# ENCROACHMENT OF CITIES ON SUB-URBAN SETTLEMENTS: A CASE STUDY OF ZARIA

**BY**

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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 presented before any examiners for a higher degree. All sources of information are specially acknowledged by means of references.

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11th March 1992

DATE

## CERTIFICATION

This thesis entitled "Encroachment of Cities on Sub-Urban Settlements: A Case Study of Zaria" by Toyobo Adigun Emmanuel meets the regulations governing the award of the degree of Master of Science in Urban and Regional Planning of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

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Finally, I am grateful to God Almighty for His strength and sense of direction given to me for the accomplishment of this task.

TOYOBO ADIGUN EMMANUEL
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## DEDICATION

To Mr. J.O. Babalola
To comfort loving people who are
always thirsty of righteousness
all over the world.

## ABSTRACT

The rapid population growth of urban centres has resulted in spatial expansion of the centres resulting in the loss of surrounding land. This is threatening the existence of rural settlements in the immediate urban surroundings. This sometimes results in the settlements being engulfed and exist as poorly structured habitations within the urban area, lacking in most if not all facilities, utilities and services and generating hostile official attitudes from the planning authorities.

This is a study of encroachment of Zaria sub-urban settlement both within and around Zaria urban area with a view to making recommendations and proposals for the development of such rural settlements,

riculture is still the mainstay of the rural settlements studied. Other non-agricultural occupation such as night watchmen, nail cutters, trading and messengers in the civil services are gaining importance.

There also exist a very strong relationship between accessibility and interaction with the urban centre. Work and trading trips are the greatest reasons for interaction between the villages and Zaria.

Land is held mainly through customary title and is largely acquired through inheritance. Land use within the settlements is also found to be still

largely rural with residential and agricultural land use dominating. However, there are indiecations that, the urban landuses are being acquired.

The main elements of the settlements are seen to be the village heads, compound, open space: and dwelling units. Circulation is mainly organic as the growth of the settlements. The traditional structure has substantially been disrupted in some settlements owing to the encroachment of Zaria.

The socio-cultural characteristics indicate a high degree of ethnic heterogeniety with some migrant population. Most glaring however is the effect of urban growth on the encroached rural settlements, rapid changes are observed to have and are occuring within these settlements and the communities. Changes in the landuse structure organisation and social structure and even production and consumption patterns.

The rural settlements both within and around Zaria are found to be excluded from the planning process of the urban centre and a few strategies are considered for the development of the settlements.

Proposals are selected to intergrate and protect the settlements so that the settlements are able to eventually become part of the urban fabric. The merger

**and special zone strategies are applied to achieve this and policy recommendations are made with a view to providing necessary climate to accommodate the proposals,**

TABLE OF CONTENTS PAGE


Title Page i

Declaration ii

Certification iii

Acknowledgements iv

Dedication v

Abstract vi

Table of Contents ix

List of Tables xiv

List of Figures xvi

List of Plates xviii

List of Appendices xix

CHAPTER ONE: INTRODUCTION 1

1.10 Statement of Research Problems 1

1.20 Aims and Objectives 2

1.30 Objectives 3

1.40 Scope and Limitation 3

1.50 Methodology 4

1.60 Sampling Methods 5

1.70 Thesis Structure 5

CHAPTER TWO: FACTORS RESPONSIBLE FOR AND THE PROCESSES OF SUB-URBAN GROWTH: A LITERATURE REVIEW 7

2.10 The Concept of Sub-Urban Growth 7

2.20 Sub-Urban Growth: Definition and Delimitation 7

2.21 Settlements surrounding rapidly expanding cities 9

2.22 The concept of fusion of settlements around and existing settlement 10

Table of Contents (cont'd.) PAGES


2.30 Processes of Urban Growth Encroaching Rural Land 12

2.40 Factors Responsible for Urban Growth and Rural Land Encroachment 13

2.41 Population growth and outward spread of cities 13

2.42 Multiplier effect of existing agglomeration 13

2.43 Speculation and cost of land 14

2.44 Government Policies 14

2.45 Transportation improvement 15

2.46 Nature of the physical landscape 15

2.47 Educational institution 16

2.50 Planning Strategies Adopted in Different Cities of the world 16

2.60 Integration of Villages with the Expanding town 17

2.61 Implementation of integration 17

2.62 Advantages of Integration 18

2.63 Disadvantages of integration 19

2.70 Resettlement or Relocation Strategy 20

2.71 Relocation within urban limit 21

2.72 Advantages of relocation 21

2.73 Disadvantages of relocation 21

2.74 Relocation on the periphery of urban area 22

2.75 Advantages of relocation at the periphery of urban area 22

2.76 Disadvantages of relocation at the periphery 22

2.77 Relocation away from urban influence 23

2.78 Advantages 23

2.79 Disadvantages 23

2.80 Special Zone Strategy 24

2.81 Advantages 26

2.82 Disadvantages 26

2.90 Bye Pass, Guided Growth and Green Belt Strategy 27

CHAPTER THREE: SUB-URBAN SETTLEMENTS OF ZARIA TOWN 30

3.10 The Study Area 30

3.11 Location of Zaria 30

3.12 Historical background 37

3.13 Population 38

3.14 The physical growth of Zaria 38

3.15 Selection of settlement for study 47

3.20 Structural Concept of Zaria Urban Area 48

3.30 Factors Responsible for Sub-Urban Growth in Zaria Urban Area 51

3.31 Spatial growth of Zaria 51

3.32 Increase land value 51

3.33 Access to land acquisition 68

3.34 Housing demand 68

3.35 Educational Institution 69

3.36 Transportation facilities and services 69

Table of Contents (cont'd.) PAGE


3.40 Characteristics of Sub-Urban Encroachment of Zaria Town 69

3.41 Land tenure 70

3.42 Land use 71

3.43 Land holdings 72

3.44 Land acquisition 96

3.45 Building condition 96

3.46 Economic characteristics 99

3.47 Socio-cultural characteristics 102

3.50 Functional Relationship of Sub-Urban Settlements with Zaria Urban Centre 115

3.51 Economic interaction 115

3.52 Social interaction 119

3.60 Problems of Sub-Urban Encroachment of Zaria Town 120

3.61 Land problem 120

3.62 Socio-Economic problems 122

3.63 Administrative problems 124

3.70 Prospect of Encroachmentof Zaria Sub-Urban Settlements 126

CHAPTER FOUR: PROPOSALS FOR THE DEVELOPMENT OF SUB-URBAN ENCROACHMENT OF ZARIA TOWN 127

4.10 Policy Recommendation 127

4.11 Urban Growth Policies 127

4.12 Administrative policy 128

4.13 Land policies 129

Table of Contents (cont'd.) PAGE


4.14 Social policy 133

4.15 Environmental policy 134

4.16 Income policies 134

4.20 Planning Proposals for the Development of Sub-Urban Encroachment of Zaria Town 135

4.30 Integration strategy 135

4.40 Guided Growth Strategy 140

4.50 Green Belt 140

4.60 General Recommendation and Curative Measures 140

4.70 Planning Standards 146

4.80 Implementation 160

4.81 Administrative framework 160

4.82 Financial implementation 162

4.90 Conclusion 166

REFERENCES 174

| TABLE | LIST OF TABLES | PAGE |
|---|---|---|
| 3.1 | Mean monthly rainfall of Samaru during the period of 1928 - 1990 | 34 |
| 3.2 | Mean relative humidity in percentage 1938 - 1990 | 35 |
| 3.3 | Mean monthly maximum and minimum temperature in $^{o}C$ 1938 - 1990 | 36 |
| 3.4 | Population of sub-urban settlements of Zaria town 1976 - 1991 | 43 |
| 3.5 | Gross area in (ha) and population density of Zaria sub-urban settlements 1976 - 1991 | 44 |
| 3.6 | Population projection (1991 - 2000) | 45 |
| 3.7 | Types of settlements | 50 |
| 3.8 | Existing landuse analysis of Paladan 1991 | 89 |
| 3.9 | Existing landuse analysis of Shika 1991 | 89 |
| 3.10 | Existing landuse analysis of Basawa 1991 | 89 |
| 3.11 | Existing landuse analysis of Wusasa 1991 | 90 |
| 3.12 | Existing landuse analysis of Dogarawa 1991 | 90 |
| 3.13 | Existing landuse analysis of Hanwa 1991 | 90 |
| 3.14 | Existing landuse analysis of Bomo 1991 | 91 |
| 3.15 | Existing landuse analysis of Unguwan Fulani 1991 | 91 |
| 3.16 | Existing landuse analysis of Kwangila 1991 | 91 |
| 3.17 | Existing landuse analysis of Gwariqwaji 1991 | 92 |
| 3.18 | Existing landuse analysis of Biye 1991 | 92 |
| 3.19 | Existing landuse analysis of Tukur Tukur 1991 | 92 |
| 3.20 | Existing landuse analysis of Tunkaran 1991 | 93 |

| TABLE | List of Tables (cont'd.) | PAGE |
|---|---|---|
| 3.21 | Existing landuse analysis of Dambo 1991 | 93 |
| 3.22 | Existing landuse analysis of Kudingi 1991 | 93 |
| 3.23 | Existing landuse analysis of Abarshi 1991 | 93 |
| 3.24 | Land holdings of respondents in the settlements studied | 94 |
| 3.25 | Land acquisition in the settlements studied | 95 |
| 3.26 | Analysis of building conditions | 97 |
| 3.27 | Occupational analysis | 101 |
| 3.28 | Income analysis | 103 |
| 3.29 | Facility analysis | 106 |
| 3.30 | Accessibility analysis | 107 |
| 3.31 | Location of work place analysis | 116 |
| 3.32 | Mode of transport from settlements to work places | 117 |
| 4.1 | Comparable planning standards for urban public facilities | 145 |
| 4.2 | Schedule of requirement for Paladan, population 5429 | 149 |
| 4.3 | Schedule of requirement for Hanwa, population 11843 | 149 |
| 4.4 | Schedule of requirement for Tukur Tukur population 15783 | 150 |
| 4.5 | Proposed land use analysis of Paladan | 150 |
| 4.6 | Proposed land use analysis of Hanwa | 151 |
| 4.7 | Proposed landuse analysis of Tukur Tukur | 151 |
| 4.8 | Summary of characteristics, problems and proposals for the selected settlements within and around Zaria urban area | 155 |

| FIGURES | LIST OF FIGURES | PAGE |
|---|---|---|
| 3.1 | Location of Zaria in Nigeria | 32 |
| 3.2 | Kaduna State Showing Zaria | 33 |
| 3.2a | Zaria: Location of study areas | 33 |
| 3.3 | Zaria stages of growth | 42 |
| 3.4 | Bar graph showing population growth of each settlement | 46 |
| 3.5 | Zaria structural concept | 49 |
| 3.6(a) | Palladan: Stages of physical growth | 52 |
| 3.6(b) | Hanwa: stages of physical growth | 53 |
| 3.6(c) | Tukur Tukur: Stages of physical growth | 54 |
| 3.6(d) | Ungwa Fulani: Stages of Physical " | 55 |
| 3.6(e) | Kwangila: Stages of physical growth | 56 |
| 3.6(f) | Wusasa: Stages of physical growth | 57 |
| 3.6(g) | Basawa: Stages of physical growth | 58 |
| 3.6(h) | Gwarigwaji: Stages of physical growth | 59 |
| 3.6(i) | Dogarawa: Stages of physical growth | 60 |
| 3.6(j) | Shika: Stages of physical growth | 61 |
| 3.6(k) | Dambo: Stages of physical growth | 62 |
| 3.6(l) | Tunkaran: Stages of physical growth | 63 |
| 3.6(m) | Bomo: Stages of physical growth | 64 |
| 3.6(n) | Kudingi: Stages of physical growth | 65 |
| 3.6(o) | Unwgan: Stages of Physical growth | 66 |
| 3.6(p) | Biye: Stages of physical growth | 67 |
| 3.7(a) | Paladan: Existing landuse | 73 |
| 3.7(b) | Hanwa: Existing land use | 74 |
| 3.7(c) | Tukur Tukur: Existing land use | 75 |

| FIGURE | List of Figures (cont'd.) | PAGE |
|---|---|---|
| 3.7(d) | Ungwan Fulani: Existing land use | 76 |
| 3.7(e) | Kwangila: Existing land use | 77 |
| 3.7(f) | Wusasa: Existing land use | 78 |
| 3.7(g) | Basawa: Existing land use | 79 |
| 3.7(h) | Gwariqwaji: Existing land use | 80 |
| 3.7(i) | Dogarawa: Existing land use | 81 |
| 3.7(j) | Shika: Existing land use | 82 |
| 3.7(k) | Dambo: Existing land use | 83 |
| 3.7(l) | Tunkaran: Existing land use | 84 |
| 3.7(m) | Bomo: Existing land use | 85 |
| 3.7(n) | Kudingi: Existing land use | 86 |
| 3.7(o) | Ungwan Abarshi: Existing land use | 87 |
| 3.7(p) | Biye: Existing land use | 88 |
| 3.8 | Zaria suburban settlements: Electricity supply | 113 |
| 3.9 | Zaria suburban settlements: Tap water supply | 114 |
| 3.10 | Zaria sub-urban settlements: Transportation modes | 118 |
| 4.11 | Organizational set up of implementation body at a zonal level | 130 |
| 4.2 | Proposals of a structural concept for Zaria urban area | 137 |
| 4.3 | Paladan within Zaria City structure | 138 |
| 4.4 | Proposals for facilities of urban settlements | 139 |
| 4.5 | Proposed method of refuse collection | 143 |
| 4.6 | Land use proposal for Paladan | 152 |
| 4.7 | Landuse proposal for Hanwa | 153 |
| 4.8 | Land use proposal for Tukur Tukur | 154 |

| PLATE | LIST OF PLATES | PAGE |
|---|---|---|
| 3.1 | Tukur Tukur: Building condition and type | 98 |
| 3.2 | Hanwa: Dilapidated house in Hanwa village | 98 |
| 3.3 | Paladan: Public well | 108 |
| 3.4 | Basawa Electricity connection | 108 |
| 3.5 | Community primary health care centre | 109 |
| 3.6 | Basawa: Old kano road with pot holes | 109 |
| 3.7 | Ungwan Fulani: Poor Drainage system | 110 |
| 3.8 | Basawa: Poor drainage system | 110 |
| 3.9 | Kwargila: Poor accessibility | 111 |
| 3.10 | Bomo: Untarred road to Bomo | 111 |
| 3.11 | Paladan: Refuse Disposal System | 112 |
| 3.12 | Wusasa: Refuse Disposal System | 112 |

LIST OF APPENDICES


| | | PAGE |
|---|---|---|
| Appendix I: | Rural settlements from growing urban centres | 167 |
| Appendix II: | Village settlements around growing urban centres | 172 |

# CHAPTER ONE

## 1.00 INTRODUCTION

### 1.10 STATEMENT OF RESEARCH PROBLEMS

One of the consequences of colonialism was the boast to urbanization. These urban centres have grown in spatial extent and building density which is manifested by the outward expansion of the build-up areas to their immediate rural surrounding. This process of growth has resulted into the fussion of some towns with the smaller settlements in their immediate vicinity. The implication of this process is that, part of the parent city becomes unplanned owing to the nature of fussion of the smaller settlements. This is widely associated with inadequate facilities, utilities and services.

Secondly this process of growth has resulted into the consumption of agricultural lands on which the inhabitants of these settlements depend for their livelihood. This in turn affects the people as their land is consumed and they are displaced. In this regard, some of the people become traders and some employed in low paying civil service such as watchmen, messengers, cleaners, etc. To improve the welfare of people in the engulfed rural settlements, there is the need to plan for the physical and social transformation as a basis of achieving a total development of the city and its surrounding settlements.

Zaria is one of the administrative zonal planning headquarters in Kaduna State under the Kaduna State Urban Planning and Development Board Authority (KASUPDA with authority to carry out planning functions in the designated urban area of which Zaria is also included. Zaria as a case study has four distinct units namely Tudun Wada, Sabon Gari, the Wall City and Samaru. These distinct units have experienced rapid growth in terms of density and spatial extent. As a consequence, some rural settlements have been engulfed and some are on the process of being encroached upon by Zaria Urban Development.

This study seeks to probe into this phenomenon of encroachment and the problems faced by the rural settlements. The understanding obtained would form the basis for formulating physical planning solutions to the problems.

1.20 AIM

The aim of this study is to examine the growth pattern of Zaria Urban Area and its consequences for the surrounding rural settlements.

This will be pursued through the following objectives:

## 1.30 OBJECTIVES

1. To review the process by which rural settlements near urban areas are encroached upon as well as the factors responsible for it.
2. To examine the structural analysis of Zaria urban area as contained in the Zaria Master Plan and identify rural settlements within the urban area.
3. To examine the physical characteristics of rural settlements as well as the socio-economic conditions of the inhabitants.
4. To review the various physical planning strategies for the development of rural settlements at the nearby urban centre.
5. To make planning proposals for the settlements and recommend policies and administrative framework for implementing the proposals.

## 1.40 SCOPE AND LIMITATION

The study of any town and its surrounding rural lands strive to create interest in their planning, construction and implementation. The study covers some rural settlements their characteristics and socio-economic condition of the residents. It also deals with the encroachment of rural settlements. Some information

obtained on the field will not be quantified but based on description only. Also, a variety of planning standards from various consultant works are identified with an ultimate aim of arriving at a minimum standard for the design purpose.

Therefore, all proposals made in this study shall be limited to curative and preventive physical planning measures as well as some administrative strategies for the implementation of the proposals.

The study is limited to a new structural concept for Zaria Urban area without any detailings.

## 1.50 METHODOLOGY

The data used in this study was collected from the following sources:

1. **Primary Sources:**
   a) Administration of questionnaires.
   b) Survey of physical characteristics based on observations.
   c) Formal and informal interviews with village heads and officials of the town planners in Zaria.
2. **Secondary Sources:**
   a) Literature on subject.
   b) Review of official documents.
   c) Evaluation of maps and diagrams.

## 1.60 SAMPLING METHODS

In the field survey, two sets of questionnaires were used:

(a) A socio-economic questionnaire.

(b) A village survey questionnaire.

The socio-economic questionnaire was administered in 16 villages in the study area. Five percent sample size was chosen and a simple random sampling method was used in selecting the respondents and the household was the sampling unit. The village questionnaire was applied in the settlements which formed the basis of study of the physical characteristics. The two types of questionnaire were analysed manually and cases of frequencies of response were identified and used in arriving at some conclusions.

## 1.70 THESIS STRUCTURE

The first chapter of the thesis deals with the statement of problems, scope and limitation of the study and research methodology.

Literature review which serves as the theoretical base of the thesis as well as the review of some physical planning strategies form the second chapter.

The third chapter is concerned with the identification of the study area, by using some parameters of growth such as growth intensity, development continuity, accessibility and the provision of facilities, utilities and services. This chapter also deals with the factors responsible for sub-urban encroachment, the spatial patterns, physical and socio-economic characteristics, functional relationships of urban area with rural lands, as well as the physical planning administration of rural settlements also form part of this section.

Inferences drawn from this section conclude this chapter.

Finally, planning proposals and implementation form Chapter Four of the thesis.

## CHAPTER TWO

## 2.00 FACTORS RESPONSIBLE FOR AND THE PROCESSES OF SUB-URBAN GROWTH: A LITERATURE REVIEW

### 2.10 THE CONCEPT OF SUB-URBAN GROWTH:

Though city growth and its associated problems have been the central focus by planners, little attention has been paid to the growth of sub-urban areas. In developed countries, problems of such areas are taken care of by the enforcement of development control. In Developing countries, the absence of effective control result into sub-urban areas growing into chaotic mess. The problem is further compounded by the excessive pull of metropolitan centres attracting large number of migrants into them. These migrant population finds a suitable abode mainly the in suburb areas of urban centres. The literature available in this regard is not much as the problem relates more to developing countries where documentation and publications are less extensive.

### 2.20 SUB-URBAN GROWTH: DEFINITION AND DELIMITATION

"Suburban" and urban fringe are two terms mostly used by scholars interchangeably referring to the same feature of physical growths at the edges of urban areas. Others terms often used which have connection with this same area are: rural-urban fringe, urban shadow, urban

periphery and commuting zones. These terms are at times confusing in their usage and delimitation. To resolve the confusion, Russwurm (1961) observed that "four zones contribute to the outward expansion of cities: the suburban zone which is actually part of the built-up city proper; the commuting zone which is very extensive (up to 58km) workshed and which includes the urban fringe and urban shadow zones. The later according to him occupies largely rural space beyond the fringe. He therefore defines urban fringe as "the key inner area of urban invasion of residential, commercial and other associated landuses".

Cater (1980) in his submission sees suburban area as "an area with distinctive characteristics which is only partly assimilated into the growing urban complex, which is partly rural and where many of the residents live in the country, but are not socially and economically of it."

Thomas (1974) identifies "suburban area" as a zone of mixed landuses elements and characteristics in which rural activities and modes of life are in rapid retreat and into which only residential but also commercial, educational, recreational, public services and others are largely extensive uses of land are intruding. He argued further in a land use and also

in an administrative sense too, the area is only partially assimilated into the growing urban complex.

2.21 SETTLEMENTS SURROUNDING RAPIDLY EXPANDING CITIES:

With the explanation of the concept of suburban growth and the understanding of terminologies associated with this region, it is important to know what suburban growth connotes. This can be explained as various human activities taken place at the suburb of urban centre. These are expressed in various land uses in terms of their scale, intensity and disorderliness. In 1961, the Greater London Conurbation had an area of 722 square miles, with a population of 8,152,000, in the zone beyond the original five mile wide Green Belt; that is, between twenty to forty miles from Central London existing towns and villages had been engulfed and new towns had grown out of villages into major urban centre (Hall, 1966). Hall further explained that, towns like Guildford and Reading had become part of Greater London and that these small towns had grown in the way they always grow not as part of a single sprawl urban mass, but as separate entities each with its own individuality.

Nigeria had been no exception to the concentration of population in large urban centres with consequent loss of surrounding countryside. Cities like Lagos, Ibadan, Kaduna, Kano and some others have been growing

in size at the expense of their respective country-side settlements. One expression of the expansion of lagos for instance is that, in 1885 Lagos settlement was confined to Lagos Island while in 1972 Lagos metropolitan area included the city of Lagos Island and the neighbouring districts were located within a distance of seventeen miles from the city (Abiodun, 1966). Abiodun concluded that with increase in the population resulting to the physical expansion of Lagos, today, Greater Lagos has engulfed many neighbouring villages among which are Ikoyi, Victoria Island, Yaba, Apapa, Ajegunle Mushin, Oshodi, Ikeja, Agege to mention but a few. These sub-urban settlements have become one big metropolis with an estimated population of more than 2 million. In other words, there had been a systematic loss of agricultural land at the suburb as well as the settlement engulfed by Lagos. The sprawl of Lagos has caused such physical problems as traffic congestion, slums, and squatter settlements resulting to inadequqte supply of facilities, services and utilities.

## 2.22 THE CONCEPT OF FUSION OF SETTLEMENTS AROUND AN EXISTING SETTLEMENT

This concept generally entails the expansion of urban or rural settlements with a view to accommodating surrounding scattered villages. In this situation,

the new settlement is seen evolving as a result of addition into the urban settlement. Here, the urban component parts including the transport network are expanded to balance the growth, and consequently changes the form as well as the size of the urban area (settlement).

As for the development of urban centre this concept provides two alternatives. Firstly, the centre of urban settlement could be developed or maintained. Secondly, rural settlements all together could be developed in an area outside the centre of the existing urban settlement. Several forces could stimulate consideration of this concept in the Nigerian situation where rural settlements are numerous and scattered. As much, this concept provide an avenue for rationalising rural settlement pattern, it would also facilitate the revival of declining settlements where facilities and labour are virtually under-employed.

Thus grafting of rural settlements as a result of fusion with urban settlements will restore the viability of rural settlements particularly those settlements noted to have suffered in the provision of facilities, services and utilities. The fusion of settlements, however is worth considering only when and where there would be no loss in values in relation to costs as compared with developing each settlement in isolation.

## 2.30 PROCESSES OF URBAN GROWTH ENCROACHING RURAL AREA

The process of urban growth begins at the inception of town growth. There is a tendency towards concentration of economic activities in a few areas of the city during the early stages of economic development. Some cities, because of the nature of their functions grow very rapidly. This alone create competition for land uses. Big industries, commercial, residential estates and educational institutions located in big cities required space for their development. Some of them require greater space than others. Some like the industries pollute the environment because of their special requirements, expanding cities take upland which may have been devoted to agriculture and settlements. These urban land uses might be due to preferential location or incidental. For instance, cemetries, military base, airport are some of the preferential locations while incidental uses might be squatter settlements. This stage continues until the growth of the built-up area encroaches rural land. Modifications of plots may occur before the suburb area is sealed off, but most modifications are attendants upon the changes of location that results from the enveloping of the suburb area by the outward growth of the built up area.

## 2.40 FACTORS RESPONSIBLE FOR URBAN GROWTH AND RURAL LAND ENCROACHMENT

Planning of cities and their suburbs result from the spatial growth of cities. Spatial growth of cities in turn originate from a number of factors which include the following.

### 2.41 Population Growth and Outward Spread of Cities:

The earliest cause of physical expansion of cities is increase in city population. Growth in population and its outward migration from the central areas of the city may result from natural increase in the city's population. A stronger cause of city population, of course is immigration. Among the known causes of migration, economic consideration appears to be dominant. Structural shifts in the economy and the attendant income disparities are good promoters of this trend. With the increase in population, there would be increasing demand for housing and other services. This would result to suburbanization.

### 2.42 Multiplier Effect of Existing Agglomeration:

As individuals are attracted to cities, so are industries especially when they discover possible economic advantages. Industries are often pulled to existing ones in order to take advantage of scale

economies. This consideration substantially adds to the physical sizes of cities which automatically in the long run result to rural land encroachment.

2.43 Speculation and Cost of Land:

Within the city itself, several factors promote physical expansion. Usually, rising price of land within the city centres forces potential developers to seek for alternative sites at the suburb. Coupled with speculation, a lot of developments occur at the city fringe and thus encourage further physical expansion because of the present of economic profits from such investments. Rural land are encroached upon as a result of the above factor. A case in point is the city of Ibadan. It was as a result of land speculation at the outskirt of Ibadan City Centre that villages like Moniya, Alegongo, Apata, etc where encroached upon and presently had become part and parcel of urban area.

2.44 Government Policies:

Government intentionally or unwillingly promote rapid physical expansion of cities through various policies. Such policies result in industrial location or relocation, within or outside the cities, the decentralization of other employment centres and the

provision of new housing estates, all of which contributes to the spatial growth of cities resulting to the encroachment of rural land.

2.45 Transportation Improvement:

The effects of the improvement of transportation help to promote the rapid spatial expansion of cities. It is now common knowledge that the construction of new roads, railway lines and other transportation routes facilitate rural land encroachment within the vicinity of urban area. Electricity, pipe water supply i.e. facilities and services are good promoters of rural land encroachment.

2.46 Nature of the Physical Landscape:

A good physical environment that support people is likely to experience rapid growth in population. Such physical factors include extensive vacant land that is easy to develope, water, soil fertility and the presence of mineral for exploitation. The growth of Jos and Enugu was due to the exploitation of mineral which created job opportunities to both foreigners and citizens of Nigeria. Population increase had led to the outward expansion of the two towns with a cheaper accommodation at the fringe with the resultant effect of the encroachment of their rural land.

2.47 Educational Institution:

Educational industry has not come about in isolation from other activities. Administration, commerce and transportation preceeded it, but education provide an impetus to the physical growth of cities. For example, the establishment of the University of Ibadan in 1948 provided an added impetus to the growth of Ibadan. The desire for better housing accommodation by some University workers and migrants into Ibadan has resulted to Ibadan physical expansion. Rural settlements such as Ojoo, Apata, Moniya, etc are at present been encroached upon by Ibadan and eventually overtaken by physical development.

## 2.50 PLANNING STRATEGIES ADOPTED IN DIFFERENT CITIES OF THE WORLD

It is accepted that growing urban centres expand into their rural lands. Thus bringing rural settlements into position of disadvantage within the urban area. Therefore the strategies mostly are considered in terms of integrating rural settlements into the urban fabric. The strategies evaluated are taken as distinct from growth control strategies which are concerned with aspects beyond the scope of this study. The strategies are drawn from the field of practice both in Nigeria and other developing countries like India. The following strategies are considered:

1. Integration
2. Relocation or resettlement
3. Special Zone or Red Boarder Area
4. Bye-Pass
5. Guided Strategy.

2.60 Integration of villages with the expanding town:

This refers to physically, socially and economically merging of the villages with the expanding urban pattern and structure. The examples of such merger are villages like Kawo, Kakuri and Barnawa on the outskirts of Kaduna which have now merged with the expanding town. In the case of Lagos, Ikeja, Agege, Shongunle, Oshodi, Mushin and other smaller towns and villages have merged with metropolitan Lagos. Such a merger call for shift in occupation of villagers from agriculture to secondary and tertiary sector.

2.61 Implementation of Merger:

The implementation of this strategy involves the provision of basic facilities and amenities i.e.

(i) Widening and upgrading of transportation and circulation within settlement and to settlement from urban centre.

(ii) Provision of Health Services or Centre, Primary school and recreational facilities such as playgrounds.

(iii) Provision of water lines and power services.

(iv) Commercial area or shopping centres or market and where necessary a police station, etc.

The provision of the above would enhance the image of urbanity acquired through location and occupation. Thus, rural settlements blends smoothly with urban mass and the two components become one. This strategy is applied to rural settlements that display a high degree of urbanity. The strategy has advantages and disadvantages.

2.62 There are several advantages of integration. These include:

(a) **Physical;** The settlement remain and become part of the urban centre. Thus, the adoption of urban ways is enhanced. Also, the cost of displacement is resolved, once the settlement is part of the urban centre.

(b) **Economic;** The settlers are integrated into the urban employment stream, getting absorbed in industries, the formal sector and public sector. This also provides an increased pool of labour for the urban centre to draw from. The compensation that comes to the villagers for the loss of agricultural lands may provide starting-off

money for integration into small scale business thus widening the economic base of the urban centre.

(c) Social: The merger strategy brings villagers into contact with various other peoples cultures and urban services. The merger of the settlement also enhance social cohension since the communities remain as a unit within the urban centre.

2.63 Integration has disadvantages also. These are:

(a) Physical; The settlements possess a distinct physical character which may form low quality areas within the urban area. Also, as residents of these settlements are mainly low income earners, the degeneration which may result from merger may create slums within the urban fabric. This usually brings negative responses from urban planning authorities concerned with environmental quality. This is usually the case at the initial stage of merger.

(b) Economic; The loss of agricultural lands may lead to unemployment. The high agricultural dependence makes it difficult for some residents of rural or sub-urban settlements acquired urban occupations. These two factors, loss of land and unemployment force these residents away from the settlement due to inability to change occupation.

(c) **Social;** The exposure of the settlements to allien culture and values may produce cultural conflicts and negative responses generating animosity between them. The injustice to which the people are exposed too, in terms of urban inequality and political economy of the urban centre may encourage crime and other anti-social behaviours.

## 2.70 RESETTLEMENT OR RELOCATION STRATEGY

This strategy has been widely applied in Nigeria. It has mainly been associated with the displacement of people as a result of the construction of dams and other development projects. This strategy involves the removal of people from one point to another. Bridger (1962) defined resettlement as "the transfer of population from one area to another on a planned basis, the objective being to raise the standard of living." This is found to have three possibilities for rural settlements around growing urban centres. Eke (1978) identifies these as:

(i) Relocation within the urban limits.

(ii) Relocation on the periphery of urban area.

(iii) Relocation away from urban influence.

2.71 Relocation Within Urban Limit:

This possibility entails relocating settlement from areas of conflicting landuse to areas of compactible landuse within the limit of urban area. Thus, the settlement is relocated with regard to the development plan of the urban centre.

2.72 The advantages of relocation of settlements within urban area include:

(a) **Physical;** Compactible landuses are joined together (i.e. residential and recreational landuses) and the settlement develops on a planned basis from the onset, with necessary facilities, utilities and services.

(b) **Economic;** Villagers provide urban centre with labour and the urban centre provides opportunities which exist within the framework of the urban area.

(c) **Social;** The village is able to remain as a social unit within the urban area, maintaining the culture and traditions.

2.73 The disadvantages of relocation of settlements within the urban area is:

(a) **Socio-cultural;** Certain ties associated within a particular settlement site of historical or cultural significance may be lost.

2.74 Relocation on the Periphery of Urban area:

This involves relocating settlements on periphery of the declared urban area. The advantages of relocation on the periphery of urban area are:

(a) **Physical;** The relocated settlements retain their rural and individual characteristics. The vacated site of settlement is made available for urban landuse.

(b) **Economic;** The agricultural economic base is maintained as the settlements are not in immediate danger of loosing land. Also settlement is still close enough to urban centre to retain former trading ties with urban centre.

2.75 The disadvantages of relocation at the periphery of an urban area include:

(a) **Physical;** The future growth of urban centre may similarly affect the relocated settlement and problems reoccurs.

(b) **Economic;** Cost of compensation to be paid to settlements to be displaced may be high and unaffordable to urban authorities.

(c) **Social;** The relocated villagers may drift back and become squatter with urban centres.

2.76 Relocation away from Urban Influence:

This possibility involved moving the affected rural settlement into areas beyond the direct urban influence outside the declared urban area.

2.77 The advantages of relocation away from urban influence are:

(a) Physical; The relocated village is located from urban pressure and influence for a long time to come.

2.78 The disadvantages of relocation away from urban influence are:

(a) Physical; The villagers may not wish to be so far away from urban centre and the drift of settlements towards urban centre may result in squatter settlement.

(b) Economic; Marketing and trading advantages derived by being near urban centre may be eroded by distance which may contribute to abandonment of resettlement site.

## 2.80 SPECIAL ZONE STRATEGY

This strategy is drawn from urban planning in India. The strategy is based on the premise that, some settlements within the urban area require special attention and protection from the effects of urban growth as their stage of development is not advanced enough to survive as a unit the effects of urban growth on the settlement.

The strategy is also used for selective preservation of elements of settlement that are of historical and cultural significance. Any area or element put under special zone strategy is also referred to as "a red boarder area." This has also been termed as conservative strategy. This strategy operates within the broad framework of urban planning standards. There are specificationsto be followed in the execution of any development activity. These relate to:

(a) **Building Standard:**

i) Minimum space requirements

ii) Material Used

iii) Services to building

iv) Ventilation, drainage and floor area ratio

(b) **Environmental Quality Standards:**

i) Refuse Disposal

ii) Drainage

iii) Trees and Other Plants

(c) **Circulation Standards:**

i) Minimum width of roads

ii) Right of way

iii) Building lines.

(d) Land Use: Together above form the basis urban standards applied or to which development must adhere to. However, while these same criteria will be applied in rural settlements the specification would be much less stringent. The standard applied to each settlements are drawn up based on the wishes and aspirations of the inhabitants of each settlement in conjuction with the planning authority. Thus, the application of this standards may be agreed upon for specific periods of time, usually 3-5 years or even longer. The settlement is brought to part with the urban centre. At the end of each period, a new set of standards are applied. Thus the process continuous until the settlement is completely integrated with the urban centre.

The strategy has the following advantages and disadvantages.

**2.81** The advantages of special zone are:

(a) **Physical;** The settlements are able to retain their character and identity without pressure from urban landuses. Thus, the settlement would otherwise not have met urban standards but can be protected.

(b) **Economic;** The people of the settlements are able to carry on their activities. Also they are able to remain within the urban area as low income earners. It also encourages the intensification of production techniques within the settlements.

(c) **Social;** It maintains the social and cultural identities while allowing for the gradual adoption of urban ways within a familiar environment. The settlement is also protected from the influx of migrants as land acquisition is very carefully monitored.

**2.82** The disadvantages of Special Zone Strategy are:

(a) **Physical;** The application of this strategy on a settlement requires that, the settlement developed at its own pace. This produces the much lamented lack of aesthetic quality that characterised rural settlements or settlements "not modern."

(b) **Social;** The settlement may not be socially isolated and the process of integration may be only physical.

## 2.90 BYE-PASS, GUIDED GROWTH AND GREEN BELT STRATEGY

(i) For want of a better name, this strategy is called bye-pass. This may be deemed a corollary of the special zone strategy. The difference being the specific actions attached to the special zone strategy. The bye-pass strategy being distinct for its lack of action. This strategy simply involves planning around an existing rural settlement with the settlement deriving no benefits whatsoever. This strategy has been widely used in northern Nigeria especially in Bauchi, Borno and Gongola States. This is not a real strategy since it achieves nothing for the rural settlement. As such, it has no advantages for rural settlement.

## 2.90 GUIDED GROWTH STRATEGY

(ii) The strategy involved making advanced plan for communication in future development zones. Guided growth strategy can readily recommend itself to developing countries particularly from the economic point of view. To layout in advance, sufficient land area in planned network for a city's future road system is very good where the government is capable of paving the roads at once. This will guarantee an orderly spatial growth of the city and ease in the provision of

basic infrastructure along the defined routes in future when resources for such undertaken are available. However, this require a lot of energy and necessary tools to implementation.

The strategy above originated from advanced countries where physical planning has been part of the city development for quite decades. Therefore, their direct application to third world countries will meet with some difficulties some of which are: functionality, Adaptability, Cost, Appropriateness to city expansion and Administration.

(a) **Functionality:** This refers to the functional ability of the strategy to solve the problems at hand. It must be convenient, flexible and gives maximum accessibility to all components in a city.

(b) **Adaptability:** It is the successful application or realization of the strategy considering the prevailing conditions and circumstances in a given set. Factors affecting adaptability could be physical characteristics of the areas, the limited available land, the complexity and requirements of the strategy or other factors like policy or machinery control.

(c) **Cost;** This refers to the cost interms of money, existing structures, etc that would have to be sacrificed before the strategy could be implemented.

(d) **Acceptability:** This relates to the people for whom the strategy is intended. The people will relate the strategy, the sacrifices to be made before it is realised, its characteristics in terms of their values and their socio-cultural setting.

(e) **Appropriateness to city Expansion and Administration:** This relates to the growth rate of a city and ability of the strategy to be able to meet up with the rate. Experiences have shown that most of the existing strategies are cut up on the way by city growth before they are implemented. Another consideration relates to administrative machineries, manpower and expertise.

2.90(iii) Green Belt Containment Policy:

Containment policy was devised by British planners to restrain the lateral growth of London Conurbation. One of the tools of achieving growth control used in this method was to establish a green belt around any affected city within which building activity could be controlled. It involved the use of force in restricting the spatial growth of cities.

## CHAPTER THREE

## 3.00 SUB-URBAN SETTLEMENTS OF ZARIA TOWN

### 3.10 THE STUDY AREA

### 3.11 LOCATION OF ZARIA

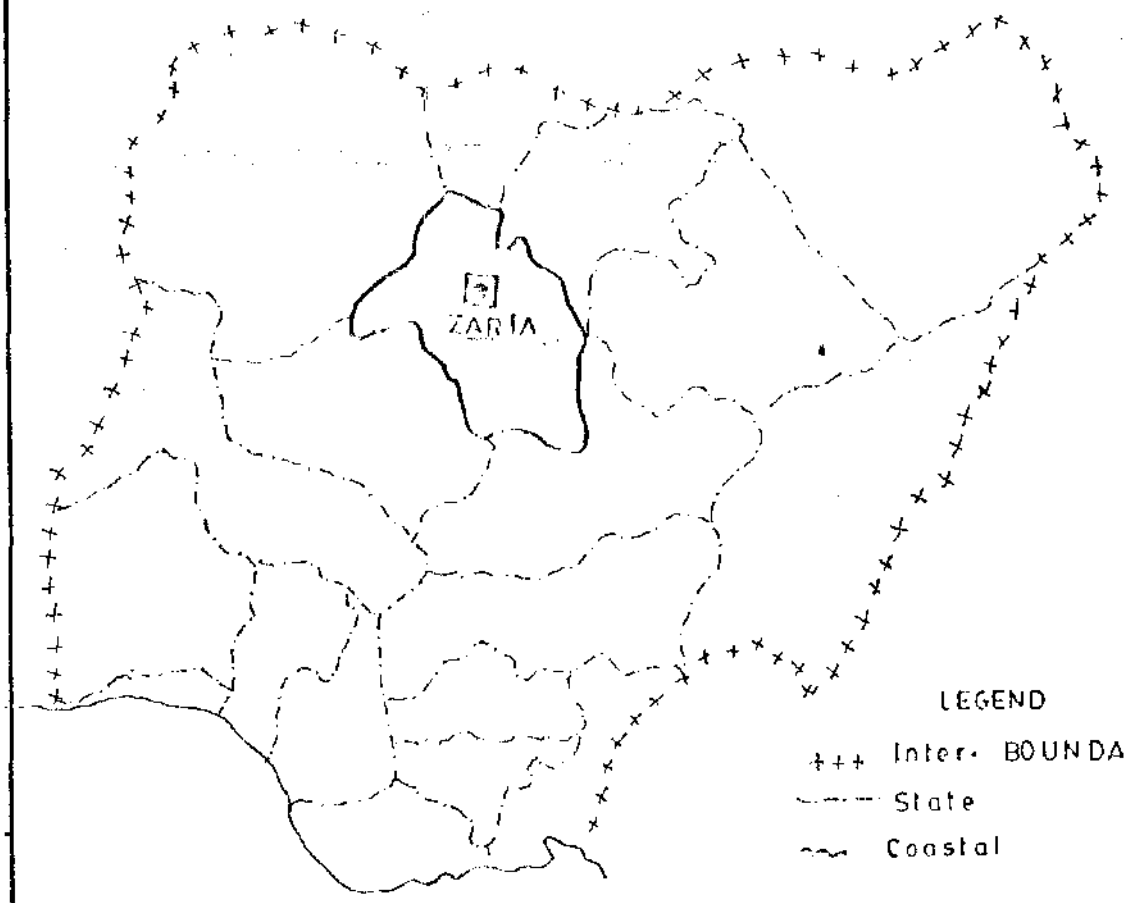
Zaria is situated in latitude $11^{o}04'N$ and $17^{o}42'E$ on the west bank of River Galma, a southerly flowing perennial tributary of the River Kaduna which is itself a tributary of the River Niger. The River Jaye and the River Lubanni are both easterly flowing seasonal tributaries of the River Galma. The Zaria area is generally flat and Zaria is situated on part of the Hausa plains of Hausaland which are here at about 670m above sea level. A number of inselbergs rise up this general level of which the most notable are Kufena (821m), Turunku (797m), the Parakwai Hills (810m) and Hange Hill (746m). The major upstanding hills are portion of basement complex compose of more resistant rocks such as gneisses, granites and quartzites. The 670m level is now being cut into by various streams, including Galma upon which Zaria stands.

According to the Kopen System of Climatic classification, the Zaria area falls into AW type, but towards the drier limit of the class. This means that, the area is distinctly tropical with monthly mean temperature falling below $18^{o}C$, with a marked dry season from November to March and a tendency towards

an August or September maximum of rainfall. The rainfall fluctuates considerably from year to year, from the long term (1928 - 1990) mean figure of 1058.6mm (See Table 3.1).

Zaria area has therefore a rainfall adequate for the growth of many crops in most years but the variation in the rainfall pattern from year to year makes the planting date of critical importance. The climate of Zaria area places it within the northern Guinea vegetation zone. The daily maximum temperature rises gradually from 21.9°C and attain its highest peak in April when some days have temperature as high as 35.8°C (See Table 3.3). Relative humidity is high during the early hours and low at noon. The relative humidity in Zaria continue to decrease by 81.4% in August to 75,9% in September (See Table 3.2). The orientation and design of buildings are greatly influenced by wind speed and direction.

Wildlife add colour, form and movement to the landscape. Existing wooded areas are inhabited by wildlife, may be preserved as parks, mammals, birds, reptiles, amphibian and some insects needed wooded areas to hide. Among the commonest animals in the region are Sokoto red goat, white sheep, etc; termites are scattered all over the area.




LOCATION OF ZARIA IN NIGERIA

Fig. 3.1

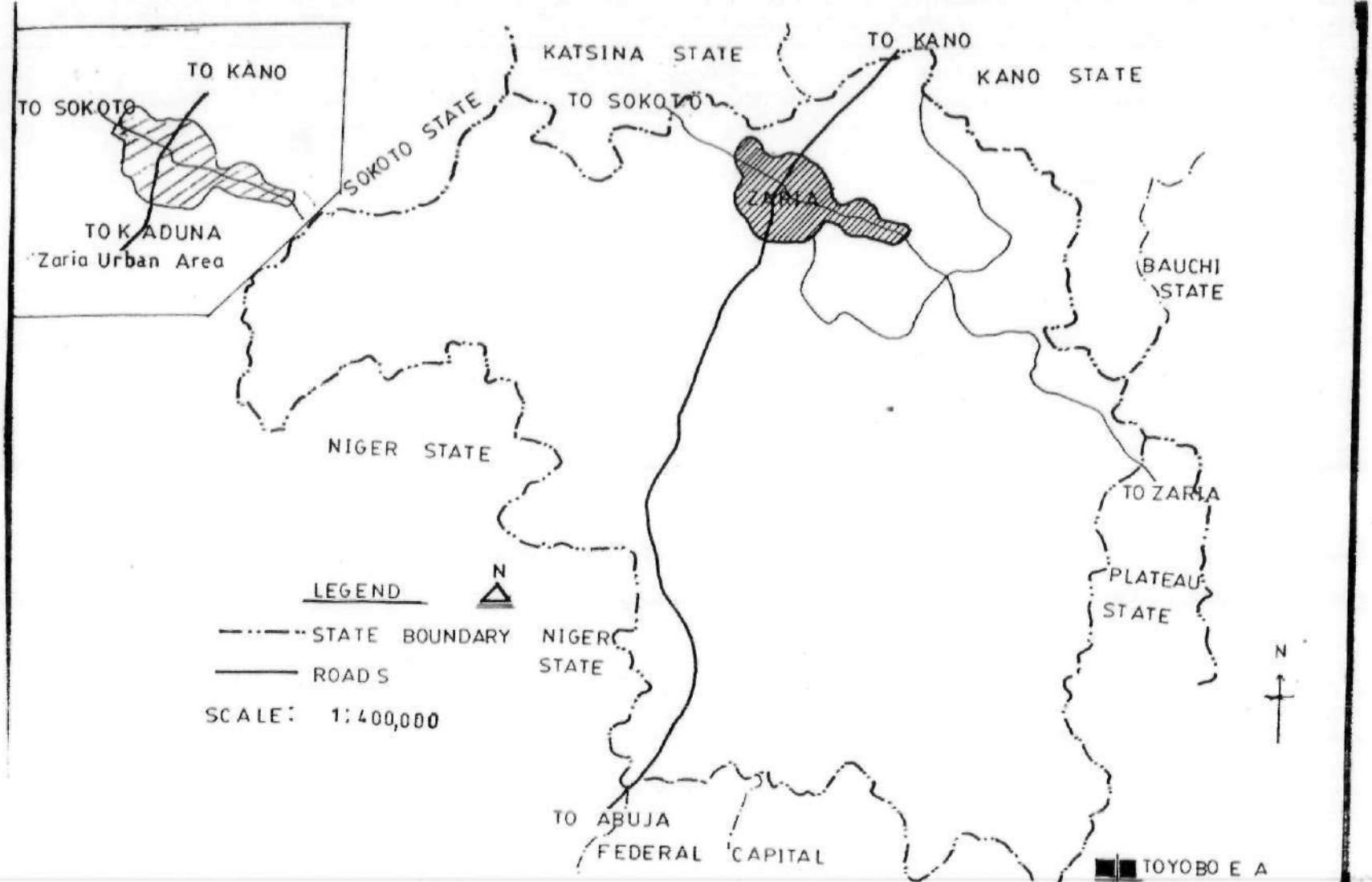
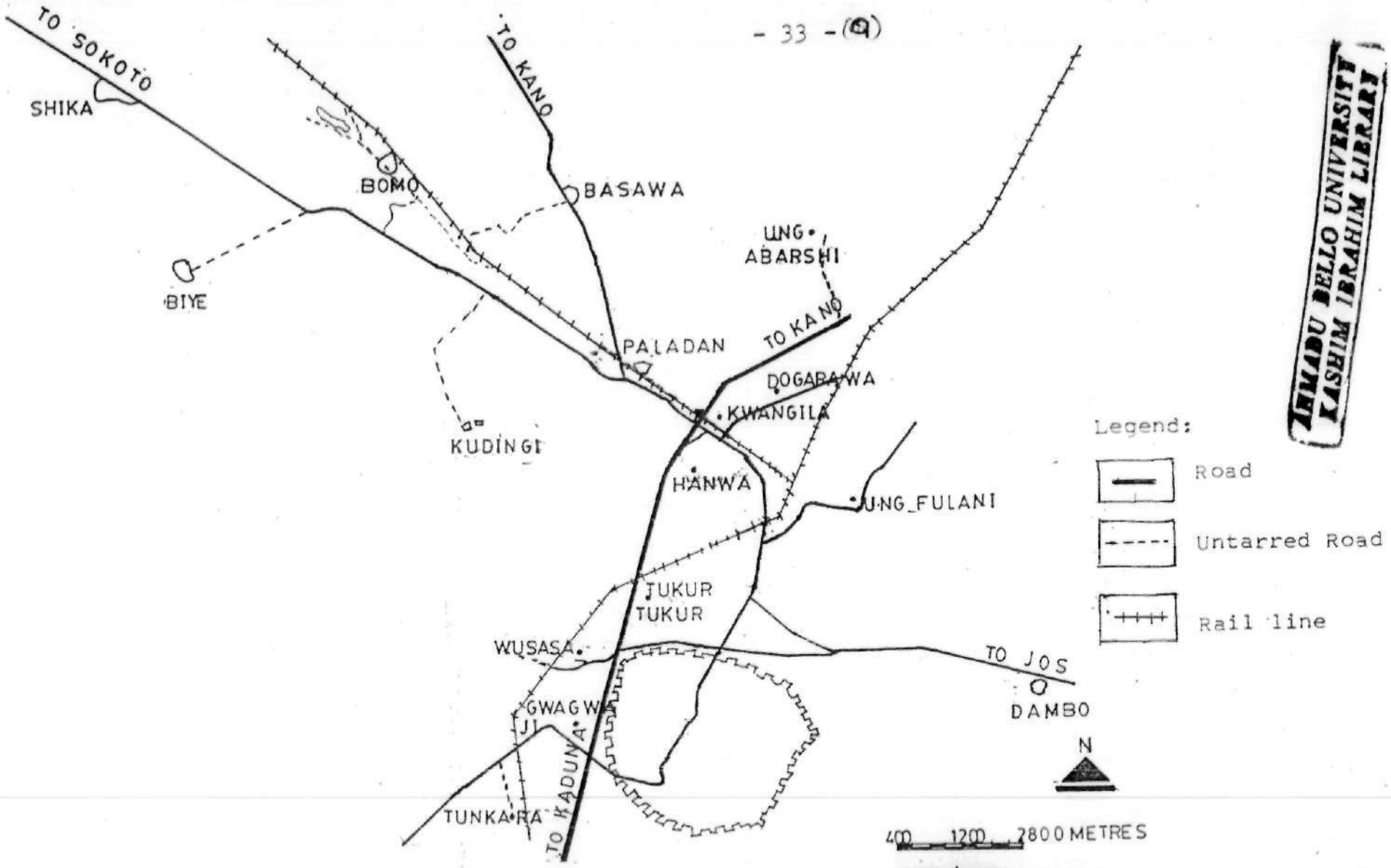



FIG: KADUNA STATE OF NIGERIA

Source: KASUPDA (1991)




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KASHIM IBRAHIM LIBRARY

FIG. 3.2 ZARIA: LOCATION OF STUDY AREAS

**Table 3.1:**
Mean Monthly Rainfall in Samaru During the Period of 1928 - 1990

| Months | Rainfall in mm 1928 - 1990 | Rainfall in mm 1990 |
|---|---|---|
| January | 0.1 | 0.0 |
| February | 0.9 | 0.0 |
| March | 6.1 | 0.0 |
| April | 35.1 | 0.0 |
| May | 119.2 | 123.3 |
| June | 153.8 | 155.7 |
| July | 221.2 | 221.9 |
| August | 274.1 | 225.3 |
| September | 209.5 | 131.5 |
| October | 37.5 | 0.0 |
| November | 1.0 | 0.0 |
| December | 0.1 | 5.0 |
| TOTAL | 1058.6 | 862.7 |
| MEAN | 88.2 | 71.89 |

SOURCE: I.A.R. SAMARU (1991)

**Table 3.2:**
Mean Relative Humidity in Percentage: 1938 - 1990

| Months | 1938 - 1990 | | 1 9 9 0 | |
|---|---|---|---|---|
| | AM % | PM % | AM % | PM % |
| January | 18.2 | 14.4 | 17.9 | 13.6 |
| February | 15.3 | 11.3 | 13.1 | 10.1 |
| March | 25.2 | 14.7 | 9.1 | 9.0 |
| April | 45.6 | 27.5 | 45.9 | 23.0 |
| May | 63.4 | 43.2 | 68.5 | 50.5 |
| June | 72.8 | 57.3 | 75.8 | 60.7 |
| July | 70.9 | 66.3 | 80.4 | 65.5 |
| August | 81.7 | 69.8 | 81.4 | 66.6 |
| September | 76.1 | 63.5 | 75.9 | 62.2 |
| October | 58.8 | 42.9 | 58.8 | 46.8 |
| November | 27.9 | 21.1 | 31.0 | 26.4 |
| December | 21.2 | 16.9 | 26.2 | 20.5 |
| MEAN | 48.8 | 37.4 | 48.7 | 37.9 |

SOURCE: I.A.R. SAMARU (1991)

**Table 3.3:**

Mean Monthly Maximum and Minimum Temperature in $^{o}C$: 1938-1990

| Months | Minimum Temperature | Maximum Temperature | Mean |
|---|---|---|---|
| January | 21.9 | 30.0 21. | 21.9 |
| February | 24.2 | 32.5 | 24.2 |
| March | 27.4 | 35.8 | 28.4 |
| April | 28.7 | 35.8 | 28.7 |
| May | 25.5 | 30.7 | 25.5 |
| June | 25.5 | 39.7 | 24.0 |
| July | 19.5 | 28.5 | 24.0 |
| August | 19.2 | 27.9 | 23.6 |
| September | 19.1 | 29.4 | 24.2 |
| October | 17.6 | 31.3 | 24.7 |
| November | 15.2 | 31.5 | 23.3 |
| December | 13.6 | 30.1 | 21.9 |
| MEAN | 21.6 | 31.3 | 24.7 |

SOURCE: I.A.R. SAMARU (1991)

## 3.12 HISTORICAL BACKGROUND

Zaria or Zazzau as the pre-Jihad state was called, is said to be one of the original seven "Legitimate" Hausa States. The earliest settlements in the area were on inselbergs, which provided defence and probably a better water supply. In the Zaria region, this sort of settlement began at Kufena and Turunku, with defensive walls in existence by about the beginning of the 15th century. By the early 16th century, the emir of Zazzau had began to extend their territory, expanding to the west and south, where there was little organized opposition. The relation of Zazzau with its northern neighbours are more obscure.

Zazzau's physical expansion during this period and the network of relations established yielded greatly increased wealth derived from war booty and from trading centre, with routes converging from the far west, from Bornu, Nupeland, Yorubaland and from the lower Niger. The next epoch in the history of Zaria was the Fulani Jihad led by Usman Danfodio. With the coming of the colonialist, some changes were brought in virtually to all aspect of human life. The pattern of settlement or urban development was no exception. In Zaria, the first phase of the colonial township was laid out during 1903 - 1905, north of Kubanni River and over 3 kilometres

distance from the old city. The offices of government and associated Government Residential Area (GRA) were all placed here. Later came Sabon Gari occupied mostly by people from southern part of Nigeria. Tudun Wada was established around the year 1910 and it came to be occupied by people from different parts of northern Nigeria. Then Samaru became the nucleus of the Agricultural Research Station, established in 1925; (See Figure 3.3; Growth Stages of Zaria).

## 3.13 POPULATION

Zaria is the second largest city in Kaduna State. However, during the precolonial era, the natural population was very low because of the inter and intra tribal wars. The population of Zaria was estimated in 1975 to be 176,000 persons. Applying a 6.23% annual growth the department of Urban and Regional Planning, Ahmadu Bello University anticipated Zaria population to be 435,733 in 1990 and over ¾ million by the year 2000. Zaria has rapid immigration over the years with increasing birth rate and low death rate due to availability of medical services. At present the total population of the suburban settlements under study is estimated at 72,100. Table 3.4 shows the population growth for each settlement as well as the rate of growth. Table 3.5 shows the gross area in hectares for each settlement. The population for each settlement have been projected from 1991 to 2000 years based on their growth rate (See Fig. 3.4).

## THE PHYSICAL GROWTH OF ZARIA

The morphology of the urbanized area of Zaria can be generalised in terms of pre-colonial (traditional), colonial (1900 - 1960), post-colonial phases (1960 to date). The smaller settlements which exist in various locations together with the old city, constitute the Zaria urban area (see Figure 3.3). Transportation system have been in parts responsible for Zaria physical growth and to a large extent this has important effects upon the surrounding rural settlements.

The physical setting of the present day human settlements of Zaria Urban Centre consists of four districts: Zaria City, Tudun Wada, Sabon Gari and Samaru.

Pre colonial (traditional) Zaria City which lies to the north of the urban area is the oldest and the traditional settlements of the indigenes. The walled city has served as a political, administrative and market centre for several hundred years. The chief physical expression of these functions are the walls, roads, market place, the mosque and the rulers compound. Evidence shows that there are other smaller walled units each more extensive and thus representing sector focal points. The Madarkaci wall was joined by an extensive wall which enclosed much good farm-land and was maintained into the 19th C. The Kona wall was partially incorporated by a much larged wall built outside and parallel to the Madarkaci wall. The present city wall

was maintained even after the British arrival.

Colonial era (1900 - 1960 : After the British occupation of Zaria in 1902, a government station was built three kilometres to the north of the old city. This station was followed by the establishment of Sabon Gari and the settlement of Tudun Wada in 1912 and 1914, respectively. Due to the colonial strict racial segregation, these last two settlements were built for and occupied by African labourers while the Government station with its residential area (ERA) was inhabited by Europeans. In 1925 an agricultural station was established at Samaru about 12 kilometres northwest of the old city which later expanded rapidly following the foundation of the Nigerian College of Arts, Science and Technology that was subsequently transformed into Ahmadu Bello University. The encroachment of rural settlements was in the form of loosely joined built up area from Tudun Wada to Sabon Gari while development is linearly along Zaria Sokoto road to Samaru Village. Kwangila and Paladan are among the settlements partially encroached upon (See Fig. 3.3).

Post Colonial era: Based on the physical growth of Zaria Urban Centre, the post colonial era in terms of rural encroachment is categorised into two:

Between 1960 - 1972, the physical expression of Tudun Wada, Sabon Gari and Samaru was firmly stamped on the land scape that subsequent developments have not erased them.

The spatial growth of Tudun Wada to Tukur Tukur village was partly due to Barewa College, the Ahmadu Bello University Teaching Hospital and also partly by social, cultural and economic factors.

Between 1972-1991, some rural settlements were encroached upon by Zaria town sch as Hanwa, Ungwan Fulani, Basawa, Wusasa, Gwarigwaji, Paladan, and Dogarawa, while some are on the process to be encroached upon. The factors responsible for the growth of Zaria vis-a-vis rural encroachment are: natural increase, health facilities, improvement of transportation system, education, economic and cultural factors. The south east and north western direction of Zaria City has remained in agricultural use, reflecting the relatively unchanging occupational structure of the city with a linear development along Jos road towards Dambo. Figure 3.3 shows the growth pattern of Zaria Urban area. It is assumed that future growth will be guided by a detailed comprehensive plan. Nevertheless, settlements such as Bomo, Abarshi, Dambo, Shika, Kudingi, Biyę and Tunkaran are on the process of encroachment. The separated needs of these settlements has created some forms.

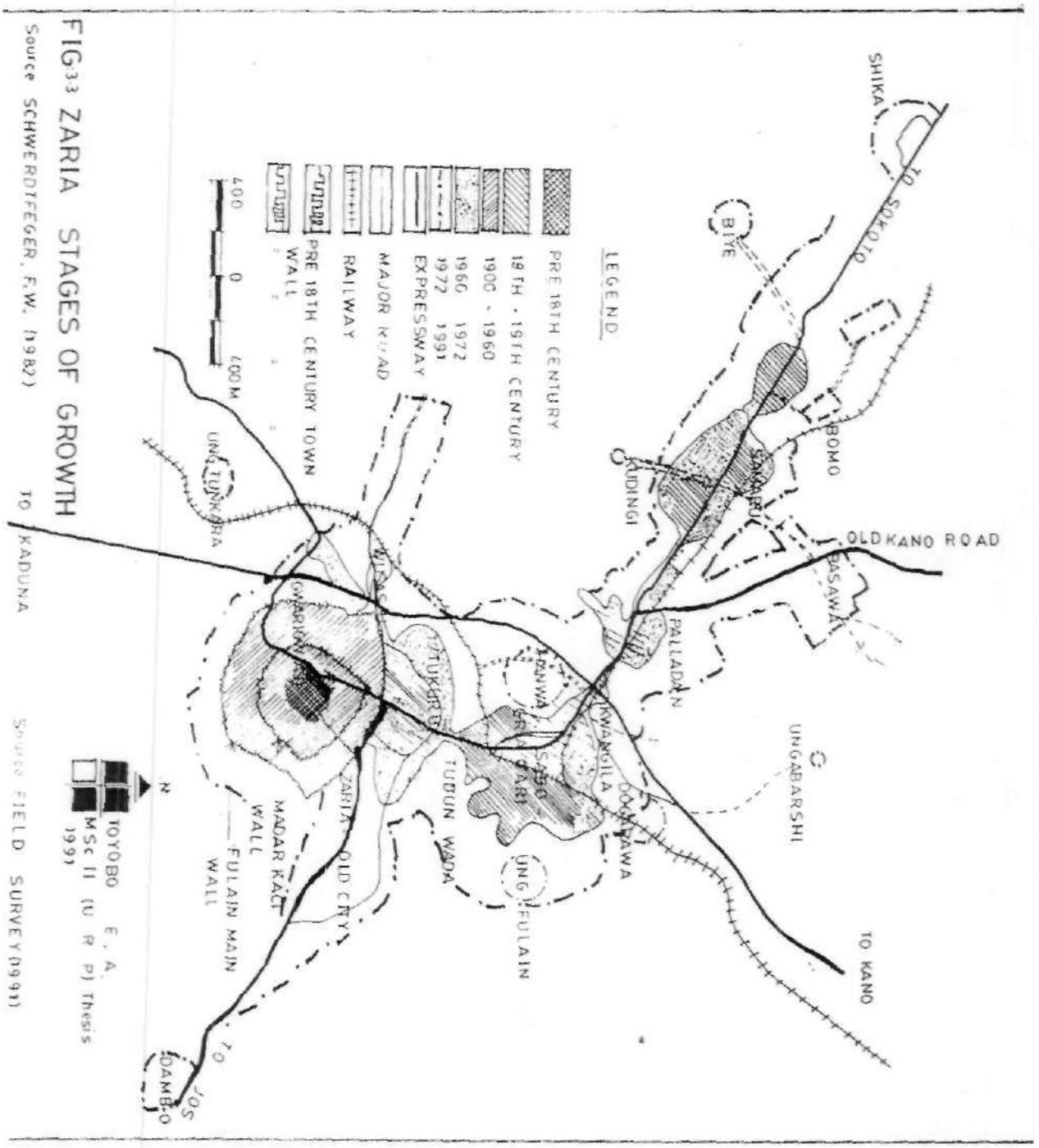



FIG 33 ZARIA STAGES OF GROWTH

Source SCHWERDTFEGER, F.W. (1982)

SOURCE FIELD SURVEY (1991)

**Table 3.4:**
Population of sub-urban settlements of Zaria Town:

1976 - 1991

| Settlements | Population Figure | | Annual Rate of Growth between 1976-1991 % |
|---|---|---|---|
| | 1976 | 1991 | |
| Palwan | 1646 | 3500 | 5.1 |
| Shika | 2596 | 4900 | 4.2 |
| Basawa | 2354 | 7000 | 7.5 |
| Wusasa | 2012 | 6300 | 7.5 |
| Dogarawa | 197 | 1400 | 13.9 |
| Hanwa | 3747 | 7700 | 4.9 |
| Bomo | 3719 | 5600 | 2.7 |
| Unguwar Fulani | 1206 | 4200 | 8 |
| Kwangila | 704 | 2800 | 9 |
| Gwarigwaji | 556 | 2800 | 11 |
| Biye | 255 | 4200 | 20 |
| Tukur Tukur | 5293 | 10500 | 4.6 |
| Tunkaran | 444 | 2100 | 10 |
| Dambo | 3719 | 5600 | 2.7 |
| Kudingi | 139 | 1400 | 16.5 |
| Abarshi | 294 | 2100 | 14 |
| | 28881 | 72100 | 6.2 |

SOURCE: FIELD WORK, 1991
Federal Ministry of Statistics
Year Book, 1991

**Table 3.5:**
Gross area in hectare and population density of Zaria Sub-urban settlements: 1976 - 1991

| Settlement | Gross Area (ha) | | Population | | Density pph | |
|---|---|---|---|---|---|---|
| | 1976 | 1991 | 1976 | 1991 | 1976 | 1991 |
| Paladan | 8.6 | 95. | 1646 | 3500 | 190.5 | 36.8 |
| Shika | 25.9 | 44.1 | 2596 | 4900 | 100 | 111 |
| Basawa | 21.6 | 89.6 | 2354 | 7000 | 109 | 78 |
| Wusasa | 18.4 | 90.7 | 2012 | 6300 | 110 | 69.5 |
| Dogarawa | 8.1 | 24.8 | 197 | 1400 | 24 | 56 |
| Hanwa | 20.5 | 93.7 | 3747 | 7700 | 183 | 82 |
| Bomo | 17.1 | 29.7 | 3719 | 5600 | 217 | 189 |
| Unguwar Fulani | 1.6 | 25.9 | 1206 | 4200 | 753.8 | 162 |
| Kwangila | 3.2 | 28.1 | 704 | 2800 | 220 | 100 |
| Gwarigwaji | 5.9 | 147.4 | 556 | 2800 | 94 | 19.0 |
| Biye | 2.7 | 18.9 | 255 | 4200 | 94 | 222 |
| Tukur Tukur | 22.7 | 147.9 | 5293 | 10500 | 233 | 71 |
| Tunkaran | 3.2 | 16.7 | 444 | 2100 | 139 | 126 |
| Dambo | 6.5 | 9.7 | 3719 | 5600 | 572.2 | 577 |
| Kundingi | 1.3 | 9.7 | 139 | 1400 | 107 | 144 |
| Abarshi | 2.7 | 5.4 | 294 | 2100 | 109 | 389 |

SOURCE: FIELD WORK

Table 3.6: Population Projection (1991 - 2000)

| Settlement | Projected population from 1991 - 2000 yrs | Assuming the same Growth Rate (%) |
|---|---|---|
| Paladan | 5429 | 5.0 |
| Shika | 7095 | 4.2 |
| Basawa | 13420 | 7.5 |
| Wusasa | 12078 | 7.5 |
| Dogarawa | 4516 | 13.9 |
| Hanwa | 11843 | 4.9 |
| Bomo | 7117 | 2.7 |
| Ung. Fulani | 83951 | 8.0 |
| Kwangila | 6081 | 9.0 |
| Gwarigwaji | 7163 | 11.0 |
| Biye | 21671 | 20.0 |
| Tukur Tukur | 15738 | 6.0 |
| Tunkara | 4951 | 10.0 |
| Dambo | 7117 | 2.7 |
| Kudingi | 5534 | 16.5 |
| Abarchi | 6829 | 14 |
| TOTAL | 123895 | 6.2 |

SOURCE: FIELD WORK, 1991

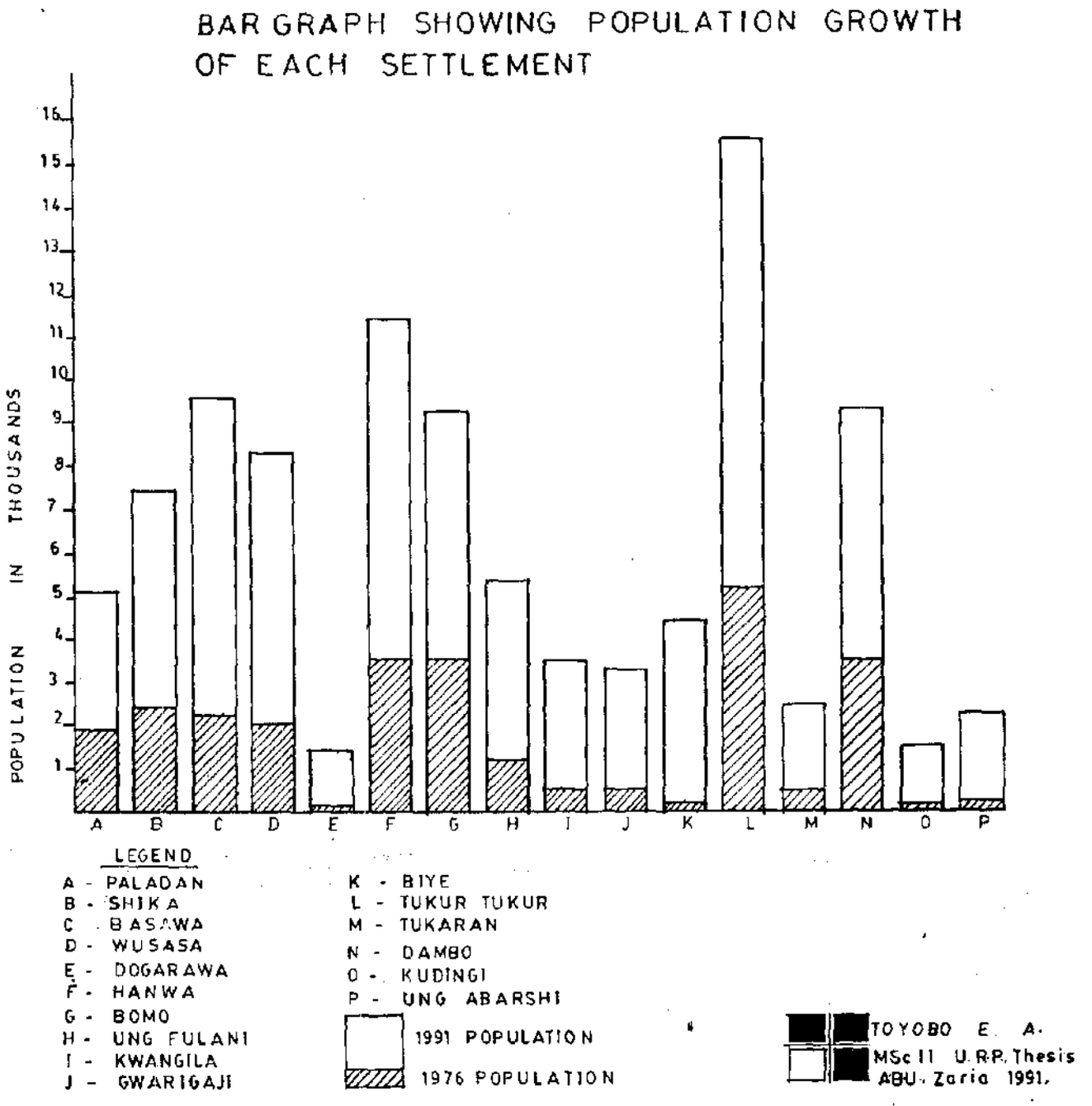



Fig. 3.4: SOURCE: FIELD WORK, 1991

3.15 Selection Of Settlements:

The study is focused on the encroachment of Zaria on sub-urban settlements. The parameters used for the selection of the settlements are: accessibility, location, building continuity, growth intensity and occupational patterns. The selected settlements are grouped into two:

Group I: Sub-urban settlements encroached upon by Zaria physical growth. They are:

Paladan
Hanwa
Kwangila
Wusasa
Tukur Tukur
Basawa
Dogarawa
Gwarigwaji; and
Unguwar Fulani.

Group II: Settlements on the process to be encroached upon in the future are:

Biye
Kudingi
Dambo
Abarshi

Shika;

Tunkaran; and

Bomo.

The characteristics of the settlements are discussed and the problems analysed with emphasis on settlements under encroachment. Proposals are made base on the outcome of the analysis of the study. The proposals serve as guidance for all settlements not yet encroached upon by Zaria.

## 3.20 STRUCTURAL CONCEPT OF ZARIA URBAN AREA

The overall structure of Zaria urban area as it is found in the Zaria master plan took the shape as shown in Figure 3.5. The Zaria master plan proposed a linear concept of development that should extend from the wall city up to the new teaching hospital along Funtua-Zaria road. The linear development to this direction was the establishment of Ahmadu Bello University. For development purposes, the structural concept would be enlarged in order to cover some of the settlements under study which are directly under the influence of Zaria. These settlements are: Basawa, Shika, Biye, Dambo, Abarshi, and Tunkaran. In this regard, there is a need for a new structural concept for Zaria urban area to cover some of the settlements under study. No detailed analysis are given about the concept.

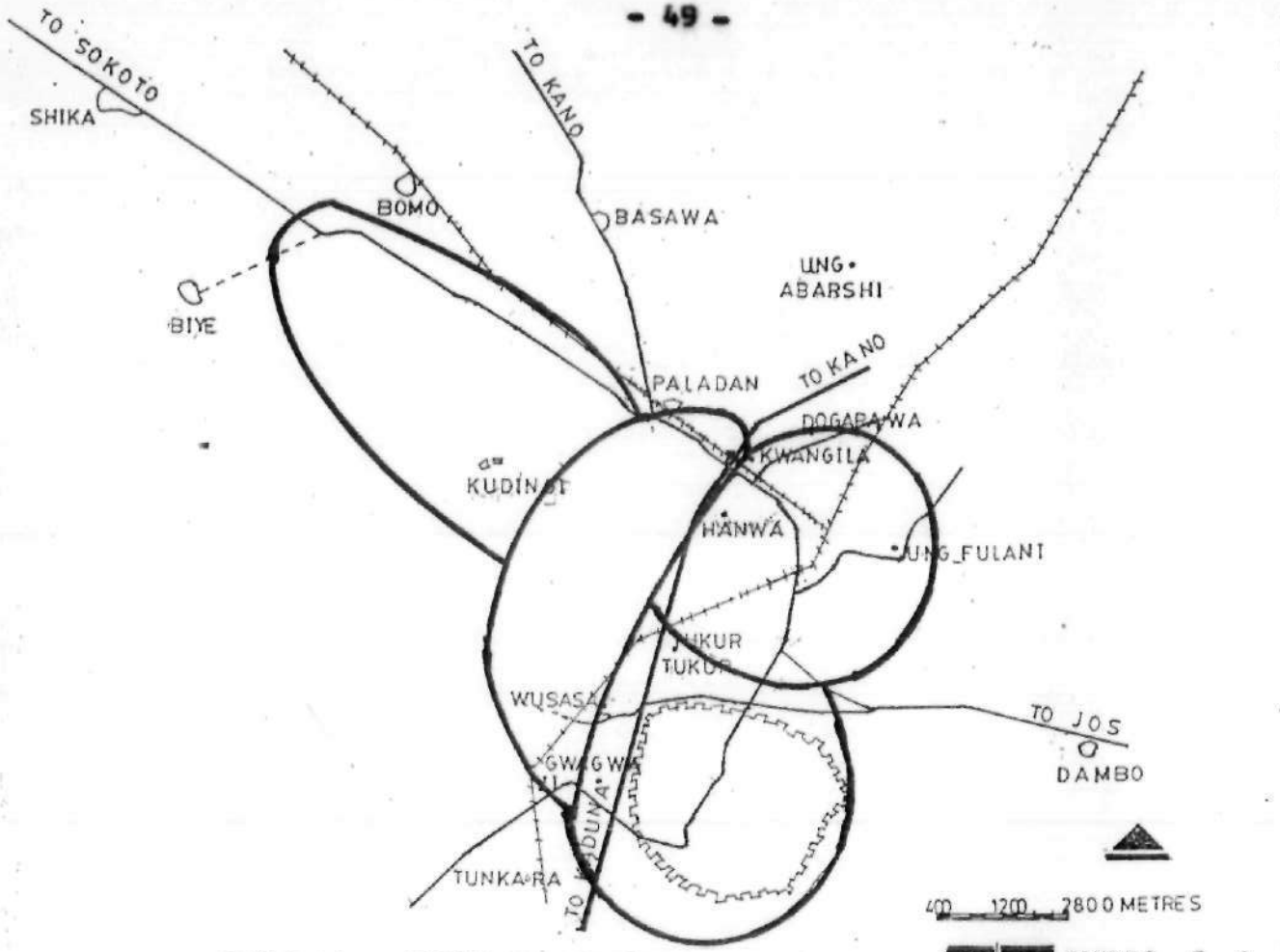



Fig. 3.5 ZARIA STRUCTURAL CONCEPT

SOURCE: Zaria Master Plan 1979

Table 3.7:Types of settlements

| settlement | Location | | Type of Settlement | |
|---|---|---|---|---|
| | Main Route | Axis | Isolated | Nucleated |
| Paladan | Zaria Sokoto Rd | ✓ | ✗ | ✓ |
| Shika | Zaria Sokoto Rd. | ✓ | ✓ | ✓ |
| Wusasa | Along Kufena Hill | ✓ | ✗ | ✓ |
| Dogarawa | New Kano Rd. | ✓ | ✗ | ✓ |
| Hanwa | Zaria Sokoto Rd. | ✓ | ✗ | ✓ |
| Bomo | Zaria Sokoto Rd. | ✗ | ✓ | ✓ |
| Ung. Fulani | Along Comm. Col. | ✗ | ✗ | ✓ |
| Kwangila | Zaria Sokoto Rd. | ✓ | ✗ | ✓ |
| Gwarigwaji | Zaria Kaduna Rd. | ✓ | ✗ | ✗ |
| Biye | Zaria Sokoto Rd. | ✗ | ✓ | ✓ |
| Tukur Tukur | Zaria Kano Rd. | ✓ | ✗ | ✓ |
| Tunkaran | Kaduna Zaria Rd. | ✗ | ✓ | ✓ |
| Dambo | Zaria Jos Rd. | ✓ | ✓ | ✓ |
| Kudingi | Behind Area 'C' A.B.U. Staff Qtrs | ✗ | ✓ | ✓ |
| Abarshi | Along Comm. Col. | ✗ | ✓ | ✓ |

Legend:

☑ Yes

☒ No

SOURCE: FIELD WORK, 1991

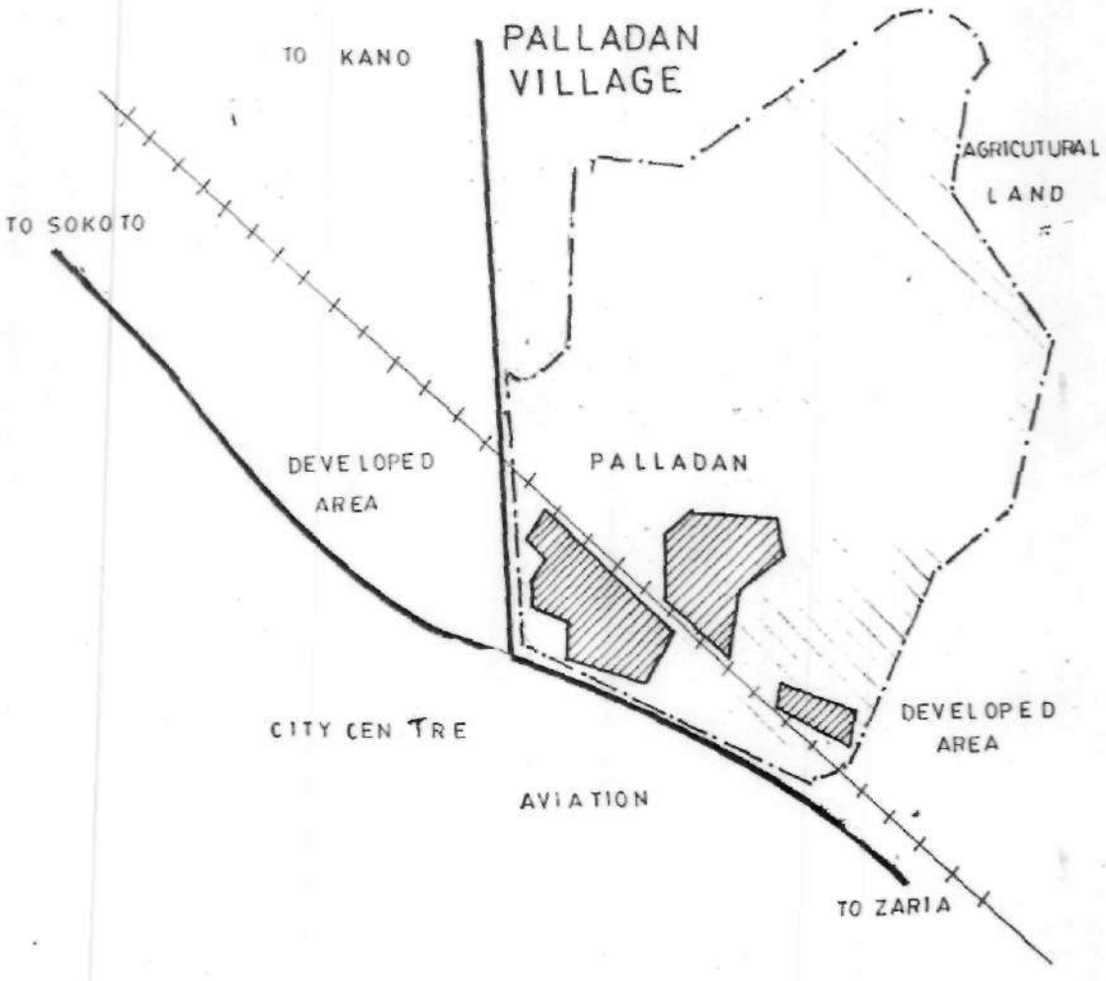
## 3.30 FACTORS RESPONSIBLE FOR SUB-URBAN GROWTH IN ZARIA URBAN AREA

### 3.31 Spatial Growth of Zaria:

The outspread in cities is caused by increased in the population. Growth in the population of a city can result from two main factors namely, natural increase and migration. The influx of people into Zaria from different parts of the country are in search for job opportunities, urban services and utilities. The change in the population of Zaria has generally found expression in physical development. The developmental changes have led to the encroachment of settlements around Zaria. When planned, such developments have given rise to urban services to different parts of the rural settlements. On the other hand, when physical extension occurs on spontaneous basis, spatial growth is expressed through different and unorganised structures and shelters at the city suburbs. This is a common phenomenon to all the settlements under encroachment (See Figs. 3.6 a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p). This shows the spatial growth of the settlements under study from 1976 to 1991.

### 3.32 Increase Land Value:

As the construction of roads and extension of services to different parts of Zaria increases, land within the metropolis astronomically increase in value.




LEGEND

OLD DEVELOPMENT AREA 1976

NEW DEVELOPMENT AREA 1991

ROADS

RAILWAY LINE

400 0 400 m

N

TOYOBO E A
MSc II URP
1991

Fig. 5.6(a)

STAGES OF PHYSICAL GROWTH

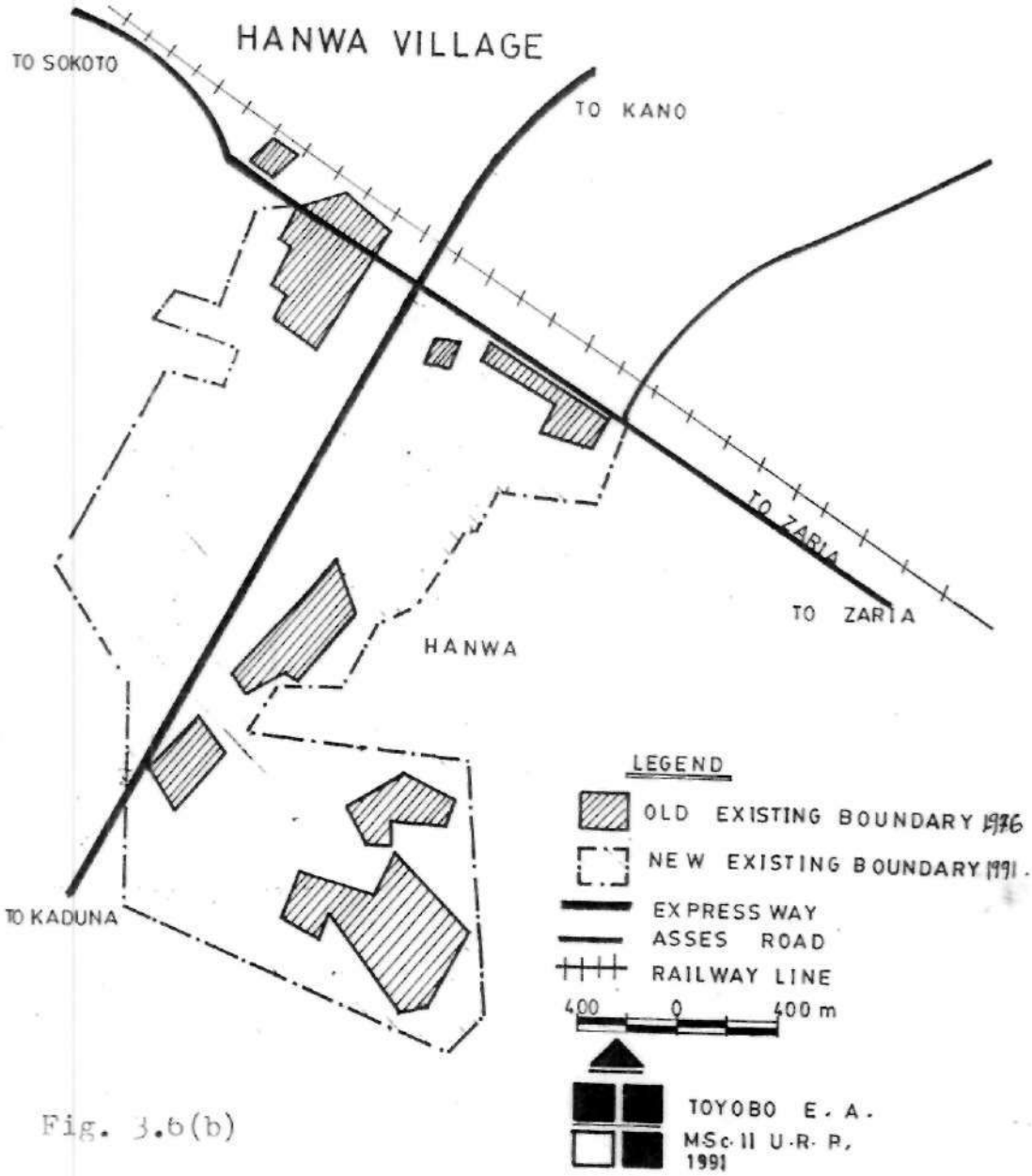



Fig. 3.6(b)

STAGES OF PHYSICAL GROWTH

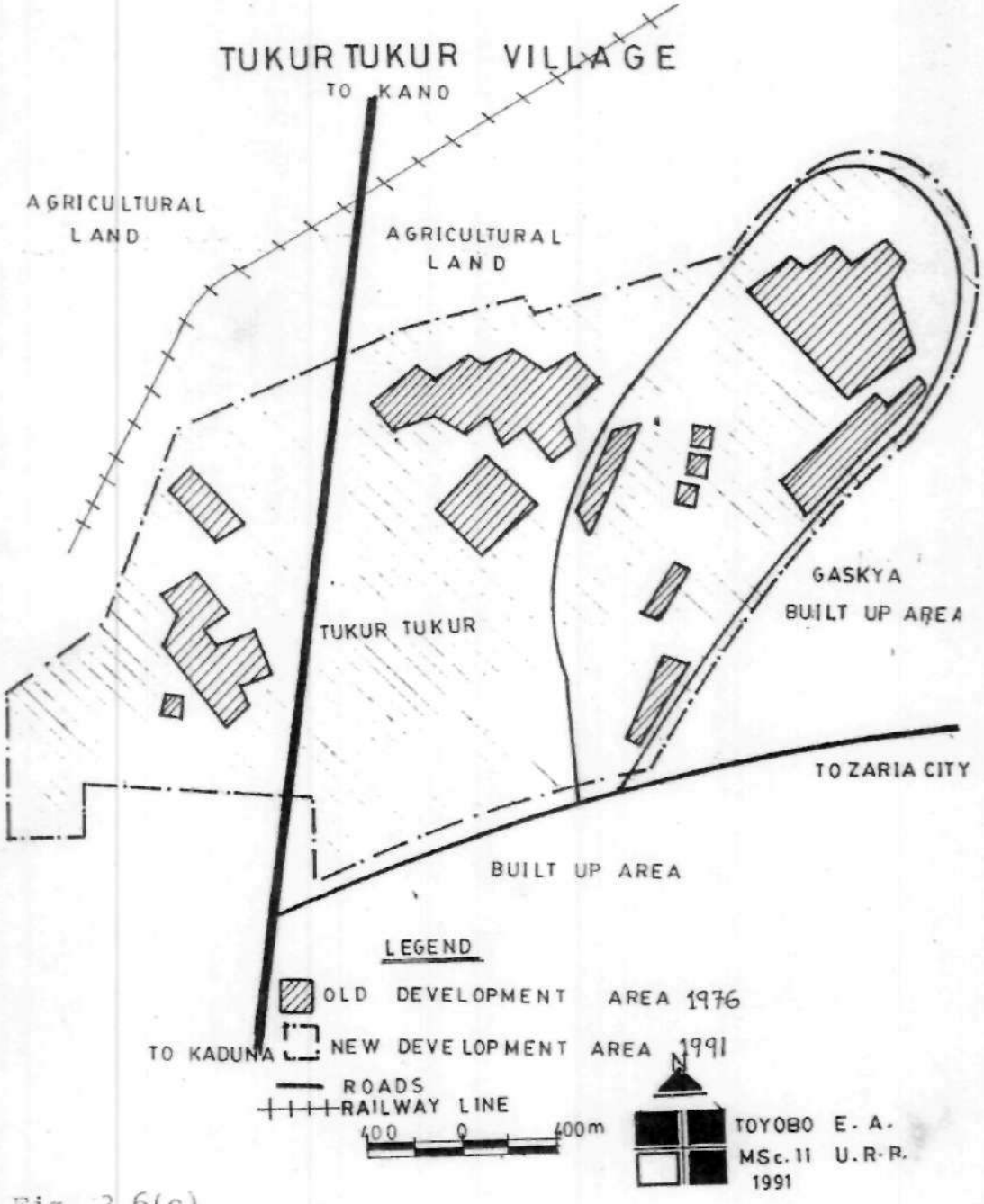
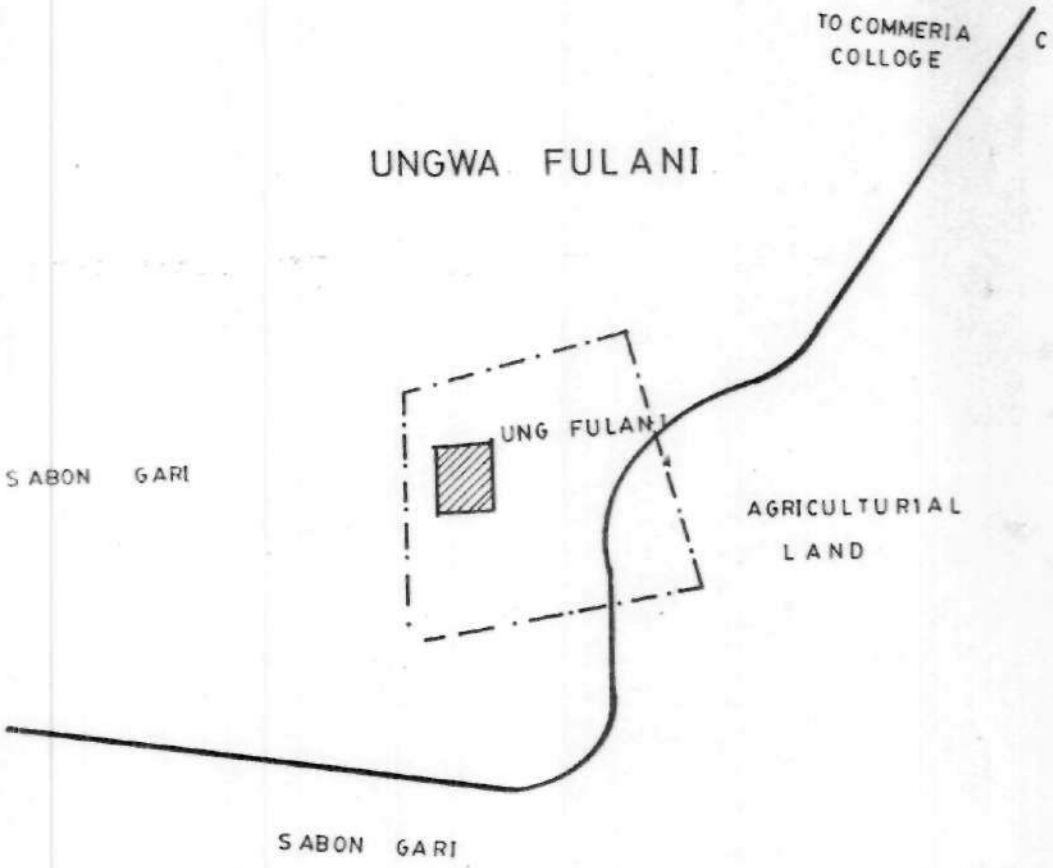



Fig. 3.6(c)

STAGES OF PHYSICAL GROWTH




LEGEND

OLD EXISTING BOUNDARY 1976

NEW EXITING BOUNDARY 1991

ROAD

400 0 400 m

N

TOYOBO E A

MSc II URP

1991

Fig. 3.6(d)

STAGES OF PHYSICAL GROWTH

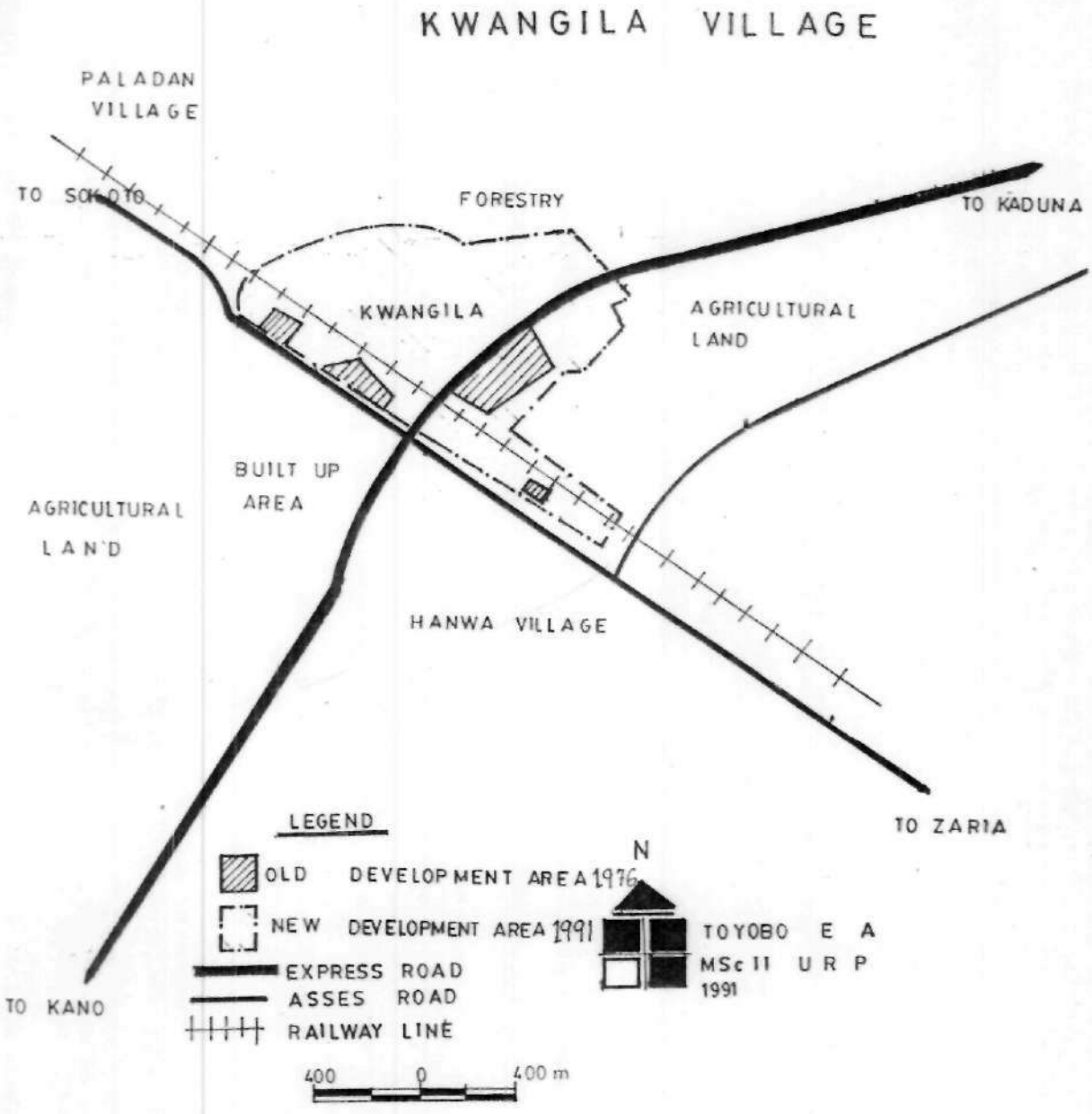



Fig. 3.6(e)

STAGES OF PHYSICAL GROWTH

WUSASA VILLAGE

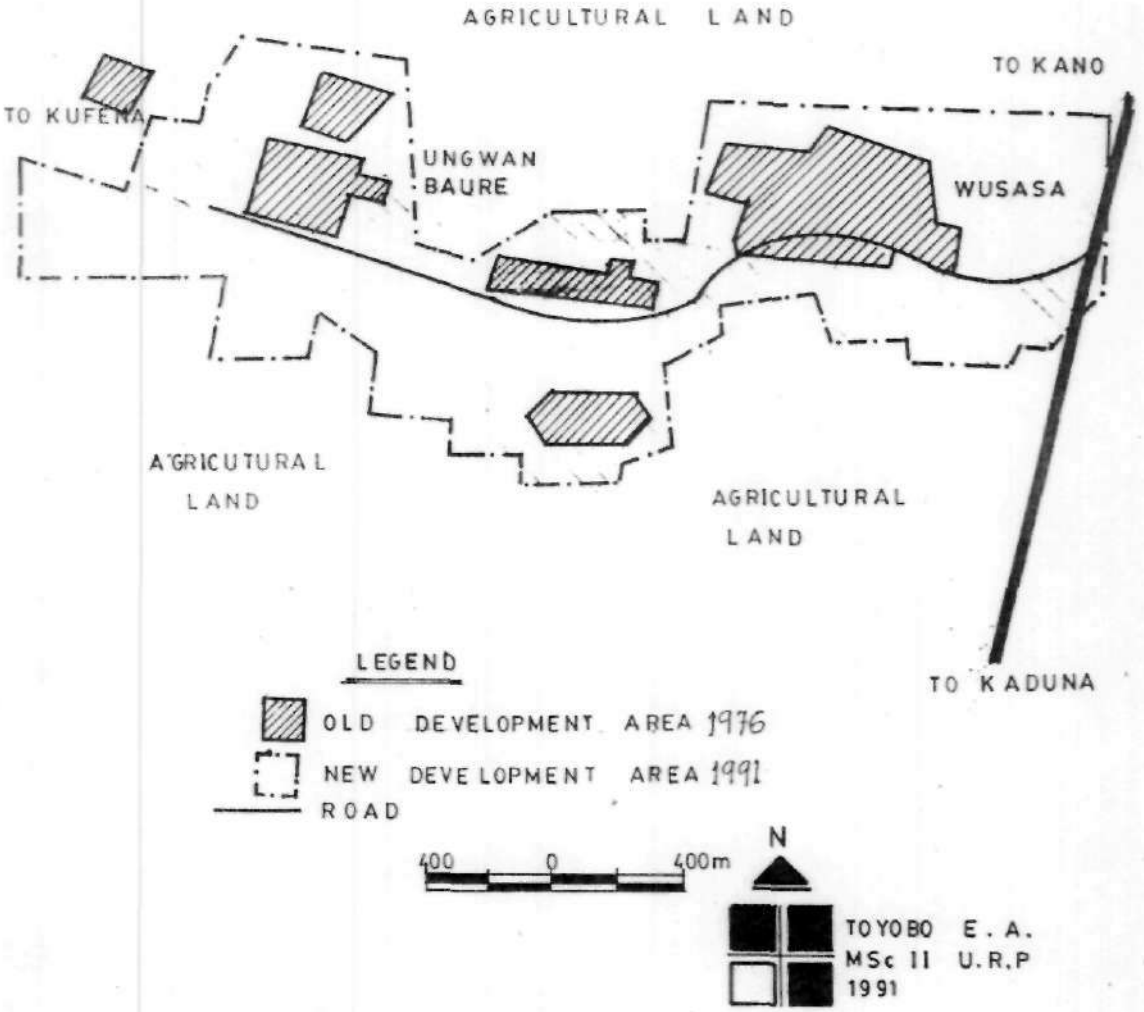



Fig. 3.6(f)

STAGES OF PHYSICAL GROWTH

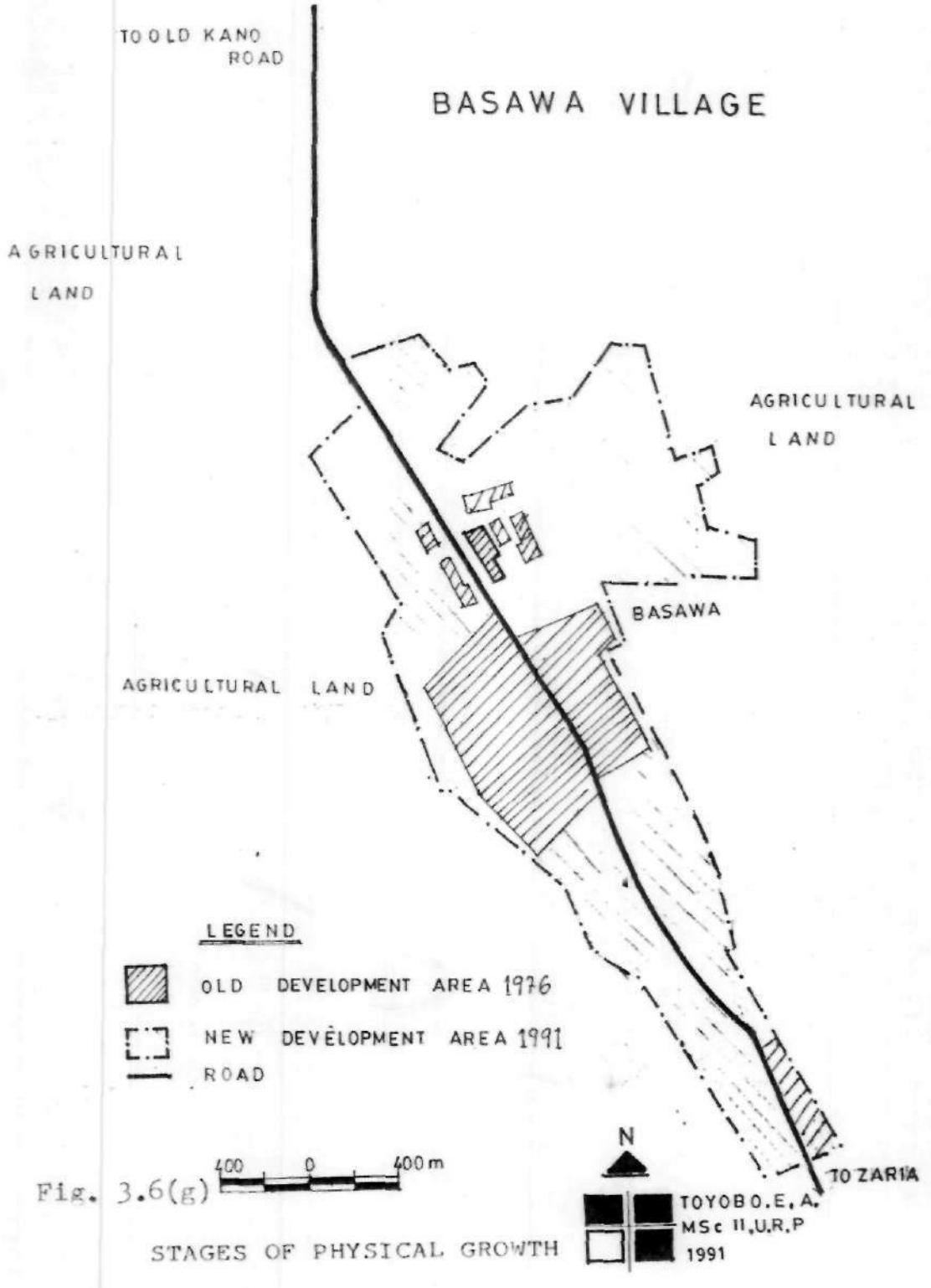



Fig. 3.6(g) STAGES OF PHYSICAL GROWTH

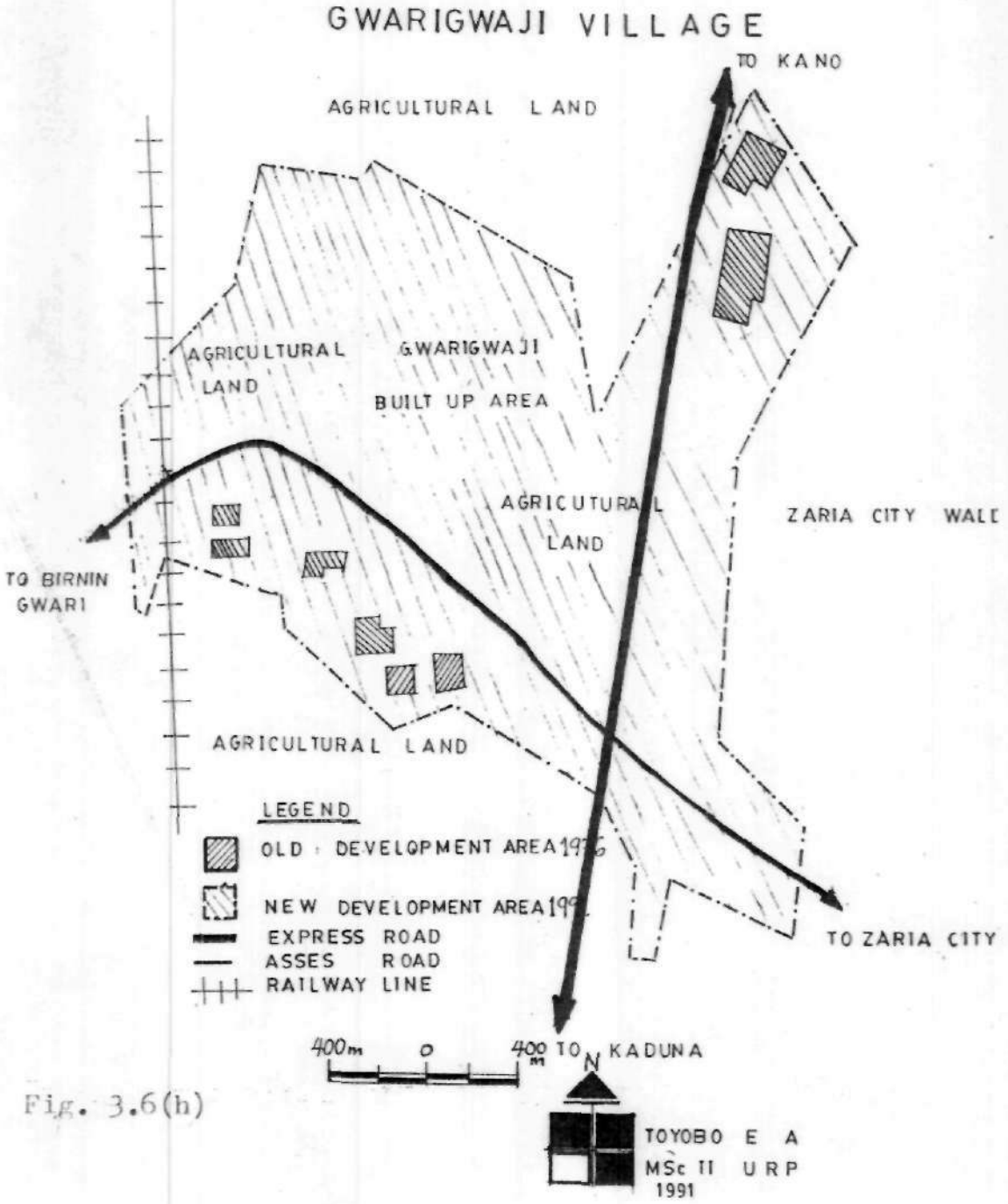
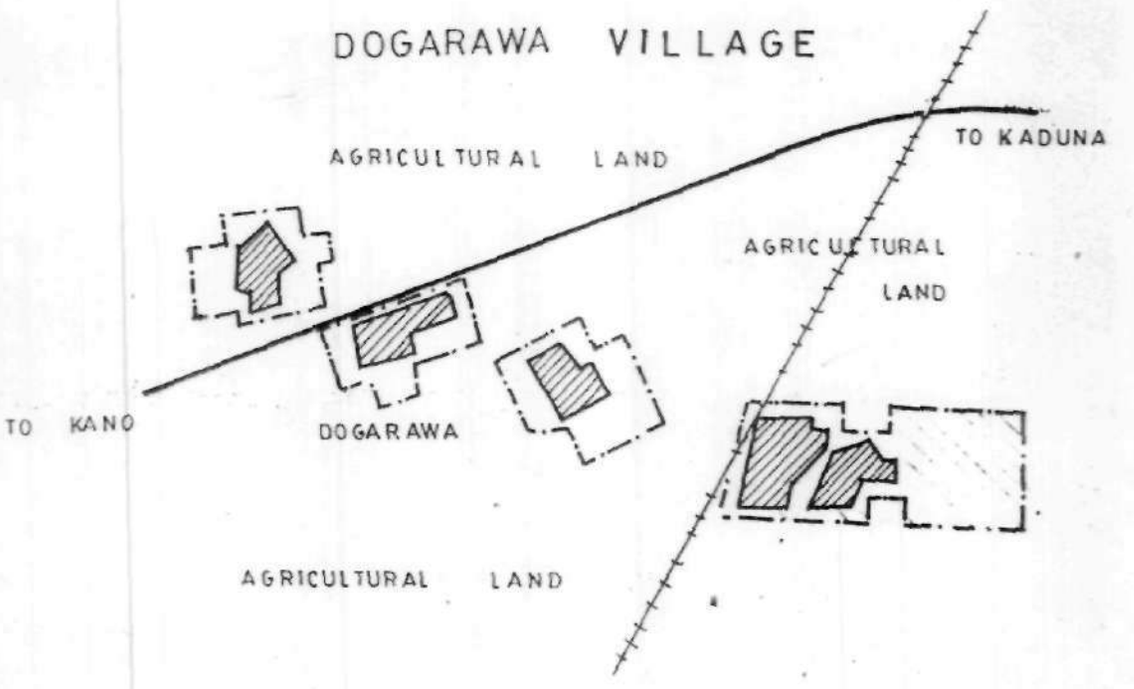



Fig. 3.6(h)

STAGES OF PHYSICAL GROWTH




LEGEND

OLD DEVELOPMENT AREA 1976

NEW DEVELOPMENT AREA 1991

ROADS

RAILWAY

Fig. 3.6(i)

400 0 400m

N

TOYOBO E.A.
MSc II U.R.P
1991

STAGES OF PHYSICAL GROWTH

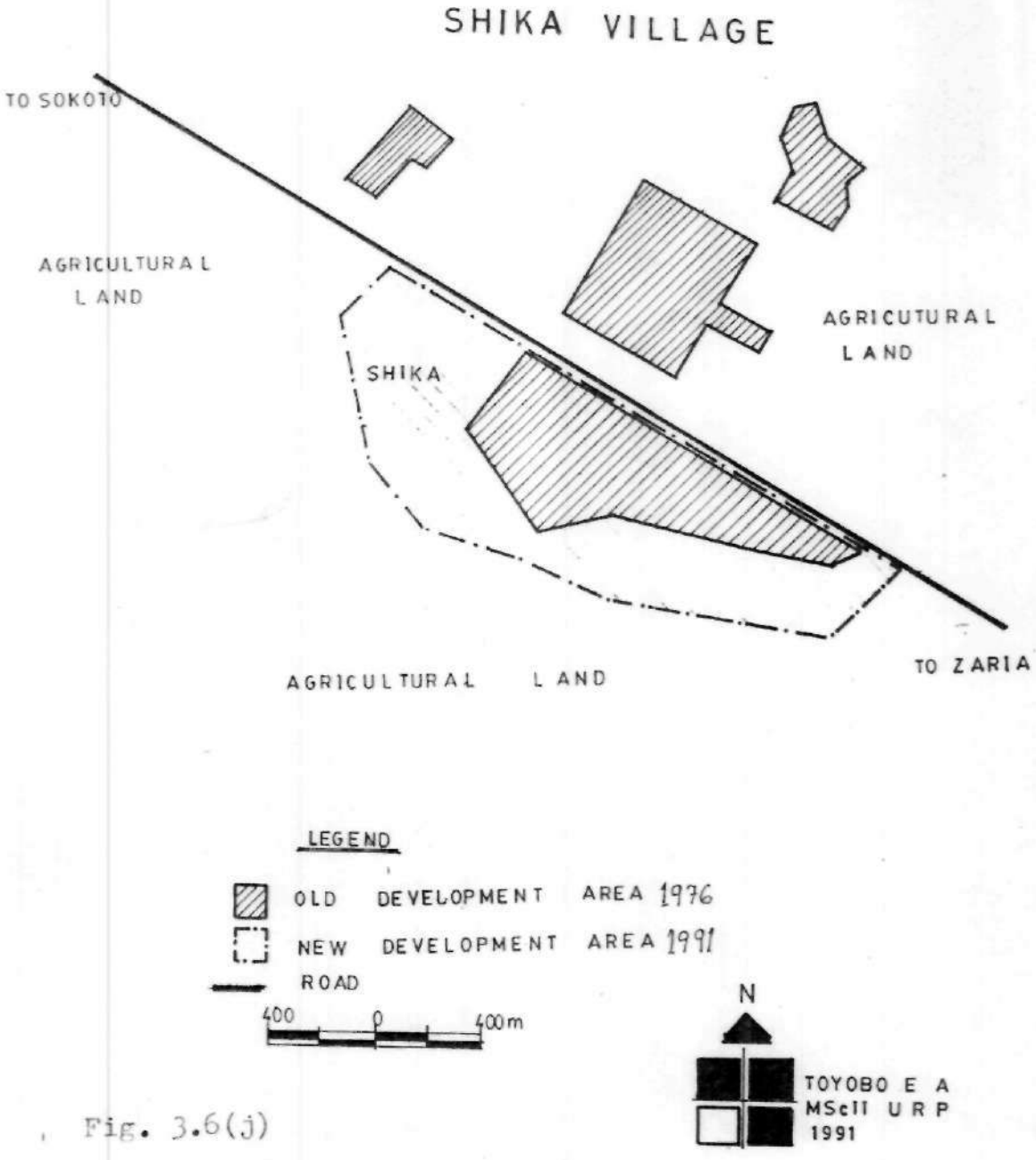



Fig. 3.6(j)

STAGES OF PHYSICAL GROWTH

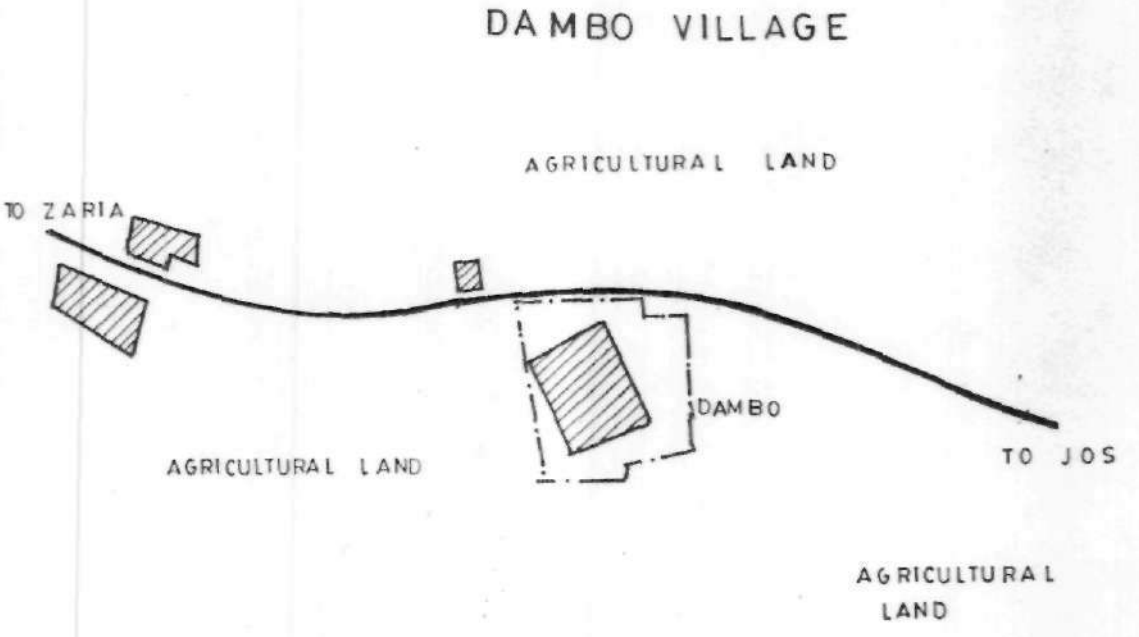



Fig. 3.6(k)

STAGES OF PHYSICAL GROWTH

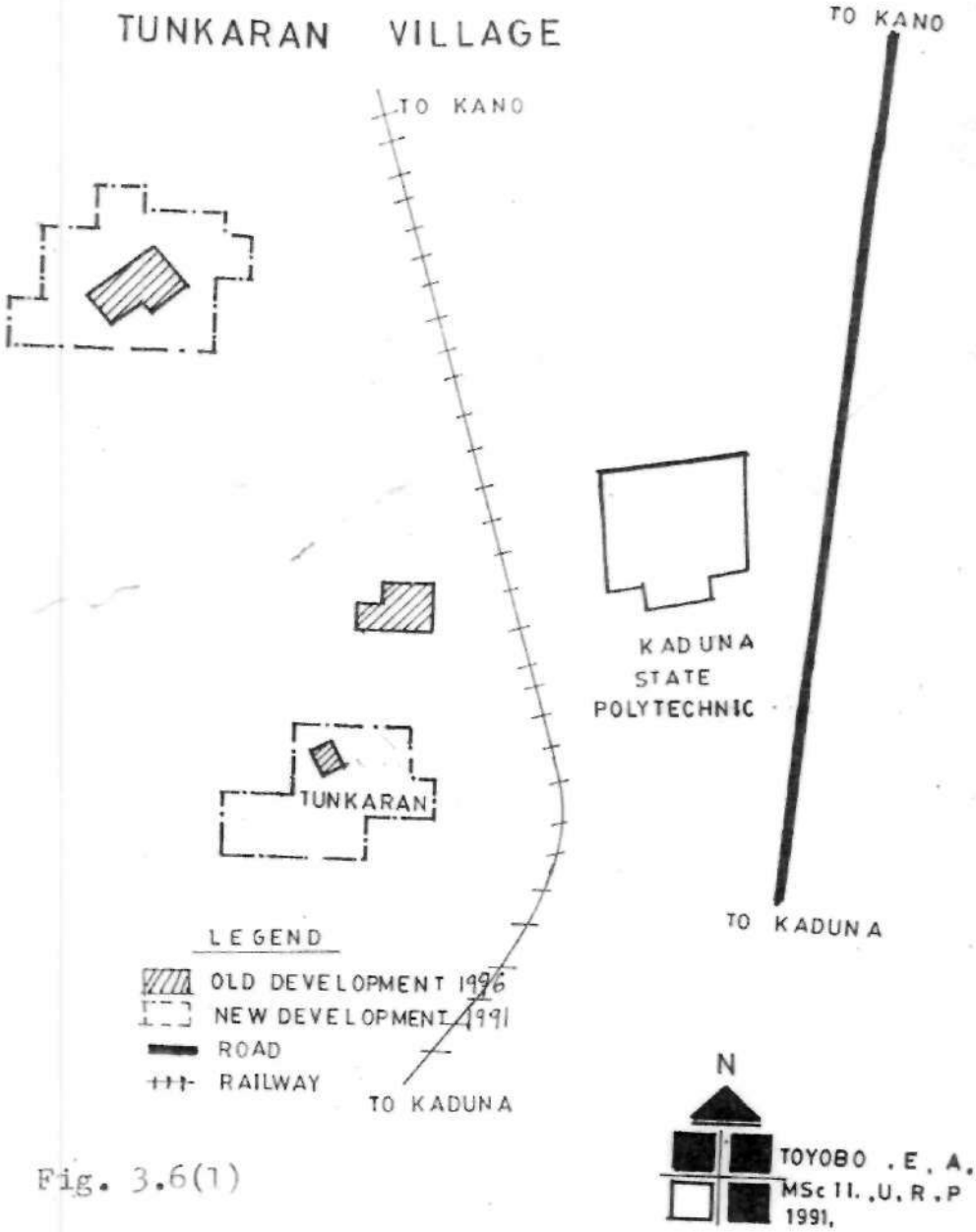



Fig. 3.6(1)

STAGES OF PHYSICAL GROWTH 1:400

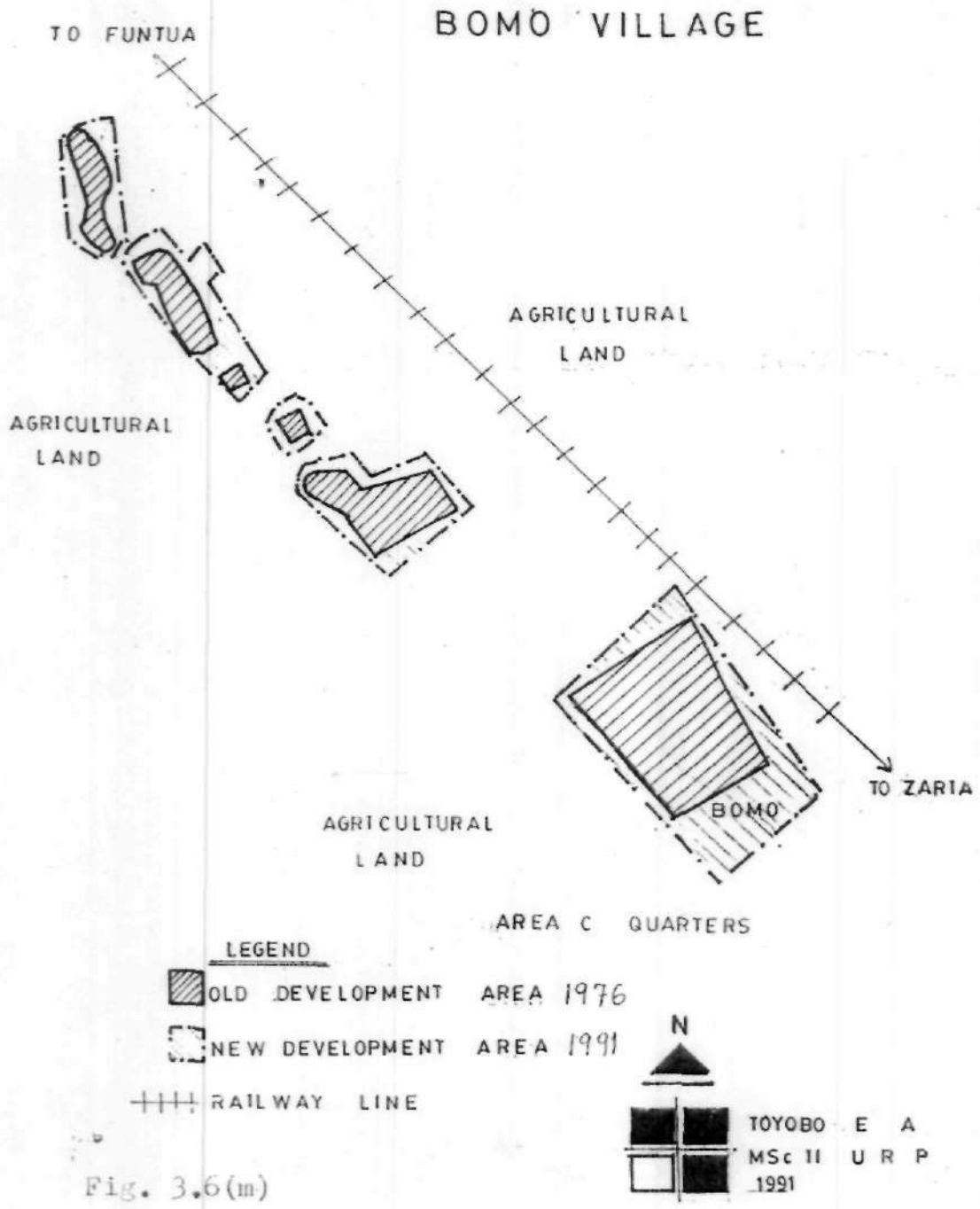



Fig. 3.6(m)

STAGES OF PHYSICAL GROWTH

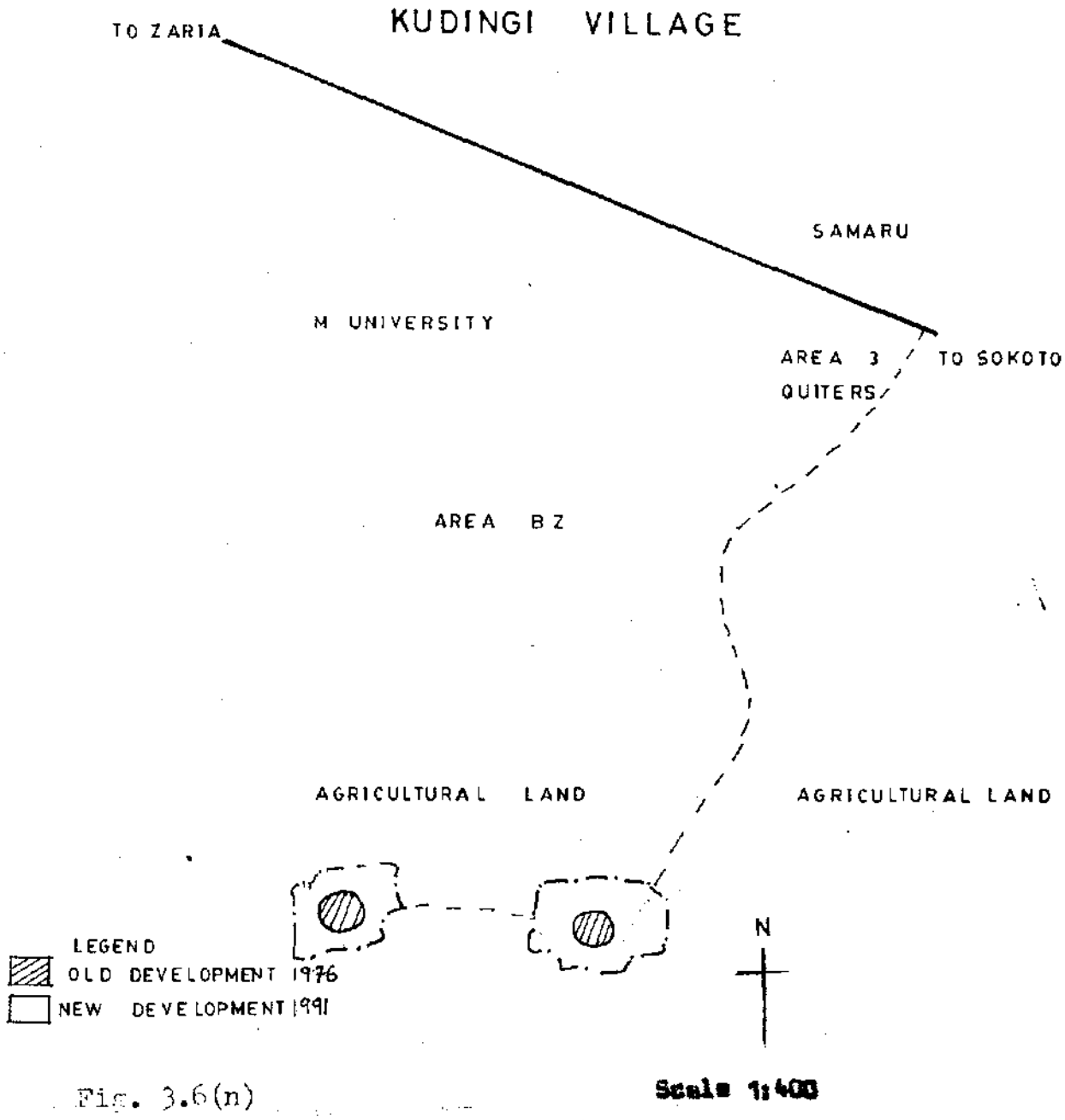



Fig. 3.6(n)

STAGES OF PHYSICAL GROWTH

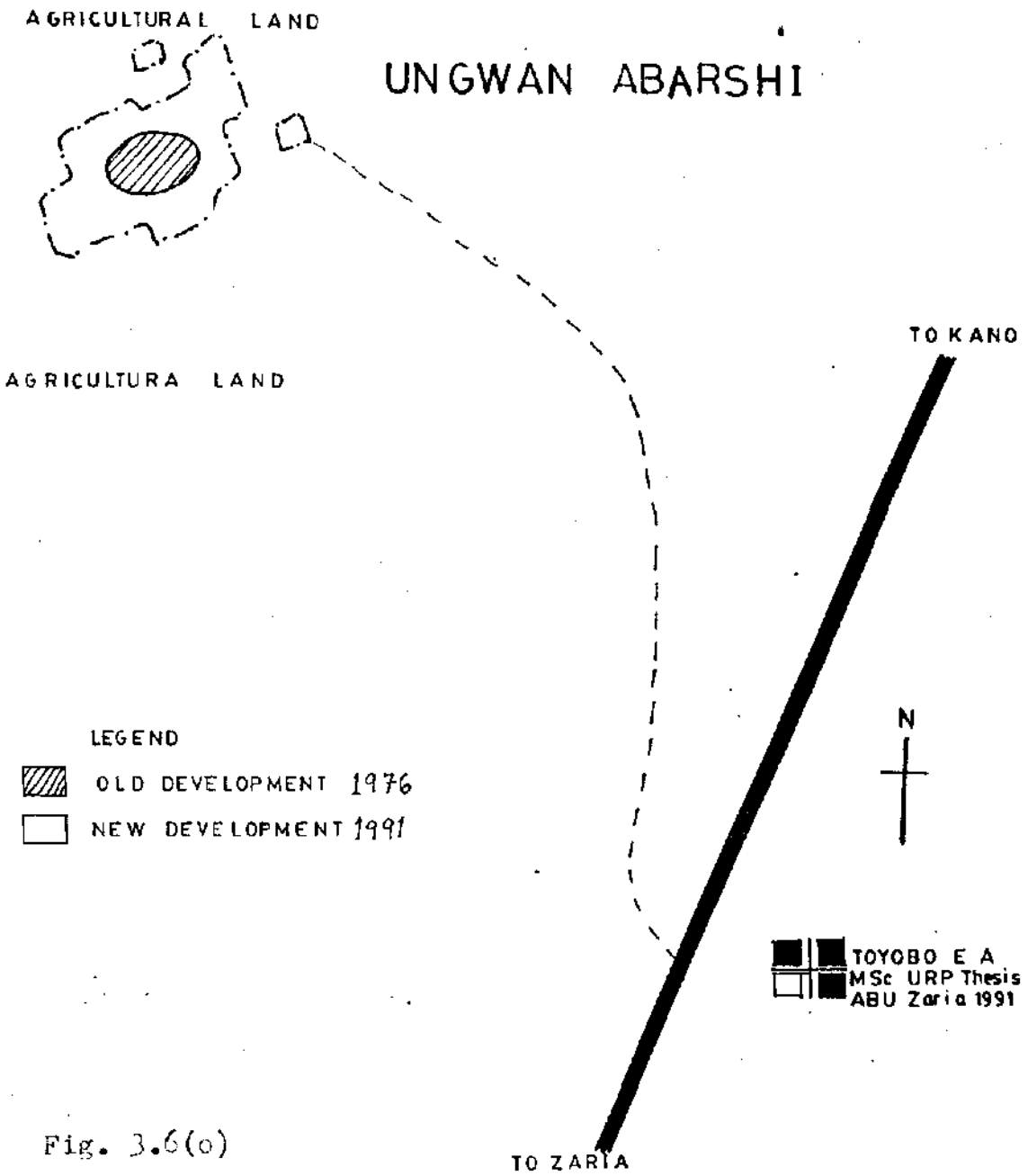



Fig. 3.6(o)

**STAGES OF PHYSICAL GROWTH**

**Scale 1:400**

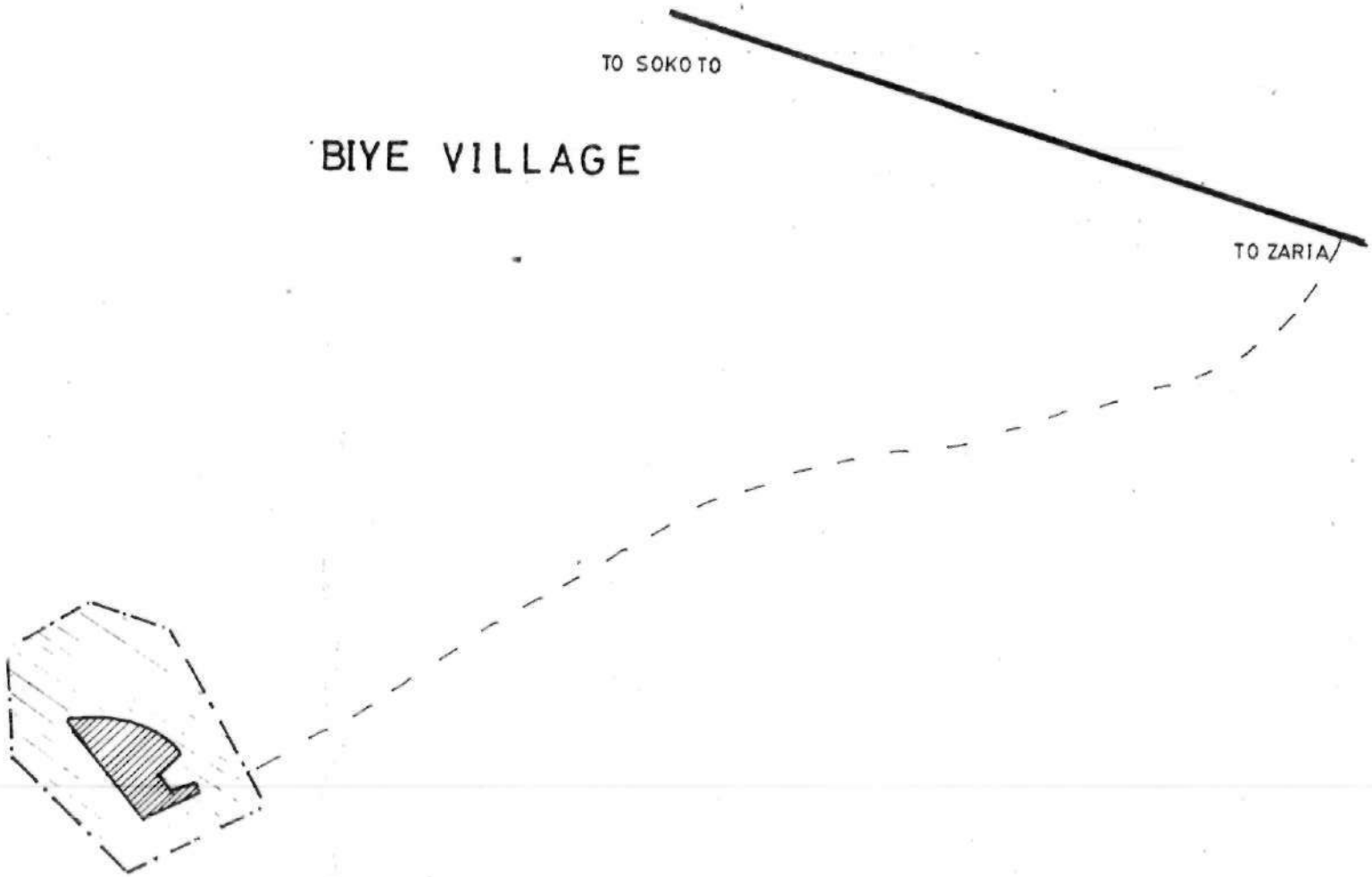

TO SOKOTO
BIYE VILLAGE
TO ZARIA
STAGES OF PHYSICAL GROWTH
Scale 1:400
N
OLD DEVELOPMENT 1976
NEW DEVELOPMENT 1991
TOYOBO E A
MSc URP Thesis
ABU Zaria 1991

Fig. 3.6(p)

Land speculation had led to outward push of developers to the edges of Zaria. In this regard, some settlements such as Hanwa, Kwangila, Paladan, Ungwan Fulani, Tukur Tukur, Wusasa, etc have increase in their physical growth as a result of relatively **cheaper land.**

**3.33** Access to land acquisition:

Access to land acquisition within Zaria urban centre is another factor leading to sub-urban growth. Despite the land use degree of 1978 which gives equal opportunity of land acquisition by the members of the public. Land lords interviewed acquired their plots through traditional heads. This acquisition does not entail much difficulty.

**3.34** Housing Demand:

Investigation reveal that, the demand for accommodation in the metropolis of Zaria outstrip supply. This has made new coming migrants to Zaria to seek for alternative accommodation at the edges. The growth of the population increase as a result of influx of migration, and birth rate. Settlement under this category include Basawa, Wusasa, Hanwa, Paldan, Kwangila, Ungwan Fulani to mention but a few.

3.35 Educational Institution:

Generally, the growth of Zaria is as a result of the establishment of educational institutions. Paramount among them are Ahmadu Bello University, the Advanced Teachers College, the College of Arts and Science, Barewa College, Kufena College and a host of others. Suburban settlements under study near these institutions act as shock absorbers to incoming migrant settling in them. This has led to increase in the growth of the settlement population in Zaria.

3.36 Transportation, facilities and services:

The growth of the settlements under study is as a result of good accessibility. Hanwa, Paladan, Kwangila and Shika are found along Zaria-Funtua road. Dambo along Jos road to mention but a few. The rate of development is faster as a result of good accessibility. In this regard some of the settlements are served with facilities, amenities and services. All the settlements under encroachment are provided with facilities and services but not adequate in supply.

3.40 CHARACTERISTICS OF SUB-URBAN ENCROACHMENT OF ZARIA TOWN

To understand the existing characteristics of suburban encroachment, it is necessary to know the foundation upon which the settlements exist and function as human habitation. The issue of land as it relates to

both the settlements within and around Zaria urban area has to be considered as a basis for looking at the characteristics of the settlements under study. The issue of land is the most fundamental in understanding changes taking place within the settlements.

3.41 Land Tenure:

Land in Zaria and in most Northern Nigeria is held under three systems of land tenure: customary rights, Customary Right Occupancy and Statutory Certificate of Occupancy.

(i) Customary Right: This is a right to land issue by the village heads and recognised authorities in the villages within andoutside the urban centre. This is a right to land enforced by customary recognition within a settlement. This is the system under which most land is held by the inhabitation of the settlements under study. The system has the disadvantage of having no official documentation and thus offer little land security within and around Zaria town.

(ii) Customary Right of Occupancy:
This form of tenure is usually granted for a period not exceeding 30 years. It is limited to areas that have been surveyed and for which

layout plan have been prepared. The acquisition of land through this process of tenure is much easier than through the process of Ministry of Lands. This system of tenure is a more secure form of tenure than Customary rights, as it gives a measure of official recognition to the holder.

(iii) Statutory Certificate of Occupancy:
This form of tenure is granted by the government, that is, through the Zonal Planning authority in Zaria. It takes a long paper work before this type of tenure is granted. This tenure is granted as official document recognition of statutory rights and title to land for a period of 99 years.

3.42 Land Use:

Urban land use is determined by a variety of economic, social, political and cultural factors. Urban landuse reflect the spatial distribution of city functions. Settlements under encroachment display a variety of similar landuse pattern from the urban centre. This ranges from residential, commercial, open spaces, light scale industries, public and semi public land uses with the exemption of agricultural

land which is a common phenomenon of uses both within and around settlement under study.

Agriculture is a non urban landuse and this still plays a very important part in the settlements. However, the encroachment of urban landuses on rural land has put pressure on agricultural land and this to the extent reflected in the changes in ownership and holders within these settlements. Fig. 3.7 a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p) shows the existing landuse structure of each settlement. Table 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.20, 3.21, 3,22, 3.23 shows the analysis of landuse for all the settlements.

3.43 Land Holdings:

This is based on the number of responses from the sample surveyed. The study reveal that the size of holdings ranges between 0-3ha or more. In Paladan 30% of respondents hold between 0-1 hectares of land, while in Wusasa and Tukur Tukur it is 36% and 53% respectively. Some respondents own more than 3 hectares of land. These are found in Bomo, Biye, Tunkaran, etc (See Table 3.24). However, the survey indicated that an individual rents land to farm for a specific period of time, usually a season. It was seen that, land is held in highly fragmented parcels usually in the immediate vicinity of the settlements.

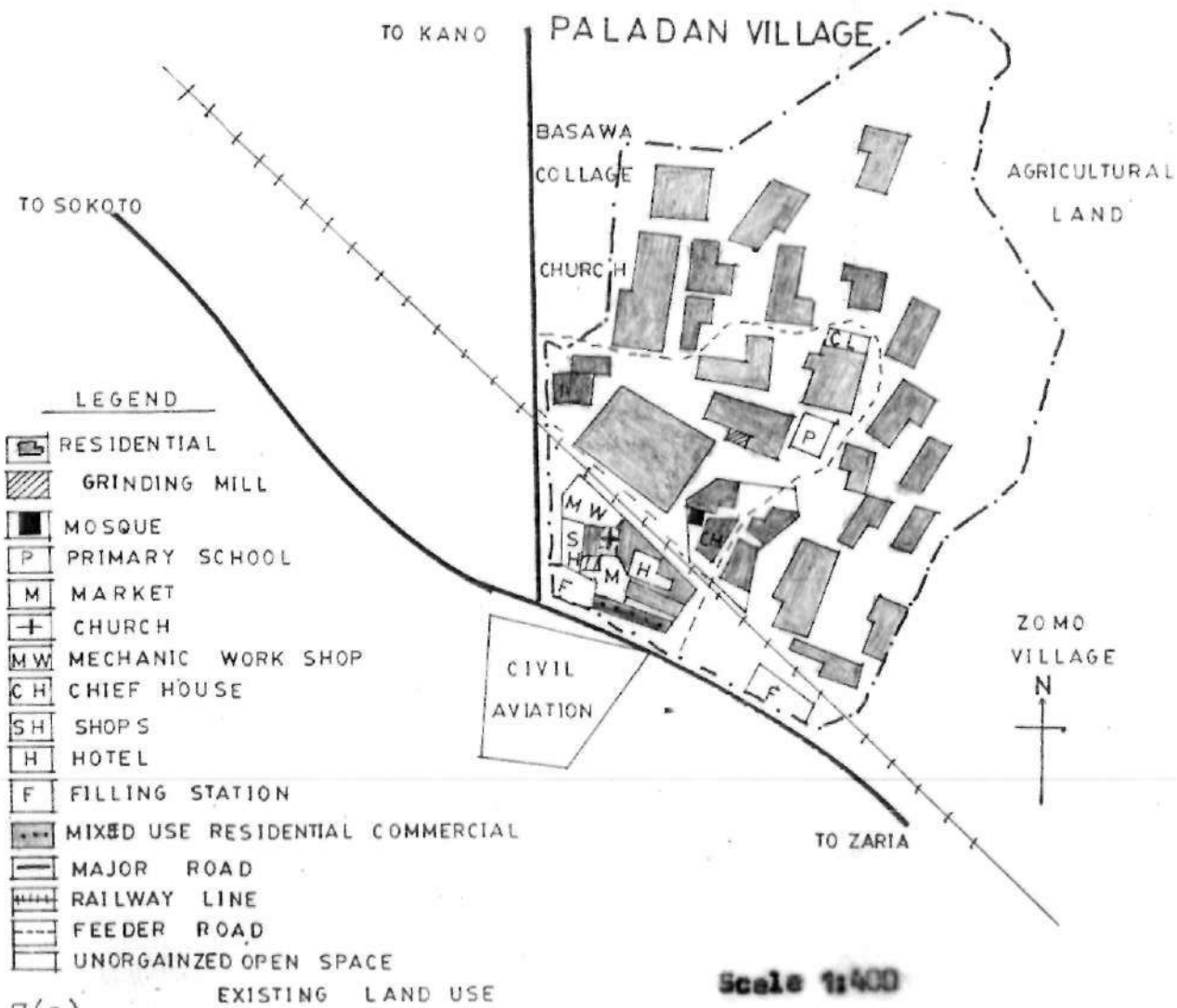
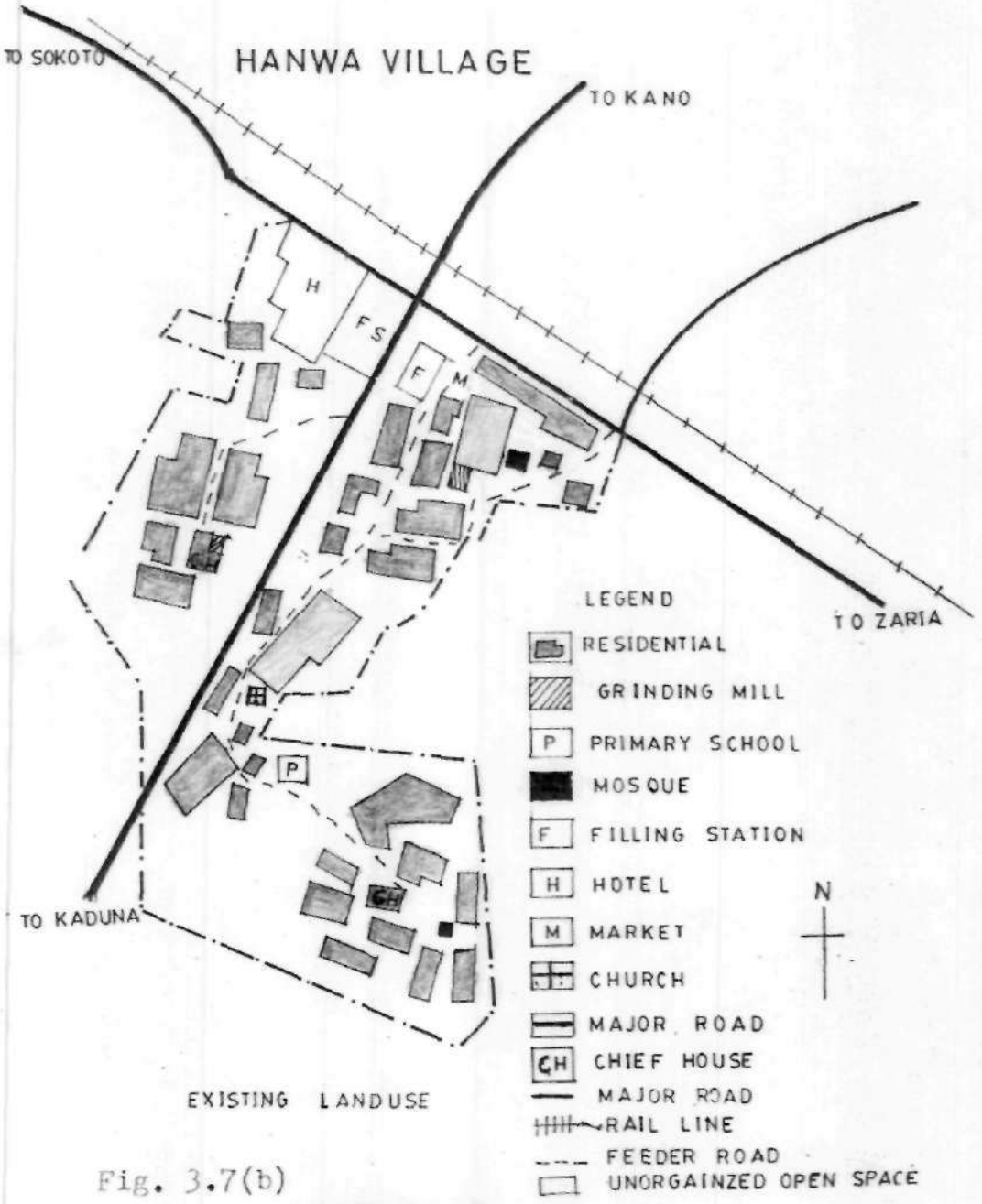

TO KANO
PALADAN VILLAGE
BASAWA
COLLAGE
AGRICULTURAL
LAND
TO SOKOTO
CHURCH
CIVIL
AVIATION
ZOMO
VILLAGE
N
TO ZARIA
LEGEND
RESIDENTIAL
GRINDING MILL
MOSQUE
PRIMARY SCHOOL
MARKET
CHURCH
MECHANIC WORK SHOP
CHIEF HOUSE
SHOPS
HOTEL
FILLING STATION
MIXED USE RESIDENTIAL COMMERCIAL
MAJOR ROAD
RAILWAY LINE
FEEDER ROAD
UNORGAINZED OPEN SPACE
EXISTING LAND USE
Scale 1:400

Fig. 3.7(a)




EXISTING LANDUSE

Fig. 3.7(b)

Scale 1:400

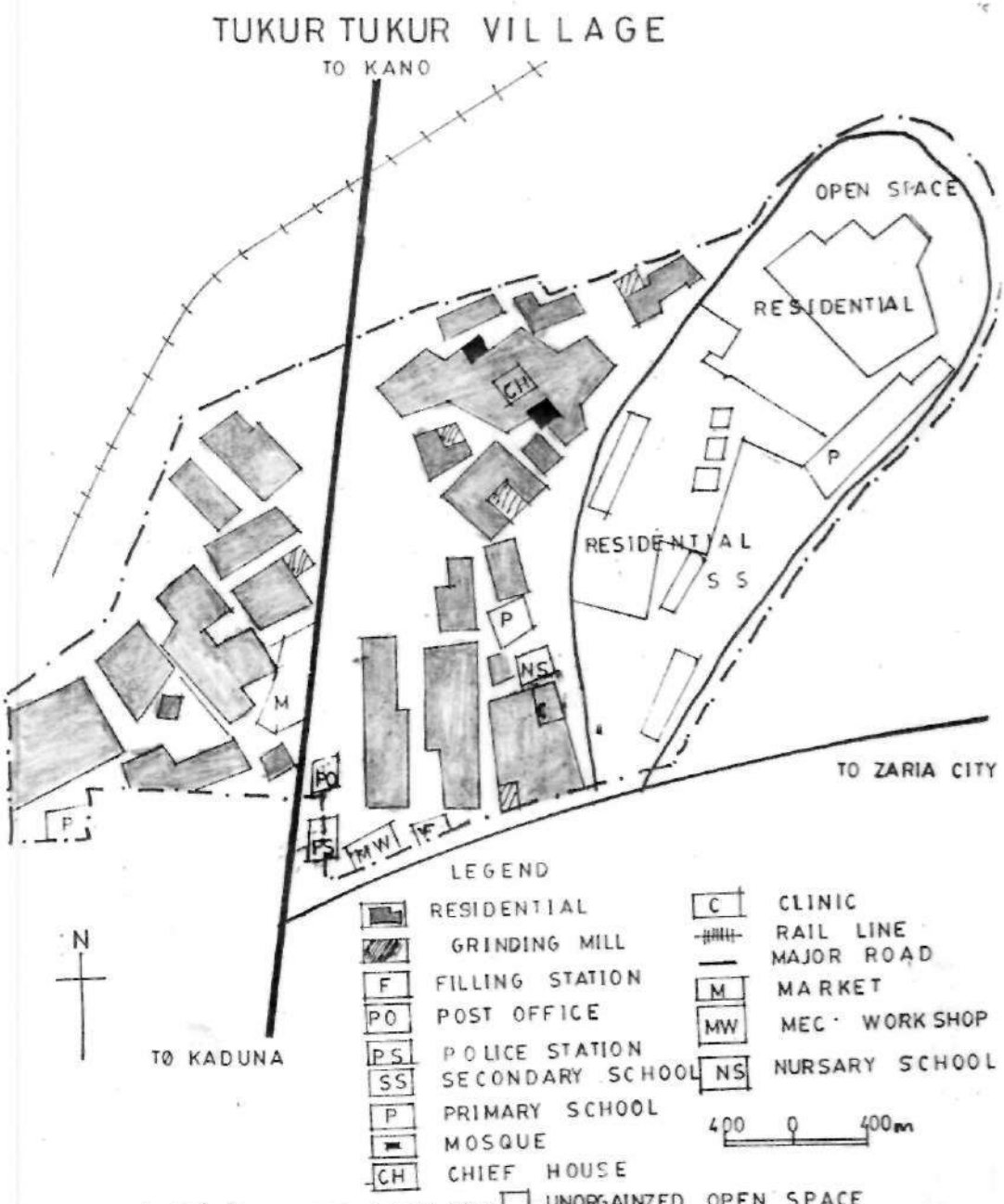



Fig. 3.7(c) EXISTING LAND USE

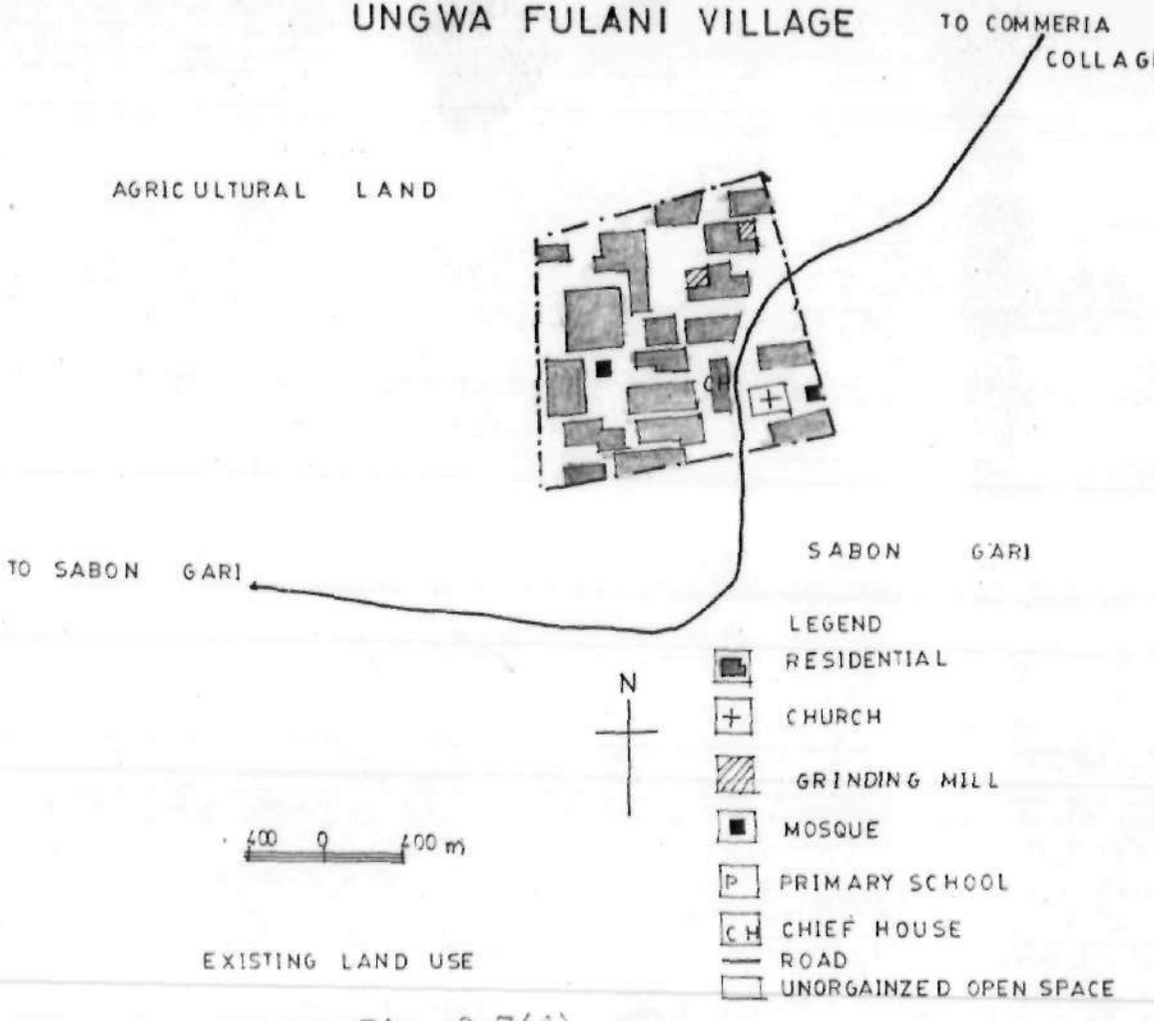

UNGWA FULANI VILLAGE
TO COMMERIA
COLLAGE
AGRICULTURAL LAND
CH
TO SABON GARI
SABON GARI
LEGEND
RESIDENTIAL
CHURCH
GRINDING MILL
MOSQUE
PRIMARY SCHOOL
CHIEF HOUSE
ROAD
UNORGAINZED OPEN SPACE
N
400 0 400 m
EXISTING LAND USE

Fig. 3.7(d)

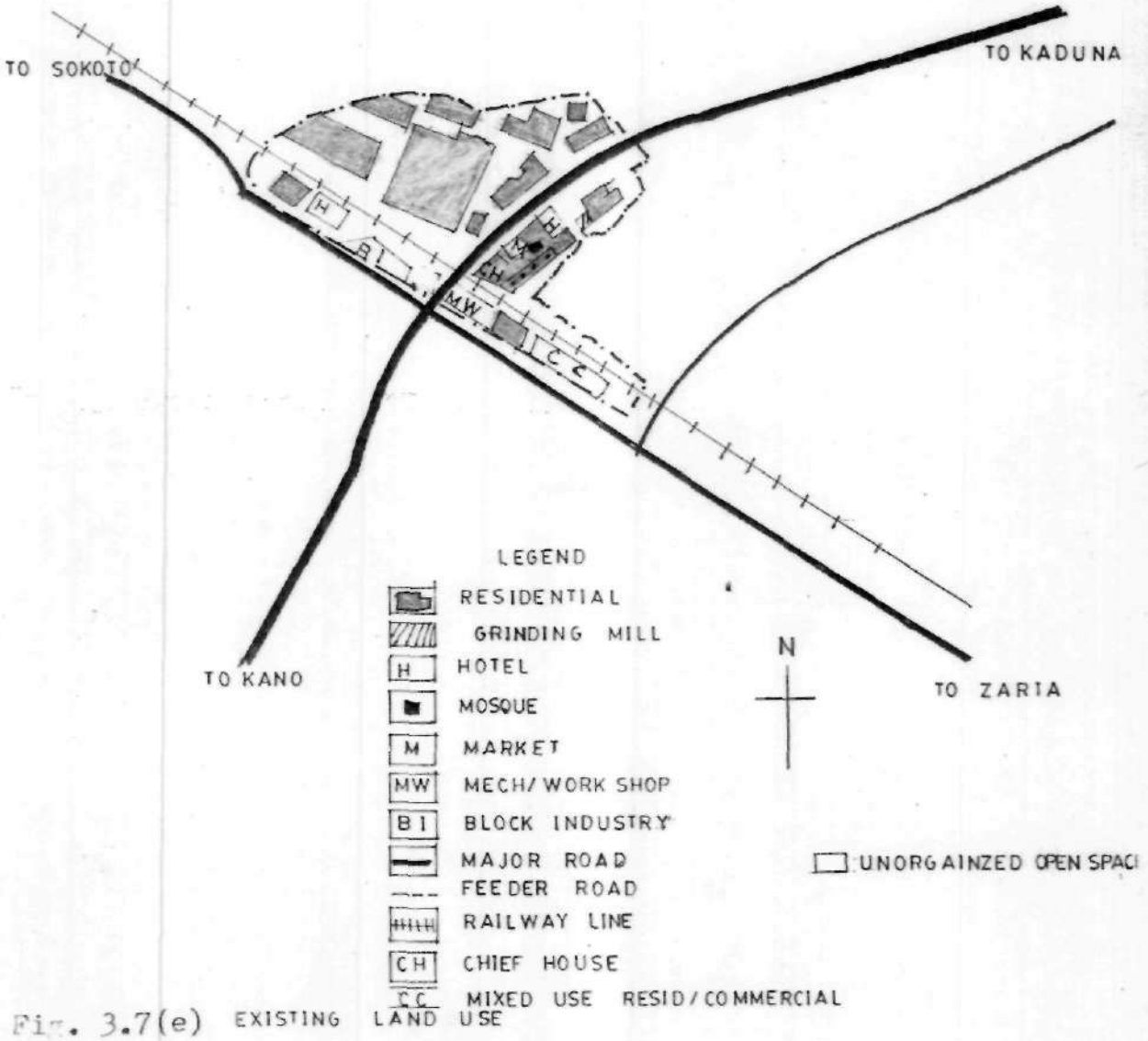



Fig. 3.7(e) EXISTING LAND USE

Scale 1:400

# WUSASA VILLAGE

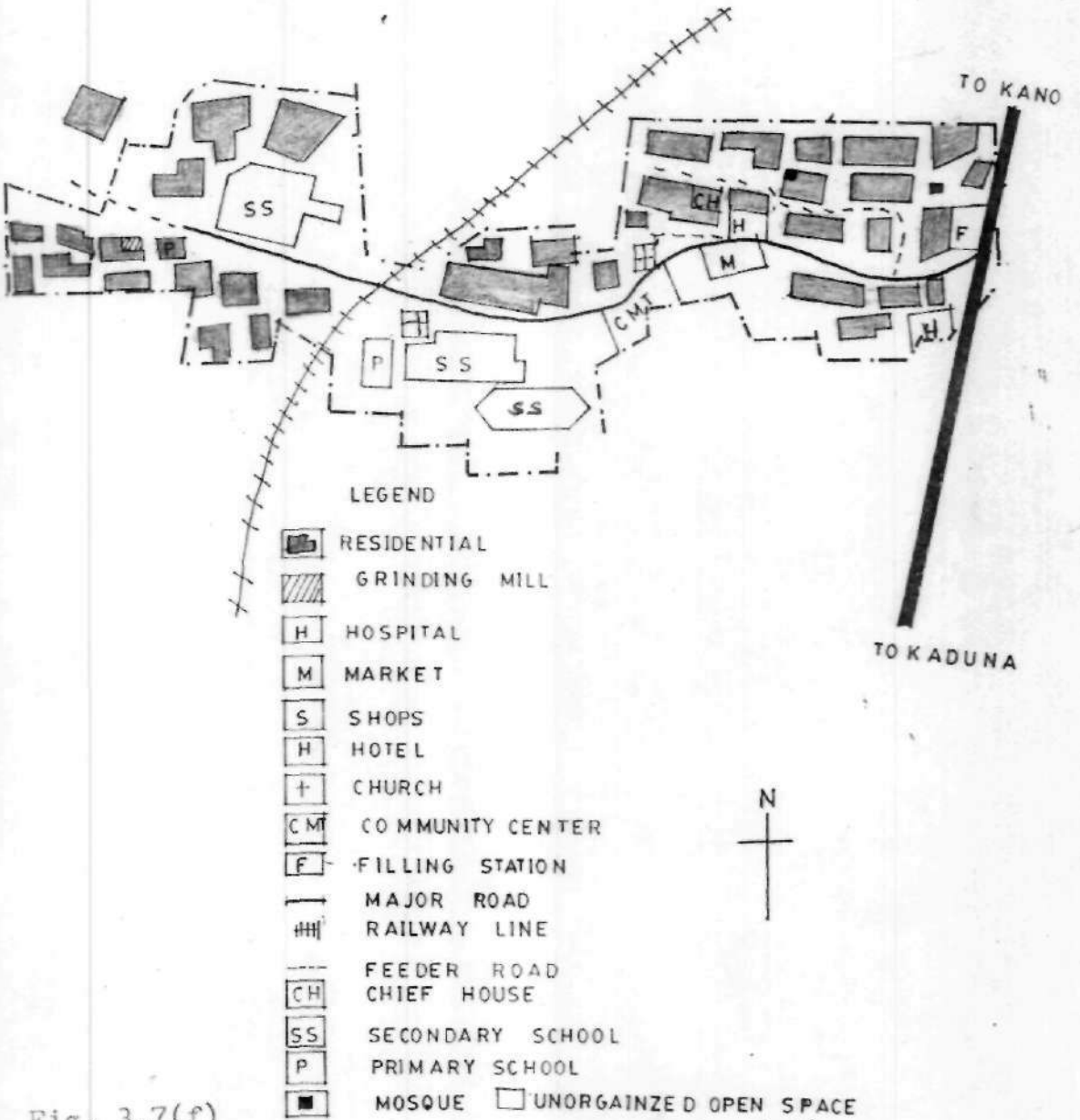



Fig. 3.7(f) EXISTING LAND USE

**Scale 1:400**

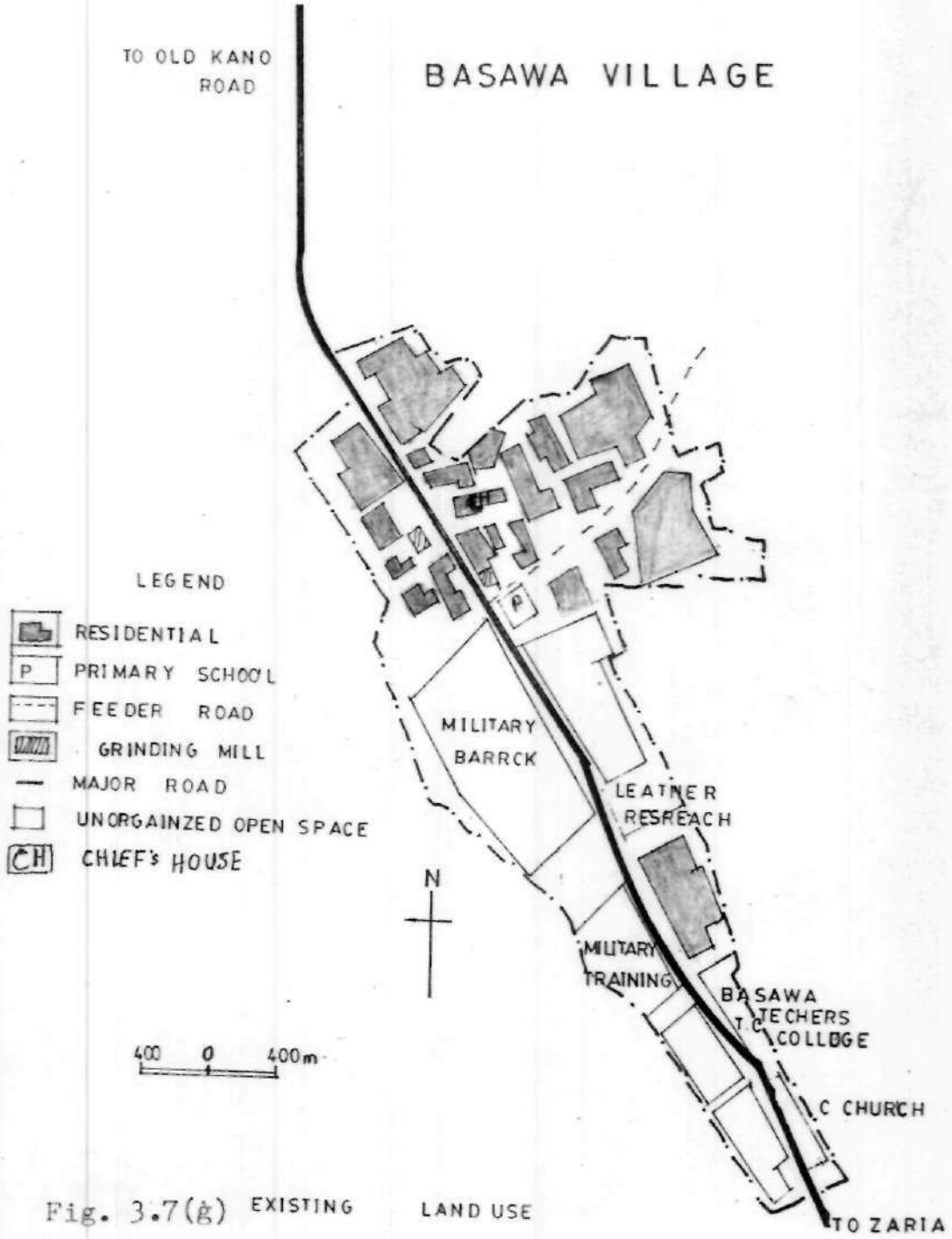



Fig. 3.7(g) EXISTING LAND USE

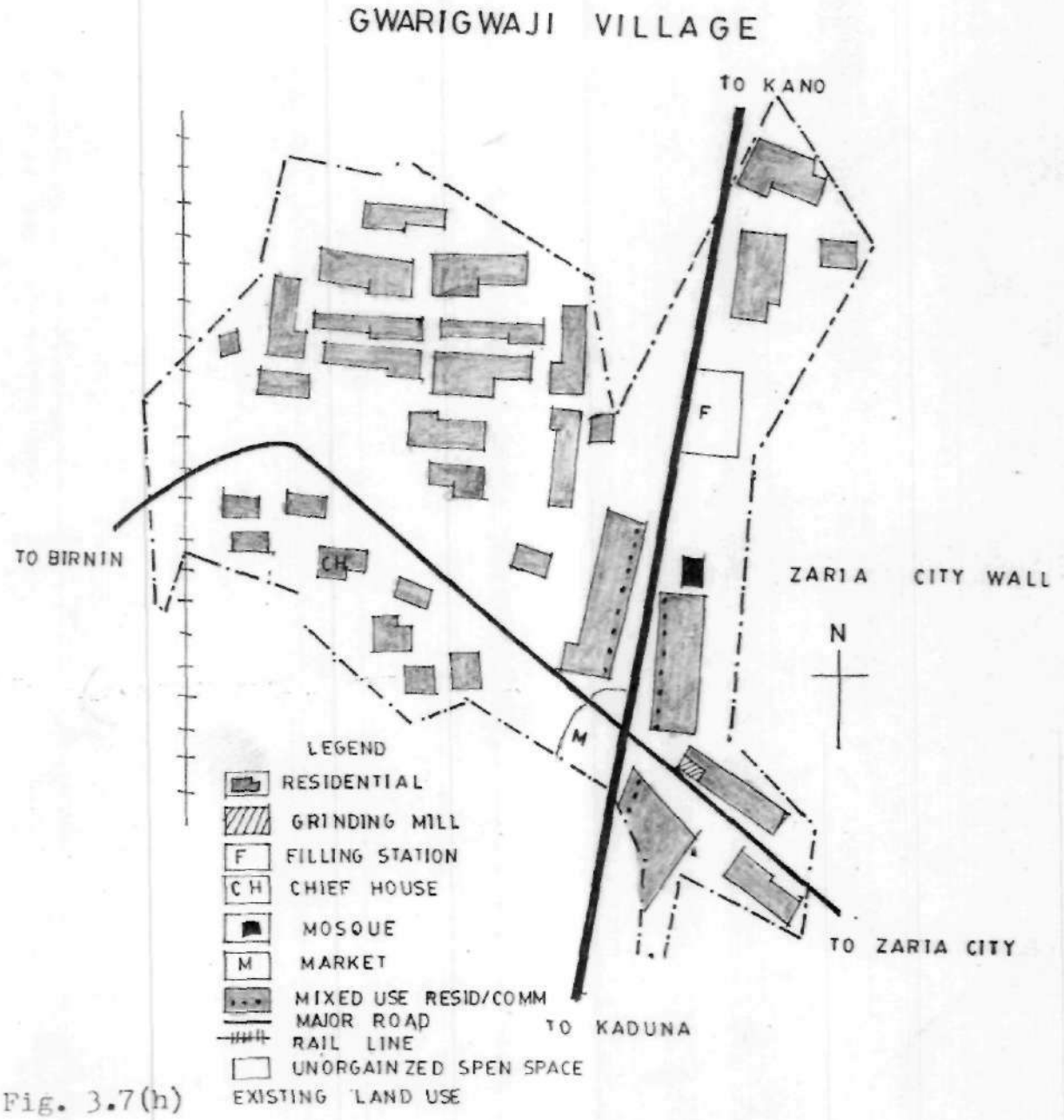



Fig. 3.7(h) EXISTING LAND USE

Scale 1:400

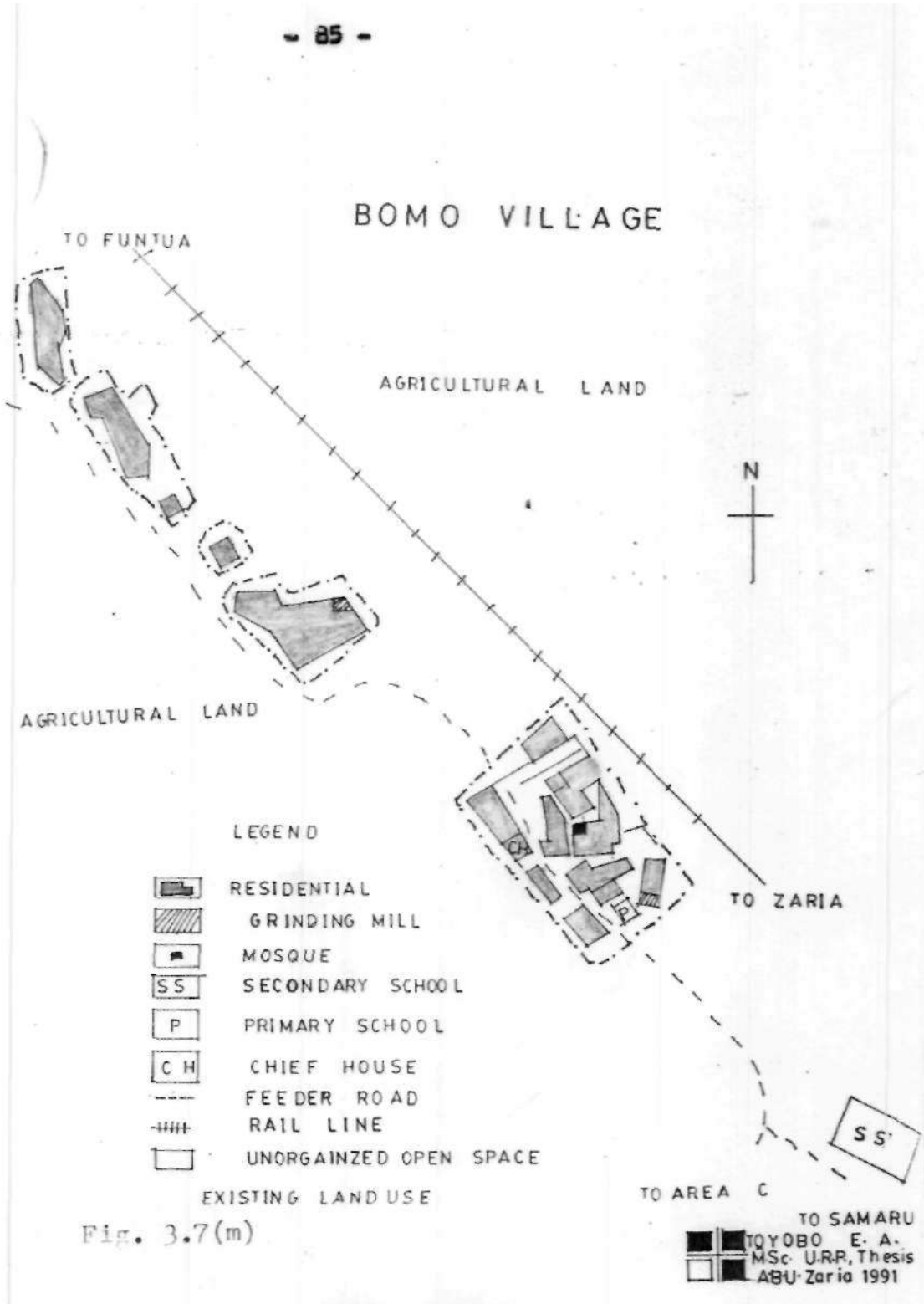
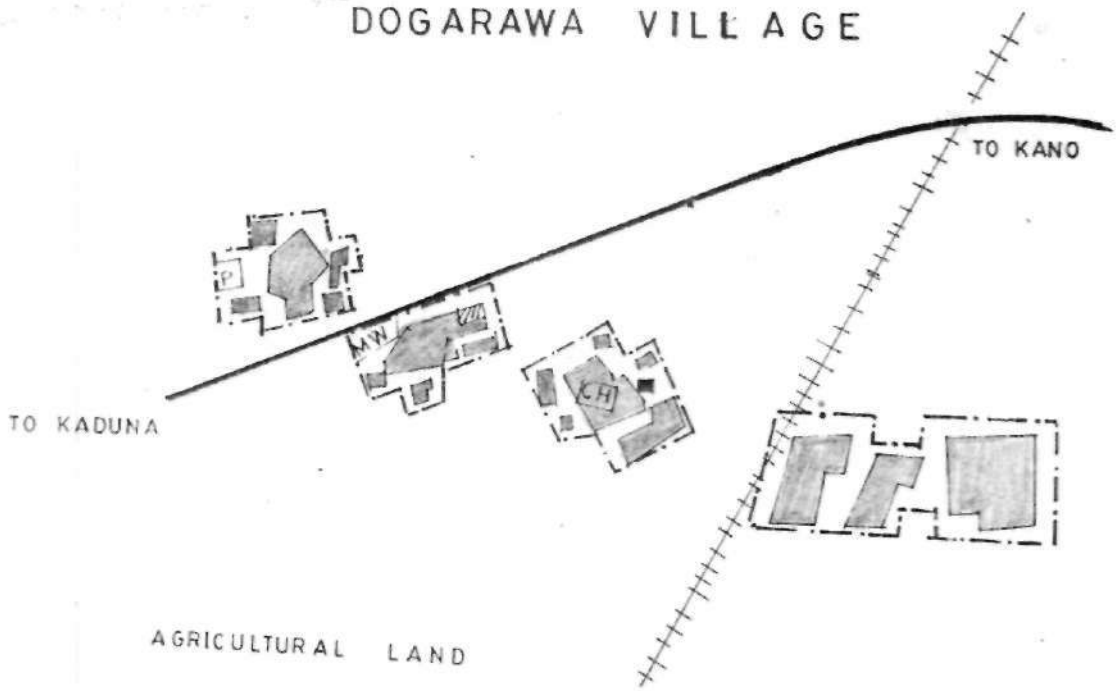

BOMO VILLAGE
TO FUNTUA
AGRICULTURAL LAND
N
AGRICULTURAL LAND
LEGEND
RESIDENTIAL
GRINDING MILL
MOSQUE
SS SECONDARY SCHOOL
P PRIMARY SCHOOL
CH CHIEF HOUSE
FEEDER ROAD
RAIL LINE
UNORGAINZED OPEN SPACE
EXISTING LAND USE
TO ZARIA
TO AREA C
TO SAMARU
TOYOBO E. A.
MSc. U.R.P. Thesis
ABU Zaria 1991
Scale 1:400

Fig. 3.7(m)




LEGEND

- RESIDENTIAL
- UNORGAINZED OPEN SPACE
- GRINDING MILL
- MAJOR ROAD
- RAILWAY LINE
- C H — CHIEF HOUSE
- MOSQUE
- MW — MECH. WORKSHOP
- P — PRIMARY SCHOOL.

N

TOYOBO E. A.
M.Sc. II U.R.P.
Thesis abu., zaria 1991.

Fig. 3.7(i) EXISTING LAND USE

Scale 1:400

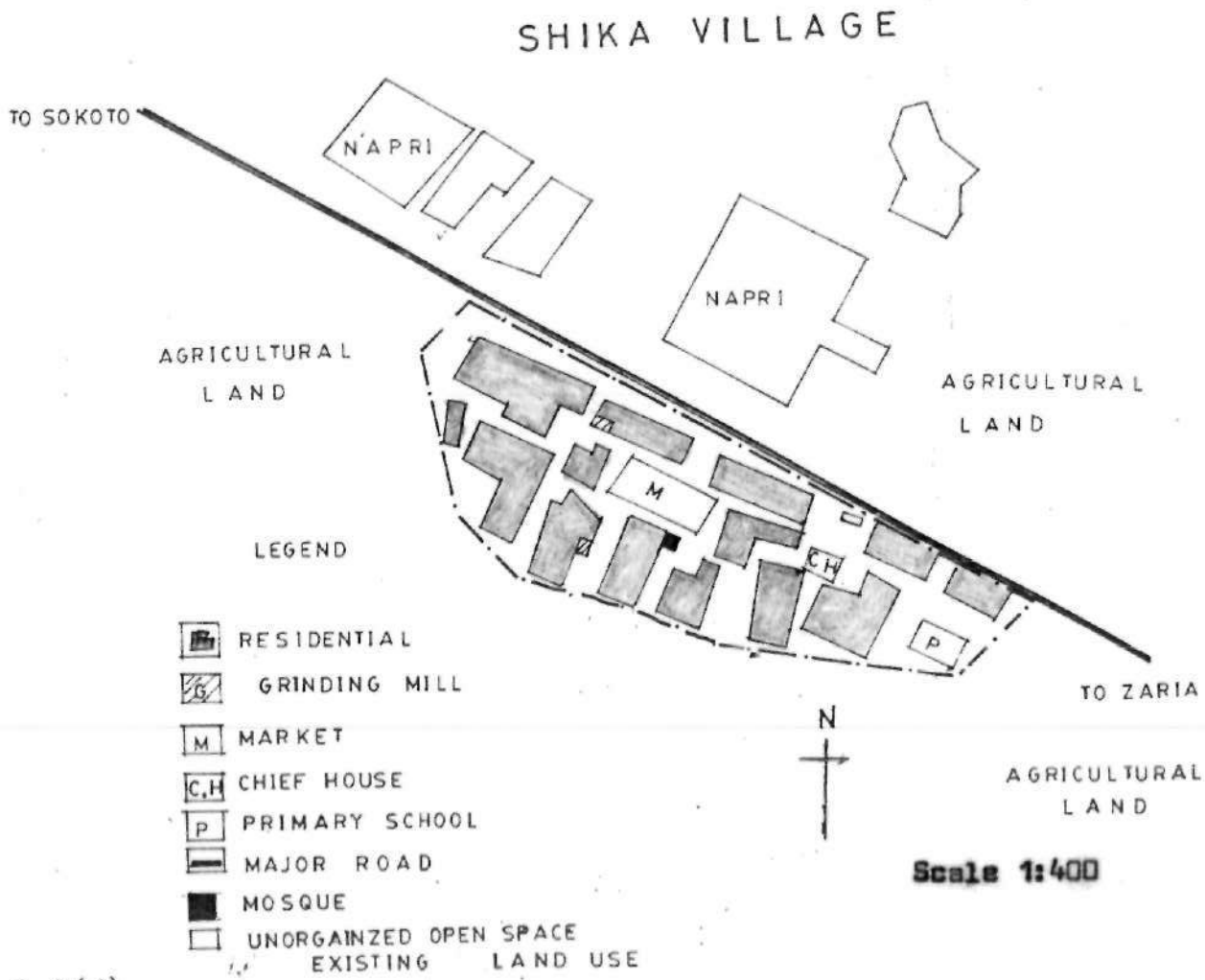

SHIKA VILLAGE
TO SOKOTO
NAPRI
NAPRI
AGRICULTURAL LAND
AGRICULTURAL LAND
M
CH
P
TO ZARIA
N
AGRICULTURAL LAND
Scale 1:400
LEGEND
RESIDENTIAL
G GRINDING MILL
M MARKET
C.H CHIEF HOUSE
P PRIMARY SCHOOL
MAJOR ROAD
MOSQUE
UNORGAINZED OPEN SPACE
EXISTING LAND USE

Fig. 3.7(j)

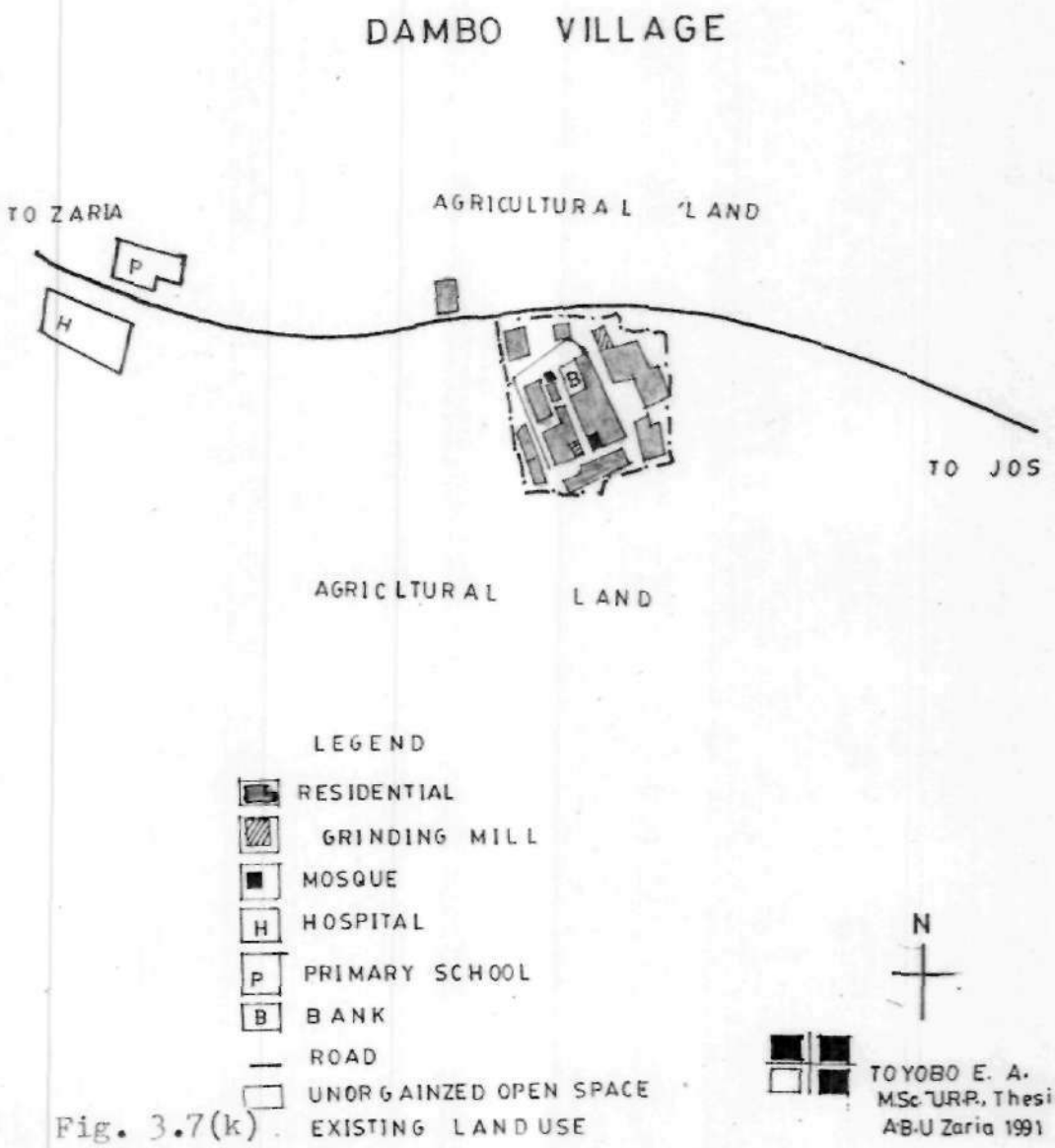



Fig. 3.7(k)

Scale 1:400

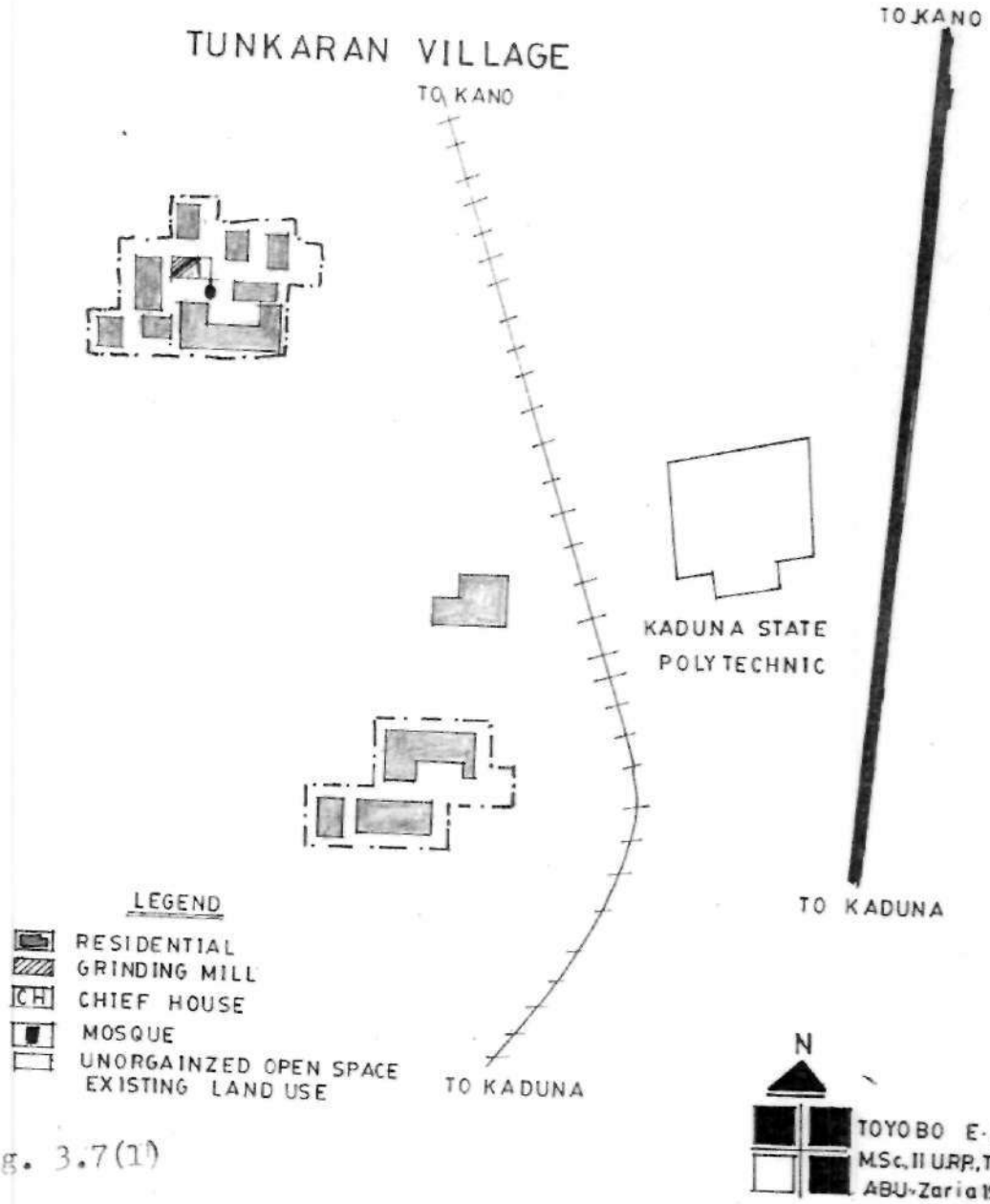



Fig. 3.7(1)

Scale 1:400

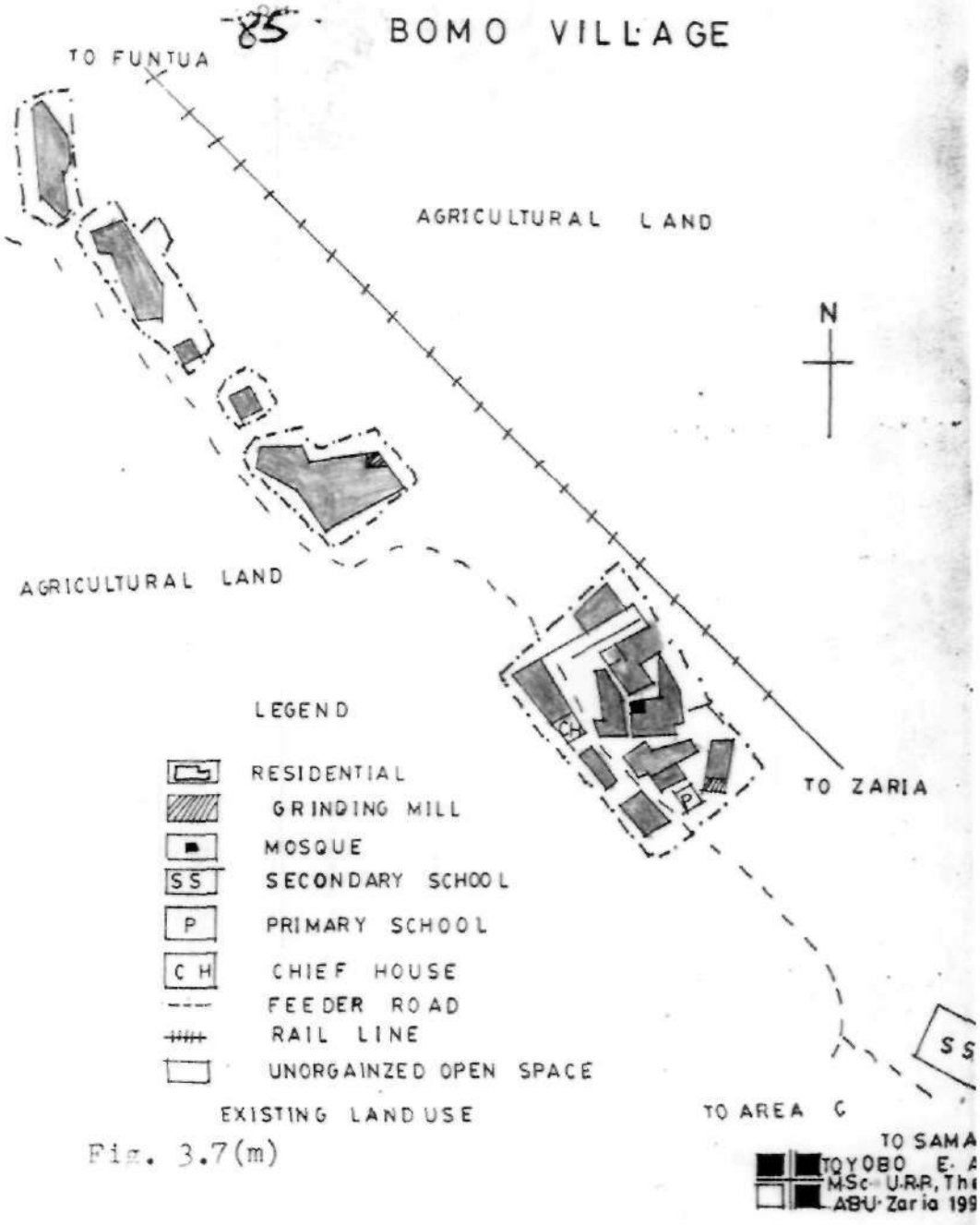

BOMO VILLAGE
TO FUNTUA
AGRICULTURAL LAND
N
AGRICULTURAL LAND
CH
P
TO ZARIA
LEGEND
RESIDENTIAL
GRINDING MILL
MOSQUE
SS SECONDARY SCHOOL
P PRIMARY SCHOOL
CH CHIEF HOUSE
FEEDER ROAD
RAIL LINE
UNORGAINZED OPEN SPACE
EXISTING LAND USE
TO AREA C
TO SAMA
TOYOBO E. A
M.Sc U.R.P, Th
ABU Zaria 19

Fig. 3.7(m)

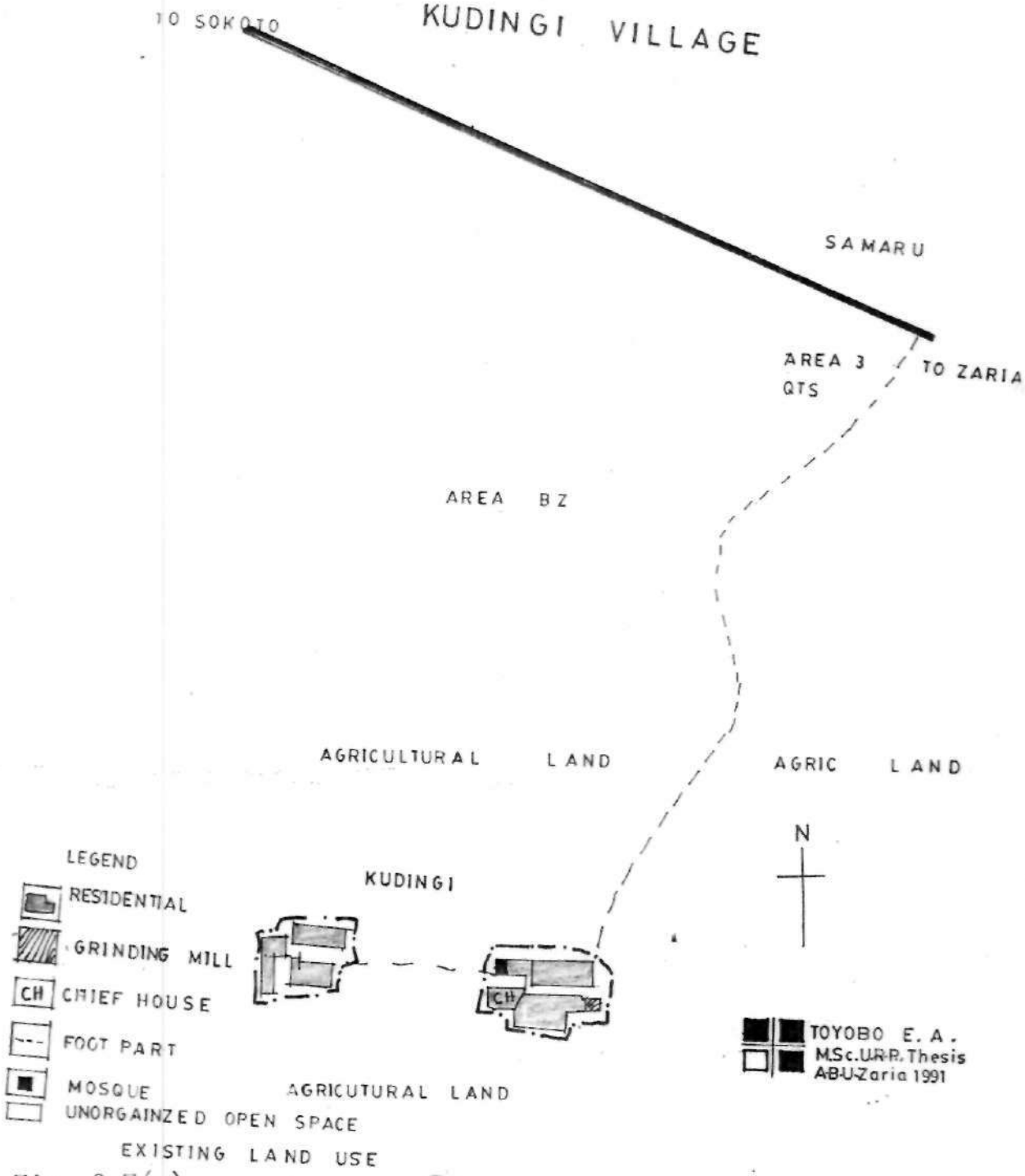

TO SOKOTO
KUDINGI VILLAGE
SAMARU
AREA 3
QTS
TO ZARIA
AREA BZ
AGRICULTURAL LAND
AGRIC LAND
N
LEGEND
RESIDENTIAL
GRINDING MILL
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FOOT PART
MOSQUE
UNORGAINZED OPEN SPACE
KUDINGI
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AGRICUTURAL LAND
TOYOBO E. A.
M.Sc.U.R.P. Thesis
ABU-Zaria 1991
EXISTING LAND USE
Dv
Scale 1:400

Fig. 3.7(n)

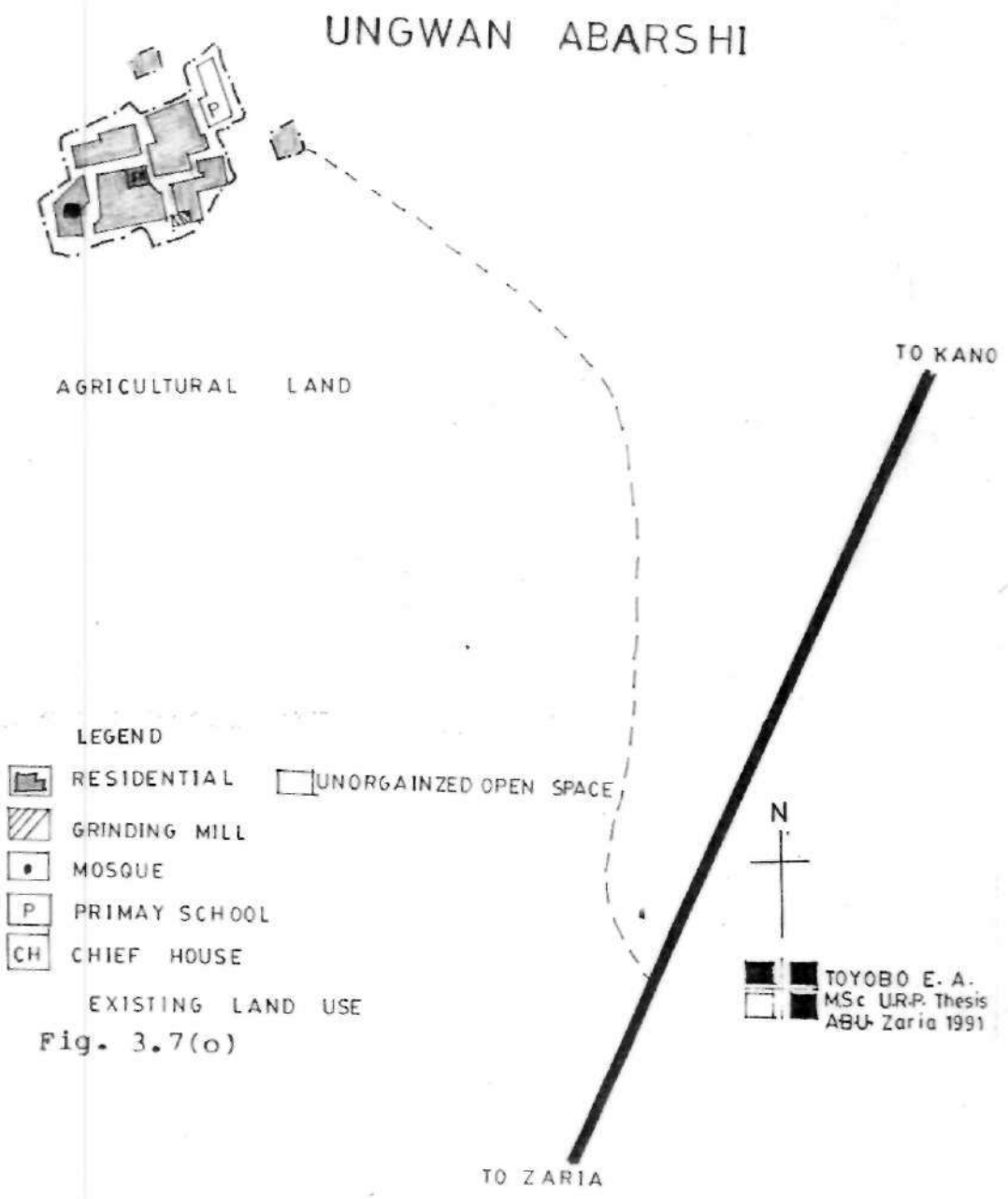
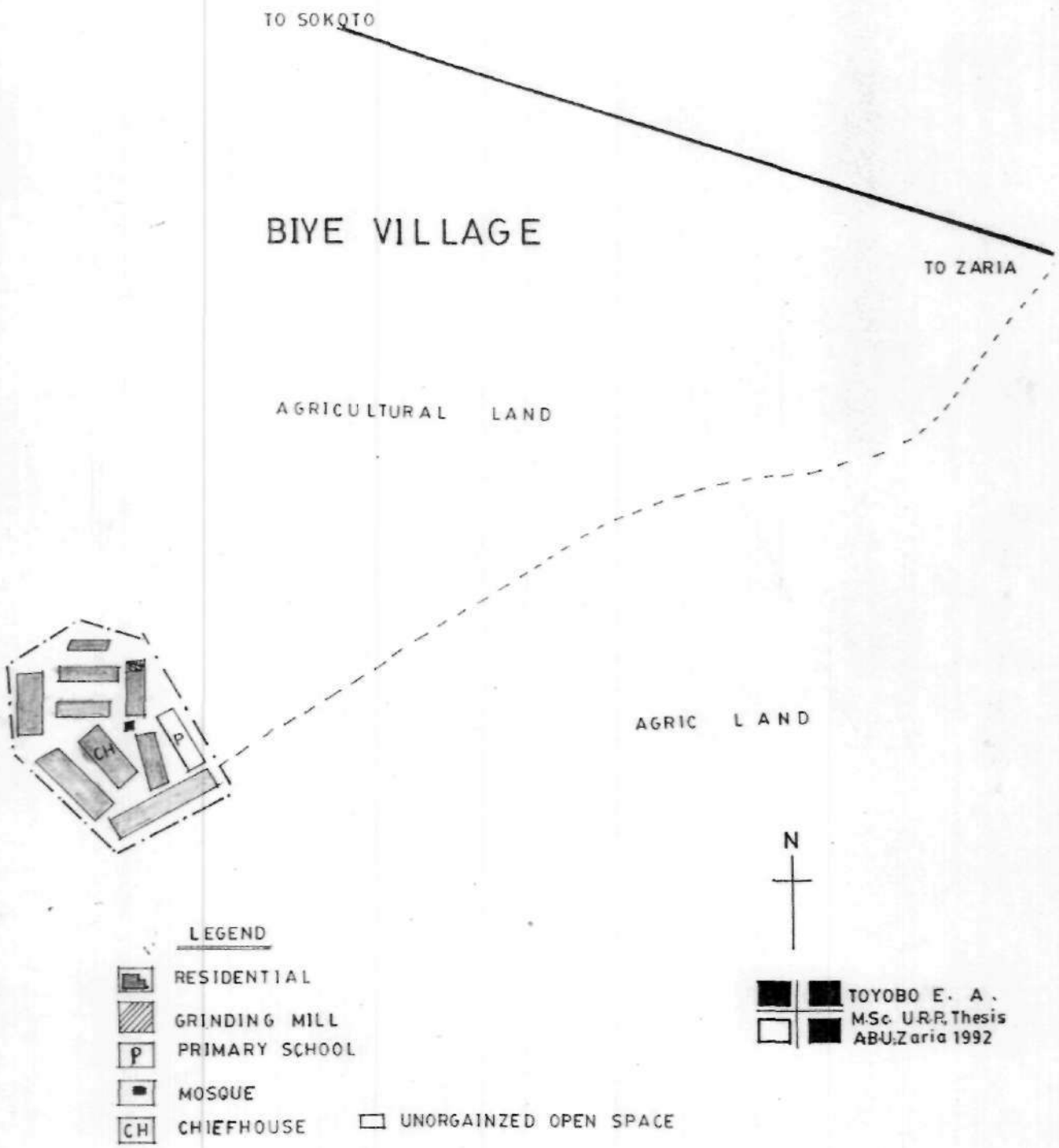

UNGWAN ABARSHI
P
AGRICULTURAL LAND
TO KANO
LEGEND
RESIDENTIAL
UNORGAINZED OPEN SPACE
GRINDING MILL
MOSQUE
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CH CHIEF HOUSE
EXISTING LAND USE
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TOYOBO E. A.
MSc URP Thesis
ABU Zaria 1991
TO ZARIA
Scale 1:400

Fig. 3.7(o)




EXISTING LAND USE

Fig. 3.7(p)

Scale 1:400

Table 3.8: Existing landuse analysis of Paladan 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 29.5 | 31.05 |
| Commercial | 0.9 | 0.95 |
| Public and Semi Public | 1.07 | 1.13 |
| Industrial | 0.02 | 0.02 |
| Open Space | 63.51 | 66.85 |
| Total | 95 | 100 |

Table 3.9: Existing landuse analysis of Shika 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 15.6 | 35.37 |
| Commercial | 1.68 | 3.81 |
| Public and Semi Public | 24.96 | 56.60 |
| Industrial | 0.48 | 1.09 |
| Open Space | 1.38 | 3.13 |
| Total | 44.1 | 100 |

Table 3.10: Existing landuse analysis of Basawa, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 32.0 | 35.71 |
| Commercial | 0.01 | 0.11 |
| Public and Semi Public | 15.65 | 17.47 |
| Industrial | 0.6 | 0.67 |
| Open Space/Road | 41.34 | 46.13 |
| Total | 89.6 | 100 |

Table 3.11: Existing landuse analysis of Wusasa 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 28.9 | 32.86 |
| Commercial | 1.08 | 1.19 |
| Public and Semi Public | 9.48 | 10.45 |
| Industrial | 0.24 | 0.27 |
| Open Space | 50.1 | 55.23 |
| Total | 90.7 | 100 |

Table 3.12: Existing landuse analysis of Dogarawa 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 4.3 | 17.34 |
| Commercial | - | - |
| Public and Semi Public | 1.32 | 5.32 |
| Industrial | 0.4 | 1.61 |
| Open Space | 18.78 | 75.73 |
| Total | 24.8 | 100 |

Table 3.13: Existing landuse analysis of Hanwa 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 46.3 | 49.41 |
| Commercial | 0.7 | 0.75 |
| Public and Semi Public | 1.32 | 1.41 |
| Industrial | 0.02 | 0.02 |
| Open Space | 45.36 | 48.41 |
| Total | 93.7 | 100 |

Table 3.14: Existing landuse analysis of Bomo, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 14.5 | 50 |
| Commercial | - | - |
| Public and Semi Public | 0.8 | 2.76 |
| Industrial | 0.02 | 0.07 |
| Open Space | 13.68 | 47.17 |
| Total | 29.0 | 100 |

Table 3.15: Existing landuse analysis of Unguwan Fulani, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 11.4 | 44.02 |
| Commercial | - | - |
| Public and Semi Public | 1.68 | 6.49 |
| Industrial | 0.6 | 2.31 |
| Open Space | 12.22 | 47.18 |
| Total | 25.9 | 100 |

Table 3.16: Existing landuse analysis of Kwangila, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 9 | 32.03 |
| Commercial | 2.4 | 8.54 |
| Public and Semi Public | 0.96 | 3.42 |
| Industrial | 0.24 | 0.85 |
| Open Space | 15.5 | 55.16 |
| Total | 28.1 | 100 |

Table 3.17: Existing landuse analysis of Gwarigwaji, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 7.5 | 5.09 |
| Commercial | 0.5 | 0.33 |
| Public and Semi Public | 0.1 | 0.07 |
| Industrial | 0.48 | 0.33 |
| Open Space | 138.82 | 94.18 |
| Total | 147.4 | 100 |

Table 3.18: Existing landuse analysis of Biye, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 9.24 | 48.89 |
| Commercial | - | - |
| Public and Semi Public | 1.03 | 5.45 |
| Industrial | 0.01 | 0.05 |
| Open Space | 8.62 | 45.61 |
| Total | 18.9 | 100 |

Table 3.19: Existing landuseanalysis of Tukur Tukur, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 39.33 | 26.59 |
| Commercial | 2.16 | 1.46 |
| Public and Semi Public | 13.93 | 9.42 |
| Industrial | 0.22 | 0.15 |
| Open Space | 92.26 | 62.38 |
| Total | 147.9 | 100 |

Table 3.20: Existing landuse analysis of Tunkaran, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 6.5 | 38.92 |
| Commercial | - | - |
| Public and Semi Public | 0.01 | 0.06 |
| Industrial | 0.02 | 0.12 |
| Open Space | 10.17 | 60.9 |
| Total | 9.7 | 100 |

Table 3.21: Existing landuse analysis of Dambo, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 6.1 | 62.89 |
| Commercial | 0.01 | 0.10 |
| Public and Semi Public | 1.04 | 10.72 |
| Industrial | 0.02 | 0.21 |
| Open Space | 2.53 | 26.08 |
| Total | 9.7 | 100 |

Table 3.22: Existing landuse analysis of Kudingi, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 2.7 | 27.84 |
| Commercial | - | - |
| Public and Semi Public | 0.6 | 6.18 |
| Industrial | 0.01 | 0.10 |
| Open Space | 6.39 | 65.88 |
| Total | 9.7 | 100 |

Table 3.23: Existing landuse analysis of Abarshi, 1991

| Uses | (HA) | % |
|---|---|---|
| Residential | 2.1 | 38.90 |
| Commercial | - | - |
| Public and Semi Public | 0.01 | 0.18 |
| Industrial | 0.01 | 0.18 |
| Open Space | 3.28 | 60.74 |
| Total | 5.4 | 100 |

SOURCE: FIELD WORK, 1991

**Table 3.24:**
Land Holdings of Respondents in the settlements studied

(Hectares)

| Settlement | 0-1 % | 1-2 % | 2-3 % | 3 % |
|---|---|---|---|---|
| Paladan | 30 | 3 | - | - |
| Shika | 60 | 14 | 6 | - |
| Basawa | 19 | 3 | 8 | 12 |
| Wusasa | 36 | 7 | 1 | 18 |
| Dogarawa | 13 | 3 | 1 | 6 |
| Hanwa | 9 | - | 3 | - |
| Bomo | 21 | 17 | - | 4 |
| Idng. Fulani | 16 | 8 | - | - |
| Kwanqila | 10 | 13 | - | - |
| Gwarigwaji | 18 | 3 | - | 7 |
| Biye | 4 | 26 | - | 19 |
| Tukur Tukur | 53 | 11 | - | 5 |
| Tunkaran | - | 31 | 15 | 20 |
| Dambo | 30 | - | 23 | 9 |
| Kudingi | 14 | 25 | 7 | 8 |
| Abarshi | 32 | 20 | - | 10 |
| Total | 365 | 184 | 64 | 118 |

Source: Field Work, 1991

Table 3.25:
Land Acquisition in the settlements studied

| Settlement | Inherited % | Bought % | Gift from Relations % | Others % |
|---|---|---|---|---|
| Paladan | 55 | 30 | 6 | 9 |
| Shika | 60 | 15 | 20 | 5 |
| Basawa | 69 | 23 | 1 | 7 |
| Wusasa | 49 | 51 | - | 1 |
| Dogarawa | 71 | 22 | - | 7 |
| Hanwa | 53 | 41 | 5 | 1 |
| Bomo | 83 | 15 | 2 | - |
| Ung. Fulani | 40 | 52 | - | 8 |
| Kwangila | 73 | 18 | 9 | - |
| Gwarigwaji | 41 | 40 | 1 | 18 |
| Biye | 75 | 19 | 6 | - |
| Tukur Tukur | 54 | 39 | 5 | 2 |
| Tunkaran | 89 | 7 | 4 | - |
| Dambo | 78 | 15 | 7 | - |
| Kudungi | 86 | 8 | 6 | - |
| Abarshi | 77 | 7 | 16 | - |

Source: Field Work, 1991

3.44 Land Acquisition:

The study revealed that within the settlements, inheritance formed the greatest method of land acquisition with 55%, 69%, 83%, 78% etc of the total sample surveyed in Paladan, Basawa, Bomo and Dambo respectively (See Table 3.25).

3.45 Building Condition:

The material used for building in the settlements under study are both traditional and modern. These include: mud, zinc, concrete blocks, cement, thatched roof, etc. Investigation revealed that some buildings are substandard and dilapidated (See Plate One; and Two) Table 3.26 shows the analysis of building condition in each settlement. In Paladan, 30% of the structures are in a good condition while 70% falls within substandard and dilapidated condition. New structures of modern types are found in the settlements under encroachment while these type of urban culture is practiced side by side in the settlements on the process to be encroached upon in the future by Zaria.

Table 3.26 Analysis of Building Condition

| Settlement | Good Structures % | Bad/ Dilapidated Structure % |
|---|---|---|
| Paladan | 30 | 70 |
| Shika | 31.6 | 68.4 |
| Basawa | 20 | 80 |
| Wusasa | 26.7 | 73.3 |
| Dogarawa | 35 | 65 |
| Hanwa | 31.6 | 68.4 |
| Bomo | 43 | 57 |
| Ung. Fulani | 47 | 53 |
| Kwantila | 40 | 60 |
| Gwarigwaji | 27.3 | 72.7 |
| Biye | 20 | 80 |
| Tukur Tukur | 40 | 60 |
| Tunkaran | 39 | 61 |
| Dambo | 45 | 55 |
| Kudingi | 37 | 63 |
| Ung. Abarshi | 28 | 72 |

Source: Field Work , 1991



Tukur Tukur: Building Condition and Type
Plate 3.1:



Hanwa: Dilapidated House in Hanwa Village
Plate 3.2:

## 3.46 ECONOMIC CHARACTERISTICS

The economic characteristics of the settlements both within and around Zaria are considered on the basis of occupation and income. The occupational structure is based on two broad categories. This categorization became necessary due to the variety of occupation that are found within the sampled respondents. The categories are as follows:

(i) Agriculture Employment: This is based on farming activities including dry season market gardening. For the majority, agriculture is a seasonal occupation with the activities taken place in the rainy season.

(ii) Others (i.e. Private and Public Sector Employment): This include all non agricultural activities that are not attached to public or government services. Thus, self employment or wage labour to private institutions falls under this category: some of the activities include nail cutters, barbers, night watchmen, domestic servants, mechanics, labourers, craft activities, etc. Some self employed persons also engaged primarily in the retailing of goods within the settlements while others engage in daily market of farm produce.

Table 3.27 Occupational Analysis

| Settlement | Farming (%) | Others (%) |
|---|---|---|
| Paladan | 55 | 45 |
| Shika | 69.5 | 30.5 |
| Basawa | 50 | 50 |
| Wusasa | 46.7 | 53.3 |
| Dogarawa | 60 | 40 |
| Hanwa | 59 | 41 |
| Bomo | 73.3 | 26.7 |
| Ung. Fulani | 60 | 40 |
| Kwangila | 70 | 30 |
| Gwarigwaji | 61.8 | 38.2 |
| Biye | 85 | 15 |
| Tukur Tukur | 60 | 40 |
| Tunkaran | 89 | 11 |
| Dambo | 90 | 10 |
| Kudingi | 82 | 18 |
| Ung. Abarshi | 81 | 19 |

SOURCE: FIELD WORK, 1991

The public sector cover those employed in government services such as civil servants, while some are employed by public institutions as labourers, messengers, drivers and other professional capacities. These are some of the characteristics of the settlements under encroachment by Zaria. Furthermore, Agriculture is the main activity of all the settlements under study. It was revealed that 55% of the sample respondent in Paladan engage in agriculture, 69.5% for Shika, 60% for Dogarawa, 73.3% for Bomo, 60% for Tukur Tukur, 90% for Dambo, 81% for Abarshi, etc (See Table 3.27).

However, these figures must be seen against other occupation that are evidenced within the settlements. Both public and private account for part of the occupation indicated in the settlements under encroachment.

(iii) Income Structure:

The income level of the inhabitants are in a very low categories. In Paladan, Bomo, Biye, Hanwa and Wusasa, 55%, 71%, 93%, 61% and 80% respectively of the total sample surveyed in each of the settlement earn between ₦1 - ₦299 per month. Table 3.28 shows the analysis of income structure in percentage in each of the settlement studied. These figures may show an

indication of added wealth and a growing prosperity within the settlements. However, the overall picture shows a high dependence on agriculture and averagely low income for the settlements studied.

3.47 Socio-cultural Characteristics:

(i) Investigation has revealed that, all the settlements under encroachment by Zaria such as Paladan, Hanwa, Kwangila, Wusasa, Tukur Tukur, Gwarigwaji, Ungwan Fulani, Bassawa and Dogarawa are ethically heterogeneous. It was seen that Hausa, Ibo, Yoruba, Kanuri, Idoma, Nupe, etc are some of the languages spoken. Hausa language is commonly spoken by the people. These settlements under encroachment are faced with migration into them resulting in increasing population. Migrants in these settlements studied represents diverse backgrounds and socio-cultural influences. The major determinant of customs and beliefs is the adherance to one religion either christianity or muslim. Cultural conflicts results as people with different values system and aspirations come together within the settlements. The spirit of community is fast disappearing as changes in ethnic structure and religion occur within the suburban settlements. The tight nit structure of social relation is distintegrating as modern compound type dwelling and similar structure undermine the basic unit of social organization.

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Table 3.28: INCOME ANALYSIS

| Settlement | (1-299) N | 300 + N |
|---|---|---|
| Paladan | 55 | 45 |
| Shika | 68.4 | 31.6 |
| Basawa | 60 | 40 |
| Musasa | 80 | 20 |
| Dogarawa | 50 | 50 |
| Hanya | 61 | 39 |
| Bomo | 71 | 29 |
| Ung. Fulani | 66 | 34 |
| Kwangila | 79 | 21 |
| Gwarigwaji | 72 | 28 |
| Biye | 93 | 7 |
| Tukur Tukur | 26.7 | 73.3 |
| Tunkaran | 60 | 40 |
| Dambo | 87 | 13 |
| Kudingi | 69 | 31 |
| Ungwan Abarshi | 85 | 15 |

SOURCE: FIELD WORK, 1991

On the other hand, the effect of urban culture is not great in the settlements on the process of encroachment. These settlements include Dambo, Tunkaran, Bomo, etc to mention but a few. Islam is the only religion being practiced. The tight nit structure of social relation exist as traditional compound type dwelling formed the basic unit of social organization.

(ii) Provision of facilities, Services and Utilities:

Table 3.29 shows the analysis of facilities for the settlements studied. Despite the rapid growth in the population of these settlements, the provision is insufficient. Kwangila, Gwarigwaji and Tunkaran are the only settlement without a primary school, while Basawa, Bomo, Wusasa and Tukur Tukur have secondary schools, the rest of the settlements have no secondary school.

In Paladan 50% of the sample respondents have pipe borne water in their residents, 40% water closet, no incenerator for refuse dumping and 75% electricity supply. Some residents have water pipe but are not functioning. The use of pit toilet is a common phenomenon since residents with water closet face the problem of pipe borne water supply. The use of public wells for domestic purpose is also a common characteristics

of the settlements under encroachment. Ungwan Abarshi, Kudingi, Dambo, Tunkaran and Bomo lack some basic facilities such as pipe borne water and electricity supply. Plate 3 and 4 shows a public well and electricity connections in Paladan and Basawa respectively.

Refuse dump is mainly outside the residents as it can be seen on Plate 11 and 12. However, it is observed that, location and accessibility to urban centre play a significant role in the level of urbanity. The circulation system to and within the settlements consist of paths, and roads. Paths form the main link between compounds while roads are the main links to the urban centre. But in Bomo, Kudingi, Abarshi, Tunkaran and Biye are linked with seasonal roads. Table 3.30 shows the analysis of accessibility in terms of location and the distance of the settlement in kilometres to any major road. Plates 6, 9 and 10 shows the type of access routes running to Basawa, Kwangila and Bomo respectively. Figure 3.2 shows location and accessibility.

There is a poor internal circulation system within the settlements as well as poor drainage system (See Plate 7 and 8).

Emphasis of the study are on the settlements under encroachment, there is therefore the need for the provision of services and facilities e.g. dispensaries, playfield, etc. Figures 3.8 and 3.9 shows a graphical representation of facility such as electricity and tap water supply to some sub-urban settlements.

Table 3.29 FACILITY ANALYSIS

| Settlement | EDUCATION | | | MEDICAL | | WATER | TOILET | REFUSE | Electricity |
|---|---|---|---|---|---|---|---|---|---|
| | No. of Pry Schools | No. of Sec. Sch. | No. of Post Pry Schools | No. of Clinics | No. of Hospitals | Pipe borne | Water Closet | Incinerator | HEP Supply |
| Paladan | 1 | - | - | 1 | | 50 | 40 | - | 75 |
| Shika | 1 | - | - | 1 | | 42 | 16 | - | 84 |
| Basawa | 1 | 1 | - | 1 | | 40 | 10 | 20 | 80 |
| Wusasa | 2 | 2 | 1 | - | 1 | 53 | 33 | 13 | 93 |
| Dogarawa | 1 | - | - | - | | 40 | - | - | 40 |
| Hanwa | 1 | - | - | - | | 53 | 32 | 21 | 79 |
| Bomo | 1 | 1 | - | 1 | | - | - | - | - |
| Ung. Fulani | 2 | - | - | - | | 60 | 33 | - | 80 |
| Kwangila | - | - | - | - | | 50 | 10 | - | 90 |
| Gwarigwaji | - | - | - | - | | 54 | - | - | 64 |
| Biye | 1 | - | - | - | | - | - | - | 60 |
| Tukur Tukur | 2 | 1 | - | 1 | | 53 | 33 | 80 | 73 |
| Tunkaran | - | - | 1 | 1 | | - | - | - | - |
| Dambo | 1 | - | - | 1 | | - | - | - | - |
| Kudingi | 1 | - | - | - | | - | - | - | - |
| Ung. Abarshi | 1 | - | - | - | | - | - | - | - |
| TOTAL | 16 | 5 | 2 | 7 | 1 | | | | |

SOURCE: FIELD WORK, 1991

Table 3.30: ACCESSIBILITY ANALYSIS

| Settlement | Location | Distance from main road to Village Centre | Tarred km | Untarred km |
|---|---|---|---|---|
| Faladan | North West of Kwangila | 0.6 | - | 0.6 |
| Shika | North West of Biye | 0.4 | - | 0.4 |
| Basawa | North east of Samaru | 0.6 | - | 0.6 |
| Wusasa | South east of Kufena Hill | 0.2 | - | 0.2 |
| Dogarawa | North east of Hanwa Rock | 0.4 | - | 0.4 |
| Hanwa | South of Kwangila | 1 | - | 1 |
| Bomo | North of Area 'C', ABU Qtrs | 2 | 0.8 | 1.2 |
| Ung. Fulani | South east of Dogarawa | 0.4 | - | 0.4 |
| Kwangila | North of Hanwa | 0.4 | 0.15 | 0.25 |
| Gwarigwaji | South of Wusasa | 0.8 | - | 0.8 |
| Biye | South east of Shika | 3.6 | - | 3.6 |
| Tukur Tukur | North east of Wusasa | 0.9 | 0.6 | 0.3 |
| Tunkaran | South west of Gwarigwaji | 1.6 | - | 1.6 |
| Dambo | South east of Tudun Wada | 0.4 | - | 0.4 |
| Kudingi | South West of ABU M/Campus | 2.4 | 0.8 | 1.6 |
| Ung. Abarshi | Northwest of Zabi Zaria | 4.8 | - | 4.8 |

SOURCE: FIELD WORK, 1991



Paladan: Public Well
Plate 3.3:



Basawa: Electricity connection
Plate 3.4:




Plate 3.5: Bomo: Community Primary Health Care Centre



Plate 3.6: Basawa: Old Kano road with potholes

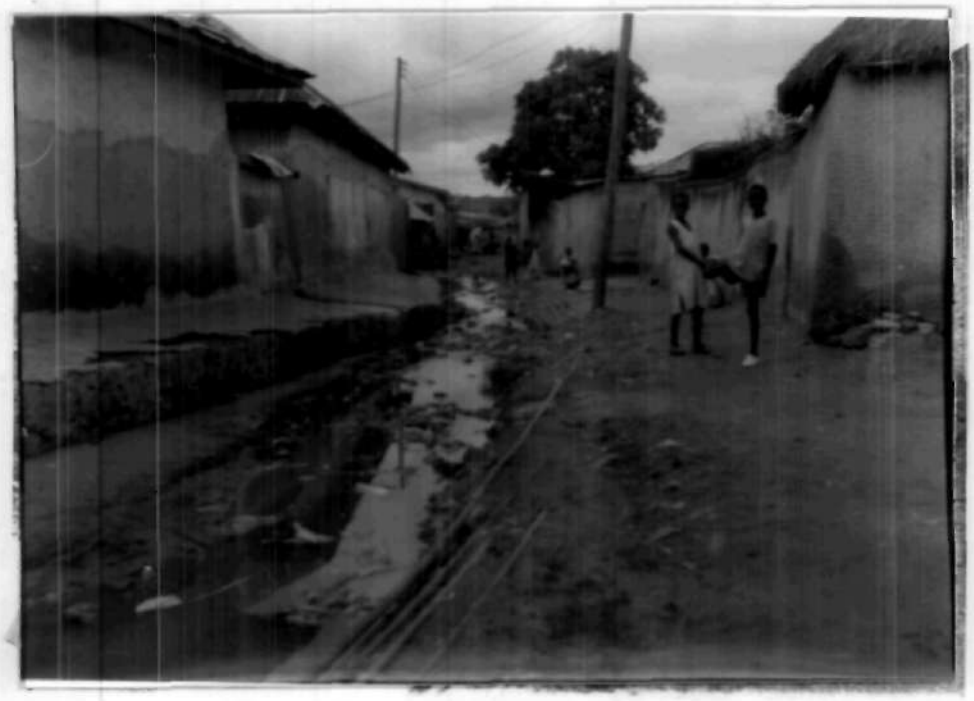


Plate 3.7: Ungwan Fulani: Poor Drainage System



Plate 3.8: Basawa: Poor drainage system



Plate 3.9: Kwangila: Poor Accessibility



Plate 3.10: Bomo: Untarred road to Bomo



Plate 3.11: Paladan: Refuse Disposal System



Plate 3.12: Wusasa: Refuse Disposal System

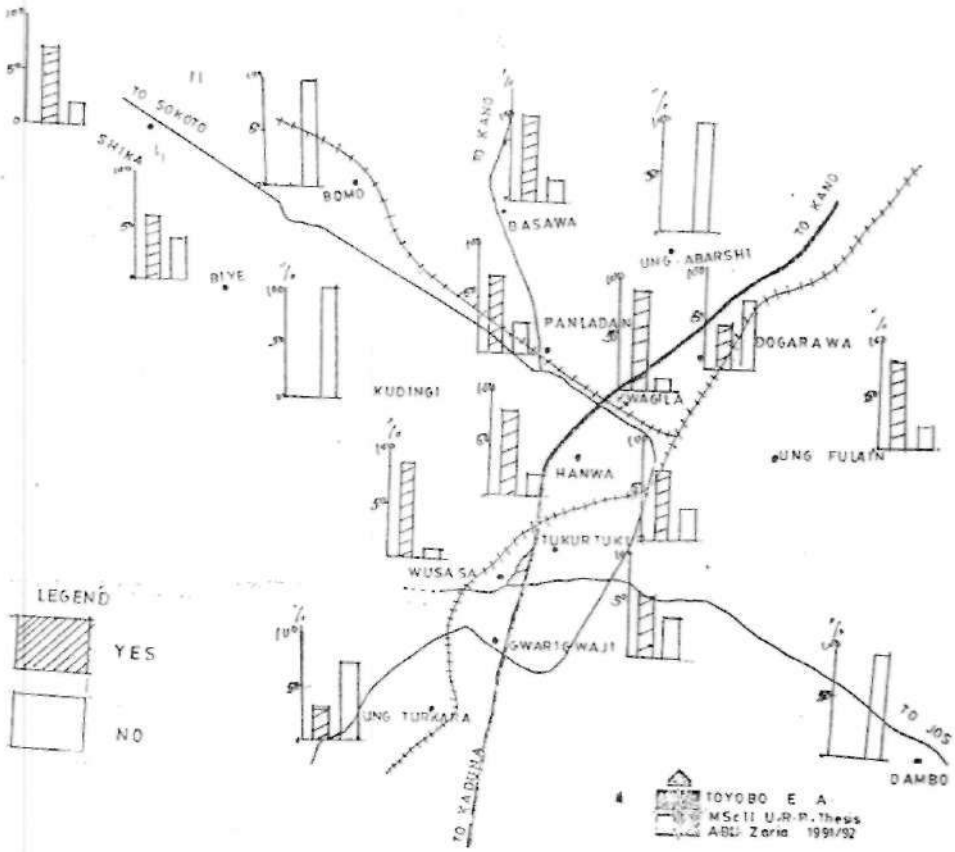
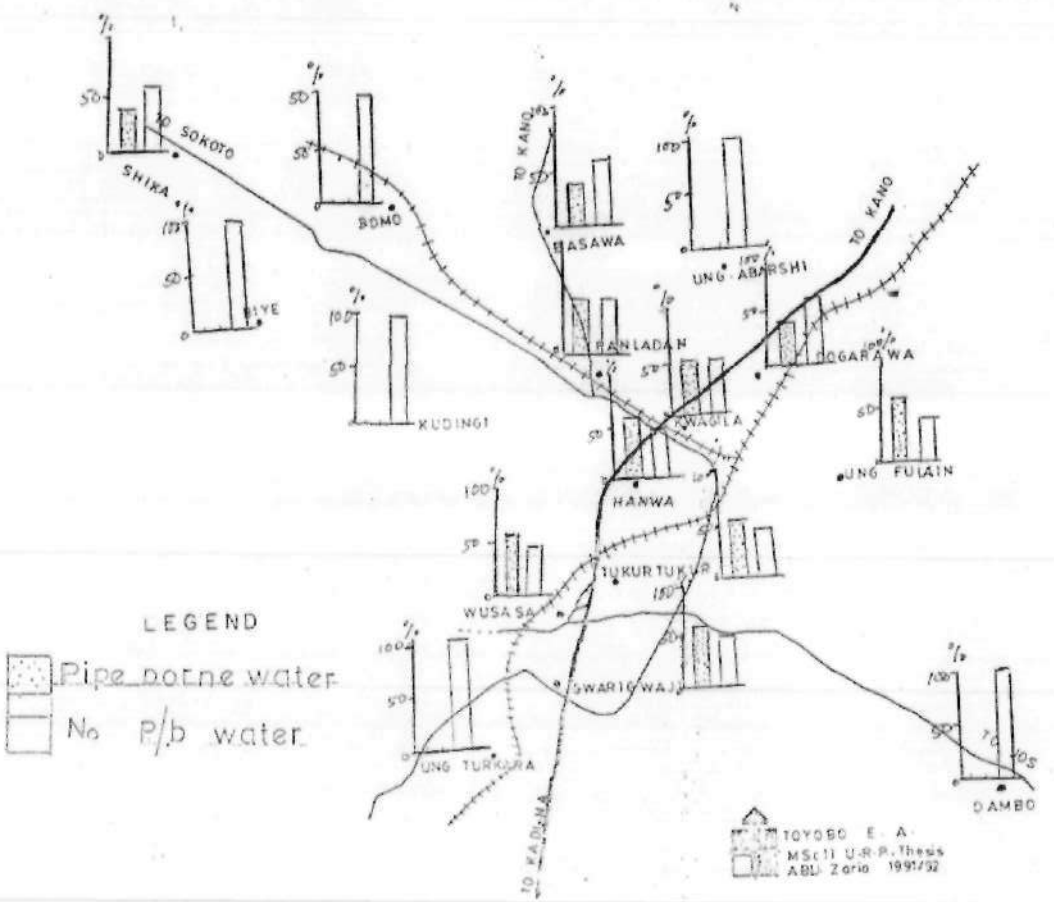



Fig. 3.8 ZARIA SUBURBAN SETTLEMENT STUDY
ELECTRICITY SUPPLY




ZARIA SUBURBAN SETTLEMENT STUDY

TAP WATER SUPPLY

Fig. 3.9

## 3.50 FUNCTIONAL RELATIONSHIP OF SUB-URBAN SETTLEMENTS WITH ZARIA URBAN CENTRE

The striking relationship between the settlements under study and Zaria urban centre is buying and selling. However, the following relationship exist:

### 3.51 Economic Interaction:

There is a symbolic relationship between Zaria urban centre and the settlements both within and around it. The settlements offer agricultural produce to the urban centre while the urban economy extends its activities to the rural economy through its offer of urban goods and services. The economic interaction between urban and rural are actually extremely complex and the viable movement of goods and services is only a part of the total independence between the two units of settlements. Table 3.31 shows the analysis of work place as part of the economic interdependence in terms of employment opportunity. The location of the place of work dictates the type of transport mode readily used. Table 3.32 shows the analysis in percentages the various modes use by each settlement to work place. In Paladan, 40% of the sample surveyed travel on foot or bicycles to work place. About 35% travel by taxi. This vary from settlement to settlement. Figure 3.10 shows a graphical representation of the various transport modes used by each settlement to work places.

Table 3.31: LOCATION OF WORK PLACE ANALYSIS

| Name of Settlement | Samaru % | Tudun Wada, Zaria City & Sabon Gari (%) | The Village itself (%) |
|---|---|---|---|
| Paladan | 10 | 30 | 60 |
| Shika | 26.3 | - | 73.7 |
| Basawa | 30 | - | 70 |
| Wusasa | 6.7 | 53.3 | 40 |
| Dogarawa | - | 10 | 90 |
| Hanwa | 21.1 | 47.4 | 31.6 |
| Bomo | 53.3 | - | 46.7 |
| Ungwan Fulani | - | 60 | 40 |
| Kwangila | 20 | 30 | 50 |
| Gwarigwaji | - | 27.3 | 72.7 |
| Biye | 20 | - | 80 |
| Tukur Tukur | 26.7 | 26.7 | 46.7 |
| Tunkaran | - | 16 | 84 |
| Dambo | - | 30 | 70 |
| Kudingi | 30 | - | 70 |
| Ung. Abarshi | - | 10 | 90 |

SOURCE: FIELD WORK, 1991

TABLE 3.32:
MODE OF TRANSPORT FROM SETTLEMENT TO WORK PLACES

| Settlement | Foot and Bicycles % | Motor Cycles Personal car % | Bus and Taxi % |
|---|---|---|---|
| Paladan | 40 | 25 | 35 |
| Shika | 46.9 | 30.1 | 23 |
| Basawa | 46.1 | 30.4 | 23.5 |
| Wusasa | 26.9 | 20.1 | 53 |
| Dogarawa | 74.4 | 15.6 | 10 |
| Hanwa | 13 | 30 | 57 |
| Bomo | 40.7 | 59.3 | - |
| Ung. Fulani | 20 | 35 | 45 |
| Kwangila | 32.7 | 30 | 37.3 |
| Gwarigwaji | 22.9 | 53.1 | 24 |
| Biye | 41.9 | 57 | 1.1 |
| Tukur Tukur | 48.8 | 18.4 | 47.3 |
| Tunkaran | 67.2 | 32.8 | - |
| Dambo | 23 | 39 | 28 |
| Kudingi | 56.3 | 43.7 | - |
| Ung. Abarshi | 40 | 60 | - |

SOURCE: FIELD WORK, 1991

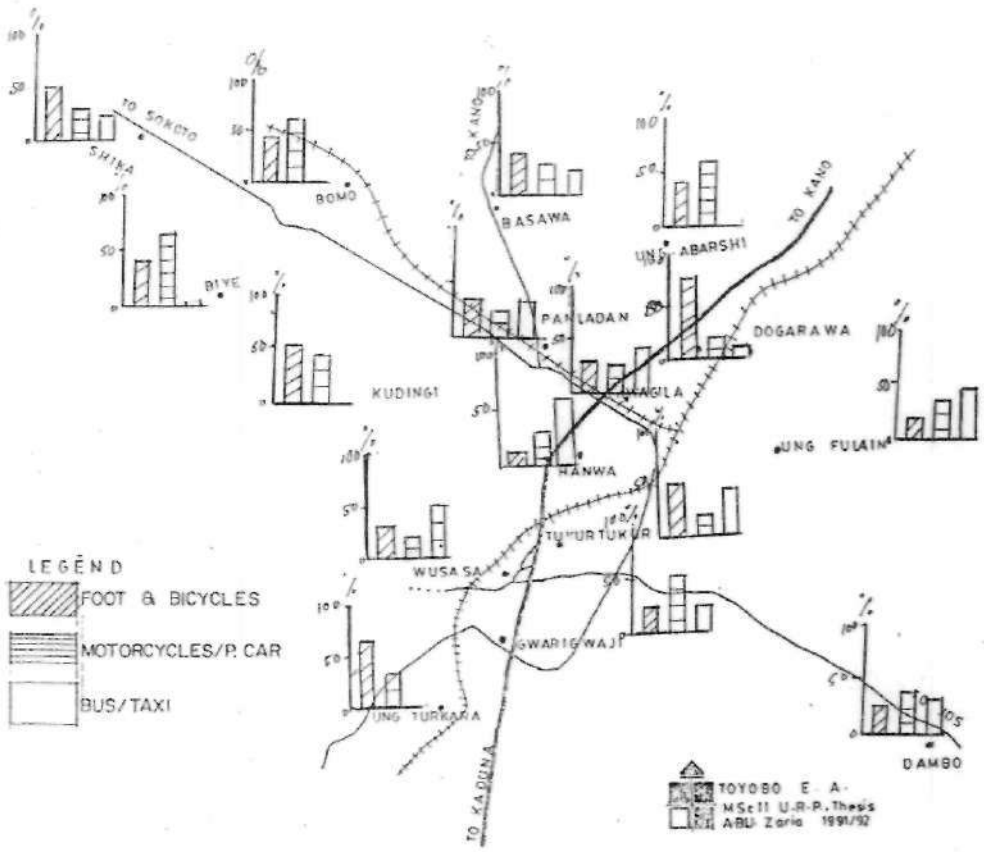



Fig. 3.10: *ZARIA SUBURBAN SETTLEMENTS STUDY*
*TRANSPORTION MODES*

3.52 Social Interaction:

Social interaction exist between Zaria Urban Centre and the suburban settlements within and around Zaria through the movement and actions of migrants. The increase between urban and the sub-urban areas by migrants increases social feedback and reduces the gap between the sub-urban settlements under study. Increasely, urbanization has become a way of life and not necessary a phenomenon associated with the settlements under encroachment. Sub-urban areas remote from urban centre e.g. Bomo, Dambo, Tunkaran, etc could adopt urban attitudes to life and could be practising an urban culture without necessarily being in physical contact.

3.53 Political interaction:

The inter-relationship between the urban and the sub-urban areas goes beyond economic and social interactions. The two areas could share the same political arrangement by which Zaria urban area is regarded as a region incorporating the urban itself together with the sub-urban area and other rural hinterland. In this arrangement, the political relationship takes care of planning proposals, administration and rendering of services Through this arrangement, a feedback mechanism between the urban and

the sub-urban settlements under study is established. Such a feed back is supposed to correct the imbalance which exists between the urban authority and the sub-urban administration whose contribution is not taken seriously in urban administration.

3.60 PROBLEMS OF SUB-URBAN ENCROACHMENT OF ZARIA TOWN

The common problems associated with encroachment of suburban settlements can be categorised into four. These problems are interrelated and cannot be treated in isolation. The problems are considered under the following:

1. Land problem
2. Economic problem
3. Social Problem
4. Administrative problem.

3.61 Land Problem:

The most fundamental problem is land and this forms the basis of all other activities. The problem of land can be considered under the following:

(a) Land losses due to urban encroachment: on rural lands.

Investigation has revealed that the growth of Zaria Urban centre has consumed land around some traditional settlements. Various developments since 1976 consumed hectares of land in the vicinity of some settlements

understudy. The effect of the encroachment have led to losses of land which were used for agricultural purpose. This can further be associated with problems drawing the following:

(a) Land Ownership: Land in the settlements under encroachment is held under customary rights. This is an insecure form of tenure with no guarantee against displacement, since it provides no official documentation. This proves to be a problem especially in terms of rights to land within the framework of the urban area, where officially sactioned title to land is required.

(b) Urban land Use: The proximity of suburban settlements to urban centre, the greater the settlement losses through landuse clashes, Such as residential, commercial, public and semi public as well as industrial landuse. The example of these settlements are Hanwa, Kwangila, Paladan, Wusasa, Ungwan Fulani, Tukur Tukur. This involves the planning of urban landuse without the regard to the existence of the settlements at the suburban areas.

(c) land Value: The value of land is high at the urban centre of Zaria but low towards the edges of the city. This has attracted land speculators looking for land thereby contributing to rural land loss in the settlement study.

(d) Fragmentation of land: This is due to some factors from within the settlements (inheritance laws) and urban forces whichcontribute to land fragmentation. This poses a problem in terms of livelihood and production.

3.62 SOCIO-ECONOMIC PROBLEMS

losses of land directly affect the economic status of the inhabitants of the settlements as agriculture is still the dominant occupation. This loss in land undermines the economic lost of the inhabitants of these settlements for the following reasons:

(a) Employment: Loss of land forces people from agriculture into other occupations. They seek work within the urban centre or in non-agricultural activities around and within these settlements. However, these people possesses few skills required by many employers within the urban centre. Some of the people are poorly educated. This factor militate against the absorbtion of the people into urban jobs. Therefore informal activities increase. This restricts prospects as the inhabitants are marginalised within the economic structure and this is a serious problem.

(b) Low Income level: It is an important characteristics of suburban population, because it has the concentration of the low income group. This in effect means less

revenue for the provision of amenities. From the previous discussion, we have seen that, these areas constitute migrants from different groups and are of low income group. The main reason for settling at the suburb is due to house affordability in terms of accommodation.

(c) Absence of Community Organization: The settlements under encroachment such as Paladan, Hanwa, Basawa, Wusasa, Tukur Tukur, etc constitutes many ethnic groups and these heterogenity of the residents makes it difficult to form an organized body for communal purposes which will improve their environment. Therefore, in most of the settlements there are no community organizations for the improvements of these areas under study.

(d) Poor Sanitary Arrangements: There is absence of a well organized refuse collection system in the areas under encroachment by Zaria. The domestic refuse is disposed any how. Some houses are served with pit latrine. There is also the evidence during the investigation that, some human waste were disposed at nearby open spaces. Therefore, the general refuse disposal in these areas under encroachment are not adequate or proper.

(e) Accessibility: All the settlements that fall under the encroachment of Zaria have poor internal circulation and drainage system. Settlements such as Hanwa, Kwangila have poor linkages. Plate 9 shows a good example of poor accessibility.

(f) Lack of Services and Amenities: With increase in the population of the suburban areas, the demand for amenities and services are higher. There are no recreational facilities such as parks, play-field or totlot, convenient shops, etc. Health services are lacking in some of the settlements like Ungwan Fulani, Hanwa and Kwangila.

3.63 ADMINISTRATIVE PROBLEMS

The administrative problems which affect city planning functions can be observed in the lack of strong administrative management. This results in the attitude of the traditional rulers, delay in granting permit and certificate of occupancy, building by-laws as well as lack of public enlightenment respectively. The above problems are briefly discussed.

(a) Attitude of the Traditional Rulers: In this case, the traditional rulers connive with some people in reed of land. Within few days or months, farmlands

are converted into residential plots. Such illegal areas cover wide expense of land to such an extent where the Zonal Planning Authority cannot demolish. All this results is due to lack of strong administrative management on the part of the planning Authority. Furthermore, there is also lack of co-operation between the community and the planning authority. The fact that, there are no traditional representatives in the decision making policies the inhabitants of the settlements are always hostile to any intervention by the planning authority.

(b) Lack of Effective Development Control:

"Development control is a collection of inter-related para-legal and administrative techniques and instruments designed to safeguard, regulate, conserve and disburse land or part thereof in the the interest of the overall community. It aims at solving the problem of compactible use of land and bringing the area in line with general plan and controlling land development. Therefore, the zonal planning Authority in Zaria faces many problems in enforcing planning regulations which are the basis for controlling landuse despite the policy guidelines provided by the Edict. To this end there is also insufficient financial support to implement plan proposals.

## 3.70 PROSPECT OF ENCROACHMENT OF ZARIA SUB-URBAN SETTLEMENTS.

In the light of the foregoing discussion of the characteristics and nature of suburban encroachment within and around Zaria urban area. The prospect for the settlements are not promising due to the present ad-hoc planning administration both at the local and state level.

However, it must be understood that changes in these settlements is inevitable and irreversible. The changes taking place can be directed towards achieving some goals and objectives, through deliberate planning intervention. This should be directed at enhancing the characteristics which are considered positive and retaining the identities of the communities of the settlements under study. This will bring the settlements uinto the main stream of planning process and urban development.

The best prospects for these settlements lie in deliberate planning action by the planning authorities and the inhabitants of these settlements. The prospect again would lie to an integrationist approach within what Ajaegbu (1976) termed "Integrated Urban Rural-Planning". It is in this regard that strategies for the integration of the suburban settlements are evaluated in the second chapter.

## CHAPTER FOUR

# 4.00 PROPOSALS FOR THE DEVELOPMENT OF SUB-URBAN ENCROACHMENT OF ZARIA TOWN

## 4.10 POLICY RECOMMENDATIONS

The proposals made were formulated within the framework of the following policy recommendations. These relates to the strategies that are applied to tackle the problem of suburban encroachment. In this regard, the recommendation are the following:

1. Urban growth policies
2. Urban Administrative Policies
3. Land Policies
4. Environmental Policies
5. Income Policies.

## 4.11 Urban Growth Policies:

The encroachment of settlements by city growth is seen to be inevitble , therefore, it is necessary to have guidelines for monitoring and control of growth as it affect settlements within and around urban centre. This should be directed at the following specific areas:

1. Land Use Compactibility: One of the problems faced by the settlements under encroachment by Zaria is identified as the haphazard pattern of land use. It is recommended that, policy

should be directed at ensuring of detailed design of development plan in the form of local area plans and subject plan for these settlements under encroachment. In the designing, landuse that are compactible with these settlements should be enhanced through integration of settlements into the urban fabric.

2. Accessibility and Growth: Urban growth policy vis-a-vis suburban encroachment need to be concerned with the location of the settlement and accessibility to urban centre. The careful application of urban growth policy will eliminate the need to relocate settlement(s) and reduce the disorientation that can result from rapid change.

4.12 Administrative Policy:

The encroachment of suburban settlements under study falls under the administration of the Zonal planning authority in Zaria with their headquarters in Kaduna. Within the same area of study, the local government has powers of administration. The development powers are vested in both administrations. This has resulted in conflicts and the general neglect of the settlements under encroachment by Zaria physical growth. In order to eliminate the conflicts of jurisdiction and bring these settlements into focus of administration, it is recommended that:

(i) Policy should re-emphasize the functions of the zonal planning authority with regard to development matters within the declared planning area within which are found the settlements under study. The zonal planning authority should be vested with pioneers overall other agencies in development matters in the declared urban area.

(ii) Within the structural framework of the zonal planning authority, traditional resppesentatives should fall directly under specifically created department that will be responsible for activities of development in the settlements (See Fig. 4.1).

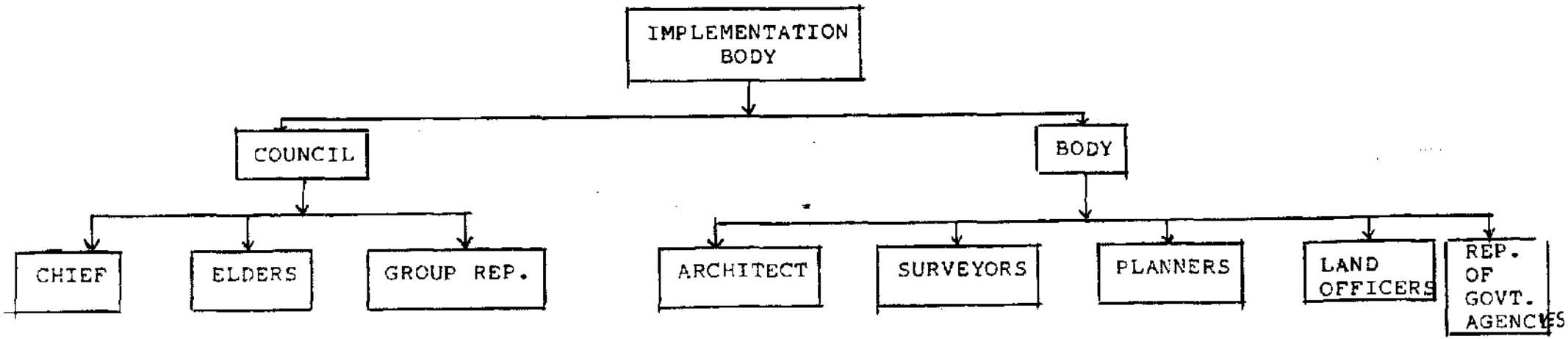
.13 Land Policies:

The issue of land is the most critical to evelopment. Land is a commodity of high value and this ıcourage land speculation within and around the settlement ıder encroachment. This is usually to the detriment of ıe settlements. Therefore, policy should focus on the ollowing areas:

(i) Landuse:

Policy should be directed at ensuring a coherent and coordinated development that would protect and enhance orderly landuse. This will ensure that land use conflicts

FIG. 4.1: ORGANIZATIONAL SET UP OF IMPLEMENTATION BODY AT A ZONAL LEVEL




- Chief should be made the Chairman of the council.
- It helps in public participation through identification of problems and implementation.
- It makes suggestion to the Board.
- Can be engaged in Community Development projects.

- Planners should head the Board.
- They can overrule the Council's decision.
- Liaise with the councils before any type of development.
- Should monitor all forms of development. In fact should control development.

Source: Toyobo Emmanuel
U.R.P., A.B.U. Zaria

do not arise. This should operate within the framework of a general development plan of the urban area (see Table 4.5, 4.6 and 4.7).

(ii) Land Allocation:

All land transaction must by policy be approved and conform to the development proposals regardless of distance from urban centre, in so far as it falls within the urban area. The process of acquisition of land needs to be reviewed towards making acquisition easier, thus eliminating the need to concentrate on land acquisition especially the settlements under encroachment.

(iii) Regularization of Ownership:

Policy should be directed at regularizing ownership. In so far as possible all legal titles should be given to residents of traditional settlements. The practice of holding land under customary rights does not provide a very secure tenure. Therefore, suburban communities under encroachment should be given official recognition by official sanction to ownership of land. This coupled with acquisition and sale procedure would ensure that land ownership inventories should be easy to produce.

(iv) Survey and Mapping:

All lands under encroachment by Zaria physical growth should be routinely mapped and surveyed. This will help define a realistic urban area. This should be based on a measure of growth of the urban centre and the area under its direct influence, thus continuity in the process of planning within the suburban areas with Zaria urban centre is ensured.

(v) Development Control:

For effective growth and development of Zaria suburban area, it is being recommended that every piece of land in the suburban settlements should be under strict control by the Zaria Zonal Planning Authority. Also co-ordination between the various government establishments involved in land development like Ministry of Lands and Survey, Works and Housing among others should be enhanced. The conflict between the local communities and the planning authority be resolved for effective monitoring of land development.

(vi) Rules and Regulation:

There should be published rules and regulations to control suburban areas for proper development just like the rules being applied in buildings.

Planning standards for land development should be revised to reflect the people's socio-cultural backgrounds, their economic status and the level of building technology. The standards should be flexible enough so as to allow people to design and build what they want as long as proper ventilation, setback, building height, orientation among others. Efforts should be made towards promoting local materials and traditional building techniques.

4.14 Social Policy:

Before preparing, approving and implementing any plan, the Zaria Zonal Planning Authority should embark on programmes to enlighten the public on the importance of planning in general. This may involve the use of all forms of communication media including the local leaders whom the people respect.

(i) Public Participation:

The Zonal Planning Authority should encourage public participation in all planning issues, whenever implementing them. The participation of the public will assist the planning Authority in enforcing development control effectively in the Zaria supurban area.

4.15 Environmental Policy:

Policy should be directed at improving the environmental condition. The building of incenerators and bush clearance within the settlements should be encouraged. Failure to comply to this law should be fine by the Sanitary inspectors. The building of public toilet either by the community or the government should be encouraged.

4.16 Income Policies:

Another thrust for suburban development is the adoption of a policy that will improve farm productivity and their income. Policy should aim at improving the income of the suburbanites. This include:

(i) Introduction of improved hybrid seeds.

(ii) Establishment of marketing boards for the sale of fertilizer, perticides, insecticides at a subsidized prices.

(iii) Improvement of accessibility to ease free movement of agricultural products from the farm at a lower transportation fare.

(iv) Grants to farmers either in the form of cash or materials such as tractors, etc.

(v) Development of more agricultural extension stations to train farmers as regard to farm management.

## 4.20 PLANNING PROPOSALS FOR THE DEVELOPMENT OF SUB-URBAN ENCROACHMENT OF ZARIA TOWN

For any proposal aimed at alleviating the physical conditions of the study areas to be successful, it must take into account the peculiar locational characteristics of the areas as well as the nature and extent of their physical planning problems. The proposal must aim at efficiency, acceptability and minimum cost. Therefore, for the proper growth and development of the engulfed settlements under study, the following proposals are recommended:

### 4.30 Integration Strategy:

It is a strategy that involves the physical integration of settlements with the urban expansion. It therefore involves the improvement of the existing situation and the use of planning standards with the ultimate aim of integrating them with the city. Therefore, it is proposed that the whole of Basawa, Paladan, Kwangila, Hanwa, Dogarawa, Ungwan Fulani, Tukur Tukur, Wusasa, Gwarigwaji and Bomo should be incorporated into the city. This is because, all the settlements mentioned above are linked to the city. This proposals can be achieved through the following suggestions:

(i) Survey should be conducted for undeveloped land and the existing developments in these settlements for their improvement.

(ii) Planning schemes to guide plan approved for new developments as obtained in the city should be prepared which takes care of integration and relocation measures.

(iii) There should be adequate payment of compensation or assignment of new sites in place of demolitions made in the process of implementation of new developments.

(iv) It is also being suggested that all the settlements under study should be incorporated into the various planning districts at the community level. Figure 4.1 shows a proposal for Zaria Urban area. The structural concept is an improvement of that in the Zaria Master Plan.

It is also suggested that settlements that are poorly, accessible should be linked with good roads and electricity supply connections (See Figure 4.3)(B)

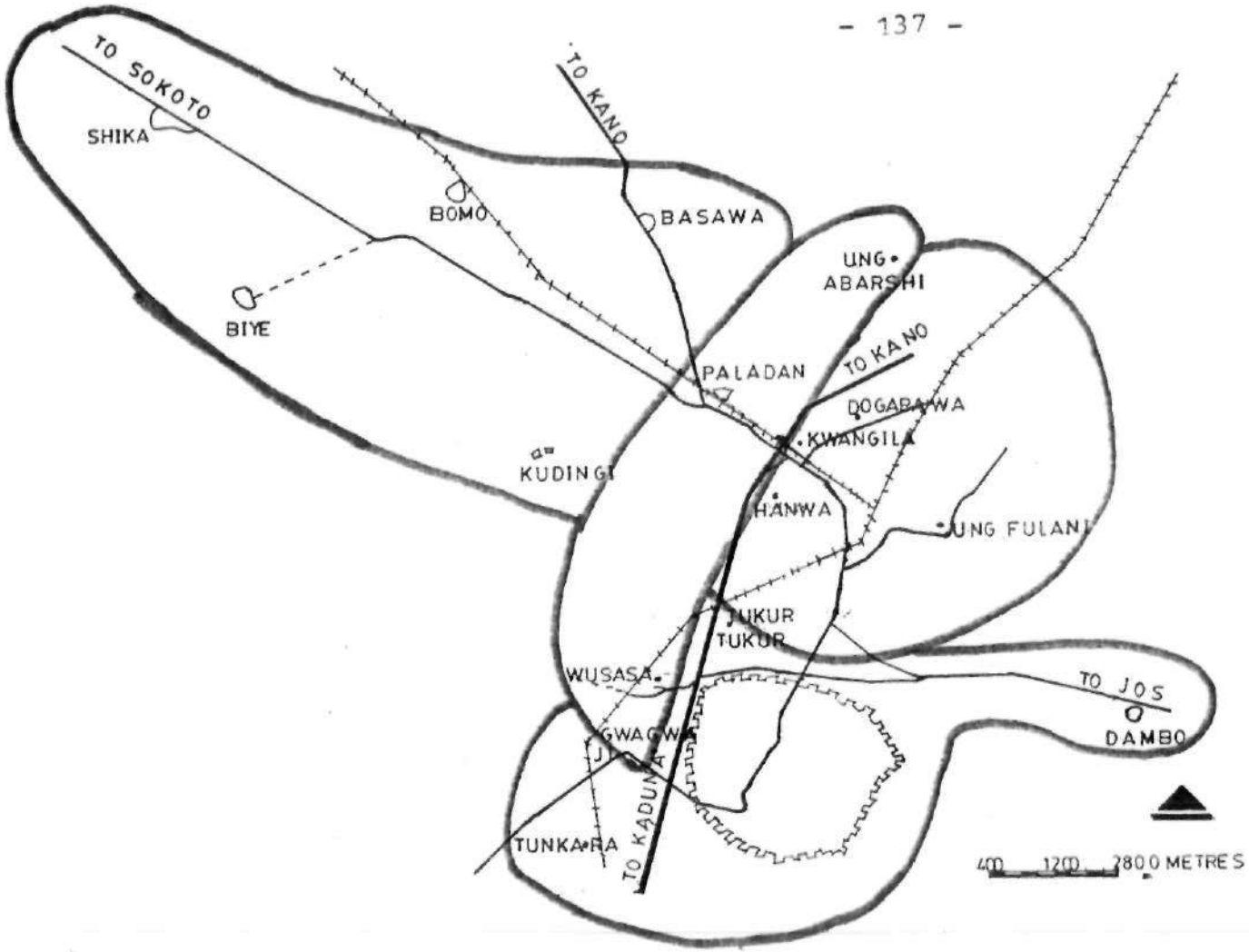
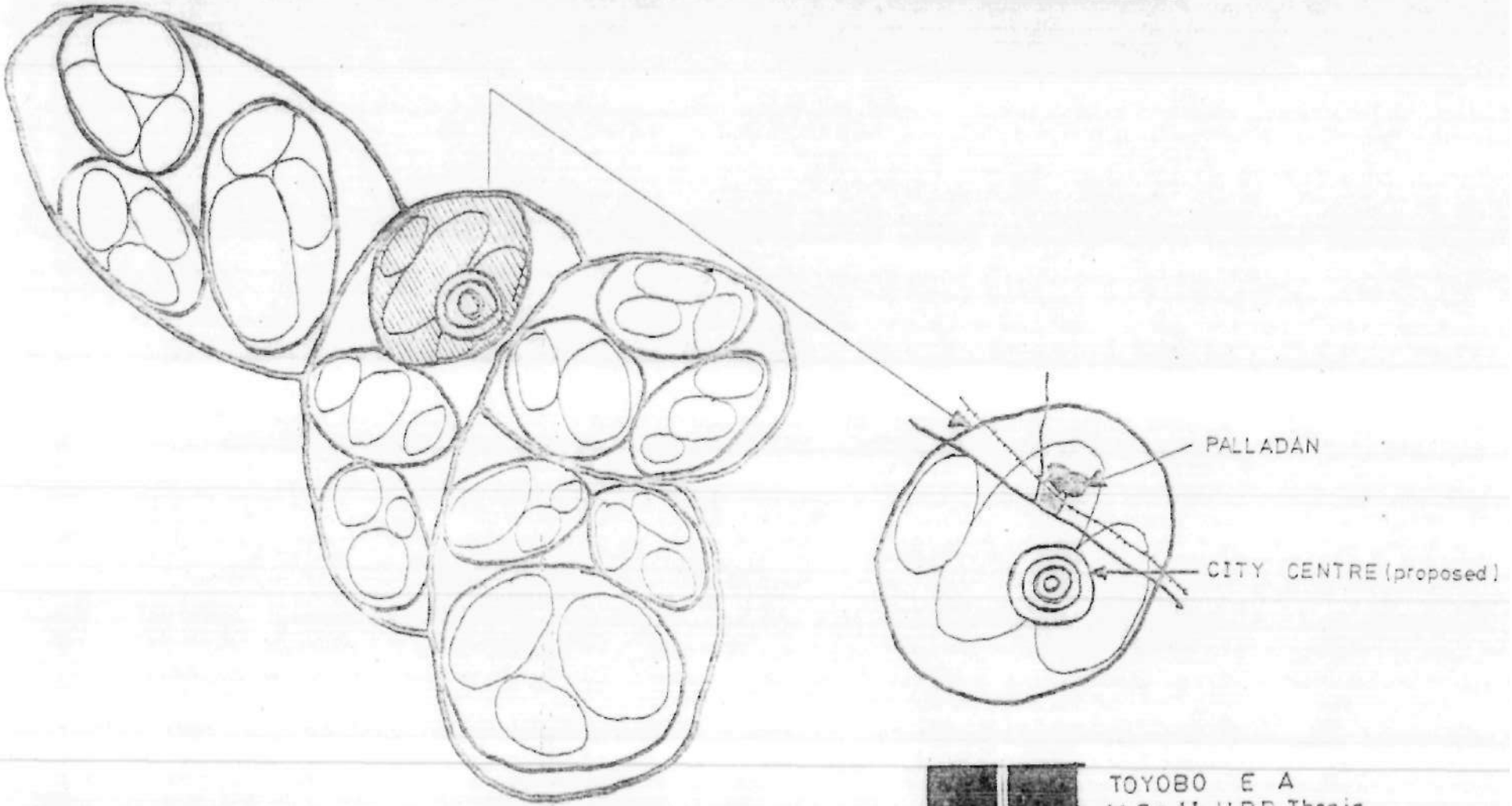



Figure 4. 2(A) Proposals of a structural concept for Zaria Urban Area.

Source: Toyobo, A.E. U.R.P., A.B.U. Zaria

# PALLADAN WITHIN ZARIA CITY STRUCTURE




TOYOBO E A
M Sc II URP Thesis
A B U Zaria
1991/92

Fig. 4.3(A)

PALLADAN - LOCATED WITHIN CITY CENTRE DISTRICT
IT IS A RESIDENTIAL SUB-SECTOR
INTEGRATION IS THE MOST LOGICAL STRATEGY
PRESERVATION SHOULD BE VERY MINIMAL

Source: Zaria Master Plan, 1976

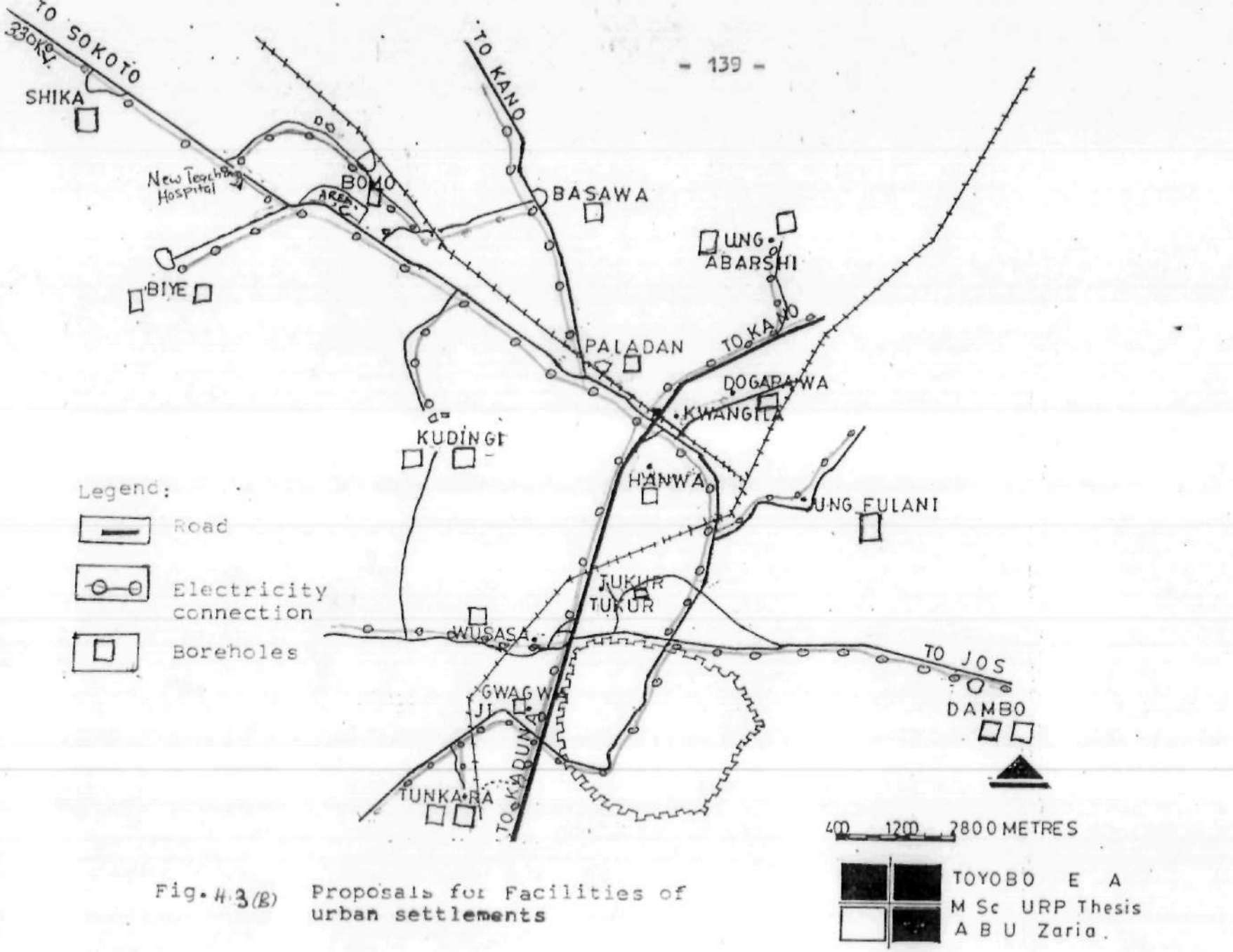



Fig. 4.3(B) Proposals for Facilities of urban settlements

4.40 Guided Growth Strategy:

The strategy involved making advanced plan for future development zones. Figure 4.6, 4.7 and 4.8 shows landuse proposal for Paladan, Hanwa and Tukur Tukur. The proposals shows sufficient land area in planned network for the settlements future development by the year 2000. This will guarantee an orderly spatial growth of the settlements together with the city.

4.50 Green Belt: Green Belt policy was devised to restrain the polateral growth of cities. The green belt policy is used in Figure 4.6 to restrain future development towards the high tension cables. It is also used along railway sides.

4.60 General Recommendation on Curative Measures:

Based on the above discussion on both relocation and integration, general recommendation have been outlined below in order to cure the present situation.

(i) Title to land: It has been suggested that title to land should be regularised by granting the residents certificate of occupancy, This legal recognition by the government will make individuals to follow planning rules and regulations as well as improving the environment at large. Also, vacant land should be acquired by either Lands and Sirvey Division in Zaria and designated to specific uses. Furthermore, where incidental open spaces exist can be used for the provision of community facilities.

(ii) Road and Drainage:

In order to cure the existing situation, internal circulation within the residents should be improved and where there is non road network should be designated with respect to the existing layout. However, storm water drainage should be constructed along roads and access ways. Domestic waste water should be made to flow directly into the drainage along the roads. This can be done by encouraging the residents to use either concrete blocks or pipes in channelling the waste water.

(iii) Water and Electricity supply:

From the study it has been observed that most of the suburban settlements under encroachment have inadequate supply of the above (see Table 3.29) and where they do exist, their supply is inadequate. It has been suggested that, there should be adequate water supply. Pipes should be laid as close to compounds as possible inorder to facilitate private connections. With this, it is envisaged that, all the residents will use pipe borne water. Public pipe borne water supply should be encouraged.

It has also been pointed out that some of the residents lack electricity supply. In order to enhance individual house connections it is suggested that low voltage lines (LV) should run along access ways. Activity street lighting should be provided at strategic locations. Boreholes should be provided to the settlements lacking water supply and which are very far away from the city.

(iv) Refuse Collection and Disposal:

The study of the sampled areas revealed that refuse disposal systems are in chaotic conditions, thus, it is suggested that refuse collection and disposal should be on the individual and collective efforts of the residents apart from the collection points to be provided by the local government council. In this case, individual households should provide their refuse collection containers as the practice in the city. Sanitary land fill method of refuse disposal should be adopted instead of the usual dumping anywhere (See Figure 4.5).

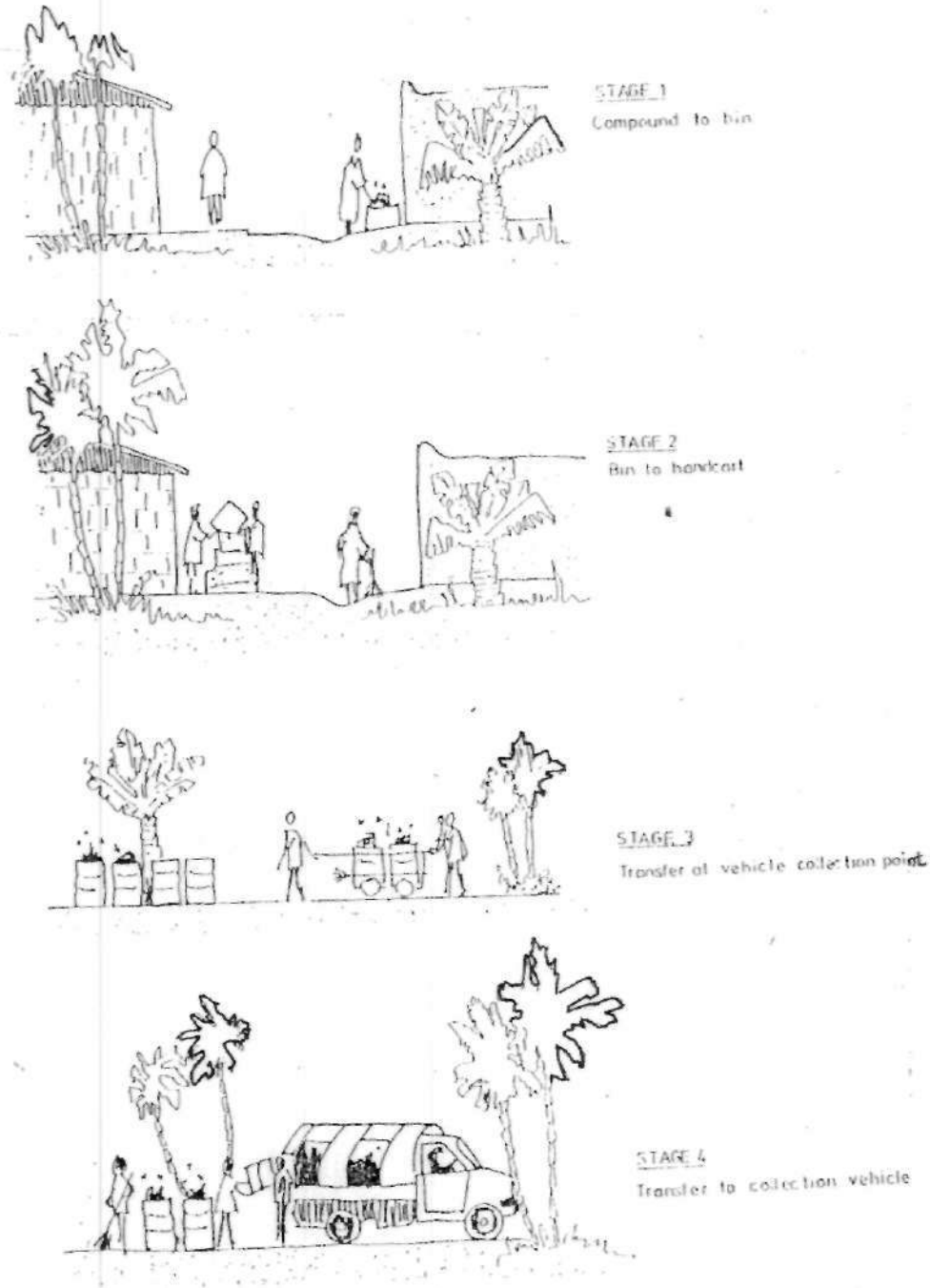



Fig. 4.5: Proposed Method of Refuse Collection

Source: Toyobo, A.E.
Dept. of U.R.P., A.B.U.

(v) Health Service:

It is recommended that the state Ministry of Health should build a dispensary in the suburban settlements with no health service. Settlements with health services should be supported with equipments and trained personnels. This will reduce the hardship encountered by the residents of the settlements under study.

(vi) Public Conveniences and Organised Open Spaces:

There should be the provision of public convenience comprising toilets to stop people from deficating in any available open spaces or uncompleted buildings. Their location should be as close to the main activity areas. There is also the need to create convenience shops, playfield, parks and open spaces. This can be done by utilizing the existing incidental open spaces for such purposes.

Table 4.1: COMPARABLE PLANNING STANDARDS FOR URBAN PUBLIC FACILITIES

| FACILITIES | ZARIA MASTER PLAN | | KUBARI MASTER PLAN | | ABUJA MASTER PLAN | | SPACE STANDARDS FOR URBAN DEVT. NIGERIA | | STANDARDS P.S. CHAPPIN JR | | PROPOSALS FOR ZARIA SUB-URBAN SETTLEMENTS UNDER ENCROACHMENT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AREA (HA) | POPULATION | AREA (HA) | POPULATION | AREA (HA) | POPULATION | AREA (HA) | POPULATION | AREA (HA) | POPULATION | AREA (HA) | POPULATION |
| Libraries | - | - | | | 0.5 | 30,000 | 0.4-0.8 | 25-50,000 | | | | |
| Church or Mosques | 0.5 | 15-50,000 | | | 0.8-1.2 | 200,000 | 0.8-1.2 | 40-50,000 | | | 0.6 | 3000 - 5000 |
| Pre Primary | | | 0.5 | 4000-6000 | - | - | 0.2-0.4 | 1500-2000 | | 350-400 | 0.2-0.4 | 1,500 - 4000 |
| Primary | | 3400,3700 | 1+1/250 | 356-750 | - | - | 1.22-2.0 | 3000-4000 | 2.0+0.4/100 | | 0.6-1.0 | 3,000 - 4000 |
| Post Primary | 5.0 | 17-24,000 | 4+1/250 | 700-2500 | - | - | 6.0-8.0 | 12-16000 | 4.0+0.4/100 | 700-1500 | 2.0-2.6 | 5000 - 900 |
| Shopping Centre | 1 Shop | 100 | 0.05 | 4000-6000 | - | - | 1.2 | 10-25,000 | 10-25 min | 80,000 | | |
| Health Centre | 2.5 | 12,000 | 2.0-4.0 | 20-30,000 | 1.5-3-0 | 30-60,000 | | | | 8 | 1.25 | 6000- |
| Health Clinic | 0.5 | 4,000 | 0.5 | 4-6,000 | | - | - | - | | | 0.5 | 8000- 1,000 |
| Play Ground | - | - | 0.25/100 | | | | 0.6-08 | 1,000 | 0.4/800 (6-12) | 800 | 0.6-0.8 | 1000- 4,000 |
| Play Field (Recreation) | | | 0.25/100 | | | | 0.6-0.8 | 1,000 | 0.4/800 (6-12) | | 0.5-1.0 | 1,000 |
| Parks Open Space | | | 1.5 | 1000 | | | 0.4-0.6 | 1,000 | 0.4 | | 0.4-0.6 | 1,000 -6,000 |
| Convenience Shop | | | | | | | | | | | 0.2 | 1,000 -4,000 |

4.70 Planning Standards:

The choice of space standards as it relates to this study form the most important set of standards the planner works with in his function of allocating land for various urban activities. It is also essential that the planner needs some measure of consistency with which land will be allocated and used. At the crudest level, such standards take the form of an overall ratio between population and land for urban functions and are mainly used to calculate the amount of space required to accommodate population projections. At the simplest level, planning standards derived from this concept consist of estimates of population required to support a school, hospital, convenience shop, play ground, park and open spaces, etc. Such standards have been used in the following ways:

(i) To predict whether there is likely to be sufficient demand to support some particular facility.

(ii) To predict the phasing of investment in facilities during the growth of such communities.

(iii) As a guide to planning spatial arrangement of such facilities within the urban structure.

The use of planning standards as described above is open to criticisms on three levels:

(i) The methodology adopted in arriving at planning standards could be wrong.

(ii) Standards used in planning are only a partial contribution to the planning process.

(iii) The actual standards may be wrong.

Table 4.1 shows a comparable planning standards for urban public facilities. The standards are synthesized and conclusions are arrived at a desirable standard for the development of public facilities in the settlements which are engulfed by Zaria.

Table 4.2, 4.3, 4.4 shows a schedule of requirement for Paladan, Hanwaand Tukur Tukur. For example, the population projection for Paladan by the year 2000 is 5429. The provisions made are based on the acceptable planning standard on Table 4.2 for all the settlements encroached upon by Zaria. From Table 4.2, one convenience shop is required to serve about 1000 population. The total number of convenience shops required is five but three are at present in operation. Therefore two convenience shops are required to complete the balance. The area required for a convenience shop is 0.2(Ha) since two convenience shops are required to to complete the balance, the total area required for the two shops is 0.4(ha). The same procedure is followed for nursery school, primary school, post-primary school, parks and open space and play ground for Paladan. In

conclusion, a total amount of 7.4 (Ha) of land is required for the development of the facilities. The same application is followed for Hanwa and Tukur Tukur, which is used in the design of landuse proposals; (See Figure 4.2, 4.3 and 4.4). The land-use proposals serve as a guide for future development for the selected three settlements. The same procedure can be followed for the rest of the settlements under encroachment.

Table 4.2: Schedule of Requirement for Paladan
Population: 5429

| Facility | Standard | No. Existing | No. Required | No. to be provided | Area (HA) | Total Area (HA) |
|---|---|---|---|---|---|---|
| Convenience shop | 1/1000 | 3 | 5 | 2 | 0.2 | 0.4 |
| Nursery School | 1/4000 | - | 1 | 1 | 0.2 | 0.2 |
| Primary School | 1/4000 | 1 | 1 | - | 2.0 | 2.0 |
| Post Primary (JSS) | 1/5000 | - | 1 | 1 | 2.0 | 2.0 |
| Parks and Open space | 1/2000 | - | 3 | 3 | 0.4 | 1.2 |
| Playground | 1/2000 | 1 | 3 | 2 | 0.8 | 1.6 |
| Total | | 5 | 14 | 9 | 5.6 | 7.4 |

Table 4.3: Schedule of Requirement for Hanwa
Population: 11843

| | | | | | | |
|---|---|---|---|---|---|---|
| Convenience shop | 1/2000 | - | 6 | 6 | 0.2 | 1.2 |
| Nursery School | 1/4000 | - | 3 | 3 | 0.2 | 0.6 |
| Primary School | 1/5000 | 1 | 2 | 1 | 2.0 | 2.0 |
| Post Primary (JSS/SSS) | 1/5000 | - | 2 | 2 | 2.0 | 4.0 |
| Church/ Mosque | 1/3000 | 2 | 3 | 1 | 0.25 | 0.25 |
| Parks and Open space | 1/2000 | 1 | 6 | 5 | 0.4 | 2.0 |
| Health Clinic | 1/6000 | - | 2 | 1 | 1.25 | 1.25 |
| Total | | 4 | 24 | 19 | 6.3 | 11.3 |

Table 4.4: Schedule of Requirement for Tukur Tukur
Population: 15738

| Faculty Facility | Standard | No. Existing | No. Required | No. to be provided | Area (HA) | Total Area (HA) |
|---|---|---|---|---|---|---|
| Convenience Shop | 1/2000 | - | 8 | 8 | 0.2 | 1.6 |
| Nursery School | 1/4000 | 1 | 4 | 3 | 0.2 | 0.6 |
| Primary School | 1/4000 | 2 | 4 | 2 | 2.0 | 4.0 |
| Parks and Open space | 1/2000 | 2 | 8 | 6 | 0.4 | 2.4 |
| Total | | 5 | 24 | 19 | 2.8 | 8.6 |

Table 4.5: Proposed Land Use Analysis of Paladan

| Uses | 1991 | | 2000 YEARS | |
|---|---|---|---|---|
| | (HA) | % | (HA) | % |
| Residential | 29.5 | 31.05 | 42.78 | 31.06 |
| Commercial | 0.9 | 0.95 | 1.31 | 0.95 |
| Public & Semi Public | 1.07 | 1.13 | 1.55 | 1.13 |
| Industrial | 0.02 | 0.02 | 0.03 | 0.02 |
| Open Space | 63.51 | 66.85 | 92.08 | 66.85 |
| TOTAL | 95 | 100 | 137.74 | 100 |

SOURCE: FIELD WORK, 1991

Table 4.6: Proposed Land Use Analysis of Hanwa

| Uses | 1991 | | 2000 YEARS | |
|---|---|---|---|---|
| | (HA) | % | (HA) | % |
| Residential | 46.3 | 49.41 | 67.14 | 49.41 |
| Commercial | 0.7 | 0.75 | 1.01 | 0.74 |
| Public and Semi Public | 1.32 | 1.41 | 1.91 | 1.41 |
| Industrial | 0.02 | 0.02 | 0.03 | 0.22 |
| Open Space | 45.36 | 48.41 | 65.77 | 48.40 |
| Total | 93.7 | 100 | 135.87 | 100 |

Table 4.7: Proposed Land Use Analysis of Tukur Tukur

| Uses | (HA) | % | (HA) | % |
|---|---|---|---|---|
| Residential | 39.33 | 26.59 | 57.02 | 26.59 |
| Commercial | 2.16 | 1.46 | 3.13 | 1.46 |
| Public and Semi Public | 13.93 | 9.42 | 20.20 | 9.42 |
| Industrial | 0.22 | 0.15 | 0.32 | 0.15 |
| Open space | 92.26 | 62.38 | 133.78 | 62.38 |

SOURCE: FIELD WORK, 1991

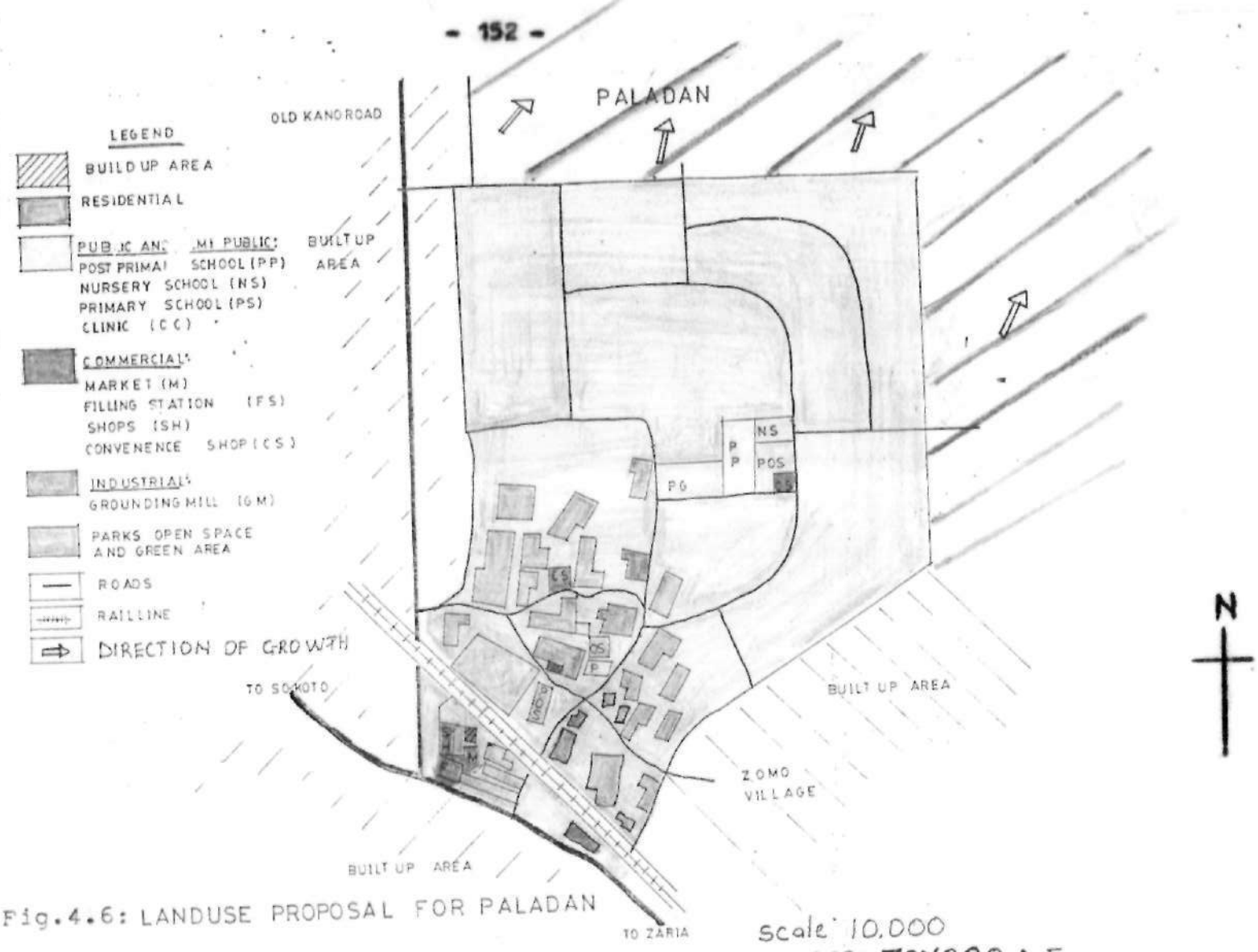



Fig.4.6: LANDUSE PROPOSAL FOR PALADAN

Scale: 10,000
SOURCE: TOYOBO A E
U. R. P. A.B.U. ZARIA

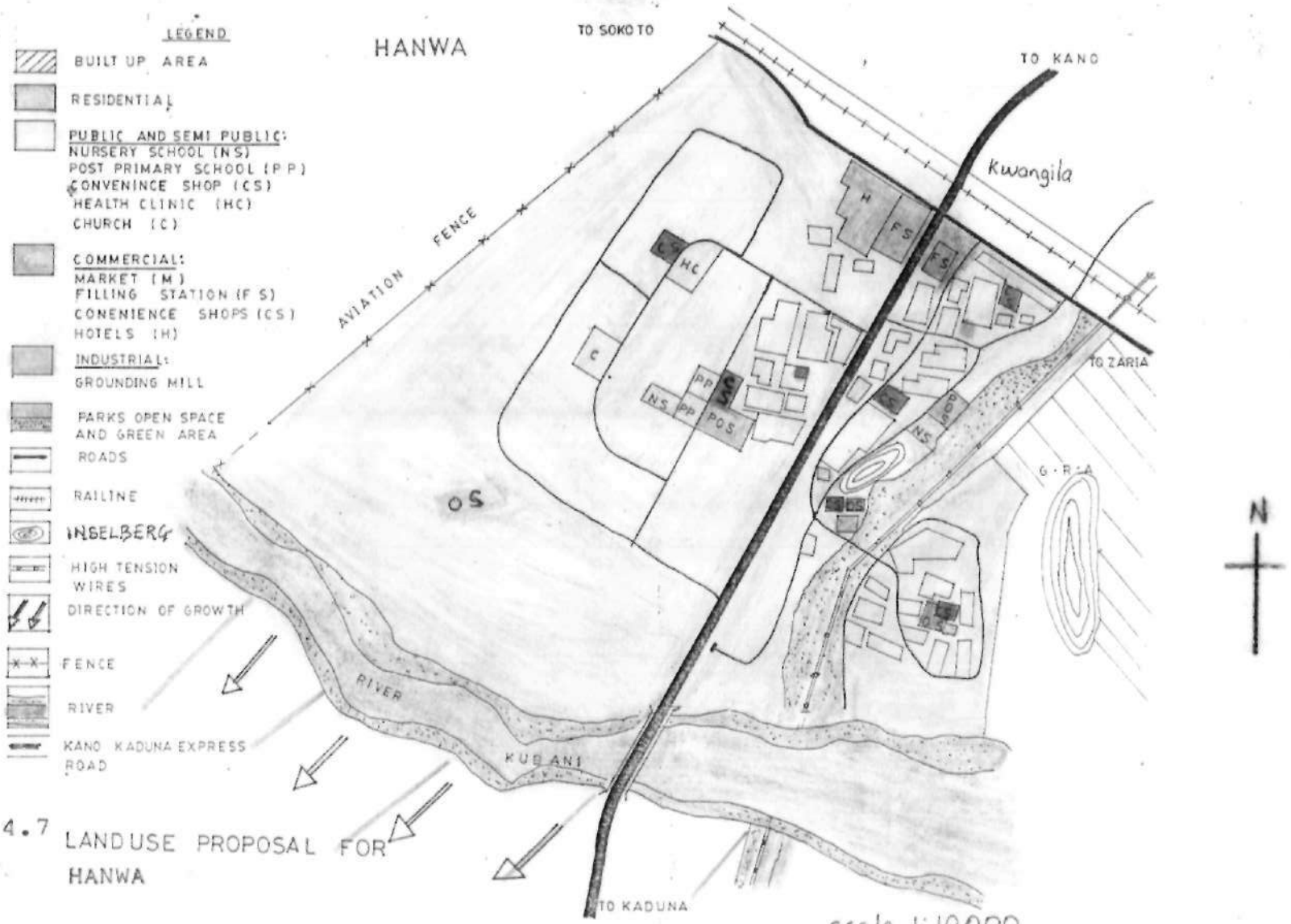



Fig. 4.7 LAND USE PROPOSAL FOR HANWA

scale 1:10,000

SOURCE: TOYOBO A.E.
U.R.P, A.B.U

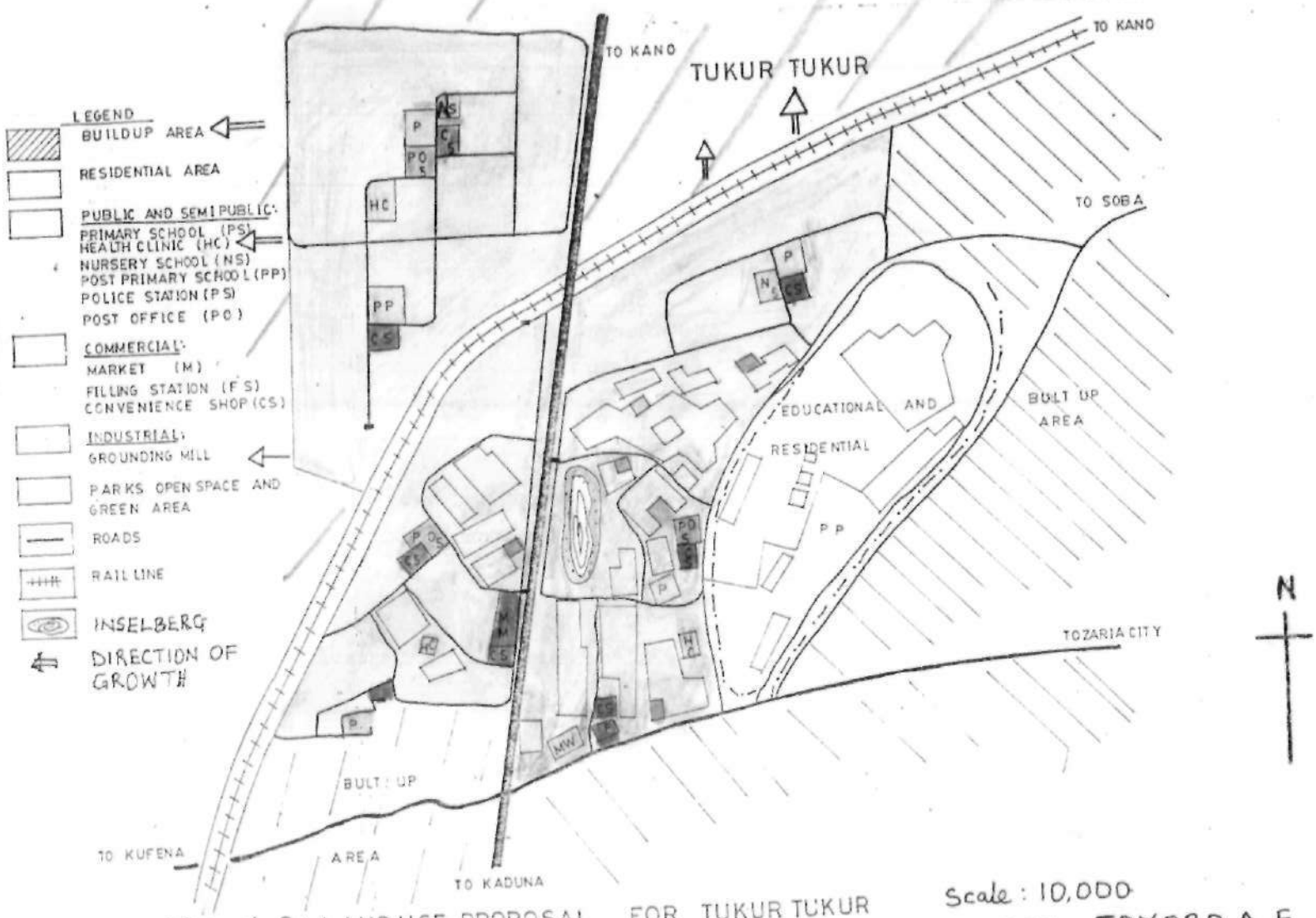



Fig. 4.8: LANDUSE PROPOSAL FOR TUKUR TUKUR

Scale : 10,000
SOURCE TOYOBO A.E
U.R.P, A.B.U.

TABLE 4.8 SUMMARY OF CHARACTERISTICS, PROBLEMS AND PROPOSALS FOR THE SELECTED SETTLEMENTS WITHIN AND AROUND ZARIA URBAN AREA

| SETTLEMENT | PHYSICAL CHARACTERISTICS | PROBLEMS | STRATEGY USED | PROPOSALS |
|---|---|---|---|---|
| PALADAN | - Experienced Rapid physical growth<br>- Local and modern use of material for building.<br>- Agriculture main occupation with secondary and tertiary activities.<br>- Main line of Urban development<br>- Haphazard Development. | - Inadequate basic services, amenities and facilities<br>- Poor environmental quality.<br>- Haphazard development.<br>- Poor internal circulation.<br>- Land Problem. | - Integration<br>- Special zone<br>- Guided strategy | - Provide adequate facilities, amenities and services.<br>- Improve internal circulation.<br>- Apply Urban standard<br>- Upgrade settlement.<br>- Boreholes |
| SHIKA | - Local and modern use of material for building.<br>- Agriculture main occupation with secondary activities.<br>- In main line of urban development to be encroached upon.<br>- Haphazard Development. | - Lack of basic services and the problem of pipe water supply and other facilities.<br>- Poor environmental quality.<br>- Haphazard development.<br>- Poor internal circulation | - Integration.<br>- Special zone<br>- Guided strategy | - Provide required amenities, services and facilities.<br>- Improve internal circulation.<br>- Apply urban standard.<br>- Boreholes. |
| BASAWA | - Local and modern use of material for building.<br>- Agriculture main occupation with some secondary activities.<br>- In main line of urban development.<br>- Haphazard Development | - Lack of basic facilities and services.<br>- Poor environmental facility.<br>- Haphazard development.<br>- Land problem. | - Integration<br>- Special zone<br>- Guided strategy | - Provide required facilities, amenities and services.<br>- Improve internal circulation.<br>- Apply urban standard.<br>- Boreholes. |

| SETTLEMENT | PHYSICAL CHARACTERISTICS | PROBLEMS | STRATEGY USED | PROPOSALS |
|---|---|---|---|---|
| WUSASA | - Experienced rapid physical growth.<br>- Local and modern use of material for building.<br>- Agriculture main occupation with some secondary and tertiary occupation (activities)<br>- In main line of urban development. | - Lack of adequate facilities<br>- Poor environmental quality<br>- Haphazard development.<br>- Poor internal circulation<br>- Land problem. | - Integration<br>- Guided Strategy | - Provide required basic facilities.<br>- Improve internal circulation.<br>- Apply urban standard.<br>- Boreholes. |
| DOGARAWA | - Combination of local and modern material for building.<br>- Agriculture main occupation with some secondary activities.<br>- Haphazard development. | - Lack of adequate amenities facilities and services.<br>- Haphazard Development.<br>- Problem of high tension cables (wires) running through the village.<br>- Land problem. | - Integration<br>- Guided strategy | - Provide required basic amenities, facilities and services.<br>- Provide land.<br>- Improve linkages.<br>- Boreholes. |
| HANWA | - Experienced rapid physical development.<br>- Used of modern and local materials for building.<br>- Agriculture main occupation with secondary and tertiary activities.<br>- In main line of urban development. | - Lack of basic facilities, services and amenities.<br>- Poor environmental quality.<br>- Poor internal circulation<br>- Land problem. | - Integration<br>- Special zone<br>- Guided strategy<br>- Green Belt | - Provide required basic facilities, amenities and services.<br>- Improve internal circulation.<br>- Upgrade the settlement.<br>- Apply urban standard.<br>- Boreholes. |

| SETTLEMENT | PHYSICAL CHARACTERISTICS | PROBLEMS | STRATEGY USED | PROPOSALS |
|---|---|---|---|---|
| BOMO | - Combination of local and modern materials for building.<br>- Agriculture dominant occupation with some secondary activities.<br>- In main line of urban development. | - Lack of basic facilities services and utilities.<br>- Poor accessibility.<br>- Poor environmental quality. | - Integration<br>- Special zone<br>- Guided strategy | - Provide required basic facilities, services and accessibility, pipe water, etc.<br>- Improve environmental quality.<br>- Borenoles. |
| UNGUWAN FULANI | - The use of both local and modern material for building is common<br>- Agriculture is the major occupation with secondary activities.<br>- In main line of urban development.<br>- Haphazard development. | - Inadequate supply of basic amenities, facilities and services.<br>- Poor internal linkage.<br>- Poor environmental quality<br>- Haphazard development.<br>- Land problem. | - Integration<br>Guided strategy | - Provide required facilities amenities and services.<br>- Improve internal linkages<br>- Upgrade the settlement.<br>- Apply urban standard.<br>- Borenoles. |
| KWANGILA | - Use of both modern and local materials for building.<br>- Agriculture main occupation with secondary activities.<br>- In main line of urban development.<br>- Haphazard development. | - Inadequate basic facilities services and amenities.<br>- Poor environmental quality.<br>- Poor internal linkages.<br>- Haphazard development.<br>- Land problem. | - Integration<br>- Special zone | - Provide required basic facilities, amenities and services.<br>- Improve sanitation condition.<br>- Apply urban standard.<br>- Improve linkages<br>- Borenoles. |

| SETTLEMENT | PHYSICAL CHARACTERISTICS | PROBLEMS | STRATEGY USED | PROPOSALS |
|---|---|---|---|---|
| GWARIGWAJI | - Use of both local and modern materials for building.<br>- Agriculture main occupation with some secondary activities practice side by side.<br>- In main line of urban development. | - Problem of pipe water supply.<br>- Poor environmental quality.<br>- Land problem. | - Integration<br>- Guided strategy | - Provide required basic facilities and amenities.<br>- Improve sanitation condition.<br>- Boreholes. |
| BIYE | - Use both modern and local materials for building.<br>- Agriculture Main Occupation with Animal farming.<br>- Haphazard development. | - Problem of accessibility<br>- Poor sanitation condition<br>- Building condition | - Guided strategy<br>- Integration | - Provide required accessible route.<br>- Pipe water supply or boreholes.<br>- Boreholes. |
| TUKUR TUKUR | - Agriculture main pre-occupation with secondary and tertiary activities.<br>- Use of both modern and local material for house construction. | - Poor internal circulation<br>- Haphazard development<br>- Poor environmental quality<br>- Land problem | - Integration<br>- Regrouping | - Improve internal circulation<br>- Provision of amenities, services and utilities.<br>- Apply urban standards.<br>- Boreholes.<br>- Upgrade the settlement. |
| TUNKARAN | - Agricultural major preoccupation with little secondary activities.<br>- Local and modern use of material for building houses.<br>- In main line of urban development. | - No basic facilities, amenities or services.<br>- Haphazard development.<br>- Poor environmental quality.<br>- Poor internal and external linkages. | - Integration<br>- Guided strategy | - Provision of basic facilities, and amenities.<br>- Improvement of linkages.<br>- Boreholes. |

| SETTLEMENT | PHYSICAL CHARACTERISTICS | PROBLEMS | STRATEGY | PROPOSAL |
|---|---|---|---|---|
| DAMBO | - Agriculture major preoccupation<br>- Use of both modern and local materials for construction.<br>- In main line of urban development. | - Inadequate supply of basic amenities, facilities and services.<br>- Poor environmental quality<br>- Poor internal circulation<br>- Haphazard growth. | - Integration and Regrouping | - Provision of basic amenities, facilities and services.<br>- Improve environmental quality.<br>- Upgrade settlement<br>- Boreholes. |
| KUDINGI | - Agriculture major pre-occupation with little secondary activity.<br>- In main line of urban development.<br>- Use of local and modern material for building. | - Poor accessibility.<br>- Poor environmental quality<br>- Poor internal linkages. | - Integration<br>- Regrouping | - Provision of basic services, facilities and amenities.<br>- Improve environmental quality.<br>- Improve accessibility.<br>- Boreholes. |
| ABARSHI | - Agriculture main occupation with little secondary activity.<br>- Use of local and modern material for development. | - Poor accessibility<br>- Poor environmental quality.<br>- No infrastructural facilities, services, etc.<br>- Poor internal linkages. | - Integration/ Regrouping | - Provision of basic facilities and services.<br>- Improve accessibility.<br>- Improve environmental quality.<br>- Boreholes. |

SOURCE: Toyobo Emmanuel
U.R.P., A.B.U. Zaria

## 4.80 IMPLEMENTATION

The most important aspect of plan is its implementation. For a successful implementation of the proposals, there must be a body which will be responsible for the coordination of the activities of other agencies involved in the programme. Therefore, no matter how laudable a plan might be if the apparatus for its implementation is not there, the aim of the programme will not be achieved. As such, the following recommendations are made for the implementation of the stated proposals:

## 4.81 ADMINISTRATIVE FRAMEWORK

Detailed design plan preparation, approval and implementation for the growth and development of sub-urban settlements in Zaria should be the responsibility of the Zonal Planning Authority in conjuction with other bodies and agencies. These bodies and agencies are the local Government Councils, Ministry of Land and Survey, Work and Housing, Others include National Electricity Power Authority (NEPA), Water Resources and Engineering construction Agency (WRECA) and Ministry of Health. Their functions should be specified so that duplication of function can be avoided and where such occurs the agency responsible can be easily identified. Therefore, the functions of all these bodies and agencies in the implementation process are being enumerated in the followings:

1. Zaria Zonal Planning Authority:

   (a) Coordinates the activities of other agencies

   (b) Development control

   (c) Payment of compensation

   (d) Planning and Finance.

2. Zaria Urban Area Local Governments:

   (a) Refuse collection and Disposal

   (b) Daily maintenance of drainage

   (c) Construction of public conveniences

   (d) Construction and maintenance of educational institution, etc.

3. Ministry of Lands and Survey:

   (a) Undertakes survey of area and prepares survey briefs.

   (b) Provides land.

4. Ministry of Works and Housing:

   (a) Construction of model houses and services in the suburban areas.

   (b) Provides technical advice with regards to house construction.

   (c) Liaise with the Federal Ministry of Works and Housing.

5. Ministry of Health:

   (a) Construction of dispensaries

   (b) Staffing and management of health establishments.

6. NEPA and WRECA

   (a) Extension of electricity and water lines respectively.

   (b) Maintenance

   (c) Bill collection.

Therefore, after defining the functions of various participating bodies mentioned above, any action that falls short of projected result can easily be identified. This process will help avoid conflict and functional interference between the various ministries and Zonal Planning Authority. Therefore for any orderly growth of the suburban settlements under encroacnment and controlling haphazard development, the administrative structure for the development nave been proposed, for Zaria Suburban settlements (See Table 4.1).

4.82 **Financial Implementation:**

Financial problem is one of the major constraints for plan implementation. All the recommendations made cannot be adequately implemented without a strong

financial support. In view of this, it becames necessary to specify the resources of fund to be used in the implementation of the proposals.

(a) Kaduna State Government:

It will be the main source of finance and its involvement will be through subventions to the main implementation body, i.e. Kaduna State Urban Planning Development Authority (KASUPDA) with one of the Zonal Office in Zaria and to the other agencies identified have roles to play in the exercise.

(b) Kaduna State Urban Planning Development Authority with a Zonal office in Zaria.

It is the body responsible for the implementation and its source of finance will be subventions from State Government loans and development charges.

(c) Federal Government: Its involvement will be through grants to NEPA, water corporations and facilitating Mortgage loans to private developers.

(d) Individuals: This will be in form of individual and community contributions. Money may however be realised by charging the individuals on services rendered.

## 4.90 CONCLUSION

The study has attempted to highlight the problems of encroachment of Zaria on sub-urban settlements and how these problems may be resolved through the application of appropriate physical planning strategies and principles.

The emergent fact is that, sub-urban settlements have been grossly neglected inspite of their encroachments. Yet the same settlement(s) are urban centres, shock absorbers, they absorb migrant from rural areas, other towns or states, house the poor and provide cheap labour for further development of urban centre. Adedeji and Roland (1973) observe that "we should make a more deliberate attempt to link the town or urban centre with the rural communities around, so as to make the villages benefit more directly from facilities present in the town. It also emphasized that, rural settlements engulfed be planned and upgraded so as to enable it blend smoothly with the urban way of life.

According to findings, social, economic and political relationship exist between Zaria urban centre and the settlements within and around it. On the basis of the evaluation of strategies used and the existing interrelationship between Zaria urban centre and the settlements both within and around it, a compromise between merger, special zone, relocation and guided

strategies has been proposed. This will ensure the continuation of their complementary relationship. The merger is anticipated and purposeful. For a settlement to be merged with the city, it has to be planned to conform with the general development of the town.

The problem of the settlements under encroachment lies in the inability of the inhabitants to present a voice that is heard. As the machinery for participation in the planning process adds to their present problems. However, even within the framework of the larger political system, it is possible to stop and reverse the trend through the practice of planning with people and recognition of the right to existence of these settlements by the planning authorities.

Roland (1973) state that "our towns must grow stronger and deeper roots with the local communities". The exploitation of rural settlements around Urban Centres should be stopped and those already merged with the city should be planned.

Urban expansion in our fast urbanizing world is not a thing to be halted. We cannot stop progress, therefore planning and landuse control, must guide and foster the development of Zaria and its immediate vicinity.

For a proper development and control of the suburban settlement under encroachment, local area and subject plans should be prepared by the planning authority.

## APPENDIX I

URBAN AND REGIONAL PLANNING DEPARTMENT

FACULTY OF ENVIRONMENTAL DESIGN

AHMADU BELLO UNIVERSITY

ZARIA

RURAL SETTLEMENTS FROM GROWING URBAN CENTRES

This questionnaire is being used strictly for academic purposes and all information gathered will be used for such purpose only.

### SOCIO-ECONOMIC QUESTIONNAIRE

Respondent's No..... Settlement.....

1. Sex: 1) Male ☐ 2) Female ☐
2. Age .....
3. Education: a) Primary ☐
   b) Secondary ☐
   c) Post-secondary ☐
   d) None ☐
   e) Others (specify).....
4. How long have you lived here in years? .....
5. Why do you choose to live in this area ?
   a) It is my house ☐
   b) Accommodation is cheap ☐
   c) Near to mywork place ☐
   d) Others (specify) .....

6. What is your ethnic relation to this area ?

a) Native /__/

b) Migrants from Kaduna /__/

c) Migrants from other states /__/

d) Others (specify).....

7. Reasons for staying in this village

a) Join relatives /__/

b) Education /__/

e) Services /__/

d) Business /__/

e) Others (specify).....

8. Average income per month in Naira .....

9. What is the size of the plot in which your house is built? .....

10. By what means do you go to work ?

a) Walking /__/

b) Bicyele /__/

c) Motor cycle or personal car /__/

d) Bus/taxi /__/

e) Others (specify) .....

11. Is the public transport to this village area

a) regular ? /__/

b) irregular ? /__/

c) occasional ? /__/

d) Others (specify) .....

12. Location of place of work

a) Tudun Wada /__/

b) Samaru /__/

c) Sabon Gari /__/

d) Zaria City /__/

e) Others (specify).....

13. Age of house in years .....

14. Plot in which house is built:

a) inherited /__/

b) lease to owners /__/

c) purchase /__/

d) Others (specify) .....

15. If house is rented how much rent do you pay per month in Naira ? .....

16. If house is not rented, indicate

a) Owner occupies /__/

b) Giftfrom relatives /__/

c) Gift from friends /__/

d) Others (specify).....

17. Services in dwelling unit

1. Electricity: a) Yes /__/ b) No /__/

2. Pipe water

a) Sufficient /__/

b) Insufficient /__/

c) None /__/

d) Public tape /__/

3. Latrine /__/

a) Pit /__/

b) Bush /__/

c) Water closet /__/

4. Well:

a) Within the compound /__/

b) Outside the compound /__/

c) Government well /__/

d) Others (specify) .....

5. Gas:

a) Available /__/

b) Not available /__/

18. How much land do you own from farming or residente ?

| | Farming | Residence |
|---|---|---|
| a) 0 - 1ha | /__/ | /__/ |
| b) 2 - 3ha | /__/ | /__/ |
| c) 4 - 5ha | /__/ | /__/ |
| d) 6 - 7ha | /__/ | /__/ |
| e) Above 7ha | /__/ | /__/ |

19. Indicate frequency of visit to the following places for the reasons stated.

| | PLEASURE | | | | | BUSINESS | | | | | BUYING | | | | | SERVICES | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Tudun Wada | | | | | | | | | | | | | | | | | | | | |
| Sabon Gari | | | | | | | | | | | | | | | | | | | | |
| Zaria City | | | | | | | | | | | | | | | | | | | | |
| Samaru | | | | | | | | | | | | | | | | | | | | |

Others (specify) .....

20. How far in metres from your house do you dispose the refuse? .....

21. What happen to the refuse when you dump it there ?

a) It is carried away by sanitory workers / /

b) It is left there to decay / /

c) It is burnt sometimes / /

d) Others (specify) .....

22. Freely comment about the area:

a) Environment .....

b) Services .....

c) Facilities .....

d) Linkages .....

## APPENDIX II

### VILLAGE SETTLEMENTS AROUND GROWING URBAN CENTRES

### QUESTIONNAIRE SCHEDULE

1. Name of village .....

2. Type of house lived in:

   a) Traditional (mud and thatch) / /

   b) Modern (concrete and zinc) / /

   c) Mixed / /

   d) Others (specify) .....

3. Observe and state thetypes of building materials used for walls in this area .....

4. Assess the general condition of the buildings found in this area.

   a) Good structures / /

   b) Bad or dilapidated / /

   c) Both (a) and (b) / /

   d) Others (specify) .....

5. Is the settlement accessible by road ? Yes / / No / /

6. Statethe condition of road.

   a) Tarred road / /

   b) Untarred road / /

   c) Foot path / /

7. What do you think about the surroundings of the house?

   a) Clean / /

   b) Dirth / /

   c) Congested / /

   d) Attractive / /

   e) Unattractive / /

8. Schools in the village:

   a) Primary /__/

   b) Post-primary /__/

   c) Others (specify) .....

9. Health clinics and dispensaries:

   a) Health centre /__/

   b) Dispensaries /__/

   c) Others (specify) .....

10. Type of water supply:

   a) Pipe water: a) Sufficient /__/ b) Insufficient /__/

   b) Sufficient /__/

   c) Well /__/

   d) Stream /__/

11. Market in village:

   a) Rural daily market /__/

   b) Rural periodic market /__/

   c) Rural periodic day market /__/

12. Supply electricity to village:

   a) NEPA /__/

   b) Generator /__/

   c) Bush lamp /__/

   d) None /__/

   e) Others (specify)...../...../...

13. List types of facilities, utilities and services found in the village.

   .....

   .....

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