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Urban Green Spaces in Africa: Nature and Challenges

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Abstract Green spaces constitute a major environmental resource of urban landscape. In Africa, statistics show that urban green spaces are depleting at an alarming rate with green spaces now occupying small proportion of the landmass of several urban areas. This paper sought to give a broad discussion on the nature and challenges behind the deterioration and poor management of urban green spaces in Africa. The paper adapted the systematic review approach and utilized publications that focused on or related to urban green spaces in the African sub-region. Among the major findings of the paper were that the nature and distribution of green spaces in Africa is influenced by the ecological zones and climate conditions of Africa. The challenges uncovered to hinder the development of green spaces in Africa included the following: rapid urbanisation, low resource base of institutions on green spaces, lack of priority to green spaces, corruption, uncooperative attitudes of the local people and political instability. To address these challenges, joint and committed efforts by national governments, city authorities and the local people to preserve these spaces is crucial. Green spaces should be treated as among the top priorities of the development agenda of urban planning authorities with the allied institutions managing green spaces well resourced to go about their activities as expected of them.

Keywords Africa, Urban, Green spaces, Nature, Challenges

1. Introduction

Although cities covers less that 5 per cent of the earth's land space, substantial amount of the world's resources can be found in them[1]. Among these resources are green spaces. The ambience of urban planning does not only cover matters of the built environment such as housing and transportation network but also the integration of green spaces into the physical urban landscape[2]. These urban green spaces literally covers all public and private open spaces in urban areas mostly covered by vegetation which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for use[3]. They include parks, gardens, allotments, wetlands, and urban trees. Planning concepts such as garden city, green belt, green fingers and greenways highlight the need to preserve the natural environment of urban areas by incorporating many green spaces into the design of cities. This is because these spaces offer immense benefits to cities. 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[4 - 6]. From environmental perspective, it has been observed that they help to ameliorate local climate, improves urban air quality, conserve biodiversity and epitomise architectural beauty of cities[7 - 9]. In the economic realm, benefits that green spaces offer include increment of property values especially houses sited close to green spaces, creation of more job avenues as many individuals will have the opportunity to work on various parks and gardens and other related businesses, and generation of revenues to augment government expenditure[10 - 12].

Ideally, due to the immense benefits that green spaces provides, it is expected that much spaces in urban areas will be reserved for such purposes but this has not been the case. Ironically, statistics shows that urban green spaces are depleting at a faster rate in urban areas across the world. For example, a study conducted on changes in land-use in 25 European cities found between 7.3 and 41 percent of lands reserved for green spaces been lost to different land-uses[13]. Similarly, in USA, a study on land-use change in 274 metropolitan areas revealed a loss of about 1.4 million hectares of green spaces to different land developments[14]. In Africa, the situation is worse. Studies on several African countries revealed that there is intense pressure on green spaces for different human activities resulting in persistent deterioration of these spaces especially in urban areas where the pressure is more profound[15, 16]. At the moment, the rapid depletion of green spaces in Africa has resulted in green spaces occupying very small per cent of the total land space of many urban areas. For example, it has been found out that several towns in the Republic of South Africa have less than 10 percent of their total lands occupied by green spaces[17]. The situation in Lagos city (Nigeria) is more frightening, green spaces now occupy less than 3 per cent of

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the city's landmass[18]. Furthermore, in Kumasi city (Ghana) once the Garden city of West Africa, statistics shows that several of the green paces in the city have been depleted remaining only a small fraction which together with other open spaces constitute about 10.7 percent of the total land area of Kumasi[19].

Despite the excessive destruction and poor management of green spaces in many regions of the world and Africa in particular, studies on urban green spaces with particular emphasis on uncovering the challenges confronting green spaces are less focused on Africa. Much of such studies are skewed towards the European sub-region and other regions of the world. The few studies on Africa are not broad base; they concentrate on green spaces within a particular city. It is therefore against this background that this paper was put together to provide a broader discussion on the nature and challenges facing urban green spaces on the African continent. This effort will make it easy for individuals, policy makers and international bodies to at a goal come into grips with the pertinent issues militating against the successful development of green spaces in Africa and hence contribute in diverse ways to avert the situation.

2. The Concept of Green Spaces in Urban Landscape

The idea of incorporating elements of nature into urban plans is an important feature in the history of urban planning[20]. Different scholars have propounded concepts that support the integration of green spaces into the physical landscape of urban areas to enhance the living condition in these areas. Some of the earliest urban utopian concepts that stressed on the preservation of urban natural environment (green spaces) include Charles Fourier's fantasy villages called "phalansteries", Ernest Callebach's novel "Ecotopia," and the most famous Ebenezer Howard's "Garden City," which are all important landmarks in green city movements [21]. George Cadbury's "Bournville Village" also made an important mark.

The term "green space" is a more recent term and its origin can be traced from the urban nature conservation movement and the European thinking about green space planning which started in UK[22, 23]. The meaning of green space is often confused with other terminologies in urban planning especially open space and public open spaces. In most cases these terms are used loosely or interchangeably. To clarify the meaning of green space and distinguished it from other concepts in the urban landscape, some authors came up with the following definitions. Fratini & Marone[24] used the term green space to cover all areas that are naturally or artificially covered with vegetation. Fam et al.[7] defined green spaces as all vegetated spaces including trees, shrubs, and grasses. In the views of Jim and Chen[25], green space consist of outdoor spaces which have some amount of vegetation and mainly found in semi-natural areas. Kit Cambell Associates[26] opined that green spaces consist of any vegetated land or structure, water or geological features found in a given area. Green spaces have also been defined to cover all green infrastructure such as network of natural, semi-natural and artificial ecological system within a given area[27, 28].

Irrespective of the minor differences that exist in the various definitions on green spaces, it can be deduced that green spaces in urban areas covers all areas that to some extent have some form of vegetation either natural or artificial. It is not only limited to urban parks and gardens. It covers land that is made up mainly of unsealed, permeable, "soft" surfaces such as soil, grass, shrubs and trees which are privately or publicly accessible or managed[22]. To get much insight about the description of green spaces in urban landscape, Swanwick et al.[23] came up with the following clarifications. According to them, urban areas are made up of the built environment and the external environment between buildings. The external environment consists of two main entities, "green space" and "grey space" (Figure 1). The green space may either be linear (occurred along transport routes such as roads, railways), semi-natural (wetlands,woodland), functional (allotments, churchyards, school grounds) and amenity (parks and gardens)[22, 23].

The second component of the external environment which is '*grey space*' covers land that to a greater extent sealed, impermeable and has 'hard' surfaces such as concrete, paving or tarmac.

The grey space is of two types, *functional* grey *space* (which provide a specific purpose such as roads, pavements, car parks and other hard surfaced areas related to different types of built development) and *civic grey space* (publicly accessible areas planned basically for public enjoyment such as town squares, plazas and esplanades)[23].

In view of this classification, Swanwick et al.[23] described urban open space as a combination of green spaces and civic grey spaces and defined it as that part of urban land that contributes to its amenity, either visually by contributing positively to the urban landscape or by virtue of public access. All open spaces that the general public have access to are referred to as public open spaces.

In sum, urban green spaces can therefore be said to be a subset of urban open spaces. Whilst urban green spaces are limited to only the vegetative part of the urban environment specifically the soft lands, urban open spaces on the other hand encompasses all aspects of green spaces in addition to those hard land surfaces made purposely for human usage.

3. Materials and Methods

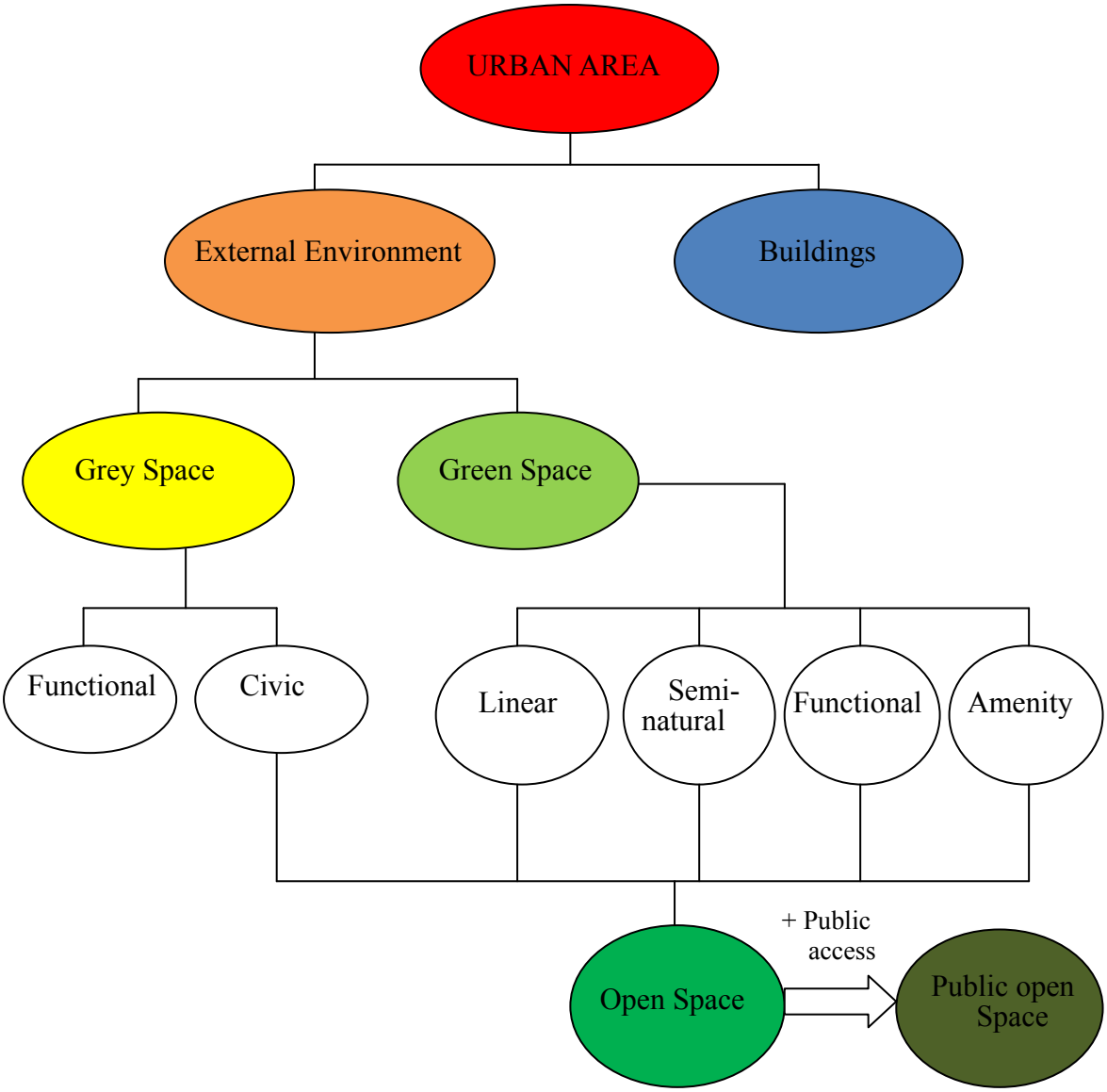

Figure 1. Description of green spaces in urban landscape

The paper was qualitative in nature. It employed the systematic review approach which deals with using explicit approach to search, appraise and synthesize available literature to satisfy the aim of a topic understudy[29, 30]. This approach was utilized due to the nature of the paper which was broad based laying much emphasis on green spaces in many cities in Africa. The robust and comprehensive nature of systematic review helped the paper to avoid biasness in the analysis of results, allowed a wide range of data to be assimilated and provided more accurate and reliable conclusions[29, 30]. The paper dwelled extensively on secondary materials such as books, journals, conference papers and reports that concerned themselves with the topic understudy. Relying on different works on systematic review, rigorous processes or steps were followed by the paper to retrieve data and provide the necessary discussion accordingly[29 - 32]. These processes were as follows:

1. Identifying publications to be included in the paper

Under this, journals, books and other written documents that focused on urban planning and landscape, urban greening, forestry, biodiversity conservation, and environmental management were of great importance for the paper since most of these areas of research give much attention to urban green spaces. Careful attention was given to some of the publications here to give the paper a solid theoretical focus.

2. Publications on African continent

Since the thrust of the paper was on green spaces in African cities, the search was narrowed down to published materials on green spaces in Africa. Here no restrictions were put in place. All written materials that were found on green spaces in Africa irrespective of their content were

utilized. This was done to get a broader overview of green spaces in Africa.

3. Focusing on the nature and challenges of green spaces

After getting broader overview of green spaces in Africa, emphasis was given to materials that gave much attention to the nature and challenges of green spaces in Africa. Rigorous content analysis was done to clearly decipher the issues that concern themselves to the topic under study. In situations where materials did not explicitly focused on the nature and challenges of green spaces but addresses it with other issues, careful attention was paid to get the information that were relevant to the paper.

4. Synthesizing the results

Various results that came out from the content analysis of the available materials were put together and made meaning from them to serve as the findings of the paper.

4. The Nature of Urban Green Spaces in Africa

The findings of the paper revealed that the African sub-region has different forms of urban green spaces. In most African countries the major forms of urban green spaces that were found included the following[33]:

- Semi-private space such as green space in residential, institutional and industrial areas;
- Designated parks, street trees and roadside plantations;
- Public green areas such as green parks, botanical gardens, recreational gardens, outdoor play areas etc.
- Public and private tree plantations on vacant lots, green belts, woodlands and peri-urban farming;
- Rangeland and forests close to urban areas;
- Natural forest under urban influence such as nature reserves, national parks, and forests for eco-tourism; and
- Trees planted for environmental protection and beautification.

Although a variety of green spaces exist in Africa, it came to the fore that among the various forms of urban green spaces much emphasis is given to urban trees. The governments of most African countries in collaboration with environmental agencies often embark on tree planning exercises in urban areas to enhance the greenery and air quality of those areas. The 2011 African Green City Report indicated that in cities such as Durban and Johannesburg (South Africa), Lagos (Nigeria), Maputo (Mozambique), Nairobi (Kenya) and Cairo (Egypt) much emphasis was given to the growing of trees than other forms of green spaces. The report revealed that over the last five years different governments have seriously embarked upon tree planting exercises to plant about 62000, 500000, and 2800 trees in Durban, Lagos and Maputo cities respectively[34]. Trees commonly found to be grown in African cities especially West African cities included the following; Azadirachta indica, Eucalyptus species, Acacia species, Terminalia catapa, Gmelina arborea, Tectona grandis (teak), Polyathia longifolia (Weeping willow), Delonix regia and different species of palm[33]. Royal palm tree, Acacia auriculiformis, Polyathia longifolia (Weeping Willow), Cassia siamea (Siamese Cassia) and Mangifera indica (Mango tree) were among the dominant tree species found in most urban areas of Ghana[35].

It was discovered further that the distribution of green spaces in Africa is much concentrated to West, East and Central Africa, and to some extent the southern part of Africa than northern Africa. This distribution was found to be influenced by the vegetation or ecological zones of Africa (Figure 2). For example, the desert vegetation zone covering the northern part of Africa where countries such as Tunisia, Algeria, Morocco, Egypt and Libya are located was found to have unfavourable soil conditions which do not support the growth of green spaces. In view of this, many urban areas in northern Africa have limited green spaces[36]. On the contrary, many cities in the West, East, Central and Southern Africa were found to have much green spaces compared to North African cities. This was because most of these cities are located in the tropical rainforest and deciduous forest vegetation zones which have favourable soil and rainfall conditions that support green spaces (Figure 2).

In the western part of Africa, seven broad vegetation zones were noticed[33]: mangrove forest, fresh water swamp, rainforest, guinea savanna, sudan savanna, sahel savanna and desert. Urban areas that lie in the desert and savanna vegetation zones of West Africa have limited amount of urban green spaces due to unfavourable soil conditions. For example, urban areas in the northern part of Mauritania, Mali, and Niger have limited amount of green spaces because of the location of those areas within the desert vegetation zones of West Africa[36]. Similarly, in Ghana and Nigeria, the northern part of the countries have limited amount of urban green spaces because those areas fall within the savanna vegetation zones which have poor soil and vegetation conditions for the growth of green spaces.

Climate was found to play significant role in the growth of urban green spaces in Africa. Most African countries especially those in Sub-Saharan Africa have two major climate seasons; wet and dry seasons. The dry season is characterized with very high temperatures and hot weather conditions with average daily temperatures ranging between 18-30℃. This does not augur well for the development of urban green spaces because during the dry season, trees and grasses on many urban green spaces wither due to intense hot conditions. The dry season in Ghana often called “harmattan” is characterized with hot and humid conditions in the southern part of Ghana, and very hot and dry conditions in the northern part of the country[37]. During this period in Ghana (November – March) there is excessive dryness of the green vegetation of most urban areas especially the northern part of the country. Poor irrigation mechanisms to water green spaces especially shrubs and lawns in cities compound this problem causing excessive desiccation of such green spaces which often ends up in complete disappearance of such spaces.

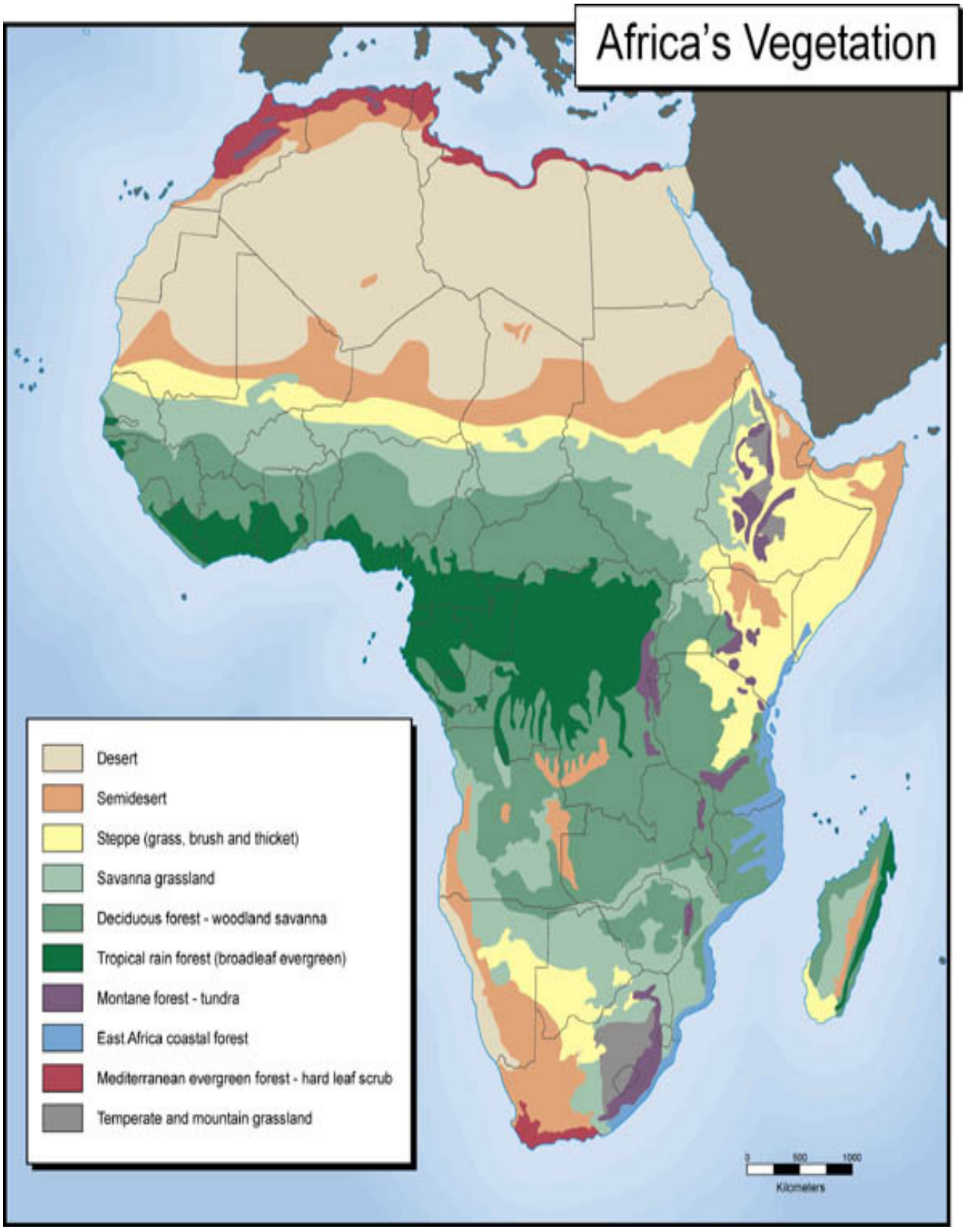

Figure 2. Vegetation map of Africa

5. Challenges Facing the Development of Urban Green Spaces in Africa

The paper uncovered several factors that impact negatively on the development and management of greens spaces in Africa. For the purposes of clarity and easy understanding, these challenges have been broadly categorized under three main themes. These are the pressure of urbanization, insufficient operation of urban planning regulations and, and socio-economic and political challenges.

5.1. Pressure of Urbanization

The predominant challenge that was found behind the deterioration of urban green spaces in Africa was rapid urbanization[33, 38, 39]. Cairo (Egypt) and Lagos (Nigeria) which are among the most populous cities in the world can be found in this region. The 2010 State of African Cities Report by UN Habitat indicated that over one billion people are living in Africa and out of this figure, close to 50 per cent are dwelling in urban areas[40]. The statistics showed by the report on the intensity of urbanisation and its adverse effects in Africa was frightening. For example, in West Africa where countries such as Nigeria, Ghana, Togo, Cote D'lvoire and Liberia are located, the total urban population in 2010 was 137.2 million compared to a mere 6.6 million in 1950. It is projected that by 2050 the total urban population in West Africa would reach 427.7 million. The urban population in East Africa (Kenya, Ethiopia, Tanzania etc.) increased from 6 million in 1960 to about 77 million in 2010. The situation in northern Africa and southern Africa was not different. Southern Africa (Republic of South Africa, Zimbabwe, Zambia etc.) remains the most urbanised region in Africa with close to 60 per cent of the human population living in urban areas. Similarly, more than half of the entire population in northern Africa (Egypt, Tunisia, Libya, Morocco etc) also lives in urban areas.

The rapid urbanisation in Africa was found to have resulted in excessive destruction of urban natural environment such as green spaces[33, 41]. This was manifested in the sprung up of many informal settlements (slums) and urban sprawl taking place on lands reserved for green spaces (such as urban forest, parks, gardens and outdoor sport areas) to absorb the high urban population. Sub-Saharan Africa has the highest slum population in the world with about 200 million slum dwellers[42]. The high rate of urbanisation in Kenya with its corresponding increase in urban sprawl and slums on the destruction of urban green spaces cannot be over emphasized. Kenya is noted for good wildlife and natural vegetation in Africa. The population of Nairobi which is the capital of Kenya has increased tremendously to the tune of over 3 million people as against 343,500 in 1962[39]. This soaring population has resulted in high rate of informal settlements and urban sprawl causing intense destruction to many urban green spaces in Nairobi. It has been observed that slums or informal settlements in Nairobi cover nine (9) administrative divisions or areas and in each of these nine administrative divisions the amount of green vegetation lost is immense[43].

In Addis Ababa, the capital city of Ethiopia, the consequences of rapid urbanisation on the development of green spaces is alarming. Most of the urban trees both exotic and local species that were grown to enhance the greenery of the city and also protect the natural environment have been destroyed or degraded due to rapid population growth of the city[41]. The green vegetation of Addis Ababa now covers only 14.6 per cent of the total land area, this is because most of the urban trees have been cleared for housing purposes[41]. Moreover, rapid urbanisation has caused many cities in West Africa such as Lagos, Ibadan, Kano, Kaduna, Sokoto (Nigeria), Dakar (Senegal), Freetown (Sierra Leone), Abidjan (Cote D'lvoire), Accra, Kumasi and Tema (Ghana) to lose substantial amount of urban green spaces to urban sprawl and infrastructural developments[33]. In a related development, a study on urban sprawl in Abuja (the capital city of Nigeria) and its effect on the natural vegetation cover showed a considerable loss of the natural vegetation to the expansion of settlements[44]. Specifically, the study revealed that in 2001 built-up areas covered 30.51 per cent of the total land area of Abuja whilst that of the natural vegetation was 21 per cent. However, in 2006 the coverage of the built-up areas increased to 42.6 per cent whilst in contrast that of the natural vegetation (green spaces) decreased to 12.19 per cent as a result of increase in urban sprawl to contain the high population growth of the city[44].

5.2. Insufficient Operation of Urban Planning Regulations

Planning of towns in Africa is underlined by regulations which are made by the legislature and approved by the central government. Although several land planning regulations on green spaces were found to be available in various African countries but the operation of such regulations was problematic. The following issues were found to hinder the effective operation of urban planning regulations on green spaces in Africa: the dysfunctional nature of urban planning regulations; bureaucratic processes involved in issuing development permits and weakness of the planning institutions as result of insufficient resources to work with.

The dysfunctional nature of the urban planning regulations in Africa can be linked to the outdated nature of some of these regulations to address the current development trends in urban areas. It was revealed that some of the urban planning regulations operating in some countries in Sub-Saharan Africa were made about 60 years ago along the lines of the planning regulations of their colonial masters at that time such as the British, French and Germans[45]. For example, the 1946 Town Planning Ordinance of Nigeria, the 1948 Town Planning Act of Malawi[46], the 1956 Town Planning Ordinance of Tanzania[47] and the 1945 Town and Country Planning Ordinance of Ghana are still in operation. Little or no changes have been made to these regulations and this makes it difficult for such regulations to

comprehensively address some of the current urban development problems such as rapid urbanisation and the fast depletion of green spaces.

In addition to this, most African countries over rely on master plans to manage urban areas. The master plan shows on a map the outlook of desired urban form to be achieved in future[48]. These master plans are not able to deal with new challenges associated with urban developments in Africa such as excessive destruction of green spaces. This is because most of these master plans are outdated, rigid and their preparation did not involve the participation of wider stakeholders including the local people. The physical development of Abuja (Nigeria) is still based on a master plan which was prepared in the 1970s[48]. It was also detected that the master plan for Lusaka (Zambia) drawn up by Doxiadis in 1968, and the 1944 master plan for Accra (Ghana) revised in 1957 are still in operation[48]. New development patterns in these cities make it difficult for these master plans to effectively guide the growth of these cities resulting in massive encroachment of many green spaces.

Delays in giving decisions on development permits by planning authorities with its associated bureaucratic processes was found to have consequences on the development of urban greens space in Africa. It takes a very long period about four years in Tanzania for a developer to get all land documents such as detailed plans and building permit approved by the planning authorities[47]. Similarly, it has been observed that in Nigeria lengthy bureaucratic procedures have to be followed before one can get the necessary papers to proceed with any land development. One has to go through about thirty-two (32) processes in Nigeria before he/she can get the available land documents and this could last for a year or more[49]. Furthermore, long bureaucratic processes in securing development permits from planning authorities have also been identified to take place in Ghana and Cameroun[45]. Specifically, it came to the fore that it takes about two years, and between 2-7 years to get land titles and other development documents in Ghana and Cameroun respectively[45]. All these long processes influenced developers and other individuals in urban areas to evade the required planning procedures to embark on land projects which are unauthorised. The outcome of this has been massive encroachment of green space lands for housing and commercial activities by private developers in many urban areas. Furthermore, lengthy bureaucratic processes were found to give rise to corrupt practices such as collection of bribes by planning authorities from private developers to speed up the process. For instance, a study on Festac Town in Lagos associated the poor physical development of the town to bribes which are collected by the city planning authorities[50]. The findings of that study showed that some officials of the Federal Housing Unit in charge of Festac Town area collects bribes before granting development permits to developers. This was discovered to be a major cause of high growth of unauthorized building structures in Festac Town which have destructed much of the green vegetation in the town. This is because developers can pay bribes to get documents to encroach on lands reserved for green spaces.

Furthering on corruption, misappropriation and embezzlement of state funds meant for socio-economic developments such as projects on green spaces by government officials was also found as a problem undermining the successful development of green spaces in Africa[38]. Embezzlement of funds strongly came up as an issue in Harare (capital city of Zimbabwe) to hamper the protection of sensitive natural sites (green spaces) and the integration of such sites into the overall plan and design of the city[51]. It was revealed that despite provision of some funds by donor agencies to incorporate ecological zones into the plan of Harare city such funds were diverted or embezzled by some government officials rendering the project to be in standstill[51].

Compounding the problem of insufficient operation of urban planning regulations in Africa was poor enforcement of land planning regulations on green spaces. Inadequate skilled personnel, insufficient logistics, financial constraints, political interference and lack of coordination between planning authorities were found to be the cause this problem. Concerning poor coordination, this was found in Addis Ababa to impact negatively on the protection of urban parks as the coordination between government institutions, private organization and NGOs on green spaces was poor[52]. The coordination and partnership between government and private institutions on green spaces in many West African countries were also found not to be in good condition[33]. This is due to the fact that most city authorities in West Africa do not recognize private organisation as important entities on green spaces and therefore often take decisions without the active involvement of the private sector. Poor coordination between the various planning institutions in Harare (capital city Zimbabwe) surfaced as a problem behind the destruction of green spaces and insufficient dialogue between the institutions was found out as a cause for that[51]. With respect to political interference it was found out that the activities of the Harare city authorities are often politically interfered especially when it comes to taking necessary actions against individuals who encroaches upon green space lands. Some of the offenders normally go scot free because of close links they have with top government officials[51].

Lack of political will to undertake projects on green spaces also emerged as a dominant challenge. Policy makers were found to lack political will to initiate policies or measures to enhance the development of urban green spaces in many African cities. Factor analysis performed to ascertain the factors destructing green spaces in Lagos city pointed out lack of political will of the planning authorities to initiate policies on green paces as a major factor for such destructions[53]. The issue of lack of political will was also a major problem in Addis Ababa (Ethiopia). Beautification projects scheduled to be undertaken on about 300 hectares of

land to enhance green spaces along the principal roads of Addis Ababa have not been accomplished for some years now due to lack of political will of the city authorities to get the project ongoing[52].

In probing further on the poor enforcement of planning regulations on green spaces in Africa, matters of unqualified skilled personnel, low staff strength, financial constraints and lack of logistics were discovered as predominant factors that worry most institutions on green spaces in Africa. These issues were among the key findings at Addis Ababa (Ethiopia) where the authorities on green spaces were hit with shortages of manpower and severe financial constraints [52]. Similarly, in Abidjan, the body in charge of Parks and Gardens was crippled with unqualified personnel and financial inefficiencies[54]. The situation in Kumasi and other cities in Ghana were not different. The Department of Parks and Gardens, the official body in charge of the development and maintenance of green spaces was found to be in crises with woefully inadequate staff, lack of several basic equipment for their activities, and limited funds to undertake their planned activities[55]. These problems make it difficult for many institutions on green spaces in Africa to strictly enforce regulations on green spaces and also initiate policies to preserve green spaces.

5.3. Social-economic and Political Challenges

Poverty emerged from the analysis of the paper to also contribute to the depletion green space in Africa. The 2010 State of African Cities Report indicated that the rate of Africa's urban poverty is critical[40]. The findings of the report included the following. As at 2003, about 47 per cent of urban dwellers in Benin and 57 per cent of urban dwellers in Burkina Faso lived on less than one dollar ($1) a day. In 2004 and 2005, as many as about 66 per cent of urban dwellers in Niger and 65 percent of urban dwellers in Nigeria lived below one dollar a day respectively. It was further revealed that about 30 per cent of urban dwellers in Ghana lived below one dollar a day in 2006. The high rate of urban poverty in Africa has been linked to the depletion of Africa's green environment as many of the poor tend to over rely on these resources for their survival[40]. Similar findings came up in a study at South Africa which found many poor communities to rely much on the green environment for additional income or to improve their livelihood[15]. The resultant effect has been excessive destruction of green spaces in many urban areas in Africa by the poor to satisfy their needs.

Lack of priority to green spaces in the development agenda of some cities in Africa was uncovered to hinder the growth of green spaces. Green spaces were found not be among the main priorities of many African countries. Matters of poverty reduction and provision of social amenities such as housing, schools, hospitals and pipe-borne water constitute the top priorities of many African countries. This has influenced national governments and city authorities not to give much attention and commit the needed funds for the creation and maintenance of green spaces. Bolnick et al.[56] echoed this by indicating that in Africa much attention is given to brown agenda to the neglect of green agenda which focuses on preserving the green environment. Lugoe[57] observed that low priority given to green spaces in Tanzania has resulted in poor implementation of urban land-use projects on green spaces. In Kisumu (third largest city in Kenya), it came to light that due to low priority to green spaces many of the urban parks have not received attention for long time causing most of the parks to lack basic facilities such as chairs, toilets, notice boards and playing facilities for children[58]. Similar results was the case in Abidjan where several parks and gardens were found in precarious condition with little or no maintenance activities taken place due to little attention given to green spaces in the city[54]. The low priority to green spaces was found to have resulted in many city authorities not providing good security on urban parks to enhance the safety of park visitors. In Kenya, some urban parks were found to be hibernated by drug peddlers, criminals and had no security guards to keep the place safe for users[58]. The Kumasi Children's Park in Ghana is no go area for many residents of Kumasi because the place has been taken over by criminals with a whole lot of criminal activities taken place on the park especially at night. A study by Taylor[59] confirmed this when poor security on the Kumasi Children's Park was found as major factor hindering the usage of the park. This situation on some parks in Africa discourages many individuals from using public parks.

Uncooperative attitudes of urban dwellers towards the management of green spaces also emerged as a predominant challenge. This was found to be the result of lack of involvement of the local people in decision making on green spaces and poor awareness of the local people on the benefits of green spaces. For example, decisions on green spaces in many southern African countries (Malawi, Lesotho, Mozambique) were found to be undertaken mostly by city planning authorities without active involvement of the local people[60]. This problem also resonated in a study on national parks in Sub-Saharan Africa which found the local people in different parts of Zambia, Cameroon and Benin not consulted and involved in the management of parks in their localities[61]. The poor involvement of the local people together with their poor awareness on the benefits of green spaces[54] have influenced most local people to perceive the protection of green spaces as the sole responsibility of planning authorities and therefore do not take good care of these spaces in their neigbhourhoods. These have ended up in indiscriminate destruction of green spaces by the local people and conversion of some parts of many parks into refuse dump in cities such as Kisumu (Kenya), Freetown (Sierra Leone), Ibadan, Kaduna, Lagos (Nigeria), Kumasi and Accra (Ghana)[33, 58].

Political instability was the last challenge that strongly came up as a contributory factor for the poor management and rapid deterioration of urban green spaces in Africa. Over the last two decades, several civil wars have taken place in many African countries such as Sudan, Somalia, Liberia,

Chad, Mali, Cote D'lvoire, Sierra Leone, Democratic Republic of Congo, Rwanda, Angola and Libya. The devastating effects of these civil wars on urban development as well as green spaces cannot be underestimated. For example, in Libaria, over 10 year's civil war in the country destroyed substantial amount of urban natural environment in areas such as Monrovia (capital city) and Bunchanan[62]. The Somalia civil war destroyed many urban trees. During the war some major urban areas such as Hargeisa, Borama, Berbera and Erigavo were the hot spots of the war and in view of that both indigenous and foreign trees in these areas were destroyed through cross bombardments[63]. In addition to this, urban green spaces in Rwanda also came under serious destructions caused by the civil war in Rwanda that occurred in the 1990s. It was estimated that the civil war in Rwanda destroyed some aspects of Gishwati forest, much of Mukura forest, and about 70 per cent loss of the Akagera National Park[64].

6. Conclusions

All in all, Africa as a region has diverse urban green spaces with much attention given to the growing of urban trees. Most of the green spaces in Africa are concentrated in Sub-Saharan Africa than North Africa because of unfavorable vegetation and soil conditions. The overall development of urban green spaces in Africa was found to be hindered by many challenges. These challenges include urbanisation, low resource base of institutions on green spaces, lack of priority to green spaces, the influence of poverty, corruption, uncooperative attitudes of the local people and political instability. To address these challenges, joint and committed efforts by national governments, city authorities and the local people to preserve these spaces is crucial. Green spaces should be treated as among the top priorities of cities with the core institutions managing the green spaces well resourced to go about their activities as expected of them.

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REFERENCES

[1] Zitkovic, M., 2008, *Managing green spaces for urban biodiversity*. Brussels: Countdown 2010 Secretariat.

[2] Baycan-Levent, T., Vreeker, R., and Nijkamp, P., 2009, A multi-criteria evaluation of green spaces in European cities. *European Urban and Regional Studies*, 16(2), 193-213.

[3] URGE Team, 2004, *Making greener cities – A practical guide*, No. 8/2004. Leipzig-Halle: UFZ Centre for Environmental Research.

[4] Cohen, D. A., Inagami, S., and Finch, B., 2008, The built environment and collective efficacy. *Health & Place*, 14, 198–208.

[5] 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.

[6] Isenberg, J. P., and Quisenberry, N., 2002, *Play: Essential for all children*. A position paper for the Association for Childhood Education International.[Online]. Available: http://365waystounplugyourkids.com/play_Essential_for_kidsl.htm.

[7] Fam, D., Mosley, E., Lopes, A., Mathieson, L., Morison, J., and Connellan, G., 2008, *Irrigation of urban green spaces: A review of the environmental, social and economic benefits.* CRC for Irrigation Futures Technical Report No. 04/08.

[8] Nowak, D. J., Crane, D. E., and Stevens, J. C. (2006). Air pollution removal by urban trees and shrubs in the United States. *Urban Forestry & Urban Greening*, 4(3-4), 115-23.

[9] Baycan-Levent, T., and Nijkamp, P., 2009, Planning and management of urban green spaces in Europe: Comparative analysis. *Journal of Urban Planning and. Development.*, 135(1), 1–12.

[10] Aldous, D. E., 2005, Education and training opportunities for turf management in Australia. *Acta Horticulturae*, 672, 71-7.

[11] Lutzenhiser, M., and Netusil, N., 2001, The effect of open space on a home's sale price. *Contemporary Economic Policy,* 19(3), 291-298.

[12] 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.

[13] European Environment Agency[EEA], 2002, Toward an urban atlas: Assessment of spatial data on 25 European cities and urban areas. *Environmental Issue Rep. 30*, EEA: Copenhagen.

[14] McDonald, R. I., Forman, R. T. T., and Kareiva, P., 2010, Open space loss and land inequality in United States' cities, 1990-2000.*PLoSONE*,5(3), e9509.doi:10.1371/journal.pone.0009509.

[15] Cilliers, S., Cilliers, J., Lubbe, R., and Siebert, S., 2012, Ecosystem services of urban green spaces in African countries: Perspective and challenges. *Urban Ecosystem,* DOI 10.1007/s11252-012-0254-3

[16] Kestermont, B., Frendo, L., & Zaccaï, E., 2011, Indicators of the impacts of development on environment: A comparison of Africa and Europe. *Ecological Indicators*, 11, 848–856.

[17] MaConnachie, M. M., Shackleton, C. M., and McGregor, G. K., 2008, The extent of public green space and alien plant species in 10 small towns of the Sub-Tropical Thicket Biome, South Africa. *Urban Forestry and Urban Greening*, 7, 1-13.

[18] Oduwaye, L., 2013, *Globalization and urban land use planning: The case of Lagos, Nigeria.* A paper presented at the 18th International Conference on Urban Planning, Regional Development and Information Society. Rome, Italy, 20 – 23 May.

[19] Amoako, C., and Korboe, D., 2011, Historical development, population growth and present structure of Kumasi. In: Adarkwa, A. A. (edi*), Future of the tree: Towards growth and development of Kumasi* (pg. 35-54). Kumasi: University Printing Press.

[20] MacHarg, I. L., 1971, *Design with nature*. New York: Doubleday, Garden City.

[21] Roelofs, J., 1999, Building and designing with nature: Urban design. In: J. Roelofs (Eds.), *Greening cities: Building just and sustainable communities*. New York: Bootstrap Press.

[22] Dunnett, N., Swanwick, C., and Wooley, H., 2002, *Improving urban parks, play areas and green spaces.* London: Department for Transport, Local Government and the Regions.

[23] Swanwick, C., Dunnett, N., and Woolley, H., 2003, Nature, role and value of green space in towns and cities: an overview. *Built Environment,* 29(2), 94-106.

[24] Fratini, R., and Marone, E., 2011, Green-space in urban area: Evaluation of the efficiency of public spending for management of green urban areas. *IJED 1 (1)*, 9-14.

[25] Jim, C.Y., and Chen, S. S., 2003, Comprehensive green space planning based on landscape ecology principles in compact Nanjing city, China. *Landscape Urban Plan. 65*, 95–116.

[26] Kit Campbell Associates, 2001, *Rethinking open space—open space provision and management*: A way forward. A Report for the Scottish Executive Central Research Unit, Edinburgh, the Stationary Office.

[27] Sandström, U. F., 2002, Green infrastructure planning in urban Sweden. *Planning Practice Research,* 17(4), 373–385.

[28] Tzoulas, K. K., Korpela, K., Venn, S., Yli-Pelkonen, V., Kazmierczak, A., Niemelä, J., and James, P., 2007, Promoting ecosystem and human health in urban areas using green infrastructure: A literature review. *Landscape Urban Planning,* 81, 167–178.

[29] Victor, L., 2008, Systematic reviewing. *Social Science Update*, 58: 1-4.

[30] Akobeng, A. K., 2005, Understanding systematic review and mata analysis. *Achives of Disease in Childhood*, 90(6), 845-848.

[31] Coren, E., and Fisher, M., 2006, *The conduct of systematic reviews for SCIE knowledge reviews.* London: Social Care Institute for Excellence.

[32] Khan, K. S., Kunz, R., Kleijnen, J., and Antes, D., 2003, Five steps to conducting a systematic review. *Journal of the Royal Society of Medicine*, 96(3), 118-121.

[33] Fuwape, J. P., and Onyekwelu, J. C., 2011, Urban Forest Development in West Africa: Benefits and Challenges. *Journal of Biodiversity and Ecological Sciences*, 1(1), 78-94.

[34] Langer, H., & McNamara, J., 2011, Africa green city index. Munich: Siemens AG.

[35] Mensah, S. S., 2010, *Evaluation of some indigenous trees for urban landscape design: A case study of the Kumasi Metropolis in the Ashanti Region of Ghana.* Master's thesis submitted at the Department of Horticulture, Kwame Nkrumah University of Science and Technology, Ghana.

[36] Food and Agricultural Organisation, 2000, *Global forest resource assessment*. Rome: Food and Agricultural Organisation.

[37] Candlelight for Health, Education & Environment, 2006, *Impact of civil war on natural resources: A case study of Somaliland.* Abu Dhabi: Candlelight for Health, Education & Environment.

[38] Opkala, D., 2009, *Regional overview of the status of urban planning and planning practice in Anglophone (Sub-Saharan) African countries*.[Online]. Available http://www.unhabitat.org/downloads/docs/GRHS.2009.Regional.Anglophone.Africa.pdf

[39] Tibaijuka, A., 2007, Nairobi and its environment. In: Barr, J., & Shisanya, C. (Eds.), *Nairobi city development strategy top priority for 21st Century future of the Kenyan capital.* Nairobi: United Nations Environment Programme.

[40] UN Habitat, 2010, *The state of African cities 2010: Governance, inequality and urban land markets.* Nairobi: UN Habitat.

[41] Dubbale D. A., Tsutsumi, J., and Bendewald, M. J., 2010, Urban environmental challenges in developing cities: The case of Ethiopian capital Addis Ababa. *World Academy of Science, Engineering and Technology*, 66, 397-402.

[42] UN Habitat, 2011, *Practical guide for conducting: Housing profiles.* Nairobi: UN Habitat.

[43] Mutisya, E., and Yarime, M., 2011, Understanding the grassroots dynamics of slums in Nairobi: The dilemma of Kibera informal settlements. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies,* 2(2), 197-213.

[44] Fanan, U., Dlama, K. I., and Oluseyi, I. O., 2011, Urban expansion and vegetal cover loss in and around Nigeria's Federal capital city. *Journal of Ecology and the Natural Environment,* 3(1), 1-10.

[45] Awuah, K. G. B., Hammond, F. N., Block, R., Proverbs, D., Booth, C. et al., 2010, *Sub- Saharan Africa urban land use planning systems: The need for an economic appraisal*. A paper presented at the Construction, Building and Real Estate Research Conference of the Royal Institution of Chartered Surveyors. Paris, September 2-3.

[46] Njoh, A. J., 2009, Urban planning as a tool of power and social control in colonial Africa. *Planning Perspectives*, 24(3), 301 – 317.

[47] Kironde J. M. L., 2006, The regulatory framework, unplanned development and urban poverty: Findings from Dar es Salaam, Tanzania. *Land Use Policy,* 23, 460 –472.

[48] UN Habitat, 2009, *Global report on human settlements 2009: Planning sustainable cities.* London: Earthscan.

[49] Egbu, A. U., Oomolaiye, P., and Gameson, R., 2008, A neo-institutional economic critique of the system for allocating urban land and development rights in Nigeria. *Habitat International,* 32, 121 – 135.

[50] Ogundele, F. O., Ayo, O., Odewumi, S. G., and Aigbe, G. O., 2011, Challenges and prospects of physical development control: A case study of Festac Town, Lagos,Nigeria. *African Journal of Political Science and International Relations,* 5(4),174-178.

[51] Muderere, T., 2011, Natural co-existence or confinement: Challenges in integrating bird-life concerns into urban planning and design for Zimbabwe. *Journal of Sustainable Development in Africa*, 13(1), 162-183.

[52] Mpofu, T. P. Z., 2013, Environmental challenges of urbanisation: A case study for open green space management. *Research Journal of Agricultural and Environmental Management*, 2(4), 105-110.

[53] Olaleye, D. O., Ayoade, O. J., and Omisoro, E. O., 2013, A multivariate analysis of factors influencing green space provision in residential neighbourhood of Sub-Saharan Africa. *Journal of Environment and Earth Science*, 3(5), 138-146.

[54] Djibril, C., Coulibaly, A., Wang, X., and Ousmane, D., 2012, Evaluating green space use and management in Abidjan City, Cote D'lvoire. *International Journal of Economics and Management Engineering*, 2(3), 108-116.

[55] Modern Ghana, 2006, *Parks and gardens collapsing.*[Online]. Available:http://www.modernghana.com/news/100 644/1/parks-and-gardens-collapsing.html

[56] Bolnick, J., Kayuni, H. M., Mabala, R., McGranahan, G., Mitlin, D., Nkhoma, S. et al., 2006, *A pro-poor urban agenda for Africa: Clarifying ecological and development issues for poor and vulnerable population.* London: International Institute for Environment and Development.

[57] Lugoe, F. N., 2008, *Assessment of main urban land use issues in Tanzania – final report.* Dar es Salaam: Dar Es Salaam Institute of Land Administration and Policy Studies.

[58] Rabare, R. S., Okech, R., and Onyango G. M., 2009, The role of urban parks and socio-economic development: Case study of Kisumu, Kenya. *Theoretical and Empirical Researches in Urban Management*, 3(12), 22-36.

[59] Taylor, P., 2010, *Improving children's park in Kumasi*. Master's thesis, Department of Architecture, Kwame Nkrumah University of Science and Technology, Kumasi

[60] Southern African Development Community, 2006, *Regional biodiversity strategy.* Gaborone: Southern African Development Community.

[61] Muhumuza, M., & Balkwill, K., 2013, Factors affecting the success of conserving biodiversity in national parks: A review of case studies from Africa. *International Journal of Biodiversity*, http://dx.doi.org/10.1155/2013/798101.

[62] United Nations Environment Programme, 2004, Desk *study on the environment in Liberia*. Nairobi: United Nations Environment Programme.

[63] Candlelight for Health, Education & Environment, 2006, *Impact of civil war on natural resources: A case study of Somaliland.* Abu Dhabi: Candlelight for Health, Education & Environment.

[64] Plumptre, A. J., Masozera, M., and Vedder, A., 2001, *The impact of civil war on the conservation of protected areas in Rwanda.* Washington, D.C.: Biodiversity Support Program.