URBAN SPRAWL AND ITS EFFECTS ON THE SOCIO-ECONOMIC DEVELOPMENT OF THE BAMENDA I MUNICIPALITY FROM 1996 TO 2021

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DEDICATION

To my beloved Parents Mr. Sahfe Anthony and Mrs. Terwiy Alice who have been a great source of inspiration to my success.

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ABSTRACT

Urban sprawl has become an important element in most Cameroonian towns. This is related to increase in population and economic activities, which has resulted to urban extension. This has not been without leaving out issues such as urban disorder, pressure on resources, and reduction in agricultural land among others. It was against this gloomy background that this study sets out to investigate the relationship between urban sprawl and its effects on the socio-economic development in Bamenda I municipality. This work sets out to investigate the contribution of urban sprawl and its effects on the socio-economic development of Bamenda I municipality. Four hypotheses were set to guide the study. Research methods and techniques that were adopted and used led to data collection, processing and analysis. Primary data was gotten through filed surveys where 192 respondents from 12 quarters of Bamenda I municipality provided the responses. Additional primary data was gotten through, interviews, focus group discussions and observation where observed phenomena were captured using a digital camera. The data gotten from questionnaires was processed using Microsoft Excel while maps and Satellite images were processed using ArchGIS and Erdas. Secondary data was gotten from published and unpublished documents. Inferential and non-inferential analyses were effectuated that paved the way for the testing of hypotheses, drawing up of meaningful conclusions, suggestions and policy implementations. The outcome of the data collected, treated, analysed and interpreted revealed that socio-economic factors (47.4%) are the main determinants of urban growth in Bamenda I municipality followed by demographic 26.0%, political 13.0%, religious 7.8% and cultural factors with a score of 5.7%. Some strategies of urban sprawl have equally been put in place in the study area. In forecasts, urban sprawl has led to building of schools, roads constructions amongst others in Bamenda I municipality. The execution of urban planning regulations by the capable power and good reassessment to ensure the respect of these regulations by the inhabitants should be a call for concerned in Bamenda I municipality.

Key words: Urban Sprawl, Effects, Socio-economic, Development, Urban planning and Bamenda I municipality

RESUME

L'étalement urbain est devenu un élément important dans la plupart des villes camerounaises. Ceci est lié à l'augmentation de la population et des activités économiques, qui a entraîné une extension urbaine. Cela n'a pas été sans laisser de côté des problèmes tels que le désordre urbain, la pression sur les ressources et la réduction des terres agricoles, entre autres. C'est dans ce contexte sombre que cette étude se propose d'étudier la relation entre l'étalement urbain et ses effets sur le développement socio-économique de la commune de Bamenda I. Ce travail se propose d'étudier la contribution de l'étalement urbain et ses effets sur le développement socio-économique de la commune de Bamenda I. Quatre hypothèses ont été posées pour guider l'étude. Les méthodes et techniques de recherche adoptées et utilisées ont conduit à la collecte, au traitement et à l'analyse des données. Les données primaires ont été obtenues par le biais d'enquêtes classées où 192 répondants de 12 quartiers de la municipalité de Bamenda I ont fourni les réponses. Des données primaires supplémentaires ont été obtenues par le biais d'entretiens, de discussions de groupe et d'observations où les phénomènes observés ont été capturés à l'aide d'un appareil photo numérique. Les données obtenues à partir des questionnaires ont été traitées à l'aide de Microsoft Excel, tandis que les cartes et les images satellites ont été traitées à l'aide d'ArchGIS et d'Erdas. Les données secondaires ont été obtenues à partir de documents publiés et non publiés. Des analyses inférentielles et non inférentielles ont été effectuées, ouvrant la voie à la vérification des hypothèses, à l'élaboration de conclusions significatives, de suggestions et de mises en œuvre de politiques. Le résultat des données collectées, traitées, analysées et interprétées a révélé que les facteurs socio-économiques (47,4%) sont les principaux déterminants de la croissance urbaine dans la commune de Bamenda I suivis des facteurs démographiques 26,0%, politiques 13,0%, religieux 7,8% et culturels avec une note de 5,7 %. Certaines stratégies d'étalement urbain ont également été mises en place dans la zone d'étude. Selon les prévisions, l'étalement urbain a entraîné la construction d'écoles, la construction de routes, entre autres, dans la municipalité de Bamenda I. L'exécution des règlements d'urbanisme par le pouvoir compétent et une bonne réévaluation pour assurer le respect de ces règlements par les habitants devraient être un appel à préoccupation dans la commune de Bamenda I.

Mots clés : Étalement urbain, Effets, Socio-économique, Développement, Urbanisme et Commune de Bamenda I

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LIST OF ABBREVIATIONS AND ACRONYMES

AP	:	Area Plan
BCC	:	Bamenda City Council
BUCREP	:	The Central Bureau for Censuses and Population Studies
CBD	:	Central Business District
CBO	:	Community Based Organization
CO2	:	Carbon dioxide
CRTV	:	Cameroon Radio and Television
GIS	:	Geographic Information System
LSP	:	Land Sector Plan
LULC	:	Land Use and Land Cover
LUP	:	Land Use Plan
MFI	:	Micro Finance Institution
MIDENO	:	North West Development Authority
MINDCAF	:	Ministry of State Property and Land Tenure
MINDEVEL	:	Ministry of Decentralization and Local Development
MINDHU	:	Ministry of Housing and Urban Development
MINEE	:	Ministry of Mines, Industry and Technological Development
MINEFOP	:	Ministry of Employment and Vocational Training
MINFI	:	Ministry of Finance
NGO	:	Non-Governmental Organization
NIC	:	National Institute of Cartography
OECD	:	Organization for Economic CO-operation and Development
PNDP	:	National Participatory Program
RGH	:	Research Gate
SAP	:	Structural Adjustment Plan
SHUMAS	:	Strategic Humanitarian Services
UMP	:	Urban Master Plan
UN	:	United Nations

BICDP	:	Bamenda I Council Development plan
UNCHS	:	United Nation Commission on Human Settlements
UNESCO	:	United Nation Education, scientific and Cultural Organisation
UNFPA	:	United Nation Population Fund
UN-Habitat	:	United Nations Human Settlements Program
WWF	:	World Wide Fund for Natures

GENERAL INTRODUCTION

0.1. Background to the study

The urban population of the developed world is expected to grow from 0.9 billion to 1 billion by 2030, while that for the less developed world is expected to grow from 1.9 billion to 3.9 billion by 2030 (UNCHS Habitat, 2001). The ever-increasing population of the world has led to the rise of unplanned urban growth in the cities, usually termed urban sprawl. Between 2005 and 2015 the world's cities swelled by about 750million people, per the UN. By 2050, China, India and Nigeria alone are expected to add about 900million urban residents in the mega cities of these countries. Most of the growth is experienced in Africa and Asia, specifically on the fringes of African and Asian cities. With few exceptions, cities are growing faster in size than in population. The UNFPA (2007) contends that the space taken up by urban localities is increasing faster than the urban population itself. A recent study by WWF shows that in the last 25 years, some 33 percent of the natural world has been annihilated (The Living Planet Index, WWF, 1998 in Girardet, 1999). From the end of the 20th century, humanity started turning themselves into urban species making large cities and towns their main habitat. To live in sprawl means driving to work, driving to get dinner, driving to meet your friends. It means congestion, as its inhabitants travel ludicrous distances for work or basic services, and isolation due to the lack of the benefit of compact city life. Sprawl eats up huge areas in very inefficient ways, destroying arable land and creating monocultures. Furthermore, a sprawling metropolis generates vastly greater amounts of pollution and CO2 than a more compact one (Douglas, 2017). Urban sprawl is a multifaceted concept that directly affects traffic congestion, high oil consumption and many other transportation issues (Brunner and Andrew, 2013, Kimengsi, Balgah & Achia, 2017).As a result of urban sprawl most of the population have developed strategies in order to be able to coup with sprawl such as the development of urban growth boundaries beyond which construction is prohibited or severely restricted, whereas others have limit the influence of urban sprawl through innovative land-use planning techniques or community cooperation. The lapses of urban sprawl are as a result of the following corruption that is a situation where citizen has been ban from building in a particular area but they still went behind and bribe the authorities in order to carry on their activities. More so they is lack of follow up to implement the rules and regulation of urban sprawl. More so, property owners are evading their taxes so they turn to the

suburb where they will be no body to charge them. The expansion of human populations away from city centers into low-density, mono-functional and usually car-dependent communities is a process that has been operating in most towns of the world and in recent years, the phenomenon is occurring at an accelerated rate. Land use dynamics and variations in sprawl are interwoven phenomenon that is inevitable as long as humanity continue to exist on the earth's surface (Girardet, 1999). The urban population of Cameroon doubled within a period of 30 years after independence moving from 28.3% in 1976 to 44.3% in 2005 (Fombe & Balgah, 2012). It was projected to be 50.6% in 2010, 53.5% for 2015 (projections from National Census 2005). This has resulted in rapid urban expansion of Cameroon cities such as Yaounde, Douala, Bafoussam, Limbe, Buea and Bamenda. Bamenda is a metropolis town in the North West Region of Cameroon witnessing rapid changes in land use patterns, which have resulted to urban sprawl at varied degrees at the detriment of its environmentally fragile lands, watersheds and the scenic beauty (Nyambod, 2010). Bamenda has transcended from being an urban center to a complex heterogeneous city rendering cross-sectorial functions and services to its inhabitants as well as its hinterland. The objective of this study is to analyze the trends of urban sprawl and its effects on the development of Bamenda I municipality from 1996 to 2021 and assess the development implications inherent with this growth. The suburbs of Bamenda I municipality are growing faster in size than in population and infrastructures, witnessing continues expansion of built-up and commercial land among others, resulting in the degradation of agricultural and forest lands, leading to loss of livelihood, joblessness, misery and poverty for rural dwellers. Changing lifestyle of dwellers in the rural-urban interface has equally enhanced increase degradation resulting from pollution. Extension of the built-up area and other human developments into underdeveloped areas (marginal lands) like very steep slopes (Sisia and Abangoh) prone to geomorphological hazards and riverine/wetland areas (Mulang and Mbelem) prone to flooding and designated as "uninhabitable" have increased the frequency of natural hazards. All these in contravention of the Law No 2004/003 of AVR.2002, which prohibits housing development in such areas. Sprawl in Bamenda, is not compatible with the supply of adequate infrastructures. The neighborhoods are strewn with poorly, drained, poorly connected and narrow streets among other infrastructures. The high living cost around the CBD has pushed the newly arrived into the suburbs. The need to evaluate the trend and disparities of urban sprawl across the various peripheral zones of the Bamenda I municipality from 1996 to 2021 constitute the basis of this

study which is hinged on the premise that urban sprawl dominates the whole of Bamenda I municipality especially the northeast, northwest and the southwestern section of the municipality.

0.2. Justification of the Study

As far as urban sprawl and population growth is concern, population growth in Bamenda1 municipality has become a preoccupying phenomenon, which is causing urban sprawl and calls for concern. Population growth has caused urban spaces of Bamenda I municipality to swell and the people fight to live in the peripheries due to enough space. Urban sprawl in Bamenda1 municipality is becoming something else. This work looks at the characteristics, causes and consequences of urban sprawl to convey strategies put in place by the council to solve the problem and further suggest more sustainable strategies. The study puts forth particular interest to the government at the level of town planning and remedial strategies of the implications of urban sprawl in Bamenda I municipality. It will also help in planning for other areas affected by the same phenomenon. The study is going to be of interest to the council of Bamenda I because they will be able to develop their strategic plan of action in order to combat urban sprawl in the municipality of Bamenda I. This study therefore, seeks to examine and to demonstrate the correlations that exist between urban extension and the effect of development in the domain of urban sprawl. Given that the factors underlining the occupation and transformation of a given milieu are strictly economical, there is therefore the need to educate the population of Bamenda I municipality on the adverse effect linked to the processes and it consequences of urban sprawl.

0.3. Interest of the Study

The study was limited to urban sprawl and its effects on the socio-economic development of Bamenda I municipality.

Personal interest: The researcher seeks to understand the problem of urban sprawl in Bamenda I municipality and how it is manifested in order to advice the population on the adverse effect of urban sprawl and strategies on how to solve it.

Interest to the municipal authorities: The researchers interest is to create awareness amongst the Cameroonian living in the Bamenda I municipality and changes urban sprawl create on the environment or landscape

Scientific interest, urban sprawl in Bamenda I municipality is of great interest to study because it is one of the problems that is affecting the population of Bamenda I municipality and therefore a call for concerned. There is an assurance that after this scientific interest, a number of scientific technic on how to manage sprawl will be developed.

Academic interest, the study is going to help the world academically to know the problem of urban sprawl in Bamenda I municiplity and also help the geography department of the University of Yaounde1 to develop remedies in solving the problem of urban sprawl in the study area. Also many universities in the world are going to learn the causes, consequences and the manifestation of urban sprawl in Bamenda I.

Professional interest, many professionals are developing strategies on how to handle the problem of urban sprawl in Bamenda I municipality they by developing planning laws and building permit which will help plan for the municipality in the future.

0.4. Delimitation of the study.

This piece of work is delimited under three axes namely thematic, temporal and spatial delimitations. Thematic delimitation delimits the context of the research, temporal delimitation delimits the research over a given period and spatial delimitation places the work in the context of geographic space.

0.4.1 Thematic Delimitation

This work is based on urban sprawl and its effects on the development of Bamenda I municipality. This work shows how urban sprawl has transformed the study area socially, economically, culturally and demographically. These transformations include unplanned quarters, haphazard roads, uncoordinated buildings, destruction of agricultural land, increase migrant. The increase in population and economic activities has greatly contributed to the transformation of natural landscape of Bamenda I municipality and livelihood of its population. The study looks at urban sprawl and its effects on the development of Bamenda I municipality in particular.

0.4.2. Temporal Delimitation

This study covers the time spanning from 1996 to 2021 and from 1996 because during this time only a few people were living in Bamenda I municipality and the problems of sprawl were not yet visible but as time and years passes by, the population of the area started increasing, and the socio-economic activities in terms of development improved in 2021 with its cultural and demographic characteristics, causes and consequences leading to sprawl in Bamenda I municipality. Urban sprawl at Bamenda I presents an evolution over time which animated the socio-economic effects, demographic effects and natural landscape modification in the peripheries and town of Bamenda I municipality. This period chosen gives a good background for the research.

0.4.3. Spatial Delimitation

Bamenda I municipality is found in Mezam Division of the North West Region of Cameroon. It is located between latitude 5º56 and 5º58 north of the equator and longitude 10º12 and 10º17' east of the Greenwich meridian; it has a surface area of 110km2 with a population of 62000 (Master plan of Bamenda city council 2011-2027) inhabitants. Bamenda I municipality is situated at the western highlands precisely in the Bamenda plateau. Bamenda III bound it to the north, to the south by Santa Sub-division, west by Bamenda II and east by Balikumbat sub-division (Bamenda city council 2015). Bamenda I municipality has localities like Abangoh Ntahsa, Abangoh Central, Abangoh Ntangang, Achichum, Ntaafi, Bamenda-nkwe, Menda-kwe, Ntafebu among others. In addition to its sub divisional status, Bamenda I Council is also the seat of the regional administration of the North West Region. Consequently, all the regional delegations are found here but administratively, they do not deal directly with all of them. At the moment, Bamenda I is the gateway in and out of Bamenda and to the rest of the North West Region and through the West Region to other parts of Cameroon.

The relief is varied. Bamenda I (Bamendankwe) municipality lies on a high lava plateau with average altitude situated at about 1000m. Morphologically, this sector is highly contrasted with crest lines, peaks and hill, juxtaposing V-shape valleys. This sector is generally term the high lava plateau. Most of the slopes here are very steep (30-50%) characterized by convex, concave and even convexo-concave shapes (Ngoran, 2013).

The climate is also distinct. Loung (1973) describes the general climatic situation of the zone as *"le climat comerounaise d'altitude"*. The leeward side of this unit receives rainfall of about 1300-1500mm while the windward slope receives 2500mm (Regional delegation of transport NWR). The maximum temperatures of this area are usually registered in the month of January-February and from November-December (25degree Celsius) and minimum from March to October.

Vallerie (1996) working on soils of the high lava plateau, he characterizes the soil as having high organic matter content and referred to it as ferralitic soils (Figure 1).
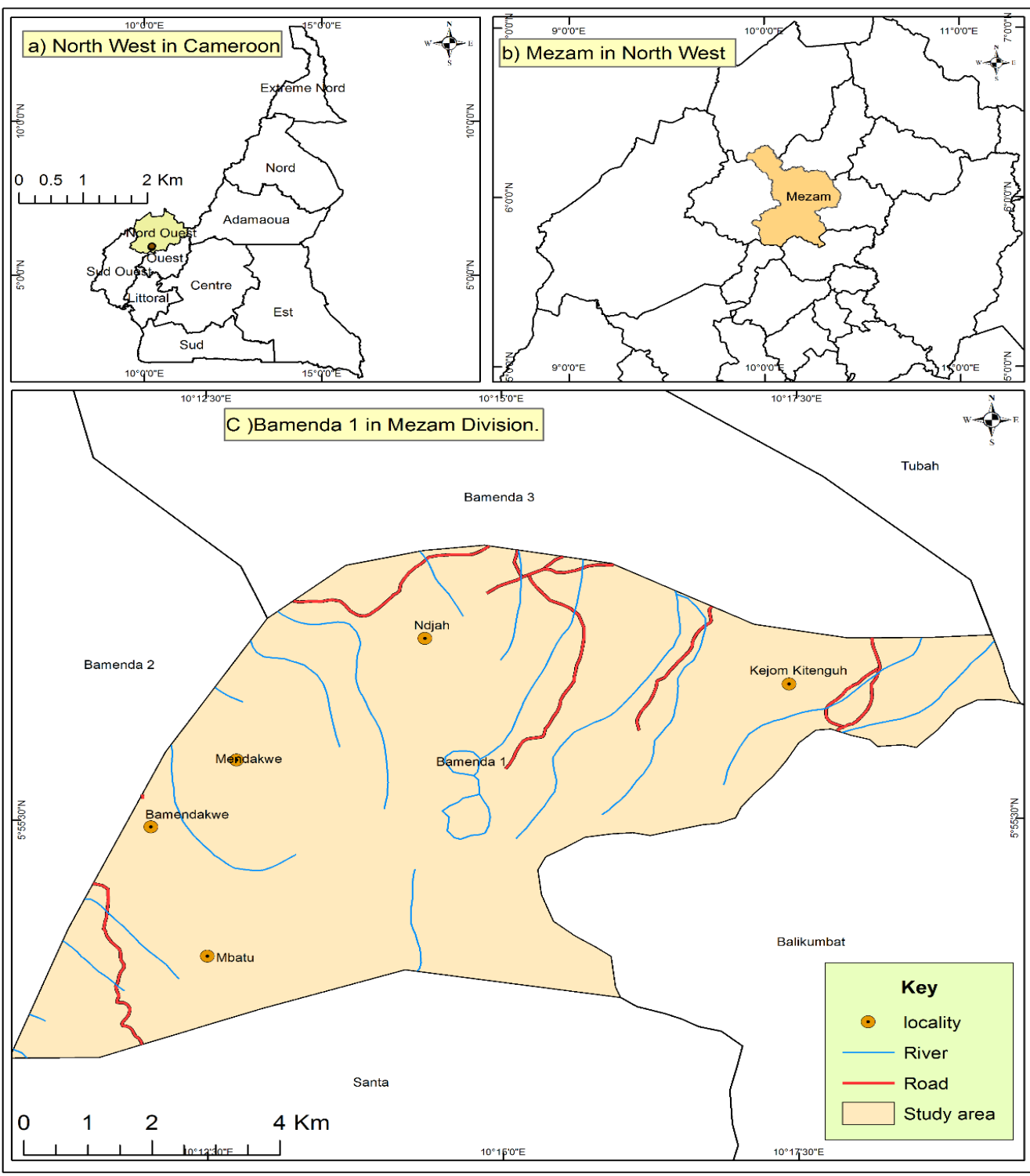
Source: Adopted from DEM aster, 2007

Figure 1: Location of the study

0.5. Statement of the Research Problem

Urban sprawl in sub-Saharan Africa especially Cameroon which is a major call for concern in the Bamenda I municipality is caused by an increase in the population resulting from the rapid growth rate and rural exodus perpetrated by the neighboring villages. In as much as this phenomenon is advantageous to urban growth and dynamics, its negative outcome too is very detrimental especially when it concerns urban planning and socio-economic development of the town. Some of the shortcomings of urban sprawl include; water and air pollution, increased traffic queue, loss of agro-pastoral land, fall in living standard, issues of urban planning and inadequate implementation of urban planning policies. These, among others are salient issues concerning urban sprawl in Bamenda I municipality which must be well handled. It should be noted that, sprawl has been persistent in Bamenda I municipality as the area is blessed with both commercial and administrative activities. The phenomena in the Bamenda I municipality is the result of a complex set of interrelated socio-economic and cultural forces, land value and is considered the chief driver of development patterns. The sprawl tends to occur where property values are lower on the periphery of urban centers.

Population growth in the town of Bamenda, particularly in the Bamenda I council area has gone a long way to ignite the phenomena of urban sprawl with its resulting repercussions. Bamenda I municipality is strategically positioned to attract people of all works of life to live and work in the area. This is further encouraged by socio-economic activities in the area such as trade and commerce, education amongst others. More so, rural exodus is fast growing in this part of Bamenda, which has resulted to urban sprawl. Most young people came to Bamenda I to seek greener pasture, which they end up building and settling there, causing rapid growth of the town.

The growth of the town has been noticed to be extending more to the North-Eastern direction while other portions experience very slow rate of expansion. This is because of relief barrier, which have made construction difficult both settlement and related infrastructure such as roads. For the fact that the town is expanding more in one direction makes it problematic. This is so because development of the town seems to be more concentrated at one angle with little or no uniformity in terms of development.

The socio-economic implication of urban sprawl in Bamenda I has been felt most especially at the level of agro-pastoral land which has affected food security and even prices since most of the land used for cultivation has been used for settlement. Secondly, there pressure

on land resulting from increase in human activities. The town is congested with many people; as such, they turn to go out to the peripheries where there is enough space with little or stringent rules at suburb of Bamenda1 municipality.

Efforts made to contain urban sprawl in Bamenda I municipality have not yielded enough fruits as the situation continue to grow spontaneously with little or no planning strategies. The policies put in place at the national and regional are loosely implemented. This has resulted poor state of houses in the town and the rapid expanding areas. Inhabitants have seized the advantage of the limited action of the council to construct unplanned and unsustainable houses. All these are resulting to urban sprawl, which must be controlled adequately.

It is therefore imperative for the above stated problems to be diagnosed and addressed so that urban sprawl in Bamenda I can adequately contribute to the socio-economic development of Bamenda I municipality, which is very vital for the wellbeing of the local population.

0. 6. Research Questions

This work has a main and four specific research questions.

0.6.1 Main Research Question

❖ How has urban sprawl affected the socio-economic development of Bamenda I municipality?

0.6.2 Specific Questions

1. To what extent is rapid population growth and rural exodus responsible for urban sprawl in Bamenda I municipality?
2. What is the direction of sprawl and expansion in the Bamenda I municipality?
3. How has urban sprawl affected the socio-economic development of Bamenda I municipality?
4. To what extent, has urban sprawl affected urban planning policies and town planning in Bamenda I municipality?

0.7. Main Research Objectives

❖ To investigate the implications of urban sprawl on the socio-economic development of the Bamenda I municipality.

0.7.1 Specific Research objectives

1. To examine how rapid population growth and rural exodus are responsible for sprawl in Bamenda I municipality.
2. To investigate the direction of sprawl movement in the expansion of the municipality.
3. To evaluate the effects of sprawl to the socio-economic development of the Bamenda I municipality.
4. To investigate how urban sprawl has affected urban planning policies and town planning in Bamenda I municipality.

0.8 General Research Hypothesis

❖ Urban sprawl has affected the socio-economic development of the Bamenda I municipality negatively.

0.8.1 Specific Research Hypothesis

1. Rapid population growth and rural exodus are largely responsible for urban sprawl in the Bamenda I municipality.
2. The direction of sprawl expansion is towards the north eastern and southern parts of the municipality.
3. Urban sprawl has affected the socio-economic development of Bamenda I municipality positively.
4. Urban sprawl has affected urban planning policies and town planning in Bamenda I municipality negatively.

0.9. Literature Review

The highest illiteracy in the 21st century is to proceed with a research work without reading to uncover knowledge that has been written and stored by various authors in the related domain of research. It is in this light that, a wide range of texts, journals, conference papers, published and unpublished documents, reports, dissertations and PhD theses were consulted to build a rich and befitting literature to proceed with this study. This permitted the researcher to have some additional ideas on urban sprawl and its activities related to socio-economic development and equally to avoid the duplication of work that has already been carried out elsewhere. These documented works have divergent points of views concerning the topic which focuses on urban sprawl and its effects on the socio-economic development of Bamenda I municipality.

0.9.1. Urban sprawl characteristics and functions

The phenomenon of Urban sprawl has been described in various ways, ranging from development aesthetics to local street patterns (Galster *et al.*, 2001). While there is no universally accepted definition of sprawling land development, there are several common characteristics pervading the literature that can help us understand and even measure its occurrence.
Song & Knaap (2004), working on low density-single family dwellings. Examine the most frequently cited feature of sprawl is the abundance of large-lot (usually 1-5 acres depending on the development context), residential housing developments that consume large amounts of previously vacant or productive land. Density, in this sense, can be represented by median lot size, the number of dwelling units per neighborhood, or median floor space of single-family units. This is the Same situation in Bamenda I municipality where this is happening every day because many families have isolated themselves in some specific empty quarters of our study area. As a result, this work will not only base on low density-single family dwellings but on high-density dwellings at the Bamenda I municipality.

Benfield et al., (1999) Said automobile dependency even for short stripBecause sprawling development patterns create large distances between dwelling units and segregate different land uses, residents are forced to rely on automobiles at the expense of alternative forms of transportation. Also, the cul-de-sac dominated street patterns within these neighborhoods foster a lack of connectivity and serve as an obstacle for walking and biking to nearby destinations. This is a clear evidence in this study area where many workers in up-station live at the suburb of Bamenda I and every day go to work using their cars and motor bike, therefore in this work, we are going to look at why some of them that are not having cars live also in the suburb areas because this is an issue that call for concern in the Bamenda I.

According to Heimlich & Anderson, (2001) in their work of spiraling growth outward from existing urban centers. Said that sprawl is also conceptualized as low-density development rapidly expanding away from more compact urban cores. Approximately 80 percent of the acreage used for recently constructed housing in the U.S. is land outside urban areas; almost all of this land (94%) is in lots of 1 acre or larger. Yes, this is a true fact in Bamenda I municipality where people are already constructing at the peripheries because of congestion in urban centers,

so this work is aim to bring out all the characteristics that make the population to go out to the peripheries of Bamenda I municipality.

Torrens &Alberti (2000) focus on leapfrogging patterns of development. Another well-known characteristic of sprawl is dispersed development, which favors the development of parcels situated further out in the countryside over the vacant lands adjacent to existing development. Leapfrogging creates a haphazard development pattern that consumes large amounts of land. The same case applies in Bamenda I where houses and roads are constructed and build here and there, in which case my own work is going to talk more on this aspect

Tsai, (2005) in examining strip development said 'Ribbon' development, in which residences or commercial properties line roads extending outward from urban centers is another prominent characteristic of sprawl. Homes arranged along rural highways present hazards related to traffic safety; commercial strips comprised of fast food chains and large retail stores cater to automobile access and are often fronted by expansive parking lots. This is the very case in our study area where houses are being line up corner the streets of Bamenda I municipality especially for their commercial purposes, so this piece of work is going to give a synthetic analysis of this strip development in the study area.

Heimlich & Anderson, (2001), Elaborating on the characteristics of undefined edge between urban and rural areas said sprawling residential development extending outward from urban centers tends to blur the division between urban and rural domains. This development pattern is often associated with the encroachment of open space and agricultural lands. Bamenda1 municipality is really a victim of this issue because most agricultural land has been destroyed for infrastructural development, which this work is going to outline it all, because this is a prominent issue affecting Bamenda I municpality.

0.9.2. Urban sprawl causes and functions

According to Pendall, (1999). sprawl is the result of a complex set of interrelated socioeconomic and cultural forces. Land value, however, is often considered the chief driver of development patterns. Sprawl tends to occur where property values are lower on the periphery of urban centers. Economists identify three underlying forces that interact with land values to create spatial urban expansion or sprawl. First, population growth results in the outward expansion of urban areas (sometime population decline also can be a precursor to sprawl) this has been happening in Bamenda I and many areas of Cameroon including the world at large, for a long

time and therefore a call for concern. So this work seeks to analyzes the causes of urban sprawl socioeconomically and culturally all together with it demographic factors.

Carruthers & Ulfarsson (2002), analyze that rising incomes allow residents to purchase larger living space. These residents locate where housing options are less expensive, in suburban and ex-urban areas generally located at the outskirts of metropolitan areas, Bamenda1 municipality is not an exception of purchasing more land, that is when people have their money they turn to buy more land at the suburb of the Bamenda1municipality because it is too cheap as compared to the urban centers.So this work is going to look at why this happens like that and also to make a comparative analysis between the price of land at the peripheries and core center of the Bamenda I municipality.

According to Gillham (2002). View that infrastructure drives the growth of cities by providing the essential framework for residential development. After new development takes place, residents then demand improvements in infrastructure that further ignites development along the urban fringe. Widespread access, provided by improvements in transportation infrastructure and relatively inexpensive gas prices, allows developers to utilize cheap land located outside the city center. The same case applies to bamenda1 municipality, as they is always a saying that: (where a road passes development follows). This work will look at the new development that are taking place in Bamenda I municipality and the impact of such development to the environment.

Daniels, (1999) explain that race has been identified as another socioeconomic indicator of urban and suburban sprawl. Racial strife in the centers of cities such as Los Angeles and Detroit led to an out-migration of middle- and upper-class whites to the urban fringe. Truly race has been identify as one of the reason why people migrate from urban centers of the Bamenda1 to the suburb areas. Race has brought a lot of discrimination, maltreatment by those who call themselves as son of the soil. Therefore, this piece of work seeks to examine the socioeconomic causes of race in the Bamenda I municipality.

According to Siedentop (2005) there are two rivalling explanation patterns for causes of urban sprawl: firstly, sprawl is explained by the demand for urban land. Driving forces are land consumption of households, companies, and public uses. Factors such as income, wealth and car use provide the framework and location choices are made based on a comparison of utility effects and costs. Secondly sprawl is explained by specific regulation patterns. The massive

public subsidies for low density, suburban forms of living and the publicly financed construction of street networks and local infrastructure reinforce urban sprawl. Land consumption of household has become very common in the Bamenda1municipality where inhabitant occupy a large space of land for housing activities and buildings. Therefore, this work is going to show all the land consume for household and the specific regulation patterns of urban sprawl in Bamenda I without living out any.

According to Mieszkowski and Mills (1993) see these factors as driving forces in a "natural evolution" theory of what causes suburbanization. This is true because forces of urban sprawl in the study area are really a driving force which is evolving and evidences are been seen in Bamenda1muncipality. The way development is going on there if care is not taken urban sprawl will become monotonous in the area as it will have evolved naturally. Therefore, this work lay more emphasis on both the driving forces and the non-driving forces of urban sprawl.

0.9.3. Urban sprawl consequences and effects

According to Zhang, (2001). While the literature identifies various social and economic consequences associated with urban sprawl, this article focuses on environmental problems. These negative impacts include, among others, air pollution resulting from important factor in determining the spatial pattern of development. Specifically, younger families promote sprawl and patterns by seeking out affordable housing options at the urban fringe. This is true because most of these small families are the ones moving from one place to another seeking for large areas. But this work will talk more of what the author has analyzed on. Finally, it should not be overlooked that even though sprawl may be an unsustainable form of growth, people strongly prefer to live on larger lots in suburban communities. The American dream of homeownership usually involves a large yard in a newer, low-density neighborhood. This conclusion ties problem statement as most of population of Bamenda I municipalities prefers to live in suburb areas where they is enough space than urban centers with little space.

Kenworth & Lau Autobe, (1999). mobile dependency, water pollution caused in part by increases in impervious surfaces, the loss or disruption of environmentally sensitive areas, such as critical natural habitats (e.g., wetlands, wildlife corridors), reductions in open space, increased flood risks, and overall reductions in quality of life. pollution is really a problem in my study which this work carefully seeks to understand in my study area.

Nechyba & Walsh, (2004). Why analyzing automobile recommend more specifically that, the reliance on automobiles has contributed to reductions in air and water quality as well as the accelerated depletion of fossil fuels. In the United States, the number of motor vehicles has significantly outpaced population growth, and car owners are driving longer distances than ever before (Dunphy, 1997; Daniels, 2001). According to (Porter, 2000; Kahn,2000; Dwyer and Child, 2004) Land is being consumed at a faster rate as populations shift from urban areas to suburban fringes. For example, between 1950 and 1995, the population of Chicago grew by 48 percent, while land coverage increased by 165 percent (Openlands Project, 1998).
Similarly, in the sprawling region southeast of Boston, more land has been developed in the last 40 years than in the preceding 330 years (Southeastern Regional Planning and Economic Development District, 1999).

According to Fulton et al (2001) Sprawl associated with rapid population growth is nowhere more apparent than in south Florida, where the percentage change in urbanized land is among the highest in the country. For example, Lang (2003) reported that out of 13 large U.S. office markets, South Florida has the lowest percentage of its office space in its major downtown (Miami). Only 13 percent of South Florida's office space is located in its central business district (CBD), compared with a median of nearly 30 percent for all 13 markets. Subdividing large natural areas into smaller spatial units can inhibit wildlife movement across the landscape (Peck 1998; Cieslewicz, 2002). This conclusion tied with one of the major of cause of urban sprawl at the Bamenda I municipality.

Brody (2008) work on leapfrog development and further explain that leapfrog development patterns further fragment natural landscapes by leaving patches of open land intermingled with built-up areas. Roadways, fences, and other abrupt, human-defined edges can act as barriers to wide-ranging species. These negative consequences of sprawl must be counterbalanced with the widely-held notion that this type of development pattern provides relatively affordable housing opportunities and a seemingly higher quality of life.

According to OECD (2000), Working on the negative consequences of urban sprawl emphasizes that, frequently mentioned consequences are: green space consumption, high costs of infrastructure and energy, an increasing social segregation and land use functional division. Furthermore, the need to travel, dependence on the private car and as a consequence increased traffic congestion, energy consumption and polluting emissions are associated with sprawl.

0.9.4. Urban sprawl and impacts

According to Siedentrop (2005). Analyzed the ecological impact of urban sprawl at the Bamenda1municipality. Building and sealing of land, as well as indirectly loss of natural potential of soils and the expulsion of endangered animal and plants. According to him the problem is not that agricultural space is used, but the fact that connected agricultural land is destroyed. The ecology of Bamenda1municipality has been destroyed by the increase in population who are just building any how in the municipality. This piece of work seeks to examine the rate of ecological impact at the Bamenda I municipality.

Gordon and Richardson (1997) claim that consumers prefer to live in low density development where they will have enough space to carry out their activities and where food is cheap. This area can only be found at the suburb areas of Bamenda I municipality. So this piece of work seeks to investigate why consumers prefer living in suburb areas than at the core of Bamenda I municipality.

0.10. Conceptual and Theoretical Framework of the study

A number of concepts and theories are examined and reviewed in this study in order to show their significance in this work in the domain of urban sprawl and its effects to the socio-economic development in which this study dwells. In a whole, two theories and three concepts are used in this study. The concepts of urban sprawl and socio-economic development. The theories include; the theory of economics of urban sprawl and the Burges theory of urban land use model.

0.10.1 Conceptual framework

Over many decades, many other concepts have emerged around urban sprawl. Geographers, planners, economists, and transportation engineers brought these concepts. The concept of urban sprawl is one of the most used concepts in geography as seen from the various definitions given by different authors. This shows how far the concept has influence geography as a whole.

0.10.2. Concept of Urban Sprawl

Urban Sprawl is a broad concept and various scholars and agencies have seen the term in different perceptions and schools of thought. According to Gordon and Richardson (1997) urban sprawl was perceived as leapfrog development emanating from the city center.

In defining of urban sprawl, Wilson (2003) and Galster (2001) stated that describing would be more suitable rather than defining. In order to make general characteristics of urban sprawl throughout the Bamenda I municipality, global socio-economic powers are rather in interaction with local environmental and spatial restrictions. These socio-economic powers include socio-economic trends at macro and micro level such as transportation, land prices, personal preference of dwelling, demographic trends, cultural traditions and restrictions, increasing attraction of the municipality, practices of local and regional land utilization policies.

Despite this interaction, urban sprawl continues rapidly with developing transportation connections and increasing personal mobility (EEA, 2006). Urban sprawl characterizes to a large extent discontinuous and fragmented occupation together with random population density. Apart from having environmental and social impacts on urban and rural • population, sprawl brings a great burden on the state as well (Polidoro et al., 2011).

According to Wu, (2006) this phenomenon may cause various important socioeconomic events such as economic discrimination, local administrations and financial unbalance between society, some studies there holds the assertions that sprawl decreases open area and amenities, increases the cost ties. It is also observed to have influences on the life of individuals. In for public services and taxes, cause traffic density, cause flood in urban areas, increase natural living area and water quality. Apart from this, there are accusations that it causes obesity, asthma, apathy and anti-social behaviors.

In spite of this, some studies defend that urban sprawl emerged due to people's desire to live in big houses and vast areas and their preferences such as tendency to comfort, and it has emerged within a regular market process between urban and agricultural utilization (Henderson and Mitra, 1996 and Brueckner, 2000).

The concept of urban sprawl has been of great interest to many scholars, which manifest differently in various domains but urban sprawl at the Bamenda I municipality is closely link with sprawl in many area of the world because all the causes, consequences and manifestations are the same in relation to urban sprawl at the Bamenda I municipality Therefore, this piece of work has brought a lot of definitions which simplifies our understanding to the notion of urban sprawl at the Bamenda I municipality.

CONCEPT	→	DIMENSION	→	VARIABLES	→	INDICATORS

Spatial growth

-evolution in buildings

-evolution in infrastructure

- Emergence of new and unplanned residential buildings
- Poor town planning
- Limited implementation of town planning policies

Urban sprawl

Socio-economic development

-creation of jobs

-availability of social amenities

Improvement in trade and commence

- Increase in economic activities
- Provision of pipe born water
- Schools and health centres
- Increase in markets

Demographic growth

-Emergence of new quarters

Increase in population and expansion of towns

Source: Authors conception 2021

Figure 2: The concept of urban sprawl

0.10.3. Concept of Development

The concept of development has been of great interest to many scholars. Development can be perceived as bringing about social change that allows people to achieve their human potential. Cambridge Advance learners Dictionary (2005) considers development as growth, change and more development. From the above perspectives, development can be in the political, cultural, economic, social and many other dimensions,

UNESCO (1982: 2000) perceived development as a complex holistic dimensional process which goes beyond mere economic growth and integrates all the dimensions of life and all energies of a community. All of whose members must share in the economic and social transformation effort and in the benefits that result from. In another light, development

Can be understood as improvement, growth or change. It involves social, technological and economic transformation focusing on economic prosperity. If a community or people have the capacity to satisfy the basic needs of a large portion of its population, we talk of a developed community.

As far as change is concerned, development is redress as planned or direct social change. It involved putting some particular planned in to action to restructure the social and economic order for desired end. The study looks at development as positive change brought in Bamenda 1 municipality by urban sprawl in the domain of infrastructure, education, and culture among others that have improved on the livelihoods of the population

President Julius Nyere in Morris (1987) brought out development as building of a society in which all members have equal rights and equal opportunities, in which all can live at peace with their neighbors without suffering or injustice, nor being exploited

Rodney (1982) and Magdalene (2010) explains that development in human society is a many sided process" He tries to identify the different aspects of development. Physical development includes man made goods produced through technology Cultural development involve aspects such as the values norms and tradition of society and Personal development comprises the psychological direction of individual. Cultural development in the study is perceived by multitude cultures brought by the urban sprawl in the study area such as dressing styles, traditional dances and traditional dishes

Development as conceived by the researcher in this work is in line with Rodney's aspect of physical development which includes, man made goods produced by the use of technology. In

Bamenda1, land has been transformed into agricultural land, settlement land and roads. According to Wikipedia, economic development is the development of economic wealth of countries or Regions for the well-being of their inhabitants. From a policy perspective, economic development can be defined as efforts that seek to improve the economic well-being and quality life for a community by creating and or returning jobs and supporting incomes and the tax base.

Schumpeter (1950). Considers Economic development as a sustainable increase in living standards. It implies increase per capita income, better education, health as well as economic protection. In this work, economic development is perceives as change in economic condition of the people which can generate income. Horownty (1972) perceived social development as being beyond purely economic criteria. It focuses on the eradication of poverty, implementation of full employment and pursues social integration. To him social development implies the transformation of human relation in which men relates to each other irrespective of their level of industrialization.

The concept of development by many authors' plays and important role in the development of Bamenda1municipality by ensuring a clear understanding on development in Bamenda 1 municipality. The study looks at social development as an improvement in the welfare and access to social facilities not leaving behind poverty alleviation in the area. The socioeconomic and cultural aspects of development in the Bamenda 1 municipality are conceptualized on figure 3.

CONCEPT	DIMENSION	VARIABLE	INDICATORS	SUB-INDICATOR

ECONOMIC

VARIABLE:
- mechanical engineering works
  Commercial activities
- Transport services

  Agricultural activities

INDICATORS:
- Job creations
- Revenue generation
- Increase in market structures
- Goods and passengers' transportation

Increase in agricultural output

SUB-INDICATOR:
- Garages
- Motor spare parts
- Motorbike
- Food

DEVELOPMENT

SOCIAL

VARIABLE:
- Educational services
- Health establishments
- Habitat construction
Religious services

INDICATORS:
- Secondary schools
- Pharmacies
- Medicine shops, stores and business house
Churches

SUB-INDICATOR:
- Denis comprehensive college
- Bmenda1 union
- Deeper life, redeem, Christian missionary

CULTURAL

VARIABLE:
- Village association

  Meetings

INDICATORS:
- Increase in type of dishes
- Dressing style

SUB-INDICATOR:
- Pounded yam
- Egusi soup
- Head searf
-     Loin cloth (rappa

Source : Field experience 2021

Figure 3: Conceptualization of Development

0.11. Theoretical Framework

Over several decades, many other theories have emerged around urban sprawl. Geographers, planners, economists, and transportation engineers brought these theories.

Orderly market process

0.11.1. Theory of Economics of Urban Sprawl (Brueckner and Fansler 1983)

Brueckner and Fansler, (1983) in their theory of Economics of urban sprawl, believed that urban expansion is determined by a systematic market process, which correctly allocates land between urban and rural (agricultural) uses. The market process is related to urban agglomeration economic, which consist of population and household income, rent, and the needs of housing for all community. Using a prediction model to explain their theory, Brueckner and Fansler first assumed all the urban population earn the same income, same housing preference and consume same composite goods with housing was produced with both capital and land receive continuous revenues. Other variables involved are agricultural land rent and commuting cost. With the theory assumption, an increase in urban population clearly must increase the distance to the edge of the city, because more people means more houses and more space to consume.

This is a very clear assumption as the same case of Bamenda I municipality where by most of the population has extended toward most quarters of Bamenda I municipality because of the ever increasing population demanding for new houses like the one in Achichum, Ntafebu and Ntaafi found in Bamenda I municipality. More so, most of the land has been used for agriculture as the population in Bamenda I municipality continue to expand towards the peripheries more land is being consume towards the direction of the expanding area and there is a different between urban land and rural land uses. So according to this theory, Bruekner and Fansler are right in saying that urban expansion is determined by a systematic market process which correctly allocates land between urban and rural uses. Brueckner and Fansler have quantified the model outcome and suggested that sprawl is virtuously the result of an orderly market and not by microeconomics or land speculation (market).

This theory will be useful in the frame work of our research in that urban sprawl is chiefly caused by an increase in population and the theory assumed that an increase in urban population clearly must increase the distance to the edge of the city, because more people means more

houses and more space to consume which is the same thing happening in Bamenda I municipality, so this theory relate to same phenomenon happening in Bamenda I municipality. This means that the theory of Brueckner and Fansler is applicable in our research because they believed that urban expansion is determined by a systematic market process which correctly allocates land between urban and rural (agricultural) uses. an increase in urban population clearly must increase the distance to the edge of the city, because more people means more houses and more space to consume. So, we see that when it comes to urban sprawl in Bamenda I municipality, an increase in urban population is the principal architect. So, this theory is directly applicable to urban sprawl in Bamenda I municipality.

0.11.2. The Burgess Urban Land Use Model (Burgess 1925)

The Burgess Urban Land Use Model of (1925), proposed a descriptive urban land use model that divided cities in to concentric circles expanding from downtown to the suburbs. This representation was built from Burgess's observations of several American cities, notably Chicago, for which he provided empirical evidence. The model assumes a relationship between the socio-economic status (mainly income) of households and the distance from the Central Business District (CBD). The further from the CBD, the better the quality of housing, but the longer the commuting time. Thus, accessing better housing is done at the expense of longer commuting times (and costs). According to this monocentric model, a large city is divided into six concentric zones:

Zone I: Central Business District (called the "loop" in Chicago) where most of the tertiary employment is located and where the urban transport infrastructure converges, making this zone the most accessible.

Zone II: Immediately adjacent to the CBD, a zone where many industrial activities locate to take advantage of nearby labor and markets. Further, most transport terminals, namely port sites, and railyards, are located adjacent to the central area.

Zone III: This zone is gradually being reconverted to other uses by expanding manufacturing / industrial activities. It contains the poorest segment of the urban population, notably first-generation immigrants living in low-cost housing.

Zone IV: Residential zone dominated by the working class and those who could move away from the previous zone (often second-generation immigrants). This zone has the advantage of

being located near the major zones of employment (I and II) and thus represents a low-cost location for the working class.

Zone V: Represents higher quality housing linked with longer commuting costs.

Zone VI: Mainly high class and expensive housing in a rural, suburbanized setting. The commuting costs are the highest. Before the mass diffusion of the automobile (in the 1930s), most of these settlements were located next to rail stations.

This theory will be useful in the context of our research work in that urban growth is a process of expansion and reconversion of land uses with a tendency of each inner zone to expand towards the outer zone. More so, the theory also proposed a descriptive urban land use model that divided cities into concentric circles expanding from downtown to the suburbs. This means that the Burgess model is applicable in our research work because he believed that urban expansion is determined by zone II (Factory zone), III, and IV (Working class zone) creating a transition zone with the reconversion of land use. So we see that when it comes to urban sprawl in Bamenda I municipality, expansion and reconversion of land uses is the principal architect. So this theory is directly applicable to urban sprawl in Bamenda I municipality.

0.12. Research Methodology

A systematic approach involving both primary and secondary data collection was used in this study. Secondary data collection involved the exploitation of Internet documents, articles, reports, books and existing documents. Primary data was obtained through questionnaire administration, observations, and interviews, informal and formal discussions. This section of the work presents the research procedures, research instruments and difficulties faced in bringing out findings of the study as design by the researcher.

0.12.1. The study matrix

The choice of an area in Bamenda I municipality is because this municipality has a solid background in the expansion of urban areas to the peripheries like from Up-Station towards Ntafebu. The choice of Bamenda I in the North West region is explained by its cosmopolitan nature especially as the municipality regroups most ethnic groups of the North West Region. The aim was to verify how the different groups already dotted with certain aptitudes of community development can operate under the framework of urban sprawl. Bamenda I municipality is also having a council, control by the rolling party. So, Bamenda I municipality could be the best

example in the North West region to exhibit and appreciate the forces and weaknesses of urban sprawl.

0.12.2. Pre-survey of the study

A preliminary survey was carried out in the study area in May-July 2021. The aim of this survey was to explain to the council officials, administrative officials, traditional authorities and civil society organization the base line of the present piece of work. A pre-test questionnaire was established and 156 questionnaires distributed in the study area. The aim of this questionnaire was to make sure the objectives and hypotheses set for the study were relevant. The pre-survey also aimed at evaluating the financial, material and human resources necessary to carry out the study.

0.12.3. Methods of data collection

Qualitative and quantitative methods of data collection were used in the realization of this piece of work. The different methods used did not only have particular strengths and permitted the collection of different forms of empirical material but also contributed to the realization of particular objectives for the study. Research in Geography as a scientific discipline and in human Geography in particular has evolved with time. Before now some researchers based their sources of data collection on observation and interviews. Today, there is a wide variety of possibilities such as the internet, extracting out existing literature and even carrying out interviews and surveys by emails[1]. Visual imagery like television programs furnishes important information for geographic research. The research methods chosen for this geographic research are practical. The questions who, what, when, where for how long are answered by the present methodology.

This part of the work makes a detailed description on how information for this study was obtained. Many researchers hold that a research work should bring out the different steps used in carrying out a scientific piece of work. In the case of the present work, the research started with the exploration of secondary documents treating the same issue at stake. Simultaneously, observations were carried out in the study area in order to bring out the scientific context of the study. The bulk of the work consisted in obtaining views from a sampled population.

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[1]Mbanga Lawrence Aku 2010, An analysis of community participation in rural development process of Ngoketunjia division in NWR PHD theses University of Yaoundé I P .88

0.12.4. Secondary data collection

As already stated, a pre-survey was first of all carried out and this permitted the study to ascertain the statement of the problem. Intensive documentary research was carried out thereafter. This consisted in reading and analyzing literature concerning the issue at stake. Documentary research procedure helped the study to demonstrate that the process of urban sprawl is of scientific interest. Inspiration and style of displaying ideas of other authors concerning the same issue in different areas also helped the present study in bringing out the scientific context of the study. Theories, concepts and models advanced by some authors fostered the understanding of the contribution of urban sprawl process in Bamenda I municipality. The literature of other researchers helped the study to come up with scientific conclusions in relation to facts gathered from the views of other authors.

Reviewing existing literature permitted an effective spotting out of areas which have not been researched on or where there is need for a case study in-depth research. In this study, there was need for the review of case studies in other areas to grasp experience which may replicate and then permit comparism with our findings. Documentary research was carried out in many documentary centers in Cameroon.

0.12.5. Consultation of research works in State University libraries

A series of research works were exploited both published and unpublished on the forces and weaknesses of urban sprawl in different countries of the world, Africa, Cameroon, in the western highlands of Cameroon and Bamenda1municipality in Particular. The consultations of these works permitted a good situational analysis of the research topic. There were many unpublished works consulted at the University of Yaoundé I central Library and the recent Masters library of the FALSS of the University of Yaoundé I. The departmental libraries of Geography, sociology and Anthropology of the University of Yaoundé I were also exploited. These libraries which were mostly rich in memoires and thesis on urban sprawl permitted the author to have a grasp of how the phenomenon is operating in other parts of Cameroon and the world at large. The libraries of the higher teacher's training college of the University of Yaoundé I and Bambilli were of utmost importance. The specificity of the library of department of Geography in Bambilli is that it had a lot of works concerning urban sprawl in Bamenda1municipality. Though such works embrace other aspects than what is treated in the

present work. The main library work was carried out in February 2021 afterward it became a matter of opportunity.

0.12.6. Consultations of research works in specialized documentation Centre's

Specialized libraries on development studies were also visited as they have a direct relationship with the present study. A diversity of books, journals, articles, newsletters and end of course dissertations were exploited in these Centre's. These include the Paul Ango Ela centre of Yaounde which is very rich in documents concerning political science and development. This library permitted the researcher to have a grasp of the political evolution of urban sprawl and its effects on development in Cameroon and other parts of the world. The regional Pan African institute of development in Yaoundé was equally visited. The visit to the Pan African Institute for development were very important because it permitted the researcher to broaden his scope on case studies carried on urban sprawl in other parts of Cameroon especially the North West Region. Other libraries were visited in other towns of Cameroon. It is true that these libraries did not provide specific information for this study, but broadened the scope of reasoning of the researcher on the notion of development. Some of such libraries include the British council libraries in Yaounde and Bamenda, the world bank information service, United nation information Centre, the Centre Catholique Universitaire library in Melen (Yaounde). Though these documents were not specific, they permitted the researcher to further understand the economic and development situation of Cameroon.

0.12.7. Consultation of documents in some regional development institutions

There are some state institutions that furnished the research with valuable material. The North West Development Authority (MIDENO) is considered as a giant developmental structure in the North West Region as it coordinates development activities of the Region. Archives of this structure were consulted in order to see how far it has helped and collaborated with other stakeholders in enforcing the process of urban sprawl. Other institutions visited in the region include PAFSAT, GP-DERUDEP, and PNDP. These structures provided information on the general development of the North West Region but also on the link between these structures and local authorities in the framework of urban sprawl.

0.12.8. Consultation in international cooperation institution, international and local NGO's

The preliminary survey carried out in 2021 permitted the identification of both external and internal stake holders involved in the process of urban sprawl in the Bamenda1municipality. Some of these structures be them local, national or international were visited to have a grasp of their contribution to urban sprawl in the city of Bamenda1municipality. They include PLAN Cameroon, SNV, SHUMAS. SHUMAS is one of the organizations that have distinguished itself in promoting grass root development. Their center in mile 4 Bamenda was visited to know the different projects they have initiated, funded, co-founded and coordinated in Bamenda1municipality. The organization is noted for her close collaboration with indigenous actors especially sprawl local collectivities. Their office in Bamenda furnished the research with information on their development aspects in Bamenda I municipality.

0.12.9. Exploration and exploitation of the print and audiovisual media

The radio, newspapers and television constitute important sources of information and data collection for local and participatory development. This study explored many local newspapers such as Cameroon Tribune, La Voix du Paysan, le Messager, Mutations, The Post, the herald and international journals such as Jeune Afrique economique, Jeune Afrique and many others which were vital for this study. Concerning the audiovisual media, Cameroon radio television (CRTV) which is leading in this sector provided information on the different meetings, colloquiums, seminars debates and conferences on urban sprawl. Such information permitted the researcher to attain meetings and training seminars on urban sprawl and its effects on the development of Bamenda1municipality. Programs on CRTV channel such as Scene de presse, press hour and regional news were fruitful for this study. It also permitted the researcher to broaden his spectrum of information and data. Other audiovisual media that enriched the study with information include Vision 4 (club d'elite), Canal 2 with its famous program canal presse, Equinoxe TV and a few others were detrimental in completing information gathered from other sources.

The above sources of gathering information were complemented by modern and advance information and communication technology such as the internet.

0.12.10. Internet Exploitation

Concerning urban sprawl expansion, very few libraries propose documents capable of giving a global view on these themes. However, the internet came in as a solution to this problem. Through the internet, works from all over the world were read. Care was taken to select well-referenced information published by local, national and internally recognized institutions. The internet broadened and widened the scope of the present research.

0.12.11. Primary data collection

Documentary research and pilot survey conducted in the study area facilitated data collection. These secondary data sources and information were not satisfactory. Hence a plethora of techniques in collecting primary and secondary data were used. Primary data has that advantage that it provided not only quantitative but also qualitative data. It also furnished information for the visual and cartographic presentation of findings.

It should be recalled that the 6 field assistants aided during this phase of the research. The researcher met with the field assistants on the month of June 2021. The aim was to test the questionnaire and to explain to them the objectives of the research so as to kick out all doubts. After testing the questionnaires, another meeting was held with the field assistants. This meeting was to permit them give their point of view especially on the reaction of the respondents. Their comments were noted and substantial amendments brought to the questionnaire proper. Another issue consisted on drilling the field assistants on the sampling technique and methods of presenting the questionnaire to potential respondents such as to avoid embarrassment and harassment. Didactic materials were handed to them. These included pens, pencils, files and notepad.

Field surveys conducted to verify the hypothesis elaborated for the study to attain the set objectives of the study. Questionnaires and interview guides were established to respond to the research problem. An observation chart was also formulated to guide the collection of field data. The first field trip that was done in December 2020 was purely exploratory and the second trip was to carry out some sort of a pre-survey, observations and haphazard unstructured interviews to be sure of the objectives, hypothesis and statement of problems that constitute the backbone of the study.

0.12.12. Field Observation

Observation as a scientific procedure permits the researcher to build a strong base which enables us to see the distance that exists between the existing situation and that which is desired to be attained. The present study started with a pre-survey which aimed at observing and appreciating the participation level of the councils and inhabitants in development of Bamenda1municipality. Observation was done on land use practice, expansion of infrastructures, types of buildings, loss of agricultural space. The researcher was curious to know and see how the urban dwellers of Bamenda I municipality are perceiving and implementing the ongoing urban sprawl process in Cameroon. Observations were to a certain extend to see the different projects that have been realized and brought a change in the standards of living of the inhabitants. Research observation constitutes the scientific framework on which the problem, research objectives, research questions and research hypothesis were built. Observation constitutes an important part in a research work because it is after the observation of an existing and questionable situation that a researcher is able to carry out a planned and scientific investigation. Despite that observation is at the base of all research works, it is not the only research procedure for it may not present clear and concise facts of an existing situation. This is the reason why documentary research is important in bringing out the scientific framework of the study.

0.12.13. Participant observation

Contextually, it necessitated the researcher with the different field assistants to spend time living or working in development projects with people in order to better understand their motives of participation. It entailed participating and observing at the same time. The researcher had the opportunity to participate in the November 2020 budgetary session of the Bamenda I council, and different meetings concerning urban sprawl in the three sub divisional councils, mostly focusing on urban expansion. This permitted the researcher to see the ambiguity that exists between the Grand councilors of the sub-divisional councils and the views of the Bamenda city council. The research witnessed their debates, saw how they chose priority projects, and took major decisions and different level of participation of each actor.

0.12.14. Semi- structured interviews

The game of asking questions in an arranged manner and listening to answers brought forth are good ways of obtaining information. It stems amongst the techniques of grasping qualitative data. This method entails exchanging with persons of various categories. In the present study semi-structured questions were posed to key and resource persons of the Bamenda1municipality and beyond. This was with the objective of grasping their knowledge, experience and reshaping the study where necessary.

The researcher opted for an approach of open interviews because a close and narrow structure interview could have narrowed answers from interviewee and consequently the scope of study. Hence it permitted the subject to be constantly evolving.

Key persons interviewed included administrative officials. In the range of these officials, the Senior Divisional Officer for Mezam division was interviewed. The interview session with this authority consisted on knowing the working relationship that he has with the three mayors of the sub-divisional council and the government delegate to the Bamenda city council. Next, was the interview granted to the sub-divisional officers for Bamenda I sub- division. The objective of this interview was to know how the follow up unit for urban sprawl at the sub-divisional level functions and the results that these units have registered for the past couple of years. Then the next group of interviewee was that of the government delegate to the Bamenda city council and the mayor of the Bamenda1council. These are the key actors charged with the implementation of the process of urban expansion in Bamenda I municipality. Their responses constituted the backbone to this study. Another point of interest in their interview was to understand the different points of antagonism between the government delegate and the mayor and how these actors interact with other, involved in promoting the developmental process of urban expansion. Another group of people interviewed were the councilors. Amongst the 15 councilors of the city, the researcher succeeded in interviewing 5 with each council represented by at least one councilor. Their interview furnished the researcher with information concerning the way decisions are taken at the city council before implementation.

Traditional authorities of the Bamenda I municipality were equally granted interviews by the researcher. It should be noted that these traditional authorities have a key role to play in the ongoing process. The Fon of Bamendakwe and Mbatu were interviewed. The aim was to know

the degree of intervention of these traditional rulers in the process of urban sprawl in Bamenda1municipality.

The three secretary generals of the councils were also interviewed. This was to understand the level of management of administrative affairs in the different council. Other resource persons interviewed equally provided useful information for the present piece of work. Apart from semi-structured interviews as a method of primary data collection, focus group discussions were also organized to complement certain information.

0.12.15. Focus group discussions

A research in urban sprawl like the present one necessitates focus group discussions wherein different actors will express their views so that the way forward can be found. This tool permitted the gathering of information and data of a large number of people in comparatively little time.

A Focus group discussion was organized amongst councilors and some important council workers. This focus group was hell in the Bamenda I municipality. The objective of this focus group was to put in one table grand councilors of the Bamenda I sub-divisional council. It should be noted that these groups had opposing views during personal interview of the researcher with each grand councilor. So, it was important to confront them so as to make out some important deductions. This focus group drew the attention of 6 people. Two other focus group discussions were organized. The focus group took place in Bamendakwe which involved developmental actors of certain civil society organizations, some quarter heads and the general public. The other one that was organized in Up-station had the same quality of members as that in Bamendakwe. The main aim of these focus groups was to evaluate the interaction that exists between actors that are not of the government wing.

0.12.16. Questionnaire Administration

The choice of using a questionnaire for this research was to ensure adequate quantitative data to a greater extent and to a lesser extent grasp qualitative data. The questionnaire was designed in a way to know the level of understanding of the urban sprawl process by the potential respondents. The questionnaire included both close ended and open ended questions. This was to give a high margin for respondent to express their views.

The approach that was adopted for the distribution of the questionnaire was the face to face approach. This approach is noted for its flexibility and simplicity. This permitted the researcher and his field assistants to aid some of the respondents in filling the questionnaire. This led to a high response rate. About 95% of the questionnaires were administered in this way. The drop and pick afterwards questionnaire method was then used for the other 5% of the households that could not fill the questionnaires instantly. The other methods such as responding by postal mail and internet surveys were not considered by the present study.

0.12.17. Sampling Size

Sampling constituted one of the main axes for primary data collection in this piece of work. It was detrimental to confront the point of view of key and resource persons to those of the lay man in the streets of Bamenda I municipality to eventually have an acute view on the trend of urban sprawl in this town.

The target population in this study is the inhabitants of Bamenda I municipality. Due to the large population size of the municipality, a sampling technique was chosen to ease information gathering. The sampling technique used in this study is the simple stratified sampling technique. This sampling method proved to be the best for this study because the houses in the city are not numbered, so systematic and random sampling was impossible regarding the means at the disposal of the research team. In the stratified sampling technique, all the individuals of the target population have the same opportunity to be included in the sample frame. From the sample frame was derived a sample size from the 12 quarters that constitute the town of Bamenda I municipality. The sample size was determined by considering the total population of Bamenda I municipality as per the general population and housing census of Cameroon 2005 carried out by BUCREP.

0.12.17. 1.The sample size of the population of the study area

The sample size of the population of the study was drawn from the 3118 households out of 4548 households in the study area following the 2005 population and household census. The reason for this rational use of households was that, it is much easier to administer questionnaires in households than individuals in streets and this will equally reduce cost and facilitate the work. To this effect, 5% of the households made up the sample population of this study that produce an in miniature cross section of the population.

The reason for choosing a 5% sample size is in accordance with the postulation of Nwana (1982) which stipulates that:

- If the population of the study is in hundreds, a 40% or more sample should be used,
- If the population is in many hundreds, a 20% will do,
- If the population is in a few thousands, a 10% will do and,
- If the population is in several thousands, a 5% or fewer samples will do (Nwana, 1982, quoted by Mah, 2010)

Furthermore, the 5% chosen was to ease the work due to the fact that the Anglophone zones of Cameroon have been facing socio-political crisis and it was not easy to administer questionnaire to a very large population.

The 5% sample size for this study was selected from the total number of households in each locality using the formula: x* 5/100   where;

X = number of households

*= multiplication sign

5 = sample size chosen

From the total number of households, a 5% sample size household was selected. This 5% sample size gave 228 households to which questionnaires were administered but finally 192 questionnaires were fully answered by respondents in the study area (table 1).

Table 1 : Total copies of Questionnaire Administered in Bamenda I municipality

Quarters of Bamenda I town	Number of household	5% Sample Size	Effective respondents
Abangoh Central	434	21.7	40
Abangoh Ntahsa	396	19.8	29
Abangoh Ntangang	514	25.7	21
Achichum	298	14.9	27
Alahnting	376	18.8	16
Aningdoh	206	10.3	22
Ayaba	820	41	13
Nta'afi	31	1.55	3
Ntanche	43	2.15	8
Bamenda-kwe	1262	63.1	38
Menda-kwe	123	6.15	20
Ntafebuh	45	2.25	4
Totals	**3118**	**228**	**192**

Source: BUCREP, 2005

The field assistants had prior preparations concerning questionnaire administration with the researcher so, at this phase of the research, they were well armed. The distribution of questionnaires included the urban and semi urban areas of the nine quarters. The study area being a city with its inhabitants involved in diverse functions of life, the cited time for administration of questionnaires was in the evenings when the household heads are back to their homes from work. In certain areas weekends were best for the questionnaire administration especially on Sundays immediately after church services. The low literacy level of certain respondents especially in the rural part of the city of Bamenda I municipality made the work a bit tedious for the field assistants and the researcher. Certain respondents had to get their questions translated into pidgin by the research team and the answers then written in English in the questionnaires as seen in table 1.

0.12.18. Data Analyses (SPSS)

The retained copies of questionnaire were processed using statistical package for social sciences. A series of statistics were constituted which formed a base for this piece of work. From

these statistics, tables were derived, graphs such as; pie charts and histograms. The data was analyzed to establish the past and current relationship between urban sprawl and urban expansion. Two basic data analysis procedures used were descriptive and inferential. A descriptive procedure in form of frequency distribution analysis was applied to describe the primary variables of the study and the associated indicator items, mainly as they related to the study objectives and hypotheses. Variable relationships were determined by the use of analytical procedures.

0.12.19. Cartographic work

Cartographic work in this study included the analysis of existing cadastral maps, satellite images, Global Positioning System, data download into a base map and the production of maps. The study area was divided into three zones representing the Bamenda I municipality. For analysis of spatial differentiation for the zone which was considered. The GPS data for the cartographic work was then collected according to the Bamenda I municipality zone.

0.13. Problems encountered during field studies

Many problems were encountered in the course of this study. Some of the difficulties face during the collection of data was.

a) Unwillingness of some urban inhabitants to answer the survey instrument

Some of the inhabitants in the sprawling quarters visited were not willing to answer the questionnaires. Some collected the questionnaires but did not return them while others prevented us from talking photos around their residential promises. This is because they thought we were either council agents or government official who may implicate them with the information collected. This made the exercise difficult and tedious as we had to spend time and energy more than expected and at the end, some of the questionnaires were not received. To overcome this, inhabitants who were not willing to answer the questionnaires were replaced with other sampled households that were willing to attain to us while some respondents were convinced on the confidentiality of the information before they responded and handed back the questionnaires.

b) Inaccurate information provided by some respondent

Another problem encountered during this research process was faulty information. Some respondents attempted to provide faulty information on some of the question on the

questionnaires like the question on ownership of building permits, ownership of a house plan approved by architects and their awareness on living in a risky and restricted zone. This made the researcher to spend a lot of time more than expected. However, at the end, most of them were convinced and they provided the right information.

c) Language barrier

Communication with respondents was one of the problems faced during the research process. Some of the respondents could not reads and write why others were francophone who did not master the English language especially some resident in Abangoh and Sisia. This problem made it difficult for some of the respondents to understand the questions and express their opinions were needed. However, this problem was solved by translating the questions in to Pidgin English or French and explanations made were necessary.

d) Limited literature on urban sprawl and its socio economics development of Cameroon

Documented literature on urban sprawl and its socio-economic development is limited in Cameroon. Very few Cameroonians have carried out research on the topic urban sprawl and its effects on the socio-economics development. The situation of urban sprawl still remains far fetch in the minds of Cameroonians main while the urban areas of the country are fast growing in an uncontrolled manner. Most of the literature gotten on sprawl and development was information on towns out of Cameroon. This made it difficult to relate the information of other countries especially those in the developed world with that of Bamenda I municipality. However, the information gotten from urban areas out of Cameroon set a base for the findings of the study. The experience of other countries was used to guide the procedure for the collection of primary data. With the primary data collected, the problem of limited documented information for the study was overcome.

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SPECIFIC QUESTIONS	SPECIFIC OBJECTIVES	SPECIFIC HYPOTHESIS	THEORIES AND CONCEPTS	METHODOLOGY	CHAPTERS
To what extent is rapid population growth and rural exodus responsible for urban sprawl in Bamenda I municipality	To examine how rapid population growth and rural exodus are responsible for sprawl in Bamenda	Rapid population growth and rural exodus are largely responsible for urban sprawl in the Bamenda I	Theory of economics of Urban sprawl by Brueckner and Fansler	Primary sources: field observation, Interview, Administration of questionnaires	CHAPTER ONE: Influence of population growth and rural exodus on urban sprawl in Bamenda I
What is the direction of sprawl and expansion in the Bamenda I municipality	To investigate the direction of sprawl movement in the expansion of the municipality	The direction of sprawl expansion is towards the north eastern and southern parts of the municipality	The Burgess urban land use model by Burgess		CHAPTER TWO: Direction of sprawl and expansion in Bamenda I municipality
How has urban sprawl affected the socio-economic development of Bamenda I muniicipality	To evaluate the effects of sprawl to the socio-economic development of the Bamenda I municipality	Urban sprawl has affected the socio-economic development of Bamenda I municipality positively	Concept of Urban sprawl	Secondary sources: FALSH libraries, ENS, BUCREP, Council census office and internet	CHAPTER THREE: Urban sprawl effects and socio-economic development in Bamenda I
To what extent, has urban sprawl affected urban planning policies and town planning in Bamenda I municipality	To investigate how urban sprawl has affected urban planning policies and town planning in Bamenda I municipaility	Urban sprawl has affected urban planning policies and town planning in Bamenda I municipality negatively	Concept of development		CHAPTER FOUR: Population adaptation to sprawl planning strategies and effects in Bamenda I

Figure 4: Table of syntax

0.14. PLAN OF WORK

General introduction

   The general introduction covers the background of the study, justification, interest, delimitation of the study, the problem statement, research questions, objectives, hypotheses of the study. the importance of the study, literature review, concepts as well as theories related to the topic are also examined here. This section of the work also covers the research methodology.

Chapter Layout

   The work consists of four chapters which are further subdivided in to sections. The sections include: introduction, discussion of the research work and finally the conclusion which summarizes what has been analyzed and introduces the next chapter.

   Chapter one examines the influence of population growth and rural exodus on urban sprawl in Bamenda I and goes further to look at population growth and effect on sprawl in Bamenda I, determinants of urban growth in the Bamenda I municipality, socio demographic/socio-economic characteristics of the study participants, forms of urban sprawl and rural exodus and its effects on sprawl in Bamenda I. The aim of this chapter is is to validate the hypothesis that rapid population and growth and rural exodus are largely responsible for urban sprawl in the Bamenda I municipality.

   Chapter two elaborate the direction of sprawl and expansion in Bamenda I municipality, the spatial evolution of Bamenda I municipality from 1990 to 2020, the physical environment and direction of urban sprawl in Bamenda I and reasons for residing in the in sprawling quarters of Bamenda I municipality which is in conformity with the hypothesis that state, the direction of sprawl is towards the north eastern and southern parts of the municipality.

   Chapter three sets out to look at urban sprawl effects and socio-economic development in Bamenda I. This chapter goes further to explain the sprawl and social development in the study area and the negative effects of sprawl in Bamenda I which validate the hypothesis that urban sprawl has affected the socio-economic development of Bamenda I municipality positively.

   Chapter four gives population adaptation to sprawl planning strategies and effects in Bamenda I, the implementation of urban planning laws in Cameroon and the Bamenda Master plans applied in Bamenda I municipality, strategies of urban sprawl in Bamenda I municipality which is in accordance with the hypothesis that state, Urban sprawl has affected planning policies and town planning in Bamenda I municipality

CHAPTER 1
THE INFLUENCE OF POPULATION GROWTH AND RURAL EXODUS ON URBAN SPRAWL IN BAMENDA I

1.0 Introduction

The influence of population growth and rural exodus on urban sprawl are glaring and more direct due to their direct implications. For some decades now, Bamenda I municipality have experienced high rates population growth and rural exodus which has gone a long way to implicate urban sprawl. These two elements or factors have resulted to the spatial evolution of the Bamenda urban space which is being characterized by a period of slow and rapid growth in terms of population and spatial expansion. This chapter seeks to examine the influence of population growth and rural exodus on urban sprawl in Bamenda I municipality being the principal focal point of this chapter, the trend of growth; the spatial dynamics, and to test the first research hypothesis which states; Rapid population and growth and rural exodus are largely responsible for urban sprawl in the Bamenda I municipality.

The data that was collected in line with the above stated hypothesis is presented in this chapter to help verify the hypothesis. This chapter carries three sections; 1.1, 1.2, and 1.3. Section 1.1 focuses on the introduction of population growth and its effects to sprawl, the spatial evolution of Bamenda I municipality, determinants of urban growth in Bamenda I municipality and how urban sprawl has evolved over time spanning for close to four decades. Section 1.2 lays emphasis on demographic factors, political, religious and cultural factors. A closer look is equally taken in this section to emphasis on the socio-economic characteristics of the study participant, form of sprawl. Section 1.3 dwells on rural exodus and its implication to sprawl in Bamenda I municipality. This chapter is finally crowned with a conclusion where the next chapter is introduced.

1.1 Population growth and effect on sprawl in Bamenda I

Generally, the world's population is in a continues growth especially that of the developing countries. Cameroon particularly is experiencing rapid population growth especially in urban areas which has implicated urban sprawl. The urban population was 18% in 1967, 22% in 1976, 40.1% in 1991 and presently it is estimated at 51.5% (BUCREP 2010). The case of Bamenda I is very peculiar with a very high growth rate. Bamenda I municipality in particular

has experienced spectacular increase in its population for over the years. The national census on population and housing of the 1976-1987 in Cameroon revealed that Bamenda was ranked 4th with a 7.8% average annual growth rate amongst towns of the 1000 inhabitants and 5th between 1987-2005 with an average annual growth rate of 4.9% amongst towns of more than 50000 inhabitants (Ngoran 2013).

As of the moment, Bamenda urban space has a population of 269530 people and a surface area of 22.5 km^2 with a population density of 718p/km^2 (BUCREP, 2010). This high population pressure is attributed to a number of factors amongst which are; high fertility, early marriages very common amongst teenage (17-18years) who start child bearing at the age of 19years (Nkwemoh, 1999). Family planning education and the use of contraceptive is slow. The culture, custom and tradition of nursing children for wealth and reduction in infant mortality due to improve medical facilities explain this increase in population growth which lead to sprawl in suburb areas and quarters of Bamenda as a whole and Bamenda I Municipality in particular. Table 3 shows the trends of population growth in Bamenda1Municipality since 1976.

Table 2: Evolution of population of Bamenda urban space by Sub Division between 1976-2005

Municipalities	1976	1987	2005	2020 projection
Bamenda1	3368	7710	18468	38250
Bamenda II	28385	64984	159210	261285
Bamenda III	16358	37448	91852	105244
	48111	110142	269530	404779

Source: BUCREP, 2005 and 2010 Projections

Table 2 shows that the evolution of Bamenda population from 1976 to 2005 and 2020 projection. From the table it can be observed that the population has been increasing for the past decades and continue to grow which shows that Bamenda is increasing both in size and population. From the table, the increase in population has been became a call for concern since 1976 a population of about 3368 was registered and within 1987 a population of about 7710 was registered giving way to the 2005 population of 18468 which we experience a tremendous increase leading to sprawl and a better projection for 2020 of about 38250 has been taken in to consideration. Figure 5 shows an increasing trend of the population in Bamenda I municipality.
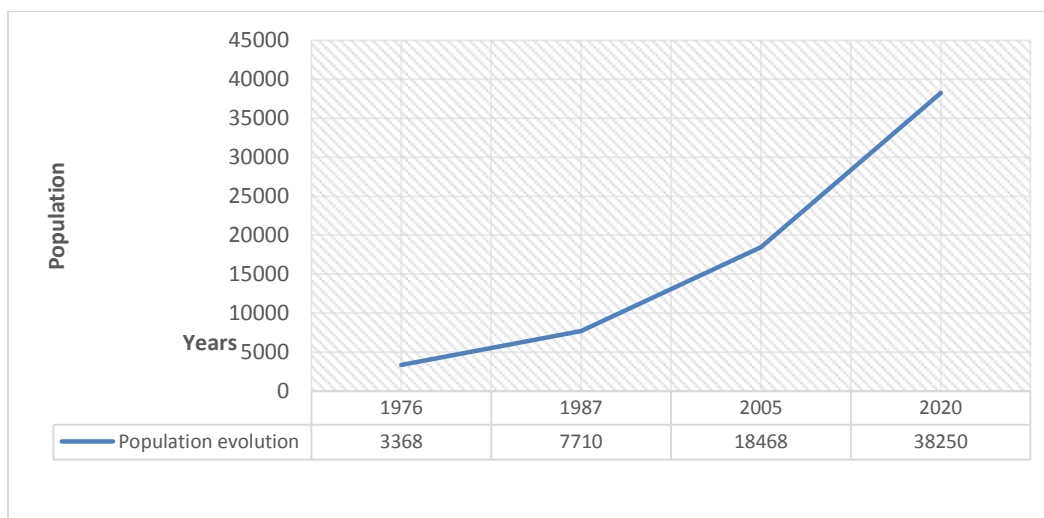
Source; compiled from BUCREP, Bamenda I Council and projection, 2020

Figure 5: Population evolution in Bamenda I municipality

From figure 5, a general trend of population growth from 1976 to 2020 which shows the increase in decade of population in Bamenda I municipality. In 1976, the population of Bamenda I municipality was very small (3368) and during that period the municipality was limited in terms of infrastructural development and administrative functions, so as in the course of time, to 1987 and 2005, the population continue to increase leading to sprawl and finally in 2020, the population reached way Bamenda I experience a tremendous increase in population due to rural exodus and other factors.

Bamenda I municipality has been growing in terms of population and human activities and as such, there has been an increase in the surface area covered. A number of factors are responsible for the rapid urban growth in Bamenda1municipality. These factors differ in time but in most cases, they work simultaneously. The main determinants of urban growth in Bamenda I municipality are grouped into demographic, socio-economic, political, religious and cultural factors (Table 3).

Table 3: Determinants of Urban growth in the Bamenda I municipality

Urban growth determinants	Frequency	Percentage
Socio-economic factors	91	47.4
Demographic factors	50	26.0
Political factors	25	13.0
Religious factors	15	7.8
Cultural factors	11	5.7
Total	192	100

Source: Fieldwork, 2021

Table 3 shows respondents' perceptions on the determinants of urban growth in the Bamenda I municipality. Socio-economic factors were generally perceived by the respondents as the main reason for growth with the highest percentage of 47.4%. These socio-economic factors amongst others included trade and commerce, health, recreational facilities and related infrastructural development which has all been implanted in this municipality. There is therefore no doubt that all these socio-economic factors have helped to influence the spatial growth of the town or the urban areas of Bameda I municipality. Also demographic factors with 26.0% also play a role in influencing the population of the study area there by leading to urban sprawl, factors such as increase in birth rate, underemployment amongst others. More so political factors with 13.0% have equally been important in determining urban growth in Bamenda I, because of the presence of military camps and tied security in Bamenda I today have guaranteed the life of many people in the area. Peaceful environment in some part of Bamenda like the Council area of Bamenda I attract more and more person in the area. Religious factors with 7.8% also have play a greater role with the opening of new churches and the existing one in Bamenda I is a called for concerned, churches like the Presbyterian church, catholic, Christ embassy and Pentecostal churches have influence the growth of this area. Cultural factors with 5.7% are also of important in the study area, this is due to fact that most of the respondents have been living in the study area and are so attach to their culture, reason why most of them cannot live the area of origin again.

1.2 Socio-Economic Factors and influence on growth

The Bamenda1municipality offers a plethora of socio-economic opportunities as businesses, health and educational services surrounding satellite towns and villages. It should be noted that, there is a strong correlation between growth and economic development. Urbanization and economic development since economies of scale and agglomeration make possible socio-economic development (Liddle, 2013). Also, urban growth is the outcome of economic development, not only because of the higher concentration of labour in Bamenda I municipality, but also because economic development results in development of an urban lifestyle that creates the need for urban infrastructure and services. Figure 6, present the major socio-economic determinants of urban growth in the Bamenda I municipality.
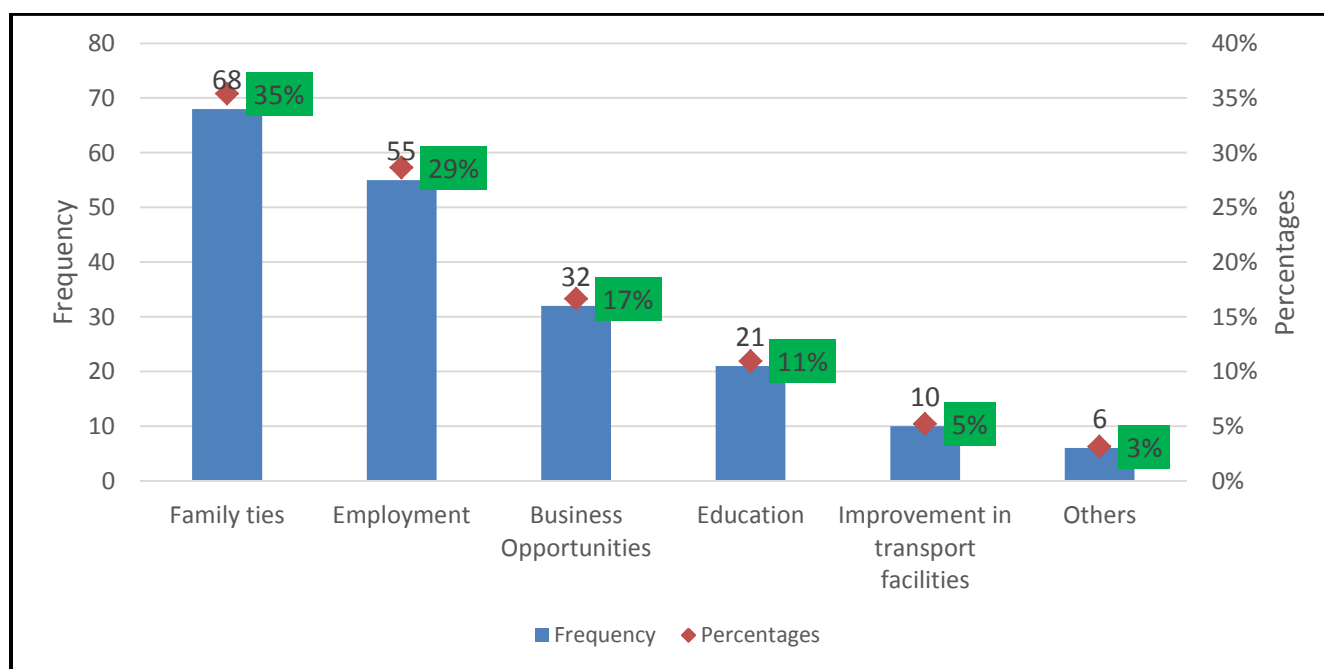
Source: Field work (2021)

Figure 6. Socio-economic determinants of urban growth in Bamenda I municipality

Figure 6, presents respondent's views of the socio-economic determinants of urban growth. Family ties represent the main reason for settling in Bamenda I municipality with a proportion of 35% which shows that most of the respondents are residing in Bamenda I municipality because of their families that has been there. Equally employment is one of the second influential

determinant of growth in Bamenda I municipality with a percentage of 29%, this is so because most of the respondents gave the view that it is due to employment opportunities in the administrative sector that cause them to be living in Bamenda I, and some of them further explain that without the presence of the administrative sector there will not have been in the area. Concerning business opportunities, a lot of many businesses has been set up in Bamenda I municipality with has attracted a lot of population in the study area, according to respondents on the field 17% were for business purposes which shows how Bamenda I municipality has been improving in the business sector couple with the fact that Bamenda I business men due trade with other regions and event international in the domain of business.

Education also is another determinant of growth in the study area because due the presence of many nursery schools, secondary, and universities in some part of Bamenda like Bambili and the National Polytechnic Bambui has attracted a lot of population who now live in Bamenda I municipality before attaining this schools, more so responses from respondents tells us that most people now prefer living in Bamenda I for safety reason because of the socio-political crisis in the South west and Northwest regions of Cameroon education now present 11% on the bases that as days are going by the educational system is going to improve. Improvement in transport facilities is one of major call for concerned in Bamenda I municipality, according to respondent's view on transport improvement it is still low reason why only 5% has been answered by respondents in the field, many roads linking the quarters in Bamena I municipality are not tarred, most of them are earthly roads while 3% were attracted by the improvement in social amenities with infrastructural development taking up space from agriculture in Bamenda I municipality.

1.3 Demographic factors and influence on growth

More so demographic factors, presents the second factor responsible for population growth. This is partly linked to increase in birth rate and improvement in medical facilities for over the decades which has ignited an increase in population of Bamenda I municipality. Birth rate and improvement in medical facilities was pointed out to be the most factors responsible for determining population growth in Bamenda I council area.
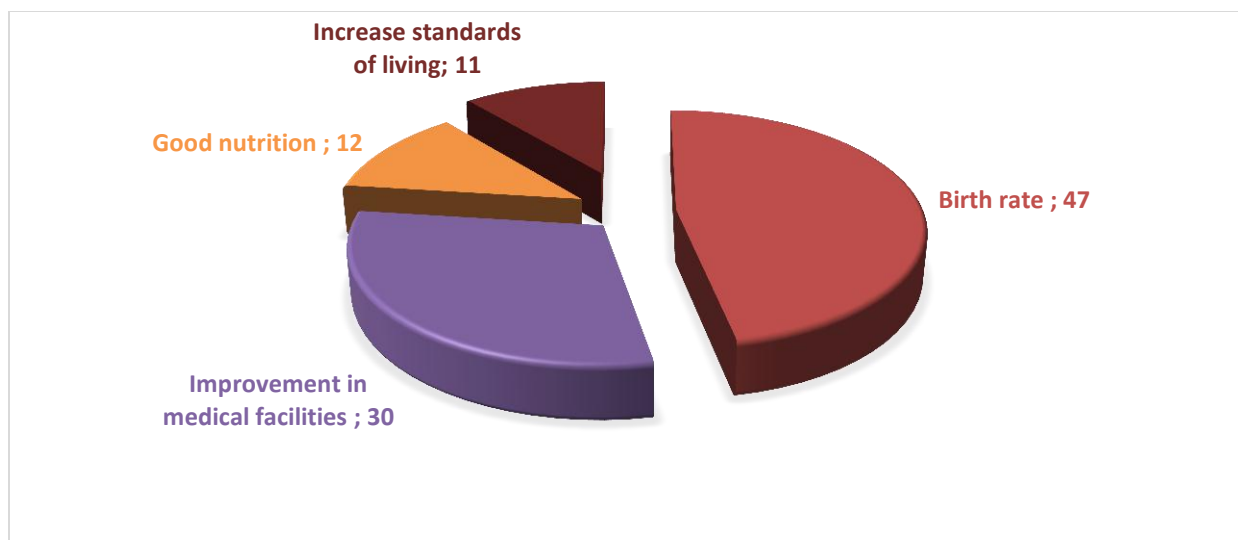
Source; Field work, 2021

Figure 7: Demographic factors responsible for determining population growth

From the 7, demographic factors has mostly population growth, birth is one of the factor responsible for urban growth in the study area and the world at large, the increase in birth rate in the study area has become so rampant due to the fact that most of the girls who drop out from school are getting pregnant so fast as compared compared to the educated girl child, since most of them are engage in their trade like beauty salon, tailoring most of them get in to early marriages there by increasing the population of Bamenda I municipality with a percentage of 47%.Another reason gotten from respondents is that some of them have not even complicated their first school living certificate but because of their involvement in peddler jobs has prompted them to lose their education because of the love of money and now the consequences is illiteracy and no used of contraceptives which is bound to cause an increase in birth rate.

Furthermore, improvement in medical facilities even though to an extent it is still low, but we appreciate the ones that are there, according to responses from respondents in the field, many pharmacies has been open in the study area, with health centers and even hospitals in the neighboring area like Mbingo Anex, the big Mbingo still in Bamenda, and many health services which has been open to boost the health sector in Bamenda I municipality. Also with 12% as good nutrition in the study area, this is so accurate because most of the respondents now carry on their activities in all sector very well with some farmers who have extended their farming activities further away now claim that even with the small product that you work from the farm,

it is being sold in a good price as compared to the past because of the phenomenon of urban sprawl in the area. Living standard has also increase because of sprawl, with the presence of administrative functions, trade and commerce has cause the living standard of many people to increase according to respondents in the field.

The rapid urban growth in Bamenda I municipality is mainly due to population growth and rural exodus. Natural population growth results from excess of births over deaths. The high birth rate in Bamenda I municipality can be attributed to high fertility seen through the early marriages common among teenagers (17-18 years), and the low education on family planning and the use of contraceptives. The culture, custom and tradition off giving birth too many children as a source of wealth and support in the future and the reduction in infant mortality due to improvement in medical facilities explain this increase population in Bamenda I municipality. Sex composition of Bamenda1Municipality is a very fundamental determinant of urban growth, both present and future growth. The sex ratio of the Bamenda reflects that of the entire nation which stands at 48% of male and 52% of female indicating a higher proportion female folks (SMAUL II,2007). The rapid population growth can be further understood by looking at the age and sex structure of Bamenda1 from 2013 to 2025 (INS, 2016) which presents a progressive structure characterized by a more youthful population due to an increase in birth rates, decrease in infant mortality precipitated by the improvement in health care facilities. The high percentage of female over males and the high percentage of youthful population show a continuous growth in the population of Bamenda I municipality.

Internal migration has been a potent factor accounting for the rapid population growth in Bamenda I municipality. This is due to increase immigration over emigration resulting in a net gain in the population of the Bamenda I. Bamenda has witnessed a very significant increase in population as people move from rural areas in to Bamenda I municipality. This has led to an increase in pressure on the inner-city areas and expansion in to the fringes of Abangoh Central, Nkwen, Bamendakwe, Achichum, Nta'fi and Nsongwa Ntafebu areas as the population of the Municipality is growing. Field investigation revealed that a majority of respondents were not native of Bamenda I Municipality (Table 4).

Table 4: Distribution of respondent's place of origin

Native of Bamenda I municipality	Frequency	Percentage
Yes	99	51.6
No	81	42.2
Undecided	12	6.5
Total	192	100

Source: Field work (2021)

Table 4 presents the distribution of respondents with respect to their places of origin. 51.6% of the respondents in Bamenda I municipality stood on the view that there are truly the sons of the soil since they have been born in Bamenda I municipality promising to ever remind remain there for life if the municipality continue to be peaceful and many of them went further to explain that they don't have the feeling of going to live in any other area since Bamenda I provide them with everything they need. In addition to that 42.2% of the respondents on the field gave their own responses and boldly declared to the researcher that they are not from Bamenda I and that their living in Bamenda I is just temporal while some of them go further to explain that there are in the area mainly because of their profession if not they would have been elsewhere especially those in the administrative sector especially all most all the administrative office now has been transfer in Up-station Bamenda. Furthermore 6.5% of respondents did not say anything and some event put but a dash the undecided column. This indicates that Bamenda I municipality is very receptive to migrants from mostly the neighboring villages and from other satellite towns due to the plethora of services she offers. This confirms the fact that internal migration has contributed immensely to the growth and development of the Bamenda I municipality.

The population of some quarters of Bamenda I municipality since 2015 indicates a continuous growth pattern in Bamenda I municipality. It was generally perceived by the respondents that the population of Bamenda I municipality has changed over time with a proportion of the highest quarter being Bamendakwe 52.8% and 12.5 for the lowest quarter which had witnessed a change in population of their neighborhood as presented in Table (5).

Table 5: Perception of respondents on population dynamic in the Bamenda I Municipality Space

Quarters of Bamenda I Municipality	Changes in Population	Percentage of change
Abangoh-Ntangang	396	16.5
Abangoh Central	434	18.2
Achichum	298	12.5
Bamenda-kwe	1262	52.8

Source: Population Census Data 2015

Table 5 present changes in population of Bamenda I municipality over time and space, with regard to the nature of change, a greater percentage of the respondents in these quarters were unanimous that population has been on the increase, according to Cameroon population census 2015, the data revealed that 52.8% of population has been in Bamendakwe, 18.2 in Abangoh central, 16.5% in Abangoh-Ntangang and 12.5% in Achichum while only few of them revealed that the population has been stable. This can be attributed to historical or political factors, employment opportunities, and the presence of socio-economic facilities among others. Those who noticed an increase trend in population of their neighborhoods lived in high-risk zones, and because of the constant occurrence of environmental hazards like soil creep and landslides, people are forced to flee to other areas. While those who perceived that the population has been constant or growing at a slow pace are those who have not lived in the municipality for long, so it is difficult for them to evaluate the rate of change.

The remarkable population growth experienced in Bamenda I municipality implies an ever-increasing demand for housing which is not backed by a corresponding increase both in terms of quality and quantity supplied. The inadequate housing has led to the growth of slums and squatters' settlements with poor access to housing facilities and services as shown in (figure 8).
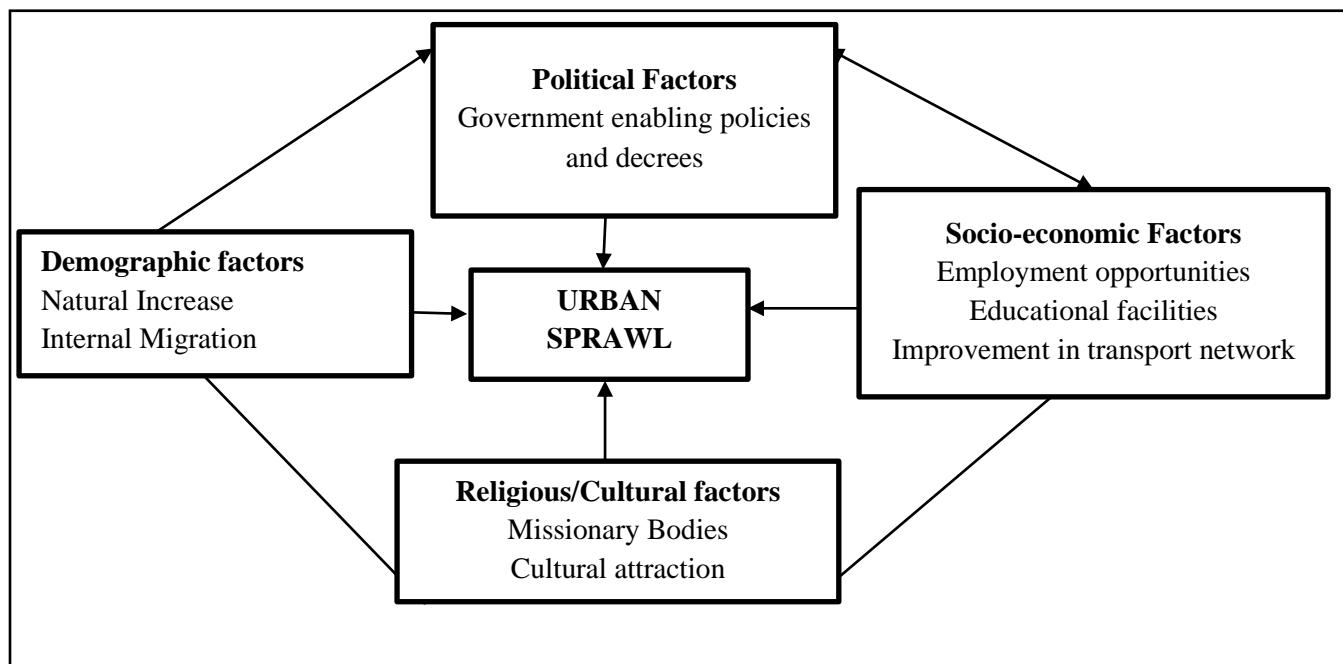
Source: Adopted and modified from Nformi Beatrice Muluh 2020 page 110)

Figure 8: Determinants of urban growth framework for the Bamenda I municipality

Figure 8 reveals that changes in socio-economic, demographic and political factors either directly or indirectly contributed to urban growth. The interrelation or interplay among these factors further intensifies urban growth in Bamenda I municipality. Natural population growth has a direct impact on urban growth, also natural population increase contributes to the expansion of the Municipality and creates situations where the urban fringe zones eventually exceed their population threshold and are reclassified as urban areas. In addition, mission activities or cultural activities attract people in to Bamenda I municipality; these migrants are mostly the young and most fertile, resulting in increased birth rates in the Municipality, thereby expanding the town boundary in to suburbs. These aspects are common in Abangoh Central, Achichum, Nta'afi, Menda-kwe, and Ntafebuh area as the population of the municipality continues to grow resulting in reclassification, thereby indirectly contributing to urban growth, which automatically led to sprawl in the suburbs of Bamenda I municipality.

1.4. Political Factors

The creation of Bamenda as a town was peculiar in Cameroon because it was intended to achieve a compromise between the authorities of the chieftains in whose territory the town was built and the dictates of a modern colonial administration (MINDHU, 1985). According to the

Bamenda City Council achieves, before the independence of French and British Cameroon in 1960/1961, there were two Native Authority structures that administered Bamenda, namely, the Bamenda South Eastern Federation with headquarter in Ndop (Ngoketunja Division) and the Bamenda South Western Federation with headquarters in Mbengwi to serve the Widikum tribe which today occupies Momo Division and parts of Mezam Division. By 1962, the Ngemba council was carved out of the Widikum council to take care of the Ngemba tribes of Mezam Division with headquarter in Mankon town. The Ngemba council was in charge of the administration of lower Ngemba made up of Mankon, Chomba, Mbatu, Nsongwa, Ndzah, Mumdum I and II and the Upper Ngemba tribes (Akum, Alating, Baba II, Baforchu, Awing and Pinyin). In 1964, the Mankon Urban Town Council was carved out of the Ngemba Council to serve the urban areas of Mankon Town. In 1968, the name was changed to Mankon Area Council and covered the whole of the Lower Ngemba Area. The outcome of the referendum of 1972 was the unity of the two Cameroons forming the United Republic of Cameroon. With this, the Mankon Area Council was changed to the Mankon Rural Council (Archives of the Bamenda City Council, 2015).

Persistent increase in the population of the Bamenda has led to the presidential Decree No: 77/203 on the 29/06/1977 which transformed Bamenda in to a Municipal council made up of Mankon, Nkween, Nsongwa, Mbatu, Chomba, Bamendankwe and Banjah (Bamenda Master plan, 1985), marking her the Capital of the then North West Province of Cameroon. The administrative functions conferred on Bamenda were immediately followed with the appointment of a governor and the gradual establishment of various branches of different ministerial delegations in Bamenda1Municipality. Being the Provincial capital,Bamenda served far beyond her immediate environment to cover the entire province with administrative, economic and social services. This resulted in rapid growth in her population and spectacular increase in construction and trade to house and feed this rising population. This was also followed by improvement in road transport as few stretches of roads were built within the town in neighborhoods like Ntamulung, Old town, Bayelle and Up station where they received their first ever coat of tar while other secondary roads were constructed within and out of the town like the Bamenda-Bambili, Bamenda-Bali, Bamenda-Mbengwi roads. It equally played an important role in the growth of Bamenda population in Bamenda I Municipality.

Also, presidential Decree No: 2008/021 of 17th January 2008 transformed the former Bamenda Urban Council (BUC) in to the Bamenda City Council (BCC), which made up of three Sub-Divisional Council Areas: Bamenda I (Bamendankwe land area), Bamenda II Bamenda II (Mankon, Nsongwa, Chomba and Mbatu land areas) and Bamenda III (Nkwen and Ndzah). All these changes precipitated rapid population growth in the Bamenda I Municipality, pressure on the available houses and emergence of unauthorized and poor-quality housing.

1.5. Religious Factors

The missionary bodies further increased the pace and intensity of urban growth and development in the Bamenda especially in Bamenda I Municipality. This was especially with the opening of the first Baptist Mission in Nkwen (1936), the presbyterian mission at Ntamulung (1936) and the Roman Catholic Mission at Abakwa (1939). These missionary bodies opened churches that played important roles in enhancing the growth of Bamenda and Bamenda I in particular. These institutions constituted the core of urban growth following the creation of elementary, primary and secondary schools, which attracted many people to move in and settle around the churches, schools and hospitals they created. This can be seen through the growth and development in the core areas of the Towns like Ntamulung and Ntabesi where the Presbyterian Mission constructed a church and schools, the Baptist mission opened a church, school and hospital that attracted people to settle in Mughed and New Layout. The Catholic mission constructed a church, which later became a cathedral and a school in Big Mankon, which precipitated the growth of that neighborhood. This has affected the distributional pattern of the people, as the main areas of population concentration correspond to the areas where the missionaries established, thereby increasing the demand for housing in Bamenda I Municipality due to the fact that most people attaining this churches live in Bamenda I Municipality especially Up station.

1.6. Cultural Factors

The first of settlers who flocked in to Bamenda in 1910 were the Hausas, with a long tradition of craftsmen and traders from Northern Nigeria. The Fon of Mankon (Angwafor II) in a neighborhood called Ntambag today known as Old Town gave them a piece of land. This area was later called Abakwa known in Hausa language as 'Land of strangers'' and forms the nucleus

of Bamenda. The growth of the Ntambag neighborhood attracted other ethnic groups like the Bamilikes from the Western region of Cameroon.

After the First World War, with the defeat of the Germans, Cameroon was partitioned in to two between British and French in 1919. Given that British Southern Cameroon was too small to be ruled as a state, the British administered it as an integral part of the Eastern Region of Nigeria. This led to an influx of many Ibos from Eastern Nigeria in to British Southern Cameroon. The influx of this Ibos played an important role in both internal and international trade, as they were business oriented. The British made Bamenda the capital and carried out many constructions works in Bamenda1Municipality such as the construction of their living quarters at the Bamenda Up station to add to the existing ones left by the Germans. Important roads construction projects such as Bamenda-Nso and Bamenda-Wum roads (Ministry of Town Planning and Housing, 1985) were lunched. These new roads ease the movement of people in and out of Bamenda1Municipality. The construction of a dispensary in Ntambag and a post office in Up Station all enhanced population growth in Bamenda1. The effects of population increase in the Bamenda1Municipality are manifested in the shortage of housing and the growth of slums and squatters towards the suburbs of Bamenda I municipality.

1.7. Socio-demographic/Socio-economic characteristics of the study participants

This cross-sectional study involved the distribution of questionnaires to participants in the Bamenda I municipality. 228 questionnaires were distributed and finally only 192 questionnaires were fully collected for this study (Table 6).

Table 6: Socio-demographic Characteristics of the Study Participants

Variables	Categories	Frequency	Percentages (%)
Sex	Male	123	64.1
	Female	69	35.9
	N	**192**	**100.0**
Age Groups	18-25	5	2.6
	26-45	60	31.3
	46-65	102	53.1
	66+	25	13.0
	N	**192**	**100.0**
Marital Status	Divorced	5	2.6
	Married	92	47.9
	Single	75	39.1
	Widow	17	8.9
	Widower	3	1.6
	N	**192**	**100.0**
Education Level	1st Degree	72	37.5
	A/L	81	42.2
	F.S.L.C	4	2.1
	O/L	35	18.2
	N	**192**	**100.0**
Sub Division	Bamenda 1	97	50.5
	Bamenda II	30	15.6
	Bamenda III	65	33.9
	N	**192**	**100.0**
Religion	Christian	120	62.5
	Muslim	65	33.9
	Pagan	7	3.6
	N	**192**	**100.0**
Employed	No	86	44.8
	Yes	106	55.2
	N	**192**	**100.0**
Sector	Private	80	76.0
	Public	25	24.0
	N	**106**	**100.0**
Monthly Salary	<35000frs	2	1.0
	101000-250000frs	67	34.9
	250000frs+	21	10.9
	35000-50000frs	35	18.2
	51000-100000frs	67	34.9
	N	**192**	**100.0**
Accommodation	Government owns	31	16.1
	Personal	31	16.1
	Rented	130	67.7
	N	**192**	**100.0**

Source : Field Survey 2021

From the 192 participants included, majority were male (64%), within the age groups of 46-65 (51%) and married (47.9%). In addition, majority of the study participants had A/L certificate (42.2%), from Bamenda 1 (50.5%) and were Christians (62.5%). Furthermore, majority of the study participants were employed (55.2%), working in the public sector (76%), and rented their houses (67.7%) (Table 6).

A. Sex ratio

Sex ratio is the ratio of male to female population in sprawling area. Field studies revealed that, a majority of people in sprawling quarters are male. Out of the 192 questionnaires received in the 11 selected quarters, (64.1%) were males while (35.9%) constituted females.

In particular, a great difference in sex ratio is most likely because men are more migratory these days as compared to the antecedent. They usually move to urban centers in search for better opportunities. In addition, most of the men responded the questionnaires as family heads and the woman's answered in situations where their husbands were not available. This account for the changes in sex ratio of the sprawling quarters.

B. Age groups in sprawling neighborhoods and marital characteristics

The age of the people in sprawling quarters in the area of study is divided in to; 18-25, 26-45,46-65 and 66 and above (Table 6). 18 years above was used as the age limit because it is at this age that an individual is considered an adult and can take major decisions for him/herself. A greater proportion of respondents in sprawling quarters of Bamenda1Municipality is within the ages of 46-65 (53.1%) followed by 26-45 (31.3) age group. This is reasonable by the fact that it is within these ages that people migrate, active and responsible. The small percentage fall within the age range 18-25 (2.6 %) and 66+ (13.0%). Learning a trade while most of the aged people (66 and above) prefer to retire in the villages than the urban centers. This accounts for the variation in age groups in the sprawling quarters.

Concerning marital status, the situation with regard to whether one is single, married, divorced, widowed and widower. In line with table 6, a greater number of people in sprawling area are married (47.9%) as most of them are in the vital procreative age groups. A bulk of these married people are those who cannot afford high cost housing in planned residential quarters of the Bamenda I Municipality. This testifies the high number of married people in sprawl areas.

The number of single (39.1%), divorce (2.6%), widows (8.9%) and widowers (1.6%) constitute a small portion of those in sprawling areas. This is because of the low level of dependence in the sprawl areas and a reduction in death rate due to amelioration in health care facilities in the study area.

C. Level of Education and employment rate

Changes of educational level exists in Bamenda I municipality. They have been structure in to4 groups; primary education, ordinary education, Advance level and higher education levels. Advance level holders make up a greater leading portion of respondents in sprawling areas (42.2%) followed by the higher level of education (37.5%). Such a greater proportion of those in the secondary and higher educational levels can be justified by improvements in literacy level due to increase in educational level with the creation of many secondary schools and universities in Bamenda today. Ordinary level of education had third to the last number of respondents (18.2%) followed by primary education (2.1%).

Primary educational level is the last level because many people who are having higher certificate at least go through primary education in this generation as compared to the past. However, those with low educational level were found in the risky sprawling neighborhoods. This is because these people have limited knowledge and poor perception of the risk involved living in these risky neighborhoods like Bamenda escarpment and Abangoh.

Employment was sub-divided in to employed or unemployed. For those employed, the sector of employment was considered that is public or private sector. A greater proportion of those living in sprawl zones employed (55.2%) as against (44.8%) who are unemployed. This is because; those who migrate to the urban centers have the search of jobs as their paramount objective. However, a majority of those employed are in the private sector (76.0%) due perhaps to limited opportunities and specialized skills. Besides, a majority of inhabitants in these quarters are of the working age group. Besides, the low rate of employment in Cameroon's public sector compared to the private sector cannot be under estimated. Thus, urban sprawl in Bamenda is highly characterized by private business people with secondary educational level and below which does not permit them to earn high. They are thus, forced to settle in risky sprawling quarters.

The evaluated monthly salaries of those in sprawling zones was categorized in the following brackets; >35000FCFA, 35000-50000FCFA, 51000-100000FCFA, 101000-250000FCFA and salaries above 250000FCFA.

A larger fraction of respondents in sprawling quarters have salaries between the range of 51000FCFA and 100000FCFA (34.9%). This is followed by 35000FCFA and 50000FCFA (18.2%) range. This amount is generally small to meet up the cost of living in an urban center like Bamenda I municipality. The economic crisis in Cameroon in the 1980s coupled with a majority of inhabitants employed in small activities in the private sector that earns little accounts for this low-income range. However, field results show that, a greater proportion of those in the sprawling quarters of the peripheries like Mile 1 Bamendankwe have income above 100000FCFA. This is because many people in these areas have higher educational level with a good number of them working in the public sector. Inhabitants with salaries of less than 35000FCFA per month represent the smallest proportion of people in sprawl areas (1.0%). This is probably because majority of those in urban centers are those of the active age group who at least try to do something to earn a living.

1.8. Analyzes of Reasons of Urban Sprawl in Bamenda I Municipality

These sections is based only in analyzing the reasons for urban sprawl in Bamenda I municipality in which all the reasons according to the number of respondents in sprawl quarters will be look on critically. These reasons are analyzed and presented below using the bar graph, bar chats and many others.

This question was asked to know whether the indigence of Bamenda I municipality really knows that uncontrolled growth is taking up space in their locality. But from the responses respondents gave, it shows clearly that a majority of them really appreciate the fact that urban sprawl is taking up space in the Bamenda I extending toward the North East and South East of Bamenda I municipality as shown in (Figure 9).
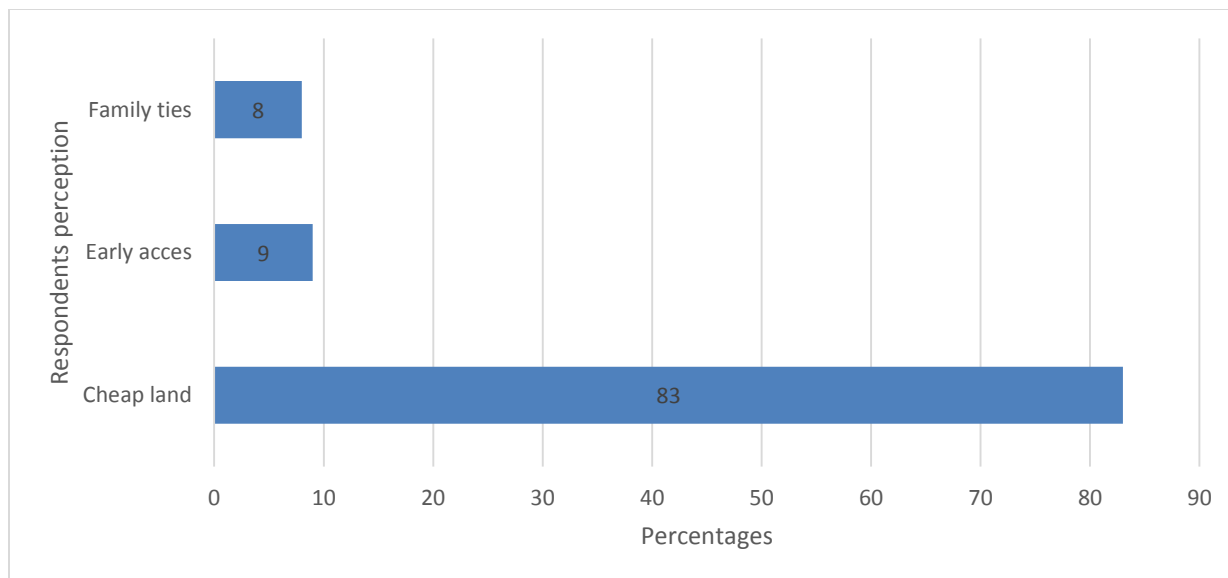
Source; Fieldwork, 2021

Figure 9: Respondents perception of urban sprawl in Bamenda I

Based on figure 9, a majority of respondents from field investigation accepted that urban sprawl is taking up space in their municipality, and some of them further explain that because of the increase in birth rate and the influx of many people in the area, they has been congestion and the need for housing has become the order of the day in the municipality in which most of the new comers since they cannot afford enough money to pay their rented houses in urban quarters of Bamenda I, there are force to go to the suburbs where land is cheap and houses cheap also with little or no control in building there by spreading the phenomenon. A majority of respondents with 83% responded positively that cheap land. Also 9% of the respondent accepted that early access has been responsible for keeping them in the study area and 8% stood on the opinion that family ties is also responsible for sprawl in the study area.

1.8.1. Decadal evolution of urban sprawl in Bamenda I

This is to show the trend of urban sprawl as seen in the following years presented in the bar graph bellow Figure 10.
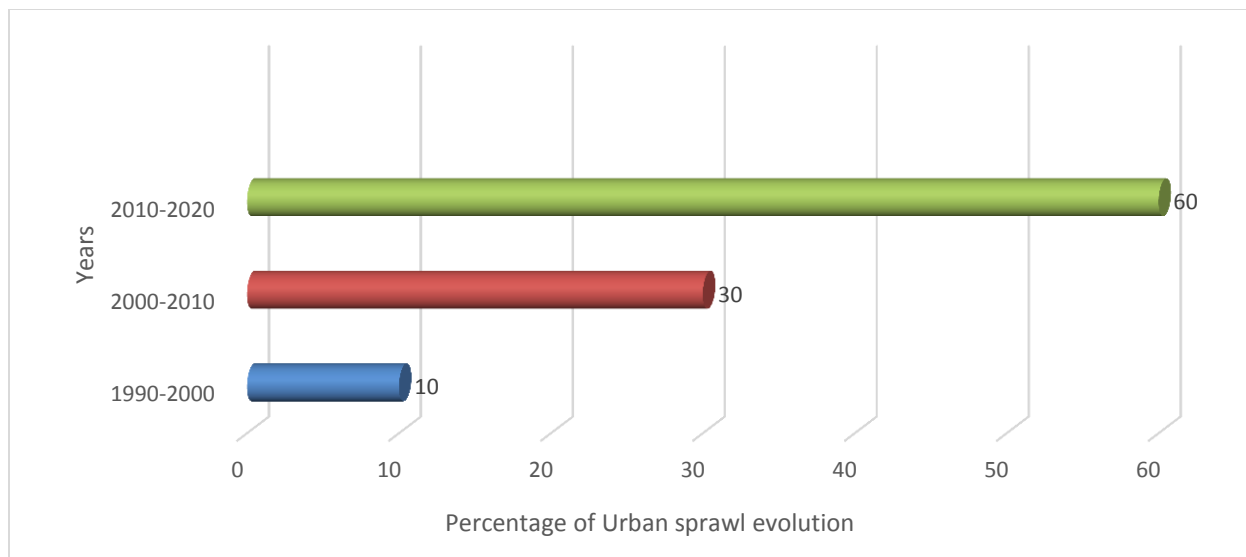
Source: Compiled from Regional delegation of town planning and regional development, 2020
Figure 10: Evolution of urban sprawl of Bamenda I

Figure 10 shows the evolution of urban sprawl in Bamenda I municipality both the highest and the lowest year of recognition. From the year 1990 to 2000 urban sprawl in the study area was still very low because during that time it was still growing day by day in terms of population and during the year 2000 to 2010 the phenomenon became widely known because within this year's Bamenda was transformed in to and urban center by the president of the republic and the two master plan of Bamenda was drawn, as a result Bamenda I in particular receive an influx of people since it was already an urban center and mostly everybody in most villages of the North west region who are seeking for job opportunities travelled to urban centers for their jobs and finally within the year 2010 to 2020 a continuous growth of population has been witness in the study area with clear evident by many persons moving toward the suburbs and spreading everywhere in Bamenda I with increase in prices of agricultural good as the result of urban sprawl.

1.9. Forms of Urban Sprawl in Bamenda I Municipality

Harvey and Clark (1971) classified sprawl in to three basic forms; Low-density continuous sprawl, ribbon sprawl and leapfrog development sprawl. The town of Bamenda I municipality depicts all these forms of sprawl proposed by Harvey and Clark. The spatial representation of the different categories of sprawl observed in Bamenda I municipality. The spatial representation of the different forms of sprawl inherent in Bamenda I municipality has been analyzed, they include

(low-density sprawl, leapfrog development and ribbon sprawl). These forms of sprawl results from the outward expansion of the town towards the peripheries following transportation corridors and occupation of ecological fragile areas like marshy areas and mountain slopes.

1.9.1. Areas with Low density of urban sprawl

Field observations revealed that some areas in Bamenda I council are experiencing very low density of urban sprawl than others. This sprawl involves the transformation of sub-urban land and natural landscape in upland areas into residential use. This type of sprawl is common in quarters of Bamenda I municipality such as, Bamendankwe, and Muyu quarter where the natural landscape or land that was for agricultural purpose has been transformed in to residential land due to growth of the town. Photo 1 is a testimony to this irregular urban sprawl with a low density of urban sprawl in Bamendankwe area.

Sahfe, 2021

Photo 1: Density sprawls in Bamenda-nkwe area

1.9.2. Leapfrog development

Leapfrogging development happens when developers jump from one built-up area to another, leaving a large, undeveloped expanse of land or forest in between, (Irwin Zhang, 2012). Leapfrogging development in Bamenda I municipality is mostly orchestrated by natural factors such as forest and water rather than anthropogenic factors. For instance, leapfrogging sprawl within the extensive quarter roads of Bamendankwe photo 2.

Sahfe, 2021

Photo 2: leapfrogging development sprawl in Menda-kwe

1.9.3. Ribbon sprawl

Ribbon sprawl is the development that follows major changes outward from urban cores. Ribbon sprawl involves the development of land adjacent to transformation corridors. However, some portions of the transformed land still have rural uses. Over time, these nearby rural lands may be converted to urban uses as land values increase and infrastructure extends perpendicularly from the major roads and lines. Ribbon sprawl is a common characteristic of the Up-Station- Mile III road (photo 3).

Sahfe, 2021

Photo 3: Ribbon sprawls in Up-station Bamenda

1.10. Rural Exodus and its Effects on Sprawl in Bamenda1

This section analyses the trend of rural exodus in Bamenda as a whole and Bamenda I municipality in particular, classification of the group of persons who come in, their age group, place of work and profession and relationship that exist between rural exodus and sprawl in the study area.

1.10.1. General trend of rural exodus in Bamenda

Just like most regions in Cameroon, Bamenda faces the problem of rural exodus throughout the length and breadth of the territory; Youths have emigrated from rural areas in to the main towns and quarters of Bamenda: this is due to the social and economic opportunities that it offers to the society. So, the fight for better living standard, quality education, social amenities has resulted not only in increased crime and unemployment but also in social turmoil. In an attempt to stop this mass migration, some existing institutions are being harnessed for the development of rural areas to alleviate the persistent conditions of economic helplessness.

1.10.2. Specific trend in Bamenda I

The fast growing nature of the town is grappling with the problem of rural exodus. Over the last years, migration to urban areas has grown dramatically; this is because of the socio-economic opportunities that Bamenda1 offers. As a result, of the presents of schools, hospital, and ministries found in Up-station. Businesses and all the social facilities have attracted many people in the Bamenda I Municipality. Most of the population that migrate to Bamenda I is also because of the push factors and this account for one of the reason why some of them settled toward the suburbs of Bamenda1. With increase population, there is need for housing, infrastructures and land. All of this can only be available in the peripheries and so the immigrants are forced to move towards outskirt with little or no planning.

1.10.3. Classification of groups of persons and their profession

In Bamenda I municipality, a good number of people who comes to settle are mostly civil servant because of its administrative functions. we have different ethnic groups of people from various places like the Bali, Banso, Nkambe, Douala, Yaoundé people, this constitute different tribes in Cameroon. All these tribes are found in Bamenda1 and are engage in administrative works under different ministries like defense, public work, education, transport just to name a few. More also, some of the rural migrant in Bamenda I municipality are also engage in farming,

while others in to Businesses, but it should be noted that Bamenda I municipality is full of administrative activities.

1.10.4. Relationship between rural exodus and sprawl

There is a great relationship that exist between rural exodus and sprawl in Bamenda I municipality. Field experiences shows that, population has triple, demanding for where to stay and since the urban areas are congested with many people, the incoming population is force to invade the suburbs where there is enough land. So rural exodus has led to poor housing and infrastructures in Bamenda I municipality where by the newly arrived seeks for where to live as such, they do not see the need for land title there by building in a disorganized manner. Lastly, from field experiences the researcher concludes that both the pull and the push factors of rural exodus in Bamenda I has a direct relationship with sprawl because it is as a result of these factors that we have urban disorder in the Bamenda I although population growth contribute but rural exodus turn out to be one of the most important contributor to sprawl.

1.10.5. Implications of rural- exodus on urban sprawl Bamenda I municipality

The result of rural exodus to sprawl in Bamenda I municipality has been look open amongst other, we have increase in total population, imbalance in age and sex structures, reduction in dependency ratio and increase in birth rate under demographic consequences and unemployment and underemployment, increase population pressure on existing resources high land value and high rents and large market under socio-economics consequences, thus all of these result has been very common in Bamenda I municipality.

Bamenda I municipality has experience an increase in total population, that is the influx of many rural dwellers to the study area. Large municipality of Cameroon especially those of the Bamenda have witnessed a rapid increase in their various populations because of rural exodus. Bamenda I municipality is dominated by the adult population since it is people from this age group who are highly migratory thus leading to urban sprawl in Bamenda I municipality. Sprawl in the study area has led to reduction in dependency ratio that is many adult working in the Bamenda I are mostly working and can take care of their self and the young and old ones. Equally, birth rate has been on the increase in Bamenda I municipality given the increase of the biologically-active population in the municipality, there has been an increase in birth rate of the

said areas as they will continue with their usual habit of giving birth to many children causing population movement and leading to sprawl (figure 11).
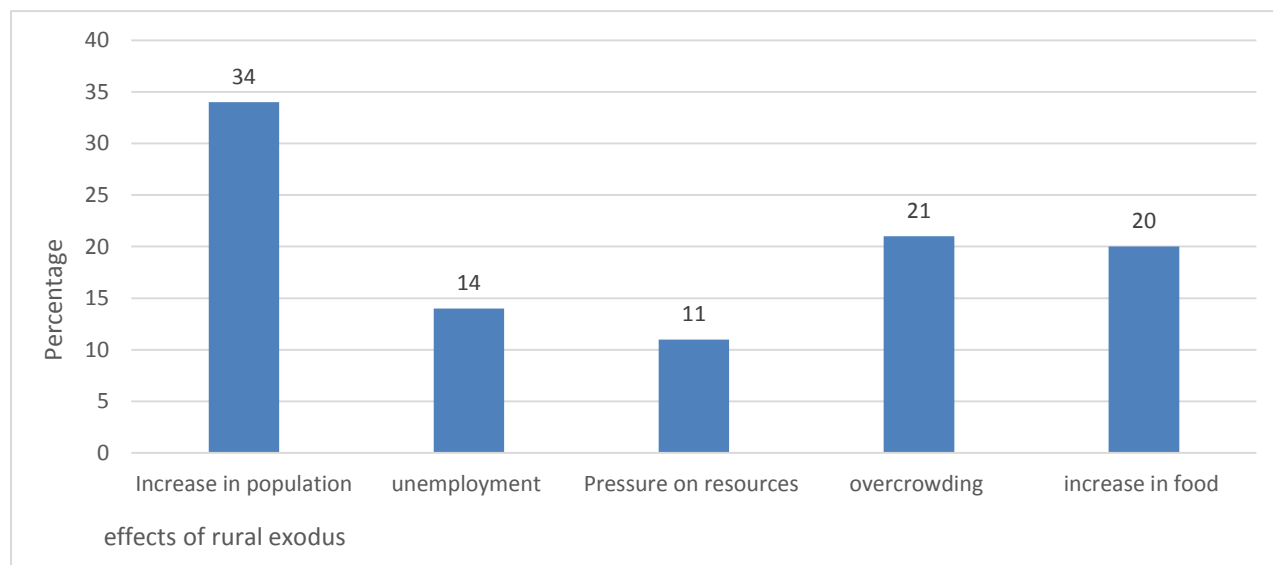
Source: Fieldwork 2021

Figure 11: Implication of rural exodus to sprawl

Figure 11, present rural exodus implications to sprawl in Bamenda I municipality, according to respondents in the field increase in population is one of the main effect of rural exodus in the study area with 34% as most of the people are still moving in Bamenda I for their many reasons, this has prompted many people to look for quarters that are at the outer skirt of the municipality there by leading to urban expansion. More because of unemployment with 14% in many villages of Bamenda, Bamenda I self as a public sector where most ministries in the north west region are located and so most of the migrant are in the area to look for better jobs so that they can be employed in the public sector, reasons why trade and commerce has become the order of the day in Up-station Bamenda.

Also pressure on the natural resource with 11% has been exerted in the study area because of the increase in population with the resources like soil for agriculture is already a call for concern in Bamenda I municipality. In addition to that overcrowding with 21% in most areas of the study area like Up-station has cause housing price to rise and lastly increase in food prices with a percentage of 20% has equally prompted many people to the suburbs areas according to

respondents in the field there by increasing the rate of uncoordinated growth in the Bamenda I municipality.

Unemployment and underemployment has been very common in Bamenda I municipality due to the fact that the increase population in Bamenda I municipality has led to shortages of jobs leading to unemployment. This is because those who come in to swell the population are of the adult age group which is the economically active age group. This situation of increase unemployment has led to many people accepting jobs which are far below their qualification (under employment) case of degree holders working in hair dressing saloons, driving taxis, bike riders and serving in restaurants everywhere in Bamenda I municipality. More so as a result of increase population pressure in Bamenda I municipality, there has been increase pressure on existing resources like schools, hospitals, housing, pipe borne water, electricity, food thus leading to sprawl in Bamenda I municipality couple with inadequate finances.

Rural exodus has equally leads to increase in urbanization in Bamenda I which consequently leads to the growth of the municipality and creation of new ones with their associated problem of urban sprawl leading to increase crime wave, increase in pollution of all sort. Furthermore, there has been an increase in the demand for housing in Bamenda I municipality due to rural exodus as a result of that some migrant who cannot afford a house are force to move to the peripheries of Bamenda I municipality where land is cheap so as to live in squatters usually built by in-migrants to house themselves there by leading to sprawl. In addition to that, the market of Bamenda I municipality has been active in the sale of industrial products and more and more people come in to the municipality. Increase demand of many industrial products has led to increase population and more investments which may eventually lead to economic growth. So, all in all, the result of rural exodus to sprawl in Bamenda I municipality are really evident.

1.11. Conclusion

Hypothesis 1 states that ''Rapid population growth and rural exodus are responsible for rampant urban sprawl in Bamenda I municipality''. To verify this hypothesis, data from respondent's awareness on the determinants of urban growth in Bamenda I municipality were analyzed. This was to determine whether it is the Socio-economic factors that are causing rapid population growth in the Municipality or other factors are involved in this problem of Urban sprawl in the study area.

Further findings revealed that, not only socio-economic factors are responsible for population growth in Bamenda I municipality but other factors are also involved.The outcome of the data collected, treated, analysed and interpreted revealed that socio-economic factors are the main determinants of urban growth in Bamenda I municipality with a percentage of 47.4%, demographic 26.0%, political 13.0%, religious 7.8% and cultural factors with 5.7% (table 4).A majority of respondents with 83% responded positively that urban sprawl is taking up space in the study area. Also 9% of the respondent did not even accept the phenomenon to be existing in reality and 8% of them did not answer anything or decide anything for their personal reasons best known to them. Socio demographic/socio-economic characteristics of the study participants were also included for this study (Table 6). The various forms of sprawl equally play a great role for this study

More so rural exodus and its effects on sprawl in Bamenda I municipality has been analyzed from the general trend to specific with classification groups of persons and their profession together with the relationship between rural exodus and sprawl. It should be noted that rural exodus is one of the most important pull factor of sprawl to the Bamenda I municipality with its implications (figure 11). The next chapter focuses on the direction of urban sprawl in Bamenda I municipality.

CHAPTER 2
DIRECTION OF SPRAWL AND EXPANSION IN BAMENDA I MUNICIPALITY

2.0. Introduction

This chapter is aim to determine the direction of sprawl movement in terms of spatial evolution of Bamenda I municipality, physical environment, housing development and to know the reasons for residing towards sprawling direction quarters of Bamenda I municipality and to analyze satellite image direction in Bamenda I municipality which is in confirmation with the specific research question which seeks to examine the direction of sprawl movement in the expansion of the municipality. Therefore, the spatial evolution of Bamenda I municipality was examined for four-time period, namely: 1990, 2000, 2010 and 2020 to describe urban growth and development direction in Bamenda I municipality

2.1. Urban Sprawl Genesis and evolution in Bamenda I

The 1990s in the Bamenda I municipality was seen to be the period with a spectacular increase in population as a result of the increase trend of migration from the surrounding rural areas. The Presidential Decree No: 77/203 on the 29/06/1977 converted Bamenda in to a Municipal council (Bamenda Master Plan, 1985) and later the capital of the North West Province. Due to the central location of Bamenda, she became the Headquarter of the North West Region of Cameroon, the socio-economic nerve-wire, the pivot to major political, religious and cultural happenings in Cameroon.

The oil production that began in 1978 in Cameroon acted as an engine of economic growth. This led to high expenditure on civil service, subsidies to inefficient public enterprises, low-return and capital-intensive investment in the 1990s (World Bank, 1995). This played a paramount role in the growth of the Bamenda1Municipality as she experienced enormous construction works from the periods of the economic boom, which allowed the revamping of roads over the Municipality and national territory.

The double visit of the president of the Republic of Cameroon to Bamenda in 1984 led to significant growth and development, with improvement in the state of social infrastructure and services. Major quarter roads in Bamenda1Municipality such as Ntache, Muyu quarter, Kumbele were open. Also, the main road that leads out of the town (Bamenda-Bafoussam) was tared in 1977. The construction of roads brought about rapid urban growth of Bamenda1Municipality,

coupled with the inadequate social amenities in other surrounding towns and Villages like power supply failures, poor health services, deplorable road conditions and inadequate educational facilities forced people to move out of such depressed areas in to Bamenda1Municipality. During this period, social facilities developed such as openings of many bars in Bamenda1. This bar acted as a resting point to most migrants moving to the coast or coming back from the coastal area. This attracted many people in to the area and some ended up settling around the Abangoh Central and Bamendakwe. Also, the arrival of missionary bodies further increased the place of growth in Bamenda I municipality. These missionaries opened churches, schools and hospitals which attracted many Christians and workers in to the area. Satellite imageries for 1990 were downloaded and a land use and land cover map was produced using GIS Packages as shown on Figure 12.
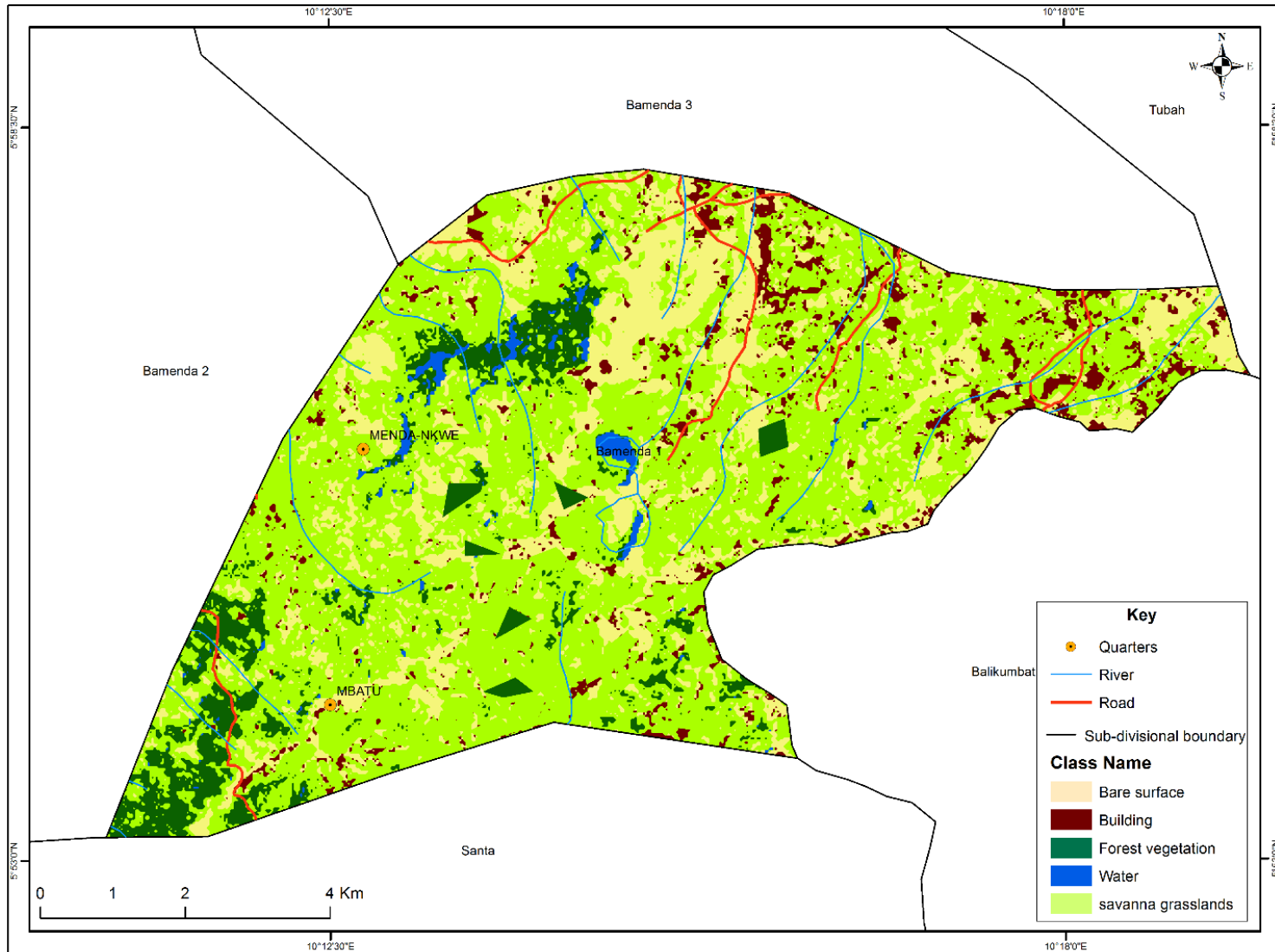
Source: Landsat 8(1990) Google map, Google Earth images and Field Work (2021)

Figure 12: Land use and cover situation in the Bamenda I Municipality for 1990

Table 7 shows the area of the different LULC patterns in 1990 (Bare surface, Built-up, Savannah grassland, Forest, and Water) in kilometers square and in percentages in the Bamenda I municipality

Table 7: Land use and cover situation of 1990 in the Bamenda I Municipality

Surface area in Km^2	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
Total	83.29	100.0

Source: Data derived from the LULC map of the Bamenda I Municipality in 1990

Despite the improvement in road network in Bamenda I, 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 I. This was followed by the closure of restructured, semi public and private enterprises, retirements and lay- offs of staff. This led to low investments on housing development and high expenditure on consumers good. 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 (Abangoh and Bamenda escarpment).

The Structural Adjustment Plan (SAP) was instituted to stabilize the economic situation of the country. This denotes states recession from the provision of social amenities, the retrenchment of workers and salary slash. This led to a fall in real income and swerved the attention of the government and individuals from housing construction and maintenance of most of the infrastructure built before and after independence. Hence, the town was deprived of basic infrastructure and the deterioration of existing ones. This resulted in increased poverty associated

with poor housing conditions and environmental deterioration. This situation incited spontaneous settlements by low-income earners on steep slopes and neighborhood such as Abangoh and Ntache with accompanied consequences.

This situation compelled the planning authorities 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 (Sule, 2005) in the town. This was due to the fact that a lot of valuable time which could have been used to by authorities in arranging the town, was spent on trying to revamp Cameroons economy affected by the economic crisis, thereby, worsening the housing situation in the Bamenda I municipality.

2.2. Spatial Evolution of Bamenda 1 Municipality Urban Space in 2000

By the year 2000, Bamenda1Municpality expanded significantly, its engulfed the fringe and extensive marginal lands such as the steep slopes located at Abangoh, Nta'afi, Achichum. The steep slopes of the Bamenda1 escarpment was also haphazardly colonized for housing development and agriculture without taking in to account the fragile nature of the slope. This was compounded by the continuous rural-urban migration in to Bamenda1 which served as the administrative area in the North West Region of Cameroon. The socio-economic and political changes experienced in the Bamenda1Municipality resulted in increased demand for housing and social infrastructure. Satellite imageries for 2000 were downloaded and a land use and land cover map was produced using GIS Packages as shown on figure 13.
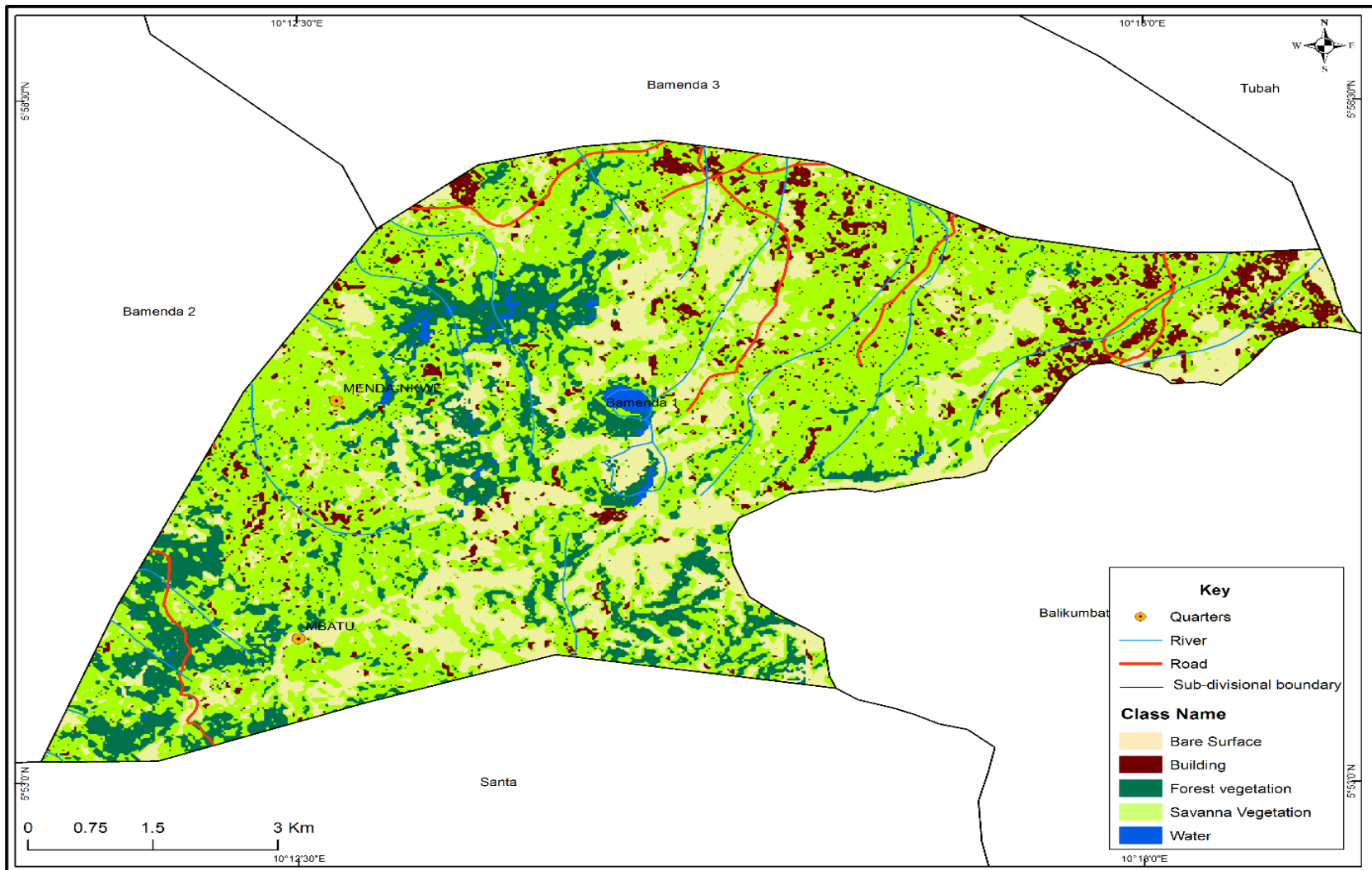
Source: Landsat 8(2000) Google map , Google Earth images and Field work (2021)

Figure 13: Land use and cover situation in the Bamenda I Municipality for 2000

Table 8 presents the surface area covered by the different LULC situation in 2000 (Bare surface, Savannah grassland, Built-up, Forest and Water) in kilometers square and percentages in the Bamenda I municipality.

Table 8: Land use and cover situation of 2000 in the Bamenda I Municipality

Surface area in Km^2	Surface area in Km^2	Percentages
Built-up	17.69	13.44
Forest	28.24	31.20
Bare surface	18.78	22.55
Savannah grassland	38.66	29.36
Water	1.70	1.29
Total	131.66	100.0

Source: Data derived from the LULC map of the Bamenda I Municipality in 2000

2.3. Spatial Evolution of the Bamenda 1 Municipality Urban Space in 2010

According to the results from the Bamenda City Council report (2015), the population of Bamenda increased from 203,480 in 1987 to 427,149 inhabitants in 2005. Furthermore 18.6% of the population of the North West Region lived in Bamenda and Bamenda I Municipality with 28359 inhabitants while at the National level; Bamenda had 1.8% of the population of Cameroon. The presidential Decree No 2008/021 of 17th January 2008 changed the status of Bamenda by creating the Bamenda City Council (BCC), thereby dividing Bamenda in to three Sub-Divisional Council Areas. These Sub-divisional councils are Bamenda I (Bamendakwe land area), Bamenda II (Nkween and Ndzah) (Bamenda Master Plan, 2012). With this, Bamenda consolidated multiple administrative functions as Divisional capital, Sub-divisional capital and Regional capital of the North West Region which acted as a pulling force, attracting many people to work in Bamenda I Municipality and render services especially with the creation of several schools ranging from primary, secondary to University level which contributed in swelling up the population of Bamenda I Municipality, implying an increase in demand for housing.

This period witnessed dramatic changes in infrastructure such as schools, pharmacies, churches among other services. In addition, educational institution like Government secondary school, primary and Nursery among others attracted many students. All these services acted as driving

forces that resulted in dramatic growth in the neighborhoods and increased the demand for housing in the Bamenda I municipality.

The Bamenda I market and the park also continued to attract migrants especially businessmen from West region of Cameroon to settle around this area. Most of the businessmen did not see the need to go very far from the Market and the park. This resulted in the growth of neighborhoods like Bamendakwe and Abangoh as the land in these areas were very cheap and with proximity to the market. The growth of these settlements deal with the situation. Thus, many housing structures were constructed without compliance to the planning laws and regulations. Satellite imageries for 2010 were downloaded and a land use and land cover map was produced using GIS Packages as shown on figure 14.
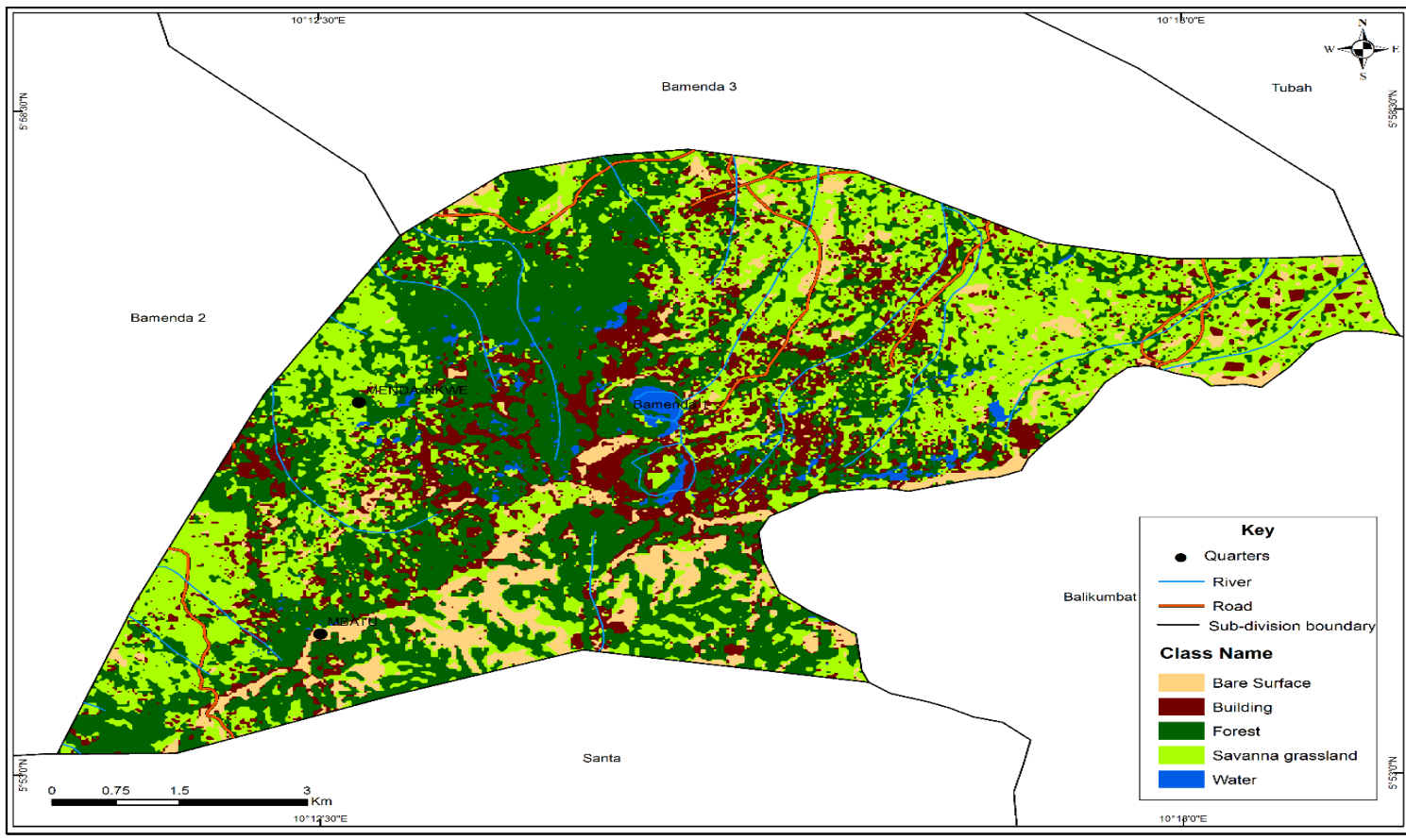
Source: Landsat 8(2010) Google map, Google Earth images and Field work (2021)

Figure 14: Land use and cover situation in the Bamenda I Municipality for 2010

Table 9 presents the area coverage of the different LULC situation in 2010 (Forest, Built-up, Savannah grassland, Bare surface, and water) in kilometers square and in percentages in the Bamenda I municipality.

Table 9: Land use and cover situation of 2010 in the Bamenda I Municipality

Surface area in Km^2	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 derived from the LULC map of the Bamenda I Municipality in 2010

2.4. Spatial Evolution of Bamenda I municipality Urban Space in 2020

The Bamenda I municipality has witnessed a further increase in population of 28359 (Bamenda city council report, 2015). The period between 2010 and 2020 witnessed significant growth due to the presidential Decree transforming Bamenda in to a city council. This decentralization of functions increased the degree of provision of social infrastructure and services in the city. The sub-divisional councils were given powers and finances to carry out developmental projects in their council areas. This period witnessed an increase in population, tremendous changes in the land uses cropping up. 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, bank among other service as shown on the map, or picture. This development has facilitated the expansion of the town from the Centre towards the urban fringes. The periods saw the increase in land values especially within the Urban Space resulting in spatial expansion and intensification of land uses. This frayed the urban fabric and increased pressure on land, far more than the case in the early 1990 and 2000. As a result, the new arrivals, especially the poor displaced by housing market have little alternative than to occupy marginal areas (along river bank, hilly slopes, and swampy areas) where rents and land prices are relatively cheap. Satellite imageries for 2020 were downloaded and a land use and land cover map was produced using GIS Packages as shown on figure 15.
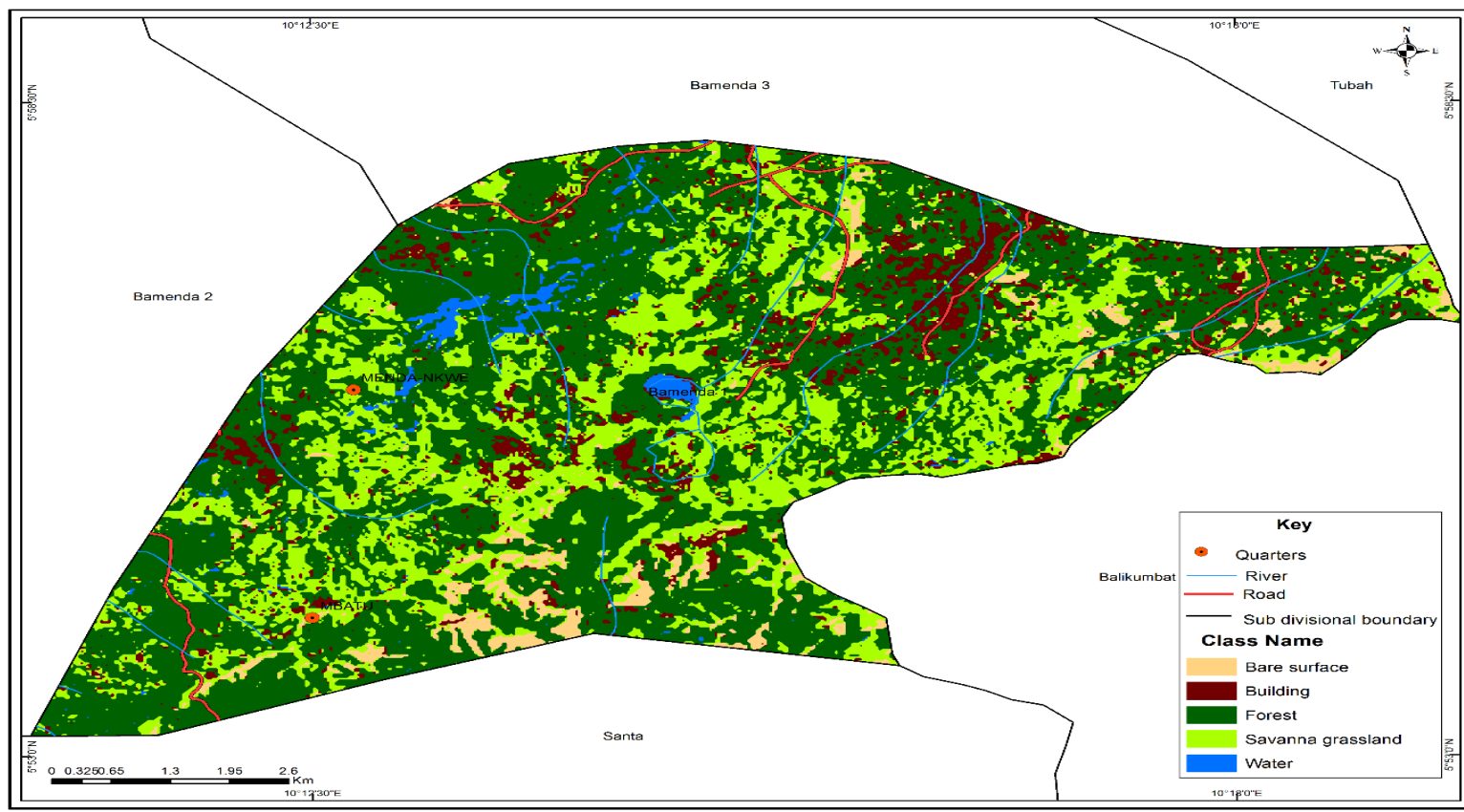
Source: Landsat 8(2020) Google map , Google Earth images and Field Survey (2021)

Figure 15: Land use and cover situation in the Bamenda I Municipality for 2020

Table 10 shows the surface area of the different LULC patterns in 2020 (Forest, Built-up, Bare surface, Savannah grassland, Water) in kilometers square and in percentages in the Bamenda I municipality.

Table10: Land use and cover situation in 2020 in the Bamenda I Municipality

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 derived from the LULC map of the Bamenda I Municipality in 2020

2.4.1. Land Use and land Cover changes for 1990, 2000, 2010 and 2020

The Bamenda I municipality has undergone remarkable changes in its land use and land cover situation over time and space. The statistics generated from the three time periods according to the land use and land cover patterns and changes revealed both positive and negative changes in land use and land cover patterns in the Bamenda I municipality as shown in Table 11.

Table 11: Land use/land cover situation in the Bamenda I municipality for 1990,2000,2010 and 2020

Surface area	1990		2000		2010		2020	
	Area in Km^2	Area in %	Area in Km^2	Area in %	Area in Km^2	Area in %	Area in Km2	Area in %
Built-up	10.96	13.16	17.69	13.44	23.71	23.10	26.45	29.22
Forest	42.59	41.50	28.24	32.20	16.49	12.52	9.02	10.83
Bare surface	57.12	43.38	18.78	22.55	17.87	19.74	15.26	14.87
Savannah grassland	42.66	15.22	38.66	29.36	19.88	19.37	16.86	18.63
Water	1.87	2.25	1.70	1.29	1.18	1.5	1.09	1.20
Total	83.29	100.0	131.66	100.0	102.62	100.0	90.51	100.0

Source: Derived from LULC Maps for Figure 12, 13, 14 and 15.

Table 11 indicates that built-up areas experienced a tremendous positive and steady increase from 10.96 in 1990 to 17.69 in 2000 and further increase to 23.71 in 2010 to 26.45 in 2020. Forest reduces from 42.59 in 1990 to 28.24 in 2000 and later witnessed a reduction again to 16.49 in 2010 and 9.02 in 2020. Bare surface also reduce from 57.12 in 1990 to 18.78 in 2000 and later decrease to 17.87 in 2010 and 15.26 in 2020. More so, Savannah grassland increased from 42.66 in 1990 and decreases to 38.66 in 2000 and further dropped to 19.88 in 2010 and 16.86 in 2020. In addition, water witnessed a constant decreased through the four periods at 1.87 in 1990 to 1.70 in 2000 and later decreased of 1.18 in 2010 and 1.09 in 2020.
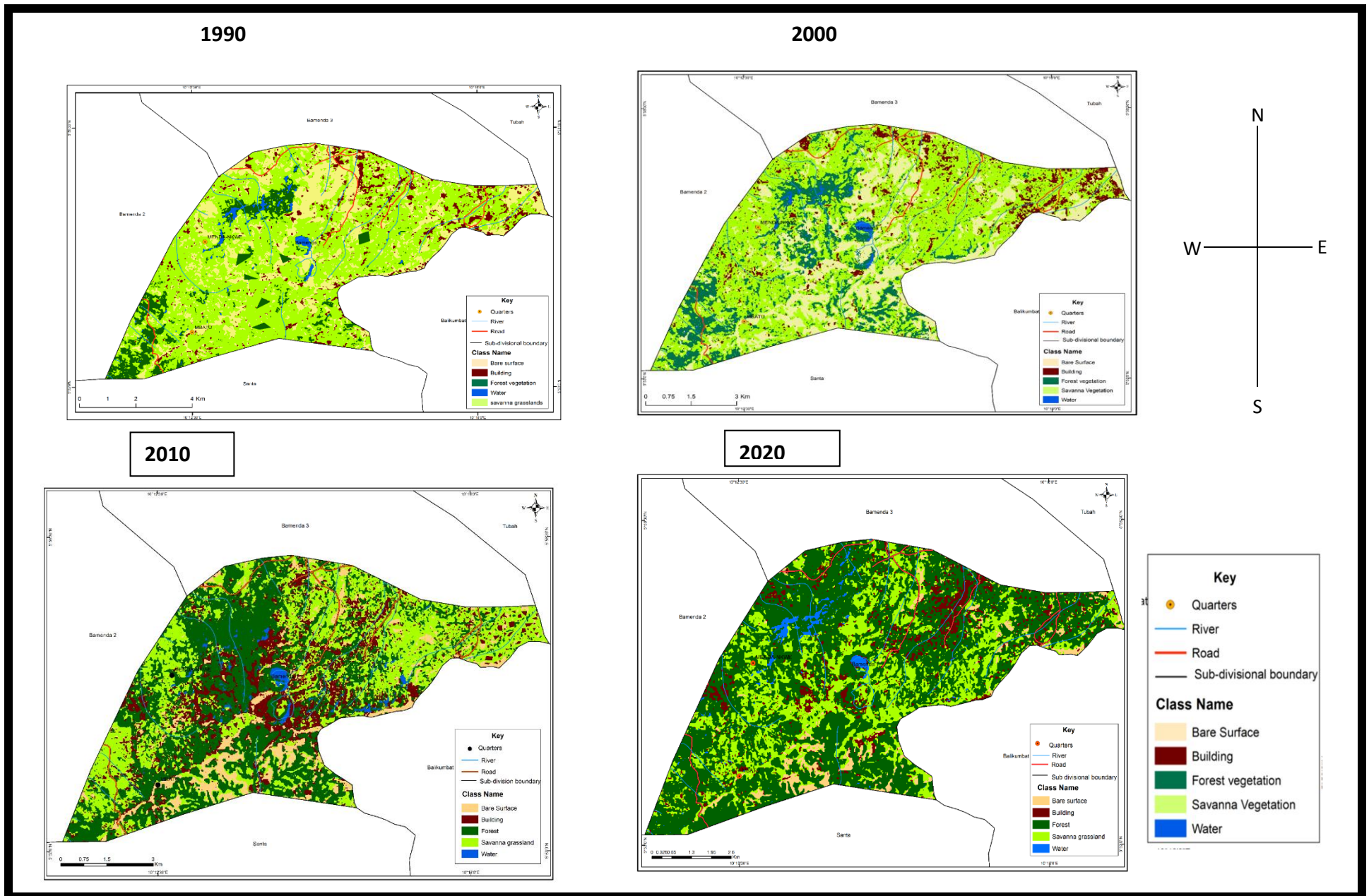
Source: Landsat 8(1990, 2000, 2010, and 2020) Google map, Google Earth images and field work (2021).

Figure 16: Land use and cover situation in the Bamenda I Municipality for 1990, 2000, 2010 and 2020

2.4.2. Direction of sprawl expansion in Bamenda I Municipality

The direction of urban sprawl in Bamenda I municipality has been presented in figure 17.
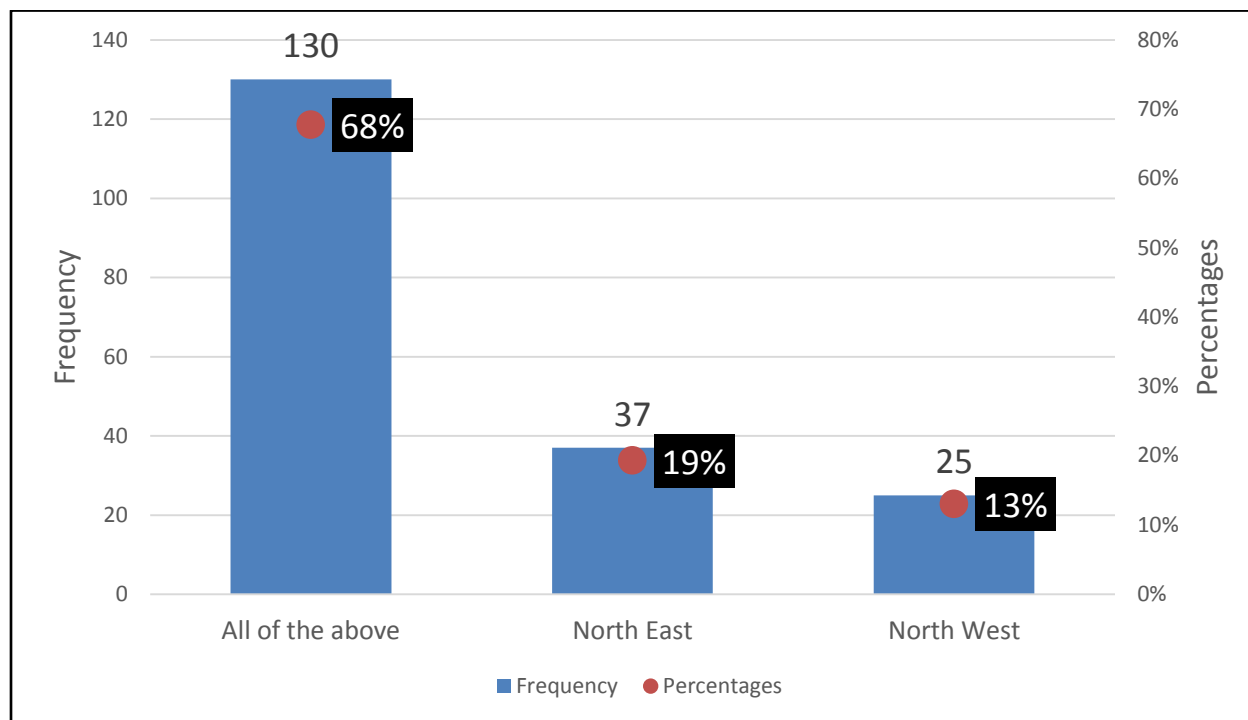
Source: Field Survey (2021)

Figure 17: Direction of expansion

Figure 17 shows the direction of expansion in Bamenda I municipality, from the figure above, it shows that a greater proportion of the respondent in Bamenda I municipality responded that urban sprawl in the study area is expanding towards the North East and North West with a percentage of 68% respondents who agreed for then only 19% talk only of the North East and North West with 13% with is the lowest according to field analyses. So from the figure we can see that All of the above factor carries a greater majority of respondents as compare to the two others indication that the direction of movement is mostly toward the North.

2.4.3 Identification of Sprawl in the study area

To identify sprawl in the study area, a number of respondent responded positively, Bamenda I municipality has since the past years been identified as a sprawling municipality in the North west region of the Country. A greater majority of those respondents living in Bamenda I municipality identify truly that urban sprawl taking up space in the study area with 84% of

respondents who agree that because of the increase in birth rate and inflow of many people in the area, many things has change even prices of agricultural good and many recreational facilities has promoted rural exodus in the study area while only 5% disagree that there is no sprawl. According to field survey urban sprawl has taken up most of the space in Bamenda I municipality to the extent that most of the respondent with 11% did not decide anything as concern sprawl in the study area

2.4.4. Foresee sprawl towards the North

From responses gotten from the questionnaires administered, it shows that within the coming years urban sprawl in Bamenda I municipality will occupy mostly the northern part of the study area, this is because the researcher in the field of study after close observation so that most of the housing and many infrastructural development are mostly towards the North and more so, empty land is still toward the North as compared to the southern part of the municipality which has already been occupy to an extent, reason why most of the urban activities are mostly concentrated towards the North as confirm by the number of respondents in the area.75% of the respondents accepted that in the coming years, sprawl is likely to take up the Northern area of Bamenda I municipality while only a few of them 10% were on the opinion that they do not see anything of such in the coming years. So prospects of the northern part being consumed by uncontrolled growth is high while 15% of the respondents didn't decide anything as concerned the prospect towards the North.

2.4.5. Feelings towards sprawl

From the responses gotten from questionnaires, feelings towards sprawl in the study area, a greater number of the respondents with 73% were not happy with this issue of sprawl in the study area because of its consequences in the nearest future, but some of them are happy with the aspect of growth and some of them went further to explain that sprawl is a good phenomenon but that its only need to be controlled by the council and the legal authorities who are capable of taking action or sanctions in the study area, so some of them with 19% feel unsatisfied with the problem while some of the respondents with 8% were indifferent with sprawl taking up space in Bamenda I municipality. So with this idea in mind by some of the respondents, it becomes difficult to fight against sprawl in the study area.

2.4.6. Sprawl in the South

Field survey shows clearly that there is sprawl in the south but at the lower level as compared to the northern part of the Bamenda I municipality. According to reponses given by respondents in the field, a majority of respondents in the study area with 58% agree that sprawl is also taking up space in the southern part of the municipality but at a lower rate since little patches of space still exist in the south. While some of them with 30%disagree that urban sprawl is not taking up space in the southern part of Bamenda I municipality and to the best of the researcher's knowledge he considered some of the respondents as not knowing the whole southern section of the study area. Further explanation holds that the increase of population in the municipality has led to sprawl in the south with no controlled and only 2% of the respondents stood for undecided base on their own view.

2.4.7. Urban Sprawl for Development

Urban sprawl in Bamenda I municipality has also been describes by some respondents as an agent of development and to some as bad phenomenon to the municipality. Field observation, urban sprawl in Bamenda I municipality is for development because it is because of the issue of sprawl that most of the quarters of the study area has been developed, both economically, socially and politically, with a greater number of diverse culture from most quarters and regions of Cameroon. 77% of responses from respondents in the field agreed that sprawl in Bamenda I municipality is for development due to the multiple activities presents in the area. 15% of the respondents in didn't abide to this idea that sprawl in Bamenda I municipality is for development while undecided view was so pronounced by 6% of the respondents who claimed not to agree or disagree on sprawl for development. So with a critical look in the field by the researcher and according to respondent responses, truly sprawl in Bamenda I municipality is for development.

2.4.8. Hope of returning to your area

Looking at the inhabitants of Bamenda I municipality, a greater majority of them that are from the area while others are from neighboring towns and villages of the northwest region does not see any need in going back to their area of origin, figure 18.
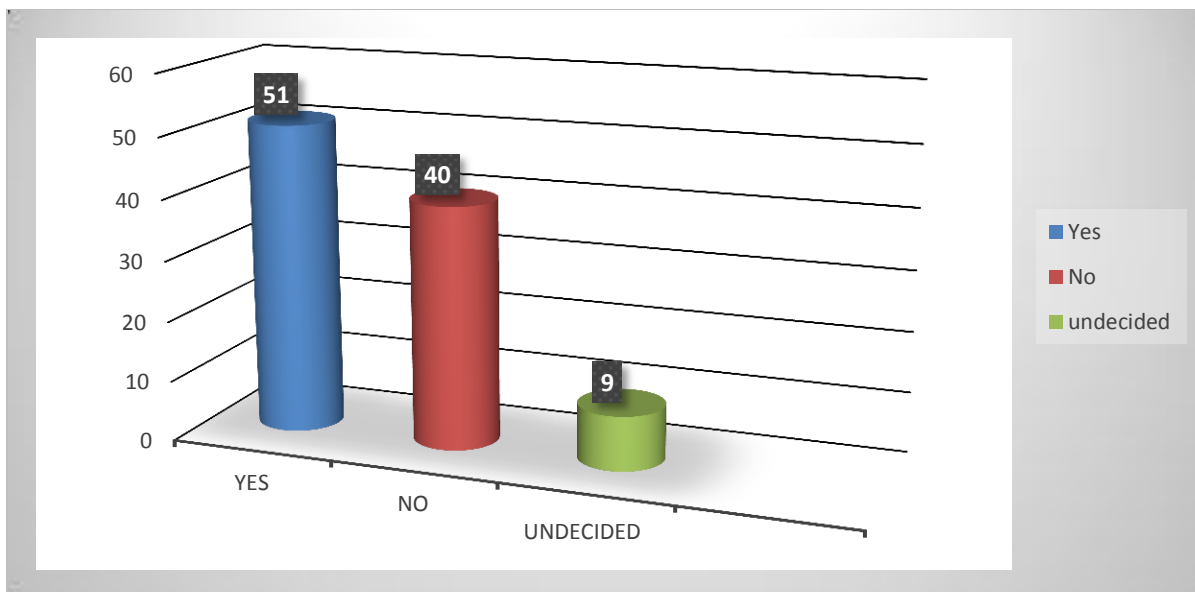
Source: Field work 2021

Figure 18: Hope of returning to your area

Figure 18, Shows respondent's idea of returning to their area of origin as most of them accepted that they are from Bamenda I municipality and those not see any reasons of living to others municipalities again, with 51% accepting that they do not see any reason going to any area since they are citizens of Bamenda I origin as compared to 40% of them that denied that they are not from the area but have been living very well in the study area and do not see any need of going back to their area of origin, while some still hold on the opinion that since they are not from the area, they can go back any time and that their stay in Bamenda I is only for the moment. So these respondents later explained that they are only living in Bamenda I municipality because of their occupation and that immediately they have been retired, from their job site they will go back to their area of origin and the undecided respondents carries a percentage of 9% just been neutral in either case, that is yes or no.

2.5. Physical Environment and direction of Urban Sprawl in Bamenda I Municipality

The physical elements such as climate, relief, drainage, vegetation, geology and soil have played a primordial role in the rapid urban growth and urban sprawl leading to infrastructural development and housing challenges in Bamenda I municipality.

2.5.1 The influence of climate

Bamenda I municipality has a fresh climate with moderate temperature, which favors human settlement. This climate is influenced by two air masses: The North East Trades (Harmattan haze) and the South West Monsoon winds, which cause the marked dry and rainy seasons respectively. Absolute annual average precipitation ranges from 1700mm to 2824mm. The rainy season is usually longer and lasts for approximately eight (8) months (mid-March to October), meanwhile the dry season lasts just for four (4) months from Mid –November to March (North West Regional Service for Meteorology, 2016). This plays a vital role in human occupation of the steep slopes and low-lying swamps. In the event of excessive rainfall, environmental problems such as landslides and floods are common especially in the month of July, August and September. This is the case in Bamenda, where the urban poor construct houses on steep slopes and wetland, whereby, during excessive rains, flooding and landslide become the order of the day like the case of September 2009 when flooding occurred in Mulang, Below Foncha, Ntamulung, Old Town, Sisia, New layout resulting in two deaths, destruction of property and farmlands (kometa & Ndi, 2012).

The average temperature ranges between 24^0C at lower altitude and 16^0C at lower at higher altitudes. Relief greatly affects the temperature of Bamenda I municipality. Sunshine is relatively high with an annual total of 1,900 hours with 50% in the dry season, 37% in the growing season and 13% during harvesting (Achuo-Chi, 1999). The high solar insulation in this tropical climate zone produceshigh energy fluxes. An interesting meteorological feature of Bamenda urban area is the protracted dryness. This creates drought- like conditions as the rain clouds that used to cover the hill slope systems disappear and the local water resources get dried up. Humidity remains high at about 75-80%. The combination of high solar energy inputs, moderate high temperatures and high relative humidity accelerates the weathering process. This issue of moderate temperature in Bamenda I municipality has attract many new comers in the area there by leading to sprawl because everybody like to live in areas where the temperatures are moderate.

2.5.2 The role of relief

The relief of Bamenda I municipality is undulating consisting of hills and valleys. Lowland intercepted by highlands dominates the local scenery of Bamenda I. Bamenda I municipality lies at an altitude of 1,430m above sea level (Achuo-Chi, 1998). The town lies

along the Cameroon Volcanic line and exhibits two very distinct relief environments, namely the High Lava plateau (Up Station) with an altitude of about 1,400m and the Lower plateau known as Down Town made up of Nkwen and Mankon villages with an average altitude of 1,100m above sea level. These relief features act as deterrent to urban growth though broken in some places, the slope escarpment traverses the urban space dividing it in to the Up-Station and downtown areas. The high elevation section of the town is prone to landslides and rock fall especially after protracted periods of torrential rainstorms. Near vertical slopes occur in the immediate vicinity of the fault line. Though man has defied the physical constraints and inhabited parts of the escarpment, the difficulties and threats of slope failure to houses and human life remain evident. Most of the built-up areas on this escarpment seem to be in ''transit'' whenever the heavy rains and surface runoff show their ugly appearance (Lambi, 2004). This varied relief offers diverse opportunities of the different categories of urban dwellers who find their housing sites in relation to their means. The nature of the relief has greatly pull administrative services and most business activities in Bamenda I municipality they leading to urban growth in the area where by a lot of people move to the suburbs quarters of Bamenda I municipality to build their houses there and as a result of that urban sprawl in the area becomes the order of the day. Therefore, the form and shape of the municipality has changed as shown in figure 19.
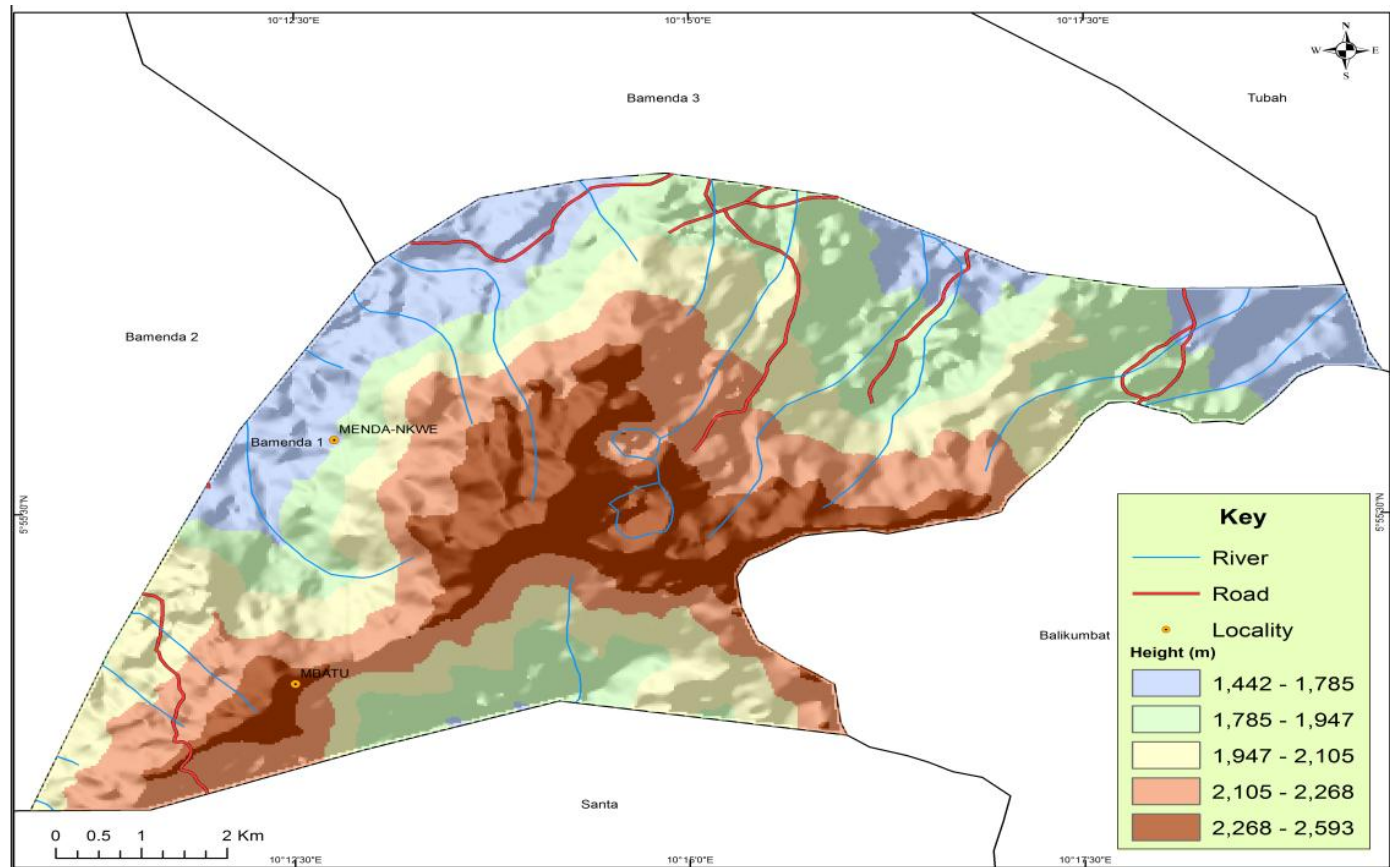
Source :DEM aster 2007. Google earth images and Field survey (2021)

Figure 19: The Relief map of Bamenda I Municipality

2.5.3. The influence of drainage

The relief of Bamenda I municipality has greatly influenced the drainage of the Region. Very few rivers and streams drain the area. The most important is the River Mezam (and its tributaries) which flows from the Bamenda I escarpment through the city centre and passes through the village of Mankon. The Ayaba and Liberkam Streams feed the River Mezam (map 6). These streams have a dendritic pattern. This River and its tributaries are responsible for the climatic hazards especially floods which affect mostly the urban poor who construct houses on flood plains.

The streams take their rise from the high plateau and reach the foothills through waterfalls over the bare hills such as that found in Sisia. Since the streams are youthful, their flow is rapid. Thus, debris runoff from the slopes becomes part of the input of the stream channels. During the rainy season, the dendritic streaming system combines with various erosional processes subjecting houses and properties, particularly those along stream courses, to periodic flooding during torrential rainstorms resulting in further destruction.

2.5.4 The soils and vegetation

❖ **Soils**

According to Ndenecho and Eze (2004), the Bamenda escarpment is made up of volcanic rocks called trachyte with lateritic soils which are reddish as the dominant soil type. The soils are heavily leached and eroded, thus, cannot support dense vegetation and agricultural activities. The erodibility of these soils encourage torrent processes and is one of the factors responsible for the presence of gullies on bare surfaces evidence are seen in Bamenda I municipality and reason while agriculture is mostly practice at the out skirt of town towards the suburbs of the study area. The valleys are covered with alluvium washed from the escarpment, which holds much water. Alluvial soils are found along river courses, which attract especially the urban poor to occupy this area. Due to the increasing rate of urbanization and ecological marginalization, they are forced to colonize and cultivate these marginal flood plains. These are sites where urban agriculture is very common with the presence of small farms and gardens found around most houses, and the valleys harbor debris, which are rich in mineral matter. The fine-grained brown soils are used to form mud blocks, which are used to construct houses in Bamenda I municipality.

2.5.5. Vegetation

The vegetation pattern of Bamenda I municipality is the direct consequence of climate and increased anthropogenic disturbances brought about by urbanization. The vegetation type is mainly savannah with patches of deciduous forests. This is due to the intense dry season and sunshine which gives little room for the development of forest vegetation. This is further compounded by the poor lateritic soils with limited nutrients to support maximum forest growth. Grooves and raffia palms dominate riverine slopes and in most places, afforestation with eucalyptus trees has greatly modified the savannah like the case in Bamendakwe (Ako, 2016). Remnants of forest (forest Refugia) indicate that Bamenda I municipality was formally an extension of the Tropical Rainforest and due to anthropogenic influences; the whole landscape has been transformed in to a cultured vegetation (eucalyptus) and grassland. Perhaps, this mountainous backbone was either completely forested or covered with moist montane forests. Very little of this climate vegetation remains today. The original forest has been replaced with different kinds of savannah distinguished from the original forest and woodland by a continuous grass layer. The growth of this forest has been hampered by anthropogenic activities brought about by urbanization. The rapid urban growth in Bamenda I municipality is seen through the clearing down of large portions of the forest for settlement purposes.

Forest and Fauna

The only natural forest is the Bafut- Ngemba Forest. This is a potential for the   promotion of tourism. The natural forest occupies 1778 Ha while registered private forest occupies 24Ha. Total surface area occupied by forest is 1802Ha representing about 16% of total area on Bamenda I. The natural forest is under threat as illegal exploitation of the forest is being practised with impunity. The forest is exploited for habitat reasons (wood for construction) and for use as energy- fire wood and its derivative, charcoal and wood shavings (used for local brazing and poultry production). No inventory of the animals in the forest has been made. Stories have been told of the presence of gorillas, antelopes and chimpanzees at the reserve forest but the pressure put on the forest by human have caused the extinction of these animals. However today, artisanal hunting is being practiced. Animals like Cane rats and birds like 'bush fowls' are being hunted. Most animals are domesticated for household economic purposes. These include pigs, rabbits, sheep, cattle and goats. Birds kept for same purpose include table birds, ducks and traditional fowls (Table 12).

Table 12: Major Forest Species within Bamenda I Council

Nº	Common Names	Scientific Names	Habitat	Uses	Part used
1	Eucalyptus	*Eucalyptus saligna* *Eucalyptus grandis*	Exotic species	Furniture Building Medication Fuel wood	Wood Leaves
2	Cypress	*Cypress spp*		Fence Windbreak	
3	Prunus	*Prunusafricana*		Medication	Bark
4	Callistemon	*Callistemon viminalis*		Ornamental	
5	Pine	*Pinuselliotti* *Pinusspp*	Exotic species	Furniture Building	Wood
6	Royal palm			Ornemental	
7	Black fruit	*Canariumschweinfurthii*	Exotic species	Food Furniture Building	Fruit Wood
8	Voacanga	*Voacangaafricana*		Food Medication	Fruit
9	Filao	*Casuarinaéquisetifolia*	Exotic species	Environmental friendly tree Fuel wood Building	
10	Cassia	*Cassia siamea*	Exotic species	Firewood	Wood
11	Gmelina	*Gmelinaarborera*	Exotic species	Firewood Poles	Wood

Source: Regional delegation of Forestry, NWR

Table 12, present major forest species within Bamenda I council stating their common names, scientific names, habitat uses and part used for all type of 11 tree species. It's difficult to have wild animal within the Bamenda I Sub division many of them have been domesticated.

Nevertheless, some sacred forest (Mendankwen) can have some wild animals but any inventory has not been done to know which types of animals are there and their number.

2.6 Reasons for Residing in Sprawling Quarters of Bamenda I municipality

Despite the risky nature of some sprawling quarters of Bamenda I municipality as they are prone to the risk of floods lands, landslide and rock fall, these reasons testify the direction of sprawl in the study area as some urban dwellers still prefer living in these sprawling quarters. These quarters continue to grow in number over the years despite the restriction of some of them by the government for habitation. The following are some of the reasons gathered from the field why some urban dwellers continue to inhabit sprawling quarters.

2.6.1 Personal Residence

The principal reason advanced by inhabitants of sprawling quarters why they cannot quite their place of residence despite the challenges face is that, they are living in their personal houses amongst other reasons. Abandoning their houses to go elsewhere is seen difficult and expensive for these settlers. They prefer to continue living in these areas despite the challenges they faced than going elsewhere to start a new life which may be difficult for them.

The low cost of land and houses compared to other residential areas of the town close to the city center accounts for the growth of sprawling quarters in Bamenda I municipality. Some migrants who are poor and cannot pay for high cost houses always see these risky environments where houses and land is cheaper as the best site for settlement. This account for the growth of sprawling quarters in Bamenda I municipality.

Nearness to job site has become one of the most important reason for residing in the sprawling neighborhood of the study area. Most people living in Bamenda I municipality live toward Up-station where all the administrative services are being located. More so most of the farmers living in Nta'afi are also there because of the presences of fertile soil in the area. The next reason for the habitation of sprawling neighborhoods in Bamenda I municipality is land inheritance Land ownership in the sprawling quarters of the town especially the risky quarter is mostly based on customary norms. This land is transferred from one generation to another within the family circle and the person inheriting it is expected to preserve it for forward transmission to his children or family members. With inheritance, they find it unlawful to abandon their ancestral sites for other areas. They also believe that, their ancestors will always be there to protect them

from any danger or risky than elsewhere. This accounts for the growth of sprawling quarters in Bamenda I municipality.

2.6.2. Family Ties

During the field study, it was observed that family ties play a role in influencing the growth in Bamenda I municipality. It was discovered that when a person from a particular village comes and settle in a particular area, he/she later invites his relatives or friends to join him/her in that area. This is the case with the inhabitants of Bamenda-kwe and Ntafebuh who were mostly people from the West Region of Cameroon. They testified that, through interviews that they are in Bamenda I municipality because of family ties.

2.6.3. Social ills of the City Center

The social ills plaguing the city center forced some urban dwellers to prefer the outskirts or risk sprawling zones of the town that are a bit free from these social ills. Through focus group discussion of the respondents hold that, the social ill of the city center forced them to indulge in sprawl. Some of the social ills in the city center include; high crime wave, limited space, pollution and overcrowding. This also accounts for the growth of some sprawling quarters of Bamenda I like Bamendakwe, Achichum, Nta'afi and Ntahsa.

2.6.4. Reasons for residing in sprawling quarters

Figure 20, analyzes reasons for residing in sprawling quarters with many motives by different inhabitants of Bamenda I municipality**.**
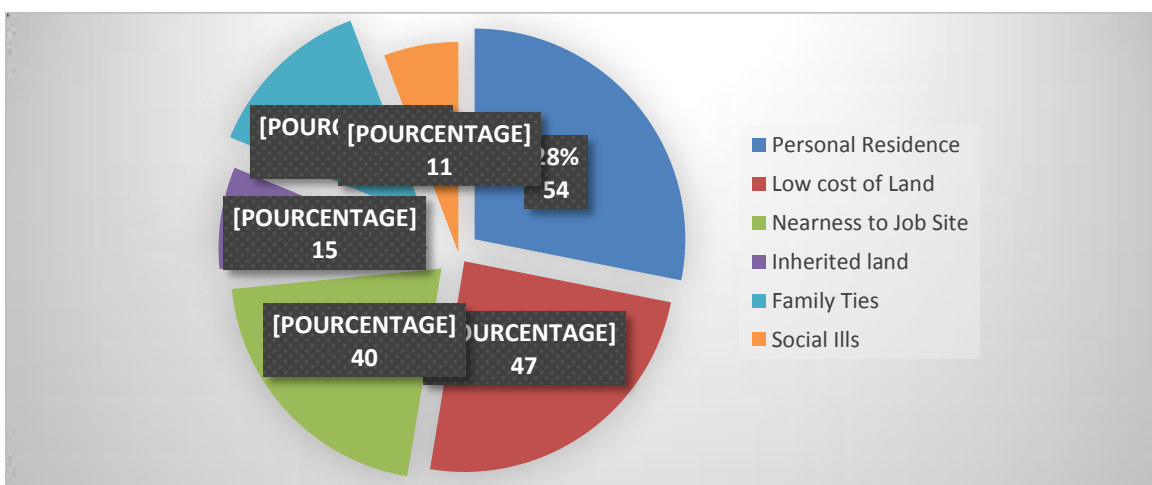
Source: Fieldwork, 2021

Figure 20: Reasons for residing in sprawling quarters

Figure 20, shows respondents responses for residing in sprawling quarters of the study area. A majority **o**f them with 28% of the respondents answered positively that one of the most reason why there are living in sprawl quarters of Abangoh is because of their personal residence that have been constructed there. More so some answered that it's because of low cost of land that make them to be living in these area with a percentage of 24% while others in Bamendankwe said that it is because their residence are near to their Job site with 21% respondents. In addition to that 8% respondents accepted that inherited land is the reason they are living in sprawl quarters with 13% responding strongly that family ties make them to reside in sprawling quarters and lastly 6% of reside in sprawling quarters because of social ills.

2.7. Conclusion

Hypothesis 2 states that ''the direction of sprawl expansion is towards the north and southern parts of the municipality''. To verify this hypothesis, the data on the respondent's view of satellite image direction has been used therefore, the spatial evolution of Bamenda I municipality was examined for four-time period, namely: 1990, 2000,2010 and 2020 to describe urban growth and development direction in Bamenda I municipality. The results revealed that 68% of the respondents attest that the direction of sprawl in Bamenda I municipality is towards the North of the study area. The study equally found out that 73% of the respondents feel satisfied towards sprawl, 19% not satisfied and 8% of the respondents were indifferent.

More so, we also verified this hypothesis in terms of physical factors that has played a great role in the displacement of people in the study area towards a particular direction. We have factors like; climate which is the very first one that attracts people towards the Northern and Southern part of the study area. The climate of Bamenda I is very good not too cold nor hot, it is suitable for human habitation. One of the reasons why all the administrative offices has been built only in the study area because of its good climate. Moreover, reasons for residing towards the direction of sprawl quarter in Bamenda I municipality figure 20, play a major role with personal residence counting as one the reason in sprawl zone, followed by low cost, nearness to job site, inherited land, family ties and social ills also count as the most influential reasons for residing in sprawl direction of Bamenda I municipality. The next chapter revealed urban sprawl effects and socio-economic development in Bamenda I municipality.

CHAPTER 3

URBAN SPRAWL EFFECTS AND SOCIO-ECONOMIC DEVELOPMENT IN BAMENDA I

3.0 Introduction

Urban sprawl is a phenomenon that affects many countries of the Sub-Saharan Africa. In the Bamenda I municipality, urban sprawl has greatly affected the socio-economic development of the municipality. In this chapter, a critical look will be on sprawl and the social development such as schools, health and recreational facilities amongst others not living out how sprawl has also affected the economic development of Bamenda I municipality, some of these activities are roads, markets, land value, rise in standard of living, and employment amongst others. This chapter focuses on the effects of urban sprawl both positive and negative in Bamenda I municipality. In a bid to verify this, the objective which state; To evaluate the effects of sprawl to the socio-economic development of Bamenda I municipality will be seen in this chapter.

3.1. Sprawl and social development in Bamenda I municipality

Urban sprawl in Bamenda I municipality has greatly lead to the development of social amenities like schools, health and recreational facilities which has been very vital in fighting for the development of the study area. Looking at all these aspects the researcher realized that a lot of people are in Bamenda I municipality because of the presents of all these activities which have been attracting most of the population in the area especially education and we know that education is the road to success in life for ourchildren's, so Bamenda I poses all these facilities which has really led to development of the area.

3.2. The outcomes of sprawl on educational development in Bamenda I municipality

Urban sprawl in Bamenda I municipality has really stem up the educational sector in the municipality. Urban sprawl in Bamenda I municipality has led to the creation of many schools starting from the nursery, primary, secondary to higher institutions and because of the presents of these schools in the study area, it has attracted a lot of population who are now living in different quarters of Bamenda I municipality and as a result of the presents of these educational facilities with its influx of population, it has led to sprawl in the area where by, many people are force to

construct houses towards the peripheries where their children do live in the peripheries of the municipality but school in Up-station and G S Bamendan-kwe

Figure 21, present a number of schools present in Bamenda I municipality from the nursery level to the University which has greatly lead to sprawl in the study area.
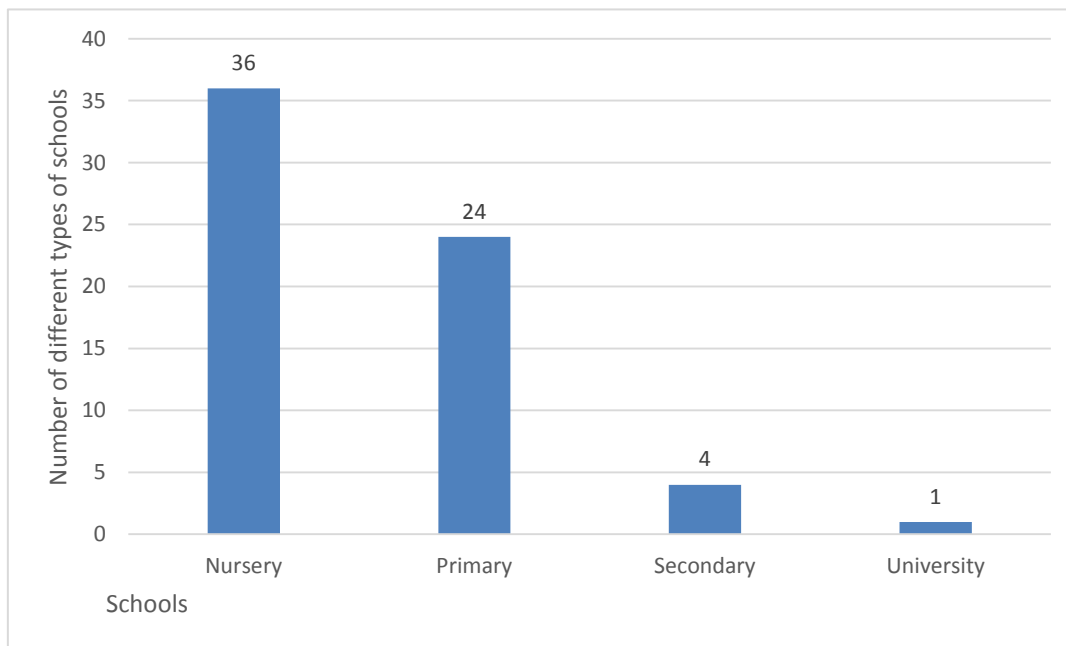
Source: Inspectorate of Basic Education, Bamenda

Figure 21: Numbers of schools in relation to sprawl in Bamenda I municipality

Figure 21, shows that Bamenda I municipality has 36 nurseries schools, 24 primary schools, 4 secondary schools and 1 university. The primary schools are distributed among the catholic, the Baptist, the Presbyterians, the private sector and the government. The private institutions operate mainly nursery, primary and secondary schools while the government operates all of both the primary school, nursery, and secondary schools. Government operates 4 secondary school while one is privately run. The Maryvale institute is a specialized center owned by the Catholics operating in the Paul VI Pastoral Centre specialized in providing refreshes course for Catholic Christians who wants to deepen their faith. (Bamenda I council, North West Region Cameroon Copyright 2021). More so schools like Government secondary school, St Bridgit Bilingual Nursery and primary school GRA Up station, GBHS Bamendankwe amongst others. With all these schools presents in Bamenda I municipality, a lot of population from different

countries, regions, division and quarters of different areas are attracted to the municipality of Bamenda I there by leading to urban sprawl.

In addition to that, with the presents of these educations a lot of development has been done in the study area in terms of building of new schools, and opening of new once. More so a lot of new schools has been open in the study area with a lot of people attending it and prospect of other professional school being open next year in Bamenda I municipality are too high. Equally, with the creation of the university of Bamenda in Bambili and the national polytechnic Bambui many workers in Up-station who wanted to further their education has been attending these schools while living in Bamenda I. More so because of schools, electricity has been extended to many quarters of Bamenda I like Abangoh, roads liking the different quarters has been modernized while some are earthly road but are under mainternants, new and affordable houses being constructed and has stimulated many others who now live besides these schools only to sale.

3.3. The outcomes of sprawl on health development in Bamenda I municipality

The health sector in Cameroon plays and important role in serving the life of many, Bamenda as a whole has been identifies as having one of the best health services in the nation in which Bamenda I is not and exception. With the presents of good health services in the region life expectancy is bound to increase. With hospitals like Big Mbingo, Mbingo Anex, the martin in mile 3 health Centre and clinic which has been open everywhere in Bamenda shows a lot of improvement in the health sector, with Bamenda I municipality having health centers, new clinic centers and health Centre's in their quarters to serve life has been very important. With the opening of these health unites, a lot of migrant and people who only want to treat their self are now living in some quarters of Bamenda I like Mendankwe, Achicum, Nta'afi and many others while going for checkup and their treatment in most hospital out of the municipality. Because of the health sector roads linking this health unite has been paved, like the one leading to the general hospital of Bamenda, also most business has been seen around many hospitals like the one in Mbingo Anex, many building rented houses around the hospitals, electricity and standby generators has been equipped in most of these hospital there by leading to sprawl in the area.

3.4. Health provision in the PDU and Land Use Plan (POS)

According to the Bamenda master plan for 2012 (PDU), sport and recreational facilities provision (POS) for Bamenda I Council, the following health services were previewed; Acquisition of land for the construction of a blood bank at Aningdoh I, Creation and construction of neighborhood health center, Creation of a health center at Bangshie and Abangoh. None of these projects have been implemented. The land for the Blood Bank has been acquisitioned. Administrative procedure for the award of contract is in progress as compensation have been paid. Also, the administration of the primary health care provision is through Health Districts. These health districts do not necessarily follow the administrative limits. Creation of health centers follows population strength and number of people visiting health center services. In this case, Integrated Health Center, IHC was created in Nkwen (Bamenda I) that covers health issues of the Bangshie zone. Also, another health center was created in Atuakom that covers the Abangoh, Ntahsia and Ntahngang area (Table 13).

Table 13: Health Facilities within Bamenda I Council

N0	Health institution	Location	No of Doctors	Pharmacist/Attendant	N0 of nurses	N0 of lab technicians	Microscopes	Maternity	Beds	Laboratories	Latrines	Water points	Incinerators	Wards	Theatre
	Military hospital	Army Camp	02	01	10	02	02	0	25	01	01	02	01		0
	Bamendankwe IHC	Akefu	00	01	07	01	01	1	18	01	01	03	01		0
	Bamenda station polyclinic	Alatining	01	01	05	01		0		01	02	04	01		1
	World Hospital	Ayaba	01	01	-	01	-	-	-	-	-	-	-	-	-

Source: Bamenda I council, 2021

Table 13, present 04 health facilities within Bamenda I Council. There is the Integrated Health Center that serves the village at Akefu quarter. Another state owned health service is the Military Hospital at the Military camp. Though it's a military hospital, it attends to civilians. The other 02 are privately owned. The World Hospital also trains nurses. More so maternities like the one in The Martin catholic hospital, and clinic centers in most quarters of Bamenda I are has

been influential to the lives of many as most people settled in Bamenda I before attending these hospitals. With the presents of these health facilities a lot of these development has been done in Bamenda I with prospects of more to be done they are hopes that the health sector is going to restructure development in Bamenda couple with the presidential degree of reconstruction in Bamenda, Bamenda I will be a place to be after this statement by the president of the republic and hope of peace in the area is what everybody is crying for as a result urban expansion has been taking up space in Bamenda I municipality.

3.5. Sprawl and recreational facilities on the development of Bamenda I municipality

Recreational facilities over the world today has been very vital in our society today, facilities such as the construction of cinema hall, sport complex, playing ground and entertainment centers has become common in Bamenda I municipality, as a consequence, many people who live their villages and come to Bamenda I municipality are always relax with the presents of these facilities and the enjoyment some of them and their families get from these activities as a result of that, news about it is always spread towards the rural areas where a lot of population live their rural communities to come and also enjoyed these facilities. More so the opening of new churches, bars and night clubs in Bamenda I with good hotels has attracted many people in the area thereby leading to sprawl. Also with the construction of new churches, modernized bars and good cinema hall has broad a lot of development in Bamenda I municipality thereby leading to development. More so many new comers in looking for better places to construct these services are always force to look for better and calm places which please their customers that is the reason why most hotels in Bamenda I are towards the peripheries except the ones that has been existing there for long. so looking at sprawl in Bamenda I municipality, it has really lead to creation of recreational facilities which is already development in the area.

3.5.1. Tourism and Leisure

Tourism is fast becoming a major source of revenue for the state. This also implies to the Bamenda I Council. Situated about 1500m above sea level, the North West region is highly alleged for its geographic, ethnic and cultural variety of factors, which have gone a long way in enhancing the rich tourist potentials of the region thereby making it a tourist marvel. Particularly, these tourists' attractions include the pleasant hilly landscapes and countryside harboring

marvelous forests and game reserves, plains, natural lakes, caves, waterfalls and undulating mountains. All these merge with human effort, architecture and the outstanding palaces of the grassland fandoms to make the region an authentic tourist destination leading to sprawl in the area.

3.5.2. Existing State of Tourism and infrastructure in Bamenda I municipality

There exist some few tourism sites and infrastructures for tourism and leisure. These are natural or manmade. The natural site of Bamenda I is characterized by: -

➢ A dissected gentle sloping plateau which runs to the south east to the north east. This plateau is well drained and stable for urban development.

➢ The plateau is flanked to the Southwest by a steep mountain range which serves as a rich source of water for the plateau. This area is too steep for settlement but constitute a vulnerable natural reserve.

➢ The Bamenda I plateau is flanked from the Southwest to the Northeast by a steep escarpment which constitutes a natural divide between Bamenda I, II and III sub divisions. This constitutes one of the natural assets of Bamenda I.

Touristic potential sites include:

➢ **German graves**: - the site is developed and accessible. This is one of the sites of international interest that is highly visited tourist especially the Germans. Since this is where the missionaries were buried. It is managed by the Bemenda I council. The site however needs a cleaner.

➢ **Centenary Monument**- the site is developed and accessible. It is located at the entrance leading to the prison. It is the statue of an unknown soldier to remember those who have fallen at the warfront.

➢ **Bamenda Fort**: - It is well developed and accessible and manage by the state. This is a German building that was built in the days Zingraff. Many foreigners will always visit the building as it is the handwork of their elites. Presently the building is used by the state as offices for some regional services. The structures are however dilapidating and needs urgent repairs to maintain its decor.

➢ **Up Station Landscape: -** It is managed by Bamenda I Council. It is along the road as you move down the station hill to town. This site is exploited by tourist within the

country. Many will go to view the town as it has very high points, some for relaxation and others for pictures

- ➤ **Bamendankwe Palace and Meseum: -** Not well developed due to finances. The long absence of the annual dance festival. This festival usually attracts tourists. There is need for these sites to be renovated.

- ➤ Pastoral Centre: - the site is developed and accessible. It is owned by the Catholic Mission and located at the Ayaba quarters. It is highly exploited because of its serenity and cleanliness. It provides accommodation, restaurant services. It is mostly used for religious retreats, seminars, meetings, marriages and receptions. It also serves as a training centre for missionaries.

- ➤ **International Museum and Library: -** it is developed and accessible. It if managed and owned by Mr Peter S Atanga. Mostly exploited by students and people interested in traditional objects. The main problem is the financial means to employ someone to manage the museum.

3.5.3. Lodging Structure (Hotels)

There are 02 identified hotels and several Inns that operate within the Council area. The hotels include the Amiralty Hotel that is a 3-star hotel found along the new GRA road. The other is Hiltop Hotel, a 2-star hotel, situated at the entrance of Gendarmerie headquarters. A green space is being developed by the council adjacent to the Hiltop Hotel. There are no standard restaurants but eating houses are quiet numerous. They are found in highly populated areas of the Council area. All these beautify the area thus leading to sprawl in Bamenda I municipality.

3.6. Urban sprawl and economic development in Bamenda I municipality

Urban sprawl in Bamenda I municipality has become an important factor as it stems economic development. Economic factors such as roads, market, land and value, standard of living and employment as it greatly plays an important role in building up Bamenda I municipality to be a better place tomorrow.

3.6.1. How urban sprawl has led to road development in Bamenda I municipality

Good roads are necessary for every economy of the world especially in the third world countries. The Cameroon government has been fighting for the construction of good roads in

almost all the regions of Cameroon right down to the sub division and Bamenda I municipality being located at the headquarter has been experiencing improvement in roads development because of sprawl in the study area. The increase in urban expansion to the peripheries because of population growth has resulted to the construction and maintenance of many roads in the study area. Urban sprawl has led to the construction of Bamenda I to Bambili roads, Bamenda I Santa road, Up-station Below Foncha and many quarter roads such as Abangoh central road, Achichum, the Muyu quarter roads, even thought that most of the roads are earthly roads, there are being maintained every year and the population of the municipality do organize community work for all as seen in (figure 22).
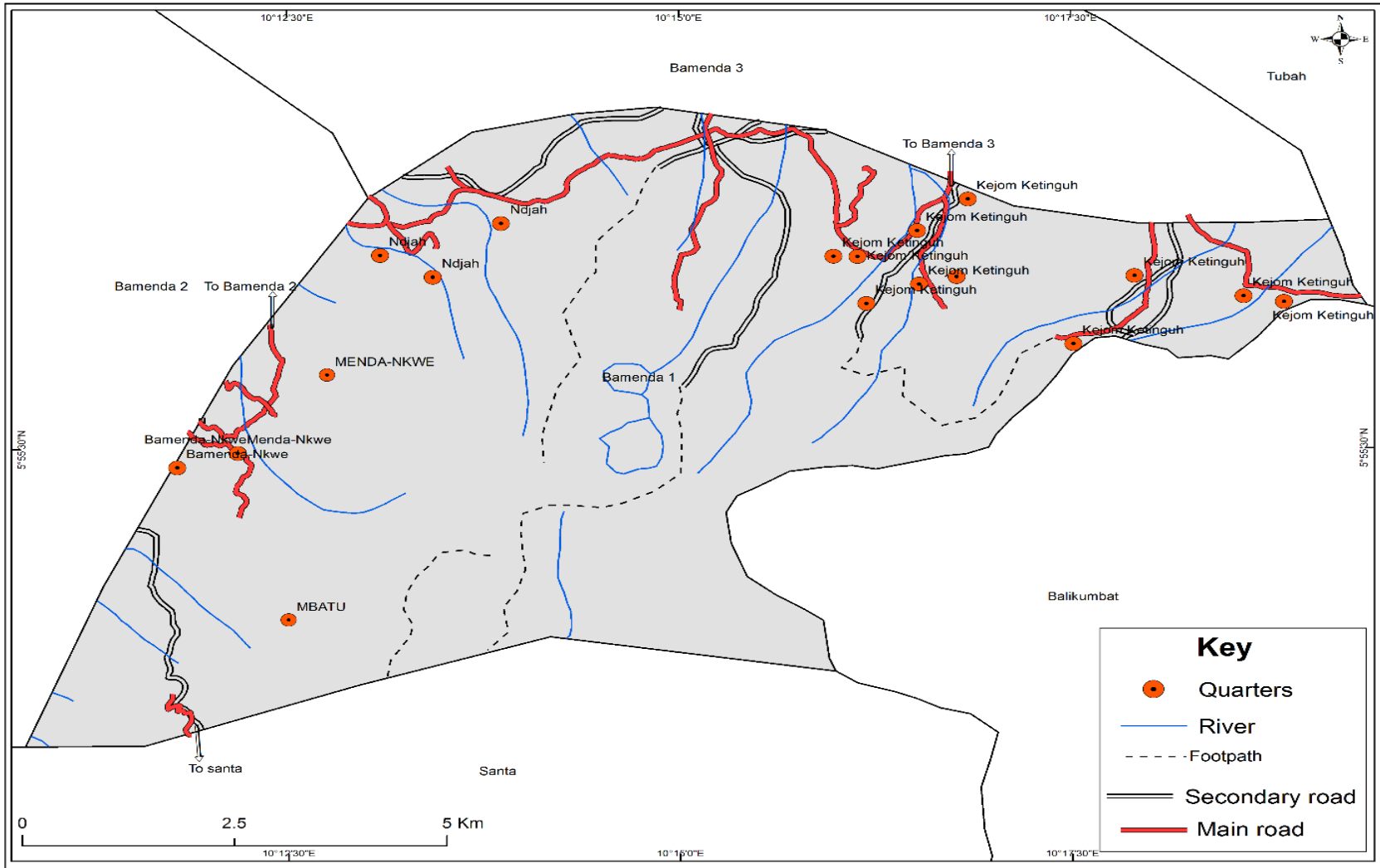
Source: DEM aster2007, Google earth map and Field survey (2021)

Figure 22: The Road map of Bamenda I Municipality

Roads in Bamenda I municipality has really broads development as most of the trucks, do transport cargo to the area because of good roads infrastructures, more so the economy of the area has been booming because of the increase population to the suburbs areas who always work so hard to improve the state of all roads in Bamenda I as the statement always used by many intellectuals that where a roads passes development follows, the economic sector in Bamenda I has been well developed because of road development in most quarters of Bamenda I.

Bamenda I market has also played an important role in influencing its development, because of the presences of Bamenda I market, many people has been able to buy and sale in the area. The more increase the population the more demand for agricultural products and most industrial good that are highly demand in the area. Bamenda I markets has attracted a lot of population even right to the peripheries where small businesses are being done, as a result of that roads have being paved while some linking small markets in the study area are being constructed. More so Bamenda I main market has been built in order to ensure good trade and commerce in the municipality, new shops has been open, bars the selling of some livestock activities has been prominent in the study area by ensuring development. All this is as a result of the influence of sprawl in the locality.

Plate 1, A and B, Shows Bamenda I main market and its developmental projects

Sahfe 2021   Sahfe 2021

Plate A, Avenir park, Bamenda I   Plate B, New Building at G S Up-station

Plate A and B shows Bamenda I main market at the part, where by many types of activities are being carried out there. Looking at this park stores are open there for the sailing of all kinds of manufactured good. Vehicle living to other destination in Bamenda I are being loaded from there, equally in this market women prepared food and sale why tailoring and weathering are also taking place in this market. More so new buildings have also been notice in the study area because of sprawl amongst others, which has shift many people towards the suburbs of the municipality.

More so high standard of living in Bamenda I municipality because of sprawl is one of the major factor influencing the inhabitant of the area. According to respondent responses in the field most of them confirm that because of urban sprawl in the locality, Bamenda I has greatly led to high standard of living, because of sprawl five Banana that used to cost one hundred francs has now been reduce to three, higher rent in the urban places of Bamenda I municipality has driven many towards the suburbs of the locality. This higher standard of living has led to the construction of better houses, most of the workers working in the public sector are always happy living in good houses of the area and as a result most of the urban poor now go to the suburb where land is cheap and settled there by leading to urban expansion in terms of development.

Equally land and value for it has been increase been increase since most it is an administrative head quarter, many business has been set up in the locality as result of that the price of land in the urban area of Bamenda I municipality has automatically been increase for example a square meter of land that used to be sole for12500 frs within the urban center has been now been sole for almost 20000frs.This testify the main reason why many inhabitant has been moving towards the suburbs area of the municipality where land is cheap an as a result of the increase prices of land and increase in the value of land only the rich are now building, in the urban areas of the municipality while the poor continue to expand their building towards the outer scared there by leading to development in the area.

Bamenda I municipality for some years now has been saving as an area, of employment couple with the presence of the administrative functions in the area. Because most government concurs and recruitment are always taking place in the area most of the population who are seeking for employment prefer living in these area. Also a there is a particular group of people

living there who are not recruited but they facelifted the process of every document you as a new comer you want to follow and after that you pay them for their work in which all of these people are resident in Bamenda I municipality and some of them has started building their own houses in the study area there by leading to development. More so many people who go to the suburbs areas some of them are sailing beside the roads while some fry puff puff and sale it, showing sign and symptoms of development. Furthermore, because the area is and administrative area, bars has been open, thereby creating employment in the locality of Bamenda I, (table 14).

Table 14: The outcome of sprawl and socio-economic development of Bamenda I Municipality

Respondents responses to sprawl and socio-economic development of Bamenda I municipality		
Yes	No	No idea
53%	41%	5%

Source: Field survey (2021)

Table 14 present respondent response to sprawl in terms of socio-economic development. Results from the table shows that a greater percentage of the respondents in the field answered yes with 53% of the of the respondents standing on this view and 41% of the respondents in the field rejected this view that sprawl has not led to any development while only 5% of respondent stood on the view for no idea for reasons best known to them. The researcher foresees that some of them with no idea only visited the municipality only within that months and weeks of researcher in the study area. But from all the responses the socio-economic factors are largely responsible for urban sprawl in Bamenda I municipality.

3.7. Negative effects of sprawl in Bamenda I municipality.

3.7.1. Urban poverty and traffic jam

Urban sprawl in Bamenda I municipality has led to a concentration of poverty. This has often been observed in Bamenda I municipality where some suburbs suffer from a quite severe concentration of poor people like those in Nta'afi quarter.

This concentration of poverty is also likely to increase crime rates since poor people are often desperate due to their living conditions and thus have a higher level of frustration, the case of thief's in Bamendakwe. Since the number of people who have to commute to work increases with an increase in urban sprawl, the traffic is likely to increase accordingly. This leads to more congestion on the streets and also to a loss of time for many people this was evidence in Bamendakwe during the landslide of 4th August 2009 which almost blocked traffic for an hour.

3.7.2. Increase in pollution

The increase in traffic also leads to an increase in pollution, especially burning of this household waste in strategic quarters of Bamendakwe. Since most of the indigenes do not empty dirt's in their bin, harmful gases are emitted through commuting on a daily basis. These gases include CO2 which also contributes significantly to the global warming issue. Moreover, the increase in population and household consumption lead to urban sprawl and causes additional types of pollution. Thus, urban sprawl and the level of pollution are closely linked to each other as seen in plate 2 (A and B).

Plate:2 (A and B). Shows waste disposal leading to pollution in Bamenda 1 municipality

Sahfe, 2021   Sahfe, 2021

plate 2A: Dumping of dirt's beside the road. Plate 2B: Dumping site of Bamendankwe
Site of Bamendankwe.   Leading to pollution.

Plate (1A and 1B). Presents waste disposal corner the road site at Bamendakwe which almost in the middle of the roads as seen in plate (1B and 1B) and the worse thing is that the indigenes of the study area always burn it there by destroying the road.

3.7.3. Environmental effects

If people move out to places that have previously not been touched by humans at all, the surrounding environmental system may be harmed. Animals that live in this area may leave and therefore the environmental system is likely to change. Moreover, the living space for many animals and plants is likely to be destroyed since the building of infrastructure often results in deforestation and other measures which are harmful to the local flora and fauna a glaring case in Bamendakwe and Abangoh currently going on.

3.7.4. Loss of agricultural land

Loss of agricultural space is one of the main effects of urban sprawl in Bamenda1Municipality. Places those were usually cultivated for farmland has been transformed in to different purposes such as building of houses, clinic centers, Nursery to Secondary schools, extension of nearly all administrative service and many others. As a result of this farmers in the study area go further away in to the suburbs of Bamenda1 like Kumbele for farming purposes as shown in (Photo 4)

Sahfe, 2021

Photo 4: loss of agricultural space in Kumbele Neighborhood to Buildings

Photo 4: Shows loss of agricultural space in some sprawl areas of Kumbele with is being replaced by the building of houses and many infrastructural developments. As a result of urban sprawl in the study area many forests have been destroyed, trees cut down for agricultural purposes and infrastructural development in Bamenda I municipality.

3.7.5. Deforestation and Landslides

Because of urban sprawl in the study area many forests have been destroyed, trees cut down for agricultural purposes and infrastructural development in Bamenda I municipality. Another environmental problem of sprawl due to its effects in Bamenda I municipality is the occurrence of landslides. Some of the sprawling quarters of the Municipality like Up-Station and Abangoh are found on steep slopes that are prone to landslides. The topographic nature of these quarters expose the inhabitants to the risk of landslide due to steep gradient, fast runoff during heavy rainfall and the jointed sedimentary rocks that are reliable to rock fall and landslide. This explains why these areas are declared risk zones by the master plan and restricted for settlement. Unfortunately, human interference on these steep slopes have accelerated over time leading to the occurrence of landslides in these areas. Many instances of landslides have been registered in the sprawling quarters of Up-Station and Abangoh blocking communication lines like roads or affecting houses. Table 15 present some landslides and the damage caused in Bamenda I municipality within the past years.

Table 15: Some major landslides and damages caused in Bamenda I Municipality

Year	Quarters affected	Damages caused
2007	Abangoh	Three deaths
4/8/2009	Up-Station	Traffic blocked on major highway for about 24hours

Source: Adopted from Nyambod, 2010 and Kometa and Ndi 2012

Table 15, show some major landslides and their damages caused in Bamenda I municipality. A minor landslide was also observed during the fieldwork in June 2021, which almost brought down a house at the Abangoh neighborhood as seen on plate (2A and B).

Plate 3: A and B, presents risky house at Ntache and Bamenda escarpment

Sahfe, 2021	Source: Research Gate 4th August 2009
3A Risky house at Abangoh	3B Landslide in Bamenda escarpment

Plate (3A and 3B) Risky house at Ntache neighborhood observed during the field study in June, 2021 that almost destroyed a house and adopted landslide of Bamenda escarpment which stop traffic for almost an hour and as a result of this the government has taking measures preventing the population from constructing in this types of places, but because of population increase in the study area, many people are looking for where to live and thus are force to occupy risky area as a result of sprawl.

3.7.6. Increase Soil Erosion

Another environmental effect of urban sprawl is increase soil erosion in Bamenda I municipality. Man's interference on hill slopes for the construction of houses or cultivation of crops usually exposes the soil to agents of erosion like wind and water as the vegetation is cleared. This is the case with the hill slopes of Abangoh Central where soil erosion is common due to construction of houses and cultivation of crops (photo 5)

Sahfe, 2021

Photo 5: Erosion at Abangoh Central

Photo 2 indicate that if not of this methods of putting soils in the bags and placing them along the river banks, if in case of heavy rain when these bags are not put in place, water will carry all the soil downstream and for this reason this bags acts as a barrier to soil erosion.

3.7.7. Rugged and Steep Topography

Rugged and steep topography is another problem of sprawl faced in some sprawling quarters. Sprawling quarter like Up-station face this problem as they are found on a rugged steep slope where construction of houses is difficult due to the rough and steep nature of the slopes as seen on photo 6.

Sahfe, 2021
Photo 6: Rugged and steep topography Up-station

3.7.8. Land dispute

Land dispute is a common phenomenon in Cameroon and Bamenda I municipality in particular especially with the customary land ownership right in most of the sprawling quarters. There exist many ways of land acquisition in the country. The traditional way of land acquisition (customary land ownership) in Cameroon especially in Bamenda1 is always a source of land conflict. The land tenure system or acquisition of land through succession of family land especially in the sprawling quarters has created a lot of land dispute in Bamenda I municipality. This is aggravated by the fact that; most settlers of the Municipality do not have land titles especially in the sprawling quarters. In all the quarters visited during the fieldwork, there were many instances of land disputes complain from the respondents as a major problem faced in these areas. Land disputes in the town is either between neighbors over a boundary line or a situation where the same piece of land is sold to many people by different family members and at times the same person selling to many people.

3.8. Conclusion

Hypothesis 3 state that ''Urban sprawl has affected the socio-economic development of Bamenda1municipality positively. While the negative factors like reduce agricultural space, pollution, and increase price of commodities also count in explaining sprawl in Bamenda I municipality. In order to verify this hypothesis data on the respondent's view that a greater percentage of the respondents in the field answered yes with 53% of the of the respondents standing on this view and 41% of the respondents in the field rejected this view that sprawl has not led to any development while only 5% of respondent stood on the view for no idea for reasons best known to them. The researcher foresees that some of them with no idea only visited the municipality only within that months and weeks of researcher in the study area. But from all the responses the socio-economic factors are largely responsible for urban sprawl in Bamenda I municipality.

More so, reduced agricultural space and pollution has also played a very big role as urban sprawl in Bamenda I municipality is concerned, agriculture in the study area that used to be done in a large scale for the survival of population in the area, has been reduce since the beginning of urban sprawl. Most of the respondents says that land that was always used for cultivation of various types of crops has been reduce due to increase population which has necessitated the demand for housing in the study area. Respondent attest that even the hilly slope areas of Abangoh Central has been occupy by human activities. The next chapter critically examines population adaptation to sprawl planning strategies and effects in Bamenda I.

CHAPTER 4

POPULATION ADAPTATION TO SPRAWL PLANNING STRATEGIES AND EFFECTS IN BAMENDA 1

4.0. Introduction

Sound urban planning is very vital in achieving sustainable urban development. Urban planning is the process of anticipating, representing and regulating development in an urban area so as to ensure an effective and harmonious organization of the urban space through a master plan (Pinson, 2010). A master plan for a town aims at organizing urban space so as to create a comfortable environment for human settlement. The plan equally aims at demarcating land between private and public uses and carving out the location and extent of new development sites in the town. The sound implementation of urban planning regulations is thus, an effective tool to curb urban sprawl and ensure the sustainable evolution of urban centers. Urban planning in Cameroon in general and Bamenda1 Municipality in particular has evolved through two main phases which are in line with the two master plans of Bamenda town. The town planning laws of 1973 was in line with the 1985 master plan while the town planning laws of 2004 are in line with the 2012 master plan. This chapter assesses the various planning strategies used by the population to withstand urban sprawl effects, the implementation of urban planning laws in relation to sprawl, the Bamenda master plans which is applicable in all the municipalities, with Bamenda I municipality as the main area of study.

4.1. The Implementation of Urban Planning Laws in Cameroon and the Bamenda Master Plans Applied in Bamenda 1 Municipality

Urban planning in Bamend I municipality like any other municipality in Cameroon is enshrined in good laws and regulations. The challenge always lies with the implementation of these urban planning laws. Urban planning after independence in Cameroon began in 1966 with the enactment of laws N° 66/10 of November 18th 1966 which laid down the urban planning code of the former East Cameroon and decrees guiding the implementation of these planning laws (law No. 66/10 of 18 November 1966). After the reunification of Cameroon in 1972, two major laws (1973 and 2004 urban planning laws) guiding urban planning in the country have been enacted which corresponds to the two master plans of Bamenda I municipality.

4.1.1 The 1973 Urban Planning Law and the First Master Plan of Bamenda Town and Bamenda1Municipality in Particular

To guide urban developments in Cameroon, the first law regulating urban planning in the United Republic of Cameroon was enacted in 1973 (Ordinance N° 73/20 of May 29th).

4.1.2 Provision of the 1973 Urban planning Law

The 1973 law laid down rules guiding developments in urban areas and so called on all the town in Cameroon to develop a town planning document to guide developments in their various jurisdiction. Following this law, several towns in Cameroon developed town planning documents including Bamenda as a whole that developed it first master plan in 1985.

4.1.3 Implementation of the 1973 Law in Bamenda through the 1985 Master Plan

Following the provision of the 1973 urban planning law in Cameroon, the first master plan of Bamenda as a whole and Bamenda I municipality in particular was conceived in 1981 and published in March 1985 (1985, Bamenda master plan). This plan was drawn based on two target periods; a short term target period that was to last up to 1989 and a long term target period that was to last up to 2004. The plan particularly defined;

- Land use (Residential, industrial and commercial land use),
- Localization of major facilities (educational, health, administrative and other facilities like sport and leisure facilities),
- Extension sites
- Major road systems

According to the plan, the built up area of Bamenda in 1981 was 10.78km$^{2.}$ This area constituted; 65% for housing, 10% for facilities and 25% for roads.

4.1.4 Evaluation of the 1985 Master Plan

Efforts were made to implement the 1973 urban planning law in Bamenda through the 1985 master plan. Unfortunately, the implementation of this law in Cameroon and Bamenda I Municipality in particular was characterized by a lot of misunderstanding during this period until the early 2000s. Coupled with the galloping effects of population growth and the economic crisis

of the late 1980s and 1990s that aggravated urban poverty, the master plan was poorly implemented. This was because; the various economic policies implemented under the Structural Adjustment Program (SAP) Virtually under look the urban sub-sector. Instead of the government galvanizing efforts towards ensuring the effective implementation of the urban master plan, her attention was now titled towards fighting the economic crisis. This led to the poor implementation and final abandonment of the 1985 master plan and the subsequent growth of haphazard and uncontrolled developments (urban sprawl) in Bamenda I municipality.

4.1.5 The 2004 Urban Planning Law and the Second Master plan of Bamenda

In 2004, the 1973 law was revised through the enactment of Law N° 2004/003 of 21/04/2004 regulating town planning in Cameroon.

4.1.6 Awareness on the Existence of the 2004 Urban Planning Law

The development of urban planning regulations aimed at guiding urban dwellers in the habitation of urban space to ensure a harmonious, organized and sustainable development of urban centers. The awareness on the existence of urban planning regulations therefore, sets a base for the respect of these regulations. Priso (2011) held that, they continue to be problems regarding implementation and compliance with town planning laws Cameroonian cities. In a bit to confirm this finding, the opinion of the inhabitants on the awareness of the existence of urban planning regulations in Bamenda I municipality (68.2%) were not aware while (31.8%) of the respondents were aware of these regulations. This is in line with UN Habitat (1999) which opined that, a greater proportion of people in the urban areas are not aware of urban planning regulations. Some of the inhabitants complained that, they have never seen a hard copy of this law or have been sensitized on it existence. This is a direct contradiction to Section 49 of the 2004 law on town planning and urban development in Cameroon which states that; "The involvement of the population, organized groups and civil society in the implementation of the general rules of town planning and management and construction should be encouraged through free access to town planning documents as well as sensitization, training, research and education in the area of town planning and management".

4.1.7 Provision of the 2004 Urban Planning Law

This law called on all the towns in Cameroon to develop documents guiding developments in their respective areas. The law equally gave provisions on the content and drafting of town planning documents and categorized town planning documents in to; the Urban Master Plan (UMP), the Land Use Plan (LUP), the Urban Sector Plan (USP) and the Area Plan (AP) are the main administrative documents that guide urban development in Cameroon. In 2008, the 2004 law on town planning and urban development was supplemented by 5 Decrees aimed at improving the legal situation that had existed for several years in the area of urban planning (law No. 2004/003 of 21st April 2004 and Decrees No. 2008/0736 of 23rd April 2008).

- Decree No. 2008/ 0736 of 23 April 2008 laying down conditions for drawing up and revising town planning documents.
- Decree No.2008/0737 of 23 April 2008 laying down safety, hygiene and sanitation rules applicable to construction works.
- Decree No.2008/0738 of 23 April 2008 organizing land-use procedures and processes.
- Decree No. 2008/0739 of 23 April 2008 laying down land-use and construction rules.
- Decree No.2008/0740 of 20 April 2008 specifying rules on penalties for violations of town planning rules.

These 5 Decrees set the basis for the demarcation of urban spaces in to different land uses and eventually the development of new master plans for the towns of Cameroon. As a follow-up to this, the town of Bamenda including Bamenda I municipality developed its second plan in 2012 that was finally adopted in 2014.

4.1.8. Implementation of the 2004 Law in Bamenda through the 2012 Master Plan

The new and recent master plan of Bamenda in general and Bamenda I in particular was conceived in 2011, published in 2012 and adopted in 2014. The plan critically examined the land use classification and the road network in the town Land use classification is the systematic grouping of land in to different uses base on common relationship. The essence of classification is to create order, ease communication to users of land and also help correct wrong utilization of land by land users. It is the basic tool in decision and policy marking especially when land users are well understood. There exist different land users in Bamenda and Bamenda I in particular

which have been classified in to zones and roads network by the 2012 master plan to guide development in the town and check sprawl as seen in Plate (6a and b).

The spatial structure (plate 5) shows the linkages between road hierarchy and land users. The plan therefore, shows the interconnectivity of land user's spatial structure in a functional city. The World Bank Urban Development support projects (PNDP) are on-going in the city of Bamenda and Bamenda I to ensure this interconnectivity of land users. The different land users defined in the plan include:

- Residential land use (high, medium, low and mix density residential areas) with a total of 77.9% of the total urban land area.
- Commercial land use with a total land area of 1.5%
- Industrial land use (0.5% of the total urban land)
- Public and social service area with a total urban of about 6.3%
- Other land uses like road network (13.8%)

The field implementation of this plan was sub-divided in to short, medium and long term projects earmarked to cover the period 2011-2027. The short term projects were estimated to run for a period of 4 years (2011 to 2015), the medium term projects for a period of 4 years (2016-2020) and the long term project for a period of 6 years (2021-2027). The earmarked projects in the master plan were to be implemented by the different ministries and other stakeholders in municipality.

4.1.9. Awareness on the existence of urban planning tools in Bamenda I Municipality (Urban Master Plan and Other Planning Documents).

Four urban planning tools exist in Cameroon (the Urban Master Plan, the Land Use Plan, the Urban Sector Plan and the Areas Plan). The Urban Master Plan (UMP) is the most important as it embodies all the other three planning tools (Ndi et al 2017). It guides the development and allotment of land use in and urban areas and as such, an essential document in the sustainable development of an urban area. Despite the importance of this document, it was disheartening to observe that, majority of the urban dwellers in Bamenda I municipality are not aware of its existence. Field data revealed that, 53% respondents were not aware of the existence of the Bamenda master plan as against 42% that were aware.

Out of the 42% who were aware of the existence of the master plan, a majority of them testified that, they have never been sensitized or seen a copy of this master plan. They only hear of it existence from council officials when they pass around their construction site to stop the construction. Since the abandonment of the old master plan till 2014, Bamenda existed without any planning document. Based on this observation, it is clear that the haphazard and disorganized developments carried out in Bamenda I municipality today is largely as a result of the ignorance on the existence of the recent master plan and the non-implementation of the old master plan as shown in (table 16).

Table 16: Awareness of urban planning tools in Bamenda I municipality.

Yes	No	No idea
42%	53%	4%

Source: Field survey (2021)

Table 16 present respondent response awareness to urban planning tools. Results from the table shows that a percentage of the respondents in the field answered yes with 42% of the respondents standing on this view and 53% of the respondents in the field rejected this view that there are not aware of urban planning tools in Bamenda I municipality while only 4% of respondent stood on the view for no idea for reasons best known to them. The researcher foresees that some of them are ignorance of sprawl in the study area.

4.2. Evaluation of the 2012 Bamenda Master Plan

This section evaluates the relationship (match or mismatch) between developments and the Bamenda master plan. An integrated approach based on the different land uses will be used to compare the match or mismatch of development and the master plan. Reasons responsible for the match or mismatch will also be advanced.

4.2.1. Residential Areas

Residential areas in the town are mixed with other land uses. A total of 77.9% of the total urban space of the town is proposed for residential purposes (PDPBC, 2012). The master plan earmarked the different quarters of the town to be used for residential purposes which match

with the field realities. All the quarters of Bamenda like Bamenda-nkwe, Menda-kwe, Ntafebu and some places in Up-Station are proposed for residential purposes because Bamenda1 is a multifunctional municipality sharing residential function with other function with other functions like administrative, religious and educational functions. These quarters are all used for residential purposes as proposed in the plan and as such matches with the master plan.

The probable reason for the match of some residential areas with the master plan is because, residential function is highly compatible with other land use functions like administrative, religious, commercial, and educational function. Equally some urban dwellers of the town actually consult the city authorities and follow up all necessary administrative procedures like obtaining a land title and building permit before carrying any developmental project on their land. During the field study, it was discovered that some people had land titles and building permits to confirm this. However, buildings in most authorized residential areas of Bamenda I do not appear in an organized manner as there do not follow a precise order and layout and as such sprawl.

4.2.3. Un planned commercial area

A total of 1.5% of urban land in Bamenda is proposed in the master plan for commercial activities. Commercial land uses in the town include buildings and offices used for business transactions and professional activities. Commercial activities in the master plan of the study area is restricted to the CBD, district Centre, markets, motor parks, shopping center, Neighborhood Centre and corner shop spaces. As such, commercial land use greatly matches with the master plan of the Municipality as shown in plate (4 A and B).

Plate 4 A and B: Presents Bamendakwe motor park and Bamendakwe market

Sahfe, 2021   Sahfe, 2021

4A Bamendakwe Motor park   4B Market of Bamendakwe

Plate 4A and shows the market of Bamendakwe where goods are being distributed from various quarters of the Municipality and sole. A majority of agricultural goods comes from Abangoh Central, Menda-kwe, Nta-afi and most quarters of Bamendakwe. Also some imported cargo from Yaoundé, Douala and even Nigeria are also being sole there, as a result, Bamenda1 market serve a good number of people in terms of agricultural activities with it motor park that help to distribute good in all direction of Bamenda town and even out of Bamenda.

4.2.4 Communication Network

The major communication land use in Bamenda1 is road network. The master plan has classified urban roads in Bamenda I municipality in to: regional roads, primary distributor roads, secondary distributor roads and collector or access roads. Regional roads are major roads that provide access in to the urban area and linkages with other regions. They are classified as N6 roads and have been designed for dual carriageway purposes (PDPBC, 2012). Primary distributor roads are roads linking other towns and suburban areas in to the city Centre and are linked to regional road. Secondary distributor roads are roads linking primary distributor roads and neighborhoods within the town. These roads are 6-7m wide side drains. Collector roads are those that link secondary distributor roads and homes or business places. They are design to convey

traffic from the secondary distributor roads and distribute to home and business places. Plate 5 show a cross section of the different categories of roads prescribes by the master plan.

Plate 5 A and B: Cross section of different categories of roads prescribed by the master plan

Sahfe, 2021	***Sahfe, 2021***
Roads network in Up-station	**Roads network in Abango Ntasha**

Plate 5A, Represent the Up-Station hill as regional road which runs from Station to pass through mile 3 to Bambili and continue as the main ring road to Nkambe. Then we also have (plate 5A) which represent the main Quarter road in Abangoh Ntahsa which is being used for transportation of some agricultural activities to the market and also since the new quarter is still growing in terms of population thus it necessitated the demand for new buildings as seen in the plate (5B).

However, some road axis in Bamenda I municipality does not respect planning. They exist some narrow collector roads linking some residential houses in some sprawling neighborhoods like Abangoh that are less than 7meters wide plate (4B). This is a direct contradiction of the Master plan part 1, Chapter 4 (1) of the 2004 town planning law in Cameroon which state that 'Urban renewal and expansion shall be approved for building purposes only where it is served by a public or private road of at least 7 meters wide except specially prescribed by town planning documents or by the Mayor of the council concern'.

4.3. Urban agriculture and planning problems

4.3.1 Agricultural Activities

According to the master plan, land for urban agriculture should be large enough to accommodate the growth and development of crops. Livestock areas should also be large enough for the animals to be raised in a fenced and gated area. Farming in the town according to the plan is restricted in areas prone to erosion, densely populated areas, flood plains that do not have adequate setbacks in the river channel or banks and farming activities that result to risky health and environmental degradation.

Unfortunately, some of the agricultural activities taking place in Bamenda I municipality like Bamendakwe and Abangoh do not respect planning as seen in plate (6 A and B).

Plate: 6 A and B. Shows some agricultural activities that do not match with planning

Sahfe, 2021   Sahfe, 2021

6A) Agricultural activities in Bamendankwe.   6B) Some agricultural activities in Muyu Quaters

Plate 6 (A and B) Shows some unplanned agricultural activities that is taking up space in Bamendakwe area and Abangoh Central, most of the crops cultivated here are mainly for home

consumption with little of it being sole in Bamendakwe main market, also plate 6b indicate location of the Quarter head residents, in Alahnting 1 Quarter Compound in the study area.

4.4. Strategies used by the Population and local Planning Policies

In order to meet the problem of urban sprawl, local planning policies can be quite effective. This means that municipalities take efforts that people stay in cities and do not settle down in suburbs or rural areas.

This can be accomplished by increasing the living quality in cities compared to suburbs. This may include improving public transport or ensuring a higher quality of education so that people are happy to stay in the cities.

4.4.2 Building permit limits

Another way to confine sprawl is to set building permit limits in suburbs. This is an easy but yet quite effective way. If these limits are quite strict, they lead to a significant reduction in urban sprawl since people are simply not able to build their homes in restricted areas.

Therefore, more people are likely to stay in the cities instead of moving to suburbs. Moreover, by setting strict building permit limits, it is likely that the prices for buildings in suburbs increase. This makes it even more favorable for people to stay in the cities instead of moving as shown in (Table 17).

Table 17: Presents Strategies of Urban Sprawl in Bamenda I municipality

Quarters of Bamenda I town	Sensitization	Building permit	Land title
Abangoh Central	17	2	1
Abangoh Ntahsa	10	2	2
Abangoh Ntangang	11	1	3
Achichum	7	3	1
Alahnting	6	2	1
Aningdoh	2	1	2
Ayaba	8	8	7
Nta'afi	3	7	3
Ntanche	4	2	3
Bamenda-kwe	18	12	10
Menda-kwe	9	9	5
Ntafebuh	7	2	1
Totals	**102**	**51**	**39**
Grand total	**192**		

Source: Fieldwork June 2021

Table 17: presents strategies of urban sprawl in Bamenda I municipality quarter by quarter which shows that sensitization is one of the best strategy with 102 respondents accepting that sensitization is the only way to prevent sprawl in the field and building permit with 51 respondents, land title 39 of the respondents stood on the facts that building permit and land title are measures that can be used to solve urban sprawl problems in the study area.

4.4.3. Urban growth boundaries

Another related measure is urban growth boundaries. This means that a specific area is an area inside the boundary is used for urban development while the area outside the boundary is used for agricultural or other purposes, but not for settlement.

By using these boundaries, urban sprawl can be effectively mitigated since it is clear in advance where buildings are permitted and where they are prohibited.

4.4.4. Tax inversion

Local authorities can also use tax discrimination in order to fight urban sprawl. This means that municipalities could charge fewer taxes on certain services if people live in cities compared to suburbs.

This may also include the tax on housing. If taxes are lower in cities, people have a stronger incentive to stay or move there.

Moreover, authorities may also charge higher taxes on fuel to make commuting less attractive. This will also make the city life more attractive compared to suburban life.

4.4.5 Land acquisition by local governments

Another measure against sprawl is a land acquisition of local authorities or governments. Through the acquisition of land, these authorities have control over how this land is used in the future. By acquiring land in suburbs or rural areas, authorities may prohibit the building of houses in these areas and rather make them available for reforestation or farming purposes.

4.4.6 Reduce the number of private car ownership

A rather unpopular but quite effective way to reduce the problem of sprawl would be to reduce the number of private car ownership. Setting limits for the overall number of cars that can be registered would give people the incentive to stay in the cities since they have not the necessary mobility to commute to work.

4.4.7 Higher taxes on fuel

Urban sprawl could also be mitigated by raising the price of fuel. This could be accomplished by setting higher tax rates. Through the increased price of fuel, people would have an incentive to reduce commuting. This in turn would mean that it becomes more attractive for people to stay in or move to cities instead of living in suburbs.

4.4.8 Higher taxes on change in land use

If people own pieces of land that they now want to use for housing purposes, they have to get a permit for the change in land use. These changes in land use could be taxed at a higher rate so that it would become more unattractive for people to turn their agricultural land into housing land. This may in turn also mitigate the problem of urban sprawl to a certain extent.

4.4.9 Increase residents share of infrastructure costs

Infrastructure costs in rural areas are likely quite high since all sorts of infrastructure has to be provided to a relatively small number of people. Thus, the cost of infrastructure per person is usually much higher than in cities. A measure that would mitigate this problem and would also lead to less urban sprawl is to increase the resident's share of these infrastructure costs. On the one hand, the costs for municipalities would be reduced. On the other hand, also the incentive for people to move to rural areas or suburbs would also be reduced.

4.4.10 Assure affordable housing

Housing prices are a big issue, especially in big cities. It is quite common that people are not able to afford a house with an average income in these areas. Thus, people have the incentive to leave and settle down in areas with lower housing expenses. Local authorities may therefore subsidize living in these areas in order to prevent people to leave.

4.4.11 Education

Education is an important incentive for people to stay in the cities, especially for families with young children or also for students. If the level of education is much better in cities, people will have an incentive to stay or move there. Hence, local authorities have to make sure that the education level in cities is better than in suburbs in order to make people stay in the cities. Urban sprawl can have significant severe consequences on our daily lives and also on the environment. There are several measures that can be taken in order to mitigate this problem. In general, governments and municipalities should give people the incentive to stay in the cities.

If people have a high living quality in cities and are also able to afford to live there, there will be no reason to move to suburbs and thus the problem of urban sprawl can be confined.

4.5. Conclusion

Hypothesis 4 states "participatory strategy plan can solve/reduce effect of urban sprawl in Bamenda1Municipality". To verify this hypothesis, data on respondent's awareness on the existence of urban planning tools (the master plan and other urban planning documents) in Bamenda I and the relationship between urban planning and observed ground development (matching of actual urban landscape with urban planning tools) is used (Chebe P 2019) working on urban sprawl and planning in Bamenda town.

Table 17 present respondent response awareness to urban planning tools. Results from the table shows that a greater percentage of the respondents in the field answered yes with 53% of the respondents standing on this view and 42% of the respondents in the field rejected this view that there are not awared of urban planning tools in Bamenda I municipality while only 4% of respondent stood on the view for no idea for reasons best known to them. The researcher foresees that some of them with ignorance of sprawl in the study area.

Further findings revealed that some developmental project in Bamenda I municipality do not match with urban planning tools. They exist residential houses in some restricted areas of the town like on the hill slopes of Abangoh and Bamenda-kwe escarpment that do not match with the master plan. Even commercial activities like the street vendors along the Up-Station road, industrial activities like motor garages and furniture workshops all over the town were observed not to match with the provisions of the master plan. This is an indication of poor implementation of urban planning regulations that have subsequently resulted to urban sprawl in Bamenda I municipality.

Apart from ignorance of the existence of urban planning tools and their ineffective implementation, findings further revealed that, some urban dwellers construct houses over night without the knowledge of council officials, which do not respect town-planning regulations. Others who are aware of these regulations refuse to respect them for selfish reasons. Based on this, hypothesis 4 which states that; "participatory strategy plan can solve/reduce effect of sprawl in Bamenda I municipality" is accepted and validated.

GENERAL CONCLUSION AND SUGGESTIONS

Introductions

This study concentrates on the contribution urban sprawl and its effects on the socio-economic development of the Bamenda I municipality. In an attempt to sufficiently diagnose the problem stated which is based on urban sprawl and related challenges, relief defies that has influenced the spatial growth of the town, socio-economic implications especially on the health sector, educational sector, touristic site, crop cultivation and food security. A general research objective and three specific ones were set. These objectives had as main goal to evaluate how far urban sprawl has implicated the socio-economic development of Bamenda I municipality. Data on the extent to which the objectives of the study have been attained is presented in the four chapters of this study. This same data is use for the testing and validation of the stated hypotheses.

5.1 Summary of findings

Objective

Finding of the objective one which was to show that rapid population growth and rural exodus are responsible for sprawl in Bamenda I municipality. Bamenda I municipality has witnessed a significant increase over the years from 3368 in the 1976 to about 28359 in 2015 (BUCREP 2005 and population projection) due to population growth and rural exodus. This increase in population has contributed to the expansion of the municipality in to risky environments (Bamenda escarpment, and hill slopes of Abangoh) and the outskirts of the municipality.

Findings also revealed that socio-economic factors are responsible for determining urban growth in Bamenda I municipality with (35%) among others, and employment stands out to be one of the first socio-economic reason while people settle in the study area with a percentage of (29%) as shown in figure (6). And distribution of household by principal occupation also shows the same thing. Furthermore, field observation revealed that political factors, demographic, religious and cultural factors play a very important role as far as population growth and rural exodus in Bamenda I municipality is consent.

Findings further revealed that, many in-migrants that swells the urban population of Bamenda I municipality, comes in search of job opportunities. Most of them end up with mean jobs in the private sector with low income. With such marginal income, they cannot afford houses or land in planned residential neighborhoods because of high land and house values. They finally end up in ecologically marginal areas where cost of housing and is cheaper leading to uncontrolled developments. This is evident with the types of houses found in such risky sprawling quarters. In Bamenda escarpment and Menda-kwe, houses have simple architectural designs which are less durable. Given the fact that sprawl continue unabated over the years especially in ecologically fragile areas, it can logically be inferred that, the evolution of Bamenda I municipality is accompanied by a persistent increase in sprawl.

More so findings revealed that the nature of urban sprawl in Bamenda1Municipality consist of low density sprawl, leap frog development and urban expansion which really shows expansion of the Municipality right in to suburbs areas of Bamenda I municipality. Sociodemographic/socio economic characteristics of the study participant also plays a very importance role in analyzing sprawl in Bamenda I municipality.

In addition to that, field observation revealed the trend of rural exodus from a general view to specific, classification of groups of people who come in, their age group, place of work, their profession and the relationship that exist between rural exodus and sprawl in Bamenda I municipality. So all in all is that these factors have greatly contributed to population growth in Bamenda I municipality there by leading to sprawl.

🞤 Objective 2

The second objective was to examine the direction of sprawl movement in the expansion of the municipality. To know the direction using the satellite image as revealed in questionnaire with a good number of respondents accepting that urban sprawl is mostly taking place in the North and South of the municipality.

Findings also revealed that, development trends in Baamenda I municipality has witnessed a significant change in its land cover/land use over time over time. Comparing the situation of 1990 and 2020 land cover/land use maps of Bamenda I municipality, one discovers a drastic increase in the build-up area from 13.16% in 1990 to 29.22% in 2020 at the detriment of water bodies (2.25% to 1.20%) forest (10.83% to 31.20%) bare surface (22.55% to 19.74%) and savannah grassland (15.22 to 18.63) which all witnessed a significant increase and drop. Such an

increase in build-up and forest space at the detriment of other land cover/land uses is a great testimony of continuous expansion and subsequent increase in sprawl in Bamenda I municipality.

Some of the physical factors also contributed to direction of sprawl with climate as the best factor for determining direction of sprawl in Bamenda I municipality among others. This is because most of the population will like to settled in areas where they is good climate and fertile soils for the cultivation of crops, Bamenda I municipality stood out to have a good climate. Drainage, relief and vegetation also counts as one of the physical factors determining human settlement in Bamenda I municipality.

More so findings also revealed that many people are living towards the direction of sprawl zone in the study area because of personal residents and as a result as the family continuous to more and more people becomes victims of living in such areas. Other reasons like low cost of land, nearness to job site, inherited land, family ties and social ills also played a big role in determining the direction of sprawl in Bamenda I municipality, but personal residents is the most influential factor.

Objective 3

Objective 3 was to evaluate the effects of sprawl to the socio-economic development of Bamenda I municipality. According to respondents in the field, a greater majority of the respondents says that sprawl in Bamenda I municipality has led to a lot of development since most of the newly arrive are settling nearly every day toward the suburbs and this has led to infrastructural and socio-economic development in the study area such as openings of Clinics centers, schools, construction of roads and buildings of houses.

Furthermore urban sprawl effects in Bamenda I municipality entails the following poverty concentration which has really been affecting most people in the peripheries of the study area, increase in energy consumption due to the fact that as more people are spreading towards the suburbs area the more energy is consumed, level of education, employment rate and sector of employment, income level of inhabitant, increase in pollution, environmental effects, loss of agricultural land, deforestation, roads maintenance, occurrence of landslides, loss of natural vegetation, increase soil erosion, rugged and steep topography, and land dispute. These are most of the effects observe during field investigation that are predominant in the study area.

More so 189 respondents stood for the fact that if the problem of sprawl in the next 10 years is not solve, Bamenda I will still be unplanned and the phenomenon will continue but if solve the reverse will be true.

- **Objective 4**

Objective 4 was to assess the various planning strategies used by the population to withstand urban sprawl effects. Due to findings on the field 53% respondents accepted that sensitization will be the best strategy to eliminate the effect of sprawl from Bamenda I municipality. Furthermore, others talk of land title and building permit to avoid buildings of houses near hazardous areas, but notwithstanding, 68% of the respondents says that they are not aware of the existing urban planning tool in Bamenda I municipality. Bamenda I council continuous its measures to limit the problem of sprawl in it area. The implementation of urban planning laws in relation to urban sprawl is sub-optimal in Bamenda I municipality. Findings revealed that, urban planning in Cameroon has passed through two main phases (in line with the two master plans of Bamenda I municipality). The first law on town planning and development in Cameroon was enacted in 1973. This law called for the development of master plans in all urban areas to guide developments. As a result, Bamenda I municipality conceived its first master plan in 1981 and adopted it in 1985. Unfortunately, with the economic crisis of the late 1980s 1990s, the government of Cameroon instead of galvanizing efforts towards ensuring the effective implementation of the master plan, her attention was now tilted towards fighting the economic crisis. This led to neglecting and abandonment of the master plans of Cameroon including that of Bamenda I municipality leading to an increase in sprawl in the town.

In 2004, the 1973 law on town planning and urban development in Cameroon was revised through the enactment of law No 2004/003 of April 2004 governing town planning in Cameroon. This law was supplemented in 2008 by 5 decrees laying down rules on developing documents governing urban planning in Cameroon and calling on all urban areas in Cameroon to develop new master plans governing developments in their area. This call was responded with the development of a new master plan for Bamenda in 2011, published in 2012 and adopted in December 2014 guiding developments in the municipality.

It was so discouraging to observe that, the implementation of these town planning regulations is sup-optimal in Bamenda I municipality with over 68% of the population not aware of the existence of urban planning regulations, 31% ignorant of the existence of urban planning

tools in Bamenda I municipality (master plan) and 26% not having building permits in the different sprawling neighborhoods visited during the field study. The few who were aware of these regulation refused to respect them for selfish reasons making the non-respect of town planning regulations rife in sprawling neighborhoods. this has resulted to the haphazard and disorganized development in the town today. The implementation of urban planning regulations in Bamenda I municipality are thus, flawed and considered to be sub-optimal with the end result being urban sprawl.

Findings also revealed that, the inhabitants of the different sprawling quarters have developed different management strategies to curb the sprawling problems in these areas. These management strategies include; financial incentives, building permit limits, urban growth boundaries, tax discrimination, land acquisition of local governments, reduce the number of private car ownership, higher taxes on change in land use, increase residents share of infrastructure cost, assure affordable housing, tolls, and education. Land dispute is settled through negotiations or in courts like local courts of Bamenda1high court. Based on these findings, it was concluded that urban planning deficiencies is a function of problems of sprawl in Bamenda I municipality.

5.2 General Conclusion

Urban sprawl in Bamenda I municipality is a crucial phenomenon of socio-economic changes manifested through increase in secondary and tertiary activities as well as expansion of the municipality. This has resulted progressively to population growth and a corresponding increase in the demand for housing. Bamenda I is a primate Municipality in the North West region and plays an important role as an engine of growth with a plethora of opportunities which it offers and has attracted migrant from the surrounding rural areas and towns. As population increase, there is a corresponding increase in the demand for housing.

The researcher carried out a spatial and temporal analysis in the direction of sprawl in Bamenda 1 from 1990 to 2020 which clearly helped in tracing the growth and expansion of Bamenda1. The social infrastructural development, land use and cover map and interpretation at all point to the fact that Bamenda1 has undergone remarkable changes which are both positive and negative as some land/cover grew at the expense of others. Built-up areas more than doubled, forest cover increased slowly especially on the steep slopes, farmlands, savannah and wetland witnessed a steady decrease in their area coverage. The increase in built-up area was

seen through infrastructural development such as increase in housing, schools, hospitals, churches, hotels, roads and markets which have attracted changes more people and caused an increase in the demand for housing.

The researcher carried out a close examination on urban sprawl effects and socio-economic development in Bamenda I in which environmental, loss of agricultural land, deforestation, in favor of build-up areas; occurrence of landslide stands out to be the major effects of sprawl in the study area. Also, there has been lots of socio-economic development in Bamenda I.

More so, population adaptation to sprawl planning strategies and effects in Bamenda I with all the stakeholders involved in urban planning and the implementation of urban planning laws and the Master plans in Bamenda I should be a focal point to both the government and the city council of Bamenda. Also all the strategies used by the people and local planning policies should be taken seriously in to consideration because it is these strategies that can solve the problem of sprawl.

In a nutshell, the situation of urban sprawl in Bamenda I municipality is largely as a result of inadequate policy implementation and enforcement, insufficient flow of information to the population and the old traditional form of land acquisition. To curb sprawl and improve the sustainable growth of the study area through planning is a major call for concern.

5.3 Recommendations or Suggestions

Based on the findings, the following recommendations are suggested. The recommendations have been proposed to the different planning authorities involved in town planning and housing development. This include the Ministry of Decentralization and Local Development (MINDEVEL), MINHDU, MINDCAF, MINFI (Ministry of Finance), Ministry of Employment and Vocational Training (MINEFOP), The Ministry of Mines, Water and Energy (MINEE), the City Council and the Sub-Divisional Councils. All of these recommendations may help to reduce sprawl and improve the sustainable growth of Bamenda I municipality if enforced by these public authorities.

5.3.1 The Elimination of all Forms of Rural-Urban Bias to Reduce Migration

MINDDEVEL should eliminate all forms of Rural-Urban bias through the regulation of market prices of rural products, provision of social facilities and services available in the

Bamenda I municipality to the surrounding rural areas. Furthermore, rural development strategies should be geared towards the improvement of agriculture, creation of agro-processing industries, the improvement of rural-urban transport and communication network, education and training programs innovation diffusion, rural participation in rural development projects, provision and improvement of social facilities such as water, health care services, schools amongst others. This will go a long way to reduce rural-urban exodus and rural urban migration thereby reducing the pressure on housing and services aggravated by rural exodus in Bamenda I.

5.3.2 Effectiveness Decentralization

MINDDEVEL should ensure effectiveness of the decentralization process through the transfer of power, finance and human resources from the central government to the municipal authorities (BCC and the sub-divisional Councils) and the corporation of other groups like Non-Governmental Organizations, Common Initiative Groups, Communities and companies towards sustainable housing practices. Effective decentralization will empower municipal authorities and encourage inclusive community base planning methods. To achieve this, there should be clear demarcation of powers between the Regional Delegate, the Senior Divisional officers, the Divisional officers, the Government Delegate of the BCC and the Municipal Councils. The municipal councils should be granted more financial and technical support to freely identify priority projects within their community and effectively execute these projects. With effective decentralization, the foundations are laid for greater inclusion of people in decision making that affect their lives and their immediate environments. This can be done through participatory approach which enhances transparency, equity, reduction of corruption and the influence of the privileged in the society. Effective decentralization simplifies bureaucratic procedures and increases greater transparency and genuine accountable to local populations. This will significantly enhance the effective implementation of housing and town planning regulations.

The implementation of effective decentralization is not a solution to local corruption but is a step towards building more accountable and transparent decision-making in the housing sector. Also, the flexibility of municipal authorities in making decisions which concern the grassroots communities without constantly waiting on the central government minimizes delays in project implementations.

5.3.3 Economic Development

The Ministry of Finance (MINFI), Ministry of Small and Medium-Sized Enterprises, Ministry of Employment and Vocational Training (MINEFOP) should provide incentive to support small businesses, make use of the forward and backward links from the housing sector which can generate jobs to the unemployed, create more formal jobs to integrate the unemployed. This will go a long way to reduce poverty, crimes and increase income levels which will assist the urban poor from residing in sprawl zones.

The new master plan of Bamenda town is enshrined with sound planning policies that can reduce the rate of urban sprawl if effectively implemented. The issue of good paper work but poor ground execution in Cameroon like the case of the 1985 Bamenda master plan that was neglected and abandoned is the problem. Good policies are always developed in the country but their implementation is a problem. Most of the short term projects earmarked in the new master plan to be executed from 2011-2015 are still to be realized like the resettlement of inhabitants of Bamenda escarpment which has been realized. Unfortunately, construction of new house is still on-going in these risky neighborhoods yearly. If the authorities of the City Council and MINDHU effectively implement the new master plan and prevent further settlement in these risky quarters, a sustainable growth may be achieved in the town.

5.3.5 Diverse methods for sensitization of town planning regulations and the master plan

Findings revealed that many urban dwellers in Bamenda town have little knowledge on the existence of urban planning regulations and the master plan. The development of diverse methods for sensitization of population on urban planning regulations and the master plan like the use of mass media communication (Radio and Television programs on the City Council projects and policies), City Council publication like a magazine containing their projects and policies and organization of community base seminars especially to those in risky environment may help reduce the rate of sprawl in Bamenda1.Thus the BCC and MINDHU who are the main actors in urban planning needs to step up their methods of sensitization so that the population can be aware of their plans and policies.

5.3.6 Educating the population on urban planning norms

NGOs CBOs and traditional rulers can help to reduce sprawl by educating the population on the ills of the disrespects of town planning regulations and the dangers associated with sprawl.

It is recommended that, NGOs and CBOs in the field of planning should organize regular seminars and sensitization forums especially with the population in restricted areas to educate them on the ills and dangers of living in restricted zones. This may help limit sprawl in Bamenda I.

5.3.7 Appropriate Land Use on Hazard Prone Zones

The sub-divisional councils should clearly identify hazard prone zones and restrict development according to exposure, reference hazard zones in building regulations and emphasis on structural requirements. The use of remote sensing and GIS techniques in the development of hazard mapping, which differentiate geographic zones in terms of expected hazard event, frequency and intensity, is highly recommended. Such maps should be developed for landslide hazards as an input for any disaster risky reduction measures and activities. Hazard maps should be produced and disseminated to guide both the private and the public in decision making concerning risk zones and to formulate risk reduction strategies. Such information is very important as it helps in identifying and prioritizing areas highly vulnerable to hazards. Hazards mapping should also reveal priorities for retrofitting and relocation. In order to preclude informal land invasions or pressures for housing development, alternative uses for hazardous areas should be defined (such as urban agriculture, park and recreation) and exploited.

The planning authorities should ensure that on steep slopes, houses should be located at a certain (specified) distance from the foot of the hill so that debris and rocks do not bury the houses during landslides. Meaning that building permit or land certificate should not be granted for any housing development before the specified distance.

The reduction of landslide impact on vulnerable areas should be done through the construction of a trench at the foot of the hill which can accommodate these loose materials during disasters, this should be followed by planted vegetation which will serve as a buffer, then a road for easy access and easy evacuation before the development of settlements. Creeping plants should be used to prevent erosion and the planting of trees to act as barriers during heavy rainfall should be encouraged.

NGOs and CBOs in the field of planning can also reduce sprawl by developing urban development projects that limits urban sprawl. Projects like creating a community forest especially in restricted areas. Planting trees in the outskirts that acts as a green belt can be carried out by NGOs. Equally, traditional rulers may reduce sprawl by redressing the traditional land

tenure system to encourage equitable distribution of traditional land and filling of the town. The traditional land tenure system contributes to the haphazard utilization of urban space and forces some urban dwellers to engage in sprawl. It is thus recommended that, NGOs and CBOs should create community projects and the traditional authorities to fight sprawl should revise traditional land policies.

5.3.8. Simplify Acquisition Procedure for Town Planning Documents

To reduce the complexity involved in the process of acquiring land certificates and building permits which are prerequisite for adequate housing, the existing town planning laws and regulations should be reviewed and revitalized by MINDCAF, MINHDU, BCC and Sub-Divisional Councils.

The administrative authorities should ensure that the procedure for the acquisition for the acquisition of town planning documents should be realistic, by ensuring a clear demarcation in the allocation of responsibility between the different institutions, since speed, low cost, clarity simplicity are important to ensure compliance and efficient implementation. There should be consistency in the regulatory framework in order to avoid contradiction with the town planning laws, master plan, land use plan and sector plans.

A well-formulated framework should be drawn that will streamline fragmentation of functions, legal procedures and simplify regulations so as to ease the process of acquiring land certificates and permits. A "One Stop Shop" should be formulated by MINDCAF and MINDHU to streamline the bureaucratic process of acquiring land certificate and a building permit. This will reduce the time and money collected by intermediaries who extort money from the housing developers and will encourage them to conform since they can get these documents by going to just one office rather than shuttling within many offices.

There should be more horizontal inter-sectoral coordination and accountability among the actors involved in issuing land certificates and building permits.
Information Communication Technology (ICT) should be used to increase the efficiency in the acquisition of housing development documents (successful in Nairobi, Kenya, and Rwanda).

This can be achieved through with the electronic applications of land certificates. This process should begin with capacity building and training of staff so that they can effectively apply this technique. This system will streamline the application process and make it more

transparent, since applicants will be able to track the progress of the application online. This method will reduce the unofficial fees paid to corrupt officials and intermediaries.

The use electronic software will increase the efficiency in the building permits and land certificate acquisition, follow-up, inspections and monitoring of construction on hazard prone areas. Since force eviction does not address the problem of haphazard housing development, proper electronic follow-up will reduce such development. This process should begin with capacity building and training of staff and stakeholders (City Council and sub-Divisional Council) involved to be able to effectively apply this technique. This is to streamline the application process and make it more transparent and less complex. This method will reduce the unofficial fees paid to corrupt officials and intermediaries

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Urban designers use this method to analyse environment at the area scale. Through this approach, we can observe phenomena such as crime and transport behaviours based on objective and subjective measures (Maier et al. 2006).

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APPENDICES

THE UNIVERSITY OF YAOUNDE 1
****
FACULTY OF ARTS, LETTERS AND SOCIAL SCIENCES
****
DEPARTMENT OF GEOGRAPHY
****

UNIVERSITE DE YAOUNDE 1
****
FACULTE DES ARTS, LETTRES ET SCIENCES HUMAINES
****
DEPARTEMENT DE GEOGRAPHIE
****

A SURVEY QUESTIONAIRE

My names are Sahfe Eric Wongbe, matricule number 19Y780 faculty of Arts letters and social sciences, department of Geography collecting information on urban sprawl and its effects on the socio-economic development of Bamenda1municipality. The questionnaire is strictly for academic purpose and any information provided will remain confidential. Your collaboration to this effect will be very instrumental in improving the socio-economic development of Bamenda1municipality as well as research in Cameroon universities.

Questionnaires on urban sprawl and its effects on the socio-economic development of Bamenda1municipality.

Instructions:Answer the following questions by marking (X) in the bracket.

IDENTIFICATION OF RESPONDENTS

1 in which Sub-Division do you reside?Bamenda1 ( ) Bamenda II(   ) Bamenda III (   )

2 Sex: Male (   ) female (   )

3) Age group? 18-25 ( ) 26-45 ( ) 46-65 ( ) 65+ ( )

4) Marital status: Single (   ) Married (   ) Divorced (   ) Widow (   ) widower (   )

5) Are you a believer? Christian ( ) Muslim (   ) pagan (   )

6) Educational level: Never been to school (   ) F.S.L.c. (   ) O/L ( ) A/L ( ) 1st Degree ( ) others (   )

7) Are you employed? Yes (   ) No ( )

8) If yes?private (   ) or public (   )

9) About how much is your monthly income?less than 35000frs ( ) 35000-50000frs ( )   51000-100000frs (   ) 101000-250000frs (   ) above 250000frs (   )

10) What is the nature of your accommodation? Rented (   ) Personal (   ) Communally owned Government owned   Others, Specify……………………………………………………..

REASONS FOR URBAN SPRAWL IN BAMENDA 1 MUNICIPALITY

11) What are factors responsible for determining urban growth in Bamenda1Mun Socio-economic ( ) Demographic ( ) Political ( ) Cultural ( ) Religious ( )

12)Which Socio-economic factor contribute the most to urban growth in Bamenda1Municipality? Family ties ( ) Employment ( ) Business opportunities ( ) Education ( ) Improvement in transport facilities ( )

!3) Distribution of household by principal occupation? Farming ( ) Small trade ( ) Business ( ) Civil servant ( ) Semi/unskilled ( )

14) Has education contributed to the growth of Bamenda1Municipality? Yes ( ) No ( )

11) Do you have any idea of urban sprawl in your area? Yes (   ) No (   )

12) If yes from which year did the municipality recognized the spread of urban sprawl? 1960-1969 (   ) 1970-1979 (   ) 1990-2008 (   ) 2010-2021 (   )

13) Has there been increasing number of jobs in the suburbs of Bamenda1municipality? Yes (   ) NO (   )

14) what of wars?is it civil or inter-ethnic? Yes (   ) No (   ) specify

15) Has Rapid population and rural Exodus contributed to urban sprawl in Bamenda1municipality Yes (   ) No (   )

16) if No, what are the other factors?water and air pollution (   ) increase traffic and Jam (   ) others (   ) all of the above (   )

17) Has improvement in infrastructure, low price for public transportation system, commuting networks and access to appropriate housing contribute to urban sprawl in Bamenda1municipality? Yes (   ) No (   )

18) As a native of Bamenda1municipality, do you think other factors can be responsible for urban sprawl in Bamenda1municipality?Yes (   ) No (   ). Specify………………………

19) what is the nature of urban sprawl in Bamenda1municipality? Low density sprawl (   ) leap frog development (   ) urban expansion (   )

20) Is ribbon settlement and automobile dependency other forms of urban sprawl in the Bamenda1municipality? Yes (   ) No (   )

Direction of sprawl in the Bamenda1municipality

21) What is the direction of Satellite image telling you of urban sprawl in Bamenda1 municipality? North ( ) East ( ) West ( ) south ( )

22) If North how is it expanding North? East ( ) North west ( ) North East and North W

23) Can you identify that there is sprawl in this area? agree ( ) Disagree ( )

24) As a native of Bamenda1municipality, do you foresee that in the nearest 10 years urban sprawl direction will be rampant towards the North? agree ( ) disagree ( )

25) How do you feel when unauthorized urban sprawl takes place in Bamenda1municipality?satisfy ( ) not satisfy ( )

26) Is urban sprawl also taking place towards the south in the Bamenda 1 municipality? agree ( )   disagree ( )

27) Can sprawl towards the north east, lead to future development? agree ( ) disagree ( )

28) What made you to reside in sprawling quarters of Bamenda1Municipality? Personal residence ( ) Low cost of land and houses ( ) Nearness to job site ( ) Inherited land ( ) Family ties ( ) Social ills of the city ( )

29) Do you hope to return permanently to your area of origin? Yes ( ) No ( )

30) How long have you lived in the Municipality? from birth 1980-1989 (   ) 1990-1999 (   ) 2000-2015 ( ) 2016-2021 (   )

SECTION B : EFFECTS OF URBAN SPRAWL IN BAMENDA1MUNICIPALITY

31) Have there been poverty concentration since the beginning of urban sprawl in Bamenda1 ? Yes ( ) No ( )

32) Do you think urban sprawl have contributed to the development of Bamenda1muunicipality? Yes ( ) No ( )

if yes how?

33) Have there been reduce agricultural space in Bamenda1municipality? Yes ( ) No ( )

34) How is the situation of crime wave in the Bamenda 1 municipality? good ( ) bad (   ) worse (   )

35) Have they been changes in social life since you arrive Bamenda1municipality? Yes ( ) No ( )

36) How is the economic condition of Bamenda 1? good ( ) better (   ) worse ( )

37) Is they shortage of financial resources in Bamenda1municipality? Yes ( ) No ( )

38) Have you witness any change since you arrived Bamenda1municipality?positive ( )
Negative ( )

39) How do you perceived Bamenda1municipalty in the next 10 years if the problem of urban sprawl is not solved? Planned ( ) Unplanned ( )

40) Is pollution and traffic congestion affecting the indigence of Bamenda1municipality?
) No ( )

SECTION C URBAN SPRAWL STRATEGIES IN RELATION TO PLANNING OF THE BAMENDA1 MUNICIPALITY

41) Is sensitization the best strategy of urban sprawl in Bamenda1municipality? Yes ( ) No ( )

42) Does the Bamenda city council know of this problem? Yes ( ) No ( )

43) If yes what measures have been taken by them to solve this problem? Sensitization ( ) Building permit ( ) Land title ( )

44) Can revitalization of existing urban centers and towns helps to preserve the existing natural environment, thereby reducing urban sprawl? Yes ( ) No ( )

45) Are you aware of the existence of urban planning tools like the urban master plan of Bamenda? Yes ( ) No ( )

46) Was your community and other stake holders consulted in the development of urban planning regulations? Yes ( ) No ( ) No idea ( )

47) Is your house having a plan approved by the Bamenda 1 council? Yes ( ) No ( )

48) Has new urbanism turn existing communities and neighborhoods in to districts? Cleaning up polluted and dilapidated areas? Yes ( ) No ( )

49) Is your house registered? Yes ( ) No ( ), if No why is it not registered ? Authorities refuse to register ( ) Have no money to register ( ) Expensive to register ( ) procedure to register too complicated ( )

50)what role does the city council play in combating urban sprawl in Bamenda 1 municipality? Dispatch councilors to the field ( ) Dispatch council agents in quarters (

UNIVERSITE DE YAOUNDE I
UNIVERSITY OF YAOUNDE I

FACULTE DES ARTS, LETTRES ET SCIENCES HUMAINES	FACULTY OF ARTS, LETTERS AND SOCIAL SCIENCES
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ATTESTATION DE RECHERCHE

Je soussigné, **Pr. PAUL TCHAWA**

Chef du Département de Géographie, atteste que

Monsieur : **SAHFE Eric WONGBE**

Matricule: **19Y780**

Est inscrit(e) au cycle de : **Master II (2020/2021)**
Spécialité : Dynamiques Urbaines et Rurales.

Et prépare une thèse sur le sujet: **Urban sprawl and its effects on the development of Bamenda I municipality.**

A cet égard, je prie toutes les personnes ressources et tous les organismes sollicités de lui réserver un bon accueil et de lui apporter toute l'aide nécessaire à la réussite de cette recherche dont la contribution à l'appui au développement ne fait pas de doute.

Fait à Yaoundé le...**04 MAI 2021**......

LE CHEF DE DEPARTEMENT

Le Chef de Département

Clement Anguh Nkwemoh
Associate Professor (M.C)
University of Yaounde I

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