where rents and land prices are relatively cheap (Figure 6).

Results from findings revealed that the built-up space in

2020 dominated the area space occupation of the Bamenda 3 local council. This confirms that space colonization by built-up has occurred and the need for proper housing remains a major difficulty (Table 6).

Table 6. Land use/landcover situation of Bamenda 3 in 2020.

Surface area in Km ²	Surface area in Km ²	Percentages
Built-up	26.45	29.22
Forest	9.02	10.83
Bare surface	15.26	14.87
Savannah	16.86	18.63
Water	1.09	1.20
Total	90.51	100.0

Source: Data treatment from Landsat image for Bamenda 3 in 2020

Results from table 5 revealed that the built-up area which was 13.10% in 2000 has increased to 29.22% in 2020 thus representing a 16.22% increase in 20 years. This indicates that the built-up space of the Bamenda 3 local council area has changed enormously giving way to numerous housing chal-

lenges accrued.

Results from findings adhere to the fact that numerous changes have occurred over the years in the Bamenda 3 local council area (Table 7).

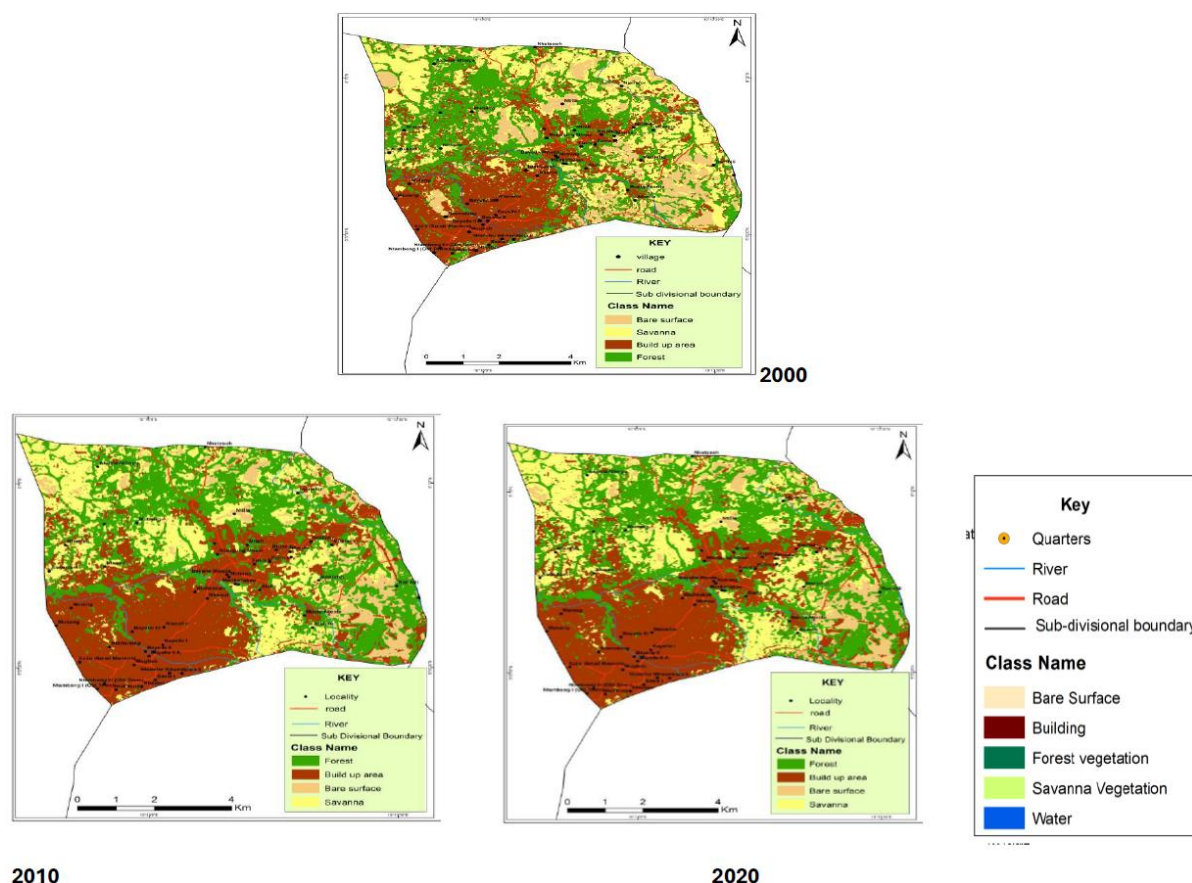
Table 7. Land use/landcover situation of Bamenda 3 from 2000 to 2020.

Designation	2000		2010		2020	
	Area in Km ²	Area in%	Area in Km ²	Area in%	Area Km ²	Area in%
Built-up	10.96	13.16	23.71	23.10	26.45	29.22
Forest	42.59	41.50	16.49	12.52	9.02	10.83
Bare surface	57.12	43.38	17.87	19.74	15.26	14.87
Savannah grassland	42.66	15.22	19.88	19.37	16.86	18.63
Water	1.87	2.25	1.18	1.5	1.09	1.20
Total	83.29	100.0	102.62	100.0	90.51	100.0

Source: Data treatment from Landsat images for Bamenda 3 from 2000 to 2020

The Bamenda 3 local council area has undergone remarkable changes in its land use and land cover situation over time and space. The statistics generated from the three time periods showing the land use and land cover patterns and changes revealed both positive and negative changes. Results from table 6 indicate that built-up areas experienced a tremendous positive and steady increase from 17.69 in 2000 and further increase to 23.71 in 2010 to 26.45 in 2020. Forest reduces

from 28.24 in 2000 and later witnessed a reduction again to 16.49 in 2010 and 9.02 in 2020. Bare surface also reduced from 18.78 in 2000 and later decrease to 17.87 in 2010 and 15.26 in 2020. More so, Savannah grassland decreased from 38.66 in 2000 and further dropped to 19.88 in 2010 and 16.86 in 2020. In addition, water witnessed a constant decrease through the three periods at 1.87 in 1990 to 1.70 in 2000 and later decreased to 1.18 in 2010 and 1.09 in 2020 (Figure 7).



Source: Landsat image of 2000 adopted from NIC, 2024

Figure 7. Summary of Land use/ Land cover situation of Bamenda 3 from 2000 to 2020.

The situation of Bamenda 3 local council area indicates that the population has increased accompanied by the built-up area. Owing to the high density of the population and increase in

the space, housing challenges have occurred which have posed several problems to the urban development of the area.

Table 8. Housing challenges indicators in Bamenda 3.

Number of clusters	Number respondents	Indicators			
		substandard housing infrastructure	High cost of house rents	overcrowding	Construction in risky quarters
Northeast	95	32	27	20	16
West	12	4	5	2	1
Southwest	170	71	48	30	21
Total	277	107	80	52	38
%	100	38.6	28.8	18.7	13.7

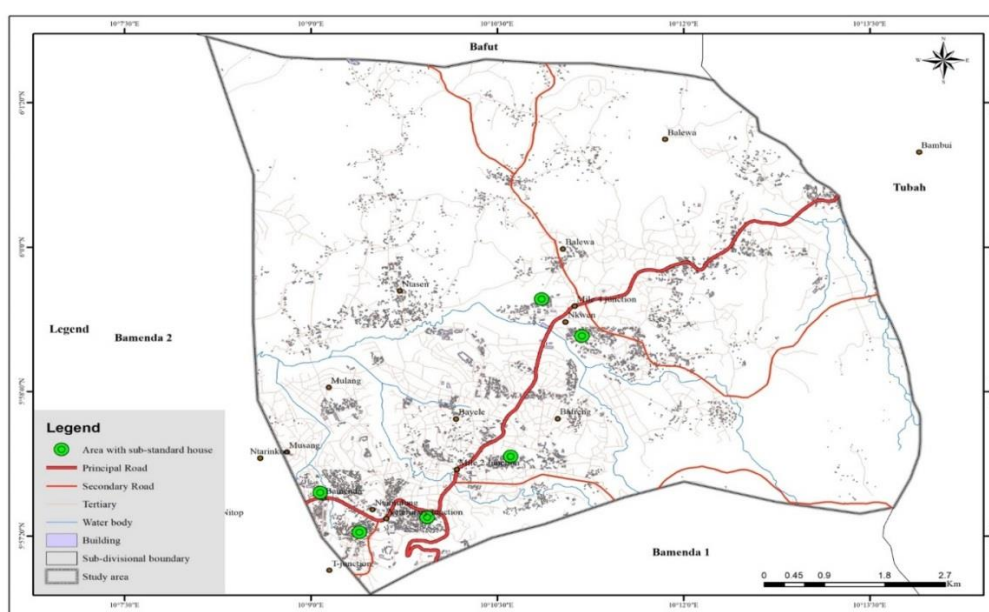
Source: Field work, 2024

4.3. Housing Challenges and Influence on Development in the Bamenda 3 Local Council Area

Access to housing is a fundamental right that must be respected and provided to all. Unfortunately, it's not the case in the Bamenda 3 local council area where access to affordable housing has become a herculean task. Results from findings revealed that housing challenges in Bamenda 3 have triggered the development of substandard houses, increased cost of house rents, overcrowding and construction of houses in risk prone quarters (Table 8).

Revelations from field results in table 7 show that sub-standard housing infrastructure is the dominant indicator in

the Bamenda 3 local council area with 38.6%. these are houses which are predominantly being constructed by the urban poor and are constructed with temporary materials such as wood and aluminium. Quality housing is a matter of great concern in Bamenda 3. The housing needs of the population keep rising, meanwhile some poor-quality houses constructed in the 1990s are in a depilating state as maintenance work has not been carried out since their construction. Most of the substandard houses do not meet construction norms and are built with poor quality materials thus vulnerable to risk of collapsing in the event of strong storms. Field data collection permitted the identification and mapping of neighbourhoods with dominant substandard housing infrastructure (Figure 8).



Source: Fieldwork, 2024

Figure 8. Neighbourhoods with substandard houses in Bamenda 3.



A

B

Captured by Tende, 2024

Figure 9. Substandard housing infrastructure in Bamenda 3.

These substandard houses are mostly located in neighbourhoods such as Mile 4 Nkwen, Nchang, Bayelle I, Mugheb, Ntammulung and part of Old town which belong to Bamenda 3 local council area. Most of these houses are in a dilapidating state and are no longer suitable for habitation (Figure 9).

Photo A in figure 9 shows isolated substandard houses at Nchang while photo B shows substandard houses close to

other buildings at Mile 4 Nkwen. The substandard houses are constructed with poor quality materials and are in delapidating state. Most of the houses were built in the early 1960s and 1990s, and since then little or no maintenance work has been carried out. Various motives account for the existence of these poor-quality houses (Table 9).

Table 9. Motive for occupying substandard houses in Bamenda 3.

Number of clusters	Number respondents	Reason for occupying substandard housing			
		Inadequate source of finance	High cost of building materials	High cost of living	Desire to own a house
Northeast	95	32	27	20	16
West	12	4	5	2	1
Southwest	170	71	48	30	21
Total	277	107	80	52	38
%	100	38.6	28.8	18.7	13.7

Source: Fieldwork, 2024

Results from findings reveal that inadequate sources of finance dominate as a motive to substandard housing occupancy in Bamenda 3. The substandard houses are occupied by low-income earners who don't have the means to afford sustainable housing. High cost of building materials made up 28.8% why people occupy poor quality houses. Furthermore, the high cost of living represents 18.7%. The cost of living has increased for the past 4 decades, and this has made it difficult for households to save money, thus more is spent on consumption and taking care of children's education. While the desire to have a house scored 13.7%. Some people desire to stay in their own house and lack the means to afford good quality housing. They are pushed to construct their own houses which of course are often houses of low quality. Urban inhabitants who stay in poor quality houses don't always have

access to portable water, good roads and energy supply (Bamenda City Council, 2012). Such is the case in the Bamenda 3 local council area which has hampered development.

In another development, the prices of house rent in Bamenda 3 for over three decades have risen, consequently, low-income earners cannot easily afford sustainable housing (Table 10). Table illustrate reasons for increase in rental housing in Bamenda 3. Based on respondents' perceptions towards high rental housing, high cost of land scored 42.5%. The price of land has increased due to fast growing population. It is worth noting that between 1980 and 1995, the average price of land in Bamenda was 1500FCFA per square meter in urban fringe area and it is currently at 600FCFA.

Table 10. Reasons for increased house rents in Bamenda 3.

Number of clusters	Number respondents	Reason for the increase in house rent		
		High cost of land	Increase price of building materials	Lack of regulatory mechanism
Northeast	95	42	30	23
West	12	5	4	3
Southwest	170	71	59	40

Number of clusters	Number re-spondents	Reason for the increase in house rent		
		High cost of land	Increase price of building materials	Lack of regulatory mechanism
Total	277	118	93	66
%	100	42.5	33.5	23.8

Source: Fieldwork, 2024

This shows that price of land has risen for the past six decades. Increase price of building materials represents 33.5% amongst the reasons for increased house rental prices. The prices of building materials for the past three decades have increased, consequently, the cost of constructing a house has risen, thus pushing the rental prices upward. Lack of regulatory mechanism scored 23.8%. No effective mechanism has been put in place to control rental housing by the state. The prices of houses in Cameroon and Bamenda 3 are controlled by the forces of demand and supply. As demand for housing increases, the prices of housing are also increase. The increase rental housing has adverse impacts especially on the urban poor.

Furthermore, overcrowding and the construction of houses in risk pruned areas have as well affected the smooth development of Bamenda 3. Results from finding revealed that the

growing population in the town of Bamenda and Bamenda 3 without adequate housing has led to overcrowding in housing. Moreover, the uprising socio-political crisis in the anglo-phones, rural areas in the Northwest region have been highly hit by the crisis and most of them have moved to Bamenda town. Overcrowding does not only put pressure on housing facilities such as rooms, beds and toilets, it also creates physical and psychological trauma on persons living under such conditions [14]. A room index analyses was done to ascertain the level of over crowdedness in Bamenda 3, and the results show that more persons lived in single rooms (Table 11). the table, the number of persons per room (1-2) scored only 22% which is normal but above 2 persons per room is overcrowding. While 2-3 persons per room scored 49% representing the highest. This implies that the number of persons that live in a room (2-3) are high, thus the room index is high.

Table 11. Room index analysis in the Bamenda 3 local council area.

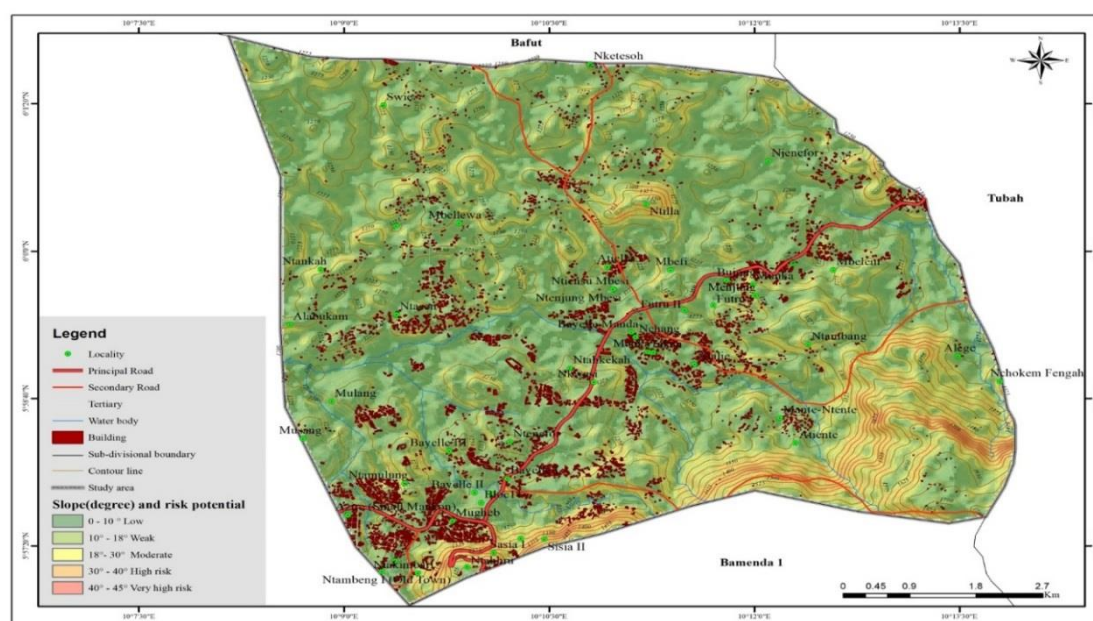
Number of clusters	Number re-spondents	Room index in Bamenda 3		
		1-2 persons	2-3persons	3-4 persons
Northeast	95	22	47	26
West	12	2	6	4
Southwest	170	37	85	48
Total	277	61	138	78
%	100	22	49	28.1

Source: Fieldwork, 2024

This shows overcrowding in housing because 1-2 persons per room is an ideal but more than 2 persons in a room is overcrowding. The number of persons per room (3-4) represent 28.1%, these were large families who have children and live in a house that has at least one parlour and two rooms and above. The comfort of households who live in such overcrowded conditions was sought and they revealed that there is also overcrowding in beds, bathing rooms and toilets which

creates physical and psychological discomfort.

The urbanisation process in Cameroon is not planned; this is seen as cities are expanding without control. As such, this has given room for the urban poor to settle in zones which are vulnerable to risks due to low cost of land. In Bamenda 3, the high cost of land has pushed most of the poor urban dwellers to settle in zones like hill slopes and swampy areas (Figure 10).



Source: Fieldwork, 2024

Figure 10. Settlement construction in risk-prone areas of Bamenda 3.

These risks zones such as hill slopes are vulnerable to landslide while swampy areas are vulnerable to floods. These zones are unsafe and are mapped out as non-habitable areas. These zones are found in areas such as Ntilla, Mante-Ntente, Alege, Atiente, Ntaubang, Sisia I, Sisia II, Ntahbru and part of

old town. Some of the slums are as well located in Bayelle, Bayelle II, and Bayelle III.

Security concerns in such areas leaves much to be desired. These risk zones are some in the hill tops and others in the swamps (Figure 11).



C

D

Captured by Tende, 2023

Figure 11. Risk zones settlement points in Bamenda 3.

Photo C of figure 11 shows houses located in swampy zones in the Sisia I and Sisia II quarters while photo D x-rays buildings being erected in the hilltop zones of Atiente and Ntaubang neighbourhoods. The inhabitants who live in swampy areas face a lot of challenges in these environments as they are exposed to environmental hazards and health related problems. Some range from flooding, unhealthy environment, inaccessibility, prevalence of mosquitoes to

disease attacks and even death at worst conditions. The population though aware of the risks involved in living in such areas are faced with the difficulties in having opportunities which can improve on their income. This has triggered the quest for low rents and available land which most often are found in the risk zones. It is unfortunate that despite government action, through the ministry of urban development and housing, the Bamenda city council, the Bamenda 3

local council as well as the civil society and local authorities [15], the housing challenges persist and has hindered planned development in the Bamenda 3 local council area and Bamenda city in general. The results presented are true testimony to how the local council area and city might be in future if nothing is done.

5. Conclusion

Peri-urbanization and housing challenges happens to be a major menace to sustainable development in most emergent cities [16]. This work which was aimed at revealing that peri-urbanization in the Bamenda 3 local council area has triggered housing challenges can adequately confirm the hypothesis to be true. Rapid population growth from natural increase and migration has triggered spatial expansion which caused the perpetual increase in the neighbourhoods. This neighbourhood increase has been accompanied by improvements in the road infrastructure, availability of social amenities, economic boom as well as available employment and security. These pull factors amongst others have yielded to the constant growth of the area owing to its administrative influence as well. The paper found out that peri-urbanization, despite its nature, can serve as a source of development to most emergent cities if properly managed. The article found out that the development a of substandard housing infrastructures, high cost of decent housing, over crowdedness as well as the construction of houses in risk pruned zones are some of the challenges observed in the Bamenda 3 local council area. Since its effects in the Bamenda 3 local council area are gradually experiencing difficulties in the unplanned expansion and its eventual defaults observed, the paper recommends that town planning rules and regulations be enforced and imposed without delay. Harkening to this call will not only curb the anarchy that is gradually reigning in the expansion process in Bamenda 3 but will also reduce the environmental consequences accrued. The paper adheres to the fact that the State should put more effort into financing affordable housing either through subventions or loan purchases to reduce substandard constructions. This can be done through the construction of low-cost housing by the government and allocation to low-income earners. This will permit the control and management of the type of structures constructed and will limit anarchical constructions at best. Furthermore, the legal and judicial system should ensure contract enforcement and promote transparency with the hope of curbing housing challenges in Bamenda 3. Transparency can be done by avoiding and prohibiting the selection of high-income earners to occupy the available low-income houses and ensuring proof of income levels before any allocation is done to curb favoritism and corruption. The work also recommends that the Bamenda city council master plan and the Bamenda 3 local council sector plans be scrupulously respected. These plans have duly revealed the planning and management of city and have respected town planning

and housing regulations which are all geared at building a sustainable city. It is the hope of this paper that the bold step of planning the in the city be considered and adopted by the authorities to give Bamenda 3 and the city a new facelift and render it sustainable.

Abbreviations

NPHCC National Population and Housing Census of Cameroon

Author Contributions

Tende Renz Tichafogwe: Conceptualization, Formal Analysis, Methodology, Supervision, Writing – original draft, Writing – review & editing

Sahfe Eric Wongbe: Data curation, Software, Visualization

Conflicts of Interest

The authors declare no conflicts of interest.

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