



Urban Planning Challenges and Prospects in Nkambe Town, Northwest Region of Cameroon

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JGEESI/2020/v24i530230

Editor(s):

(1) Dr. Teresa Lopez-Lara, Autonomous University of Queretaro, Cerro de las Campanas S/N, Col. Niños Héroes, 76010 Querétaro, Qro, Mexico.

Reviewers:

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(3) Guoming Du, Northeast Agricultural University, China.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/51401>

Original Research Article

**Received 14 July 2019
Accepted 19 September 2019
Published 15 August 2020**

ABSTRACT

For over three decades or so, urbanisation and urban development alongside urban planning have become a cardinal issue to urban dwellers, government institutions and professionals in the developed and developing countries. It is in this regard that this paper examines urban planning challenges and prospects in Nkambe town. The growing population of Nkambe like in other emerging Cameroonian towns suffers from the problem of socio-economic and environmental problems and need adequate urban spatial planning. Field surveys, observations, interview with the administration, questionnaire administration, interviews and on-the-spot appraisals constituted the main data sources. Three focus group discussions were carried out which was complemented by secondary sources. The results indicated that the driving forces of urban disorder were population increase manifested through inadequate enforcement of its plan, non-respect of building codes, poverty and limited houses with potable drinking water, business conflicts, inadequate health facilities, and increasing crime waves. The study recommended that there is a need for a change of mentality of the Nkambe man towards an awareness that the town has its carrying capacity and when overstretched could lead to devastating respond in an undesirable manner probably in future.

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Keywords: Urbanization; urban challenges; planning; sustainability; Nkambe town.

1. INTRODUCTION

Urbanization is one of the most significant land-use trends of the past and present century, providing the foundation and momentum for global land use and environmental changes. This dramatic shift towards urban life has profound implications for socio-economic lives, politics, and human progress as well as the environments. The process of urbanization upon society is such that society gives way to urban institutions, urban values, and urban demands [1,2]. The urban environments are a combination of social and built environments. The concept of urban is, at root, a place-based idea [3], Weeks et al., 2004.

In Cameroon, urban places are considered based on population size and political administration criteria. Thus, all places with a population of 2,000, 5,000, 10,000, or more and all sub-divisional, divisional and regional capital are considered urban [3]. Urban growth is considered a complex phenomenon due to the strong interactions among different economic, social, environmental, cultural, and institutional components (Carolina and Montserrat 2017). Urban centres in Cameroon and elsewhere are expanding due to their capacity to generate income, contribute to national wealth, attract investments and create jobs. Within studies carried out in Cameroon, nobody has investigated the population growth and infrastructural inadequacy as challenges facing urban planning in the emerging towns. It is the knowledge gap that this paper is out to investigate in the town of Nkambe. Sustainability of urbanization requires planned development of these urban centres, competent institutional frameworks put in place and there should be proactive management and governance strategies. Thus, urban planning is an important tool to guide the growth of urban areas [4,5,6].

Most towns in Cameroon, such as the Nkambe, have outgrown their socio-economic infrastructures and, as a result, drinkable water is becoming scarce, sewage is not properly disposed of, plan housing is hard to find, transportation is inadequate, and electricity is just only sporadically available [7]. While urban centres face major problems, they are also powerhouses of economic growth and catalysts for inclusion and innovation (UN, 2016; [3]).

Urbanisation is the key factor underpinning and catalysing changes in land use, land transactions, increased rural-urban immigration and the overall poverty increase [5]. The increase of urban population leads to changes in the life style of the people, where land used for farming is changed into different land uses including housing and institutional development. Such a scenario presents many challenges necessitating the need for the implementation of sound urban planning regulations, a condition sine qua non for effective urban environmental management [3,8,1]. Urban planning is a deliberate ordering by public authority of the physical arrangements of towns to promote their efficient and equitable functioning as socio-economic units and to create an aesthetically pleasing environment (Sutcliffe, 1981 in Ndi et al., [1]). Urban planning ensures that there is a place for every worthwhile activity while keeping away noxious activities from residential areas, thus protecting and safeguarding the integrity of the urban environment [9]. It usually supports the growth pole strategy for most developing countries [10] which, sometimes, are implemented through the establishment of plantations [11,12].

Nkambe as an emerging town grows from developed urban nodes undergoing some form of physical infrastructures alongside socio-economic transformation in respect to infrastructural development, increased access and range of public and private services, concentration of institutions since it is an administrative divisional headquarter among others; subsequently giving rise to population explosion and over-exploitation of natural resources [5,3], Parsimeigitau, 2011. For economic development to occur capital must be invested in such things as education, health, roads or infrastructure, a difficult proposition in Nkambe, where poverty impedes the ability for governments and individuals to invest. The town of Nkambe conflicts with itself in the business sector. Because of inadequate spatial planning, parking and public places are altogether insignificant. The urban growth in this area is synonymous with business/pedestrian/vehicular/animals/cyclists and related spatial conflict, which has grown from bad to worse as urbanisation, continues to grow. The conflict often intensifies during market days and most especially in the evening rush hours when the urban dwellers and its environs' working-class

converge with local and visiting activities (business men).

Therefore, urban planning is a foundation, as it is the need to comprehend and anticipate urban land space changes. The effectiveness of urban planning regulations as a tool for urban space planning and management is more of theory than a practice in Nkambe. In a bid to ensure urban sustainability, the government of Cameroon instituted a number of legal/regulatory instruments (*Law No 2004/003 of April 2004* regulating Town Planning in Cameroon and *Law No 96/12 of 5th August* relating to Environmental Management) to serve as an interactive discourse and compromise in sustainable urban planning and management [1]. These regulatory laws were expected to serve as light to the existing urban problems and urban environmental stability (sustainability). Despite the existence of these robust laws, urban environmental, social and economic problems continuously exist, leading to a contradiction between the goals to urban planning and urban sustainable management. Solving these urban problems remains for a comfortable margin of tolerance to be drawn between urban planning and urban users [5], Parsimeigitau, 2011 alongside its management in Nkambe and elsewhere in Cameroon.

Some literature carried out on the town and elsewhere were focused on issues like land and water management [13], and an appraisal of the urbanization process (Nformi, 2011), the efficiency of urban planning regulations on environmental management [14,1,15], urban planning and land management challenge [4], urban planning (Yango, 2014; [16]), Water Rationing [17]: urbanisation process: patterns, implications and prospects [3] and the implication of eucalyptus on water supply in Nkambe town [18]. This is an indication that there is a paucity of the ready-to-use studies and consolidated information for challenges and management of land in the town. Against this backdrop, this study is aimed at dealing with urban planning challenges and management practices in Nkambe town. Hence, this study on urban challenges, planning and prospects is intended to fill the knowledge and information gap in the implementation of planning and will also help urban administrators alongside other stakeholders involved in urban planning and management by providing valuable information

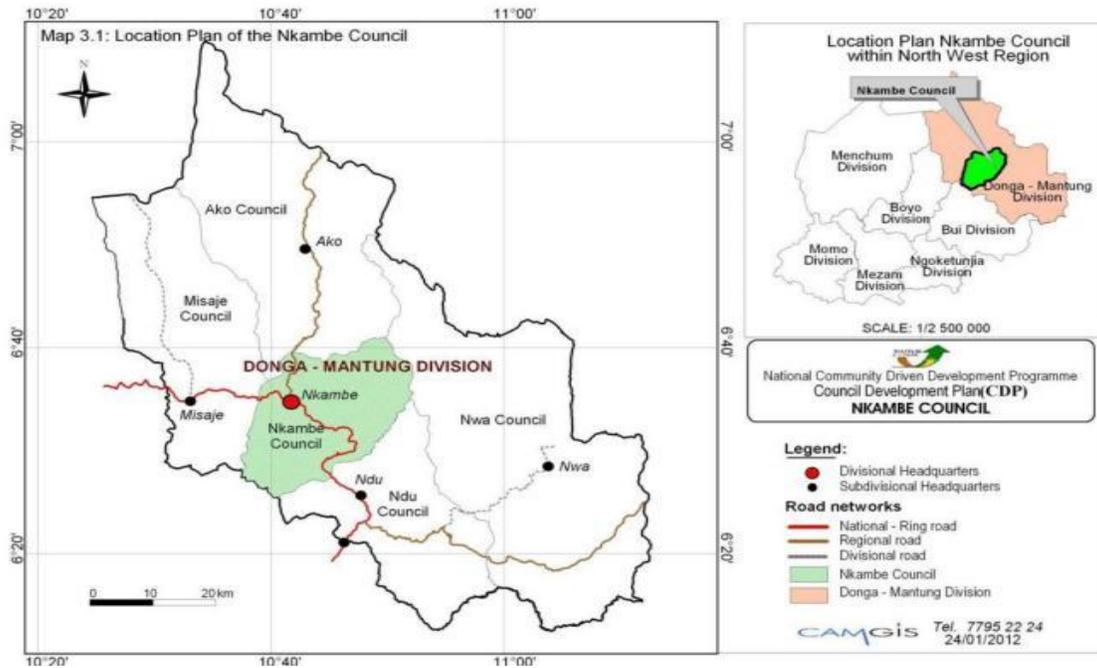
about the missing but important element. The unanswered question has to do with; what are the socio-economic and environmental problems facing Nkambe? How has urban planning regulations (town planning) been implemented in Nkambe? How can it be translated into concrete policy options with the integration of urban planning regulations to enhance urban space management?

2. MATERIALS AND METHODS

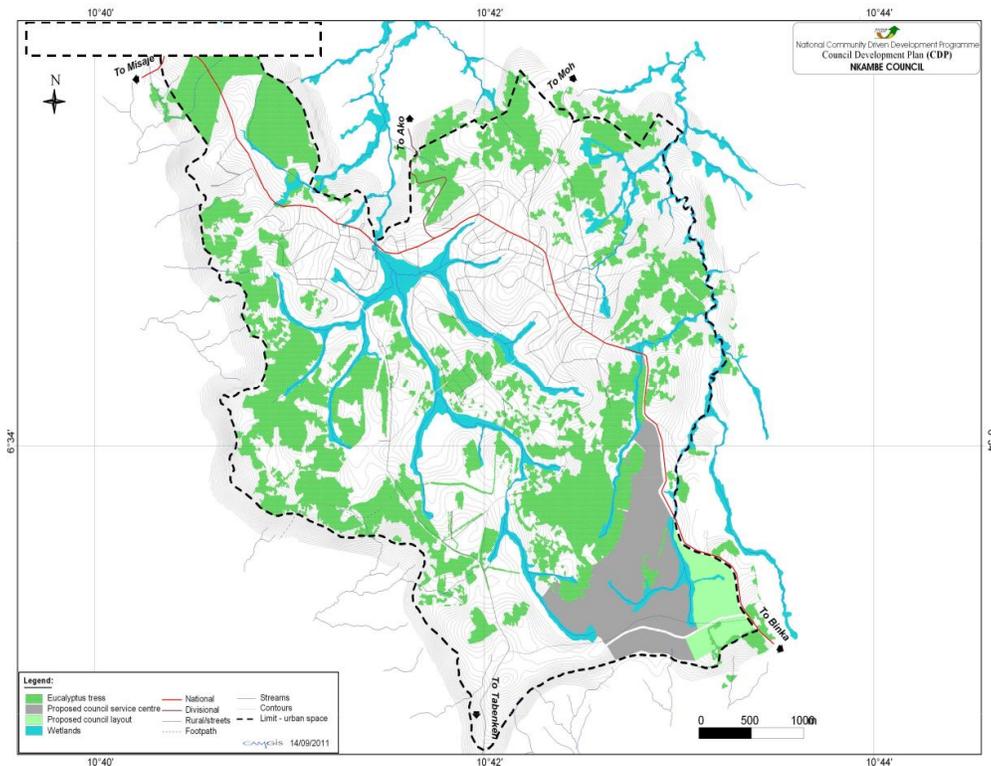
2.1 Study Area

Nkambe is one of the emerging towns of Donga and Mantung Division. Name Council was created by a colonial ordinance emanating from Lagos in 1946, but became operational in 1948; Nkambe Division then covered present-day Donga-Mantung Division. Nkambe is the divisional headquarters of Donga-Mantung Division. Nkambe Central Subdivision, which also harbours Nkambe Council, is found in Donga-Mantung Division. It is bordered to the west by Misaje, to the east by Nwa, to the north by Ako and to the south are Ndu and Noni Subdivisions. It has a surface area of 487.4 km². The municipality is situated between latitudes 6°00.7' and 6°01.13' north of the equator and longitudes 10°01.03' and 10°01.45' east of the Greenwich Meridian (Map 1 shows the location and layout of Nkambe) (source, Nkambe council, 2019).

Map 1 shows the location of Nkambe council area and its neighbours. Nkambe falls within the tropical region with the climate varying as influenced by the relief and seasons. In areas of high altitude like Binju, temperatures are low ranging from an average minimum of 12°C to a maximum of 16°C. The lowland areas like Kungi and Binshu have a warm climate with a monthly average maximum of about 27°C. In the dry season, the town is characterised by cold mornings and hot afternoons while the rainy seasons are generally warm. The area is marked by two main seasons; the dry and the rainy seasons. The dry season is usually shorter and runs from November to March while the rainy season lasts for a longer period (mid March to mid October) of the year. The rainfall is usually high in the area and varies between 1300mm to 1900 mm per annum (source, Nkambe, 2019).



Map 1. The location of Nkambe in North West and Donga-Mantung Division
 Source: Nkambe rural council, 2018



Map 2. Delimitation of Nkambe urban space
 Source: Nkambe Council, 2019

During the dry season, the harmatan winds are common ushering in cold dry winds. This wind blows dust onto houses causing colour changes alongside ill-health condition to the urban dwellers. The urban space consists of two zones; the urban and the peri-urban zones. The urban zone is made up of the present urbanised area of Binju, part of Moh, and Njema, part of Binshua; and Part of Kungi. The peri-urban area is the zone soon to be urbanised with the present moves to relocate the municipal and administrative services (Map 2). The Nkambe urban area is characterised by sandy loam soils in the highland areas, humus in the lowland and clayey soils in the wetlands. The highlands of the area are generally experiencing erosion which renders them less fertile. The sediments eroded from the highlands are deposited in the lowland areas, rendering them fertile. Some of the eroded soils close drains and forces runoff to gorge out during rainy season destroying earth roads of the town (Map 2).

The following criteria were used to delimit Nkambe urban space (Map 2). Physically; limitations to future expansion set by the steep slopes towards Ako and Misaje, the presence of alternative constructible land elsewhere, absence of steep slopes, swampy or flood-prone areas. Human aspect considered were the present lopsided location of administrative offices, and present built-up areas. Urbanisation trends consist of the ease of accessibility, the density of existing developments, decongestion of existing built-up area, and the possibility of administrative upgrading. Based on the common choice of the Nkambe Council, interview with the Lord Mayor of Nkambe council, the Divisional Delegation of Urban Development and Housing, the workshop with participants and focus group discussions, the urban space for Nkambe was delimited (Map 2) to consist of the following areas: Nkambe Town (consisting of Binju, part of Moh, and Njema); Part of Binshua; and Part of Kungi (Map 2).

2.2 Research Methodology

It was based on both primary and secondary sources of data set. The primary data was collected from questionnaires, direct interviews and focus group discussions with individuals who were directly related with planning, management, allocation of land (individuals from institutions, departments and the municipality responsible for town planning and management) and persons who have lived for long in the town; personal

observations and response to questionnaire administered to a sample of 100 household selected from the four quarters of Binju, Kungi, Binshu and Nkambe town. The sampling procedure was based on the data obtained from the Nkambe municipal council which contains a detailed Wimbum (neighbourhood) population. First, randomly, the four quarters of Binju, Kungi, Binshu and Nkambe town were selected. The numbers of households were determined by proportional allocation and were selected using systematic sampling. Based on the response rate, 100% of the total households of the study population were involved in the survey. Satellite image, land use and location maps were gotten using some Geographic Information System (GIS) software packages such as Google Earth, ENVI4.3, Global Mapper 15 and ArcGIS 10.2. Geographic Information System (GIS) and Global Positioning System (GPS) were also used wherein, satellite images (aerial photographs) gotten aided in the production of digitized maps for land use change analysis. The GPS helped in the location of special distribution of social amenities. The rationale for using visual images was to raise awareness on the state of socio-economic infrastructure through communicating messages and information effectively through the spatial representation of data. Secondary data were obtained from various institutions and offices like the Divisional delegate of town planning on the number of houses that had building certificates, land survey on land with titles, Regional Planning, Nkambe council and judicial police of Nkambe for urban crimes, health units for the number of health infrastructure, population statistics from Nkambe council and personnel present in Kambe town.

2.3 Research Procedure

The primary source of data collection began with a reconnaissance survey of the study area in January 2018. This gave the researchers the ability to understand the realities of the study area and to determine the tools of data collection and the target population. Field observations were undertaken in August 2018 and January 2019 for more detail analysis. During this period, photographs were taken on the field, which helped in portraying, urban planning challenges and the implications on development in Nkambe town. Data was collected through field respondents; interviewees organized under-structure and semi-structured questionnaire under sub titles like; causes; characteristic, challenges and implications of the study.

Observations from the field were obtained from December 2017 to January 2019 using GPS, satellite images and interview guides. The divisional delegates interviewed included that of urban planning, public works, water, mines and energy alongside that of health. Besides these delegates, the mayor of Nkambe, urban dwellers, traders and buyers were interviewed to better understand the management challenges and its implication on development. Land use and location maps were produced using some Geographic Information System (GIS) software packages such as Google Earth, ENVI4.3, Global Mapper 15 and ArcGIS 10.2. Google Earth was used to locate the study area where the GPS coordinate of its limits were obtained. These coordinates were later used to download raster and elevation data for the area as well as satellite images from the global land cover facility website. Land sat ETM+ image files of urban space were downloaded and the various bands were modulated and corrected to reveal towns, roads, farmland and other geographical features using global Mapper 15 to help reveal the road network, names of quarters and important socio-economic infrastructure found in Nkambe town. This image was later exported to global Mapper 15 where the visible features of interest were digitized and their shape files exported to ArcGIS 10.2 where they were assembled with the raster and elevation data to produce the land use map. The polygons representing the various parameters were then measured using ArcGIS 10.2 and computed using Microsoft Excel 2013.

3. RESULTS

3.1 Population Growth

In 1976, the official statistics of Nkambe town was 6,514 inhabitants. The urban area is a pull centre for various classes of people ranging from students, apprentice workers and workers of different institutions. The town has a high agglomeration of population. Nkambe central subdivision has a population of about 74,051 inhabitants according to the projections as of 2018 and with a population density of 151.93 persons/km square. Today, the town has a total urban population of 29,296 inhabitants (Nkambe council, 2019). The population of the urban space has been increasing from 6,514 (1976), 12,232 (1987) and 17,191 inhabitants in 2005 (Regional Service of Statistics Surveys North West Region-Bamenda, 2005). At present, the town has a total population of 29,296 inhabitant base on 2005 projections (Nkambe Council,

2019) (Table 1). For the moment, the urban space covers an approximate area of 1,899.05 hectares (Map 2). The urban space population is 29,296 consisting of 8,403 males (28.68%) and 20,893 females (71.33%) with an urban population density of about 905.27 persons/km² (Table 1) (Nkambe council, 2019).

The increase in the population of Nkambe town (Table 1) has been dramatic and such an increase inevitably translates to an increase in the demand for more social amenities like adequate housing with the result being the haphazard construction of buildings which are of poor quality and poorly planned. In the same line, there has been increasing demands of potable drinking water and electricity. With such astronomical population growth, both observed and expected, coupled with the phenomenon of urban poverty, the problem of securing adequate housing, having enough drinking water and regular electricity supply has been daunting to urban dwellers in Nkambe.

The rapid increase in the urban population (Table 1) has been influenced by high fertility rate and in-migration. The patterns of migration in most parts of the sub-division is rural exodus with the youths (adults) mostly involved alongside the transfer of civil servants into the town. In-migration from other regions is slow and involves civil servants of different works of life who have been posted into the town. Nkambe town has developed into an urban area with several educational, administrative, financial and private institutions constituting a pull factor. The presence of a growing civil service and private entrepreneurs have provided avenues for employment, thus pulling people into the town.

The emerging Nkambe town has become urban, not only as a result of population growth but also as a result of political influence. This settlement that was once rural was later upgraded to a divisional headquarters through government efforts to take administration closer to the people (decentralization). The rapid population growth of Nkambe has influenced its land cover to change. The urban space covers an approximate area of 197.03 (km²), out of which around 11.9% is covered with dense, open and gallery forest. Grass land including savannah is around 25.5%. About 43.9% comprises of wasteland with barren rocky areas, degraded rocks, land with or without scrub and sheet rocks. Agricultural land comprises about 16.1% of the

area and built-up area is almost negligible, a little more than 2.6%. Fig. 1 shows a comprehensive overview of the land use/cover of the council area.

In a planning sense, the town cannot be longer considered primarily as urban areas of migrants, but town of citizens; migrants and native born, whose concerns for basic needs are increasingly not being met [1, Cohen 2004, Amawa and Kimengsi, [17]]. A large proportion of modern sector jobs in the service industries, including government bureaucracies are not readily found in the town. Since population growth of Nkambe has been growing rapid and in excess of government and private expenditures, the availability of physical infrastructure and especially housing has lack well behind, resulting in the problems of overcrowding in public taps and squatter settlements (Fig. 1). The urban space (Fig. 1) has been growing spontaneously without the respect of the building code because the master plan has not yet been enforced. According to field findings on the economic drivers of land use, the responses were gotten as on Table 2.

This shows that although Nkambe town is an urban area (Table 2), more lands are being occupied by agriculture. A fundamental issue in land use/cover changes in Nkambe is how to preserve agricultural land. As the urban space keeps on growing, the unfortunate thing is that, there is no piece of land reserve for agricultural use although the urban dwellers need food. The researchers went further to investigate why urban dwellers keep on moving to water catchment sites despite restriction placed by the municipal council (Table 3). The respond obtained was summarized in Table 3.

According to field finding (Table 3) it was understood that 63% of the sampled urban population said limited agricultural land made them encroach into water catchment sites, 24% said it was because of fertile soils available in these areas and 13% said of an all year round water availability encouraging the growth of crops. This constant change in the urban space poses many challenges to town planning and future urban sustainability since the majority of these expanding areas are moving into marginal areas and agriculturally productive land.

Table 1. Population figures of the council

Villages/Year	2013	2014	2015	2016	2017	2018
Binshua	4.941	5.072	5.184	5.316	5.450	5.588
Kungi	3.409	3.499	3.576	3.667	3.760	3.855
Moh	1.181	1.212	1.239	1.270	1.302	1.335
Nkambe Town	16.375	16.806	17.180	17.615	18.061	18.518
Total	25.906	26.589	27.179	27.868	28.573	29.296

Source: Nkambe Council 2019

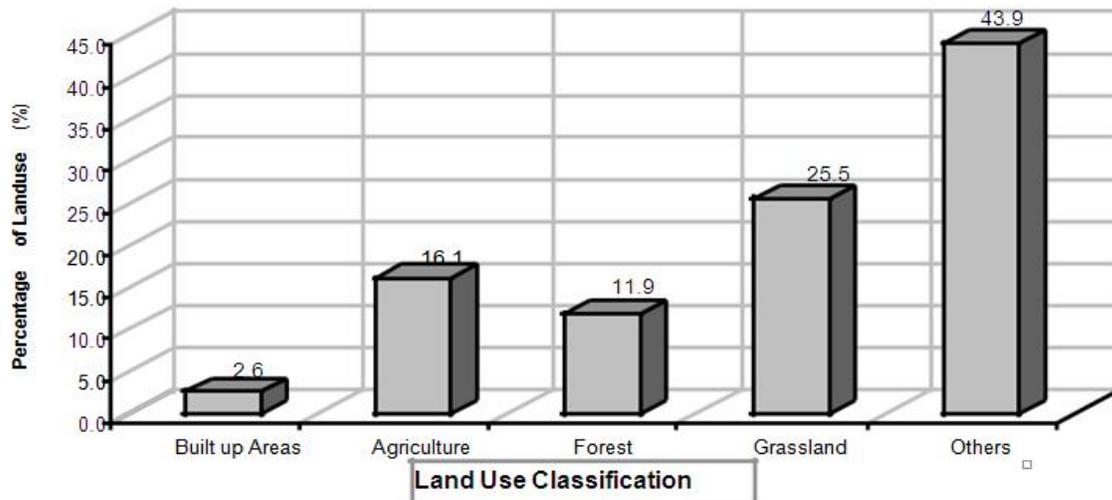


Fig. 1. Land use of Nkambe in 2019

3.2 Challenges of Urban Management and Sustainability

The urban population of Nkambe town is growing faster than its economy, socio-economic infrastructure and services. The local authority's in-charge of its management (Nkambe council) has limited resources and capacities to solve the complex and massive problems of the town. This is exhibited by the degrading physical environment, urban roads, shortage in potable drinking water and electricity, poor housing and overcrowding on some social amenities, low incomes and unemployment, and high rates of crime. Field finding (Fig. 2) revealed that, the challenges facing the proper urban management range from urban poverty (25%), rapid urban growth (30%), environmental degradation (10%), urban expansion (15%), inadequate resources (5%), poor urban governance and inefficient urban transport system (5%), and urban crime and insecurity (10%) (Fig. 2).

From this finding, the highest challenge facing urban managers in Nkambe is rapid urban

growth followed by urban poverty. The least being inadequate resources and poor governance (5%). Although recent observation is that, since 2016 till date, urban crimes and insecurity is increasing at a much faster rate (Siwar et al., 2016).

3.3 The Housing Situation in Nkambe Town

The housing development in Nkambe town is unplanned with most of the units being haphazardly (spontaneously) distributed across the town. There has been uncontrollable movement of people from rural to urban areas with resultant effects on housing. This led to the issues of house shortage, growth of informal settlements, and urban poverty. Slums are outcropping in most parts of Kungi, Binshu and Binchu because of rural-urban migration and engulfment of villages into urban space (40%), poor urban governance (5%), inequality (10%), insecure tenure and globalization (45%).

Table 2. The economic drivers of land use change

Economic drivers	Number of respondents	Percentage (%)
Agricultural activities	61	61.0
Exploitation of timber	18	18.0
Urban expansion	17	17.0
Construction of roads	4	4.0
Total	100	100%

Source: Field survey; 2019

Table 3. The reasons for increase encroachment on water catchments, and wetlands by the sampled population

Diverse reasons	Number of respondents	Percentage (%)
Limited agricultural land	63	63%
Fertile soils	24	24%
Availability of water	13	13%
Total	100	100

Source: Field survey; December 22nd, 2018

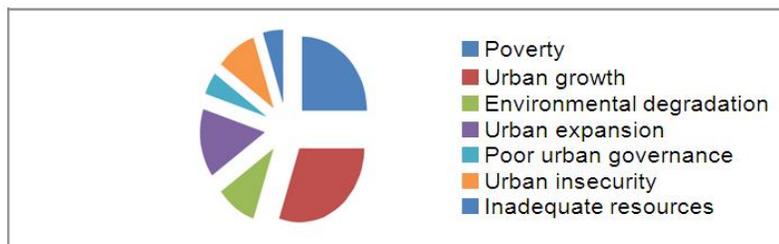


Fig. 2. Urban management challenges in Nkambe

Source: Field survey, December 2018

3.4 Markets and Traffic Challenges

The market in Nkambe town has problems ranging from poor infrastructure to environmental management. The existing infrastructures are in a horrible state, non-existence of latrines and water points and periodic markets which is timid due to bad roads. The road networks serving the town are characterized by poor surfaces, encroachment and blockage of feeder roads most especially on market days by sellers. In fact, during this survey, 70% interviewed rated the current state of roads within the area as very poor. Nonetheless, a number of roads in the area have been reduced to less than 9 metres, a phenomenon that is blamed on the intensive and extensive subdivision of land in the town alongside poor urban governance. Other illegal structures have also been erected on road reserves leading to obstruction causing vehicular and human traffic most especially on market days. Insufficient designed parking space in Nkambe have set the town to a collision course amongst businessmen and women. For instance, the motorists popularly known here as « Achaba » are left with no option rather than parking on roadsides, shop fronts because no space is provided for them; thus inconveniencing pedestrians, sellers and buyers of the town. These conflicts for space have led to increasing in personal confrontations and series of road accidents.

3.5 Challenges of Potable Drinking Water

Nkambe town is fortunate to have a rich abundance of water resources, while it is facing a growing range of water resource issues and challenges that are presently affecting its ability to fully enjoy the benefits of this resource. The town's steady economic and urban growth over the past decades has brought with it a wide range of water management concerns, demands and conflicts, and these are more complex than ever before. A major urban challenge in Nkambe is how to protect the environment and human health while meeting the growing demand for water and development that is driven by population growth and affected by climate variability and land-use change. Increasing demands for clean water, combined with changing land-use practices, ageing infrastructure pose significant threats to the water resources. Nkambe town is home to an ever-expanding population today which calls for the availability of an increasing amount of water. This remains a difficult task because water is not effectively distributed.

The town has pipe borne water from a natural catchment in the mountainous Kungi area. However, this catchment has dried off due to poor irrational practices around water catchment like farming and the introduction of exotic tree species (eucalyptus) that consume much water in the course of their growth. The problem of potable water supply as revealed from field finding has been intensified by lack of water in many quarters (20%), few wells and boreholes dotted in the town (30%) and lack of experts to manage this resource (50%). In Binju, Kungi and Binshu where water supply has few water catchments, accessing drinking water has become a great task for women and pupils. The problem here is two folds; low pumping capacity of the existing motorised pump and the distribution pipes that has grown old or is destroyed but the worse scenario being natural forest degradation in favour of eucalyptus. A major problem confronting watersheds in Nkambe town remains the increase in human population and land use mutations, which sets in to degrade watersheds. The implications on communities concerned are usually grave; the decline in water quality and quantity which translates into the upsurge of water borne diseases and a drop in agricultural production.

3.6 Health Care Challenges

Nkambe town has one district hospital; one health centre; three integrated health centres; two health posts and five private health centres with a total of 122 beds, five public pharmacies and a few private patent medicine stores (Divisional Delegate of Health for Donga/Mantung, 2019). These health facilities are unevenly distributed and some very far from majority of the population. These problems create negative effects on patients like long distances between health institutions which makes the health coverage very low, alongside inadequate personnel in most health units, inadequate equipment and infrastructure with insufficient budgetary allocations for healthcare by the various families. Due to the above situation and in order to be sure of services, the population moves to the Bansa Baptist hospital and Shisong hospital to assure proper medical care with scarce and limited financial resources.

3.7 Crime Waves

Crime is another problem plaguing Nkambe town. The fear of crime and violence continues to be pervasive in the town and is one of the top concerns in the lives of the citizens' every day.

Crime is a preoccupying issue in the town with a growth rate of 5%, above the average growth of 2.3% in the study area. According to the judiciary police sources (2018), the growth and expansion of Nkambe town has been accompanied by increase in crime waves. Crime victimisation surveys reveal that between 2015 and 2018, crimes registered by the judicial police varied from 1.117 to 2.180 cases. It involved motorbike theft, corruption, burglary and arm robbery, land disputes and money laundry. Today averages of 40 crimes are committed per month. In these scenarios, feymaniac represents 28%, gunshot aggression 26%, robbery at homes 16%, physical aggression 13% and others 17%. In the same line, money, electronic devices, mobile telephones and recently digital devices like laptop, computers and valuables in parked cars are objects targeted in several incidences with the rate of victimisation at 75% in the town. Workers of the informal and private sectors are the most vulnerable because it is believed they carry along money alongside these devices in their houses and cars.

4. DISCUSSION

In recent years, global urban population trends have affected urban land use and socio-economic infrastructure at town scale. Virtually every social, political, and economic problem facing towns today alongside Nkambe has links with demographic change as one of its root causes. This finding was also observed by Nformi (2011), Nfor et al., [13] and Ndi [18] in their previous studies carried in Donga and Mantung Division.

However, the universal declaration of human rights of 1948 recognizes the right to adequate housing as an important component of human right to adequate living. As continuing economic hardship forces a growing number of migrants to urban areas in search of employment and better life, an even greater strain is placed on urban pressure points like housing [3,2]. The urbanisation in Nkambe and the growth of spontaneous settlements are taking place at a scale that local councils and urban planners cannot cope with the demands for appropriate housing service delivery (UN- Habitat, 2016).

Today, potable water is not readily available in Nkambe town. Despite the advances made during the past 20 years, there are still challenges that continue to threaten the Nkambe's water supplies. The drinking water systems are stretched to serve an increasing

population, and the urban dwellers suffer from inadequate, outdated and/or neglected infrastructure [13]. The rampant electricity cuts disturb the effective pumping of water especially during dry season when there is often acute shortage of electricity. The serious shortage of water has also been attributed to the ubiquitous presence of eucalyptus forests as was observed by Amawa [19]; Ndi, [18]; Ndi and Amawa, [20] and Nfor et al., [13]. Water crisis in the town is not only in terms of shortage but also manifest in terms of long distant trekking mostly suffered by the already vulnerable population (women and children). In Binju, Kungi and Binshu quarters, streams have either ceased to flow or drop in volume in the dry season. There has been a considerable drop in the discharge of water into the collection tanks [13,21,19]. Dwindling groundwater is also felt by the Cameroon Water Utilities Company (CAMWATER). From an average of 2.79 hours in 1992, the number of hours increased to over 7 hours in 2004 representing a 150% rise in the pumping rate over a period of 12 years [21,18,20]. Cameroon's 1998 national water law fails to address some key principles of sustainable water resources management like effective stakeholder participation, and economic value of water [22]. There is no formal national water policy for the interpretation, application, and enforcement of water legislation.

Adequate healthcare is one of the very important milestones in the Sustainable Development Goals(SDG's) and as such, to have the patient /doctor ratio of 30400/doctor and a nurse standing at a ratio of 5067/nurse like the case of Nkambe leaves much to be desired and remains very far-fetched (MINPLAPDAT socio-economic report 2018). This problem is further exacerbate by the gap existing in the provision of health services like inadequate accommodation which are poorly furnished and equipped, limited capacity in terms of personnel and facilities and extremely large catchments areas for just three doctors.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The population of Nkambe town over time has been on the constant increase. This increase has been from natural growth and in-migration in to the town mainly of civilians alongside the engulfment of villages as urban centre's. This

increasing population does not tie with the socio-economic infrastructures posing a lot of planning challenges in the town. The foundation of our future rests at the intersection of environmental responsibility, social equity, and economic strength in our urban centers. Building community consensus is critical to successful urban planning, yet the effort is often fraught with challenges. Urban planners are on the front lines trying to solve these issues, yet they traditionally faced an uphill battle, armed with dated tools, analytics, and disorganized data. The town of Nkambe can only develop into a sustainable one if planned at this point in time, with a great concentration on the use of controls and planning, alongside greater concentration on residential, commercial and most especially transport and recreational land uses. Planning the urban land has become a serious challenge since it is the space where all activities are carried out. These conflicting business interest has made planning and administrative management very vital [4]. Unless institutions for the town and regional planning are made more effective, urban chaos will be the outcome in Nkambe.

5.2 Recommendations

The planning of socio-economic infrastructure should take into consideration articles 40(1) and 40(2) of section V of the Environmental Law No. 96/12 of the 5th of August 1996, which state that housing development plans shall take into consideration environmental protection and that urban centers shall comprise of recreational grounds and lawns in a harmonious proportion. To accommodate a growing population, Nkambe town will need to develop new places and reshape existing urban areas. It was understood that the master plans for Nkambe town (1977) has not been adequately enforce to achieve its primarily intended goals. However, attempts were made to guide the development and expansion of the town in the course of its development and expansion mainly allocating it for various functions; not for the intended spatial development. This is a clear testimony that urban administrators and management stakeholders of Nkambe town seem to be losing the battle of coping with effective urban planning as a result of non-respect of urban planning regulations. Therefore, man's ability to bypass the laws regulating town planning have brought about negative reverberations, that will soon usher Nkambe urban space into a frivolous path to profligacy if something is not done [1].

The engineering, management, maintenance and upgrading of the town's infrastructure requires fresh thinking to minimise use of materials, energy and labour while ensuring resilience. Such synthesis of understanding, sensor technologies and data management remains an important research challenge. There is a need to align the intended benefits of the regulators of infrastructure, service providers so that they combine to deliver the best overall outcome for the urban dwellers rather than focusing solely on the delivery of benefits from the single infrastructure system under consideration [6]. Coordination is needed between the custodians of the urban surface landscape (local authorities, private landowners, regulators, utility service providers) to avoid disconnected planning.

In order to improve the efficiency and effectiveness of the planning, urban space planning mainstreaming should be integrated into the whole planning process as it will enable more efficient planning of urban managers. There is the need to sustained implementation and enforcement of enacted laws of decentralization in Nkambe town. The recent decision taken by the central government to effectively decentralize local bodies by granting 100 million to all local councils in Cameroon is very timely but one thing which remain unclear is how this money will be manage for an effective project realisation (Ministry of Decentralisation and Local Development, February 2019). Strict enforcement and implementation structures should be developed by the authorities that be and defaulters punished according to the law alongside adequate monitoring and evaluation if Nkambe wants to become an emergent town by 2035.

The urban administrators need to exploit database on land use changes to plan for the current and future urban land uses in Nkambe as a major thrust in urban space management. This urban planning must integrate economic, social and environmental considerations now and in the future for the sustainable management of the urban space. Land use development rights like building permits and occupancy rights should be used as a tool for urban land use planning (Molombe, 2011 in Balgah, 2013). This urban land use planning and management must provide the greatest sustainable benefits, minimize land use alongside business conflicts and ensure a balance between land exploitation, land productivity, population growth and environmental sustainability.

There is the need to educate stakeholders on their participatory roles in effective and efficient water management, rehabilitation of existing stand taps and the establishment of a proper and befitting structure for managing them (Nkambe council, 2019). In terms of management, the ever growing population need new layout with well plan water distribution network. Water tanks need to be increased along increased extension of more water infrastructure like pipe and standing taps. The work equally stressed that, there should be a proper monitoring and evaluation strategies put in place to resolve issues from the evolving challenges of plan implementation and land management in the town. If Nkambe town has to emerge by 2035, urban legislation like the Master plan of 1977 most be updated and enforced and not just enacted. This document most solve problems instead of creating others like setting out unclear, unambiguous, comprehensive, reliable and well circumscribed rules for the sake of easy, inexpensive implementation and access by every urban land developer at any time.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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