

# The Role of Open Space in Human Settlement Development in the Tamale Metropolis of Northern Ghana

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**How to cite this paper:** Shaibu, M. and Donkor, D.K. (2022) The Role of Open Space in Human Settlement Development in the Tamale Metropolis of Northern Ghana. *World Journal of Engineering and Technology*, 10, 322-333.

<https://doi.org/10.4236/wjet.2022.102020>

**Received:** March 14, 2022

**Accepted:** May 14, 2022

**Published:** May 17, 2022

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## Abstract

Most parts of the world are rapidly urbanizing. In sub-Saharan Africa, towns are urbanizing at a faster pace than earlier predicted. Also, large portions of rural settings have been gradually moving towards urbanization. The Tamale Metropolis has been rated as the fastest-growing metropolis in Sub-Saharan Africa. City planning and concerns about the need for open-space creation have been a major challenge due to poor adherence to standards in the building codes. This study was conducted to assess the role of open space in human settlement development in the Tamale Metropolis. The study sampled the views of 157 residents who stay closed to community open spaces in five suburbs of the metropolis. Key informant interviews were also conducted with officials from the Town and Country Planning Department. The study revealed that most residents spend leisure by taking a walk in the neighborhood or idling in outdoor spaces. Also, the majority of the residents had poor knowledge of institutional and land administration. This often led to non-adherence to regulations and this affects open spaces in the metropolis. Common among residents is also a poor appreciation of the importance of open space and this results in encroachment. The Town and Country Planning Department should institute sanctions and stringent measures to deter offenders. Also, public seminars should be used to educate residents on the need to adhere to planning and building codes. Lastly, the study recommends strong collaboration between the various institutions engaged in land administration to facilitate effective provision and preservation of quality open spaces in the metropolis.

## Keywords

Settlement, Open Space, Development, Tamale

## 1. Introduction

Rapid urbanization remains one of the most important features of the 21<sup>st</sup> century. The rate of urbanization that characterizes the recent sequence of growth of communities worldwide is quite beyond simple imagination [1]. This situation has brought about rapid physical development and expansion in both urban and peri-urban areas. As population increases, land uses intensify and urban activities spill over into previously rural lands on the fringes. Various land-use control mechanisms are designed to promote the effective utilization of urban land to maintain standards for physical development and to ensure harmonious spatial distribution of human activities by an approved plan [2] [3]. While development controls have been utilized with a degree of success to ensure harmonious spatial distribution of activities in advanced countries, their application has been problematic in developing countries [4].

The beginning of the year 2007 marked the year when, for the first time in the history of humanity, half the world's population was projected to be living in cities. Urban populations are expected to increase by 1.5 billion over the next 20 years, while the number of megacities will double [5]. As of 2015 the United Nations (UN) there were about 358 "million cities" with one million or more people and 27 "mega-cities" with ten million or more. Much of this growth happened in developing countries where projections point to even greater increases [6]. It is also a known fact that about half of the planet's population lives in Asia, which is experiencing rapid urbanization, largely due to the industrialization of China and India. The world's most populous continent is also culturally and politically diverse, with economic extremes of wealth and poverty.

The influence of Asian cities on the world stage is increasingly becoming apparent. Between 2008 and 2025, Shanghai is expected to soar up the global city GDP rankings from 25th place to 9th, and Mumbai is expected to rise in the same period from 29th to 11th place. In the region, the urban population of 1675 million (41%) in 2010 is expected to rise to 2086 million (47%) in 2020 [7]. Also in the next 20 years, Africa and Asia will see by far the fastest growth in urban settlements in the world. In Africa alone, the population growth will equal the current entire population of the USA [5] [8] [9]. This is projected to rise to 60 percent by 2030, with almost all the urban growth occurring in low- and middle-income countries. These increases in the growth of cities and towns are not only a factor of increased birth rate but migration as well [10]. For instance, during the two centuries until 1950, about 400 million people moved to cities worldwide. Current projections suggest that by 2050 more than 6 billion people, almost 70% of the total world population, will live in urban areas and migration alone will account for about 23%. This will be translated into the growth of cities in developing countries which is expected to grow by 1.3 billion people in 2030 [11] [12].

Africa is the most recent urban tradition and the experience of city life is currently urbanizing at more than 4% annually. As of 1995, only 28 cities on the

continent had populations exceeding one million and by 2005 this has grown to 43 cities, and subsequently 59 by 2015. In the region, the urban population of 413 million (40%) in 2010 is expected to rise to 569 million (45%) in 2020. This gives a strong indication of the level of planning as this huge population will necessarily result in the expansion of settlements. In Ghana, the history of planning dates back to the early twentieth century when the first National Development Plan instituted by governor Guggisberg (1920-1930) was implemented under British colonial rule [12] [13].

Until recently, much was not known about the planning system in the country until the recent upsurge in settlement development. Planning was a centralized activity executed on an administrative basis without the participation of the public. In 1921, about 7.8% of the population lived in urban centers, but this figure rose to 15.4% in 1950 with 3.4 percent and 1.9% of the urban population living in Accra and Kumasi. The number of urban localities; that is localities with more than 5000 populations, in the country, stood at 39 settlements in 1948 and included Accra, Kumasi, Sekondi-Takoradi, and Tamale [14].

Recently, Ghana is one of the few countries that are recognized to have National Development Frameworks with spatial references [15] and at the same time gone through several changes towards improving its planning system, even though Ghana's Spatial Planning System for many years has been criticized as weak and ineffective in delivering its objectives [16]. In a bid to stimulate and modernize the planning system, Ghana in 2007 introduced a new three-tier spatial planning model that would allow for spatial planning at the national, regional, and local levels of administration [15].

This high rate of urbanization has accelerated the demand for land to meet the increasing needs of urban dwellers, particularly in the major cities in Ghana. As a result, there is the seemingly rapid expansion of peri-urban areas where basic facilities such as piped water, electricity, and sewage services are virtually non-existent [17]. Estimates indicated that, as of 2015, nearly 60 percent of Ghanaians will be living in urban areas or settlements with more than 5000 populations [14]. A direct implication of the foregoing is that the number of large and medium-sized human settlements (those with more than 5000 people) in Ghana is likely to increase because settlements with less than 5000 population will grow beyond this threshold to become urban centers [17].

Tamale Metropolis is known to be the fourth-largest city in Ghana, with a high rate of the population at around 3.2% [18]. The high rate of urbanization resulting from high birth and in-migration has given rise to an increase in demand for new settlements. As a result of this, conflicts resulting from land issues and litigations and counter litigations are numerous. This, therefore, calls for improved planning around each of these settlement zones. Tamale is one of the fastest developing cities in Ghana [19]. The increasing growth and expansion in the municipality have been a direct consequence of the increasing population leading to a high rate of urbanization with a concomitant demand for land. In some instances, poor layout and inadequate open space creation have resulted in

some difficulties [20]. The relevance of open space development has long been known in development planning and has become an important component in spatial planning for cities. Yet most growing cities and towns in developing countries are still challenged in this regard [21]. In many cities across the globe, spatial/land-use planning constitutes one of the established governance systems by which governments articulate and implement policies aimed at achieving an integrated and functional organization of activities, as well as regulating the type, location, and timing of these activities at various spatial scales [3] [22].

In Ghana, the Ghana Building Code 1996, CAP 84 of the Town and Country Planning, and the Local Government Act 462 (1993) have largely been ineffective in planning, controlling, and monitoring physical development largely due because these legislations were inherited from colonial periods which have no relevance to addressing contemporary planning issues [23]. Research has highlighted the laborious procedures involved in the land documentation and permitting processes and the lack of administrative capacities to respond to the needs of home builders [2] [24]. These issues have rendered the efforts of planners to plan effectively useless. In the context of complex land tenure systems, lack of political will, outdated legislative frameworks (usually inherited from colonial masters), administrative fragmentation, and weak administrative institutions, physical development has proceeded in many cities without proper planning [17].

Over the years, the inception of the new Spatial Planning System has culminated in the formulation of several spatial planning instruments at different spatial scales, including a National Spatial Development Framework [10]. Spatial planning embraces the task of integrating the economic, social, and environmental dimensions of territorial strategies with the ultimate aim of ensuring that development outcomes are sustainable [13]. As a result of these weaknesses, most residents in the Tamale Metropolis are unable to abide by some land administrative regulations such as the open space system [16]. There are cases where several residents have refused to recognize open space boundaries, thereby ignoring the advantages that come with it. Evidence on the ground sometimes points to the traditional leadership under whose bosom the land is sold. The focus of this study therefore will be to examine the role of open in human settlement development in the Tamale Metropolis [25].

## 2. Materials and Methods

This study adopted the survey design with a focus on the mixed methods strategy where both qualitative and quantitative data were used [26] [27]. Data was collected from sampled residential communities within the Tamale Metropolis. The collection of data was done with the usage of questionnaires and key informant interviews. In the process of data collection, both probability and non-probability sampling techniques were employed throughout the study. In probability sampling, Simple Random Sampling (SRS) was used to select five communities. SRS was again used to select respondents from the communities.

On non-probability sampling, purposive sampling was used to relevant departments and institutions necessary to assist in the study [28]. In all, a sample of 157 was used for the study. The selection of respondents was limited to areas that stayed closed to open areas within the suburbs. **Table 1** shows the list of suburbs and the number of respondents. Much of the analyses of this research were done using the Statistical Package and Service Solution (SPSS v.20) to produce Frequency Distribution Table (FDT) and figures for analyses. Validation of findings which is a necessary component of the research was done through member checking.

### 3. Results and Discussions

#### 3.1. Common Ways of Spending Leisure in the Tamale Metropolis

Leisure is one of the periods individuals relax after prolonged hours of hard work. It also sets the tone for the expression of freedom for individuals to relax and reflect on issues or matters of concern. This study examined the common ways respondents spend their leisure. It was revealed that some respondents spend their leisure by taking a walk in the neighborhood street and this constituted 39.5%. The fact that a good number of respondents spend their leisure along the street suggests the lack of a place of rest such as open spaces in some of the communities. Also, about 26.1% of the respondents spend their leisure by idling in the community while 12.7% spend their leisure by visiting friends nearby. As many as 17.2% of the respondents also spend their leisure by visiting social centers, only 4.5% of the respondents spend their leisure doing sightseeing around the neighborhood. The dynamics involved in the way respondents spend their leisure suggest a paucity of open space in the communities. This is illustrated in **Table 2**.

The mode of leisure was further interrogated by the study. It was noted that most respondents prefer spending time with friends by the roadside or a walk around the community in their pastimes. This indicates that respondents in the various communities do not make use of some open spaces in the communities. This could be due to the nonexistence of open spaces or otherwise. About this,

**Table 1.** List of suburbs and number of respondents.

S/R	List of Suburb	Frequency
1	Target	Kuku
2	Kukuo	48
3	Changli	29
4	Dungu-UDS	29
5	Sawaba	17
	Total	157

Source: Field survey, 2022.

**Table 2.** Common ways of spending leisure.

Leisure	Frequency	Percent (%)
Visiting Friends	20	12.7
Taking a walk in the Neighborhood	62	39.5
Idling in the Community	41	26.1
Visiting Social Centers	27	17.2
Sight Seeing	7	4.5
<b>Total</b>	<b>157</b>	<b>100.0</b>

Source: Field survey, 2022.

the Town and Country Planning Department intimated that most open spaces are either converted into residential land or waste collection centers. This, therefore, makes its usage a major challenge. “*When open spaces are created in our design, they are usually converted by the chiefs for use as residential plots or sometimes places for waste collection...* (KII, 2022)”. It was further revealed that some open spaces have also tended to be hubs of criminals and criminal activities and this does not allow for its full benefits.

### 3.2. Availability and Perception on the Creation of Open Space

The study also sought to find out from the respondents whether there are common areas of interaction within the communities. It was revealed that 52% of the respondents indicated that they do not have any common grounds for interaction in the communities. This means that there are no common areas where respondents can meet for any social activity. Also, 48% of the respondents indicated that there is a common space for interactions. On the creation of open space in communities, the study queried respondents on the agency responsible for the creation of open space. This was to determine the level of awareness of respondents on bodies responsible for such purposes. As many as 35% of the respondents mentioned the Town and Country Planning Department as the body responsible for demarcating and creating open space in communities. This suggests that about one-third of the respondents see the role of creating open space to be in the hands of the Town and Country Planning Department. Also, 25.5% of the respondents mentioned community chiefs while 21.7% identified open space as being the role of the National Parks and Gardens Department. As many as 17.8% of the respondents perceive the Lands Commission as the recognized body responsible for the creation of open space. The various perceptions above signify that most of the respondents do not have an idea about the body responsible for the creation of open space (**Table 3**).

Respondents were sharply divided on the availability of open spaces in the sampled communities. While the TCPD mentioned several open spaces, most communities were not aware of such. This means that open spaces were either being converted into other land uses or were sold out to private individuals.

**Table 3.** Perception on the creation of open space.

Perceived Agency	Frequency	Percent (%)
Community chief/leaders	40	25.5
Town and Country Planning Dept.	55	35.0
Parks and Garden	34	21.7
Lands Commission	28	17.8
<b>Total</b>	<b>157</b>	<b>100.0</b>

Source: Field survey, 2022.

Similarly, some respondents' knowledge of the institutions responsible for the creation of open spaces was limited. The fact that some respondents did not even know the institution responsible for planning and zoning meant a lot for development.

### 3.3. Consideration for Siting of Open Space

The study also wanted to determine respondents' perceptions on the various considerations employed in selecting a site for use as an open space. In **Table 4**, about 38.9% of the respondents identify accessibility as one of the major considerations before creating an open space. This means that any open space must be accessible to its users. Also, a good percentage of respondents, 30.6% mentioned the serenity of the location. Others represent 12.7% mentioned closeness to a natural resource or nature, as many as 13.4% of the respondents also spoke of proximity, as little as 4.5% mentioned other factors such as the composition of the users' population and existing customs. The fact that respondents have varied reasons for open space creation lay credence to its importance.

According to the TCPD, open space play important role in settlement planning and these include health, physical, and natural or climatic reasons among others. This means that a lot of factors are considered when creating open spaces. However, the lack of adherence to building codes in the metropolis has rendered some of these benefits useless. This often led to misuse of the available open spaces. Some respondents, therefore, questioned the considerations for the creation of open spaces. Uncharacteristically, open spaces in the metropolis are often found to be close to noise sources or inhabited by criminals. This tends to defeat the intended benefits of its creation. Despite all these reservations, the majority (60%) reckoned that open space is very important even though open spaces in the metropolis have not served their intended purposes.

It was further found that open space is very necessary for any human setting according to the TCPD. The benefits of open space are seen in the fact that it breaks the monopoly of physical structures which more often than not deprives the environment of the feel of nature. As such, open space is usually recognized as the breathing point of the environment. This means that the need to protect open spaces is incumbent on every individual perceives to be benefiting from it.

**Table 4.** Consideration for Siting of open space.

Factors	Frequency	Percent (%)
Accessibility	61	38.9
Serenity	48	30.6
Natural Resources	20	12.7
Proximity	21	13.4
Other	7	4.5
<b>Total</b>	<b>157</b>	<b>100.0</b>

Source: Field survey, 2022.

It is important to emphasize that, the challenges of open space created in the metropolis did not prevent respondents from appreciating its importance as seen in **Table 5**. Aside from the benefit of relaxation and comfort, the issue of physical rest, natural ventilation, and leisure were among the major uses of open spaces. In all cases, it is seen that open space performs a significant role in society as recognized Doyle (2012) recognized in his passive and active categorization of open spaces.

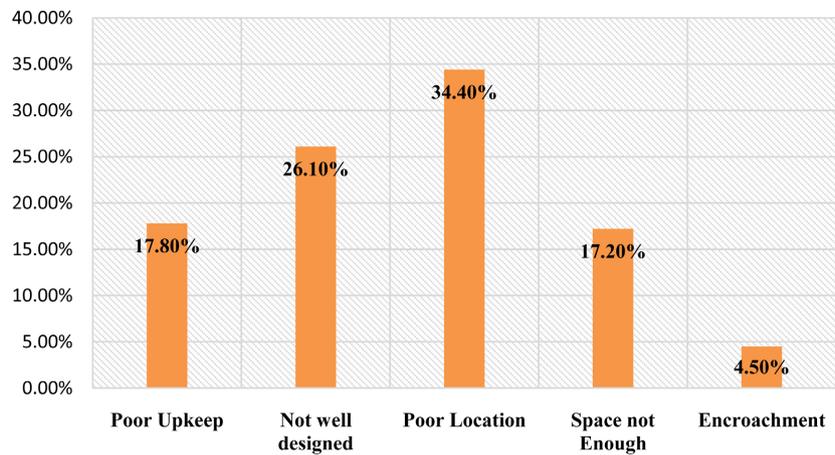
### 3.4. Challenges of Conforming to Open Space Standards

In most growing cities, challenges involved in the use of common properties such as open space are numerous. Aside from the issues of lack of restricted access to such facilities, all resources are used in a common pool fashion. It was, therefore, necessary for this study to examine the user challenges of open space in the Tamale Metropolis. In **Figure 1**, about 34.4% of the respondents associated poor location as one of the challenges of open space. This means that some open spaces in the metropolis are perceived to be poorly located. This could therefore lead to the disuse or misuse of such facilities. Another challenge identified by about 26.1% was the poor design of open space in the metropolis, as many as 17.2% also complained of the space not being enough for the intended purpose. This could be one of the reasons why some respondents spoke about the little space of some open space in the metropolis.

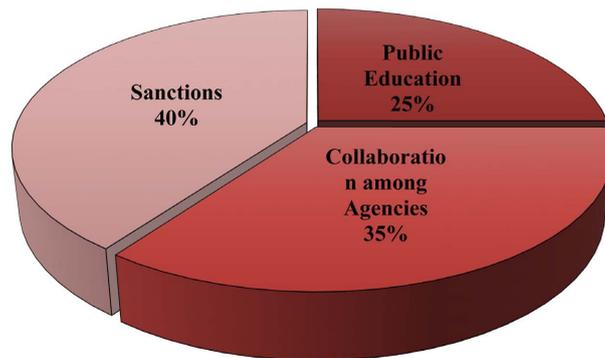
Although most of the subsequent discussions with the key informants agreed with the challenges above, it was further found that general challenges with land administration place a major hindrance on the development of open space. Although the laws of Ghana have spelled out the processes involved in land acquisition, these processes have been routinely abused by both traditional authorities and landed property developers. In most cases, it was mentioned that the chief who are the primary custodians of the land do not often see the value in the creation of open space. It is therefore labeled as a 'waste of land' and in most cases often re-zoned for physical development. Another major challenge that came up was the issue of poor design and upkeep. It was revealed that most of the open spaces in the metropolis are not well designed and this opens it up for different

kinds of unregulated uses. This is the reason why most open spaces in the metropolis have been turned into a hub for criminals and criminal activities.

Based on the challenges as highlighted already, the study also sought the views of residents on the way forward. In **Figure 2**, it was revealed that 40% of the respondents suggested sanctioning offenders who do not obey zoning regulations, especially open spaces. This means that both traditional landowners and residents who fail to follow laid-down regulations should be sanctioned. It was



**Figure 1.** Challenges of usage of open. Source: Field survey, 2022.



**Figure 2.** Way forward. Source: Field survey, 2022.

**Table 5.** Uses of open space.

Importance	Frequency	Percent (%)
Physical rest	36	22.9
Relaxation and comfort	57	36.3
Good for leisure	22	14.0
Playground	27	17.2
Ventilation	15	9.6
<b>Total</b>	<b>157</b>	<b>100.0</b>

Source: Field survey, 2022.

also suggested by 35% of the respondents that stronger collaborations among the various institutions that deal with land zoning and demarcation were needed. This will not offer some avenue for some of these institutions to bypass certain regulations. Public education on the relevance of open spaces was also suggested by 25% of the residents. The issue of public education will help residents to identify the various processes in land administration and also the importance of open spaces. This will help protect open spaces and also reduce encroachment and misuse.

#### **4. Conclusion**

From the foregone, it is seen that most residents in the Tamale Metropolis spend leisure in the outdoor space and along the street. In doing so, they engage in passive rest activities such as sitting, conversing, and engaging in sightseeing by the roadside. Although some residents also use the central parks and gardens, it is usually used by those engaged in active outdoor games. Additionally, most open spaces within the metropolis are not well developed to suit the user needs of the residents. As a result of this, open spaces tend to be used as a hub for thieves and places for open defecation. The challenge of encroachment and re-zoning of open spaces is also very common in the metropolis due to poor adherence to the physical development procedures. The level of awareness of the importance of open space among residents is very high, especially for both the environment and human settlement. However, the level of its patronage has been very poor due to its bad forms. The lack of strict enforcement of building codes is, therefore, a major hindrance to open space development. Different considerations were perceived to be considerations for citing open spaces. The success of open spaces in the metropolis, therefore, lies in the hand of residents and the traditional landowners and the TCPD since most of the challenges of open space are habitual instead of technical. The Town and Country Planning Department (TCPD) and its related bodies should endeavor to enforce strict planning and adherence to building codes. The activities of local community chiefs that militate against the strict adherence to planning and building codes should be discouraged. Also, sensitization and public education should be organized regularly to educate people on the importance and use of open space. The Tamale Metropolis should also ensure there is the sanity of open spaces to ensure people use them judiciously.

#### **Study Limitations**

Like most studies, the conduct of this study was not without challenges. The study was limited in the acquisition of spatial data which could have been used to show areas designated for open spaces in the metropolis. Such data and the use of ground truth data could have helped in the analyses. Additionally, this study was a bit narrow in scope as more suburbs could be included in the study sample. Lastly, the study could also access enough secondary Data from institu-

tions that are directly related to land administration and zoning in the metropolis. Future related studies could make use of these useful suggestions to enrich the outcome of the study.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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