AN APPRAISAL OF THE DEVELOPMENT AND MANAGEMENT OF ORGANISED OPEN SPACES IN KADUNA METROPOLIS

BY

HUSAINI IBRAHIM GARBA

A Thesis Submitted in partial fulfilment of the requirements for a Masters Degree in the Department of Urban and Regional Planning, Ahmadu Bello University, Zaria - Nigeria.

JANUARY, 1990.

DECLARATION

I hereby declare that this thesis has been composed by myself and that it is the outcome of my research work. It has not been accepted in any previous application for a higher degree. All sources of information have been acknowledged by means of reference.

JANUARY, 1990

HUSAINI IBRAHIM GARBA.

CERTIFICATION

This thesis entitled: An appraisal of the development and management of organised open spaces in Kaduna metropolis by Husaini Ibrahim Garba meets the regulations governing the award of the Degree of Master of Science, Urban and Regional Planning of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

Chairman, Supervisory Committee — Date: 7th May, 1990

Member Supervisory Committee — Date: May 7, 1990

Head of Department — Date: 7th May 1990

Dean, Postgraduate School — Date: 4-9-90

DEDICATION

LATE HAJIA HABIBA GARBA (MOTHER)

LATE ALHAJI GARBA SOKOTO (FATHER)

ACKNOWLEDGEMENT

All thanks are due to Almighty Allah the Most Beneficient, Most Merciful.

I would like to express my profound gratitude and since appreciation to my supervisors Alhaji Idris D. Suleiman and Malam Ma'aruf Sani for sparing their precious time to criticise, advise and correct this work from its initial conception to its present form.

My sincere appreciation goes to the Management of KASUPDA for sponsoring me. Also to the following people for the various roles they played in my successful completion of this work, viz. Ismail M. Bashir, Muhammed M. Abubakar, Lawal A. Gaga, Garba Gambo, Garba Ibrahim, Aminu Abubakar, Nasir Umar, Bello Nuhu and my typist Mr. Timothy A. Obogbare.

My special thanks go to the entire staff members of the Urban and Regional Planning Department and to my colleagues especially Hassan S. Na'abba and Abubakar Bawa Bwari for making the course a very enjoyable one.

Finally, I would like to thank all my relatives for their support and encouragement and a special thanks to Nafisah (my wife) for her understanding and endurance throughout the two years.

ABSTRACT

This research aimed at appraising the development , and management of organised open spaces in Kaduna metropolis and to recommend appropriate strategies for implementation.

To achieve the afore-mentioned aim, the following objectives were set:

1 - To review the concept and classification of open space.
2 - To examine the system and distribution of pattern of open spaces in Kaduna metropolis.
3 - To analyse the development and management of organised open spaces in Kaduna metropolis.
4 - To compare the development and management between publicly and privately organised open spaces in Kaduna metropolis.
5 - To highlight the general problems of open spaces in Kaduna.
6 - To recommend some policy guidelines and provide a frame work for their implementation.

The methodology of this study consists of two basic components: The theoretical aspect which discussed . various concepts, and classifications of open spaces through an inventory of the existing literature, and the impirical component which involved a study of the

existing situation of organised open spaces using structured and informed interview, reconnaisance survey, personal observations and other secondary data sources.

The study revealed that both human and natural factors provide potentials as well as constraints for the development of open spaces in Kaduna. The population growth and its heterogeneity provide potentials for the development of various open space types. Also the natural physical conditions such as the climate, geology, and vegetation provide the greatest potentials for open spaces development in Kaduna. Despite these potentials, the study revealed that there is inadequacy in the supply of organised open spaces in Kaduna metropolis. It indicated that organised open spaces represent 2.5% of the total landuse in Kaduna. This is far below the acceptable standard of 7 - 8 % for the provision of open spaces in cities with the population of between 500,000 - 1,000,000 within which Kaduna falls.

Inspite of their inadequacy, some of the open spaces especially water bodies and their flood plains are being encroached and destroyed as a result of urban developments.

The study also revealed that there is very poor attendance and underutilisation of the existing publicly organised open spaces. It also revealed that privately developed open spaces are better organised and efficiently managed than publicly organised open spaces. Most of the publicly organised open spaces are wrongly located, poorly designed, ill-equipped and in deplorable conditions and their management is poor. This is because of the duplication of responsibilities and lack of coordination between . the government organisations responsible for their development.

Consequent to the above findings, the following proposals and recommendations were made: More organised open spaces should be supplied by the government to reduce the large deficit. 1% additional open space was proposed to make a total of 3.5%; this is because there is no enough space to meet the 7 - 8% within the metropolis. The proposed open spaces should be distributed in areas that lack organised open spaces within the metropolis such as Mando, Malali, Rigasa, Nasarawa, Sabon Tasha, Hayin Banki etc.

Secondly, the study proposed some set backs along all water bodies based on an earlier study by the green belt committee and the field survey of the existing situation.

The study also recommended that the conditions of the existing public open spaces be improved by providing park equipments, parking spaces, sitting areas and staff that will maintain the quality of parks to make them more attractive and better utilised by the people.

It also recommended the establishment of a Commission to be known as "Kaduna Open Space Commission" which shall take over the responsibility of the development and management of all public open spaces. It shall coordinate with agencies like the Planning Authority NEPA, NITEL and Water Board for the development of all open spaces.

It is believed that this will assist the proper development and management of organised open spaces, so that open space planning becomes well appreciated essentially for its positive contribution in making urban areas viable places to live in.

LIST OF FIGURES

FIGURE		Page
1.0	Thesis structure	10
2.0	Traditional open space	29
2.1	Open supply in Bichi Master Plan ...	30
3.0	Location of Kaduna metropolis ...	43
3.1	Location of Kaduna state in Nigeria	44
3.2	Annual distribution of rainfall and temperature in Kaduna	50
3.3	Open spaces in Kaduna as at 1967 ...	53
3.4	Existing open spaces and built-up areas in Kaduna	58
3.5	Open space systems	
3.6	Open space hierarchy	62
4.1	Distribution of organised open spaces in Kaduna	70
4.2	Involvements of government organisations in the planning of open spaces ...	74
4.3	Income and hours of visits to open spaces	78
4.4	People's free hours allotted to open space visits	87
4.5	People's time of open space visit	91
4.6	People's preferences of organised open spaces	92
4.7	Development parameters of public open spaces	96
4.8(a)	An improperly located Doka park...	97

LIST OF FIGURES CONT'D

FIGURE		Page
4.8(b)	An improperly located Kawo park...	98
4.8(c)	An improperly located NBC children play ground	99
4.8(d)	An improperly located Arewa house park	100
4.9	Development parameters of private open spaces	111
4.91	Well located privately organised open spaces	
5.0	Proposed distribution of open spaces	

LIST OF TABLES

TABLES		Page
3.1	Mean monthly rainfall and temperature distribution in Kaduna	48
3.2	Type and quantity of open spaces as at 1967	55
3.3	Existing type and quantity of open spaces in Kaduna	57
4.1(a)	Existing privately organised open spaces	69
4.1(b)	Existing publicly organised open spaces	71
4.2 a & b	Nature of people's recreational activities	81
4.3	Minimum distance required to organised open spaces	83
4.4(a)	Distance covered	84
4.4(b)	Convenience of distance covered	84
4.5	Modes used to travel to open spaces	86
4.6	Time of people's free hours ...	88
4.7	People's willingness to pay for a visit	90
4.8	People's open space preferences...	93
4.9	Development and management conditions of publicly organised open spaces in Kaduna	110
4.9(a)	Conditions of privately organised open spaces in Kaduna	118
4.9(b)	Comparisons between publicly and privately organised open spaces in Kaduna...	119

LIST OF TABLES CONT'D

TABLES		Page
5.00	Proposed set backs for water bodies	128
5.10	Proposed distance of open spaces	129
5.20	Proposed open space area (in Ha)	130

LIST OF PLATES

PLATE	DESCRIPTION	PAGE
1.0	Greek open spaces	17
1.1	Roman and Renaisance open spaces	18
1.2	Medieval and Modern open spaces	22
1.3	Traditional open spaces ...	23
1.4	Traditional open spaces ...	24
1.5(a)	Modern open spaces in Nigeria ...	27
1.5(b)	Modern open spaces in Nigeria ...	28
2.1	Open space destruction and encroachment	54
4.1	Deplorable conditions of some public parks	109

TABLE OF CONTENTS

Contents		Page
DEDICATION	... ...	i
ACKNOWLEDGEMENTS	... ...	ii
ABSTRACT	... ...	iii
LIST OF FIGURES	... ...	vii
LIST OF TABLES	... ...	ix
LIST OF PLATES	... ...	xi
CHAPTER ONE		
1.00	Introduction	1
1.10	Justification of research and statement of problem	2
1.20	Aim and objectives	4
1.30	Scope and Limitation	5
1.40	Research methodology	5
1.50	Thesis structure	10
CHAPTER TWO: LITERATURE REVIEW	...	11
2.00	Definition of open space	11
2.10	The concept of open spaces ...	15
2.20	The functions of open spaces ...	31
2.30	The classification of open spaces	35
CHAPTER THREE		
3.00	The study area	41
3.10	Historical background	41
3.20	Physical background	45
3.30	Open spaces in Kaduna	51

TABLE OF CONTENTS CONT'D

Contents		Page
3.40	Open space system in Kaduna ...	57
3.50	Open space hierarchy in Kaduna ...	60
3.60	Open space pattern and distribution in Kaduna	63
CHAPTER FOUR		
4.00	Development and Management of organised open spaces in Kaduna	67
4.10	Organised open spaces in Kaduna ...	68
4.20	Government organisations and the Development and Management of organised open spaces in Kaduna	73
4.30	Organised open spaces and people of Kaduna	77
4.40	Publicly organised open spaces ...	94
4.50	Privately organised open spaces ...	107
4.60	Comparisons of the development and management between publicly and privately organised open spaces in Kaduna ...	119
CHAPTER FIVE		
5.10	General findings	123
5.20	Proposals	126
5.30	Recommendations	132
5.40	Policy statements	133
5.50	Conclusion	
FERENCES	... ...	138
APPENDICES	... ...	140

CHAPTER ONE

1.00 INTRODUCTION

The need for open space has been with man for quite a long time. Indeed it is believed to be "as old as the first man that led a settled life by providing a house to shelter his family" Adesanya, (1980)[1]. This is further highlighted by Wilcox, (1958)[2] who believes that "man is essentially an out door animal as far as his biological and physical needs are concerned."

Environmentalists and imaginative civil leaders have for a long time realised the need for open spaces in cities because of the ugly and monotonous nature of the built-up urban environment that lacks physical and social balance. This imbalance can be solved by providing organised open spaces as believed by Gold[3], (1973). That "perhaps no single element can better shape and complement urban form than well placed open

---

1. Adesanya, J.O. (1980), pp. 14.
2. Wilcox, A.T. (1958), pp. 31.
3. Gold, S.M. (1973), pp. 48.

space, its ability to differentiate, integrate or buffer various urban elements is unsurpassed.

Many developed countries, such as United States of America and Britain have perceived that the vitality of the city is related to park-building and park use, and to innovative planning of open space.

In developing countries, efforts are being made by physical planners to provide organised open spaces in their plan proposals and to renew the traditionally built up cities so as to make them function better by giving immediate satisfaction to their residents.

For contemporary urban areas to function well, they must not only provide houses and industries to shelter and employ people respectively, but must also ensure easy accessibility to residents, services and natural environment, orderliness and activity spaces for excitements. The future of cities will therefore greatly depend on the degree to which people develop positive desires to live in them.

1.10 JUSTIFICATION OF RESEARCH AND STATEMENT OF PROBLEM:

It is generally believed that the spatial patterns of open spaces have an organising impact on the form,

structure and smooth accessibility in urban areas. However, the efforts to provide organised open spaces in plan proposals are being thwarted in the process of urban growth and development. In Kaduna metropolis for example, many proposed open spaces and green areas have been encroached and subsequently destroyed by residential and commercial developments. This is particularly true in the centre of the town where nature forms an enviable park-like open space pattern.

The increasing need for organised open spaces and the state governments efforts to develop organised open spaces for public use and the need for a balanced environment that provides a place for man as well as for nature within the urban environment are among the issues that prompted this research.

The problems perceived in the study area as regards the planning for organised open spaces included:-

1. Ineffective utilisation of the present open spaces.
2. Inadequate supply of publicly organised open spaces.
3. Lack of proper location of organised open spaces.
4. Inappropriate development and ineffective management of publicly organised open spaces.
5. Lack of co-ordination between government organisations that are responsible for the planning of public open spaces.

6. Absence of a generally accepted open space policy in Kaduna metropolis.

The afore-mentioned problems will be analysed with the view to recommending lasting solutions, because if allowed to continue every available space will be taken over by buildings, and the town will no longer be comfortable to live in.

1.200 AIM AND OBJECTIVES

AIM

The aim of this research is to appraise the development and management of organised open spaces in Kaduna metropolis with a view to recommending some policy guidelines and provide a framework for their implementation.

OBJECTIVES:

The above aim is intended to be achieved through the following objectives:-

1. To review the concept and classification of open spaces.
2. To examine the system and distribution pattern of open spaces in Kaduna metropolis.
3. To analyse the development and management of organised open spaces in Kaduna metropolis.
4. To compare the development and management between publicly and privately organised open spaces in Kaduna metropolis.

5. To highlight the general problems of open spaces in Kaduna.
6. To recommend some policy guidelines and provide a framework for their implementation.

1.30 SCOPE AND LIMITATION:

This research intends to cover the area within Kaduna metropolis which comprises of Kaduna, parts of Zaria and Chukun Local Government areas.

A general highlight of the situation of all types of open spaces shall be made. However, a detailed analyses of the development and management of publicly and privately organised open spaces shall be made. The study limits itself to open spaces within Kaduna metropolis.

1.40 RESEARCH METHODOLOGY:

For the purpose of this research, the following methods were adopted for data collection, data analyses and research approach:-

1.41 RESEARCH APPROACH:

The approach to this research is to enquire into the general planning of organised open spaces within Kaduna metropolis. It tries to find out the appropriateness of development and effectiveness of management of organised open spaces within Kaduna metropolis.

1.42 METHODS OF DATA COLLECTION:

The following methods were adopted for data collection of this study:-

i. RECONNAISANCE SURVEY:

The study area was physically visited to acquaint the researcher with the apportunities and constraints of the open spaces, to identify open space types, their location, distribution pattern and their general conditions. Also to make an on-the-spot assessment of the problems and a general impression on the demands of the research.

ii. QUESTIONNAIRES:

Three different types of questionnaires were designed and administered for the purpose of this research as follows:

(a) Questionnaire on organised open spaces:

This questionnaire was designed and administered to public officials whose organisations are involved in making decisions on the planning, development and management of public open spaces in the metropolis, viz: Kaduna State Urban Planning and Development Board (KASUPDA), Kaduna Local Government Authority, Forestry Division of the Ministry of Agriculture and the Town Planning

Division of the Department of Lands, Surveys and Country Planning.

Information was collected regarding official's perception of open spaces, the type of involvement of their organisations, the problems of open spaces and possible ways to solve them. This enabled the researcher to make certain inferences and recommendations on the involvements of government organisations in the planning, development and management of organised open spaces in the city.

A total of 20 questionnaires were administered to randomly sampled respondents in the organisations. Five respondents were used from each of the four organisations. All the people responded.

(b) Questionnaire on people's recreational habits:

This questionnaire was designed and administered to a total of 1,250 people within the study area. The people were chosen using the stratified random sampling method.

Information was collected about the sex, age group, education and income levels of the respondents. Also collected was information about the type and nature of recreational habit of the respondents, the distance

they cover to visit open spaces, the mode of transportation used, the number of their free hours per day and the number of hours they allot to open space visits. Respondents were also asked their willingness to pay for organised open space use, the type of open spaces they prefer and their opinion about the development and management of organised open spaces in Kaduna metropolis.

This information enabled the researcher to analyse the open space recreation-habit and the preferences of the respondents and make recommendations of the type and number of organised open spaces required in the city and the improvements to be made in the existing open spaces.

A total of 1,199 responses were received out of the 1,250 questionnaires administered.

(c) Questionnaire on privately organised open spaces:

This questionnaire was designed and administered to privately organised open spaces. Information was collected about their ownership, membership, financial sources, adequacy of equipment, attendance, development and management and the problems they face. This enabled the researcher to analyse the data and make inferences about the development and management of privately organised open spaces and make recommendations for

improvements. A total of 18 out of 21 privately organised open spaces were selected and the questionnaires administered to them. 14 responses were received out of the 18 questionnaires administered.

iii. INTERVIEW:

Another method used for data collection was interview. The Kaduna local government superintendent of parks and gardens was interviewed and information about the practical planning, development and management of public open spaces was collected. This enabled the researcher to understand and assess the practical development and management of publicly organised open spaces.

iv. SECONDARY DATA:

The secondary data collected and used for this research included literature from relevant books, journals, magazines and papers on open spaces. Maps, layouts and master plans were also used. Sketches of relevant places and features were made and photographs of places and features taken for further illustrations.

v. METHODS OF DATA ANALYSIS:

The methods used to analyse the data collected from the various aforementioned sources were simple statistical methods such as graphs, tables, diagrams etc.

6. THESIS STRUCTURE:

The following figure gives the basic structure of this thesis.

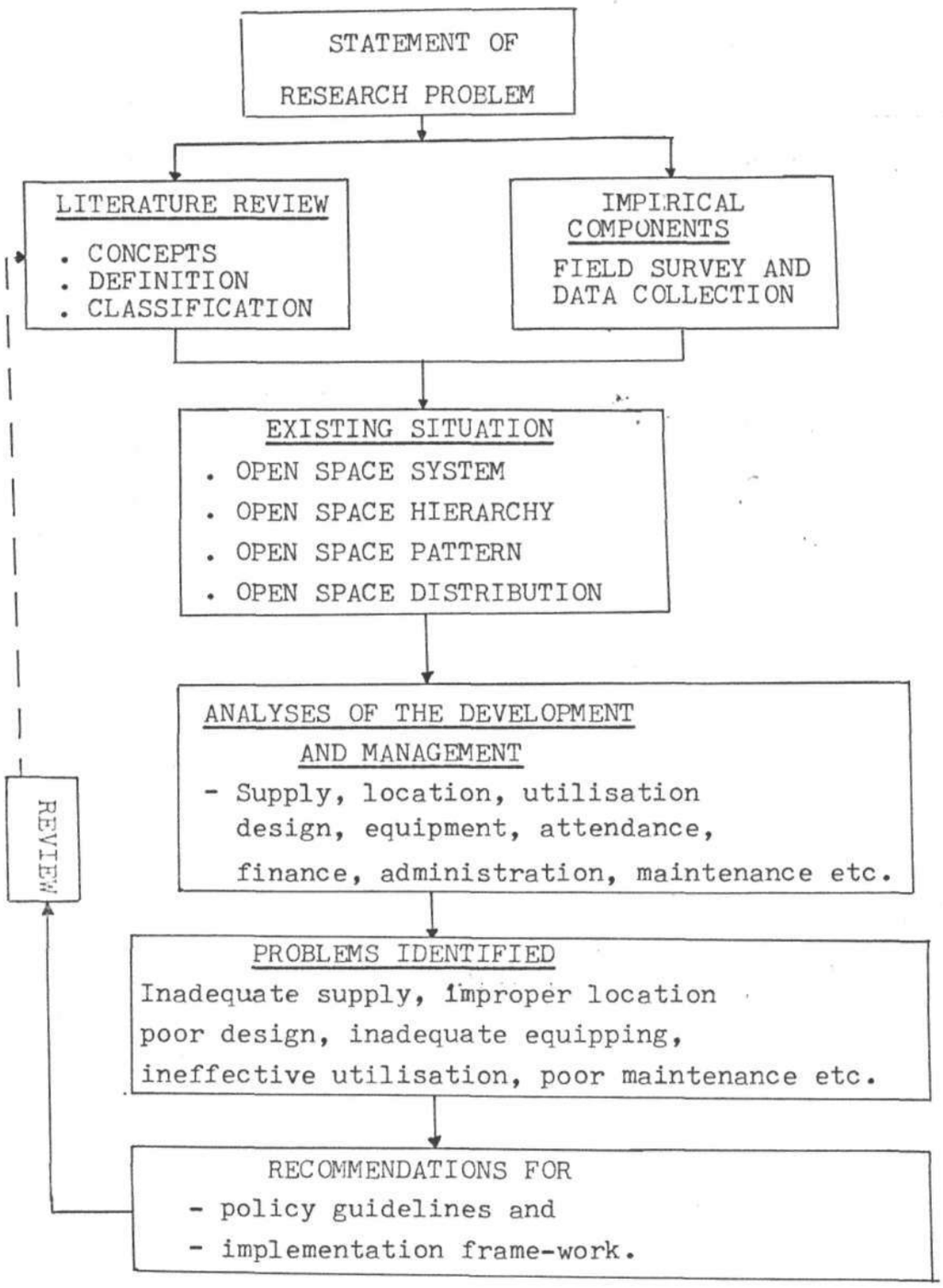


Figure 1.0

CHAPTER TWO

2.00 LITERATURE REVIEW

Although the idea of open space has been with man for quite a long time, but there is little literature on open spaces particularly in the developing countries.

In the developed countries however, quite a number of studies have been carried out as regards to the planning of open spaces.

In Nigeria there is little literature as regards the issue of open spaces and even the few are usually for academic purposes. Indeed there is lack of a comprehensive study on open spaces in the country in general. The absence of literature restricts the researcher to use some old materials. However, a few recent materials were adequately used.

2.10 DEFINITION OF OPEN SPACES:

The study of open space has not been very well advanced especially in the developing countries, but quite a number of definitions have been advanced by various researchers. For instance, open spaces was defined as spaces which include "not only land and water in an around urban areas but also the space and light above us" Stanley, (1963)[4].

---

4. Stanley, B.T. (1963), pp. 57.

This definition seems vague and does not make easy the understanding of open space because of the inclusion of light and space above.

Another definition is that open spaces should be thought of as "land which is not built upon and as sites which have some recreational potentials" Turnard and Pushkarev (1963)[5].

This definition looks at open space in a very broad perspective as to include all land that is not built upon but then narrows itself again to sites which have recreational potentials, but not all sites with recreational potentials are open spaces. Also it fails to consider water bodies and forests.

Keeble (1985)[6] also advanced a definition of open space to mean parks, play fields and all undeveloped land within residential layout which are larger than incidental open spaces (walkways, setbacks etc.) to which people are accessible. This definition is shallow because it viewed open spaces to only include parks, play fields and spaces larger than incidental open spaces. Open spaces are indeed much more than these, besides, there are open spaces that may not be accessible to people such as very high mountains, thick forests etc.

---

5. Tunard and Pushkarev, 1963, pp. 41
6. Keeble, 1968 pp. 13.

Another definition was that an open space is land or water areas that is largely in its natural condition, such area include parks, parkways, beaches, lakes, bays, rivers and institutional lands, King and Associates, (1971)[7]. This definition fails to understand that most organised open spaces are not in their natural conditions. Most of the flowers and the trees in them are artificial, also the institutional lands do not help this definition.

Kevin Lynch (1960)[8] in his Image of the city, defined a space as open if it allows people to move freely within it, such as picnic ground, playground, medow beach, wood is too restricted and so is a focus on space standard. The openness of an open space is not a matter of how few buildings stand upon it but rather how open it is to freely chosen action of its user. This definition provides a simple meaning of open space as a space that allows the free movement of users.

Another definition of open space was that "any undeveloped or mainly undeveloped land in or adjoining an urban area which is characterised by significant natural attributes or whose existing openness, natural

---

7. King and Associates, 1971
8. Keven Lynch, 1960, pp. 18.

condition or present use, if retained would enhance the present potential value of surrounding urban development or would conserve significant natural, historical or man made resources" Vancleve (1962)[9]. This definition also provides a good understanding of urban open spaces in general.

Shittien, (1975)[10] in her analysis of open spaces in Jos, defined open space as a piece of land area within urban region that is mainly in its natural condition; this does not include residential land, but may be located within or adjacent to it. This definition is shallow, because there are non residential lands that are not open spaces. It also does not give example of what it means by open space.

Adesanya, (1980)[11] defined open space as the spaces that remained after the construction of buildings or tersely spaces left uncovered with buildings whether they are organised, natural or incidental. This definition has narrowed open space to spaces that are left after construction. This does not suit the present day perception of open spaces.

A more recent definition of open space is advanced by Harrison and Burgess (1988)[12]; they defined it as

---

9. Vancleve and Associates, 1962. pp. 25
10. Shittien O. 1975, p
11. Adesanya J.O. 1980, pp. 27
12. Harrison, C. and Burgess J. 1988, pp. 16.

not just parks and gardens (spaces set aside for enjoyment) but rather as urban green in its widest perspective. such as walkways, waste places, streams, golf courses, cemeteries and squares.

Many more definitions have been advanced regarding open spaces. The various definitions examined show that open spaces are defined differently depending on the time and the environment of the research. It has been observed that definitions given in the 70s differ in scope and perspective, and open spaces in the 80s tend to include many things that were hitherto not considered as open spaces.

For the purpose of this research therefore, open space is defined as any undeveloped land (natural or man-made within or adjoining an urban area which allows for free movement to people and is used or has potentials for socio-cultural, recreational or economic activities for the benefit of the urban residents and the environment.

2.10 THE CONCEPT OF OPEN SPACES:

Open space is, conveived in different ways and at different times. The concept develops with technological advancement and the changing form and structure of towns and cities.

2.11 Greek period (800 - 100 BC)

During this period, the popular open space was the Agora; this was the main town square where free citizens gathered to buy, sell or exchange goods. It also provided a forum for social interaction. This period also had open spaces such as the palaestrae and Gymnasia where athletes, swimmers and wrestlers met, interacted and exercised. Other formal open spaces during this period included stadia, library and theatre where people spent much of their time during the day for socio-cultural and physical pursuits.

Open space during the Greek period was largely conceived as meeting place for people as well as places where people exercised.

2.12 Roman period (150 BC - 270 AD)

The Romans benefited from open spaces by copying and adapting the Greek architectural designs which they greatly improved upon. This was observed by Wilcox (1958)[13] that some beautiful physical facade of Rome was preserved. The Romans developed open spaces in form of what they called forum which was of regular shape and well beautified for all sorts of passive and active open air recreational pursuits.

---

13. Wilcox, 1958.

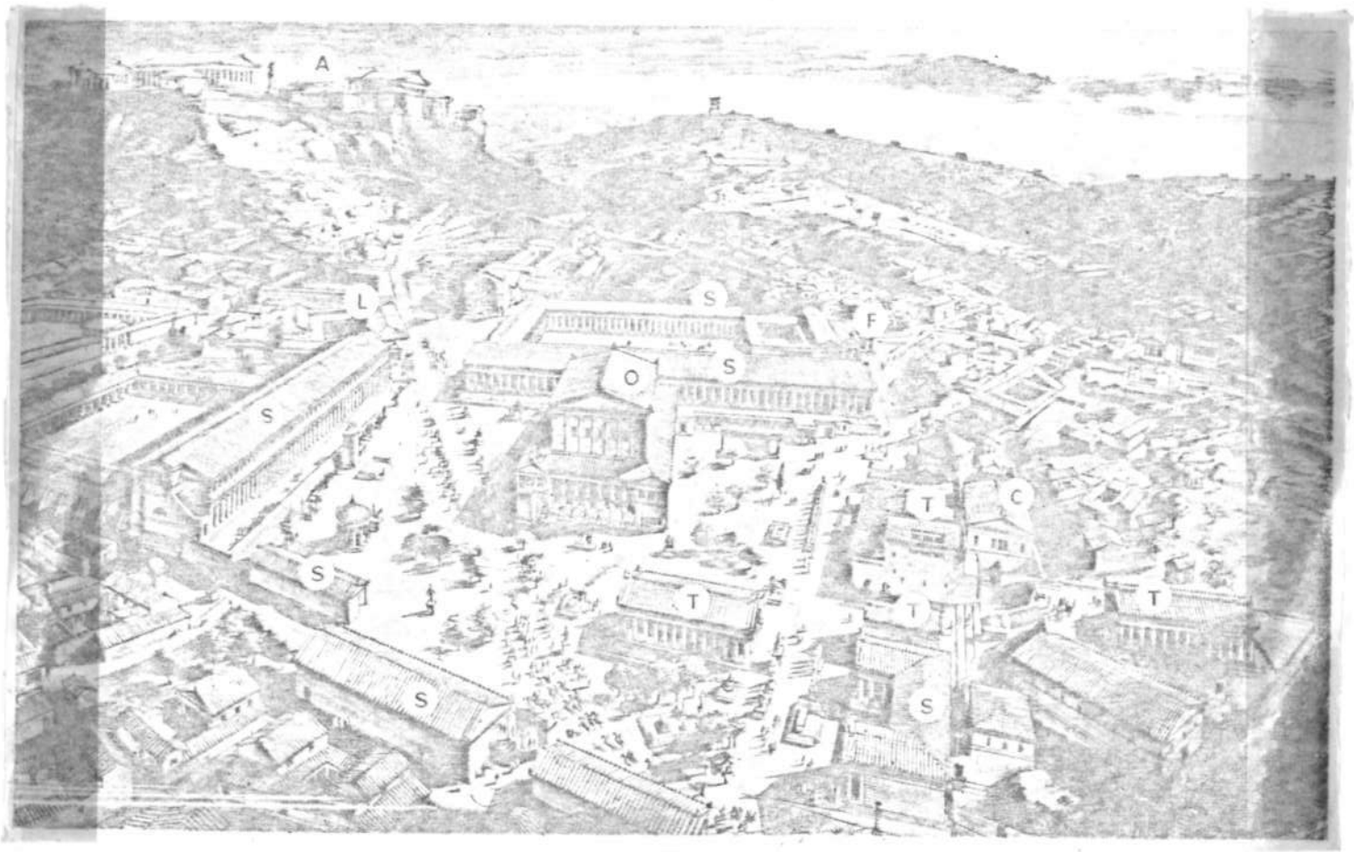
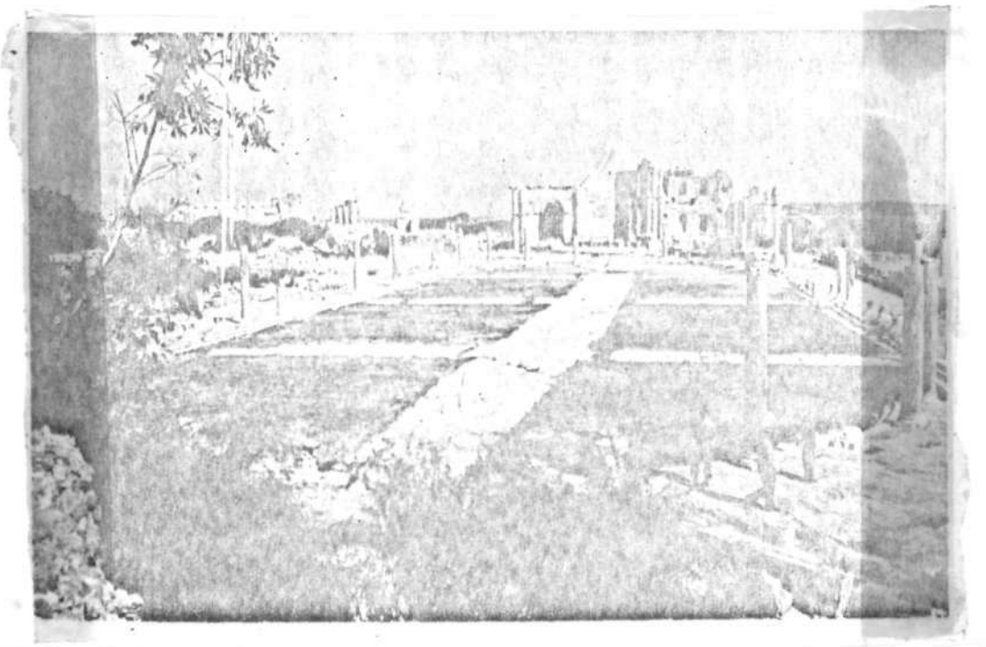
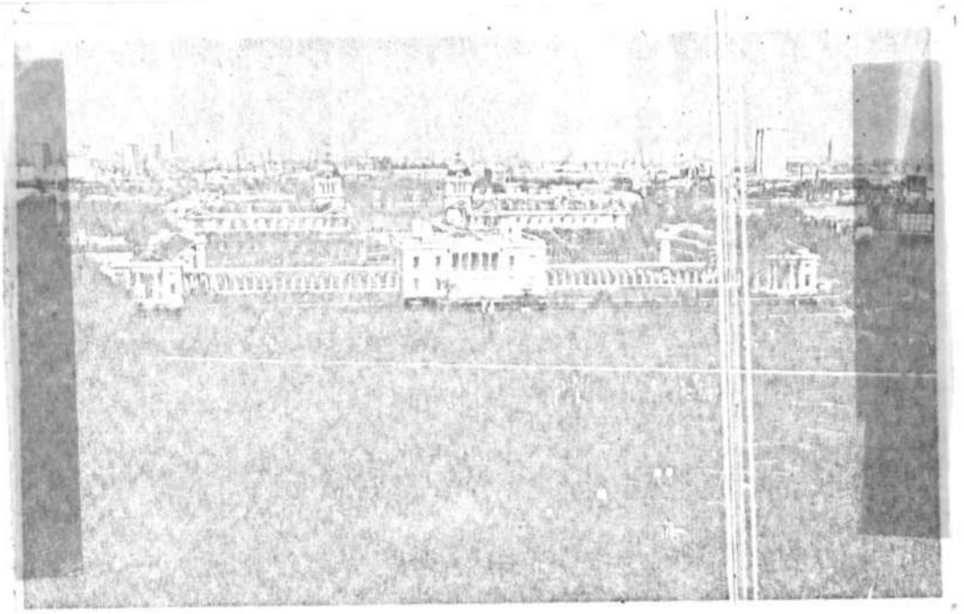


PLATE 1·0 THE GREEK AGORA: OPEN SPACE DURING THE 5th CENTURY, B.C.

PLATE: 1·1



(a) THE ROMAN FORUM.
DURING THE THIRD CENTURY, B.C.



(b) RENAISANCE OPEN SPACE
IN 1696 A.D.

It was during this period that broad and well landscaped streets were introduced for easy accessibility as well as asthetics. Also the idea of separating vehicular movement from park areas was first used during the Roman period. "The forum which was the main town square, was kept free of wheeled traffic." Burke (1971)[14] Plate 1.1(a) shows an example of the Roman forum.

2.13 Medieval period (middle ages 1100 - 1500 AD):

During the medieval period, open spaces were considered as important land use features in the scheme of architectural designs. Open spaces were created for colourful activities and for social interaction Also, streets were constructed and landscapped for easy accessibility to commercial areas of the cities and for beautification. Plate 1.2(b) shows a medieval open space.

The concepts of open space during the Greek-Roman and medieval periods were essentially closed, found within the city walls and were largely considered as meeting places. They had little or no influence on the general form and structure of the cities and they were not fully integrated into the urban landuse pattern.

---

14. Burke, G. 1971, pp. 31.

2.14 Renaisance period (1400 - 1830s A.D)

The renaisance period experienced an important change in the development of open spaces. A sense of movement towards outward ends was created in men. The Renaisance cities were therefore different from the Greek and Roman cities, in the sense that they were more open. It was during this period that people begin to realise that cities should not be built wholly for the sake of shelter but also for some civil conveniences and spaces left for squares, courses, for chariots, gardens, places to take the air in, for swimming and all sorts of amusement.

The various periods of developments show that the concept of open space evolves with time and is related to the technology of the time and the environment. The concept improves with the improvement of town planning. This is observed because during the Greek-Roman and Medieval periods witnessed essentially closed sort of open spaces, but with the advancement of technology and planning the concepts changed into the direction of openness as observed during the Renaisance period. Plate 1.2(b) shows a renaisance open space.

2.15 Contemporary Open Spaces (19th century to date):

Technological advancement of modern period has greatly contributed in the changing concepts of open

spaces as understood during the Greek-Roman and Medieval periods. But the experience gained from the early concepts had a lot of influence on the development of modern open spaces.

Unlike the Greek-Roman open spaces serving mainly their surroundings, contemporary open spaces have become loose and very open; they serve regions and even country, indeed, higher hierarchy contemporary open spaces are used internationally. This is because of the improved technology in mobility and interaction. Consequently, the conception open space has been improved and incorporated into the entire planning process to the extent that there is hardly any plan proposal that does not take cognisance of open spaces. Besides, contemporary open spaces play quite a number of roles in urban areas such as recreation, aesthetics, accessibility, conservation etc.

2.16 Concept of open spaces in Nigeria:

Open spaces have been part of the architectural designs of many Nigerian traditional cities for quite a long time. Like the other parts of the world, open spaces developed through ages in Nigeria. It has been related to the socio-cultural, economic and political settings of the people. The Nigerian open spaces were essentially closed type serving only the people within the walls. The traditional open spaces were found in

PLATE : 1·2

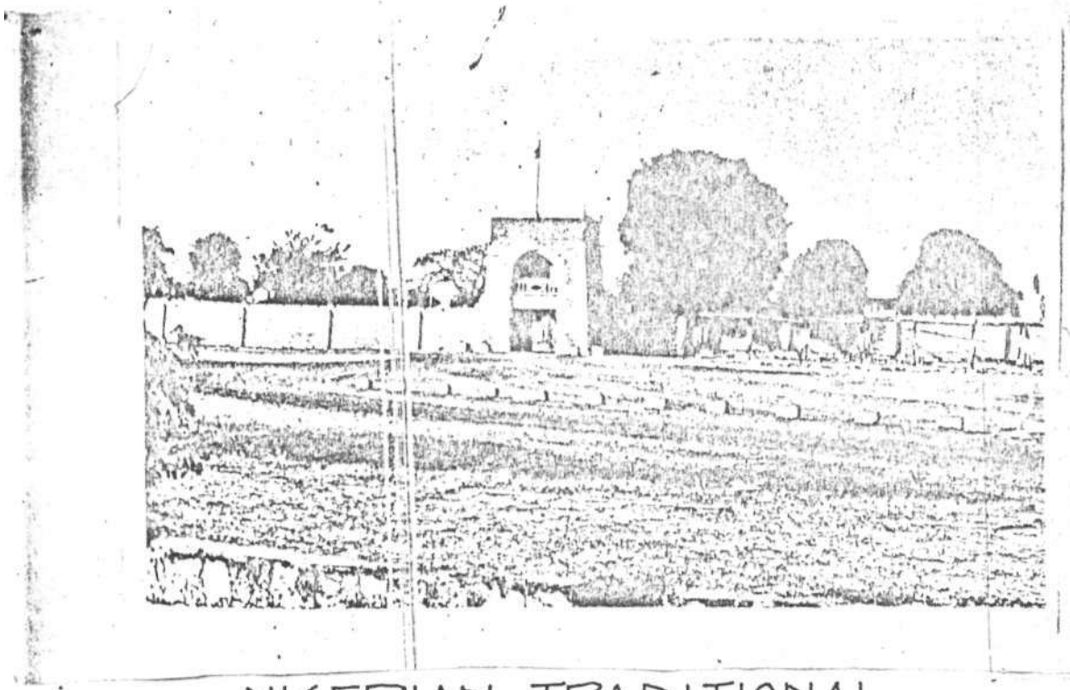


MEDIEVAL OPEN SPACE
IN 1450 A.D.

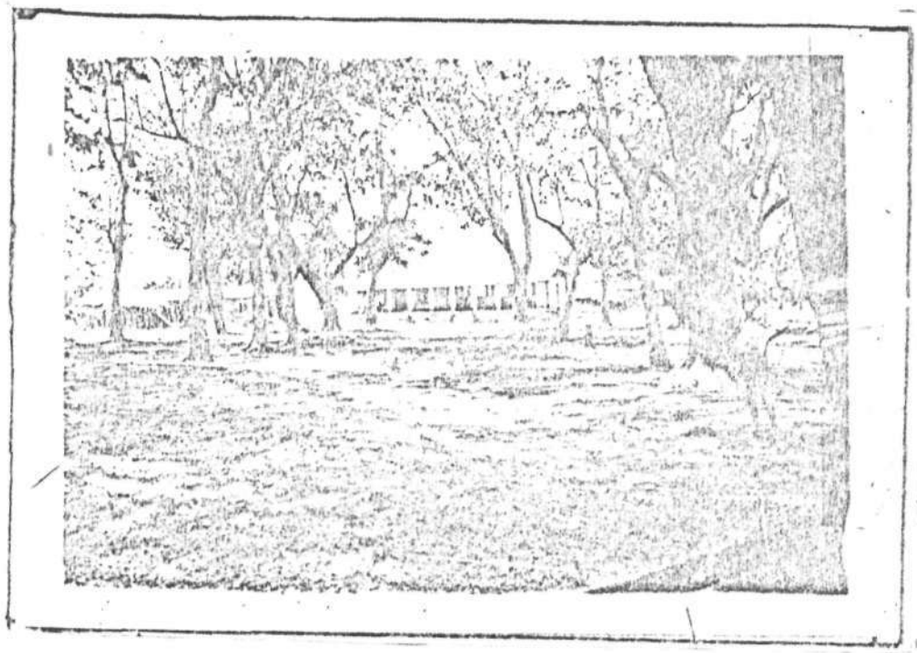


A MODERN OPEN SPACE

PLATE: 1·3

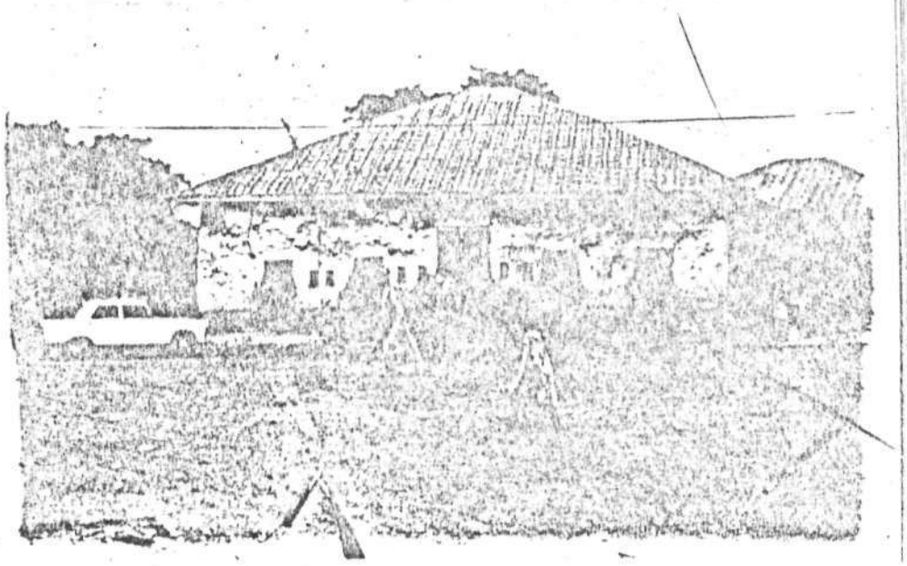


a NIGERIAN TRADITIONAL OPEN SPACE – DANDALI

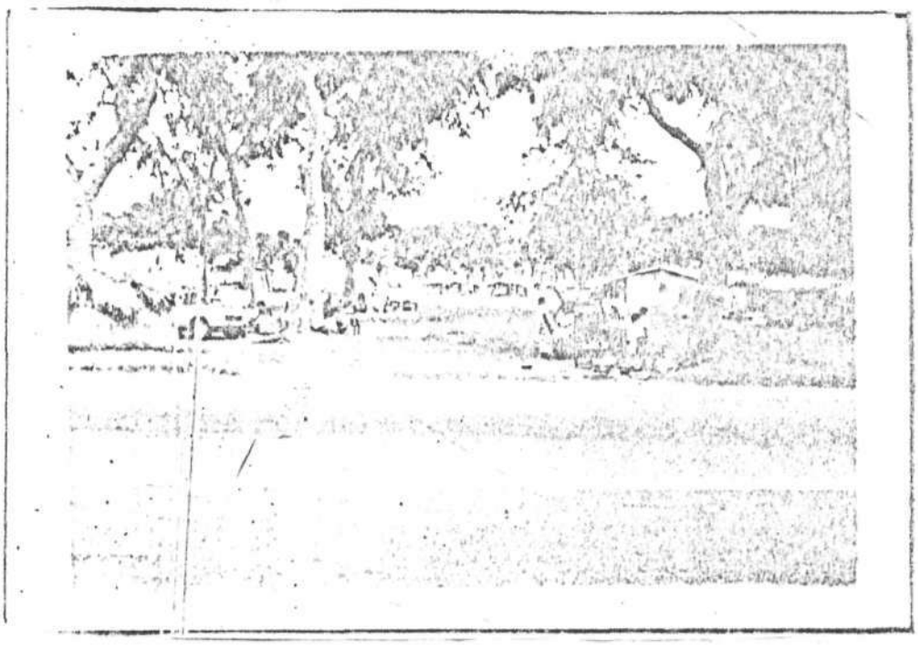


b TRADITIONAL OPEN SPACE: AVILLAGE SQUARE.

PLATE: 1.4.



a. TRADITIONAL OPEN SPACE: DANDALI



b. TRADITIONAL OPEN SPACE: A MARKET SQUARE.

hierarchies depending on the size and functions they performed. They include the following:

i - Lower order open spaces:

These were found around the households; they include courtyards, backyard, housing frontage and spaces between compounds. They were consciously provided as areas where children could play, for story telling (Tatsuniya), naming and wedding ceremonies and for condolence.

ii - Medium order open space:

These open spaces are larger than the lower order open spaces; they include neighbourhood squares, playgrounds, market squares, cemeteries and ritual forests. Example is shown in plate 1.4(b). They were used as places where goods were bought or sold, where people interacted and exercised. Local wrestling Kokawa, boxing Dambe, Sharo, traditional dances, yam festivals for small communities and the burial of the remains of those who died of contagious diseases in the evil forests.

iii - Higher order open spaces:

These are more important and larger than the lower and medium order open spaces. These open spaces were found in front of the Emirs palace Dandali and Oba's market were very conspicuous in Hausa and Yoruba settlements. The Dandali is used to entertain people

during the sallah festivals, for turbaning new traditional title holders and other important traditional activities. The Oba's market on the other hand, is a large open space in front of the Afin; this space was used for selling, buying and exchanging products. It also served as a social place for festivals, crowning of new title holders, political issues, also take place. Figure 2 shows traditional open space in Sokoto.

Other forms of open spaces were found in various traditional settlements mostly in form of squares where traditional ceremonies were performed. Plate 1.3(a) shows a Dandali.

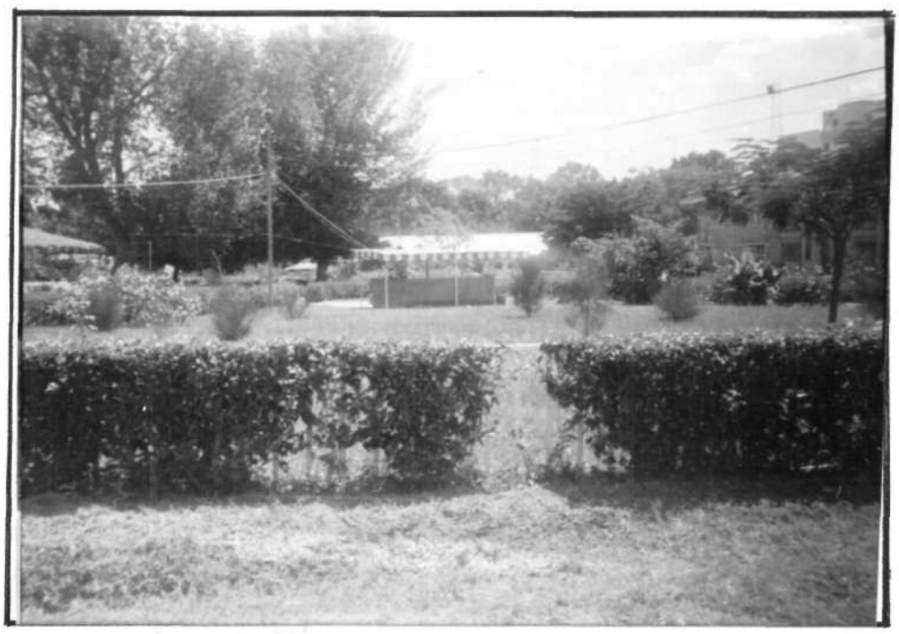
2.17 Contemporary Open Spaces in Nigeria:

Colonization and rapid urbanization have great influence on the landuse pattern in Nigeria. These brought changes in the technology and more awareness of modern open space functions. The modern concept of open space was introduced by the British colonial officers. This is particularly true of recreational open spaces, because the colonial district officers would want to relax by taking part in active or passive recreational activities which were mainly in organised open spaces such as the golf field, polo ground, swimming pool, tennis courts, etc.

PLATE 1.5a

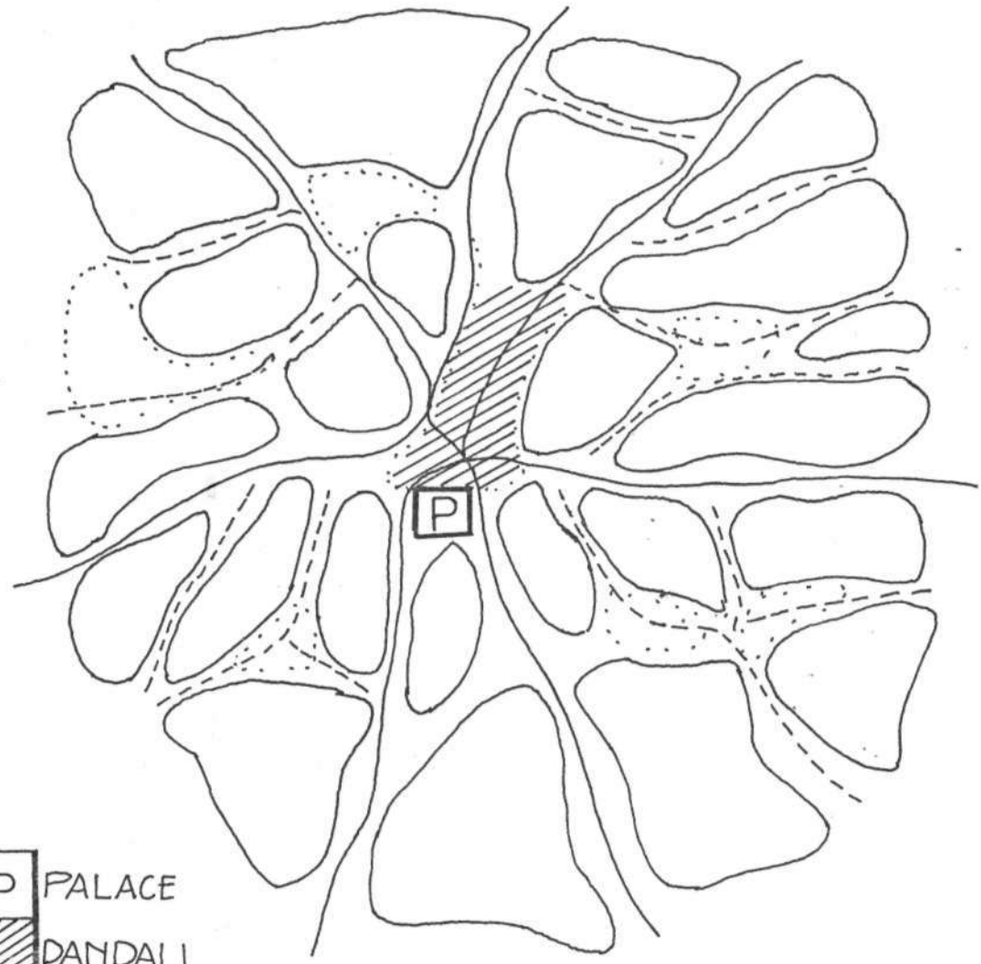


MODERN OPEN SPACE: LEMACO CHILDREN PLAYGROUND, KADUNA.



MODERN OPEN SPACE: HAMDALA HOTEL GARDEN, KADUNA.

FIGURE: 2.0

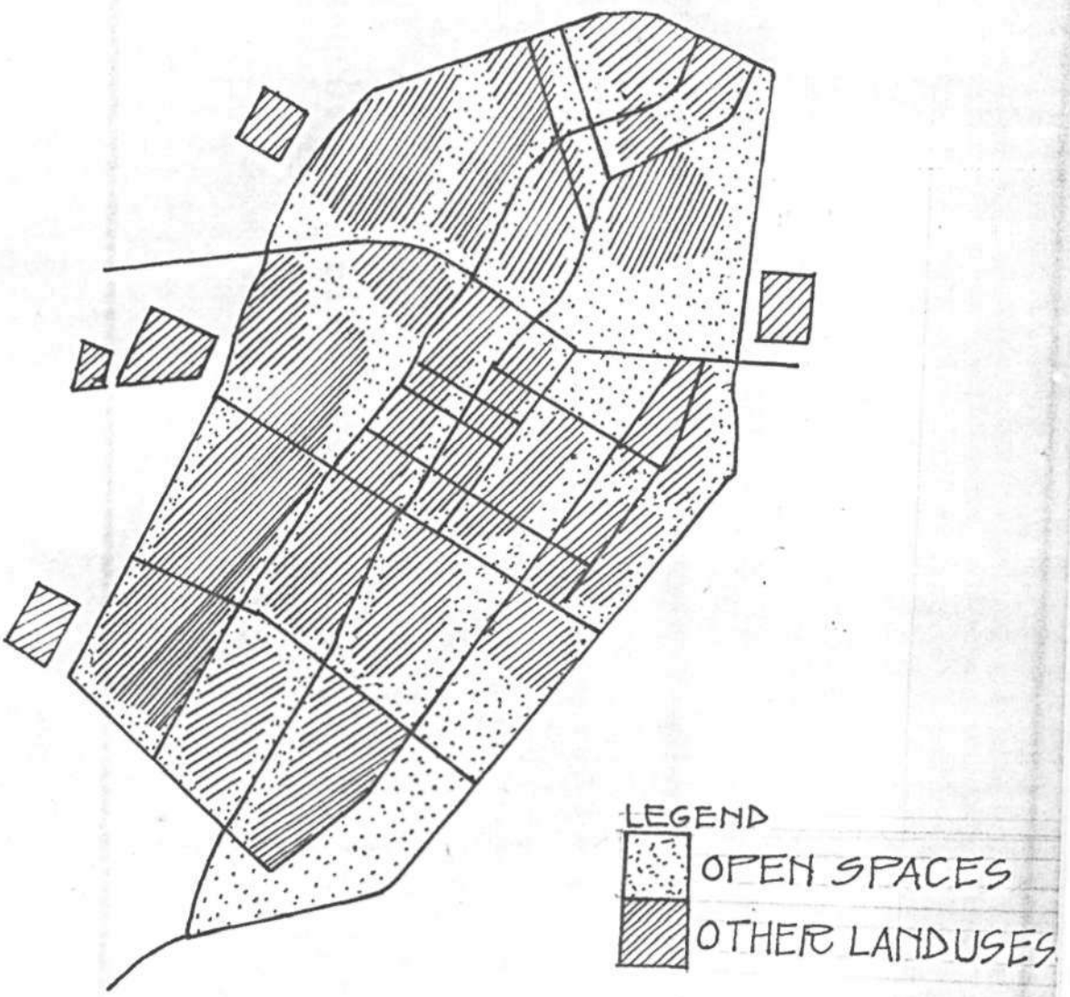


SOURCE: YELWA, A.C. 1989.

TRADITIONAL OPEN SPACE: SOKOTO WALLED CITY

HUSAINI I. GARBA
M.SC. URP THESIS, 1989.

FIGURE : 2.1



SOURCE: BICHI MASTER PLAN, 1978.

OPEN SPACE SUPPLY IN BICHI MASTERPLAN

HUSAINI I. GARBA
M.SC, URP, THESIS, 1989.

Realising the roles played by modern open spaces, the then regional governments made efforts to provide organised open spaces in urban area. As a result, both public and private open spaces were developed in various towns and cities across Nigeria. These include, zoos, botanical and zoological gardens, parks, playgrounds, swimming pools, polo grounds, golf courses, fives and tennis courts, etc. Also, the potentials of open spaces as the lungs of the city for easy accessibility, aesthetics, conservation and the general quality of urban environment was realised. Open spaces now feature prominently in most of Nigeria's plan proposals.

2.20 FUNCTION OF OPEN SPACES:

The way to understand the importance of open spaces and to appreciate its study in Kaduna is to examine the roles it plays on the physical and social settings of cities. The following functions of open spaces are therefore given:-

2.21 Urban form and structure:

Urban open space can be the structural framework to which various forms and activities can relate to provide foci, nodes and ultimate regions of different size, scale and character. Indeed, no single element can best shape and complement urban form than a well placed and organised open space. "Its ability to

differentiate, integrate or buffer various urban elements cannot be equalled" Lynch, (1960)[15].

Well planned open space can give urban resident and a visitor a sense of identity, association and direction. The green belt open spaces on the fringe of sprawling urban areas can give definition to urban form and limit the physical size or shape of acity. Figure 2 shows how planned open space aids the pattern to urban development.

2.22 Recreational Function of Open Sapces:

The recreational roles of open spaces perhaps provide the greatest opportunity for self expression. Recreation is important in building and maintaining physical fitness. The phenomenon of urbanization which brought both income and leisure into the modern setting also brought serious tensions for everyday life. Both working and living take place under crowded and noisy conditions which often frustrate urban residents. Recreation of one's mind is necessary to reduce these tensions, because man does not live for work alone, when he can play, he does. All these outdoor recreation activities usually take place in open spaces; they include: polo, golf, football, tennis etc.

---

15. Lynch, 1960.

2.23 Social function of open space:

Man is by nature a social animal. Many open spaces provide the social interaction opportunities that man requires. Indeed, it has been observed that most of the open spaces during the Greek and Roman periods and in the traditional Nigerian settlements were essentially places that people interacted socially. The modern open spaces also provide social interaction opportunities as observed by Harrison and Burgess(1988)[16] that the social meanings of public open space became a central concern. They provide opportunities for particular kinds of social interaction that cannot be easily found in the built environment.

Open spaces therefore provide an outdoor medium which people socially interact and watch others.

2.24 Conservation and education functions of open spaces:

Preservation of natural open spaces in cities is very necessary because urban societies cannot flourish without the support and balance of living things other than man - Wallace et al. (1970)[17]. It was also believed that urban communities will gain maximum benefits by preserving as natural open space

---

16. Op cit, p. 17.

17. Wallace, et al. 1970, p 95.

those land areas that are physically and economically unfeasible for urban development. The scenic beauty of phoenix mountain residents is a precious asset worth preserving. Van Cleave (1962)[18], plate shows conservation of the phoenix mountains.

The preservation of land in its natural condition within or around urban area is most difficult but very necessary for at least the following functions:

- Retention of water supply and natural drainage pattern;
- Alleviation of air pollution and
- provision of a limited habitat for natural flora and fauna.

Urban open spaces also play educational role. As Johnstong, (1959)[19] noted that the role of public open spaces in education improvement is indispensable. They serve as outdoor classrooms and laboratories where students can study native flora and fauna in the city. Besides, many educators believe that the best place to teach an urban child some of the basic relationships of urban life such as competition, survival or reproduction is the natural surrounding.

---

18. Op cit p. 26.

19. Johnstong, V. 1959. In urban recreation planning by Gold. p. 57.

1. Augast Hecksher classification:

He classified open spaces into three different types: Traditional open spaces which comprise of parks and squares; natural features within cities which include streams, rivers, rocks, valleys etc. and man-made open spaces which comprise of walkways, rights-of-ways, set backs etc.

Hecksher's classification is simple, but his conception of the traditional open spaces is shallow as just parks and squares.

2. Nan Fair Brother classification[23]

Here, open spaces were classified into two categories viz: planned open spaces such as parks, gardens, playgrounds etc and incidental open spaces which include rivers, streams, valleys, rocks etc.

This classification is short sited as to have classified open spaces into just planned and incidental. Besides, some incidental open spaces are planned, for instance roundabouts in cities and a good example is the Phoenix mountains which is incidental open spaces but it has been planned such that the community utilises the potentials it provides. So also many rivers and streams have been planned and well utilised for various open space functions.

---

23. Nan Fair Brother, 1975.

3. Max Lock classification:

He classified open spaces into two types: Organised open spaces which include parks, gardens, play fields, polo grounds, zoos, etc; these type of open spaces are usually organised and located in different parts of the urban area; they require regular attention and constant maintenance; and unorganised open spaces which usually correspond with these areas where the natural physical conditions have created either a rock out crop or land depression in the valleys of rivers and streams. They are not always organised and are normally left in their natural state.

Max Lock's classification, is also simple but is shallow to have conceived open spaces into organised and unorganised.

4. Stanley's classification[25]

He classified open spaces according to their hierarchy into 4 types:

i. Street level open spaces: Yards, courts, rights-of-way, streets, residential commons, tot lots etc.

ii. Community level open spaces: School grounds, playgrounds, small parks, play fields, ponds, streams etc.

---

24. Max Lock and Partners, 1976 pp 205-206.
25. Op cit., p. 19.

iii. County level open spaces: Medium-sized parks, golf courses, polo grounds, lakes, minor conservation areas etc.

iv. Regional level open spaces: Large parks, major water bodies - great rivers, oceans, private farms woodland, coastlines, mountain ranges and other land on the urban fringe.

This classification is easy to understand but there is overlap of functions in the hierarchies. All types of open spaces can be found in all the hierarchies, the only difference is their size and the functions performed.

5. Adesiyan's classification:

Adesiyan (1980)[26] also made an attempt to classify open spaces into three types viz:

i. Organised open spaces which include play fields, stadia, golf courses, lawn tennis field, public foot walk lawns, parks, gardens, cemetery etc.

ii. Incidental open spaces which include set-backs, backyard areas,vacant lots, residential commons.

---

26. Op cit, p. 29.

ii. Natural open spaces which include river channels, flood plains, lakes (pools) reservoir, forest, wilderness area, mountains coastal areas etc.

This classification is simple and it covers all types of open spaces, however, it left out traditional open spaces which are very important in the Nigerian open spaces.

The classifications advanced by various researchers on open space show that they are mainly classified on the basis of their nature, that is, organised, unorganised, traditional, incidental etc. considering the evolution of Nigerian open space and the background of the study area therefore, the following classification is given for the purpose of this study:

i - Organised open spaces: These include parks, gardens, golf courses, polo ground, swimming pools etc.

ii - Traditional open spaces: Dandali, Oba's market, market squares, cemeteries, ritual forests, village squares etc.

iii - Natural open spaces: Forests, rivers, streams, lakes, valleys, rock out crops, flood plains etc.

iv - Incidental open spaces: Side walks, burrow pits, setbacks, backyards etc.

CHAPTER THREE

3.00 BACKGROUND OF THE STUDY AREA

a. History:

"Kaduna is unique amongst Nigeria's major towns" Udo, (1970)[27]. It is a new town found in 1917 during the second decade of the British rule in Nigeria. Kaduna developed in the dual capacity of a garrison town and an administrative centre of colonialism. Its establishment brought to an end the protracted search for a suitable administrative capital for the then Northern Nigeria.

Kaduna is endowed with an unlimited supply of water; a major railway junction and indeed Nigeria's biggest train passenger exchange point; and its vast potentials for growth made it develop from an army encampment to a centre of colonial administration and to an industrial and commercial town. Although the creation of states in 1970, 1976 and 1987 all affected Kaduna, it still maintains its administrative, commercial, industrial and military functions.

b. Location:

Kaduna metropolis is located between latitudes 10^{o} 30' and $11^{o}0$ north, and between longitudes $7^{o}21'$ and $7^{o}30'$ east. Figures 3.1 and 3.2 show the location

---

27. Udo, R.K., 1970, pp. 61

of Kaduna state in Nigeria and the location of Kaduna metropolis within Kaduna planning area.

c. Population:

Kaduna experienced dramatic increase in population from its establishment in 1917 to date. In 1919 Kaduna's population was only 3,000; by 1952, it had risen to 40,000 and 11 years later (1963), it was 149,000. In 1984 the estimated population of Kaduna was 460,000 and today, Kaduna's population stands at 550,000. The rapid increasesare due to the administrative, commercial and industrial importance of Kaduna.

As a state capital, a major armed forces training centre (military, airforce and police) and an important industrial town, Kaduna has a large population of government and industrial workers. This population increase has a serious impact on the landuse in that much of the land area proposed as open space has been taken over by residential and commercial developments to cope with the fast population growth that is becoming greater than its strength to support.

This large population is heterogenous because of the establishment of the town and the role Kaduna

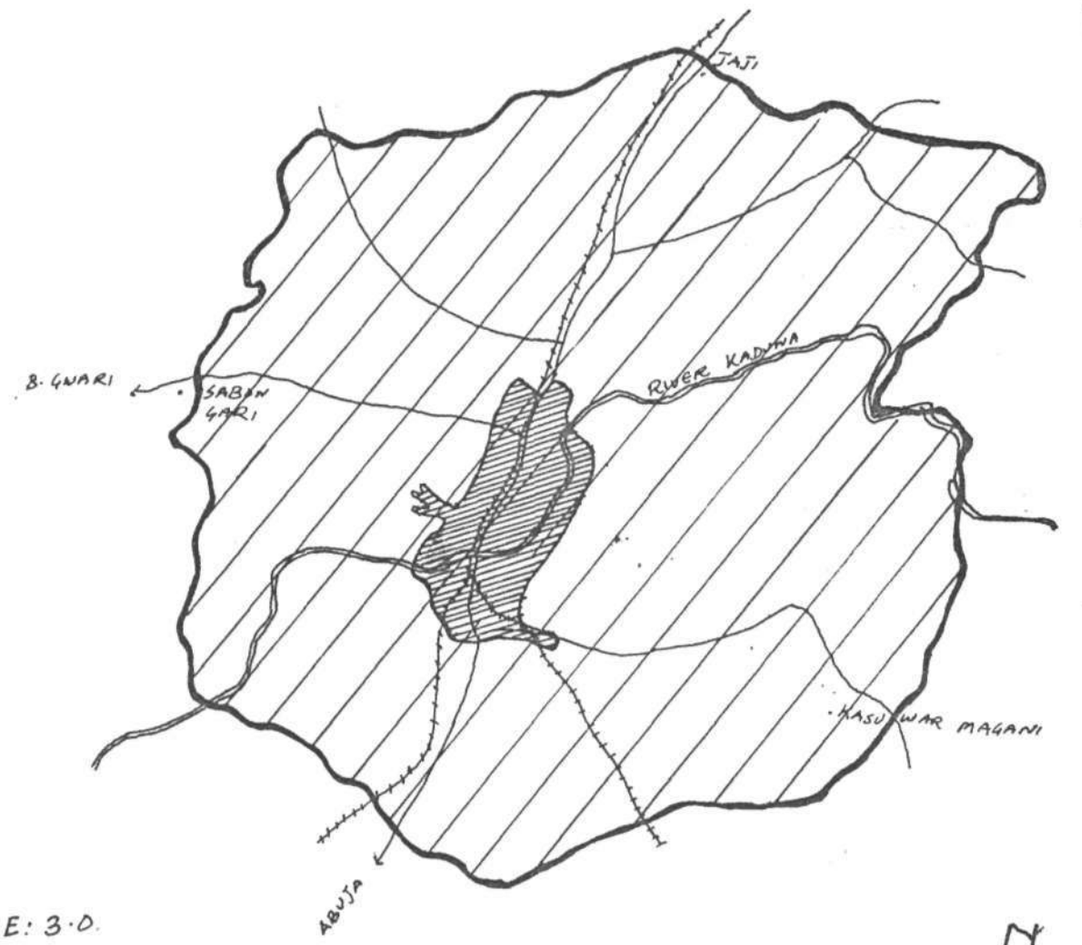


FIGURE: 3·0.

N

KADUNA PLANNING AREA
KADUNA METROPOLIS.

10 5 0 10 20 kms

LOCATIO OF KADUNA METROPOLIS IN KADUNA PLANNING AREA.

HUSAINI I. GARBA
M.SC URP THESIS 1989.

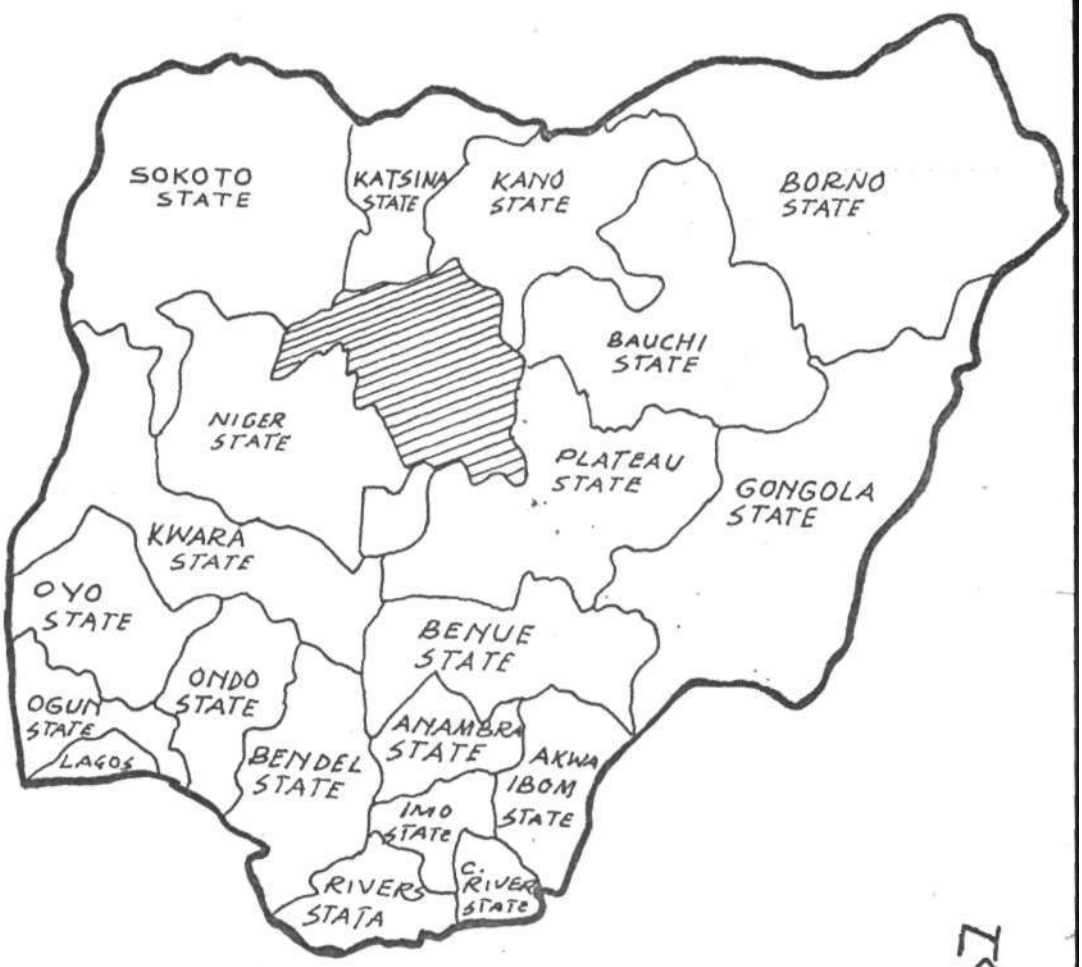


FIGURE: 3.1

KADUNA STATE

0 75 150 225 300 Kms

LOCATION OF KADUNA STATE IN NIGERIA.

HUSAINI I. GARBA.
M.SC. URP, THESIS, 198

plays in the country. It accommodates the second largest number of federal government establiments apart from Lagos. So the population is very heterogenous. This has its own influence on open space planning because it provides a potential for the development of a wide range of open space types. It also indicates an increase demand for public open spaces and strict control of natural open spaces to avoid urban development everywhere which could lead to everywhere being brown.

The population growth and heterogeniety also provide some constraints. The rapid growth means an increase in the demand of the organised open spaces, however, there is a limit to the percentage of land to be reserved for open space, so the continuous growth of the population means congestion and over utilisation of open spaces. The heterogeniety of the population means different perceptions and open space requirements. So it provides the constraint of the type of open spaces to be provided in an area.

3.20 PHYSICAL BACKGROUND:

Nature has favoured Kaduna as a town to be interspersed with vast undevelopable areas in form of sudden outcrops of rugged granites, wide valley

and flood plain of River Kaduna, streams, gulleys and the vacant lots of the Guinea savannah vegetation. Indeed Kaduna is referred to as a city in the bush,- Max Lock (1967)[28].

a. Topography and Geology:

Kaduna's regional topography consists of a rolling park-like terrain with little relief situated about 100 metres above, and below 2,000 metres contour line. Much of the area is crossed by mature wooded streams flowing in broad shallow valleys separated by inconspicuous watersheds.

The basic geological structure is mixed steaky rocks and granite. Over most of the area, the surface has decomposed to laterite. Erosion is mainly by small streams that cut deep valleys leaving the residual laterite caps to be gradually eaten away at the edges by natural forces of rain, wind and vegetation (Wright, (1970)[29].

(b) Climate:

i. Rainfall and wind:

The climatic data of Kaduna shows a distinct seasonality of rainfall as a result of its

---

28. Op cit, p. 43.

29. Wright, J.B. 1970, pp. 7.

tropical continental location. It lies within the zone of the seasonally fluctuating inter-tropical convergence zone (I.T.C), where seasonal reversal of winds are experienced following northward movements of the I.T.C. Thus, the dorminant wind at one season (May - September) is moisture-ladden south west monsoon, while the other season (October - April) the dry, dusty continental north west trade wind (Harmattan) prevails.

The former wind is responsible for the bulk of the rain received which means that rainfall is concentrated within five months of the year (May - September). During these months over 97% of the total annual precipitation occurs as shown in Table 3.1. The wet months favour much plant growth and therefore provide potentials for the development of organised open spaces such as parks, gardens, game reserves and some natural open spaces like forests and woodlands are at their best. Figure 3.2 shows rainfall distribution.

The seasonality of rainfall and alternation of wet and dry season of Kaduna favour the development of wide range of open spaces activities such as football, horse riding, tennis, polo,

gulf, picknicking etc. But the strong winds at the beginning of rainy season in April and May, and the heavy rainfall between June - August prove some constraints to open space use.

Table 3.1: Mean monthly rainfall and temperature distribution in Kaduna 1987.

Month	Mean rainfall (mm)	Mean temperature (°C)
January	0.00	21.6
February	0.00	24.0
March	6.50	27.0
April	16.00	28.4
May	95.60	27.0
June	104.20	24.0
July	224.00	23.1
August	245.30	23.8
September	145.20	24.0
October	44.00	24.1
November	0.00	22.3
December	0.00	21.2
Annual mean	74.00	24.0

Source: I.A.R. Meteorological Unit.

ii - Temperature:

Annual variations of temperatures are expressed within Kaduna region. It is seen that monthly averages are generally high. The coolest months is December, with a mean of 21.5°C. Temperatures display double maxima with peaks occurring in April and September.

On the other hand, the relatively low temperatures between November and February are attributable to the cool, dry Harmattan winds which are the prevailing winds during these months, making it difficult for plants growth during this time. I.A.R. (1987)[30].

While the temperature favours some organised open space activities such as swimming, picnicking etc., it has negative impact on natural open spaces particularly parks and gardens because it disfavours plant growth. The distribution of temperature is shown on figure 3.2.

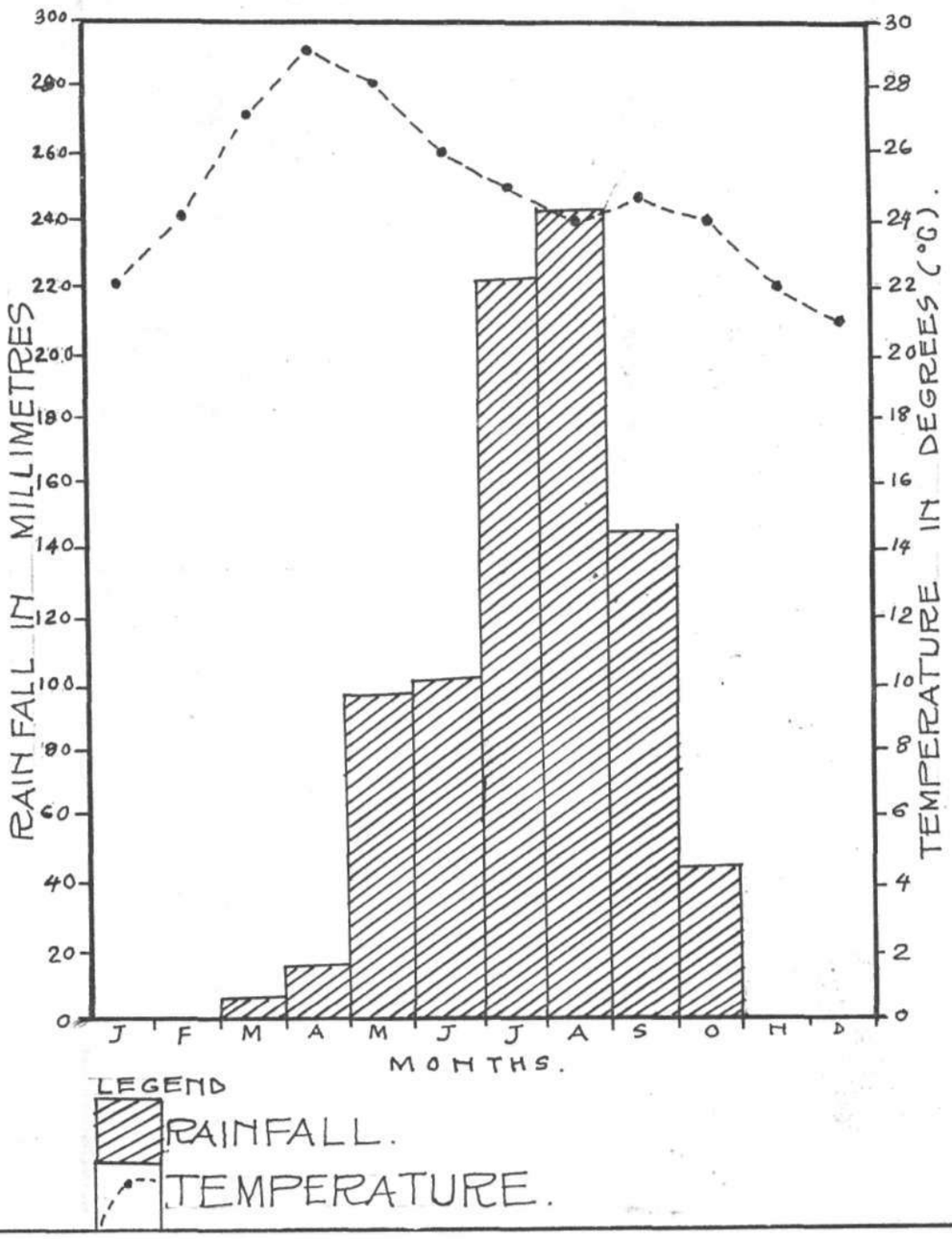
(d) Vegetation:

Kaduna is situated within the northern guinea savannah zone. This implies a woodland vegetation characterised by the presence of such trees as "Isoberlina doka, Isoberlina tomensa and Uapaca togoensis,

---

30. I.A.R. Meteorological, 1987.

FIGURE : 3·2.



ANNUAL DISTRIBUTION OF RAINFALL AND TEMPERATURE IN KADUNA, 1987.

SOURCE: I.A.R. METEOROLOGICAL UNIT.

HUSAINI I. GARBA
M.SC, URP THESIS, 1989.

with a well developed grass layer of tufted Andropogoneae" Jackson, (1970)[31].

The natural vegetation consists of low orchard bush with a scatter shade trees such as baobab, silk cotton and shea butter.

The vegetation of Kaduna provides a good potential for natural open spaces such as forestland, farmlands, Botanical gardens etc.

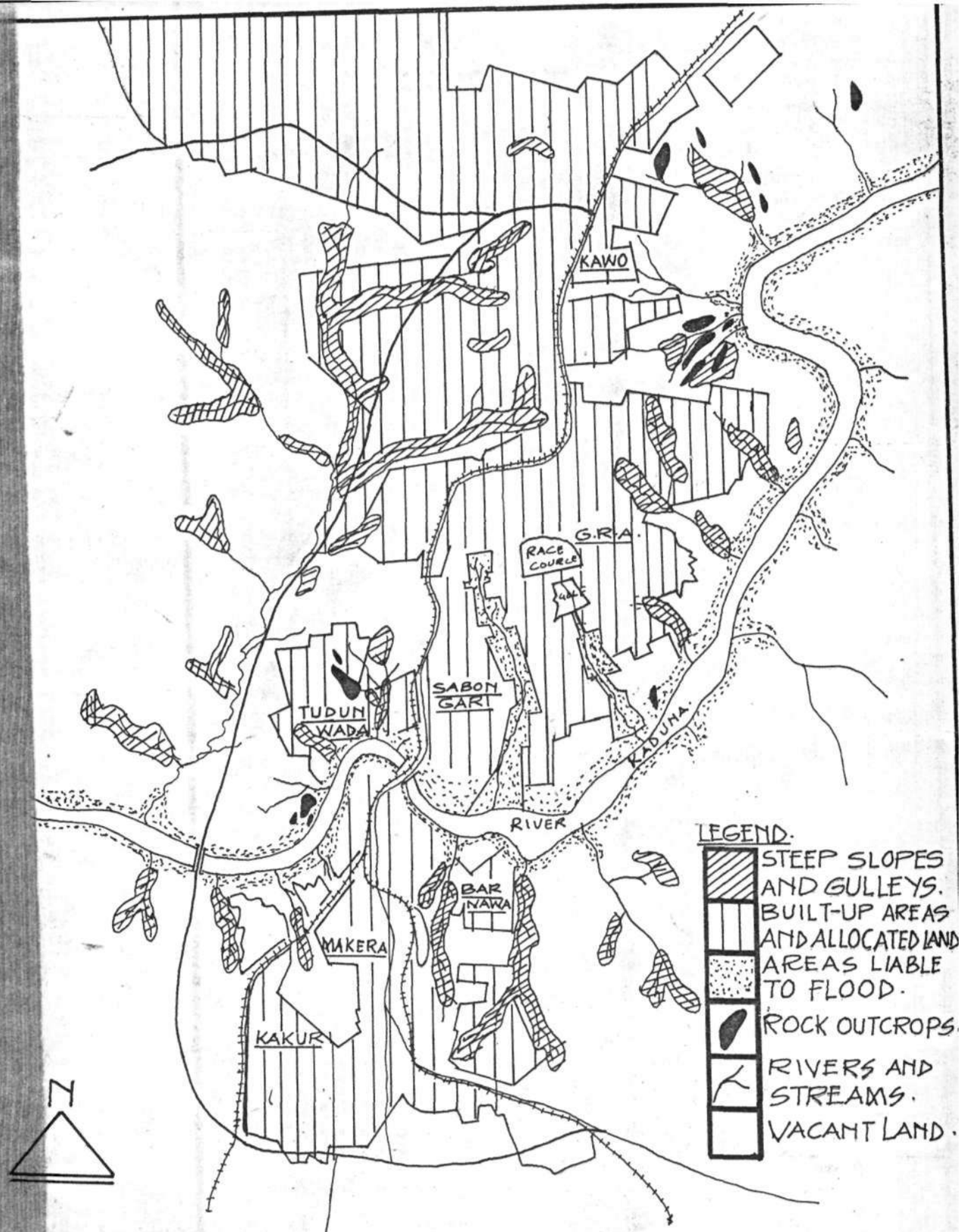
3.30 OPEN SPACES IN KADUNA:

(a) Open spaces as at 1967:

To appreciate the existing open spaces in Kaduna, there is need to give account of the open spaces as at the time Max Lock made the master plan proposals for Kaduna in 1967. Nature has favoured Kaduna very much as far as open spaces are concerned. Kaduna was interspersed with vast open spaces which surrounded and separated its larger built up "limbs" and smaller fingers of development. These open spaces represented two fifths of Kaduna's land area, which confer on the town a generous park-like character

---

31. Jackson, G. 1970, p. 8.



SOURCE: MAX LOCK 1967.

FIGURE 3·3

OPEN SPACES IN KADUNA AS AT 1967.

0 1 2 3 4 KMS

HUSAINI I. GARBA
M.SC, U.R.P. THESIS, 1989.

PLATE: 2·1

ENCROACHMENT AND DESTRUCTION OF OPEN SPACE



A BUILDING IN THE FLOOD PLAIN OF A STREAM IN KADUNA.



A BUILDING IN A GREEN AREA AT G.R.A, KADUNA.

Table 3.2: Gives the breakdown of the open spaces as at 1967.

	Open space	Quantity (in Hectres)
1 -	Organised	85
2 -	Natural	391.6
3 -	Vacant lot and incidental	4,288.4
	Total open spaces	4,680.0
	Total land area	9,614

Source: Max Lock 1967.

Quite a lot of changes have occurred in Kaduna since Max Lock's plan of 1967, most of the proposals of the plan have been overtaken by events. Indeed the plan has never been used by the state government for any serious planning in Kaduna. So land use, including open spaces have been affected by the changes.

Natural open spaces and vacant lots are the most affected. River and streams flood plains, rock outcrops have been destroyed at will by urban developments, and indeed some of the remaining ones are being encroached at an alarming rate. The state government realised the danger of destroying the natural open spaces and consequently, directed in the white paper

report of the high powered administrative committee on land use, (1984)[32] that all undeveloped plots in the green belts be revoked. However, the encroachment and destruction of the natural open spaces continue without any sign of control, to the extent that most of the stream flood plains have been developed to their last limits.

Existing open spaces

The existing open spaces in Kaduna metropolis are clearly different from what obtained in 1967. This is clearly shown in figure 3.4. It shows a sharp decrease in the amount of natural open spaces as a result of the uncontrolled encroachment and destruction. Much of the central natural open space and the stream flood plains particularly in the well serviced areas have been taken over by urban developments. Much of the green areas around the government reserved areas have been destroyed by residential developments.

However, there is increase in the number of organised open spaces since 1967 especially privately organised open spaces. These include Kaduna club, Kaduna recreation club, Sardauna fives club, the various staff clubs etc.

---

32. Government white paper, 1984, pp. 18-20.

The most affected open space is the vacant lot, which formed the bulk of the entire open spaces. This is due to the rapid population growth far beyond the proposal of Max Lock. The pressure on land within the city became high and more than 80% of the vacant land has now been developed or allocated. Table 3.3 below gives the breakdown of the existing open spaces in Kaduna.

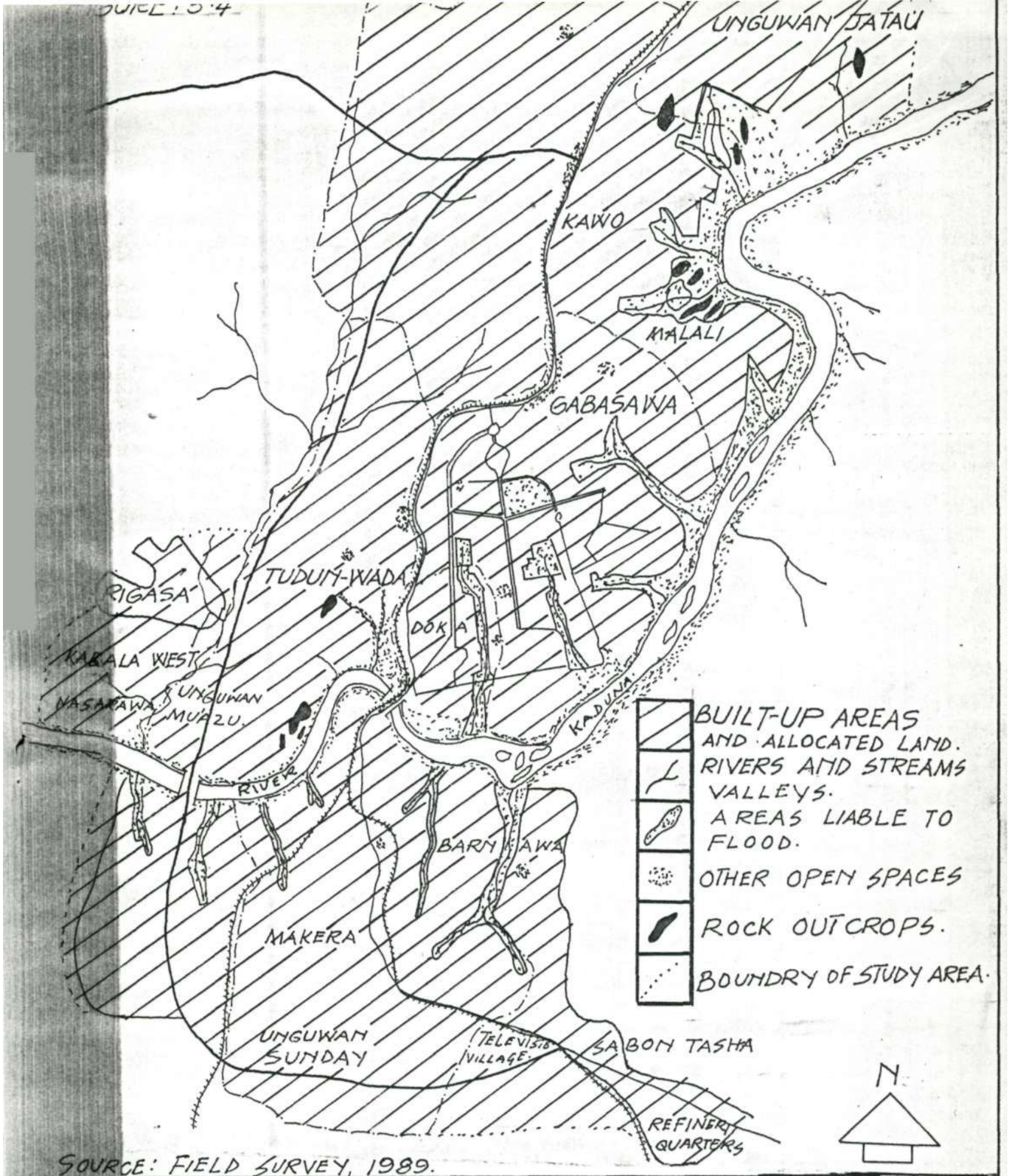
Table 3.3 : Existing Open Spaces in Kaduna.

	Open space	Quantity (in Hectres)
1 -	Organised	148
2 -	Natural	285
3 -	Incidental	52
4 -	Vacant lots	729.2
	Total open spaces	1,214.1
	Total land area	9,614

Source: Field survey, 1989.

3.40 The Open Space System:

Man's ability to influence his environment is directly related to his technology, whereas his ability to synthesize it depends on how much he understands its potentials and constraints. Also, man's plan for a better future depends on the present, thus to create



SOURCE: FIELD SURVEY, 1989.

EXISTING OPEN SPACES AND BUILT-UP AREAS.

HUSAINI I. GARBA
M.SC, URP THESIS, 1989.

and within them. Within the subsystems are also found elements which interact between and within themselves. For instance, the organised open space sybsystem consists of components such as parks, gardens, swimming pool, polo grounds etc, and within a park there are elements such as equipments, flowers, sitting areas, kiosks etc. The entire urban open space is therefore planned using the systems approach, because the physical planners take cognisance of the types of open spaces to be provided and where. Their design and development also recognises the existence of other open spaces etc. Even within an organised open space, the various elements are planned and located in relation to other elements.

The systems approach therefore provides a better framework for the planning of the entire urban open space.

3.50 OPEN SPACE HIERARCHY IN KADUNA

Different hierarchies of open spaces can be distinguished in Kaduna as shown in figure 3.6.

The hierarchies are based on the space size, population served and the importance of the functions it serves. There are five hierarchies of open spaces in Kaduna, viz -

1 - Regional level: These are first order open space which are large and serve population beyond the city. This include Ahmadu Bello stadium, polo ground and golf course.

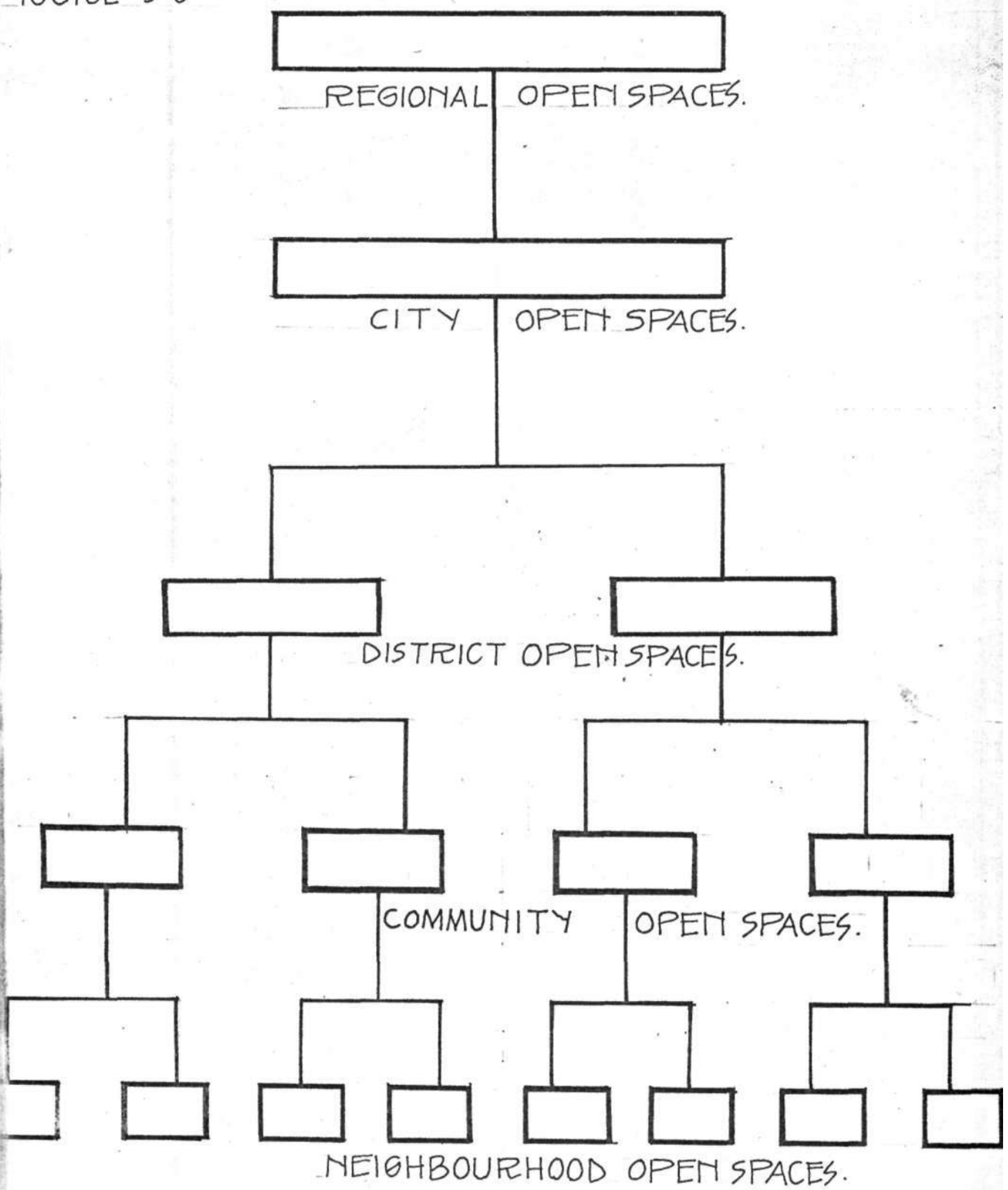
2 - City level: These are the second order open spaces; they occupy smaller areas than the regional open spaces and has smaller population capacity. They serve the entire city; they include the golf course, Ranchers Bees stadium, recreation club, Kaduna club etc.

3 - District level: These are third order open spaces. They serve smaller populations and require smaller space than the first and second order open spaces. They usually serve people within a district. They include ideal flour mills, amusement park, Kawo park and Botanical garden.

4 - Community level: These are smaller open spaces that serve small populations. They include medium sized parks, playgrounds, sports fields, Lemaco children play ground, Nigerian Breweries, children playground and secondary schools sports fields.

5 - Neighbourhood level: The neighbourhood level open space require small spaces and usually within treckable distances; they include small-size parks, gardens, play fields, residential commons and neighbourhood squares.

FIGURE 3.6



OPEN SPACE HIERARCHY.

3.60 PATTERN AND DISTRIBUTION OF OPEN SPACES IN KADUNA:

(a) Pattern of open space:

A definite pattern or arrangement of urban open space plays a significant role in determining the general quality of the environment and can also be an effective tool of landuse and development control. Stanley, (1963)[33] observed that one of the levers in shopping urban development is a good open space pattern. That a particular development pattern is accompanied automatically by a particular open space pattern. A canalised open space allows for flexibility in the regional development pattern and for easy accessibility within the entire urban setting.

Because of the encroachment and destruction problems faced by open spaces in the city, there is no definite pattern of open space in Kaduna. The pattern proposed by Max Lock in 1967 has been overtaken by events. However, it is important to note that the natural open spaces attempted to provide a park-like pattern in the centre and towards the eastern part of the city.

The central pattern of natural open space in Kaduna would have been formed by the stream valley

---

33. Op cit pp, 63-67.

and flood plain, that flows southwards down the central axis of the city which begins at Kanta road (behind Jinya clinic) and passes southwards across Hospital, Nupe and Ibrahim Taiwo roads, then the wide valley of the stream across Constitution road and passes west of Kabala Constain housing estate and ends in the river. At the end of this would-have-been-pattern is the Ahmadu Bello stadium and a proposed 54 Ha Sports Centre Complex.

This supposedly natural pattern of open space has been obstructed in several places by urban developments, prominent among them include the NACB British Council, Allied Bank (under construction), Kagoro clinic, Royal cinema, Pilgrims Welfare Board, Police Barracks etc, all these have been built right inside the flood plain of the stream that would have been provided an excellent central park-like pattern of open space.

The other would have been pattern is towards the eastern part of the town in the Government reserved area. It begins at the race course (Murtala Square) including Hamdala gardens and into the golf course; its walk narrows as it passes ABU Teaching Hospital and continues broadly until it opens into the government garden and woodland which terminates into the river. Apart from various destructions and encroachment by urban development just like in the first case, this

would have provided a generous open space pattern in the city.

(b) Distribution of open spaces in Kaduna:

There is need for an even distribution of open spaces in urban areas so that no area is left unserved. It also helps to achieve a definite pattern within the city. The importance of this even distribution has since been realised that it was stated in the Fourth National Development Plan that every neighbourhood should have at least a playground[34].

The distribution of natural open spaces is shown in figure 3.2. The rivers and streams have been well distributed. There is no district that lacks a water body; rock out crops, gullies and other natural open spaces are also found in various districts. However, the distribution of organised open spaces in the city leaves much to be desired. While some areas in the metropolis have more than 5 organised open spaces, some lack any open space at all.

The issue of distribution will be discussed in detail in chapter four.

Summary of findings:

Natural and human factors provide potentials as well as constraints for the development of open spaces.

---

34. Fourth Nigerian National Development Plan

The physical and natural conditions such as geology, climate (rainfall, wind and temperature) and vegetation, provide the greatest potentials for open space in Kaduna. The rock out crops, streams, flood plains, grasses, trees etc. could be well developed as organised open spaces. The seasonality of rainfall and temperature allow for the development of a wide range of open spaces.

The human aspect too provides some opportunities for open space development. The rapid population growth indicates an increased (demand for publicly organised open spaces, and the heterogeneity of the population also provides a potential for various open space types. However, human activities have destroyed much of the potentials provided by the natural condition. This is caused by urban developments to accommodate and employ the rapidly growing population.

CHAPTER FOUR

4.00 DEVELOPMENT AND MANAGEMENT OF ORGANISED OPEN SPACE IN KADUNA

Introduction:

Development and management play very vital roles in ensuring the effective utilisation of urban open spaces. Their appropriate development and effective management lead to the achievement of their functions such as giving form and structure, recreation, aesthetics, conservation of natural settings and socio-cultural functions.

While development involves issues such as supply, location, design and equipment, management concerns issues of financing, staffing, control, maintenance and administration. It is believed that management plays great role in ensuring effective utilisation and liveability of organised open spaces in urban areas. For instance, Burgess, et al., 1988[35] believe that enjoyment of public open space is felt to be threatened by a collapse of management and responsibility. The central issue is the level of social control proper to design, management and utilisation of public open spaces. Users were angry and helpless because

---

35. Burgess, et al., 1988, pp. 9-18.

of ineffective controls against anti-social behaviours in public open spaces. The ways in which they are managed and staffed prevent many users from visiting them. For organised open spaces to function effectively, they must be appreciably developed and managed.

4.10 Organised open spaces in Kaduna:

Organised open spaces are spaces set aside, planned, developed and maintained in urban areas for certain functions such as recreation, aesthetics, form, structure and easy accessibility. This category of open spaces include parks, gardens, golf courses, polo ground, play grounds etc. They could be publicly or privately developed and managed.

The field survey revealed that there are 31 organised open spaces in Kaduna metropolis. They cover a total of 148.27Ha. Of these 31 open spaces, 21 are privately owned and 10 are publicly owned. Table 4.1 gives the number of open spaces and their sizes.

Table 4.1(a)

	Open space (private)	Size (in Hectres)
1 -	Kaduna club	8.50
2 -	Kaduna polo club	11.90
3 -	Kaduna rugby club	6.00
4 -	Kaduna golf club	38.40
5 -	Sardauna fives club	0.13
6 -	Polytechnic staff club	2.50
7 -	UNTL staff club	1.38
8 -	KTL staff club	0.80
9 -	NNPC staff club	1.20
10 -	PAN staff club	0.15
11 -	Hamdala Hotel garden	1.50
12 -	Durba hotel swimming pool	0.41
13 -	Zumuta social club	0.40
14 -	M.I. Attah recreation area	0.52
15 -	NAF officers mess	1.80
16 -	Alheri social club	0.50
17 -	Police officers mess	2.40
18 -	Kaduna press club	1.30
19 -	Club 70, Kaduna	2.20
20 -	One Mechanised Div. officers mess	1.90
21 -	Kaduna recreation club	4.50
	Total	89.39

Source: Field survey 1989.

Table 4.1(b)

	Open space (public)	Size (in Hectres)
1 -	Ahmadu Bello stadium	16.0
2 -	Rancher's Bees stadium	5.30
3 -	Botanical garden	6.00
4 -	Doka park	2.20
5 -	Kawo park	0.73
6 -	Arewa house park	4.80
7 -	Murtala square	18.00
8 -	Nigerian Breweries Limited playground	0.50
9 -	Lemaco children playground	0.35
10 -	Ideal flour mills children playground	5.00
	Total	58.88

Source: Field survey, 1989.

Total Hectares of private and public = 58.88

+89.39

148.27

The privately owned open spaces represent 60% of the total organised open spaces while public open spaces represent 40% of the total organised open spaces. The organised open spaces represent only 1.5 percent of the total land area of Kaduna metropolis.

This indicate a serious deficit of organised open spaces in Kaduna. This deficit is based on Max Lock's proposal of nine percent of the total landuse in Kaduna and United Nations 7 - 8% of the landuse in a town with a population of between 500,000 - 1,000,000[36].

(a) Distribution of open spaces in Kaduna:

The distribution of open spaces in Kaduna is not even. 18 out of the 31 organised open spaces are found around Gabasawa/G.R.A area; no other area has more than 5 open spaces. Indeed the whole area around Kawo, Hayin Banki, Mando, Unguwar Jatau, Unguwar Dosa etc has only two organised open spaces of which one is privately owned. So all the people in this area have just one public open space of 0.73 Ha to use. Figure 4.1 shows this uneven distribution of organised open spaces in Kaduna.

The reasons for this uneven distribution are largely because of historical accident. The area around Gabasawa happens to provide a good physical condition for the colonial administrators. So their residences and the public offices and institutions happen to be located there. Consequently, because

---

36. Kulshrestha, S.K. 1978, pp. 113.

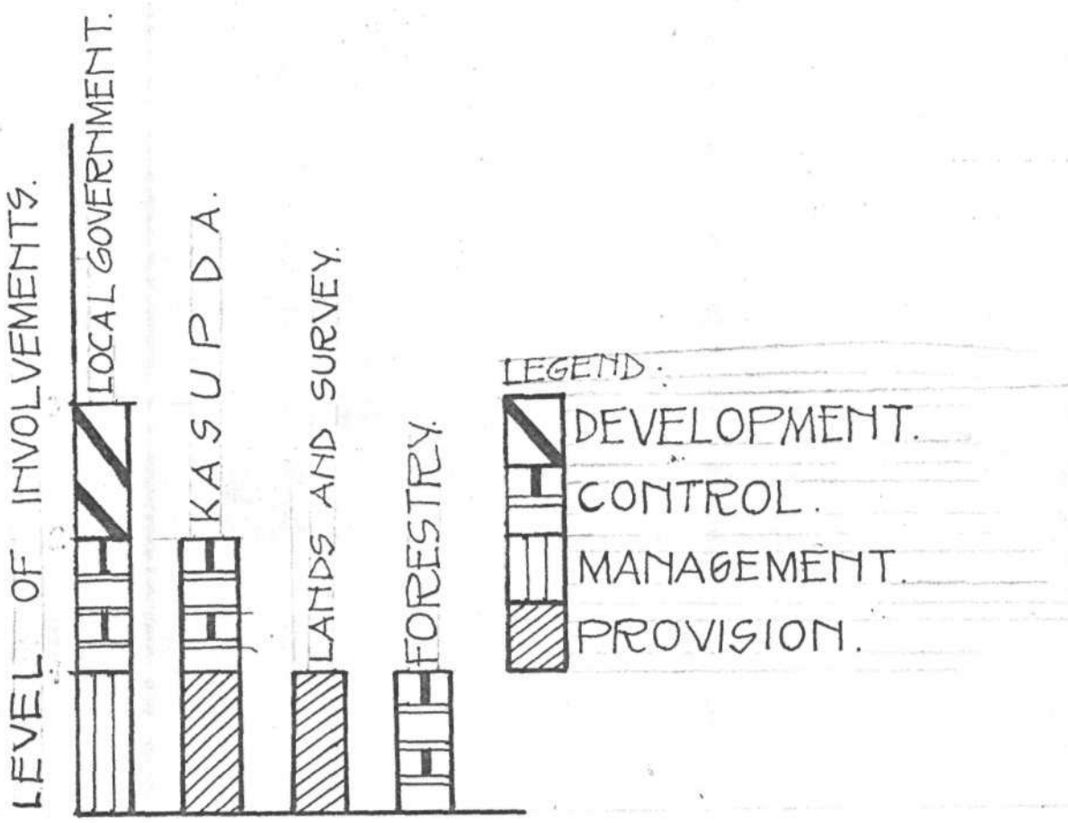
of the requirement of organised open spaces to be close to user's residences and the fact that most of the open spaces then were recreational as well as foreign conceived, they were located around the G.R.A.

Another reason is perhaps because of the need for services such as good roads, water, electricity, telephones in the privately owned open spaces which the G.R.A. had better than other areas. The colonial notion of segregation was also attributable to the uneven distribution of the open spaces. Indeed there is lack of procedure for the distribution of open spaces in Kaduna.

4.20 Government organisations and the development and management of organised open spaces in Kaduna:

It is important to understand the type of involvements of organisation that take part in the planning of organised open spaces in Kaduna. This will enable the research to find out how coordinated and effective the government organisations have been in the planning of organised open spaces.

FIGURE: 4.2.



SOURCE: FIELD SURVEY, 1989.

TYPES OF INVOLVEMENT OF GOVERNMENT ORGANISATIONS IN THE PLANNING OF OPEN SPACES.

HUSAINI I. GARBA
M.SC. URP THESIS, 1989.

(a) Type of involvements of government organisations

The government organisations involved in the planning of open spaces include: The Kaduna state urban planning and development board, Town Planning Division of the Ministry of Lands and Surveys, the Kaduna local government and the Forestry Division of the Ministry of Agriculture. Figure 4.2 shows the type of involvements of the afore-mentioned organisations.

The figure revealed that there is duplication of responsibility in the cases of control and provision between various organisations. This creates some of the development and management problems faced by organised open spaces in Kaduna. It has been observed that there is also lack of coordination between the organisations in the planning of open spaces. The local government which developes and manages 40% of the publicly organised open spaces does not coordinate with any other organisation in carrying out its responsibility. Indeed none of the open spaces developed by the local government has been designed or approved by KASUPDA which is responsible for approving the development of any physical structure within Kaduna planning area. There also seems no any coordination between the Kaduna local government

and Forestry division which is responsible for the control of public open spaces. Other agencies such as NEPA, NITEL and Water Board have not been coordinated with in the planning of public open spaces.

The haphazard nature of involvements and lack of coordination between the organisations are perhaps the salient reasons why the development and management of public open spaces are very poor. This made it easy for many top public officers to be involved in the illegal allocation of green spaces within the metropolis, which led to the dismissal of many top government officials that were found guilty of using their position to influence encroachment and destruction of green spaces especially in the G.R.A.[37] Government white paper, 1984.

The government directed that all undeveloped plots within the green areas be revoked and the then KCDB to assess and replan the area. All designated green spaces be properly demarcated with survey beacons and sign posts to prevent further encroachments. It also directed that the Forestry department of the Ministry of Agriculture to take over the administration and management of all green spaces and to fence and manage all parks and gardens in Kaduna planning area.

---

37. Kaduna State Government White Paper, 1984, pp. 12-15.

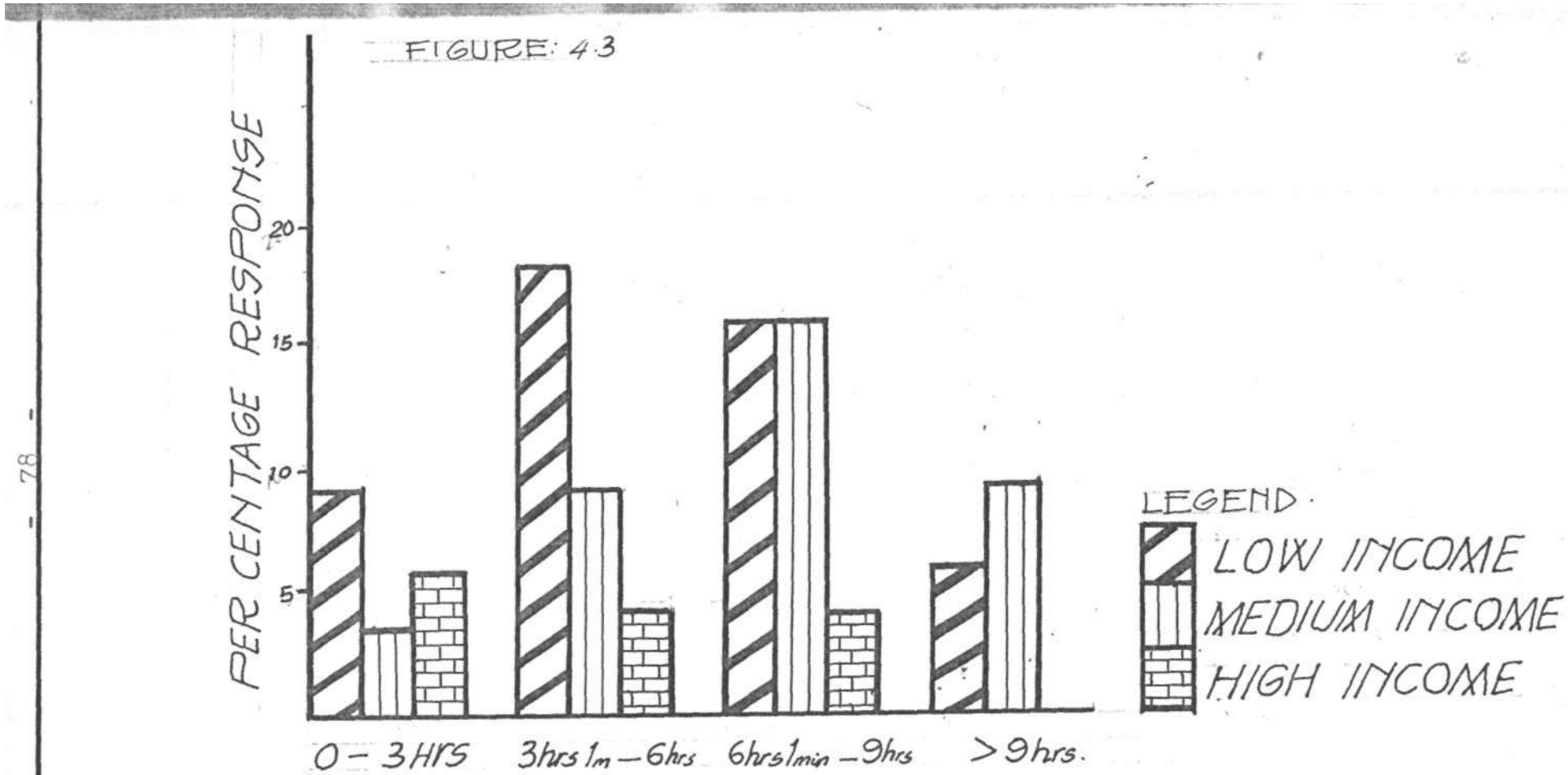
It is observed that the government directives that gives the responsibility of green areas, parks and gardens to the forestry divisions further compounds problems, knowing fully well that the 1976 local government reform has given the responsibility of parks and gardens to Kaduna local government. Beside, the Forestry does not seem well equipped with professionals in terms of staff and equipments to effectively carry out the responsibility.

The involvements of government organisations in the development and management of organised open spaces therefore leaves much to be desired. Unlike the case of other landuses such as residential, industrial and commercial, there is lack of proper policy for the development and management of open spaces. This perhaps is the reason for the multiplicity of responsibilities between the organisations which do not seem to augur well for open space planning in Kaduna.

4.30 Organised open spaces and people of Kaduna

Organised open spaces for recreation, aesthetics, socio-cultural activities etc. are provided in urban areas to satisfy peoples' requirements other than food, clothing and shelter. Population plays a very important role in the planning for open spaces because

FIGURE: 4.3



SOURCE: FIELD SURVEY 1989.

CORRELATION BETWEEN INCOME AND HOURS OF VISITS TO OPEN SPACE

HUSAINI I. GARBA
M.SC, URP THESIS

it is essentially planned for and with the people. The number and characteristics (age, sex, income, education, heterogeneity etc.) of the population influence greatly the type, location, distribution and quantity of organised open spaces in the city. Consequently, peoples' perceptions, preferences and aspirations about open spaces need to be understood for a meaningful development of open spaces.

4.31 Income and visits to open space:

The correlation between income and visits to open space in Kaduna is shown in Figure 4.3. The figure revealed that 34% of the people in the low income group have between 3 hrs. 1 min. to 9 hrs free, and 25% of the medium income too have these range of hours also free, while majority of the people in the high income group have between 1 min. to 3 hrs. free.

This is perhaps because people within the low and medium income groups are school children, junior and intermediate staff who have more free hours to visit open space. The high income group which constitutes senior civil servants and top businessmen who have little free hours to themselves.

4.32 People's recreational activities:

The nature of peoples' recreational activities determines the type of public open spaces required, which determines the utilisation of the open spaces. Tables 4.2(a) and (b) show the peoples' recreational activities.

Tables 4.2(a) and (b): Nature of peoples' recreational activities

(a)

Nature of activity	Number of responses	Percentage of responses
Active	767	45
Passive	432	26
Active and passive	493	29
Total	1,693	100

(b)

Nature of activity	Number of responses	Percentage of response
Outdoor	695	49
Indoor	504	35
Outdoor and indoor	234	16
Total	1,433	100

Source: Field Survey, 1989.

Table 4.2(a) revealed that 45% of the people take part in active recreation and 29.1% take part in both active and passive recreation. This indicates that 74% take part in some active recreation, while Table 4.2(b) revealed that 49% take part in outdoor recreation, with another 16% taking part in both indoor and outdoor recreation. In all, 65% of the people take part in some form of outdoor recreation.

The findings presented in the tables indicate that the population of Kaduna provides potential for the development of open spaces because both active and outdoor recreation that majority of the people participate, are largely organised in open spaces.

4.33 Distance covered by people to open spaces:

The distances covered by people to reach open spaces is important because, certain distances do not favour users to visit open spaces.

The criteria used to analyse the distance covered are: The acceptable standards for the distance to reach open spaces and peoples responses to questions on the distance covered to visit open space.

Table 4.3 shows the acceptable standardards for the distance to open spaces.

Table 4.3: Minimum required distance to planned open spaces:

S/No	Open Space	Distance to users
1	City parks	8 - 10 km
2	District parks	3 - 8 km
3	Athletics field	Planned with high schools
4	Play fields	3 - 5 km
5	Swimming pool	3 - 8 km
6	Golf	Easy driving distance

Source: Adesiyan, 1980[38]

Tables 4.4(a) and (b) show the responses of people about the distance they cover to reach open spaces and how convenient they feel about it.

38. Op cit, p. 65.

Tables 4.4:

(a) Distance covered

Range of distance	Number of responses	Percentage pf response
∠ 2.9 km	216	18
3 km - 4.9 km	372	31
5 km - 6.9 km	431	36
7 km and above	180	15
Total	1,199	100

(b) Convenience of distance

Assessments	Number of responses	Percentage of response
Very far	192	16
Satisfactory	360	30
Alright	647	54
Total	1,199	100

Source: Field Survey, 1989.

Table 4.4(a) revealed that 67% of the people cover between three to seven kilometres and 15% cover more than seven kilometres to reach open spaces.

Compared with the acceptable standard distance shown in table 4.3, the distance covered by the people of Kaduna to reach open spaces is satisfactory. However, in the peoples' assessment as revealed in table 4.4(b), 54% of the people feel that the distance they cover is very far. The reason for this could be because people are not aware of the planning distance that is considered acceptable to reach open spaces. Another reason could be due to the fact that most of the public open spaces have not been located close to residential areas.

4.34 Mode of travelling to organised open spaces:

The mode people use to travel to organised open spaces is shown on table 4.5.

Table 4.5: Modes used to travel to open spaces

Mode of travel	Number of responses	Percentage of response
Private car	146	12.2
Bus/Taxi	635	53.0
Motocycle	300	25.0
Treck	118	9.8
Total	1,199	100

Source: Field Survey, 1989.

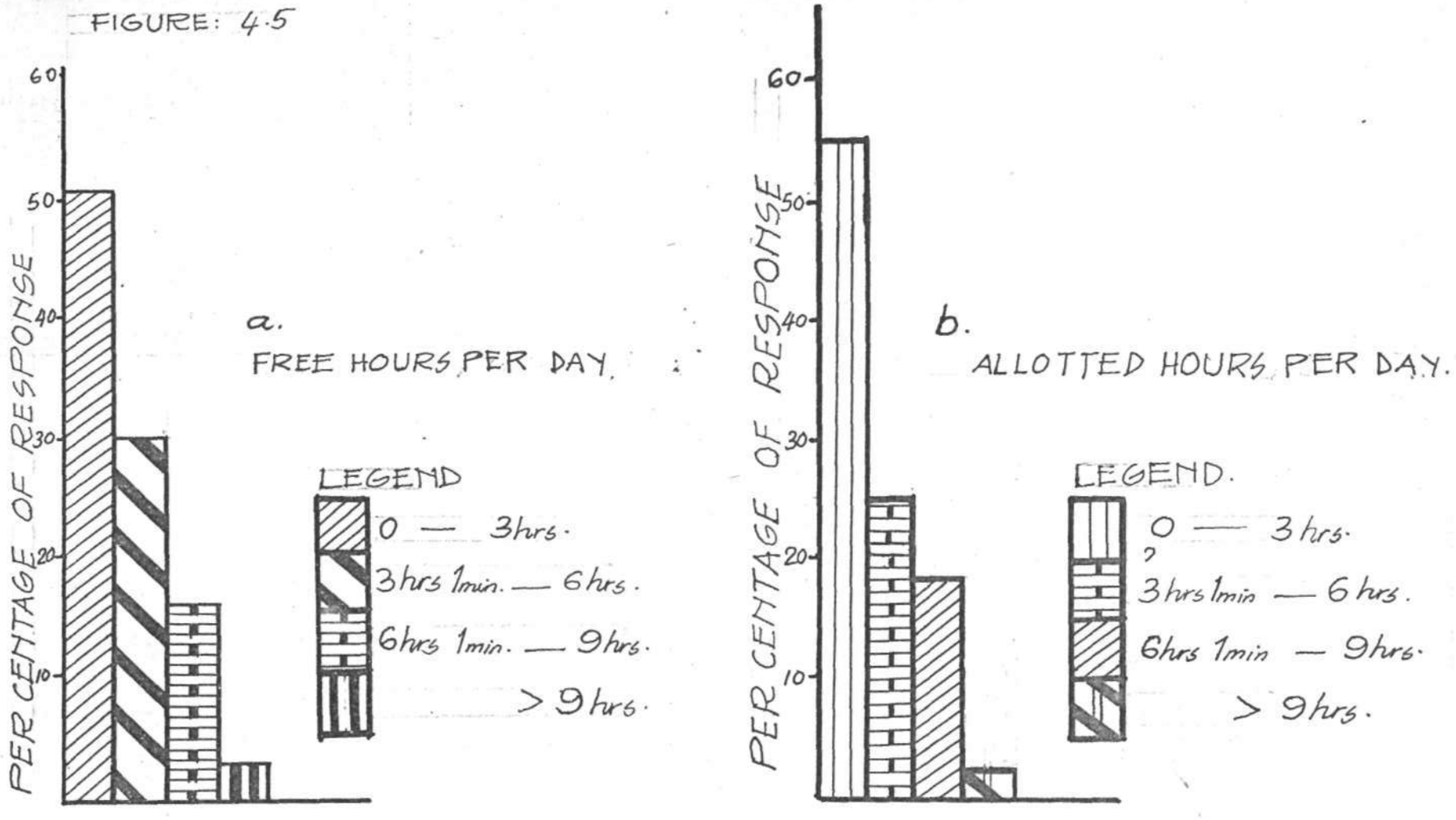
Table 4.4(b) shows that 53% of the people use hired transportation mode while 25% of the people use motocycle. Indeed 90% of the people use vehicular mode of transportation to visit open spaces.

The use of vehicular modes to visit open spaces is perhaps the reason why most of the people feel that the distance they cover to open spaces is not convenient. It further indicates that the neighbourhood parks that are supposed to be within the residential areas, have not been located as such.

4.35 People's free hours per day:

The free hours people have determine the attendance as well as the utilisation of open spaces. It is

FIGURE: 4.5



OPLES' FREE HOURS AND THE HOURS ALLOTTED TO OPEN SPACE VISIT

therefore important to analyse peoples' free hours to be able to know the quantity and type of open space to be provided.

Figures 4.5(a) and (b) represent the composition of peoples' free hours and the number of hours allotted to open space visits. Figure 4.5(a) indicates that over 50% of the people have up to 3 hours and 30% have up to 6 hours to open space visit. Figure 4.5(b) indicates that 55% of the people allot up to 3 hours, while 25% of the people allot between 3 - 6 hours per day. This indicates that 80% of the people allot between 1 minute to 6 hours to visit open space per day.

Table 4.6 indicates the time of the free hours.

Table 4.6: Time of Peoples' Free Hours

Time	Number of responses	Percentage of free hours
Morning	72	6
Evening	372	31
Afternoon	755	63
Total	1,199	100

Source: Field Survey, 1989.

Figure 4.6 further illustrates the peoples' time of free hours. It indicates that over 60% of the people visit open spaces in the afternoon, while 31% of the people visit the spaces in the evenings.

This analysis revealed that all the people have at least some free hours out of which they allot some time to visit open spaces. It also revealed that the people have the hours mainly in the evenings.

4.36 Peoples' willingness to pay for visit to open space

Assessing the peoples willingness to pay for enjoying open spaces will assist to determine whether the government should continue to develop and manage open spaces. This will also attract private individuals/organisations that would want to develop and manage open space for profit.

Table 4.7 shows that all the people are willing to pay for visiting open spaces.

Table 4.7: Peoples' Willingness to Pay

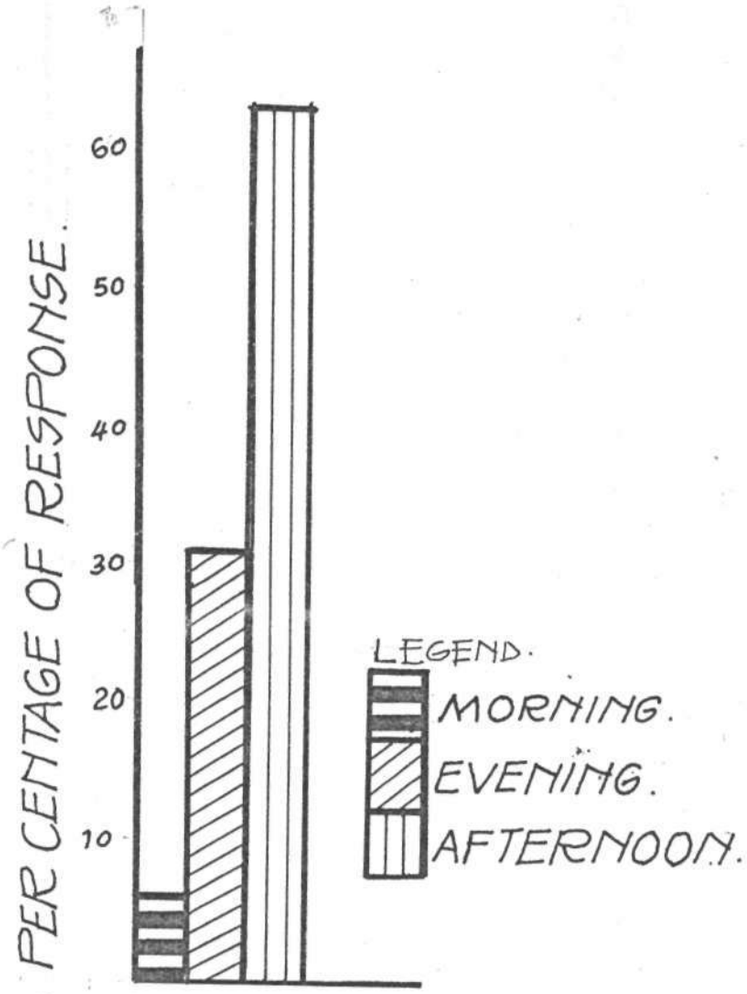
Amount (in ₦) willing to pay	Number of responses	Percentage of response
< 1.00	96	6
1.10 - 2.00	240	20
2.10 - 3.00	515	43
3.10 - 4.00	228	19
> 4.00	120	10
Total	1,199	100

Source: Field Survey, 1989.

The table indicates that 43% of the people are willing to pay between 2.10 - ₦3.00 and 20% are willing to pay ₦1.10 - ₦2.00. This indicates that 63% are willing to pay between ₦1.10 - ₦3.00 per visit.

This revealed that people are willing to pay certain amount to enjoy open spaces. This will assist the government to continue to develop and manage public open spaces and it provides potentials for private individuals/organisations that are willing to develop and manage public open spaces for profit purposes.

FIGURE. 4.6

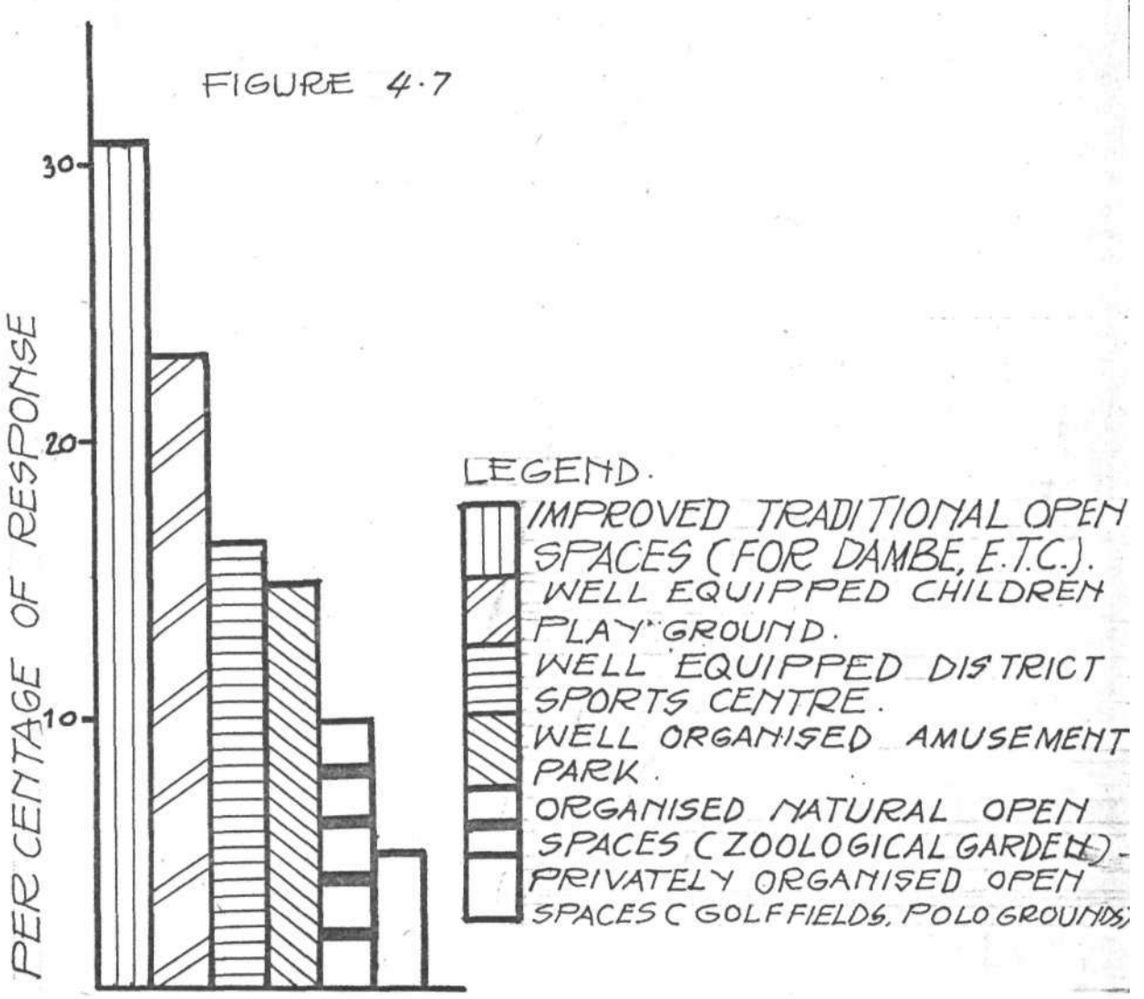


SOURCE: FIELD SURVEY, 1989.

PEOPLES' TIME OF OPEN SPACE VISIT.

HUSAINI I. GARBA
M.SC, U.R.P. THESIS 1989.

FIGURE 4·7



SOURCE FIELD SURVEY, 1989.

PEOPLES' PREFERENCES OF ORGANISED OPEN SPACES.

HUSAINI I. GARBA.
M. SC. URP THESIS 1989.

4.37: Peoples' preferences of open space types:

Development of open spaces that reflect peoples' choice assists their effective utilisation. Table 4.8 gives the breakdown of type of open spaces people prefer.

Table 4.8: Peoples' Open Space Preferences

Types of Open Spaces	Number of responses	Percentage of responses
1. Well equipped children play ground	276	23
2. District sports centre	192	16
3. Well organised parks and gardens	180	15
4. Improved traditional open spaces	371	31
5. Privately organised open spaces	60	5
6. Organised natural open spaces	120	10
T Total	1,199	100

Source: Field Survey, 1989.

The table shows that 31% of the people prefer improved traditional open spaces for cultural dances, wrestling (Kokawa), Boxing (Dambe), Sharo, drama etc, while 20% would like to be provided with well equipped children play grounds. Figure 4.7 further illustrates peoples' open space preferences.

The reason for preferring improved traditional open spaces is perhaps because of the fact that most of the public open spaces provided are foreign conceived, as such they do not portray much meanings to people. The reason for peoples' preference for children play grounds as second is due to the fact that most parents would not like their children to play in very far away places for fear of vandalism.

4.40 DEVELOPMENT AND MANAGEMENT OF ORGANISED OPEN SPACES:

Development and management are the central issues in the planning of organised open spaces. Development is concerned with issues of supply/provision, location, design, equipment and distribution, while management is concerned with financing, staffing, maintaining and administering open spaces. These issues determine the effectiveness of organised open spaces. The main issue in open spaces is the level of social control proper to design, management and use. Harrison et al., 1988[39].

4.41 The development and management of publicly organised open spaces:

(a) Development:

To analyse the development of publicly organised open space, issues such as supply, location, design and distribution are going to be examined.

---

39. Op cit, p. 11.

(i) Supply:

There are only ten publicly organised open spaces in Kaduna metropolis. All of them were provided by the government. 50% of them were supplied through the formal planning processes while the remaining 50% came about as a result of the governments policy of environmental sanitation which sought to rid the Kaduna metropolis of environments that were mis-used as dumping grounds and toilets (Lemaco children playground, Kawo park, Doka park).

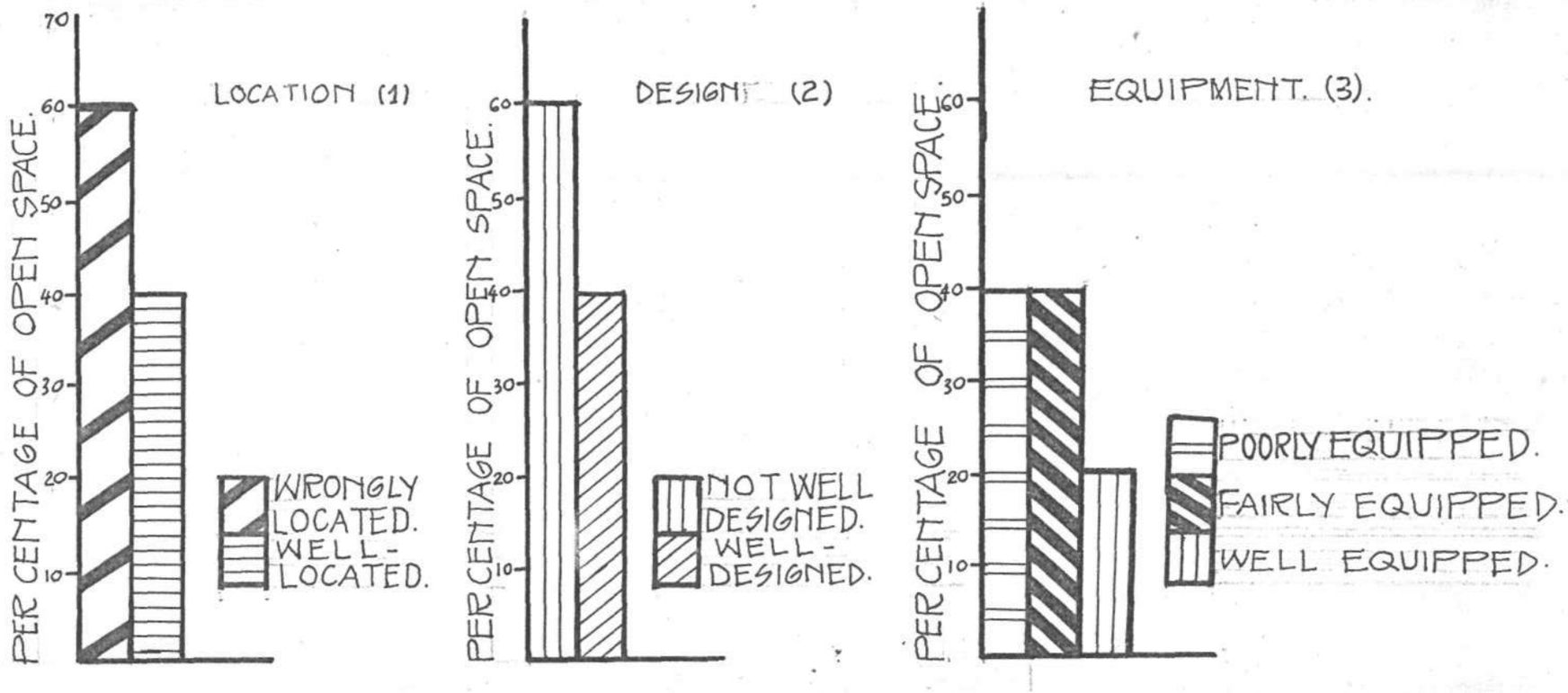
However, the supply has been shown to be inadequate. This is because the 10 open spaces provided constitute 58.88 Ha which represents 0.6 of the total landuse in Kaduna. This is greatly inadequate in a town with an estimated population of 550,000. This inadequacy is further proved because the United Nations' acceptable standard for a town with a population of between 500,000 - 1,000,000 is 7 - 8% of the total landuse. Max Lock also proposed that 9% of the total landuse in Kaduna should be open spaces, but Max Lock's proposal has never been used.

(ii) Location:

Proper location is very important in the development of open spaces because it ensures effective utilisation. Harrison et al., 1988[40] observed that

---

40. Op cit, p. 17.

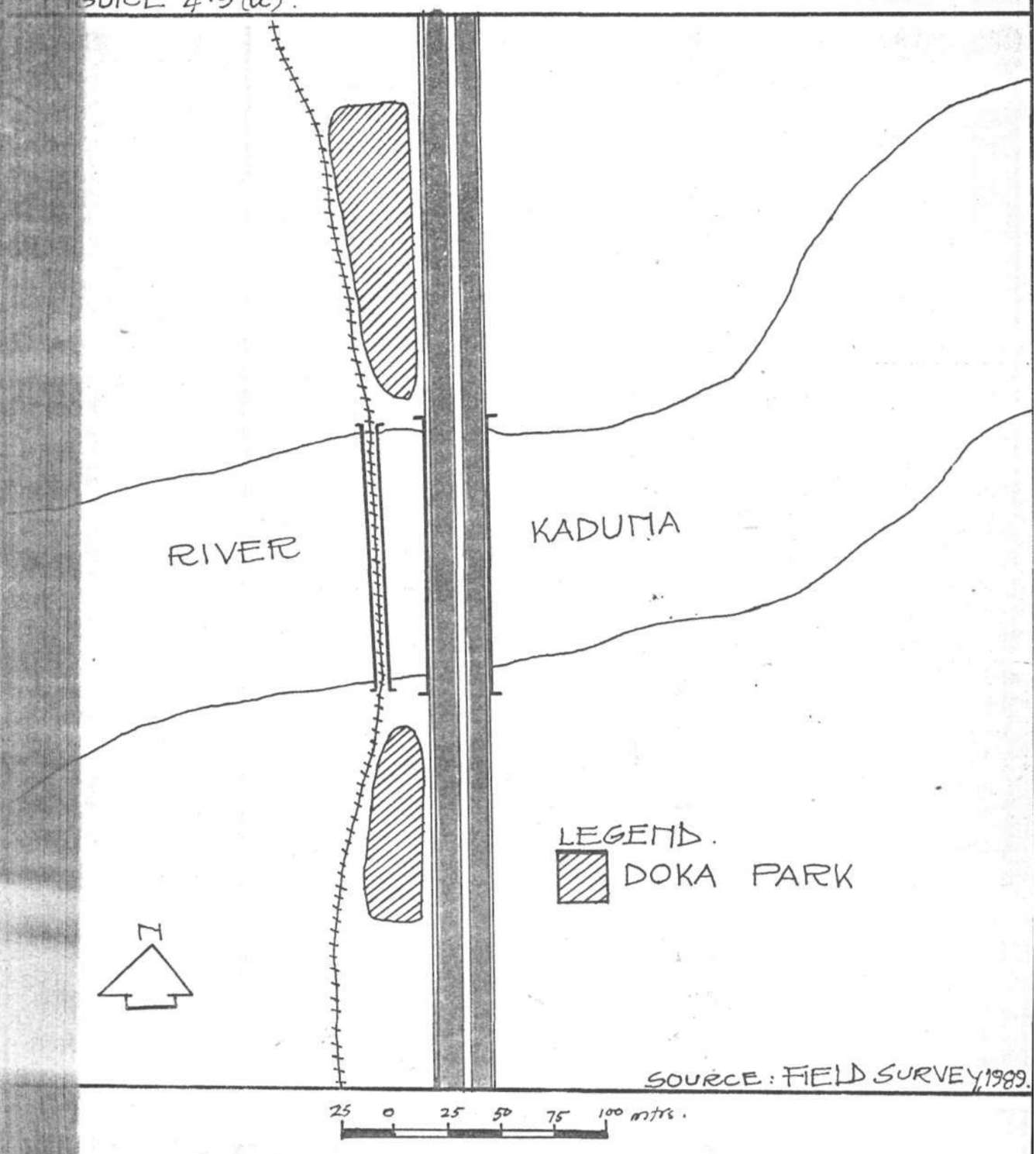


SOURCE: FIELD SURVEY, 1989.

SOME DEVELOPMENT PARAMETERS OF PUBLIC OPEN SPACES.

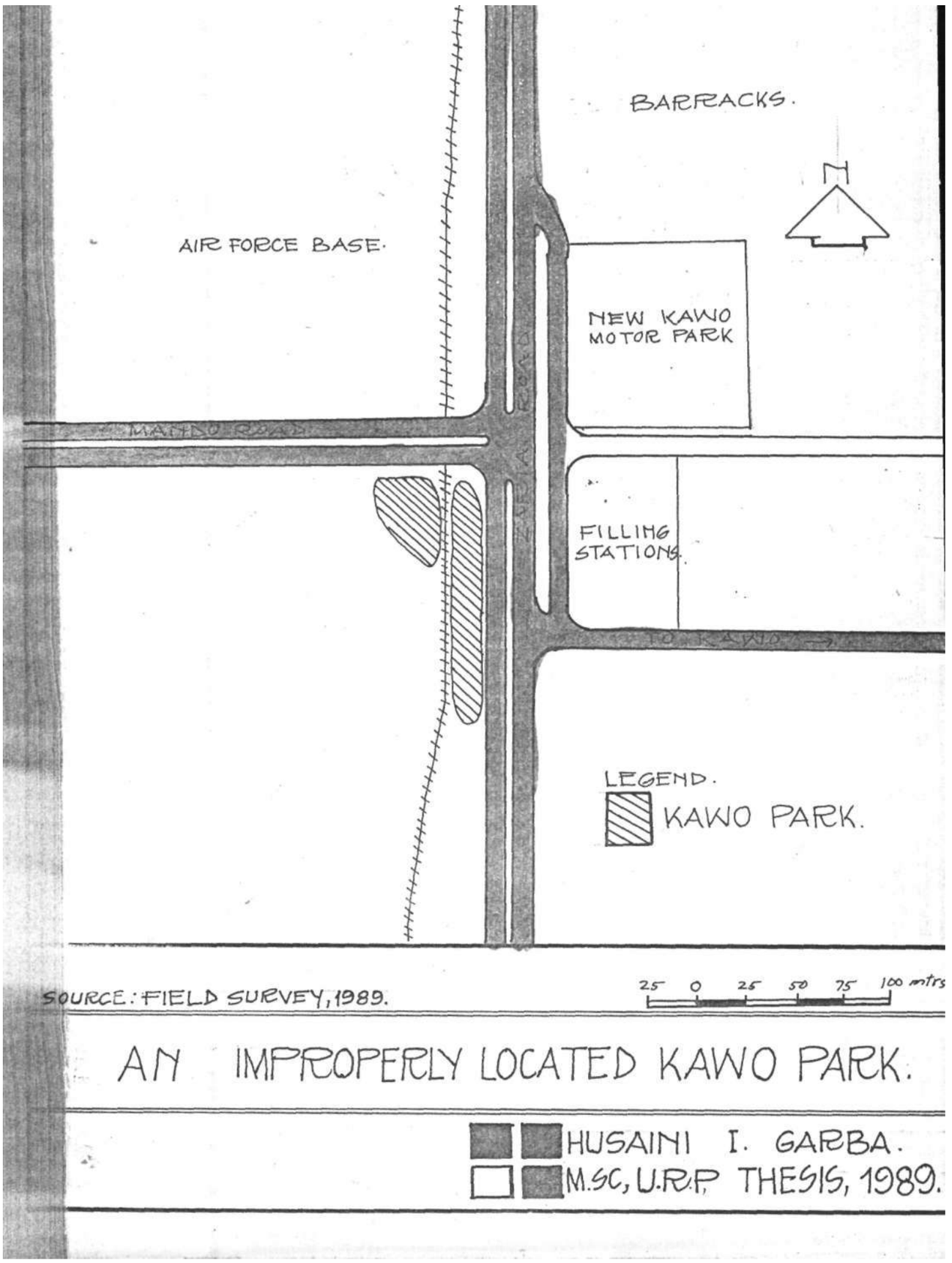
HUSAINI I. GARBA.
M.SC, URP THESIS 1989.

FIGURE 4·9(a).



AN IMPROPERLY LOCATED (DOKA PARK) ORGANISED OPEN SPACE

HUSAINI I. GARBA.
M. SC, U.R.P, THESIS, 1989.

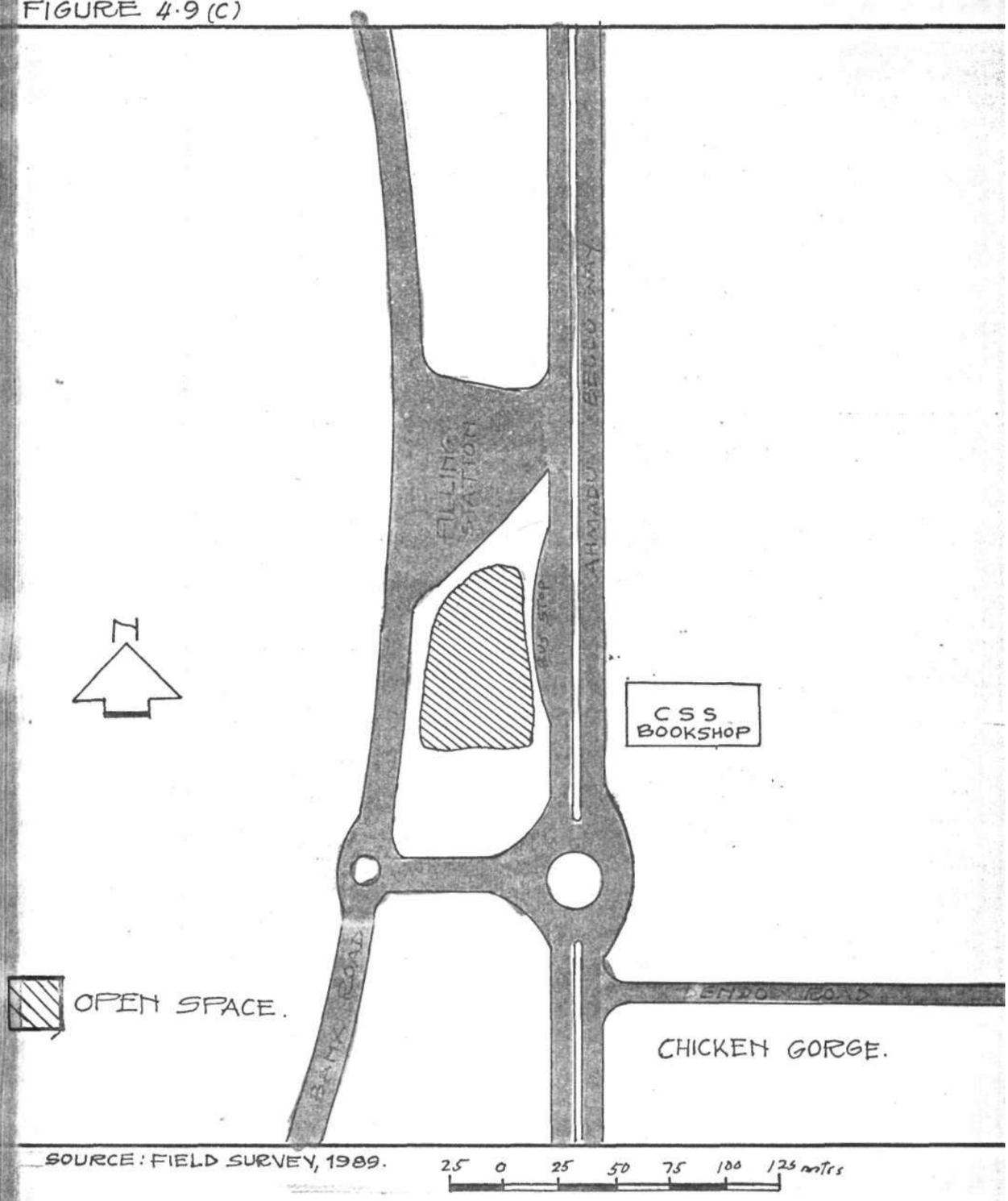


SOURCE: FIELD SURVEY, 1989.

AN IMPROPERLY LOCATED KAWO PARK.

HUSAINI I. GARBA.
M.SC, U.R.P THESIS, 1989.

FIGURE 4·9 (C)

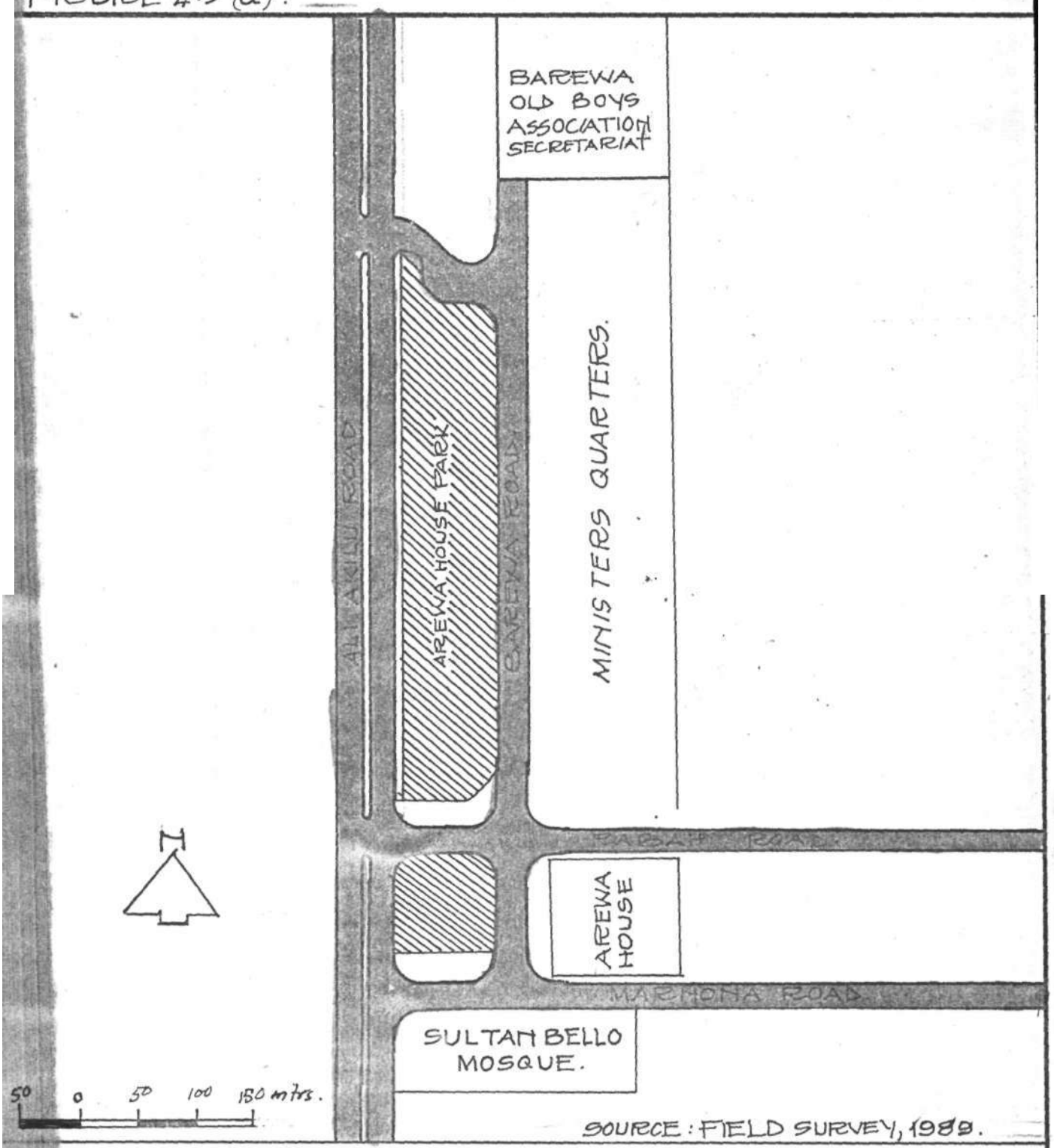


SOURCE: FIELD SURVEY, 1989.

N B L CHILDREN PLAY GROUND: AN IMPROPELY LOCATED ORGANISED OPEN SPACE.

HUSAINI I. GARBA
M. SC, U.R.P, THESIS, 1989.

FIGURE 4.9 (d).



AREWA HOUSE PARK: AN IMPROPERLY LOCATED ORGANISED OPEN SPACE.

HUSAINI I. GARBA
M.SC, U.R.P, THESIS, 1989.

planners must ensure that open space locations are very accessible to people. Children play grounds are better utilised when located around residential areas.

Figure 4.8 indicates that 60% of the publicly organised open space have been wrongly located, while 40% have been well located. This problem of location is further illustrated with sketches in figures 4.9(a, b, c and d).

Their improper location creates problems and perhaps the main reason why the publicly organised open spaces are not well attended and therefore ineffectively utilised. Most of them have been located away from users and in road reservations which are often very dangerous.

(iii) Design:

Design plays very important role in the development of organised open spaces. It requires site analysis which assists in identifying the potentials and constraints for the development of open spaces. Design also ensures that the various relationships such as movement, parking, sitting, play areas, etc, are well coordinated.

Figure 4.8(b) indicates that 60% of the publicly organised open spaces have not been designed. The lack of proper design is perhaps among the reasons that make most of them unattractive and ineffectively utilised.

(iv) Equipment:

This concerns the provision of all the necessary facilities, utilities and services in open spaces. It is important to equip open spaces because it ensures effective utilisation. Studies in Britain indicated peoples' disatisfaction because public open spaces have not been provided with the necessary facilities such as places to sit, to socialise, no where to picnic, no where for entertainment and no where for children to play Harrison et al. (1988)[41].

It has been observed that most of the publicly organised open spaces in Kaduna have not been adequately equipped. This particularly affects public open spaces developed by the government which include Doka park, Botanical garden, Arewa house park etc. These parks lack places to sit in comfort, children play areas, no canteens to buy drinks, no water drinking points and some lack toilets. Plate 4.1 shows the conditions of equipments in the Botanical garden and Doka park.

---

41. Op cit. pp. 17.

The lack of sufficient equipments in most of the publicly organised open spaces explains why they are heavily underutilised.

(v) Distribution:

Well distribution of open spaces assist the achievement of some important functions they perform such as form, structure and easy accessibility in the urban area. However, the distribution of publicly organised open spaces in Kaduna does not aim to achieve any of the above mentioned functions. This is because of the earlier mentioned reason of lack of proper policy for the provision of open spaces. As a result, they are very unevenly distributed.

The existing distribution of organised open spaces as shown on figure 4.1, reveals that 40% of the publicly organised open spaces are located in Gabasawa area and 20% are located in Doka area. Other areas such as Tudun Wada, Kawo, Kakuri and their surrounding settlements have 10% each.

This haphazard distribution compounds the problems of open spaces in the city. It explains the lack of a proper open space pattern in the city.

(b) Management:

To understand the effectiveness of the management

of publicly organised open spaces in Kaduna, the following issues: financing, staffing, maintenance and administration were examined.

Financing:

Finance is the most crucial issue in the development and management of open spaces; without enough funds the physical development will not be possible and the issue of management would not have arisen.

50% of the publicly organised open spaces are financed by government for their management. Although 20% (Ranchers Bees and Ahmadu Bello stadia) are money generating recreation open spaces, the money generated is not enough to manage them because their use is occasional and their staff are permanent. The remaining 30% are funded by philantropic organisations.

This indicates that 70% of the publicly organised open spaces largely depend on government for funds. The government however, provides less than 30% of the funds required for the proper management of open spaces as testified by the superintendent of the Kaduna local government parks and gardens. He believes that other financial sources need to be sought if the public open spacesare to be properly managed.

This revealed a very weak financial sources for publicly organised spaces which is the main reason behind their poor development and ineffective management.

Staffing:

Park staff play very important role in the management of open spaces. It has been observed that people judge the quality of open spaces in terms of the standard care provided by park staff, and their withdrawal decreases open space use Harrison et al. 1988[42].

In Kaduna, public open spaces face acute shortage of staff. Resident park staff are conspicuously absent in 80% of the open spaces. This has been proved by the parks and gardens superintendent of Kaduna local government who believes that his unit is heavily under-staffed. The 38 staff of the unit are not sufficient to properly manage the five open spaces under his unit, and that 90% of the staff are unskilled labourers whose main work is to "water and trim flowers, and clean the surroundings".

Maintenance:

Maintenance relates to the management aspect which takes care of the physical quality of the open spaces such as landscapping, sweeping, trimming park plants, cleaning the sitting areas and the general

---

42. Op cit. p. 18.

environmental quality of the open spaces.

It has been observed that 50% of the publicly organised open spaces are not well maintained. The Botanical garden, Arewa house and Doka parks deserved to be mentioned. Their maintenance is very poor, their sitting benches are broken,the flowers are not properly kept and the surroundings are not well kept. Arewa house park lacks the sitting areas at all and the whole area is bushy. There is no evidence of maintenance at all.

However, the public spaces developed by philantropic organisations are well maintained and the two stadia are fairly maintained.

Administration:

Good administration is required for effective management of public open spaces. Some form of administration is observed in the case of most of the public open spaces. 20% (the two stadia) are well administered; 60% are fairly administered (NBL, Lemaco, Murtala square, Ideal Flour Mills, Kawo park and Botanical garden) and 20% are poorly administered (Arewa house and Doka parks). The open spaces administered by the local government requires a more formidable and organised administration. Lack of skilled staff makes their administration weak and poor

Attendance and utilisation of public open spaces:

The result of proper development and effective management of open space is well attendance and utilisation. It has been observed that public open spaces are highly valued for their ability to enhance the good qualities of urban life, variety of opportunities and physical and socio-cultural diversity. If an open space precludes some or all of these roles, its ability to attract people decreases so also its utilisation.

The analysis of the development and management parameters of public open spaces in Kaduna indicates that a lot need to be done in order to make them attractive and utilised. The reason for this is not unconnected with the poor location, design, finance, equipment and maintenance of the majority of the public open spaces. Indeed, all the publicly organised open spaces face at least one of the problems mentioned. There is need for a proper development and management strategies if public open spaces are expected to play their roles in Kaduna metropolis. Table 4.9 gives a summary of the development and management of publicly organised open spaces in Kaduna.

4.42 Privately organised open spaces in Kaduna:

There are 21 privately organised open spaces in Kaduna metropolis. This represents 68% of the total

organised open spaces andthis amount to 89.39 Ha of the total open spaces. This represents 0.9 percent of the total landuse. Private open spaces are usually developed and managed by private organisations/ individuals or institutions for the use of their members. As a result, access/use is largely restricted to registered members.

To analyse their development and effective management, a 45% random sample was taken. This sample constitutes 14 privately organised open spaces.

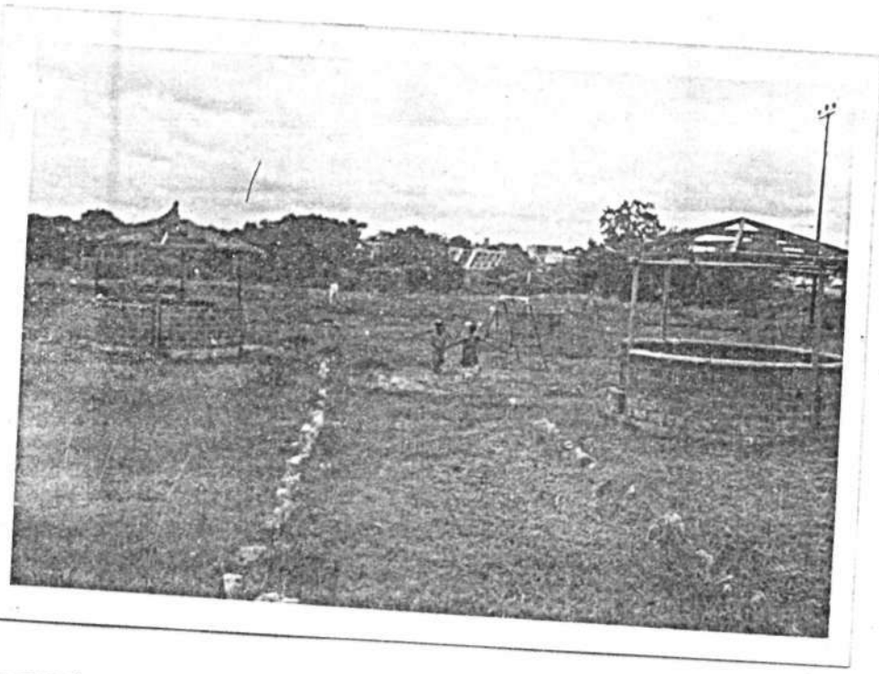
A - Development:

Parameters which include location, design, supply, equipment and distribution were analysed as follows:

(i) Supply and location:

97% of the privately organised are legally acquired or situated in areas that are covered by legal certificates. As mentioned eaflier, privately organised open spaces constitute 0.9 of the total landuse in Kaduna; they are therefore satisfactorily supplied.

79% of the privately organised open spaces are well located in various parts of the metropolis, 21% of them are fairly located. They are all located with appropriate set backs from the right of ways. Indeed,



DEPLORABLE CONDITION OF DOKA PARK.



POORLY EQUIPPED BOTANICAL GARDEN.

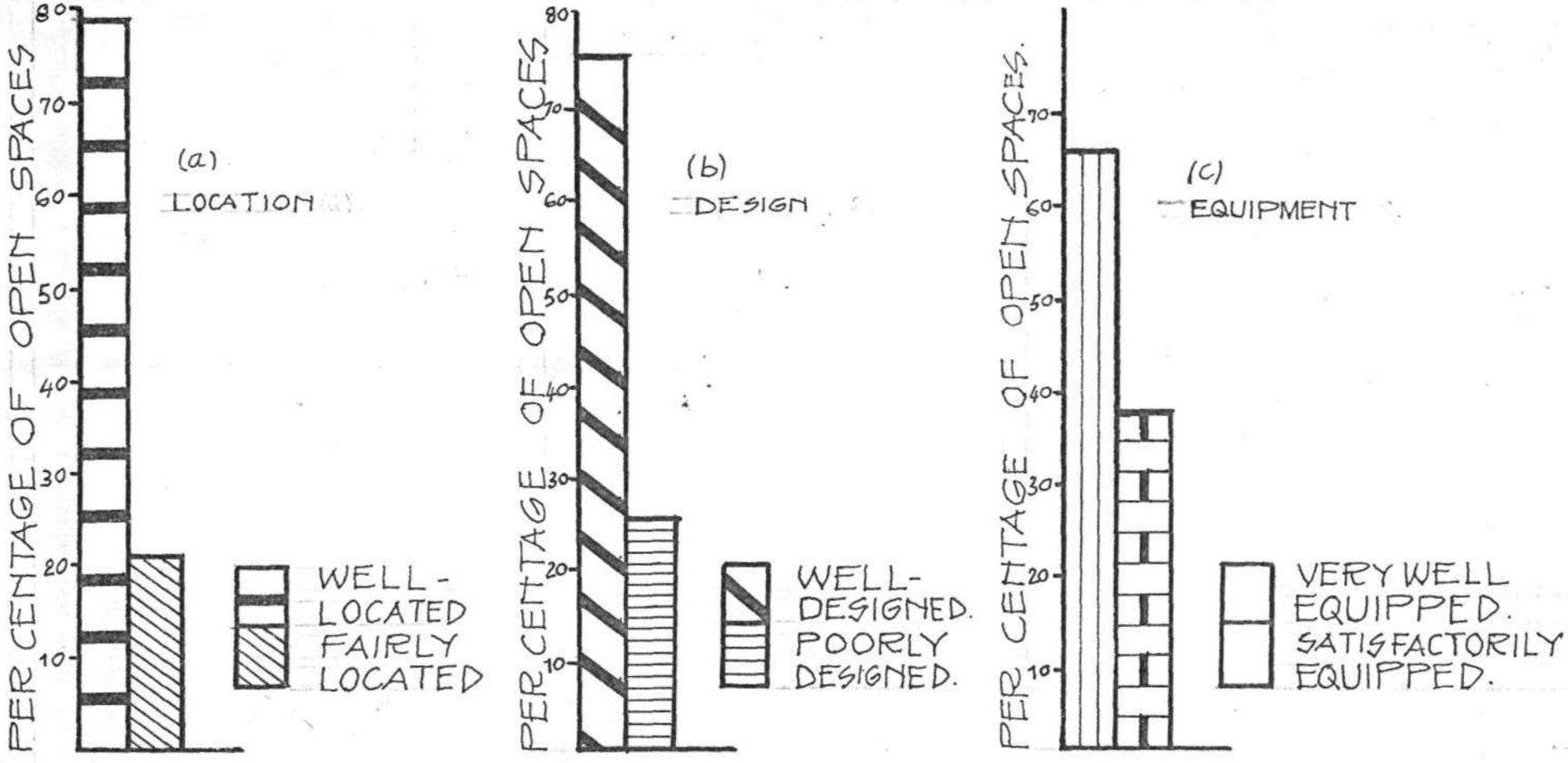
Table 4.9: PUBLICLY ORGANISED OPEN SPACES

DEVELOPMENT AND MANAGEMENT CONDITIONS

	OPEN SPACES	LOCATION		DESIGN		EQUIPPING			ATTENDANCE			CONDITION			MAINTENANCE			STAFFING			UTILISATION		
		Well located	Wrongly located	Well designed	Poorly designed	Well equipped	Fairly equipped	Poorly equipped	Well attended	Fairly attended	Poorly attended	Good condition	Fair condition	Poor condition	Well maintained	Fairly maintained	Poorly maintained	Well staffed	Fairly staffed	Under staffed	Well used	Fairly used	Poorly used
1	Ahmadu Bello stadium	✓		✓		✓			✓				✓		✓			✓			✓		
2	Ranchers Bees stadium	✓		✓			✓		✓				✓			✓			✓		✓		
3.	Botanical garden	✓			×			×			×			×			×			×			×
4	Arewa house park		×		×			×			×			×			×			×			×
5	Doka park		×		×			×			×			×			×			×			×
6	Kawo park		×		×			×			×		✓			✓			✓			✓	
7	Murtala square	✓		✓			✓		✓				✓			✓			✓		✓		
8	Nigerian Breweries children play-ground		×		×	✓				✓		✓			✓			✓				✓	
9	Lemaco children playground		×		×	✓				✓		✓			✓				✓			✓	
10	Ideal flour mills park and playground		×	✓		✓				✓		✓			✓			✓				✓	

SOURCE: FIELD SURVEY, 1989.

FIGURE 4·91

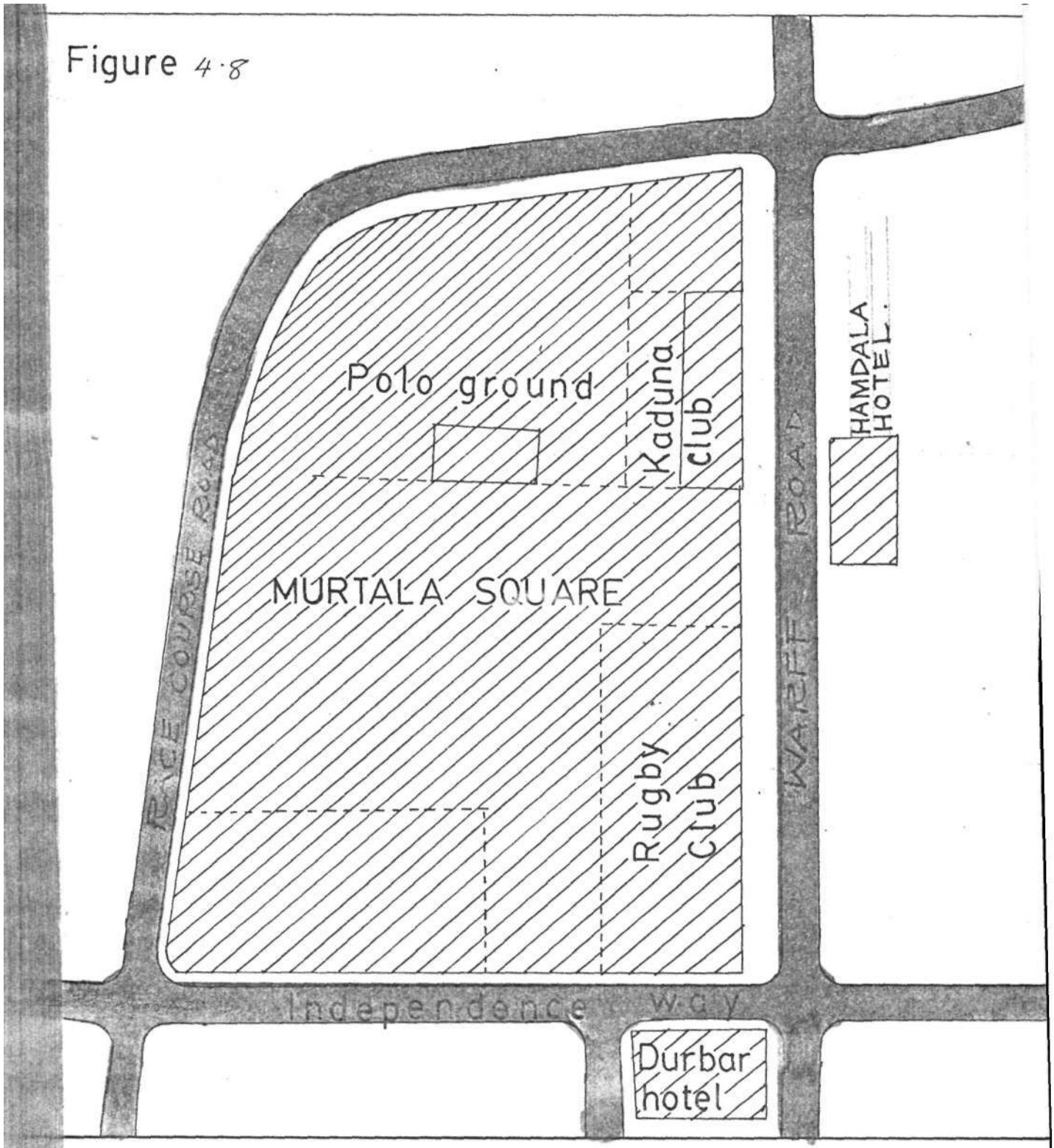


SOURCE : FIELD SURVEY 1989.

SOME DEVELOPMENT PARAMETERS OF PRIVATE OPEN SPACES.

HUSAINI I. GARBA

Figure 4·8



SKETCH OF THE LOCATION OF MURTALA SQUARE WITH OTHER ORGANISED OPEN SPACES.

Source: field survey, 1989.

25 0 25 50 75 100 125

Husaini I. Garba
M. sc. Thesis, 1989.

The distribution of privately organised open spaces within the metropolis is poor. Figure 4.1 shows that 64% of the private open spaces are located around the G.R.A., while Kawo area has only 4.5% of the privately owned open spaces. The reason for this uneven distribution is as a result of a historical accident as mentioned earlier. Also it could be because of the financial involvement of members and their awareness of open spaces tended to locate private open spaces to where most of the members resides.

The development parameters analysed indicate that privately owned open spaces are better developed than publicly owned open spaces.

B - Management:

The management of privately organised open spaces is going to be examined by analysing the following: membership, financing, staffing, maintenance and administration.

(i) Membership:

There are two types of membership of private open spaces. Firstly is the membership in which any person that works with the owner organisation becomes an automatic member for examples, are private institutional

open spaces, although some institutions restrict membership to only senior staff. Secondly is the one in which membership is open to the general public, but one becomes a member only when duly registered. So in both cases there is certain restriction to membership and so also utilisation.

(ii) Financing:

Finance is the central issue in the development and management of organised open spaces. So strong financial sources greatly assist the management of open spaces. The privately organised open space have the following sources of finance: Firstly, the private institutional open spaces are financed by their institutions and annual subscriptions by members. Secondly, the exclusively privately developed open spaces are financed through annual subscription by members and donations from organisations or individuals. In both cases, finances are also sought through fund-raising activities such as appeal funds, organising tournaments, film shows etc. In some cases, non-members are charged certain amount per use.

This revealed that unlike the publicly organised open spaces, privately open spaces have more and stronger financial sources. This perhaps is one of

the reasons why they are in a better condition than the public open spaces.

(iii) Staffing:

As mentioned earlier, management of organised open spaces depends much on the adequacy and effectiveness of open space staff. Since 80% of the privately organised open spaces play recreation roles, adequate staffing is essentially required. The survey indicates that 87% of the sampled private open spaces have enough staff that are fully employed, 13% are satisfactorily staffed. This indicates that the privately organised open spaces are mostly well staffed.

(iv) Maintenance:

The private open spaces are well maintained. It has been observed that most of the required equipments have been provided and are well kept, sitting areas are mostly in good condition; their surroundings are mainly kept clean and in some places litter baskets are provided. Unlike the public open spaces, 70% of the privately organised open spaces are in good condition and well maintained. This might be one of the reasons that private open spaces attract more people despite the financial involvements.

(v) Administration:

All the privately organised open spaces have some form of administrative structure. In most cases formal administrative functions are found, managers secretaries, clerks, offices are constructed within the open spaces. In some cases the managerial staff are members of the clubs. This indicates that the administration of private open spaces is better than what obtains in the public open spaces.

(vi) Attendance and utilisation:

80% of the private open spaces are well attended and 79% are well utilised. It has been observed that their management and development are good. The reason for this is because of the financial involvement and the influence of members in the management of the open spaces. Members are fully involved in the general planning of the affairs of private open spaces. Table 4.91(a) shows the summary of the development and management of privately organised open spaces.

4.50 COMPARISONS OF DEVELOPMENT AND MANAGEMENT BETWEEN PUBLICLY AND PRIVATELY ORGANISED OPEN SPACES

Based on the analyses of the development and management of organised open spaces in Kaduna metropolis comparison was made btween publicly and privately organised open spaces. Table 4.91(b) gives the comparisons.

Table 4.91(b): The Comparisons

PARAMETERS	ORGANISED OPEN SPACES	
	PUBLIC	PRIVATE
1 - Supply	Inadequate, 58.88 Hectres which represents only one per cent of the total landuse	Satisfactory, 89.39 Hectres which represents 1.5% of the total landuse
2 - Location	Inappropriate, 60% were wrongly located inside right of ways and far away from users	Location is appropriate 79% of the were properly located.
3 - Design	60% of them were not designed, 20% were well designed and 20% were poorly designed.	75% of them were well designed and 25% were fairly designed.

TABLE 4.91(a): PRIVATELY ORGANISED OPEN SPACES IN KADUNA

	LOCATION		DESIGN			EQUIPPING		FACILITIES UTILITIES AND SERVICES			ATTENDANCE		CONDITION			MAINTENANCE			STAFFING		
	Well located	Fairly located	Well designed	Fairly designed	Poorly designed	Well equipped	Fairly equipped	Well provided	Fairly provided	Poorly provided	Well attended	Fairly attended	Good	Fair	Poor	Well maintained	Fairly maintained	Poorly maintained	Adequately staffed	Fairly staffed	*Under staffed.*
Kaduna club	✓		✓			✓		✓			✓		✓			✓			✓		
Kaduna recreation club	✓		✓			✓		✓			✓			✓			✓			✓	
Kaduna golf club	✓		✓			✓		✓			✓		✓			✓			✓		
Sardauna fives club		✓			×	✓				×	✓				×		✓				×
Polytechnic staff club	✓		✓				✓		✓		✓			✓			✓			✓	
UNTL staff club	✓		✓			✓		✓				✓	✓			✓			✓		
KTL staff club	✓			✓		✓		✓				✓	✓			✓			✓		
Peugeot staff club		✓		✓		✓		✓			✓		✓			✓			✓		
Hamdala Hotel garden	✓		✓			✓			✓			✓	✓			✓			✓		
Durbar Hotel swimming pool	✓		✓			✓		✓			✓		✓			✓			✓		
Zumunta Social club		✓			×		✓		✓		✓			✓			✓			✓	
Alheri Social club		✓			×		✓		✓		✓			✓			✓			✓	
Police officers mess	✓		✓			✓		✓			✓			✓			✓			✓	
Kaduna Press club		✓			×		✓	×		×	✓				×			×			×

SOURCE: FIELD SURVEY, 1989

Table 4.91(b) contd.

PARAMETERS	PUBLIC	PRIVATE
4 - Equipment	40% were fairly equipped and 60% were ill-equipped.	64% of them were well-equipped and 36% were fairly equipped.
5 - Distribution	It does not form any particular pattern. It is not even.	Concentrated around the G.R.A. distribution is not even.
6 - Membership	It is open to the general public. It does not require formal registration.	Membership restricted. Formal registration is required.
7 - Finance	Mostly depend on government subvension. It is not adequate.	Financed through annual subventions, money generating functions and institutions financed their open spaces. Financial sources are adequate.
8 - Staffing	They face acute shortage of staff. The few ones are not skilled.	They are largely well staffed.
9 - Maintenance	50% are fairly maintained while the remaining 50% are poorly maintained.	70% are well maintained to the satisfaction of members; 30% are fairly maintained.

- low and medium income earners have more time for open space use.
- The heterogeneity of the population provides potential for the development of a wide range of open spaces.
- Open spaces are located in right of ways and far away from users. The distances travelled are very far; most of the people use public transport to travel to open spaces.
- People have certain time they allot to recreation, which is mainly in the evening. This provides potential for recreational open spaces.
- 63% of the people express their willingness to pay between ₦1.00 to ₦3.00 per visit.
- People prefer open spaces that reflect their socio-cultural (traditional) practices.
- Privately organised open spaces are better attended and effectively utilised.

CHAPTER FIVE

GENERAL FINDINGS, PROPOSALS AND POLICY GUIDELINES

5.00 General Findings:

Based on the analyses of the survey data and observations of the open spaces in Kaduna metropolis, certain general findings were made. The findings reveal the potentials and constraints of the open spaces in Kaduna. Understanding these potentials and constraints will lead to useful proposals and recommendations regarding the development and management of organised open spaces. The following are the general findings:

Firstly, it revealed the natural potentials of open spaces in Kaduna metropolis. The Kaduna river, its tributaries and many other smaller streams and water bodies abound in the city. Rock-out-crops, gullies and flood plains are also found in various parts of the town; much of the G.R.A. falls within the green spaces. The stream that crosses Hospital, Bida, Ibrahim Taiwo and Constitution roads and its flood plain provided a natural park-like pattern of open space. Another park-like pattern was provided in the eastern part of the town towards the G.R.A.; it begins in Murtala Square, through Hamdala Hotel garden to the

golf course, through the ABU Teaching Hospital down to the Botanical garden where it joins River Kaduna.

However, most of these natural potentials have been destroyed or encroached by urban developments. For exmple, the Jinya clinic, NACB, British Council, Allied Bank (under construction), Kagoro clinic, Royal Cinema, School for the blind, Kaduna clinic etc. were all developed within the stream valley that would have formed a natural park-like open space pattern. Much of the mansions along Dawaki, Sultan and Jabi roads were developed within the green spaces. Consequently, this generate problems of poor drainage system that was formed by the streams valleys which create potential danger of flood.

Secondly, the existing open space all together constitute 148.27 Ha and this represents 2.5% of the total landuse area of Kaduna. Based on the acceptable open space standards of towns with population of between 500,000 - 1,000,000 of which Kaduna falls, the town requires between 7 - 8% and based on Max Lock's proposal for Kaduna, its open space requirement is 9% of the total landuse. Therefore, organised open spaces have not been adequately supplied within the metropolis.

Thirdly, it also revealed that the existing publicly organised open spaces were not properly located.

Some are located far away from users such as Doka park, Kawo park, Lemaco and NBC children playgrounds. All these are also located along very busy roads. NBC children playground is located in a bus stop and Kawo park is located between rail and road right-of-ways. Their locations are therefore wrong and dangerous. Related to location is the distribution of organised open spaces which is found to be concentrated around the G.R.A.

Fourthly, the government organisations that are involved in the decision making in the planning of open spaces do not coordinate with each other in the discharge of their open space responsibility despite the overlap of duties between them which require coordination. The government's decision to give the responsibility of the management of open spaces to Forestry was wrong and it indeed compounds the problem. This also indicates the lack for an accepted open space planning policy.

Fifthly, it also revealed that 60% of publicly organised open spaces lack adequate facilities, utilities and services. For example, no single public park in the metropolis has parking space, some lack sitting areas, canteen for refreshment, toilets are lacking and staff offices are conspicuously lacking.

In addition, most of them are in a deplorable condition. This is the reason why public open spaces fail to attract people and are ineffectively utilised.

Finally, it revealed that despite the natural and human potentials for the development and management of open spaces, they fail to perform most of the functions they are supposed to serve. Their planning therefore leaves much to be desired.

5.20 Proposals and Recommendations:

Proposals and recommendations are very important in any meaningful research because they tend to provide possible solutions to the problems identified. Consequent to the findings of this research, the following proposals and recommendations have been made with a view to providing solutions to the identified problems.

(a) Natural open spaces:

The research revealed that although nature has provided great potentials for open space development in Kaduna, these potentials have been encroached and destroyed in the face of urban developments. This is as a result of the rapid urbanization and population increase in the town which creates serious pressure on serviced land to provide accommodation as well as employment

for the people. Consequently, the natural open spaces have given way to residential and commercial developments. However, this has to be discontinued immediately to prevent the further destruction of the water bodies that provide natural drainage channels as the continuation of this provides perpetual threat particularly during flood. The central part of Kaduna and greater part of the G.R.A. stand the danger of being destroyrd by flood.

It is proposed that all water bodies and green areas be surveyed, demarcated with beacons and gazetted. The following set backs are proposed for the water bodies in Kaduna. The proposal is based on the field survey and an earlier work conducted by the Green Belt Committee.

Table 5.00: Proposed set backs for water bodies:

WATER BODY	GREEN BELT COMMITTEES' PROPOSAL (in metres)	PROPOSAL BY THIS STUDY (in metres)
1 - River Kaduna	500	100 - 150
2 - River Romi River Abakpa	200	50 - 100
3 - Rigasa stream Gora stream	150	50 - 100
4 - Badarawa stream Unguwar Dosa stream	50	20 - 50
5 - Unguwar Munchi stream Narayi/Barnawa "	20	20
6 - Chalawa road stream Dawaki road " Hospital road " Sultan road " College road "	Existing developments along the stream valleys to be maintained and controlled.	Revoke all undeveloped plot in the green areas and control the remaining areas that have not been allocated.

This proposal is necessary because the green belt committee's proposals were not realistic in some respect. There is hardly anywhere along river Kaduna that a 500 metre set back can be found, in most cases developments are less than 200 metres from the River valley. Besides, the proposal tend to be rigid because it does not give range.

(b) Location of open spaces:

The study revealed that people expressed their dissatisfaction for the distance they cover to visit public open

spaces. This is due to the fact that most of them have not been located close to users. The following proposal is made based on peoples preferences of distance they consider convenient and the miximum distance suggested for American towns.

Table 5.1

TYPE OF OPEN SPACE	MINIMUM DISTANCE TO USERS (AMERICA)	PROPOSAL FOR KADUNA
1 - City parks including: Golf, polo, stadium, zoo, Zoological and Biological gardens, etc.	8 - 10 km	4 - 7 km
2.- District parks: Amusement parks, gardens swimming pools etc.	3 - 8 km	2 - 4 km
3 - Community parks Small sized parks, gardens sports centre, swimming pools etc.	2 - 6 km	1 - 2 km
4 - Neighbourhood parks residential commons, children playgrounds, small sport fields, table tennis etc.	1 - 3 km	Within short distance.

(c) Distribution:

The study revealed that the distribution of open spaces in Kaduna is uneven, therefore it does not form any particular pattern. This is perhaps due to the lack of a clear policy for the distribution of open spaces. Figure 5.0 shows the proposed distribution of open spaces in Kaduna. This proposal is based on the need to distribute open spaces evenly.

(d) Supply:

It has been shown that organised open spaces which constitute 148.27 Ha represent only 2.5% of the total landuse of Kaduna. Based on Max Lock's proposal, Kaduna requires 9% of its landuse as open space, and based on the United Nations estimate a town of Kaduna's population size (500,000 - 1,000,000) requires between 7 - 8% of total landuse as open spaces. Considering the two proposals, and the field survey, the following proposal was made for Kaduna:

Open Space	Area (in Ha)	Percentage (in Ha)	Proposed area	Percentage
Private open space	89.39	1.5	0	0
Public open space	58.88	1.0	58.73	1.0
Total	148.27	2.5	58.73	1.0

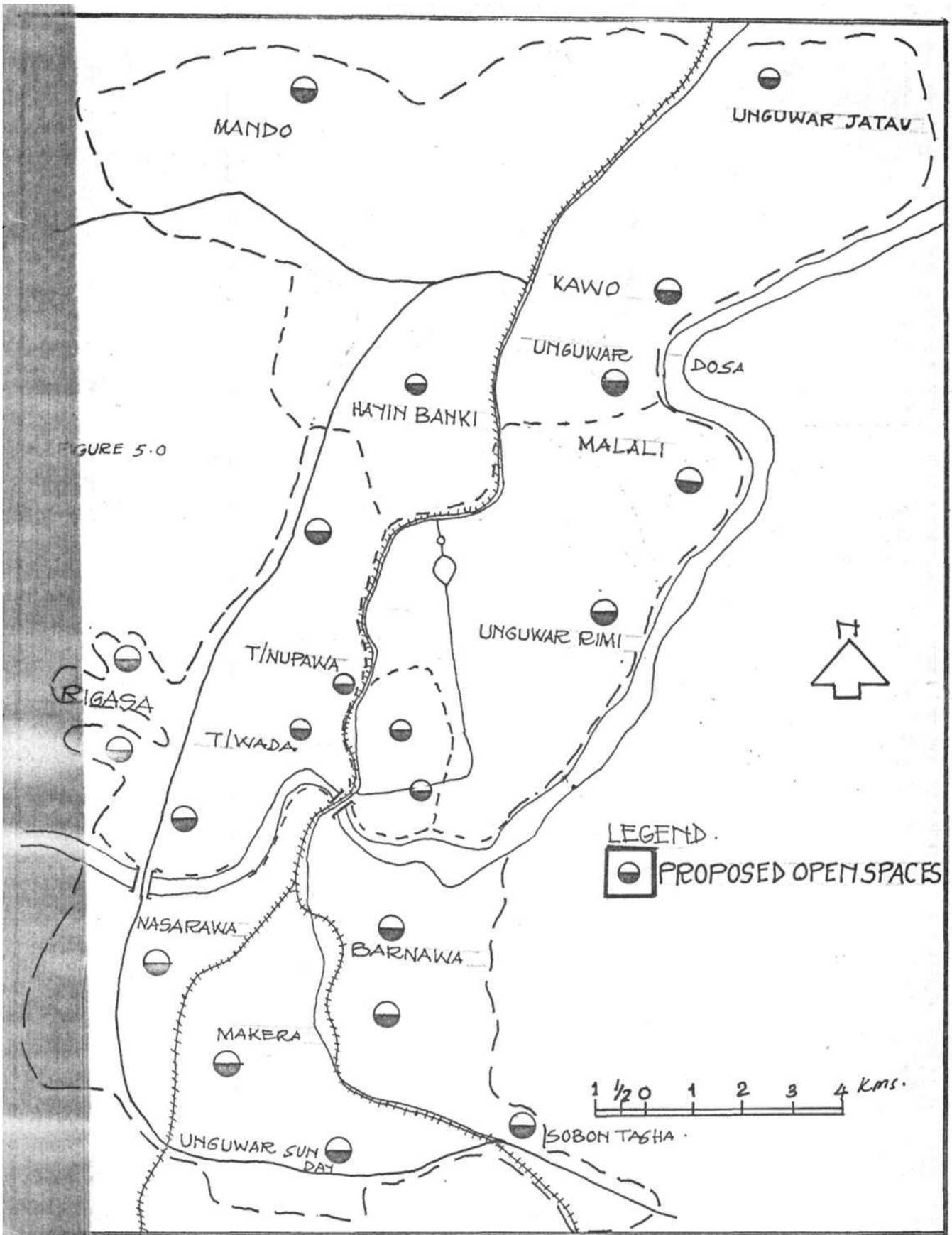


FIGURE 5.0

DISTRIBUTION OF PROPOSED OPEN SPACES.

SOURCE: FIELD SURVEY, 1989

HUSAINI I. GARBA
M. SC, U.R.P. THESIS, 1989.

5.30: Recommendations and Policy Statements:

Recommendations:

There is need to make certain recommendations that will solve the problems of poor attendance and ineffective utilisation faced by the existing public open spaces. Because it is important to suggest ways that will make the existing ones functional before providing more. As a result, the following strategies are therefore recommended:

i - Government should provide the necessary facilities such as sitting areas, drinking points, kiosks for snacks, toilets, play equipments for children and provide parking spaces.

ii - Proper maintenance of the facilities has to be ensured. The surroundings should be well landscapped by planting beautiful flowers and shade trees, sitting areas must be kept clean and the surrounding should always be swept and litter baskets provided.

iii - Where children play grounds were dangerously located such as NBC park, there is need to fence the area and a permanent park staff that watch the movements of the children be employed.

iv - People should be educated of the importance of open space use through the print and electronic media.

These will assist greatly in making the existing public open spaces to be more attended and utilised.

POLICY STATEMENTS:

To improve the general planning of open spaces and particularly their development, management and control, there is need for strong policy guidelines by the government which must be adhered to.

Based on the problems highlighted in various places, the proposals and recommendations made, the following policy strategies should be taken by the government in order to implement the proposals and recommendation successfully.

a - There is need to establish a commission that will henceforth take up the responsibility of the development, management and control of all public open spaces in the town. The commission is to be called "KADUNA OPEN SPACE COMMISSION".

i - The commission should be a statutory one.

ii - It should have its headquarters located in Kaduna.

iii - It should have a general manager, secretary/ legal adviser, public relations officer and other staff.

(b) The functions of the commission would be:

i - To survey, demarcate and beacon all open spaces in Kaduna metropolis.

ii - To liaise and find out all the natural, physical and human potentials and constraints for the development of organised open space.

iii - To control encroachment and destruction of all green areas and ensure that the proposed set backs are strictly adhered to.

iv - To demolish any physical structure being developed within the open spaces without its prior knowledge.

v - To develop, manage and control all publicly organised open spaces within Kaduna metropolis that it can handle.

vi - To formally apply to the landuse and allocation committee for any public open space they want to develop.

vii - To obtain plans or get their plans approved from KASUPDA for any open space to be developed.

viii - To liaise with other agencies such as NEPA, Water Board and NITEL before developing any open space.

ix - To study the peoples' open space preferences of the area which it is going to develop.

x - To educate the people of the area on the importance of such an open space and to encourage them to use it.

xi - To study the possibility of peoples' participation in the development of government owned public spaces.

(c) All the workers of the Kaduna local government parks and gardens unit be transferred to this commission and the headquarters of the commission should be at the present office of the parks and gardens unit along Independence Way.

(d) Any proposed public open space that cannot be developed by the commission should be directly advertised to the general public by the landuse and allocation committee. Successful applicants must liaise with the open space commission before developing the open space. The allottee must obtain design from KASUPDA or his proposed design must be approved by KASUPDA before development.

He should also liaise with NEPA, NITEL and Water Board before development. The allottee may charge gate fees of between 10k - 50k per visit (for children) and ₦1.00 - ₦3.00 per visit (for adults).

CONCLUSION

Open space is a characteristic of the urban landuse structure of many great cities all over the world. It is believed to be of great significance to the urban environment as well as its residents. Besides, it influences urban form, structure and spatial development. There is need to therefore understand the phenomenon of urban open space in relation to the general quality of the environment particularly in the developing countries. There is also need for a com comprehensive study of the potentials for open spaces in both quantitative and qualitative terms with a view of developing them for the people.

This study examined particularly the development and management of organised open spaces in Kaduna metropolis, the situation of which leaves much to be desired. Publicly organised open spaces face many problems of development and management which make people to create negative attitudes towards them and as a result, they are poorly attended and ineffectively utilised.

There is urgent need for a clearly defined open space policy in Kaduna which should aim at ensuring proper development, management and control of open

spaces and must accommodate the perception of users rather than suppliers.

Current encroachment and destruction of green spaces must be stopped to avert future negative repercussions such as flood disaster which is likely to be very destructive if it occurs.

Through a good understanding of the roles open spaces play in urban areas, it is hoped that open space planning becomes well appreciated essentially because of its positive contributions to the structure, recreation, aesthetic etc of the areas. This will assist their development to be fully integrated into the overall urban spatial structure which will ensure a healthy and desirable urban environments.

REFERENCES

1 - Adesiyan, J.O. 1980. Open space systems and environmental quality of an urban area: A case study of Ibadan. M.Sc (URP) thesis, ABU, Zaria.

2 - Wilcox, A.T. 1958. Introduction to outdoor recreation. East Lansing, Michigan, Michigan State University.

3 - Gold, M.S. 1973. Urban recreation planning. Lea and Febiger - Philadelphia.

4 - Stanley, B.T. 1963. The importance of open space in the urban pattern, in cities and space: Lowdon Wingo, Jr. The Johns Hopkins Press, Baltimore and London.

5 - Tunnard and Puskkarev, 1963. Man-made America. Philadelphia.

6 - Keeble, S. 1968. Principles of practice of town and country planning. M.B. Saunders, New York.

7 - King and Associates, 1971. The regional planning for open spaces, recreation and environmental appearance. The gulf regional planning commission, Philadelphia.

8 - Lynch, K. 1960. The image of the city. Boston Cambridge Press, London.

9 - Van Cleve Associates, 1978. Open space for the Phaenix mountains. Inc., Phoenix, Arizona.

10 - Omar Shittien, 1975. A user oriented systems of park and open spaces in Jos. M.Sc unpublished thesis, Department of Urban and Regional Planning, ABU, Zaria.

11 - Harrison, C. and Burgen, J. 1988. Qualitative research and open space polity. The planner Journal of the Royal Town Planning Institute, Volume 74, No. 11, November, 1988.

12 - Burke Gerald, 1971. Towns in the making. Edward Arnold Ltd., 25 Hill Street, London W1X 8LL.

13 - Department of U.R.P. ABU, Zaria, 1978. Bichi Master Plan, Kano state Urban Development Board.

14 - Wallace, D.A. et al., 1970. Metropolitan open space and natural process. University of Pennsylvania, Philadelphia.

15.- Johnstong, V. 1959. In urban recreation planning edited by Gold. Lea and Fabiger.

16 - Heckscher, A. 1977. Open spaces: The life of the American cities. New York.

17 - Nan Fair Brother, 1975. The nature of landscape design.

18 - Max Lock and Partners, 1967. Kaduna master plan. Times drawing office ltd 11-12 Pollen Streen, London, W.I.

19 - Udo, R.K. 1970. The Geographical regions of Nigeria. Heinmann Educational Books Ltd. London WcI B 3 HH.

20 - Wright, J.B. and McCurry, P. 1970. In Zaria and its region, edited by M.J. Mortimore. ABU, Department of Geography, Occational paper, No. 4.

21 - Metroerological unit of the Institute of Agricultural Reseafch A.B.U., Zaria, 1988.

22 - Jackson, G. Vegetation Around the city and nearby towns of Zaria. In Zaria and its regions edited by M.J. Mortimore Occasional paper, 1970.

23 - Kaduna state of Nigeria, 1984. White paper on the report of the high-powered administrative committee on landuse.

24 - Federal government of Nigeria 1981 . The Fourth Nigerian National Development Plan.

25 - Burgen, J. et al., 1988. Peoples, parks and the urban gree: a study of popular meanings and values for open spaces in the city.

26 - Kulshrestha, S.K. 1978. Landuse patterns of urban centres in India, Ekestics.

QUESTIONNAIRE 1

FOR GOVERNMENT OFFICIALS WORKING WITH ORGANISATIONS THAT TAKE PART IN THE PLANNING OF OPEN SPACES IN KADUNA

1 - Organisations: Indicate where you work with by a tick.

(a) KASUPDA, (b) Kaduna Local Government

(c) Lands and Survey and (d) Forestry Department.

2 - Is your organisation involved in the planning of open space in any way?

Yes ☐ No ☐

3 - Indicate by tick(s) the level of involvements of your organisation.

(a) provision/supply ☐ (b) development ☐

(c) management ☐ (d) Control ☐

4 - How effective does your organisation in the involvement(s)?

(a) Very effective ☐ (b) Satisfactory ☐

(c) Ineffective ☐

5(i) Has there been any effort by your organisation to study open spaces in Kaduna

Yes ☐ No ☐

(ii) If yes, how successful was it.

(a) Very successful ☐ (b) Satisfactory ☐

(c) Not satisfactory ☐

6(i) Does your organisation coordinate with other organisations in the discharge of its open space responsibility? Yes ☐ No ☐

(ii) If yes, mention the organisations .....

.....

.....

7(i) What is your opinion about the problem of encroachment and destruction of natural open spaces in Kaduna?

.....

.....

.....

(ii) In which ways do you think the problems could be sulved?

.....

.....

.....

QUESTIONNAIRE ON PEOPLES' OPEN SPACE HABITS

1 - Where do you reside?

☐ (a) Kaduna north (Kawo, Mando, U/Jatau, Hayin banks, U/Doki)

☐ (b) Doka (Kaduna central)

☐ (c) Gabasawa (U/Sarki, Malali, U/Rimi)

☐ (d) Tudun Wada (T/Nupawa, Sabon Gari, Rigasa, Kabala West, U/

☐ (e) Kaduna South (Kakuri, Barnawa, Nasarawa, Sabon Tasha etc).

2 - Sex: Male ☐ Female ☐

3 - Age:

(a) 5 - 15 ☐
(b) 16 - 25 ☐
(c) 26 - 35 ☐
(d) 36 - 45 ☐
45 ☐

4 - Marital Status: Married ☐ Single ☐

5 - Education

(a) Quranic ☐
(b) Primary ☐
(c) Secondary ☐
(d) Post-secondary ☐
(e) Degree ☐

6 - Occupation (nature of employment)

(a) Trader ☐ (e) Armed forces ☐

(b) Teacher ☐ (f) Business ☐

(c) Industrial ☐ (g) Others specify ☐

(d) Self employed ☐

7 - Income level:

Low (₦500.00 - ₦3,999 ☐

Medium (₦4,000 - ₦5,999 ☐

High (₦6,000 and above) ☐

8(i) Are you aware of open spaces in Kaduna?

Yes ☐ No ☐

(ii) If yes, do you visit them Yes ☐ No ☐

(iii) What is/are the purpose(s) of your visit?

(a) Recreation ☐

(b) Enjoy nature ☐

(c) Relaxation ☐

(d) Others specify .....

9 (i) What is the distance you cover to visit open spaces?

(a) 2.9 km ☐

(b) 3 km - 4.9 km ☐

(c) 5 km - 6.9 km ☐

(d) 7 km - and above ☐

(ii) What travel mode do you use to visit open spaces

(a) Private car ☐

(b) Bus/Taxi ☐

(c) Motocycle ☐

(d) Treckking ☐

(iii) How convenient is the distance you cover?

(a) Convenient ☐

(b) Satisfactory ☐

(c) Not convenient. ☐

10 - What is the nature of the open space activity you take part in?

(a) Active ☐ Passive ☐

(b) Outdoor ☐ Indoor ☐

11(i) How many free hours do you have per day?

(a) 1min - 2hrs ☐

(b) 2hrs 1min - 4hrs ☐

(c) 4hrs 1min - 6hrs ☐

(d) 6hrs ☐

(ii) How many of the free hours do you allot for open space visit?

(a) 1 min - 1hr ☐

(b) 1hr 1min - 2hrs ☐

(c) 2hrs 1min - 3hrs ☐

(d) 3hrs ☐

(iii) When do you normally visit open spaces?

(a) Morning ☐

(b) Afternoon ☐

(c) Evening ☐

12 - Indicate in order of preference the type of open space you would like to be provided in your area of residence. For instance put 1 against the open space you most preferred, 2 against your second best etc.

1 - Well equipped children play ground ☐
2 - District sports centre ☐
3 - Well organised park and gardens ☐
4 - Improved traditional open spaces ☐
5 - Privately organised open spaces (polo, golf etc) ☐
6 - Organised natural open spaces (Botanical, Zoological) ☐

13 - How much are you willing to pay per visit to open space?

50k - ₦1.00
₦1.10 - ₦2.00
₦2.10 - ₦3.00
₦3.00

QUESTIONNAIRE TO PRIVATELY OWNED OPEN SPACES

1 - Name of open space/club.....

2 - Location (address).....

.....

3 - Ownership: (i) Private organisation/individual ☐

(ii) Institutional ☐

(iii) Others (specify).....

4 - Membership

i - Open to everybody

ii - Restricted

iii - Others (specify).....

5 - Finance:

i - Annual dues by members ☐

ii - Donations ☐

iii - Fund raising activities ☐

iv - Others (specify).....

6 - Equipment

i - Adequate ☐

ii - Satisfactory ☐

iii - Inadequate ☐

7 - General condition of the place

i - Good ☐

ii - Satisfactory ☐

iii - Poor ☐

8 - Staffing: Total number of staff:.....

9(a) Is there any administrative block?

Yes ☐ No ☐

(b) If yes, how many offices are there?.....

(c) Indicate the officers you have out of the following:

i - Manager, President, Chairman ☐

ii - Secretary/Sec. General ☐

iii - Financial Secretary/Treasurer ☐

iv - Others (specify) .....

10 - Mention any problem(s) you have as regards the management of this club:.....

.....

.....

.....