Role of Urban Green Spaces/Areas in the Management of Environmental Issues in Ibadan Metropolis, Oyo State

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Abstract

Urban green space refers to any integrated area comprising natural, semi natural or artificial green land, providing manifold benefits to different groups of people within an area, city or community. It serves as an environmental safeguard policing the negative impacts of climate change as well as recreational purposes. Studies have identified the benefits of engaging in recreational activities to include: promotion of healthy living, encouragement of social interaction, increased productivity, prevention of crimes and anti-social behaviours and enhancement of the economic base of the society, among others. Urban green spaces/areas are strategic to the quality of life in cities and thus should be an important element in urban planning. Consequently, this paper examined the role of urban green spaces in the management of environmental issues in Ibadan metropolis. Four green spaces/areas (University of Ibadan Botanical Gardens, International Institute of Tropical Agriculture, Agodi Gardens and Park and Ibadan Recreation Club) served as the study locations while the study population was

randomly selected in the study locations. Method of data collection was in-depth interviews. The study revealed the following: (i) one of the major difficulties of establishing green spaces in Ibadan is lack of information on its benefits, (ii) green spaces can serve as a peacebuilding instrument, (iii) there is a strong link between insufficient green areas in Ibadan metropolis and floods that consistently ravage the city.

Keywords: Urban green spaces, Environmental issues

Introduction

The increasing rate of urbanisation and city expansion and inadequate town planning have resulted in the loss of green spaces and not much emphasis has been placed on the benefits of urban parks to human and city sustainability (Popoola et al., 2016). According to the World Watch Institute, half of the world's populations now live in cities, and in the recent past, the main increase in the urban population occurred in underdeveloped and developing countries (World Watch Institute, 2007). It is believed that approximately 80% of the population in EU countries live in cities or other urban areas (UN, 2009). The large-sized and medium-sized cities in developing countries are following a pattern of centric-periphery expansion, causing the phenomenon called urban sprawl, which can be defined as sparse and disconnected urban growth that leaves empty spaces inside the urban space (Brueckner, 2000). The disorganised development of cities, especially in developing countries, occurs in the opposite way to what is needed, which is a process that incorporates environmental values into the development of the urban spaces (Ghomes and Moretto, 2011). Urbanisation is rapidly causing changes in societies. The process of urbanisation, with an ever-growing population in the city, devours large amounts of green spaces on the periphery of the city and changes the internal green space pattern (Zhou and Rana, 2011). The threat is from both the disintegration of green spaces and changes in the natural areas, and for these reasons, ongoing urbanisation can cause problems both within and outside cities (Suomalainen, 2009).

The effects of this urbanisation are manifested in physical alterations to the landscape, such as changes to the drainage system and the intense

construction of infrastructure (Alberti et al., 2007). The conversion of natural land cover to impermeable surfaces substantially reduces the infiltration of rainwater, and because of this, rainwater run-off tends to increase, which results in hydrological responses such as floods (Alberti et al., 2007).

Many cities in the world are experiencing environmental challenges such as poor air quality, water pollution, street noises, and heat island effects, which undermine the urban development process and environmental sustainability (Zhou and Rana, 2011). In addition, the removal of natural areas for city infrastructure construction, such as roads and housing, increases the temperature of the urban centres, causing the heat island phenomenon (Weng et al., 2004). It is now abundantly clear that rapid urbanisation is greatly transforming the spatial pattern of urban land use worldwide and is one of the biggest environmental problems facing many cities worldwide (Graham et al., 2004). Furthermore, Daramola and Eziyi (2010) opined that Nigerian cities are witnessing a high level of environmental deterioration and are rated among the urban areas with the lowest livability in the world. Consequently, the resulting losses of urban green space at local and global levels are continuously altering urban ecosystems, thus bringing about continuous change in the outlook of cities (Popoola et al., 2016). The increasing number of human extension of urban areas through industrialisation and technological advancement in transportation and building construction has contributed to industrial and human wastes and effluents, resulting in environmental pollution such as noise pollution, air pollution, water pollution, land pollution, urban heat and urban sprawl, leading to loss of green areas (Hales, 2000). All these have given rise to serious concerns over the deteriorating quality of air, water, land and forests, highlighting the need to create awareness and stem pollution and degradation to all components of the environment (Fadamiro and Atolagbe, 2006).

In many African nations, the general attitude to green space planning is often expressed solely through spontaneous action and direct intervention to a pressing problem (Okunlola, 2013). Like many other Third World nations, rapid urban development in Nigeria as a whole and Ibadan metropolis in particular has led to a dearth of green spaces in urban settings. This has contributed to the problems and issues related to urban pollution, heat island, erosion and floods (Omar et al., 2000). Since the development of cities puts increasing pressure on green or open spaces, concern over the

preservation of urban green space has been growing in recent years (Kolbe and Wüstemann, 2015). This study therefore examines the role of green spaces in the management of environmental issues in Ibadan metropolis, Nigeria.

Statement of the problem

Despite the importance of urban green spaces, urbanisation and limited accessibility (in cost and time) have influenced negatively the use and patronage of urban green spaces in urban areas. Many aspects of open green space planning and development are yet to be given proper treatment in nearly all Nigerian cities, including Ibadan metropolis. Many researchers like Obateru (1981) and Tomori (2010) have lamented the shortage of open recreational space land use in Ibadan city. According to Obateru (1981), ideally Ibadan should have at least 500 children's playgrounds, 125 neighbourhood parks, 31 district parks and 10 city parks. Obateru's submission is interesting but outdated because as at the time he made this submission, the population of Ibadan metropolis was not up to what it is today. This implies that the city's green space/recreational needs have more than tripled considering the increase in the population of the city in 1981 as noted by Obateru and the current population of about 3.565,180 in 2019 (NCP, 2019). Looking at the exegesis of things in Ibadan at the moment requires more than the figures prescribed in 1981. The present situation suggests that recreational facilities in the city should be tripled and constructed to suit different people's need. Furthermore, Ibadan metropolis has been facing various environmental issues in the past few years. This paper therefore examines the role of green spaces in the management of environmental issues in Ibadan.

Aims and Objectives of the Study

This study aims to investigate the role of green spaces in the management of environmental issues in Ibadan metropolis. To this end, the specific objectives of the study are to:

1. Identify the environmental issues in Ibadan metropolis;
2. Examine the role of green spaces in the management of these issues;

3. Investigate the peacebuilding potentials of green spaces in Ibadan metropolis;

4. Highlight the challenges to the establishment of green spaces in Ibadan metropolis.

Research Questions

1. What are the environmental issues in Ibadan metropolis?

2. How can green spaces aid the management of these environmental issues?

3. Does green space have peacebuilding potentials?

4. What are the challenges to establishing green spaces in Ibadan metropolis?

Justification for the Study

The study would provide deeper knowledge on green spaces and its benefits to the environment and residents of Ibadan metropolis. In line with this, it will aid the identification of conflict management and peacebuilding potentials of green areas as well as highlight the potential of green spaces in checkmating negative impacts of climate change such as erosion which is a constant threat to many residents of Ibadan metropolis. This study will make modest contribution to the body of knowledge as a basis for future research into other aspects of green spaces in Nigeria.

Scope/Location of the Study

The study was carried out in four selected green spaces/areas. These are the University of Ibadan Botanical Gardens, International Institute of Tropical Agriculture, Agodi Gardens and Park, and Ibadan Recreation Club in Ibadan metropolis, Oyo State, Nigeria. The study locations were purposely chosen because they are the major green spaces in Ibadan metropolis.

Research Methodology and Data Collection

The study adopted the historical and the case study research methodologies. Data was collected from both primary and secondary

sources. The technique for primary data gathering was through the conduct of in-depth interviews. For the interviews, 12 respondents (5 from University of Ibadan Botanical Gardens, 3 from Agodi Gardens and Park; 2 from the International Institute of Tropical Agriculture, and 2 from Ibadan Recreation Club) were randomly chosen and interviewed. The data collected was analysed using content analysis. Secondary data was sourced from textbooks, academic journals, newspaper publications and the Internet.

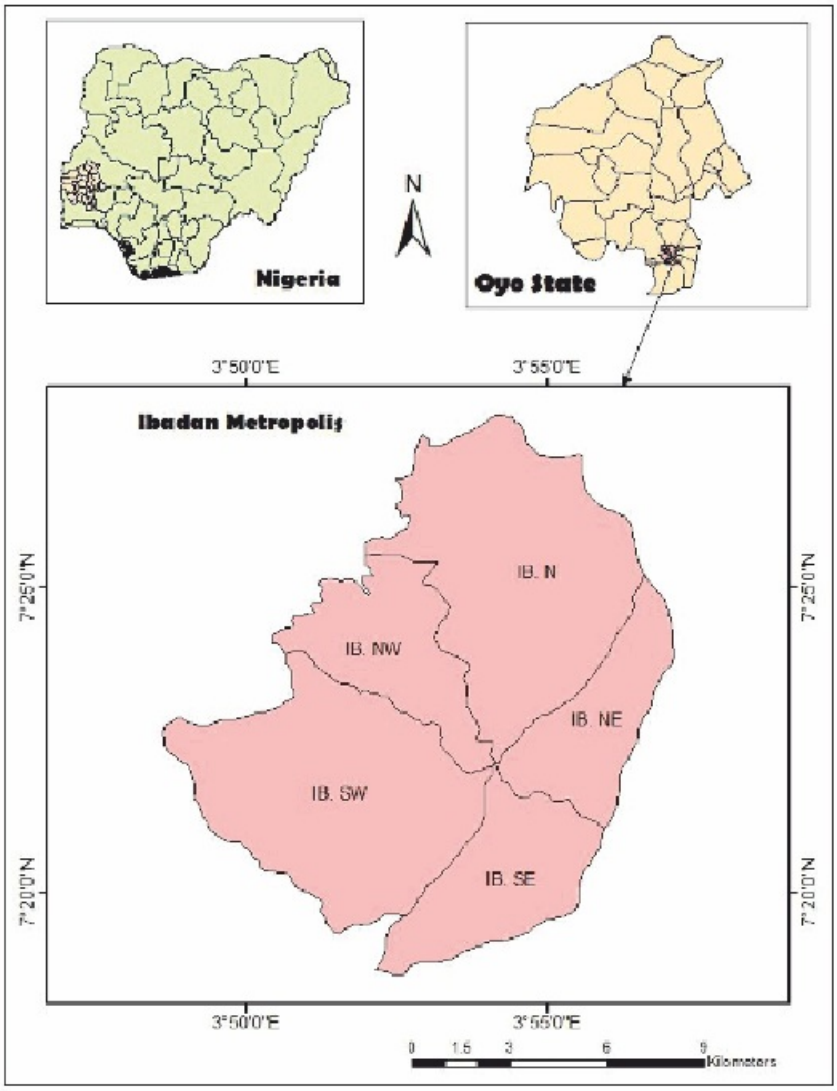

Figure 1: Map of Ibadan metropolis.

Literature Review

Urban green spaces

Malmström et al. (1991), defines a green area as an area in city plans with green surface, trees and other elements of vegetation. According to the World Health Organisation (2016), urban green spaces may include places with 'natural surfaces' or 'natural settings', but may also include specific types of urban greenery, such as street trees, and may also include 'blue space' which represents water elements ranging from ponds to coastal zones. Urban green spaces are widely understood as improving cities by increasing amenities and providing places for both passive and active recreation (Kendal, 2016). Consideration of urban green space in different research usually includes public parks and gardens which may or may not include a range of other areas, such as public open space, street trees, sports pitches and recreational facilities such as golf courses, private and semi-private gardens and other residential open space, roof gardens, urban agriculture, commercial forests, vegetated wasteland (WHO, 2016). Physical environmental variables such as climate and degree of urbanisation directly influence the composition, abundance and structure of urban green spaces (Kendal, 2016). The importance of green spaces to people's lives is therefore of interest for investigation as lots of commercial activities take place there.

The few African cities where a little attention has been given to urban green space include Abuja, Lagos, and part of Cairo and Cape Town, among others (Abegunde, 2008; CCG, 2008). From the study "Users' Perception of Urban Parks and Green Networks in Ibadan" carried out by Popoola et al. (2016), it was discovered that 52.4% of the respondents argued that some of the urban gardens lack complementary facilities or are in poor state. The development of urban green space is manifested through conservation of existing green belts in cites, tree planting, soft landscaping, urban agriculture, creation of green parks and gardens, among others.

Urban green space planning

It is believed that the task of landscape and green area planning in growing cities is to develop a green network map, which can regulate the management of the green areas (Suomalainen, 2009). Indicators are an important instrument for the management of urban green areas that can provide information, not only to support policy formulation for these areas

but also to ensure effectiveness of the implementation process and in the monitoring phases inside a policy cycle (Ghomes and Moretto, 2011). Indicators such as the number and area of public green spaces per inhabitant have been used to measure the attractiveness of a city (Suomalainen, 2009).

Sustainable development focuses on green network (Connie et al., 2004) as a main strategic tool for integration of cultural and recreational uses and for the maintenance and protection of nature (Mougiakou and Photis, 2014). This is to achieve the reallocation of green spaces all over cities fairly and democratically so that each citizen has good access (Thompson, 2002). Urban planning design and management integrating human needs with the potential of the environment is absolutely necessary for sustainable development (Kowalewska, 2011).

Green structure

Green structure, according to Werquin et al. (2005), is the green area system of a city consisting of interaction between built-up areas, green spaces and green connections. Green connections and/or green-ways have numerous benefits within a city structure which include: protection of natural resources, opportunities for recreation, and preservation of historic and cultural resources. These can be provided by connecting green areas and forming linear corridors of green spaces (Fabos, 1995). It is therefore important to examine the environmental perspective when planning and designing cites from the human standpoint (Suomalainen, 2009). Green space systems require improvement of the spatial pattern of urban green space (Bilgili and Gökyer, 2012). Green areas must therefore be planned together with the other policies of the city, such as transportation, housing and sanitation (Ghomes and Moretto, 2011).

Uses of green areas

The function of green areas in cities can be evaluated on the basis of their utilization. It has been difficult to determine which factors make a place a favourite one, when another place with the same facilities is not appreciated by users (Suomalainen, 2009).

Gälzer (2001) opined that the use of green spaces can be measured using the following paradigms:

1. **Accessibility.** The distance should be about 10 minutes from home or strategically located to accommodate people within the neighbourhood.

2. **Size.** Generally, big areas are better accepted than small areas.

3. **Safety.** It should be located in a secure environment, free from all forms of danger or threats.

4. **Attractiveness.** There should be facilities to accommodate all types of people and it should be environmentally friendly with some aesthetically enriched values attached to the green space.

Figure 2: Ibadan Recreation Club.

Urban green spaces provide essential structural and functional contribution to cities to make them more attractive and habitable (Melville, 1975). Urban green spaces are vital for inhabitants as they provide many kinds of benefits such as recreation, different activities and aesthetic experiences (Suomalainen, 2009). Considering the advantages of green spaces, some states in Nigeria have begun to inculcate a good attitude toward green spacesin their citizens (Ward, 1992). Adejumo (2011), whose recent study centres on Lagos, sees green spaces from a natural and micro climatic scale perspective as a system that forms the hub of natural resources

that promote environmental consciousness and protect the city's eco-zone biodiversity.

Traditionally, urban green spaces are of significance to the communities in which they exist. Erosion of open recreational space value has been noticed in some Nigerian traditional cities in recent times. The effects of this are beginning to show negatively in nearly all Nigerian traditional cities, including Ibadan, where open green space value is expected to be tenaciously upheld going by the value often attached to such spaces from traditional points of view. Agwu and Obialor's (2012) investigation on open green space in Umuahia and Aba (South-east Nigeria) noted that due to rapid urbanisation and poor planning or implementation of plans, the condition of the two cities have become worse both physically and functionally. This problem may well be described as a national phenomenon. Falade (1998) had earlier concluded that the higher the rate of urbanisation in a place (resulting in overcrowding), the greater the deficiency of open spaces. A cursory observation of the morphological appearance of Ibadan city (South-west Nigeria), to a greater extent, reveals a clumsy physical development condition which may have arisen from poor planning and insufficient provision of urban green spaces in its numerous neighbourhoods that have grown unabated over the years. The quality and viability of cities largely depend on the design, management and maintenance of green areas as well as open and public spaces in order to fulfil their role as an important social and visual way (Bilgili and Gökyer, 2012). Urban green spaces are not only an important component in housing areas, but also in business, leisure, retail and other commercial developments (Baycan-Levent, 2002). This submission by Baycan–Levent is right because urban green spaces add aesthetic value to commercial activities thereby creating an ambient relationship between man and the environment.

Benefits of Urban Spaces

Tempesta (2015) submitted that urban parks are fundamental and play a significant role in improving the quality of living in urban areas since they bring about many benefits for the dwellers. The main purpose of urban green spaces is to provide recreational opportunities, relaxation and encourage a healthier lifestyle for the urban working class (Calson, 2001). Green spaces, an oasis in the city, renders great benefits to urban sustainable

development from ecological, economic, and social equity points of view (Wheeler and Beatley, 2002).

Ecological benefits

The ecological benefits derivable from green spaces, which range from protecting and maintaining the biodiversity to helping in the mitigation of change, cannot be overlooked in today's sustainable planning. Urban green spaces supply cities with ecosystem services ranging from maintenance of biodiversity to the regulation of urban climate. When compared with rural areas, differences in solar input, rainfall pattern and temperature are usual in urban areas. Solar radiation, air temperature, wind speed and relative humidity vary significantly due to the built environment in cities (Heidt and Neef, 2008). Urban heat island effect is caused by the large areas of heat absorbing surfaces, in combination with high-energy use in cities. Heat island effect can be a serious health hazard during heat waves and extreme heat events and it arises due to replacement of vegetation with impervious heat absorbing surfaces in urban areas (WHO, 2016). Urban heat island effect can increase urban temperatures by 5˚C (Bolund and Sven, 1999). In the United States, Harlan et al. (2006) showed that densely populated areas, sparse vegetation, and low levels of open space in the neighbourhood were significantly linked to higher temperatures and urban heat islands in Phoenix, Arizona. During warm weather, trees can provide shade and reduce the demand for air conditioning and, especially in warmer countries, they can provide comfortable outdoor settings and allow people to avoid heat stress (Lafortezza et al., 2009). Therefore, adequate forest plantation, vegetation around urban dwellers' houses, and management of water bodies by authorities can help to mitigate warm weather effect.

Gill et al. (2007) emphasized that urban green spaces can play a central role in both climate-proofing cities and in reducing the impacts of cities on climate. Presently, rapid urbanisation is causing losses of even more urban green space across the globe. This may have important implications for future changes in the Earth's climate. Therefore, urban green spaces need to be preserved and promoted for future generations as they provide a key ecological service (Gairola and Noresah, 2010).

Pollution control

Pollution in cities result from pollutants including chemicals, particulate matter and biological materials, which occur in the form of solid particles, liquid droplets or gases. Also, air and noise pollution are common phenomena in urban areas. The presence of large numbers of motor vehicles in urban areas produces noise and air pollutants such as carbon dioxide and carbon monoxide. Emissions from factories in the form of sulphur dioxide and nitrogen oxides are very toxic to both human beings and the environment. The most affected by such detrimental contaminants are children, the elderly, and people with respiratory problems (Bolund and Sven, 1999). These scholars also opined that urban green spaces can reduce air pollutants directly when dust and smoke particles are trapped by vegetation. Research has shown that on average, 85% of air pollution in a park can be filtered by green vegetation.

Noise pollution is a major and increasing threat to human health due to continuing urbanisation, rising traffic volumes, industrial activities and a decreasing availability of quiet places in cities (World Health Organisation, 2016). Noise pollution from traffic and other sources can be stressful and create health problems for people in urban areas. Urban green spaces in overcrowded cities can largely reduce the levels of noise depending on their quantity, quality and the distance from the source of noise pollution. Contemporary studies on urban green spaces consider the complex urban ecosystem and conservation of the urban green spaces to maintain a natural ecological network for environmental sustainability in cities. For cities in a fast urbanizing and growing economy, countries like China consider the dynamic form of urbanisation and expand it to manage effective urban green spaces, which will contribute significantly to the reduction of overall carbon dioxide by maintaining or even increasing the ability of carbon dioxide absorption via the natural ecosystem (Sorensen et al., 1997). Urban residents in different countries (Portugal and France) have recognized the role of green spaces in improving air quality (Madureira et al., 2015).

Biodiversity and nature conservation

Green spaces also function as protection centres for reproduction of species and conservation of plants, soil and water quality. Urban green spaces provide a linkage between urban and rural areas. They provide visual relief, seasonal change and a link with the natural world (Francis,

1997). A functional network of green spaces is important for the maintenance of ecological aspects of sustainable urban landscape, with green-ways and use of plant species adapted to the local condition with low maintenance cost, self-sufficient and sustainable (Loures et al., 2007). Hence promoting and preserving biodiversity within urban green spaces is one way to decelerate the rapid rate of biodiversity loss (Alvey, 2006).

Economic and Aesthetic Benefits

Energy savings

Using vegetation to reduce the energy costs of cooling buildings has been increasingly recognized as a cost effective reason for increasing green space and tree planting in temperate climate cities (Heidt and Neef, 2008). Plants improve air circulation, provide shade and help in controlling erosion. This provides a cooling effect and helps to lower air temperature. A park of 1.2 by 1.0 km can produce an air temperature between the park and the surrounding city that is detectable up to 4 km away (Heidt and Neef, 2008).

Property value

Areas of the city with enough greenery are aesthetically pleasing and attractive to both residents and investors. Indicators are very strong that green spaces and landscaping increase property values and financial returns of between 5% and 15% for land developers, depending on the type of project (Heidt and Neef, 2008). This is clearly seen in some parts of the country where properties situated with proper planning and greenery are valued more than others.

Social and Psychological Benefits

Recreation and well-being

According to Fleischer and Tsur (2003), different forms of enjoyment can be obtained from different types of green spaces. For example, neighbourhood gardens provide residents daily contact with nature; golf courses bring leisure relish; and urban parks give a good place for picnics and recreation (Zhou and Rana, 2011). People satisfy most of their recreational needs within the locality where they live. Green spaces within urban areas provide a sustainable proportion of the total outdoor leisure

opportunities. Urban green spaces serve as a near resource for relaxation and provide emotional warmth (Heidt and Neef, 2008). An urban green space serves as a buffer zone where stress from intensive work environment can be managed. Social values and communication can also be shared among peers who come together around the green space environment.

Aesthetic enjoyment

Simply through visual contact with nature, individuals can obtain immense pleasure and gratification, however, aesthetic enjoyment is not always limited to visual experience (Zhou and Rana, 2012). Hu et al. (2008) found a relationship between the aesthetic quality (overall greenness) of public open spaces and the cardio-metabolic health of urban residents and lower stroke mortality. As the city becomes more and more dense, the elaborate and ingenious design of the urban green corridor can add some beautiful elements into each citizen's life (Todorova et al., 2004).

Figure 3: Society for African Mission (SMA) Formation House, Bodija.

Human health

An obvious health benefit derived from access to green open space is the opportunity for physical activity, either through formal or informal recreation (Ives et al., 2014) and for certain activities the size and amount of green open space available is just as important as the quality of the space

(Giles-Corti et al., 2005). The aesthetic relish, such as a sense of tranquility and peace from the green space, can calm down people's rage and regulate emotion; it also creates an avenue for reflection and finding solutions to some personal crises.

Figure 4: Men and women exercising.

Bolund and Sven (2009) found in a review that the level of stress for people who were exposed to the natural environment decreased rapidly, compared to people who were exposed to the urban environment whose stress level remained high. In the same review, patients in a hospital whose rooms were facing a park had a 10% faster recovery and needed 50% less strong pain-relieving medication compared to patients whose rooms were facing a building wall. This is a clear indication that urban green spaces can increase the physical and psychological well-being of urban citizens. Another research conducted in Swedish cities showed that the more time people spent outdoors in urban green spaces, the less they were affected by stress (Grahn and Stigsdotter, 2003). Certainly, improvements in air quality due to vegetation have a positive impact on physical health with such obvious benefits as decrease in respiratory illnesses. The connection between people and nature is important for everyday enjoyment, work productivity and general mental health (Sorensen et al., 1997).Walking around parks has been shown to reduce stress across a broad spectrum of individuals (Ulrich,

1989). Lohr et al. (1996) also demonstrated that plants in the workplace reduce stress levels. In a study carried out in four European cities, Van den Berg et al. (2016) demonstrated that more time spent in green space is associated with improved mental health and vitality, independent of cultural and climatic contexts. A cross sectional study in England linked the quality of, and access to, green space with reduced psychological distress (Pope et al., 2015). Also a recent longitudinal study of approximately 575,000 adults in Canada found that increased residential green space was associated with a reduction in mortality (Villeneuve et al., 2012) and the strongest effect was on mortality from respiratory diseases (World Health Organisation, 2016).

Discussion of Research Findings

Objective 1: What are the environmental issues in Ibadan metropolis?

According to respondents, the major environmental issues facing Ibadan metropolis are:

1. Erosion/Flooding
2. Air pollution
3. Water pollution
4. Noise pollution

Respondents noted that within the last 5-10 years, Ibadan metropolis has been facing the problem of erosion and flooding. They noted that each time the city witnesses rainfall, no matter how little, many parts of the city are usually overrun by flood and suffer erosion. Many respondents observed that within the last two years, a number of residents of the city have lost their lives to incidences of erosion and flooding. Also, many houses have been destroyed as a result of erosion and flooding, especially in densely populated areas such as Apete, Ogunpa, Bodija, Agbowo and Bere. Respondents also identified air, water and noise pollution as environmental problems facing the metropolis. According to respondents, air pollution in the city is mainly caused by emissions from factories and vehicles on the roads. Water pollution is the result of lack of pipe-borne water in almost every area of the city. Due to non availability of pipe-borne water, residents sink shallow boreholes in their compounds, many of which are often located near septic tanks (soak-away) and pit toilets. Noise pollution in the city is

mainly caused by religious centres that use unregulated loud speakers during crusades, church services and calls to prayers.

Objective 2: How can green spaces aid the management of these environmental issues?

Expressing their views on the above objective, respondents opined that green areas can provide trees and grasses that will control flooding and erosion. Respondents also noted that green areas can serve as buffer zones protecting residents from unregulated sounds from religious houses. The trees in green spaces can reduce the distance travel of sounds that can cause noise pollution. They observed that in respect of heavy winds, the trees in green areas can break the force of the winds thus reducing its negative impact on the environment.

Figure 5: Prototype of green area.

Objective 3: Do green spaces have peacebuilding potentials?

Respondents strongly noted that green spaces have a high potential for peacebuilding. According to them, green spaces usually serve as recreational centres with facilities for fun and merrymaking. In view of this, many of the people who patronize these centres go there to have fun thus

making these areas places of socialization and integration. In these green spaces, there is no distinction based on ethnicity or religion, instead people interact and socialize. Many people use these green areas for meetings while others take advantage of the serene nature of the environment and use it as a venue for settlement of disputes and disagreements.

Objective 4: What are the challenges to establishing green spaces in Ibadan metropolis?

The major challenge to establishing green areas identified by respondents is lack of information on its benefits to the people and the community. Respondents observed that many residents of Ibadan metropolis do not know that green areas have the potential to address some the environmental issues and problems facing the city. Respondents also indicted government for not making this information available to the people. Respondents also identified the bad maintenance culture of Nigerians as another challenge to green areas. They noted that the existing green spaces lack maintenance and thus did not encourage the establishment of new ones be established. Why should new ones be built when existing ones are not well cared for and are not being put to proper use. Other problems identified by respondents include: non availability of funds, corruption, urbanisation which increases land demands, traditional attachment to lands by Africans and failure of government to use land allocated as green spaces for the purpose it was designated.

Recommendations

Deriving from the study's findings, the following recommendations are made:

1. Efforts should be made by government and environmentalists to create more awareness on the benefits of green spaces.

2. Existing green spaces should be properly maintained by relevant government agencies

3. Government should integrate and enforce the creation of green spaces in its urban developmental master plans.

4. There should be equal distribution and establishment of open spaces within the entire urban area to ensure that one exists at about 10 minutes walking distance from every neighbourhood.

5. Awareness and sensitization on the importance and benefits of green spaces and management should be done periodically in Ibadan metropolis and citizens should be made to participate in the designs.

6. Oyo State Ministry of Environment should carry out environmental audit in all the green areas.

7. Ministry of Urban and Regional Planning should encourage the inclusion of green spaces in architectural designs before approval is given.

Conclusion

The need for green spaces in Ibadan metropolis cannot be overemphasised. This is because of the various advantages accruable to residents and the community. This paper examined the role of green spaces in the management of environmental issues in Ibadan metropolis. It highlighted the various benefits of the subject matter, discussed the environmental issues in the study area and the role of green spaces in addressing these problems. It further examined the peacebuilding potentials of green spaces as well as the challenges of establishing green spaces in Ibadan metropolis. It recommended that citizens need to be made more aware of the benefits of green spaces and environmental needs to make more green spaces available and ensure maintenance and policies that promote the creation of green spaces.

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