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THE ENVIRONMENTAL EFFECTS OF CONVERSION OF RECREATIONAL AREAS TO OTHER USES IN THE FEDERAL CAPITAL CITY (PHASE 1), ABUJA

GOLDA TARFA ALADE; ANYAKU D. OVYE; & ALAKU MOSES

Department of Geography, Faculty of Environmental Science, Nasarawa State University Keffi, Nigeria.
Corresponding Author: *anyakuovye11@gmail.com*

Abstract

Recreational areas have suffered conversion to several other uses, the immediate consequence being that the facilities can no longer provide the desirable services to the residents. The research therefore assessed the environmental effects of the conversion of recreational areas like parks and gardens to other uses in the Federal Capital City, Abuja comprising of Garki, Central Business District, Wuse, Maitama and Asokoro. To effectively achieve this, the study investigated the demographic and socioeconomic characteristics of the residents in relationship with these facilities. An analysis of the original and current uses as well as the effects of the converted uses and the level of utilization of parks and gardens was also carried out. Utilizing data generated from both primary and secondary sources, the study found a strong correlation between the demographic and socioeconomic characteristics of the residents and recreational facilities. The study concluded based on its findings that the current uses of the parks and gardens are not entirely in tandem with the purposes for which these facilities were meant for. This abuse has negative effects on the environment such as environmental pollution. It therefore recommended amongst others that steps be taken by the concerned authorities to return these facilities to their original uses while defaulters be appropriately sanctioned to serve as deterrent to others.

Keywords:
Recreational Areas, Parks and Garden, Environmental Effects, Federal Capital City Abuja.

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Introduction

The Environment is an interactive indispensable medium through which man's life performance is carried out. Man's life is unimaginable without the environment to supply him with his needs such as air (to breathe), water (to drink and wash), food (to eat), and solid materials for fashioning weapons, building shelters and clothing (Atolagbe, 2002).

Environmental degradation resulting from human attitude is becoming serious the world over, and Nigeria is no exception. Generally, problems arising from environmental degradation are mostly due to developmental processes and are of local, regional and global effects (Kadir, 2006).

These effects are viewed as consequences of human activities, and are most often harmful on human beings, livelihoods, animal and plant lives (Kjellstrom and Mercado, 2008). These also have far reaching implications on sustainable development; therefore, urban environmental issues will continue to dominate sustainable development agenda the world over and in developing nations in particular in the next few decades (Daramola and Eziyi, 2010) In the face of increasing urban population, the increased number of human extension of urban area through Industrialization and technological advancement in transportation and building construction has contributed to industrial, 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 area (Hales, 2000).

When the decision to establish a new capital city for Nigeria was taken in 1976, it was with a view of creating a city - beautiful' that would be sustainable in the long run. It was on this view that the master plan was prepared to guide in the development of the new city. The master plan then become the guiding principle for the orderly development of the city and has been in use for the last 30 years (Jibril, 2010). Massive construction work has been going on since then, thus leading to massive and rapid growth of the city within this period. Part of the provision of the master plan (MP) is the development of adequate recreational and green areas within the Federal Capital City (FCC) of Abuja (Jibril, 2010).

The city is to be developed in phases on area of 250 square kilometres. The total land area of phase 1 of the city is about 7076 hectares. Out of these, about 1260 hectares is reserved for 'Greens' development. These include open space, recreational facilities, park centres, and national and district/neighbourhood parks. Others include green stretches along valleys, hilly patches and some incidental open spaces (Jibril, 2010).

However, as the city grows, the provisions of these "Green Areas" become a subject of abuse and a lot of the areas were taken over by developers and converted to other land uses thereby leading to the abuse and distortion of the master plan of the city. In 2003, a serious effort was embarked upon to restore the "Green" as per the provision of the master plan. This concerted effort continued up to the middle of the year 2007. This

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attempt at the restoration of the master plan and reclamation of the 'Green areas' proved successful. The success of the reclamation is question to be admired.

Statement of Research Problem

The Abuja master plan was designed to guide in the development of the city. The master plan became the guiding principle for orderly development of the city, which aimed at the ensuring an orderly, functional and sustainable development of the city in a long run. The master plan was based on the concept of garden cities by Howard Ebenezer (1800-1929) one of the most influential man of urban planners. Garden cities refers to planned settlement, as by Ebenezer Howard (1850-1929) offering the benefits of urban living without the crowding and squalor of the Victoria city.

The master plan made a provision for aesthetic; leisure and recreation as well as human health, among others. However, as the city grows, the provision of these Green Areas start encountering problem and become the subject of abuse and a lot of the areas were taken by developers and converted to other land uses as a result of political intervention, inadequate technical and management capacities of implementation, frequent changes of key personnel, executive fiat, frequent changes in government policy especially with regards to phased movement into the city and thereby leading to the abuse and distortion of the master plan of the city and affect the aesthetical, leisure, scenic beauty of the city, recreational, social life, human health, among others.

However, even after the implementation of the master plan many seem not to be satisfied with it and there are several criticisms. There is need to look at the challenges of maintaining recreational areas in the urban infrastructural development of Federal Capital City Phase 1.Thus, the need to incorporate recreational areas such as parks, garden and open space in the Federal capital city Phase I Abuja constitute the main thrust of this research.

Research Questions

At the end of this dissertation, answers will be provided for the following research questions;

1. What are the socioeconomic characteristics of the residents in the study area?
2. What are the original and converted uses of the parks and gardens?
3. What are the effects of converted uses
4. What is the level of utilization of parks and gardens?

Objectives of the Study

1. To identify the socio-economic characteristics of the peoples.
2. To identify the original and converted uses of the parks and gardens.
3. To assess the effects of the converted uses.

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4. To assess the level of utilization of parks and gardens.

Significance of the Study

The importance of incorporating parks, gardens and open space into urban infrastructural development is the first step geared towards achieving a sustainable and healthy environment. Urban green areas play special environmental roles since trees had been recognized in the early 19th century when large parks of London were referred to as Lungs of the city (Pit et al 1979). Thus, the quality of life in urban areas is greatly influence by the quality of green spaces around it. Thus, serves as carbon sink, natural purifiers of environment, climate moderator, release oxygen into the environment and also improve the aesthetic value of the environment. It is of these that the MDGS with it roof in the United Nations UN Millennium Summit in year 2000, with about 189 World leaders in attendance, captured it in the development goal, MDGS goal 7 states to ensure environmental sustainability.

Scope of the Study

The contextual and conceptual scope of this study includes, Green areas (parks, gardens and open space), assessment of green areas from the master plan, land uses, matching the designed for green areas among others.

The spatial scope of the study comprises the Federal Capital City Phase l which consist of 600 hectares of land (60 km2) which is further divided in five districts which includes the Central Area District with 16.58km2 area covered, Maitama districts with 10.50 km2, Garki district with 8.6 km2, Wuse districts with 15.30 km2 and Asokoro district with an area extent 8.97 km2 (IPA, 1979).

The temporal research refers to research that is not a time bound research, thus the research work can be conducted at any point of time, but is expected to complete within one year. This study is limited to the phase l of the Federal Capital City and it covers what the master plan of Abuja provided for green areas. It focuses in assessing the incorporation of green areas in urban infrastructural development in the Federal Capital City Phase 1.

Conceptual Framework

The Concept of Planning

Planning is seen in conventional theory, as a general problem-solving teleology directed to such task as promoting human growth, securing the public interest, maximizing social welfare and so on (Scott and Rowels, 1997). In recent years planning has become a key means of delivering a number of government's objectives relating to climate change, reducing carbon emissions, access to housing and improving the supply of housing, enhancing biodiversity and a number of other emerging priorities. Planning is seen in different views by different people and therefore defined in different ways.

Scott and Rowels, 1979 defined as a goal-oriented process that seeks to achieve specified desires, objectives subject to constraints or planning is an attempt to apply rational decision making procedures to the guidance of social change or it seeks to promote human growth. Radcliffe (1974) defines planning comprehensively as the making of an orderly sequence of action that will lead to the achievement of stated goal or goal (s). The main impetus of planning again is to foresee and guide change. Scott and Rowels, 1977 defined Planning as a goal- oriented process that seeks to achieve specific desires, objectives subject to constraints or planning or planning is an attempt to apply rational decision making procedures to the guidance of social change or it seeks to promote human growth (McLaughlin, 1969).

It is the allocation of resources, particularly land in such a manner as to obtain maximum efficiency, whilst paying heed to the nature of the built environment and the welfare of the community (Dale, 1990) It involves making choice among the option that appear open for the future, and then securing the implementation, which depend on the allocation of the necessary resources (Robert, 1974).

Types of Planning

Four main type of planning can easily be identified. They are: Physical planning, Environmental planning, Economic planning, and social planning.

Physical Planning

This is sometime referred to land use planning or a road map for development (Oluruntola, 2005). It is concerned with the spatial arrangement of urban and rural land uses for the purpose of creating functionally efficient and aesthetically pleasing physical environment for living, working circulation and recreation. Land subdivision plan, master plan, local plan are example of physical plans.

Land Use Planning

Dale (1990) defined land use as a combination of human activities that are carried out on the land and are specifically related to the land, together with the natural physical environment characteristics of the earth's surface. An indigenous forest is not a human activity, yet it represents a land use. The responsibility for foreseeing and guiding changes with respect to land use falls to the physical or land use planner, thus land use planning. Classification of land use helps clearly define a land use type of any plot or parcel of land. Central to any land use mapping is the need for a clear and precise system of classification (Rhind and Hudsons, 1980). The world land use survey, which was a commission of the international geographical union, adopted a classification in 1949 and was oriented towards agricultural interests (Rhind and Hudson, 1980). Different countries today have their own land use classified according to their socio-economic, political and physical

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environment, interest or purpose. It is also reflected at the regional, national and local land use planning. Land use planning is primarily a political instrument for resolving, ameliorating, avoiding or forestalling conflicts of interest over land use. These can occur between land users of different categories. Land use is also an instrument for identifying, representing and protecting the interest of those indirectly affected by land use and management decisions-the wider community and future generations. The Canadian Institute of Planners offers a definition that: Land use planning means the scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency health and wellbeing of urban and rural communities.

The processes of land use planning are:

1. Identification and definition of objectives, goals, issue and problems;
2. Collection, analysis, and interpretation of data;
3. Development and testing of alternatives;
4. Formation of land use plan;
5. Review and adoption of plans;
6. Implementation of plans; and
7. Revision and amendment of plans

METHODOLOGY

The Study Area

The study is limited to phase 1 of the Abuja metropolis and this is because, of its numerous recreational areas. The phase 1 include Central area district, Garki district, Wuse district Maitama districts and Asokoro district. (See Fig 3.1 bellow)

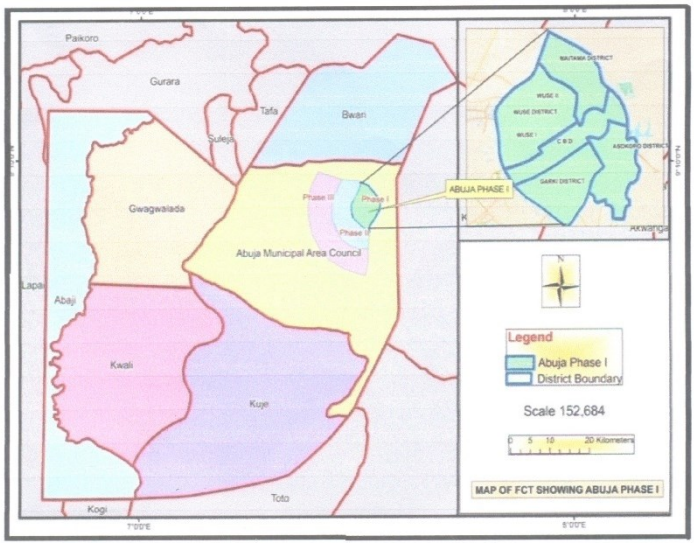

Figure 3.1: Study Area
Source: Office of Surveyor General of the Federation, Nigeria, 2018

Location

Abuja the Federal Capital city is geographically located in Federal Capital Territory, Abuja with land mass of approximately 800 km^2, The Federal Capital City, occupies 250 km2 of the 800 km^2. It is situated

within the Savanna region with moderate climatic conditions. Abuja is phased into four phases: Phases I; II; III; and IV. It lies between latitude 8°251and 9° 201North of the equator and longitude 6°451and T391 East of Greenwich meridian. It occupies an area of 800km2. It is bounded on the north by Kaduna State, on the west by Niger State, on the East and southeast by Nasarawa State and on the South West by Kogi State (Ezeah, 2009). Phase one of the Federal Capital City (FCC), Abuja has an area extent of about 6000ha (60km2) and is divided into five (5) districts. Asokoro districts, Central area district, Garki district, Maitama districts and Wuse district (Balogun, 2001) and see (Figure 1).

Population

The Federal Capital Territory has a population of 778, 567 (NPC 2006) of which 292,407 people live within phase 1 of the territory (AMAC, 2001). Both the city and the Federal Capital Territory have undergone a huge population growth, with some areas around Abuja growing at a rate of up to 30% each year. The population of Abuja is heterogeneous with different classes of people in the society.

Reconnaissance Survey

This is a preliminary survey in the study area accompanied by observation for understanding the nature and characteristic in the study area.

I went round the study area and the result of the preliminary survey enabled me to locate where the green areas are located in the study area. I went round the districts of the Federal Capital City phase 1, comprises of Wuse district, Maitama district, Garki district, Central Business District and Asokoro district respectively and the result shows that there are some green areas that were encroached upon and converted to other land uses. The reconnaissance survey also aids me to identify the number of green areas converted to other land uses in each districts of the study area. This has enabled me to locate and familiarized with the green areas in the Federal Capital City Phase I, which make it easier to collect the required data.

Type and Sources of Data

a.Types of Data

The type of data for this study include the data on socio-economic characteristics of respondents such as age, marital status, occupation, sex, educational qualification among others.

a. Sources of Data

i. Primary Sources

Data was sourced through field questionnaire administration and data were collated on variables such as sex, age, educational qualification, original and current uses as well as effects of conversion.

i. Secondary Sources

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Secondary data was sourced through related literature, seminars, thesis (published and unpublished), international and national journals from relevant government organization such as Abuja Environmental Protection board (AEPB), Federal Capital Development Authority (FCDA), Abuja Parks and Recreation Department, Millennium Development Goals (MGGs), Office of the Surveyor General Nigeria (OSGN) and internets sources amongst others.

Method of Data Collection

This was done using questionnaire administered on the respondents. The questionnaire was administered on a house by house basis at the security checks for onward transmission to the would-be respondents and to avoid the possibility of gender bias and to ensure that the researcher does not have contacts with the respondents that may influence their choices. A total of three hundred questionnaires distributed.

Population, Sample and Sampling Procedure

Federal Capital City Phase 1 which is the study area consists of five (5) districts namely, Asokoro, Central area, Garki, Maitama and Wuse districts respectively. The study population consist of all residents of the area aged between 21-60 and above.This population is considered vibrant enough to be able to attend to issues raised in the study. It is from this population that a simple random sampling method was used to obtain the number of samples in each. A sample size of 300 was then chosen, 60 each from the districts under consideration.

Statistical Analysis

Frequencies and percentages are the statistical tools used in analyzing the data collated from the respondents to arrive at the findings of the study. The reason for the use of these analysis tools is basically because they are easy to interpret and understand.

PRESENTATION OF RESEARCH FINDINGS

Demographic and Socio-economic Characteristics

The demographic and socioeconomic characteristics of the people in the study area consist of age, sex, educational level as well as income level as shown in Table 1 below**.**

Table 1: Demographic and Socio-economic Characteristics.

SEX COMPOSITION				
Sex	**Male**		**Female**	
	Frequency	Percentage	Frequency	Percentage
Asokoro	26	27.7	28	22.6
Central Area	20	21.3	22	17.7
Garki	15	16	24	19.4
Maitama	18	19.	34	27.4
Wuse	15	16	16	12.9
Total	94		124	

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AGE COMPOSITION						
Districts	21-30		31-50		51 and above	
	Frequency	Percentage	Frequency	Percentage	Frequency	percentage
Asokoro	6	21.5	46	26.9	2	10.5
Central Area	4	14.3	33	19.3	5	26.3
Garki	5	17.8	29	17	5	26.3
Maitama	8	28.6	38	22.2	6	31.6
Wuse	5	17.8	25	14.6	1	5.3
Total	28		171		19	

EDUCATIONAL LEVEL								
Districts	Tertiary		Secondary		Primary		No formal Education	
	frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	percentage
Asokoro	24	25.8	12	15.8	13	37.1	0	0.0
Central Area	15	16.1	22	28.9	4	11.5	4	28.6
Garki	13	14.0	11	14.5	9	25.7	6	42.9
Maitama	24	25.8	18	23.7	5	14.3	2	14.3
Wuse	17	18.3	13	17.1	4	11.4	2	14.2
Total	93		76		35		14	

INCOME LEVEL						
Districts	High Income		Middle Income		Low Income	
	Frequency	Percentage	Frequency	Percentage	Frequency	percentage
Asokoro	12	30.8	32	24.6	10	20.4
Central Area	9	23.1	26	20	7	14.3
Garki	8	20.5	23	17.7	8	16.3
Maitama	7	17.9	30	23.1	15	30.6
Wuse	3	7.7	19	14.6	9	18.4
Total	39		130		49	

Source: Field Work, 2019

During the investigation as seen in table 1 more female residents used the recreational facilities more than males. This clearly shows that females are more interested in recreational issues than their male counterparts. This is attributed to the high level of socialization, in terms of partying and events.

In terms of age composition, it is very clear from Table 1 that residents within the age group of 31-50 seem to be in the majority in terms of the frequency of use of the parks and gardens. This is followed by residents within the age bracket of 21-30. Residents within the age bracket of 51 and above used the facilities less. This results show that residents who are predominantly within the working class age group use parks and gardens more.

Similarly, it is evidenced in Table 1 that residents with tertiary and secondary education qualifications used the recreational facilities more than the others. It is equally interesting

to note that those with even primary education used the facilities more than residents with none formal education. This suggest that, the higher the level of education, the higher the level of patronage of parks and gardens by the residents in the study area.
In terms of income, the research categorized income into three namely high income earners which include those in the directorate cadre of the civil service or its equivalent in other works of life, the middle income earners includes those in the civil service on levels 08-14 or its equivalent in other works of life while the low income level includes those in the civil service on level 07 and below or its equivalent in other works of life. Investigations as shown in Table 1 clearly shows that the middle income earners patronize parks and gardens more than any other income group in the study area. This can be attributed in part to the fact those in the middle income group are mostly within the age group of 31-50. This age group, are at their youthful years and full of energy to partake in sporting activities and so on. Subsequently the high level of their patronage.

Uses of Parks and Gardens

Parks and Gardens are provided in each district, to enhance the quality of urban life and help to ease the pressure usually associated with day- to-day activities of life.
The uses of parks and gardens, both original and converted, are shown in Table 2 below where 1, 2, 3, 4 and 5 represents Asokoro, Central Area, Garki, Maitama and Wuse Districts respectfully. The uses include reception, sports, relaxation, religious, and residential amongst others.

Table 2: Original and Converted Uses

Uses	Original Uses					Converted Uses				
	1	2	3	4	5	1	2	3	4	5
Reception	Yes	Yes	Yes	Yes	Yes	Not	Not	Not	Not	Not
Sports	Yes	No	Yes	No	Yes	Not	Not	Not	Not	Not
Relaxation	Yes	Yes	Yes	Yes	Yes	Not	Not	Not	Not	Not
Play Spaces	Yes	Yes	Yes	Yes	Yes	Not	Not	Not	Not	Not
Religious	Not	Not	Not	Not	Not	Yes	Yes	Yes	Yes	Yes
Bar and night club	Not	Not	Yes	Not	Yes	Yes	Yes	Yes	Yes	Yes
Residential	Not	Not	Not	Not	Not	Yes	Yes	Yes	Yes	Yes
Corner shops	Not	Not	Not	Not	Not	Yes	Yes	Yes	Yes	Yes
Bus Terminal/Car Park	Not	Not	Not	Not	Not	Not	Not	Yes	No	Yes

Source: Field Survey, 2019

Original Uses

According to residents as reviewed by the investigation, parks and gardens are originally used in the study area for receptions, relaxation and sporting activities. It is equally important to mention that Bar and night clubs form part of the original uses of parks and

gardens in some districts notably Garki and Wuse. This original uses, according to the residents has the capacity to enhance quality of urban life and serves as an environment whereby peoples meet to socialize and understand the cultures of one another. They also provide a close feeling of the natural environment such as hilltops, hillsides, streams/river courses amongst others. Parks and gardens are used as an extension of the household thus serving as an alternative to the absence of play spaces in most households. In addition, these facilities, according to investigations have the capacity to ease the pressure usually associated with the day-to-day hectic activities of life.

Converted Uses

However, investigations further revealed, as shown in Table 4.2, that while some of the parks and gardens continue to retain their original uses even in the current dispensation, most of the parks and gardens have been converted to other uses. This uses include religious activities, night clubs and bars. Investigation further revealed that some are now being used as corner shops, residential purposes and even bus/car terminals. This, according to our investigations is in sharp contrast with the provisions of the Abuja Master Plan.

The Effects of Converted Uses

The effects of the converted uses of parks and gardens which include pollution and distortion of the master plan amongst others are shown in Table 3 below.

Table 3: Effects of Converted Uses

Effects	Districts				
	Asokoro	Central Area	Garki	Maitama	Wuse
Floods	Yes	Yes	Yes	Yes	Yes
Pollution	Yes	Yes	Yes	Yes	Yes
Distortion of the Master Plan	Yes	Yes	Yes	Yes	Yes
Security Threat	Yes	Yes	Yes	Yes	Yes
Waste	Yes	Yes	Yes	Yes	Yes

Source: Field Survey, 2019

It is clear from Table 3 that there are negative effects usually associated with these converted uses. These effects include pollution and distortion of the master plan. Investigation further showed that other effects are increased security risks depending on the specific usage it has been turned to. For instance, night clubs can trigger security breaches. Flood also occurs particularly when these converted uses encroach on water channels and block drainages. Investigations further revealed large amount of waste often generated with its attendant health implications and equally cause flooding when it blocks water channels and drainages. All these effects have implications for increased

cost to government in terms of managing the waste generated, cleaning the drainages and water channels as well as working to restore the master plan amongst others. It was equally revealed that there is added cost to residents who try to access these facilities in other areas outside their neighborhoods.

Level of Utilization of Parks and Gardens

Table 4 below shows that, none of the districts in phase 1 has achieved high level of utilization in terms of recreational activities. All of them recorded only average to low recreational levels.

Table 4 Level of Utilization of Parks and Gardens

Districts	High		Average		Low	
	Frequency	Percentage	Frequency	Percentage	Frequency	percentage
Asokoro	0.0	0.0	44	22.3	10	47.4
Central Area	0.0	0.0	38	19.3	4	19.4
Garki	0.0	0.0	36	18.3	3	14.2
Maitama	0.0	0.0	49	24.9	3	14.2
Wuse	0.0	0.0	30	15.2	1	4.8
Total			197	100	21	100

Source: Field Work, 2019

The reasons been that, residents in all the districts in phase1, are especially owners of the houses near the recreational areas and are high class people, with inbuilt recreational facilities in their homes and do not find it necessary to patronize the public parks and gardens.

Investigations further revealed the reasons why parks and gardens are enjoying this current level of utilization, this is because most of them have been converted to other uses and that security in the parks and gardens is always a cause for concern. Findings, have also revealed that, the parks and gardens are not properly kept and maintained

The level of utilization of the recreational facilities in Maitama and Asokoro seems to be higher than the other districts as seen in Table 4. This is partly explained by the fact that Maitama and Asokoro are predominantly residential. While the other districts Garki, Wuse and Central Business District are gradually becoming commercial areas, though the CBD is within its traditional land use. There have been massive penetration of commercial activities into Garki and Wuse which were hitherto purely residential. This has led to the conversion or change in the land use in these areas.

Summary of Research Findings

This research invested the effects of conversion of recreational facilities into other uses in the Federal Capital City comprising of Asokoro, Central Business District, Garki, Maitama and Wuse. The research drew its findings from existing literature and a well structured questionnaire distributed to residents in the study area. The study thus found that there

is provision for recreational facilities within these areas in the master plan. Investigation also showed a strong correlation between level of education as well as females and use of recreational facilities.

Conclusions

Based on the findings of this research, we concluded that there is provision for recreational areas and that most of these facilities have been converted to other uses including religious and commercial uses. This conversion has negative effects such as pollution and security threats as well as distortion of the original master plan.

Recommendations

Based on the strength of our research findings, we recommend the following measures to curb the negative consequences associated with conversion of recreational areas to other uses. As first measure, green areas, parks, gardens and open spaces converted to other uses in the study area should be reverted to their original uses. In addition, defaulters should be sanctioned to serve as a deterrent to others. Regulators of green areas, parks, gardens and open spaces should enforce compliance and engage in regular monitoring of operators. Finally, operators' associations should be recognized by the regulators and that the activities of both the operators and regulators should be made complement each other rather working against the interest of each other.

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