

Motives of Community Attachment to the Valorization of Green Field Potentials in the Urban and Peri-Urban Areas of Bamenda City, Cameroon

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Abstract – Green field constitute an intrinsic environmental resource which mankind depend on for their socio-economic, cultural and environmental values. Despite their importance, urban green spaces have been depleting as the years go by in Bamenda due to anthropogenic factors. Currently, there exist the lack of evidence needed to fully understand the motives of community attachment to the valorisation of green field potentials in Bamenda. This paper seeks to bring into lamplight the motives of community attachments to the valorization of green field potentials in the urban and peri-urban areas of Bamenda. Through a survey by help of 394 copies of questionnaire, interviews, focus group discussions and field observations, the results showed that socio-economic, cultural and environmental factors do influence population attachments to the valorisation of green field potentials in Bamenda. These green field potentials span through patches of natural expanses, sacred forest, shrines, cemeteries, city gardens, roadside, street line and residential and institutional outdoor green field potentials. The study recommended that the government should promote bottom-up conservation strategies through active involvement of the local population during decision and policy formulation and implementation for holistic conservation of green field potentials.

Keywords – Community Attachment, Green fields, valorization, Bamenda

I. INTRODUCTION

The management of green field potentials has become a call for concern in the urban areas around the world because of its economic, social, cultural and environmental benefits to human life on earth (Chen *et al.*, 2008; Jim and Chen, 2006; Crompton 2001 as cited in Mensah 2014). These green fields are considered as spaces covered with natural or artificial vegetation, as opposed to spaces that are paved or covered with buildings (Fratini and Marone, 2011). These green fields include parks, city gardens, outdoor green spaces, street line vegetation, sacred forest, allotments, wetlands and urban trees (Mensah, 2014; Kimengsi and Fogwe, 2017a).

In Africa, the majority of the local population in the rural and indigenous communities participate in the valorisation of green field potentials prior to their socioeconomic, cultural and environmental intrinsic values (Mofor *et al.*, 2020; Tassou, 2017; Tambi and Kengah, 2018). Socially, green spaces have been found to create land uses that provide avenues for recreation, support the development of children, and also promote social interaction and cohesion (Cohen *et al.*, 2008; Isenberg and Quisemberry, 2002; Mensah, 2014). In the economic perspective, green field spaces offer more job avenues to many individuals who have the opportunity to work in parks, botanical gardens, other related businesses and generation of

revenues to government (Chia and Nkwemoh, 2023; Aldous, 2005; Crompton, 2001). In the environmental realm, it has been observed that green spaces help to ameliorate local climate, improves air quality, conserve biodiversity and ornate cities (Fam *et al.*, 2008; Baycan-Levent *et al.*, 2009). Consequently, despite the immense benefits that green fields provide, it is expected that much spaces in the urban areas will be reserved for such purposes but this has not been the case as statistics shows that urban green spaces are depleting at a rapid rate across the world (Mensah, 2014).

In Cameroon, studies have shown that the landscape harbours green field potentials including botanical gardens, national parks, private gardens, reserves, zoos and Eco-touristic lakes and waterfalls which play an important role in ecotourism development and rural livelihood of many in the country. The valorization of these green spaces is provoked by the opportunities that man benefit from them. Studies has found out that, in the western highlands of Cameroon, Bamenda harbours both natural and artificial green field potentials which are conserved for diverse motives (Mofor *et al.*, 2020).

Despite their importance, urban green spaces in Bamenda city have been depleting and indiscriminately destroyed as the years go by due pressure from anthropogenic factors such as population increase, housing construction and other infrastructural developments. The depletion of green fields in Bamenda city can have significant negative consequences on the environment, the economy and socio-cultural wellbeing of the residents. Currently, there exist the lack of evidence needed to fully understand the motives of community attachment to the valorisation of green field potentials in Bamenda. As such, an evidence and spatial gaps currently prevail as far as the motives for community attachment to the valorisation of green space potentials are concerned in the study area is concerned. Based on these grounds, this paper seeks to examine the motives for community attachment to green field valorization in the urban and peri-urban areas of Bamenda, thereby significantly contributing to existing literature on the topic.

II. MATERIALS AND METHODS

Description of the study area

The study was carried out in the urban and peri-urban areas of Bamenda in the Mezam Division North West Region, Cameroon. The study area is spotted at latitude 5° 57; 50.59 north of the equator and longitude 10° 09; 26.06 east of the Greenwich meridian. It is bordered to the South by Santa sub-division, to the North by Bafut and Tubah sub-divisions, to the East by the Ngoketunja and to the West by Momo division (Figure 1).

Found at the mid of Mezam Division in the northwest region of Cameroon, Bamenda has an average altitude of about 1430m above sea level. It covers a total surface area of 3125 hectares. As of 2016, the city was termed a near millionaire city (Fogwe, 2016).

The geo-physical milieu of the city varies considerably. In the geomorphological perspective, the area lies on the Cameroon volcanic line and it is made up of two major relief features which include: the plateau of up station (Bamendankwe) and the lowland that is made up of Nkwen and Mankon (Mofor *et al.*, 2020). As concerns climate, the area has a tropical climatic type marked by two seasons, being a long rainy and short dry season. The dry season spans from October to March while the wet season is from mid-March to late October. The temperature varies between 15 - 31°C. With regards to vegetation, the study area is made up of both natural and artificial vegetation types. As concerns the natural vegetation, the area is endowed with different types of vegetation including sub montane and montane forest which has been greatly degraded while the artificial vegetation constitutes the domesticated of sub montane landscape and savannah vegetation. For the soils, the area is characterized by the ferralitics, alluvial, volcanic and lateritic soils. Ferralitics soils are found mostly in the lowly-lying area of Nkwen, while some of the highland areas of Nkwen and particularly Ndzah have modified orthic soils while alluvial soils are found along river courses (Njoh *et al.*, 2018; Hawkins and Brunt, 1965).

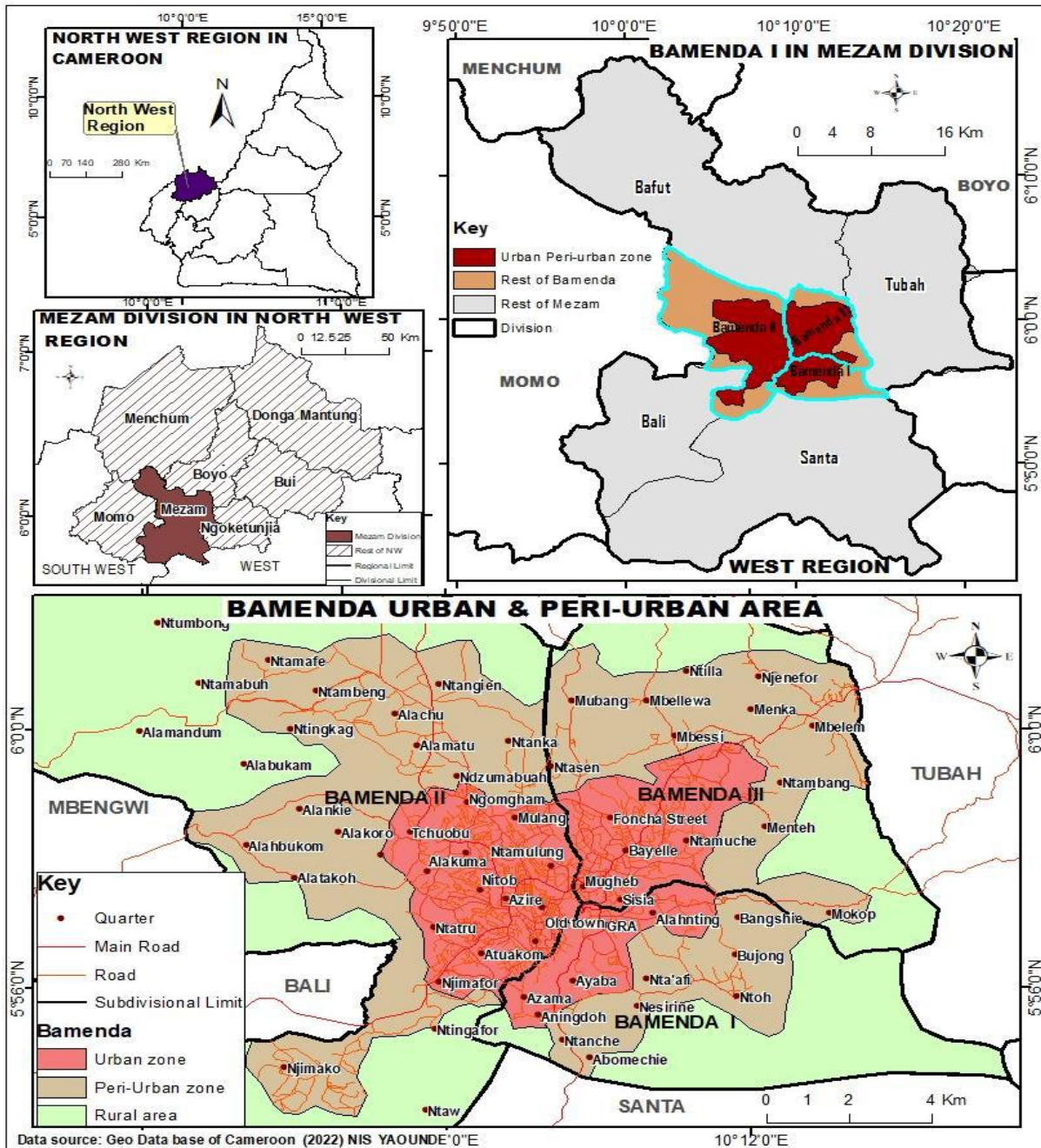


Fig.2. Location of Bamenda in Mezam Division, Northwest Region of Cameroon
Adapted from Cameroon Atlas for Schools and Colleges (2017)

Data Collection Sources

The data used for the realization of this study was obtained from both primary and secondary sources. The simple random sampling technique was used to select the 397 households through which primary data was collected. This data was exploited from these households through designed semi-structured questionnaire, interviews and Focus Group Discussions. As concerns questionnaire. Some 394

sampled copies were administered to the households through face-to-face method. The face-to-face interviews were also carried out with the resource persons such as the representatives of the Ministry of Forestry and Wildlife, Bamenda I, II, and III councils and some purposively selected households during the study. Focus group discussions were carried out with those depending on green field potentials to have an in-depth understanding about factors influencing

their attachments to green field valorization. Direct field observations method was used to observe the different types of green field potentials and their conservation strategies. Data from secondary source was obtained from journal articles downloaded from online search, specialized institutions such as the Municipal Councils of Bamenda, Ministry of Forestry and Wildlife as well as the libraries of The Universities of Bamenda and Dschang.

Data Analysis

Descriptive analysis was employed for quantitative data to obtained statistical tables, pie and bar charts representing the population opinions with respect to community attachments to green field valorization in the urban and peri-urban areas of Bamenda. Qualitative data obtained from interviews, resource

persons and field observations were sorted out manually and was summarized according to the various sub-headings of the study (content or thematic analysis) in order to avoid confusion and to make them more meaningful. This data was used to complement statistical data obtained from questionnaire administration.

III. RESULTS AND DISCUSSION

Spatial variation of green field potentials in Bamenda

Through field investigations, several green field potentials (natural and domesticated) were identified to be existing in the urban and peri-urban areas of Bamenda. Their spatial location is shown in Figure 2.

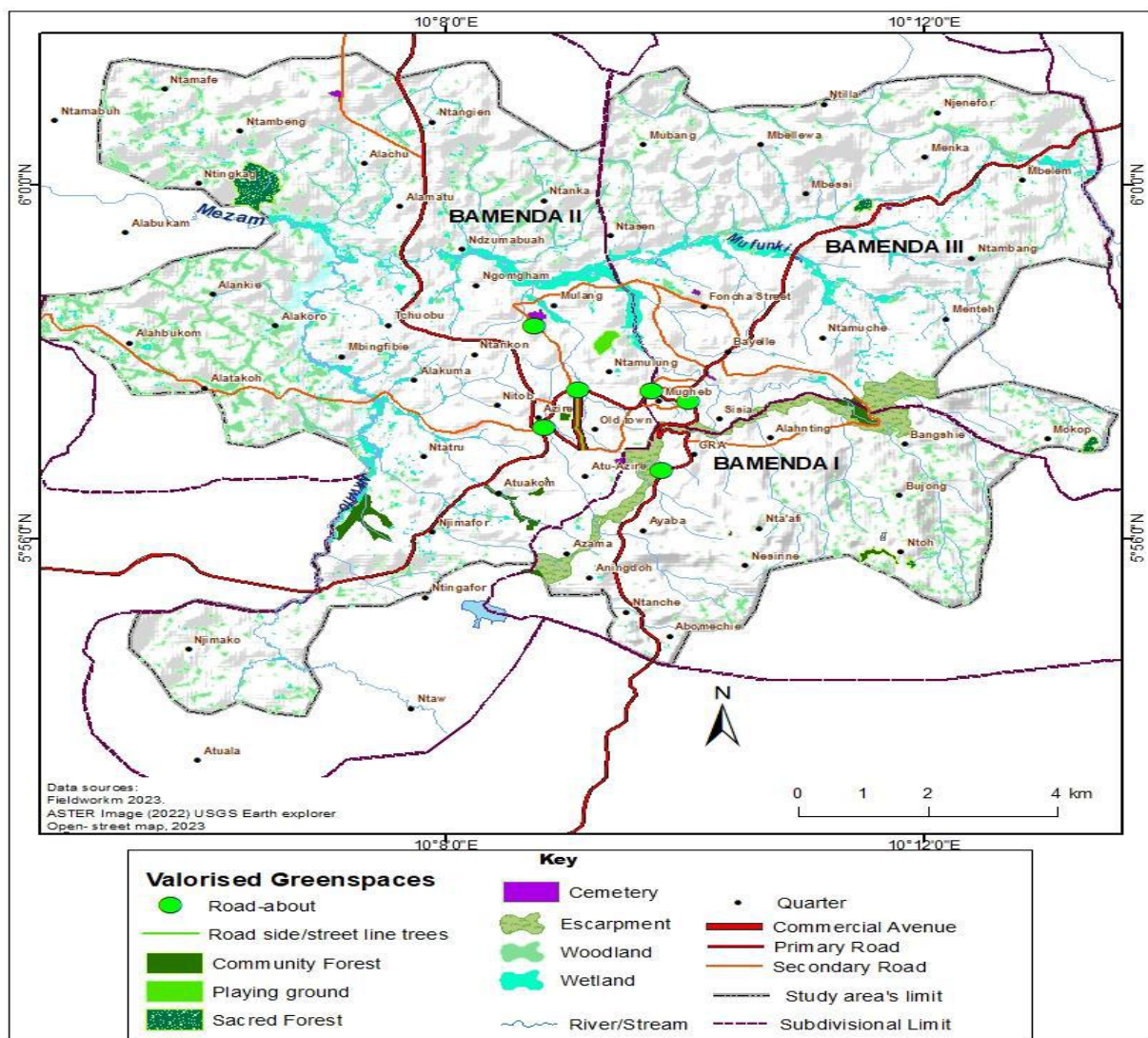


Fig.2: Spatial coverage of green field potentials in Bamenda

Source: Google Earth Image (2023); USGS Earth Explorer (2023) and Field Work (2023)

These green field potentials (Figure 2) include community forests, playing grounds, sacred forests, woodlands, commentaries and wetlands. Through field observations, other existing green field potentials identified in the study area include city gardens, street line, roadside, outdoor, roundabouts and water catchments green spaces.

Community Attachments to the Valorisation of Green Field Potentials in Bamenda

In order to ascertain the state of community attachments to the valorization of green field potentials in the urban and peri-urban areas of Bamenda, four (4) variables such as; very high attachments, high attachments, low attachments, and very low attachments were chosen and scaled in order to express the opinions of the studied population following the likert scale and the scores presented in Figure 3.

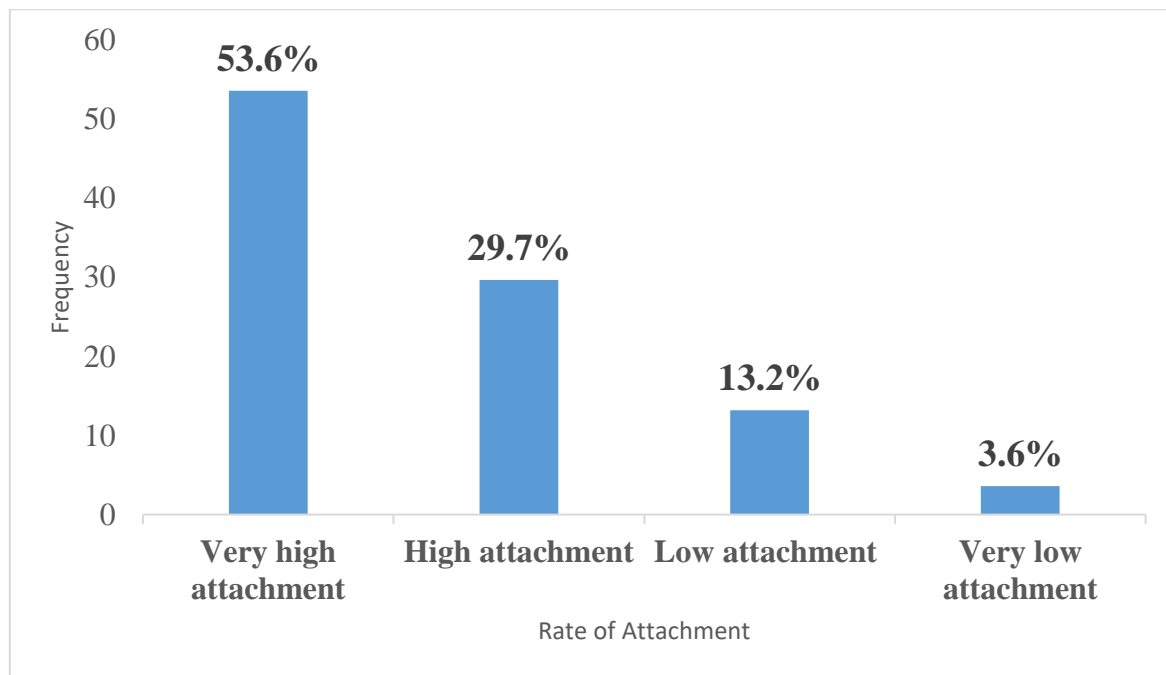


Fig.3: Household's opinion on community attachments to the valorisation of green field potentials in Bamenda

Source: Fieldwork, September (2023)

From Figure 3, an overall majority of the study population (53.6%) are of the perception that community attachments to the valorization of green field potentials in the urban and peri-urban areas of Bamenda is very high. Only a small proportion of the studied population opined that community attachments to the valorization of green field potentials is very low (3.6%). This least proportion of the population who perceive very low attachment to the valorization of green field potentials can be those living in areas with the absence of green field potentials. It can also be attributed to the fact that some of the studied population were non-indigenes residing in the study area due to the socio-political conflicts and do not have a broad knowledge about the valorization of green field potentials in the study area. On the other hand, the high attachment of the

population to the valorization of green field potentials in the study area was assessed to influence by several factors as explained in the section below.

Motives for Community Attachments to Green Field Potentials in Bamenda

Several motives account for population attachment to the valorization of green field potentials in the urban and peri-urban areas of Bamenda. For clarity, these motives were classified under social, economic, cultural, and environmental perspectives:

Social motives for population attachments to the valorization of green field potentials

In order to ascertain the social motives of population attachments to the conservation and management of green field potentials in the urban and peri-urban areas of Bamenda, five (5) social drivers were

observed and the population were asked to identify among them the major, medium and the least (Table 1).

Table 1: Social drivers of community attachments to green field valorisation in Bamenda

Social Drivers	Scaling					
	Major		Medium		Least	
	F	%	F	%	F	%
Provide avenues for recreation	212	53,8	151	38,3	31	7,9
Research	62	15,7	181	45,9	151	38,3
Hiding sites	91	23,1	31	7,9	272	69,0
Harvesting of traditional medicine	189	48,0	181	45,9	24	6,1
Promote social interaction and cohesion among people	180	45,7	123	31,2	91	23,1

Source: Fieldwork, September (2023)

Based on population's perception as shown in Table 1, it was found that several social factors contribute to community attachments to green field potentials in the urban and peri-urban areas of Bamenda town. As can be seen in the table, the views expressed by the majority of the population was that the use of green field spaces for recreational motives (53.8%), worship sites for traditional gods (59.1%), leisure sites (46.2%) as well as the harvesting sites for traditional medicine (48.0%) are the major drivers of population attachments for their conservation and management in the study area. Among these major factors, the use of green field as worship sites for traditional gods was identified by the majority of the population as one of the most outstanding social driving factors of population attachment to green field conservation in the urban and peri-urban areas of Bamenda. The use as leisure sites was ranked the least major factor that contributes to population attachment to green fields. On the other hand, it was revealed by the majority of the population (69.0%) that the use of green field as hiding sites is one of the least factors that contributes to population attachments to the conservation of green field potentials in the study area. This can be probably because of the fact that a greater number of copies of the questionnaire were administered in the urban area of Bamenda where most green spaces like street line, road sides, road junctions, outdoor green spaces, cemetery, private and public gardens are found and are made up of mostly grass and trees very

disperse which cannot be used for hiding during danger. Besides, the large majority of the population who opined that the use of green field spaces as sites for the worship of traditional gods is one of the most outstanding major factors that attracts the population attachments to green fields conservation in the study area can be attributed to the belief by the population that green field spaces are abode to traditional gods that protect them. These social motives are further detailed in the following points:

Provide avenues for recreation

The study also revealed that population attachments to the valorization of green field potentials in the study area is influenced by the services that these green spaces provide to them. Developed green field spaces are areas used for leisure. People used these areas as photographic grounds, playing grounds as well as sales points. These services provided has instigate stakeholder's attachments to their valorization in the study area.

Research

The population attachments to the valorization of green field potentials in the urban and peri-urban areas of Bamenda was also found to be influenced by research carried out by multiple researchers in the domain of green fields in the area. These studies carried out in the area has proven that green field potentials as well as their resources are threatened and needs to be protected. This has instigated

stakeholder's attachment to their valorization in the study area. Amongst these studies, some have acknowledged that these threats on green field potentials in the study area may affect the urban air quality meanwhile others noted that if something is not done, this may further contribute to climate variation in the study area (BUCREP, 2005; Kimengsi and Fogwe, 2017a; Kimengsi *et al.*, 2017b; Balgah and Kimengsi, 2016; Mofor *et al.*, 2020). However, some stakeholders have instigated attachment to the management of green field spaces in the study area through their recommendations. For instance, the conservation of Bamenda escarpment through the planting of trees by the Bamenda Urban Council was found to be a strategy to fight against climate change in the study area resulting from the recommendations of scientific works carried out in the study area. It was also found that conserved green spaces such as street line, road sides and roundabouts conserved by the City Council in the study area is through recommended reviewed from research and publications. It was further revealed that the recommendations of these multiple works carried out in the study area, have instigated the Ministry of Environment, Nature Protection and Sustainable Development (MINEP) to collaborate with the Municipal Councils in the study area to sensitize the population on the valorization of green field through the planting of trees as a strategy to fight against climate change. This has gone a long way to influence population attachment to the valorization of green field potentials in the study area.

Hiding sites

It was also found that the population attachment to the conservation and management of green field spaces in the study area is also provoked by the fact that these spaces are used by the population as hiding sites during danger. During field discussions with the population, we noticed that the use of green covered spaces as hiding sites only became intensified during the beginning of the on-going socio-political crisis in the study area. Before the on-going socio-political crisis in 2016, the population stressed out that green field were only used as hiding sites during intensive search by the police, gendarmes and army when an incident occur in a quarter, village or town. During this search, people without national ID cards flee to green covered spaces for safety due to fear of arrest

and imprisonment. Besides, it was also revealed that when someone causes problem in the village, and he/she is wanted, the forest is the only alternative since the victim does not have any hidden place due to the presence of people. Green spaces become very fertile grounds for the population as hiding sites since the outbreak of the ongoing socio-political crisis in Bamenda. In hardest hit crisis zones of the study area, the population noted that during severe gunshots, thick green field spaces are used by people as safety zones. This depends upon their perceptions on the gunshots as some of the armed men used these green spaces as hideouts to carry out their activities.

Exploitation Medicinal plants

The attachment of the population to the conservation of green fields in the study area was also found to be influenced by the types of medicinal plants they exploit from them. These traditional herbs are used by the population to heal people from certain sicknesses. Table 2 presents the types of medicinal products exploited by the population from the existing green field areas in the study area that attracted their conservation.

Green fields in the study area are rich in medicinal plants including trees, herbs, roots, xerophytes, epiphytes, lianas and succulent plants. Out of the many non-timber forest products identified in the existing green field spaces of the study area, a bulk of them has medicinal properties. As can be seen in Table 2, a wide variety of medicinal plants are exploited and used by the locals from different green fields found in urban and peri-urban areas of Bamenda. About ten different medicinal plants were identified to be exploit from green fields of the study area. The population opined that the presence of these different medicinal plants in these green covered spaces has contributed to population attachments to their conservation.

Economic motives of population attachments to the valorization of green field potentials

In the Economic realm, green field potentials have been found to provide immense benefits which has contribute to population attachments and hence, their conservation. In order to understand or identify the economic motives of population attachment to the conservation of green field potentials in the urban and peri-urban areas of Bamenda, five (5) economic driving factors were identified and scaled to express

the opinions of the population and the scores presented in Table 3.

Table 2: Medicinal herbs in relation to parts and uses in Bamenda

Common name	Scientific name	Part used	Uses
Bush mango	<i>Iringia gabonensis</i>	Bark from stem, leaves roots and kernel membrane	Traditional medicine for the treatment of diarrhea, yellow fever, healing scabby skin, toothache
Njangsang	<i>Ricinodendron heudelotii</i>	Barks, root, and seeds	Traditional medicine for sexual and fertility problems, stomach discomfort, coughs and fever.
Kola nuts	<i>Cola nitidia</i>	Seeds	Use to reduce infection from mouth and gastro-intestinal cancers
Country cola	<i>Cola nitida</i>	Seeds	Seeds used culturally for entertainment and for ceremonies
Castor oil	<i>Elaeis guineensis</i>	Kernel oil	Treatment Skin diseases, stomach disorder and convulsion in children
	<i>Lantana camara</i>	Leaves	Treatment of Diarrhea and Fresh wounds
	<i>Tabernaemontana</i>	Bark	The bark is cut and applied to fresh wounds to stop blood flow
	<i>Ricinus communis</i>	Leaves	The Leaves are boiled and a bath taken using the water for the treatment of muscle weakness
	<i>Lasianthera Africana</i>	Leaves	The leaves are squeezed, boiled and the resulting concoction taken for the treatment of Diarrhea and stomach related complication

Source: Fieldwork, September (2023)

Table 3: Economic driving factors of population attachment to green field conservation

Economic driving factors	Scaling					
	Major		Medium		Low	
	F	%	F	%	F	%
Exploitation site of forest products	272	69,0	91	23,1	31	7,9
Hunting sites	241	61,2	92	23,4	61	15,5
Create job opportunities	91	23,1	152	38,6	151	38,3
Increase household incomes	121	30,7	212	53,8	61	15,5
Generate income for the government	152	38,6	61	15,5	181	45,9

Source: Fieldwork, September (2023)

The use of green cover spaces as exploitation sites for forest products, hunting sites for bush meat as well as job opportunities offer by green fields to the population, increase in households' incomes through the sales of forest products and income generated from green field by the government are all economic factors influencing population attachment to the conservation of green field potentials in the study area. There exist several factors that influence population attachments to the valorization of green field potentials in the urban and peri-urban areas of Bamenda. The key factor that influences population

attachment to the valorization of green field potentials by households was found to be the use of these green field potentials as exploitation sites of forest products. Taking vantage of the existing of both natural and artificial forest patches in the study area, the population have enhanced both forest resource exploitation and local hunting in the study area. This forest resource exploitation is very effective in the peripherals zones where both natural and artificial green spaces are still existing. Table 4 presents the types of forest products exploited in the study area.

Table 4: List of forest resources exploited in the study area

Forest products	Scientific name
Wild palms	<i>Elaeis guineensis</i>
Ebom	<i>Prunus africana</i>
Bush pepper	<i>Piper quinensis</i>
Kola nuts	<i>Cola nitidia</i>
Njangsang	<i>Ricinodendron heudelotii</i>
Black	<i>Canarium schweinfurthii Engl</i>
Snails	<i>Helix aspersa</i>
Fuel wood	<i>Acacia seyal delile</i>
Bush mangoes	<i>Iringia gabonensis</i>
Bush Plum	<i>Dacryodes edulis</i>
Bamboo	<i>Bambusa</i>
Indian bamboo	<i>Oldeania alpine</i>
Mushrooms	<i>Amanita muscaria</i>
Honey	<i>Honey</i>
Raffia wine	<i>Raphia</i>
Ngongo leaf	<i>Marantaceae</i>

Source: Fieldwork, September (2023); MINFOF-Bamenda; Compilation from CDP

Table 4 shows the forest resources found in and around the communities in the urban and peri-urban areas of Bamenda. Still thanks to the presence of green spaces, a variety of animals are hunted by the local populations as a source of food (Table 5).

In the urban and peri-urban areas of Bamenda, hunting is not really a cherished activity especially in the urban milieu of Bamenda. This is because the existing green field spaces are mostly artificial such as

outdoor, road junctions, public green spaces, and city gardens which do not contain animals. In the peripherals zones where forest patches are still existing, hunting is done mostly through the use of local traps and hunting dogs. It was observed that meat consumed in the study area is mostly cow meat bought from the markets within the municipality.

Cultural motives for population attachments to the valorization of green field potentials in Bamenda

In the cultural perspective, regarding the perceptions of people toward population attachments to the valorization of green field potentials in the urban and

peri-urban areas of Bamenda, possible results were obtained on a likert scale and the main scores are presented in Table 6.

Table 5: Animal species hunted for bush meat in the study area

Common/local name	Scientific name
Antelope	<i>Hypotragus equitus</i>
Black mamba	<i>Naja nigricollis nigricollis</i>
Grass cutter	<i>Thryonomys swinderianus</i>
Bush baby	<i>Peridicticus potto</i>
Cane rat	<i>Proptoxerus stangeri</i>
Deer	<i>Cephalophus dorsalis</i>
Python	<i>Python sebae sebae</i>
Giant rat	<i>Cricetomys gambianus</i>
Squirrel	<i>Tichechus senegalensis</i>
Gray Parrots	<i>Psittacus erithacus</i>

Source: Fieldwork, (2023); MINFOF-Bamenda and compilation from the CDPs Bamenda

Table 6: Cultural attachment to green field conservation in Bamenda

Cultural motives	Scaling					
	High		Medium		Low	
	F	%	F	%	F	%
Worship sites for traditional gods	233	59,1	150	38,1	11	2,8
Provide material use in cultural ceremonies	90	22,8	122	31,0	182	46,2

Source: Fieldwork, September (2023)

Population attachment to the valorization of green spaces in the study area was also revealed to be influenced by the cultural benefits (Table 6) that green spaces offer to the population. For instances, it was found that green field provides the population with materials exploited and used for the production of items used in cultural ceremonies. Green fields provide material used for the production of traditional chairs, caps, bags and bangles which are signs of cultural identities. As a sign of culture, it was revealed that the people of northwest are easily identify through some types of traditional caps and bags they used during ceremonies which are made out of fiber obtained from raffia leaves. It was also revealed that, green field potentials are used for the production of musical instruments such as drums,

gongs and spears used as dancing instrument during ceremonies are.

Moreover, it has been also revealed that green fields are highly conserved by the population due to the fact that they used them as worship sites. Sacred groves and shrines are the main green field spaces used by the population as worship sites of traditional gods in the urban and peri-urban areas of Bamenda. The attachments to the valorization of these green spaces is deeply rooted from human attachment to them for over generations. People have very strong social sentimental attachment to these types of green fields in the study area. This is because of the belief by the population that there are some supernatural beings (gods) that live in them that protect the population from any evil attack. The population worship these

supernatural beings belief to be found in these spaces through the offering of sacrifices like the killing of fowls and goats. These areas are highly protected as people are prohibited from tree felling in such locations. The collection of non-timber forest products is not allowed. Hunting or killing of animals in these areas is a punishable offense. All forms of fire and farming activities are prohibited from these spaces. These types of green spaces are mostly found within the Chief's Palaces, traditional herbalist and soothsayers. Through field observations, it was found that green field such as shrines are mostly individual conserved green spaces mostly found within the residence of traditional herbalist or soothsayers. On the other hand, we noticed that sacred groves were

mostly found around Chief's Palaces such as Mankon, Nkwen and Bamendankwe's fon palaces. It was also observed from the field that despite the continuous rapid urban expansion, these places still exist in the peri-urban and urban areas of Bamenda thanks to the population's high attachments vice-a-vice green field valorization.

Environmental motives of population attachments to green field conservation

In order to ascertain the motives for the population attachments to the valorization of green field potentials in the study area, about eight (8) environmental driving factors were chosen and scaled to express the population perceptions and their scores presented in table 7.

Table 7: Environmental factors of population attachment to green fields' valorisation

Environmental factors	Scaling					
	Major		Medium		Minor	
	F	%	F	%	F	%
Stabilises slope movement	141	35,8	212	53,8	41	10,4
Beautify the environment	233	59,1	150	38,1	11	2,8
Protect water stability	256	65,0	92	23,4	46	11,7
Enhance soils fertility	122	31,0	210	53,3	62	15,7
Stabilises strong winds from crops and building destruction	90	22,8	182	46,2	122	31,0
Conserve biodiversity	241	61,2	122	31,0	31	7,9
Ameliorate local climates	303	76,9	91	23,1	00	00
Improve on urban air quality	72	18,3	310	78,7	12	3,0

Source: Fieldwork, September (2023)

In line with the three core pillars of Sustainable Development, green fields have three importance which is viewed from an economic, social and environmental perspective [7]. Based on these grounds, about 8 motives (Table 4) were identified on the environmental perspective to have been influencing population attachments to the valorization of green field potentials in the urban and peri-urban areas of Bamenda. For better understanding, this attachment motives were detailed in the following points

Stabilize slope movement

Though identified as a minor factor (Table 7), it was revealed that the attachments of population to green field valorization in the study area is a strategy to reduce slope movement. There have been frequent slope movements such as landslides and rock fall in some parts of the study area. To this, people plant trees along steep slopes as a strategy to ameliorate this situation. The roots of trees were acknowledged to play a greater role in binding up the top soils thus reducing it from creeping. Based on this, the population conserved or plant trees along areas characterized with landslides and rock falls. In Mendakwe village in Bamenda I Sub-Division, the population noted that due to frequent landslides

along the slopes during the rainy season, has provoked the respective population found along these areas to continue to plant eucalyptus trees as a preventive measure. Through discussions with the

resource persons, it was revealed that the planting of trees along the steep slopes of the Bamenda escarpment (Photo 1) is a strategy to reduce frequent rock fall as well as landslides in the area.



Photo 1: Trees planted along the steep slope of the Bamenda escarpment at 'Up-Station'
(GPS point 5.951667; 10.166762)

Source: Fieldwork, September (2023)

It was further noticed that, the planting of trees is not only a strategy to reduce frequent rock fall, landslides or to ameliorate urban air quality as well as the fight against climate change, but, it is also a strategy to fight against road accident. For instance, trees are planted along roadsides to prevent vehicles from falling off the steep slopes of the escarpment in case of brake failure. Based on this, a native of this area have this to say "in 2017, it was thanks to the eucalyptus trees planted by the council that help a taxi from falling off the road due to brake failure. This hill is very long and dangerous, the Bamenda Council needs to plant more trees or even throw sand along the Sharp C Bend in order to prevent accident in future". Based on this, it clearly shows that landslides, and rock fall interplay on community attachments to the valorization of green field potentials in the study area.

Beautify the environment

The ability to ornate the environment is one of the factors that contributes to population attachments to the management of green spaces in the urban and peri-urban areas of Bamenda. People conserve plots of outdoor green spaces around their surroundings in order to keep the environment beautiful. Photo 2

shows a sample of a conserved outdoor green field in the study area.

The above photo indicates one of the landmarks outdoor green space in the study area. The ecological services it provides to the urban community make it a conservation concern for the population. These areas in the study area consist mostly of carpet grass (A) and flowers (B) conserved around household's homes and the surroundings of public buildings. The stakeholders attached to the valorization of these types of green field potentials in the study area include the local population, Municipal Councils, school officials, Ministry of Environment, Nature Protection and Sustainable Development and Environment Management Associations operating in the study. Furthermore, stakeholder's attachments to the valorization of green fields is also influences by their ability to achieve Sustainable Development Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable) in the study areas. Based on this, the City Council of Bamenda and UN-Habitat and Dordrecht/Gorinchem City Councils of The

Netherlands launched engaged in partnership with United Nations Human Settlement programme (UN-Habitat) in August 2016 in order to seek ways for the sustainable used and development of urban green space as well as ensuring urban green successful. To develop an urban green space in Bamenda, the

Bamenda City Council in 2011 earmarked the slopes of Bamenda escarpment for protection. Though not achieved, it was revealed that series of management strategies (Photo 3) has been taking place in this location earmarked by the City Council.



Photo 2: A conserved outdoor green space at 'Up-Station', Bamenda I Sub-Division

(GPS point 5.951669; 10.166767)

Source: Fieldwork, September (2023)



Photo 3: Planted eucalyptus trees by the Bamenda City Council at 'Up-Station'

(GPS point 5.951669; 10.166767)

Source: Fieldwork, September (2023)

Prior to the importance of sustainable development goals, this conserved space as indicated in Photo 4.7 above is one of landmarks which display intrinsic

values. Despite the identification of this area as a strategy to improve on the urban greening project by the city council, some parts of this area has greatly

been affected due to the population pressure for building construction.

Maintain water stability

Study results also poised that the ability to conserved water stability in the study area also interplay on communities attachment to the valorization of green field in the study area. This is because some of these green fields in the study area are water catchments and intrinsically conserved by the population in order to improve on water access, quantity and quality (Mofor *et al.*, 2020). This management correlate with

the Millennium Sustainable Development Goal 6 “to ensure availability and sustainable management of water and sanitation for all”. About four water catchments were identified in the study area with two of them found in the northern slopes Mendakwe in Bamenda I peri-urban area, one in Tchuobu in Bamenda II urban area and the other in Alahlie quarter in Bamenda III Council area. Plate 1 presents some of the natural green spaces in the study area which the population is highly attach to their management in order to maintain constant water flow.



Photo A: Conserved water catchment in the Alahlie neighbourhood, Nkwen (Bamenda III Sub-Division) (GPS point 5.95427; 10.166767)



Photo B: Conserved water catchment at Tchuobu, Bamenda II Sub-Division (GPS point 5.95427; 10.166767)

Plate 1: Conserved green field potential in Bamenda

Source: Fieldwork, September (2023)

These Water catchments in the study area are considered by the population as the lugs of Bamenda town and are highly conserved with the principal goal to improve on water access, quantity and quality as stated in gold 6 of the Millennium Sustainable Goals 2015. These water catchments in the study area constitutes preserved areas where most management efforts are carried out. They are water sources where various communities and CAMWATER depend on to supply water for human consumption.

3.2.4.4. Improves urban air quality and local climate

Again, results from field findings revealed that Community attachments to the valorization of green field potentials the study area is a strategy to ameliorate local climates as well as improving on urban air quality (table 7). This attachment varies among stakeholders in the study area. For instance, it was revealed the main stakeholders involved in the valorization of green field with the main goal to improve on urban are quality as well as ameliorating local climate include the Bamenda councils, the Ministry of Environment, Nature Protection and Sustainable Development. Their attachments to the

valorization of green fields were assessed to be influenced by their ability achieve the Millennium Sustainable Development Goals 11 (make cities and human settlements inclusive, safe, resilient and sustainable) and 13 (take urgent to combat of climate change and its impacts by regulating emissions and promoting developments in renewable energy). As a strategy, the Ministry of Environment, Nature Protection and Sustainable Development in partnership with the City Councils of Bamenda have embarked on the conservation of green spaces and the sensitization of the population for the planting of trees as a way to fight against climate change (Njoh *et al.*, 2018). It was revealed that 5 hectares of urban land along the slopes of the Bamenda escarpment has been earmarked by the Bamenda City Council in order to match the urban greening project.

IV. CONCLUSION AND RECOMMENDATIONS

The urban and peri-urban areas of Bamenda are cornucopian to different types of green field potentials. These green field potentials are of intrinsic value to both the rural and the urban population. The prime concern of this paper was to examine the state of population attachments to the valorization of green field potentials in the urban and peri-urban areas of Bamenda. Based on methodology used, it was found population in the urban and peri-urban areas of Bamenda have very high attachments to the valorization of green field potentials in the study area. This attachment was assessed to be motivated by socioeconomic, environmental and cultural factors. Socially, population attachments to the valorization of green fields were found to be motivated by the services provided by green field to the population. For instance, green fields were found to be used as for recreational activities, hiding sites, harvesting of medicinal plants as research. In the environmental perspective, population attachments to their valorization was assessed to aimed at improving urban air quality and local climate, beautification of urban environment, reduction of landslide and rock fall as well as maintaining constant water flow. From the economic perspective, the valorization of green field by the population was found to influence by the fact that these spaces are used as exploitation sites for forest products, hunting sites for bush meat, and as

well as increasing government and household incomes in the study area. The study recommended that the government should promote bottom-up conservation strategies through active involvement of the local population during decision and policy formulation and implementation for holistic conservation of green field potentials.

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REFERENCES

- [1] Aldous, D. E. (2005). "Education and training opportunities for turf management in Australia." *Acta Horticulturae*, 672, 71-7.
- [2] Balgah S.N. & Kimengsi N. J. (2016). "Land use dynamics and wetland management in Bamenda: Urban development policy implications." *Journal of Sustainable Development*, Vol.9, No. 5, pp. 141-151.
- [3] Baycan-Levent, T., Vreeker, R., and Nijkamp, P. (2009). "A multi-criteria evaluation of green Spaces in European cities." *European Urban and Rregional Studies*, 16(2), 193-213.
- [4] Chia P.T. & Nkwemoh, C.A. (2023). "Indigenous Knowledge in Forest Resource Exploitation and Management in Manjo Sub-Division, Littoral Region, Cameroon." *International Journal of Research and Innovation in Social Sciences (IJRISS)*, Vol VII, Issue IX, pp. 988-1002.
- [5] Cohen, D. A., Inagami, S. and Finch, B. (2008). "The built environment and collective efficacy." *Health and Place*, 14, 198-208.
- [6] Crompton, J. L. (2001). "The impacts of parks on property values: A review of the empirical evidence." *Journal of Leisure Research*, 33(1), 1-31.
- [7] Fam, D., Mosley, E., Lopes, A., Mathieson, L., Morison, J., and Connellan, G. (2008). Irrigation of urban green spaces: A review of environmental, social and economic benefits. CRC for Irrigation Futures Technical Report No. 04/08.
- [8] Fogwe, Z. N. (2016). "Assessment of an urban-development flood impact relationship in a near millionaire city of Cameroon (Bamenda)." *Journal of Geoscience and Environment Protection* (4):13-61.
- [9] Fratini, R. and Marone, E. (2011). "Green-space in urban area: Evaluation of the efficiency green spaces in

- Guangzhou, China." *Landscape and Urban Planning*, 75, 81-96.
- [10] Hawkins, P. H. and Brunt, M. (1965). The soil and Ecology of West Cameroon, Report to FAO Rome, vol. 1 and 2, 285p.
- [11] Isenberg, J. P., and Quisenberry, N. (2002). Play: Essential for all children. A position paper for the Association of Childhood Education International. [Online at]: http://365waystounplugyourkids.com/play_Essential_for_kids1.htm.
- [12] Jim, C.Y. and Chen, W. Y. (2006). "Recreation-amenity use and contingent valuation of urban green spaces in Guangzhou, China." *Landscape and Urban Planning*, 75, 81-96.
- [13] Kimengsi N. J., Nguh S. B. and Nafoin, S. A. (2017b). "Peri-Urban Land Use Dynamics and Development implications in the Bamenda III Municipality of Cameroon." *Sustainability in Environment*, Vol. 2, No. 3, pp. 273-288.
- [14] Kimengsi, J.N and Fogwe, Z.N. (2017a). "Urban Green Development Planning Opportunities and challenges in Sub-Saharan Africa: Lessons from Bamenda city, Cameroon." *International Journal of Global Sustainability*, Vol. 1, No. 1, pp. 1-17.
- [15] Mensah, C. A. (2014). "Urban Green Spaces in Africa: Nature and Challenges." *International Journal of Ecosystem*, 4(1), 1-11.
- [16] Mofor, G, Z., Samba , G. and Koungoum, G.P. (2020). "Urban Natural Space Conservation: Challenges and Perspectives in Bamenda, North West Region of Cameroon." *International Journal of Trend in Scientific Research and Development (IJTSRD)*, Vol. 4, pp. 2456-6470.
- [17] Njoh, D, B., Dittrich, N., Feldt, T., Karg, H., Gawum, E., Witte, A. and Van Veenhuizen, R. (2018). Urban and Peri-Urban Agriculture in Bamenda: A Policy Narrative, sustainable Development and Humanitarian Services Foundation.
- [18] Tambi, D. M. & Kengah, N. D. (2018). "Contribution of Non-timber Forest Products to Socio-Economic Wellbeing in Rural Cameroon." *Agriculture and Forestry Journal*, Vol. 2, Issue 2, pp. 65-80.
- [19] Tassou, M. (2017). Factors affecting household participation in ZE non-timber forest products markets in Eastern Uganda. Master's Thesis, University of Nairobi.