

Urban overspill and its upshot to the Bafoussam Emergent Metropolis in Cameroon

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ABSTRACT

Unbridled urban sprawl in Sub-Saharan African cities reflects an infirmity that warrants both vaccination and treatment to curb urban disorder and its costs. This article divulges that rapid population growth, spatial expansion and economic activities are responsible for the urban overspill and its upshot in Bafoussam. Unplanned settlement from the rapid growing population has led to the development of slumps and reduction of arable land. A multi-spectral Landsat satellite imagery of 1988, 2001 and 2016 was used to determine the spatial expansion of the town over a period of 30 years. Field observation and interview sessions were done to have information on the proliferation of economic activities to the expansion of the town. An in-depth secondary data collection was done to gather information on the rate of population growth of Bafoussam. The data was processed to generate maps through the ArcGIS 10.4 and Adobe Illustrator CS soft wares and tables through SPSS 17 for results and analyses. Results from findings propound a significant increase in the built-up area of Bafoussam of 19.34% in 1988, 50.30% in 2001 and 79.41% in 2016. This increase was accompanied by a drop in the vegetation of 78.64% in 1988, 48.50% in 2001 and 20.07% in 2016. The built-up increase was provoked by a persistent rise in the population of the city from 62, 239 inhabitants in 1976 to 112,681 in 1987 and 282,800 in 2010. Industrial and commercial activities developed in the course of the twin increase and unfortunately with no control triggered urban disorder. This article advocates for a mandatory implementation of the urban norms in Cameroon to liberate Bafoussam from the drowning overspill syndrome plaguing Sub-Saharan cities.

Keywords: urban overspill, upshot, spatial expansion, population growth, economic activities, satellite image, Bafoussam.

With its administrative strength as headquarters of the Western region of Cameroon, coupled with the strategic geographic position, Bafoussam's urban state leaves much to be desired. This article seeks to address the spatial expansion of the Bafoussam city which has provoked urban anarchy and the development of slumps in the area. With the rapid increase in population and economic activities in the area, more people have come into the city. The new population that arrives find it difficult to have available settlement space in the city centre and are left with no choice than to occupy the peripheries. Faced with the nature of the terrain of the areas available and with the quest to survive the city huddles, this new population enhances spatial expansion through their temporary constructions. These temporary constructions gradually become permanent ones even without any legal ownership. Other economic and social activities such as markets, schools, health centres and roads come into play and increase the colonisation of the vegetation. This spatial expansion unfortunately takes place in a disorganised manner which has led to urban anarchy, reduction of arable space, deforestation and even land tenure conflicts observed in Bafoussam. It is in furtherance to this that this article seeks to address the problems accrued from unplanned spatial expansion and its consequences to the Bafoussam city. It is hoped that the results and analyses gotten from this paper will help to suggest possible solutions to the urban overspills and upshots observed in Cameroonian cities.

METHODOLOGY

Data collection was done through field observation. It permitted the capturing of photographs for presentation of results. In the course of this process, the Geographical Positioning System was used to locate anarchical neighbourhoods for map realisation. Some 247 questionnaires were distributed to households of the Bafoussam city to collect information on factors of attraction that have pulled the population into the town. A 5% sample of the total number of household of 4,955 inhabitants [5] was used to arrive at this result. Further field data through interview sessions with the municipal authorities and State administrators was done to have first-hand information on the steps taken to avoid such unplanned settlement in Bafoussam. In order to determine the spatial expansion of the city, satellite images for three different periods were used. The Landsat MSS for 1988, Landsat ETM for 2001, and Landsat OLI for 2016 satellite images were used. These images were chosen because of availability and possibility to have better results.

An in-depth secondary data collection was done to have information on the total population [3]. Statistical information on the economic activities and maps of the Bafoussam city were gotten from the National Institute of Cartography in Cameroon. Consultations at the level of the Bafoussam councils and the city council were done to have information on the growth of the city over the years. All these data from primary and secondary sources were treated through the ArcGIS 10.4 and Adobe Illustrator CS to generate maps for analyses. Furthermore, the SPSS 17 and Excel 2010 were used to treat statistical data used to generate tables and diagrams for analyses.

RESULTS AND DISCUSSION

Results from findings adhere to the fact that rapid population growth, spatial expansion and economic activities have triggered urban overspill and its upshots to the Bafoussam city.

Rapid Population Growth and its consequences in Bafoussam City

Population growth is the increase in the number of individuals in a population [6]. It is either determined by the increase in the birth rate over death rate or by the increase in the immigration

over emigration. This paper found out that the population growth of Bafoussam has been rapid over the years. Following the statistics of the third population census data of Cameroon in 2005 and its 2010 projections, Bafoussam was ranked as fourth city in total population after Douala, Yaounde and Bamenda (Table 1).

Table 1: Population and growth rates of some cities in Cameroon

Rank	City	Population	Growth rate from 1987 to 2005
1	Douala	1 907 479	4,7
2	Yaounde	1 817 524	5,7
3	Bamenda	269 530	4,9
4	Bafoussam	239 287	4,1
5	Garoua	235 996	2,8
6	Maroua	201 371	2,7

Source: BUCREP, 2005 and 2010 projections

There is no doubt from such statistics that the population growth rate of Bafoussam is on the rise. A more particular attention was focused on the population growth of Bafoussam and results showed that it has risen progressively for the past three decades (Table 2).

Table 2: Population Evolution of Bafoussam from 1976 to 2010

Years	1976	1987	2005	2010
Population	62 239	112 681	239 287	282 800
Growth rate	-	5,5	4,1	4,1

Source: BUCREP, 2005 and 2010 projections

Table 2 x-rays that the population of Bafoussam has increased by 218, 561 people in 34 years (1976 to 2010). This increase of course can be attributed to improved economic activities and development of social services. The Bafoussam city is noted for its dense and heterogeneous population [7]. Nevertheless, close to 75% of the people are indigenes while the rest are from other parts of the world. The city is made up of Bamileke, Basa, Beti, Mankon, Bansa, Muslims as well as Nigerians and Chadians distributed here and there [7]. This cosmopolitan population no doubt has come into the town because of its administrative characteristics as well its economic power in the West region. The increase therefore has provoked spatial expansion of the city.

Spatial expansion and impact on urban disorder in Bafoussam

Spatial expansion is the increase in the built-up space of an area into several directions provoked by population growth [8]. This process in most Sub-Saharan cities is triggered by rapid urbanisation and industrialisation. Results from field work in this paper revealed that spatial expansion in Bafoussam emanated from population growth and its administrative and economic shift. With the use of satellite images of three different periods, the land use / land cover evolution of Bafoussam for close to three decades was produced (Table 3).

Table 3: Land use / Land cover Evolution of Bafoussam from 1988 to 2016 in %

Land use / Land cover	Periods		
	1988	2001	2016
Built-up area	19.34	50.30	79.41
Vegetation	78.64	48.50	20.07
Water bodies	2.02	1.2	0.52

Source: Satellite Images of 1988, 2001, 2016

Revelations from table three connote that spatial expansion and built-up colonisation in Bafoussam was not rapid in 1988. The vegetation stood at 78.64% while built-up was 19.34%. Some few neighbourhoods for settlement such as Tchitchap I and II, Djemoun 1, Tougang village 1, and Kouogouo existed with a dense vegetation cover. The high dominance of vegetation over built-up stems from the fact that Bafoussam at that time was not yet the headquarters of the West region thus possessed less attractive opportunities. From 1988 to 2001, the city of Bafoussam experienced a dramatic population growth resulting from migration and natural increase [9]. This increase in over 126, 606 people (Table 1) led to the sprawling of the urban spatial setting of Bafoussam with remarkable consequences on the vegetation.

The built-up area increased from 19.34 to 50.30% in 2001, while the vegetation dropped from 78.64 to 48.50%. This spatial colonisation of the vegetation by the built-up area led to the increase in the settlement zones of the city as new unplanned urban neighbourhoods emerged. Bafoussam had now gained the status of regional headquarters [7], and thus served as an attractive pole to many. The land use / land cover situation of Bafoussam by 2016 revealed a tremendous colonisation of the area by built-up (Figure 2)

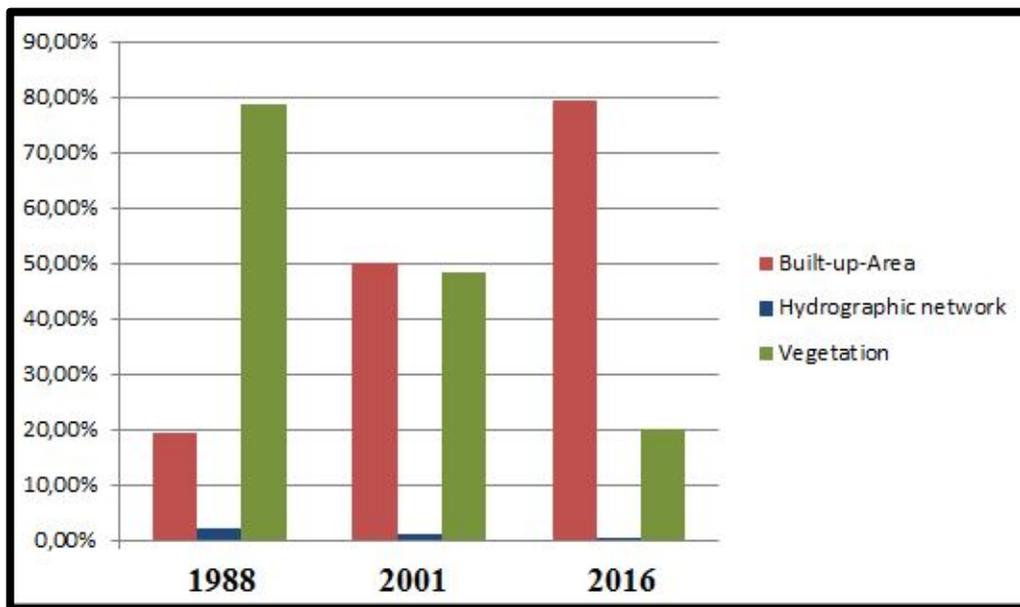


Figure 2: Built-up Evolution in Bafoussam from 1988 to 2016

Source: Satellite Images of 1988, 2001, 2016

The vegetation dropped enormously from 78.64% in 1988, to 20.07% in 2016, while the built-up increased from 19.34% to 79.41%. The city of Bafoussam experienced a rapid increase in its population which led to the occupation of land in all directions unfortunately in a disorganised manner. The three satellite images used permitted the appreciation of spatial expansion in Bafoussam which revealed that the built-up area has increased progressively over vegetation (Figure 3)

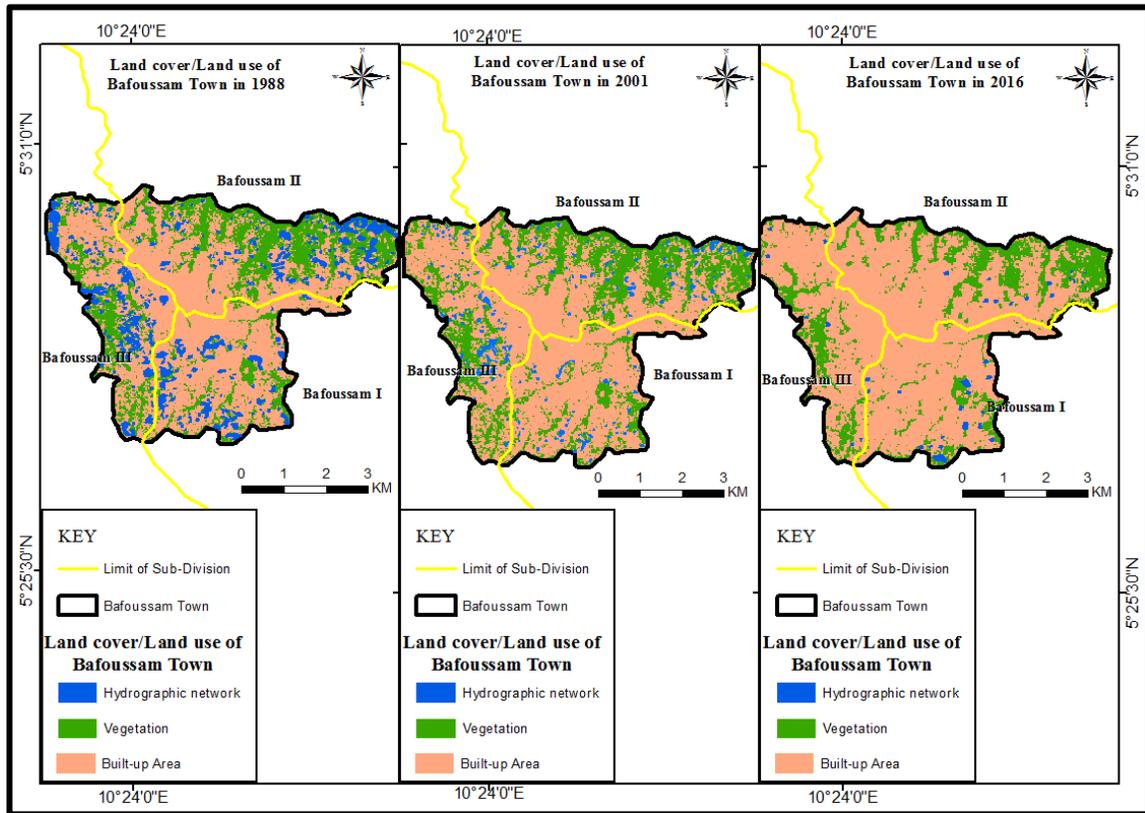


Figure 3: Land use / Land cover of Bafoussam from 1988 to 2016
Source: Satellite Images of 1988, 2001, 2016

The land use / land cover of Bafoussam showed that spatial expansion of the town has increased over time. The vegetation cover which was 3997.19ha in surface area in 1988 dropped to 1004.57ha in 2016, while the built-up area increased from 983.03ha in 1988 to 3974.70ha. The increase in built-up area was irrefutably accompanied by settlement which unfortunately was more unplanned. This urban disorder therefore led to the occupation of peripheries and even risk pruned zones in slumps. Results from the field propound that urban anarchy reigns in the city. The increasing population with the quest to enjoy city life and generate some income for their livelihood are faced with no choice than to settle in the available space without any legal authorisation.

Upshots of spatial expansion to the city of Bafoussam

Upshots of spatial expansion are the eventual outcome of expansion in an area [10]. In Bafoussam, several manifestations have occurred from spatial expansion which has affected the smooth urban state of the city. The development of slums and unplanned neighbourhoods in Kouogouo, Nguouache, Famla I and II is one of the consequences of spatial expansion in Bafoussam. The neighbourhoods are characterised mostly by the less privileged that do not have stable jobs as they are involved in

commercial and other activities for survival. With the inability to have available organised space in the heart of the city, they are left with no choice than to settle in swampy, sloppy and hydromorphic areas which are exposed to landslides and other urban hazards. Some of these neighbourhoods of Djemoun 1, Tougang ville A as well as Famla II are prohibited for settlement but are occupied by a majority of the urban scavengers [4]. They are exposed to severe soil erosion especially during the wet season and landslides (Plate 1).



Plate 1: Risk-pruned areas in the slump neighbourhoods of Bafoussam
Photo by Kengmeo, 2018

Plate 1 exhibits landslide in the Kouogouo south neighbourhood in A, and mudflow in the Toungang-ville in B with the risks involved. The valleys of these sloppy areas are as well occupied by the population and are vulnerable to floods with severe consequences. Neighbourhoods such as Kouogouo, Kena, as well the Baleng school areas are considered flood exposed areas of Bafoussam and thus vulnerable to health hazards [4]. Some neighbourhoods in Bafoussam through the city council such as Kamkop I, Kamkop IV, Kamkop V, Banengo and Ngouache II had been identified as risk zones with injunction built-boards placed as awareness. Unfortunately, constructions have filled these areas leaving the inhabitants at the mercy of natural and health hazards.

Some other consequence to this urban disorder is the difficulty to access urban social amenities. Access to good health facilities has become a problem to the inhabitants of Bafoussam and most especially those in the make-shift quarters. Field results revealed that some 30.52% of the inhabitants are unable to access health facilities. This is due to proximity difficulties as the health units are concentrated in the city centres of Mifi, Kamkop, Ndiandam and Banengo A. Other difficulties to access health facilities were poverty and overcrowding at the health units which leaves much to be desired. Further problems such as inability to access electricity energy supply, unorthodox waste disposal and access to portable water have therefore come into play [11]. The upshots have therefore contributed to the urban disorder found in Bafoussam, thus jeopardising its urban status which warrants serious checks.

The Influence of Economic activities to Urban Overspills in Bafoussam

Secondary and tertiary activities have had a great influence on spatial expansion and unplanned settlement in Bafoussam (Figure 4).

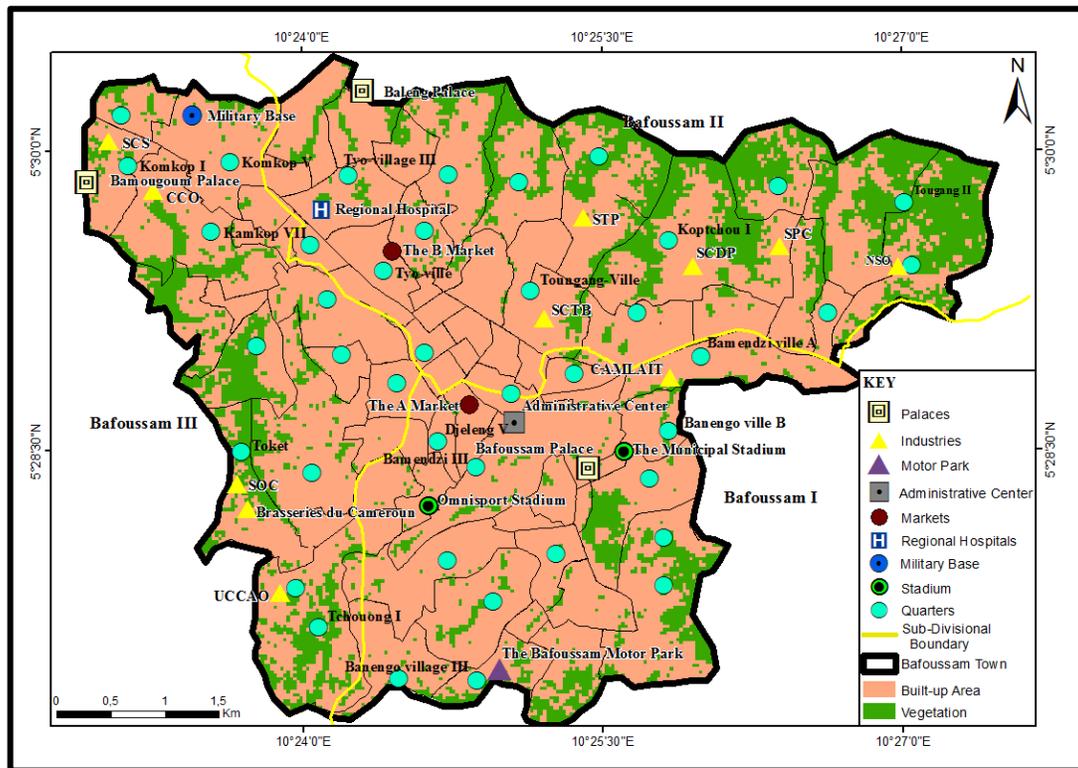


Figure 4: Economic influence to spatial expansion in Bafoussam

Source: Field work, 2018

Results from findings confirmed that the proliferation of industries, improvement in transport, tourism, markets and commercial expansion and administrative activities have influenced spatial expansion. Industrial activities from the Brewery, Agro-alimentary, soap and detergents as well as production and distribution of energy have attracted people into Bafoussam. Most of them are located around the peripheries of the city and have pulled the active population in search for employment and other minor trades. The migrant population has thus settled around these industrial zones thereby increasing the built-up area of the city. Furthermore, workers of the SCDP, ENEO, CAMLAIT, S.O.C, as well as SABC have settled in the city and increased the space.

The transport network in Bafoussam is very dense [4]. It can be classified into the highway that links Bafoussam to other regions, the secondary roads which link the various quarters of the city to the highway and the local roads and pathways further linking the quarters (Figure 5).

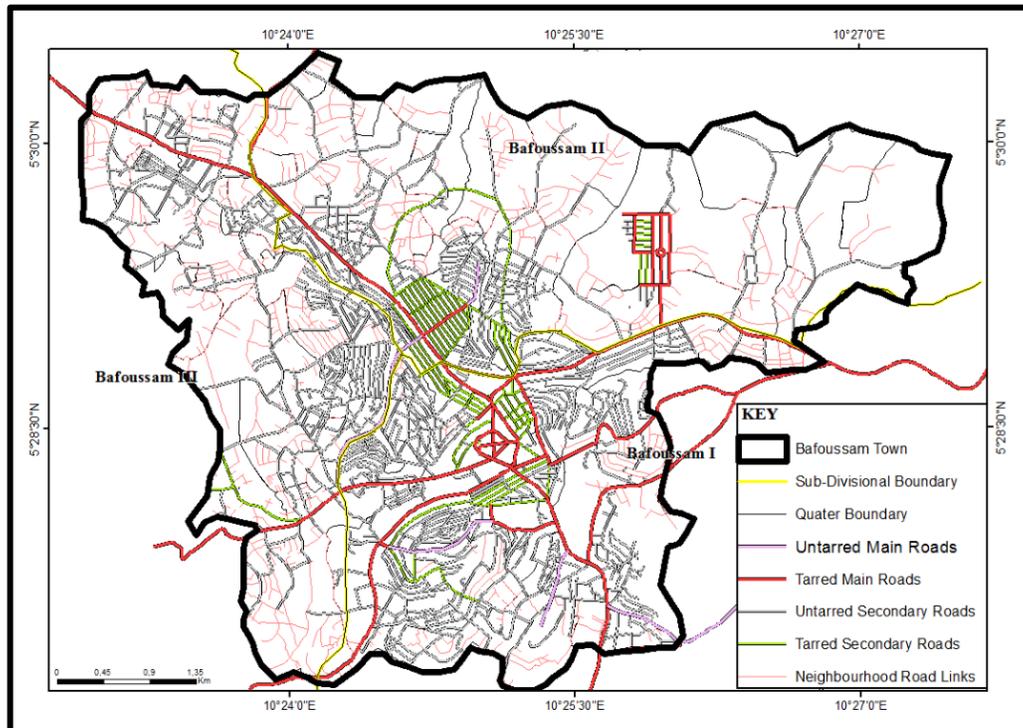


Figure 5: The Bafoussam Transport Network

Source: PCD of Bafoussam, 2013 and Field work, 2018

The Bafoussam road network though dense is predominantly un-tarred. Visible signs of the highway linking the regions are seen as one crosses the city. Statistics from secondary data sources show that 90.15% of Bafoussam is un-tarred while just 9.85% is tarred [4]. Such revelations prove that the city though urban, probably exhibits more rural characteristics hence, urban disorder. Tourism on its part has also contributed to spatial expansion in Bafoussam. The city is noted for its traditional Fondoms with much sacred characteristics which leave visitors spell bound from the history gotten. These palaces have thus attracted the local population and provoked the emergence of neighbourhoods such as Famla 1, Famla 2 and Banengo.

Markets and commercial activities constitute one of the most important pull factors of the population growth and spatial expansion in Bafoussam [4]. This city has the Marché A, Marché B, Casablanca and Food markets. These markets have not only attracted those who buy and sell, but have as well enabled the expansion of the city as the Djeleng 5, Bamendzi, Djemoun 1 and 2 neighbourhoods emerged to accommodate the traders. Bafoussam being the administrative headquarters of the West Region has automatically pulled the civil service population into the town. However, with the limited space in the planned neighbourhoods of Tamdja 1 and 2, others have settled in the unplanned ones at Famla 3 and Toket which are closer to work. These economic activities no doubt have expanded the city of Bafoussam and improved upon the livelihood of its inhabitants. Unfortunately, with un-projected planning, poor implementation of urban laws and the stubborn mentality of the people, the city has grown in an unplanned manner. Bafoussam is more unplanned than planned with spontaneous anarchical settlements which distort the city's beauty and affects the population.

CONCLUSION

Uncontrolled urban overspill in an emergent city is tantamount to chaos [12]. This article which was aimed at investigating the aftermath of urban overspill and its upshots to the Bafoussam emergent metropolis found out that the phenomenon has marred the smooth growth of the city. Urban anarchy in the form of unplanned settlement has colonised the area as make-shift houses are found even in risk-pruned zones. This disorder unfortunately leaves the inhabitants at the mercy of floods, landslides, mudflows and other health hazards even death. It is observed that rapid population growth and spatial expansion have progressively increased overtime. Accompanied by economic activities, many migrants have come into Bafoussam and settled without proper control. The anarchy observed would have probably been avoided if the law was respected. The Cameroonian 2004 law on urbanisation which was revised in 2014 strongly prohibits urban anarchy with severe sanctions on defaulters [13]. The authorities amongst which are the city and local council personnel are supposed to implement this law to avoid disorder. Nevertheless, due to negligence and inertia, anarchical settlement has occurred. As a result of the urban disorder and deliberate disrespect of the law by the population, natural and health hazards are affecting the people. The most recent of such is the October 29th 2019 Nguouache IV landslide which caused 42 deaths, 13 missing persons, 6 seriously wounded ones and 130 homeless with loss of houses and property [14]. Off course the State through government action did some compensations and relocation. However, the shadow has been chased, but the flesh still remains. Several other neighbourhoods in the Nguouache situation are still occupied and vulnerable to future threats (Figure 6). It is therefore mandatory for a prompt action to be taken early enough to avoid future perils. Figure 6 exhibits neighbourhoods exposed to natural hazards in Bafoussam. Neighbourhoods such as Banengo Village, Kamkop III, Tougang Village II, Nguouache II and Tchitchap II are more exposed to landslides owing to the nature of their slopes. This article has therefore mapped-out such areas to raise awareness on their state. Several people have settled in these quarters despite the dangers that might occur. It is thus a call for decision makers to wake-up and act fast to reduce any eventual catastrophe in future (Figure 6).

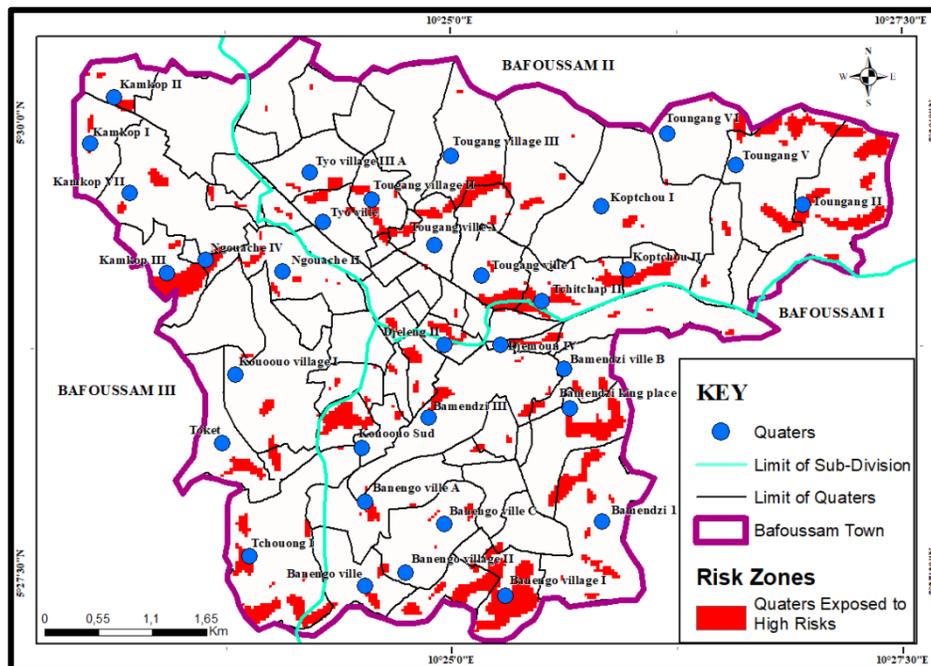


Figure 6: Exposed neighbourhoods to hazards in Bafoussam

Source: PCD of Bafoussam, 2013 and Field work, 2018

RECOMMENDATION

Confronted with such snags, this article endorses the implementation of the Bafoussam master plan which was adopted in 2013. Through this plan, all the neighbourhoods vulnerable to risks should be identified and the population notified for eventual evacuation and relocation. In this way, expenditures on relocation and some compensation will be much better than reactions of remedy after calamities have occurred. Sentimental management has been proven not to be the best in issues that concerns the lives of people. Therefore the strict respect of the law should be applied and several of such anarchical acts will be avoided. Furthermore, building a sustainable Bafoussam emergent city is the responsibility of all. It is thus imperative to introduce a participatory management approach. This is management which includes the grassroots in decision making [15]. In this way, the State, civil society and local population will synergize in planning and managing the city. Through this, administrative perspectives and local realities will be taken into consideration and Bafoussam amidst other Sub-Saharan cities will be free from urban calamities.

References

- [1]. Olu Sule, R. (2007). Urban Planning and Environmental Health Criticality. Thumbprints, London. 412p.
- [2]. Reuel, R. et al. (2013). The Encyclopedia of Geography. Terms, Themes and Concepts. ABC-CLIO, LLC. 428p.
- [3]. BUCREP. (2005, and 2010 projections). Third population and housing census results of Cameroon, 647p
- [4]. PDU. (2013). Plan de Développement Urbain de Bafoussam, 2013, 325p
- [5]. Oloyo, R. (2001). Fundamentals of Research and Methodology for Social and Applied Sciences ROA Educational Press, Aloro Nigeria. 305p.
- [6]. Richard, Peet and Nigel Thrift. (2013). New Models in Geography, Volume 2, Routledge, London. 418p.
- [7]. Tchamani, P. (2005). La problématique de l'approvisionnement de Bafoussam en eau potable. *Mémoire DIPES II. ENS, Yaoundé*, 132 p.
- [8]. Tim Hall. (2006). Urban Geography 3rd edition. Routledge contemporary Human Geography series. Routledge Taylor and Francis Group. 217p.
- [9]. Fombe, L.F. and Balgah, S.N. (2012). The Urbanisation Process in Cameroon. Process, Patterns and Implications. African Political, Economic and Security Issues. NOVA, Nova Sciences Publishers, Inc. New York. 214p
- [10]. Barney, W. et al. (2012). Encyclopedia of Human Geography. SAGE PUBLICATIONS. Thousand Oaks London. New Delhi. 638p.
- [11]. Mark Pelling. (2003). The Vulnerability of cities. Natural Disasters and Social resilience. Earthscan Ltd, London, 224p
- [12]. Gordon, McGranahan and David Satterwaite. (2014). Urbanisation concepts and trends. IIED working paper, IIED London. 28p.
- [13]. MINDUH. (2014). Recueil de textes relatifs a l'urbanisme et l'habitat, Novembre, 2014. 278p.
- [14]. The Herald Newspaper. (2019). The Bafoussam calamities in Ngouache, Cameroon
- [15]. Craig, W. J, Harria, T. M and Weiner, D. (2002). Community Participation and Geographic Information System, 2nd Edition, London, 246p