

**HOUSING PROVISION FOR WORKERS IN URBAN AREAS:-  
A CASE STUDY OF INDUSTRIAL WORKERS IN KADUNA  
METROPOLIS**

**BY**

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**Thesis submitted to the Dean, post Graduate School, Ahmadu Bello University  
Zaria partial fulfillment of the requirement for  
the award of M.Sc (URBAN AND REGIONAL PLANNING).**

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**JULY 1999.**

### **DECLARATION**

I here declare this thesis has been composed by me and that it is the outcome of my own research work. It has not been accepted in any previous application for higher degree. Quotations are distinguished by quotation marks and sources of information are appropriately acknowledged by means of referencing.

Signature: .....

Date: .....10:12:99.....

## CERTIFICATION

This thesis entitled "Housing provision for workers in urban Areas:- A case study of industrial workers in Kaduna" by Margaret Wendy Joel meets the regulations governing the award of the degree of Master of Science, Urban and Regional Planning of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

  
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18/12/01  
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Date

**DEDICATION**

**To my children**

**Bela and Mimi**

## **ACKNOWLEDGEMENTS**

The study in this report is the outcome of a Master of Science research programme under taken by the writer in the Department of Urban Regional planning, Ahmadu Bello University, Zaria. For all the contributions in this thesis the writer is greatly indebted to previous contributors in the field of housing.

Deep gratitude is expressed to the supervisors, Dr. J. B Kaltho, Mallam A, Ahmed whose inspiring and untiring efforts as supervisors have contributed immensely to the successful completion of the project. Particular thanks go to Dr. M.B. Yunusa the head of Department Urban and Regional planning A.B.U. Zaria for his invaluable advice and inspiration.

Mr E.S Lema of Kaduna Polytechnic who greatly assisted in providing most of my research materials and in the drafting stage of my seminar paper.

I am also grateful to Hadiza Lantana Ampah for painstaking proof reading of the manuscript and for keeping company.

The writer wishes to thank Kola who drew the maps used for this work after an effortless search for good draft-manship.

A lot of thanks goes to all my classmates, Clement Drug, Idris Mohammed, Tijani Nasiru, Gbenga Owalabi, Japhet Musa, Hashimu Saidu, Abdul Hussaini, Oguns Ajanaku Ojo, Momoh Umar, Thomas Tenku, Musa Mohammed and Bakut Felix; my greatest thanks to my Brothers, Philip,

Nchemiah and Folami, my Sister Binta and many others well wishers, who cannot be mention here, thank you all.

## ABSTRACT

Housing Workers is of prime importance to the economy of a country. This is in view of the fact that housing environment influences their productivity and safety. A good housing package for industrial workers will lead to high productivity and consequently to a better economy.

However, in most industrial towns in Nigeria and Kaduna in particular, there is shortage of adequate housing facilities for the industrial workers due to failure of the industrial management to provide houses for their workers, shortage of housing stock in areas adjoining the industrial Zones, failure on the part of government in enforcing the Employee housing scheme (special provision) Decree and relevant policies, others include decent income which are dependent on the effectiveness of the macro, economic, social and others related policies.

This thesis therefore, seeks to investigate the problems militating against an efficient and effective provision of houses for the industrial workers and to proffer solution to these problems. Information was collected on Housing situation of industrial workers in Kaduna, qualitative/quantitative aspects of industrial workers houses, characteristics of journey to work of industrial workers, and policies on housing industrial workers.

After a careful analysis of the data, it was observed that most of the workers reside far away from their working place and this has a negative effect on productivity. They reside in houses in deplorable conditions. The study found out that 90% of the workers are not housed by the management of the industries.

Finally, planning proposals were suggested on how to provide effective and efficient houses for industrial workers.



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## CHAPTER ONE

### 1.0 DESIGN OF THE STUDY

#### 1.10 INTRODUCTION

Industrialization brings about social and economic benefits to the society. These benefits enhance socio-economic developments and welfare. Most countries of the world give priority to industrialization due to the benefits. With industrial growth and associated job opportunities, migration into cities increases. The large labour force presents threshold population for the development of infrastructure and other services in the cities. As population increases, shortage of community facilities and services emerges especially in the housing sector. Poor housing conditions are normally found in towns with large proportions of industrial development: for example; Lagos, Port Harcourt, Kano, Kaduna etc.

Industries are commonly located at the fringes of urban areas, where huge tracts of land is available. Due to these locational characteristics of industries problems that emerge include.

Availability, of housing falls below demand in areas adjoining the industrial zones for workers, their families, and others who migrate to provide services to workers both in absolute demand and the demand for workers.

- (b) Shortage of adequate workers housing in quantitative and qualitative terms.
- (c) Poor industrial workers housing location accessibility with reference to work place.

## 1.20 THE STUDY PROBLEM

Urban housing problems in many Nigerian towns are largely associated with rapid urbanization and industrial development. Rent subsidy for senior staff is often higher and in most cases accommodation is provided for this category of staff. The low-income earners are often left to fend for themselves. The rent subsidy paid the low-income earners, who in most cases are unskilled, is not enough to get them decent accommodation.

The industrial workers sustain the industries and consequently the economy of the nation. This therefore makes it necessary that their housing and accessibility to work places is provided at suitable locations to enhance their welfare.

What attempts have industries in Kaduna made to ensure that their workers are housed? Under what conditions are those not housed living? What possible solutions could be provided?. These aspects of industrial housing have not been considered by earlier research work. Therefore, it is necessary to address these problems in terms of both housing supply and spatial policies. This is the focus of the study with specific reference to Kaduna.

Based on the research focus, the following shall be analysed

1. Problems of housing industrial workers and characteristics of workers housing in Kaduna.
2. Implications of housing location for the workers journey to work.
3. The public and private sector roles in the supply of housing for the industrial workers in Kaduna.



4. The potentials for planned housing supply for the workers.

1.30 **AIM AND OBJECTIVES**

1.31 **AIM**

The aim of the study is to appraise the problem of, and the policy for housing industrial workers in Kaduna with a view to making planning proposals for solving the problems.

1.32 **OBJECTIVES**

1. To review the relationship between urbanization, housing and industrialization and locational principles of workers housing in relation to workers welfare and productivity.
2. To examine the operational policy for housing industrial workers in Kaduna in the context of national housing policy.
3. To investigate the quantitative and qualitative housing characteristics of Industrial workers housing in Kaduna
4. To investigate the journey to work and other problems associated with the locational aspects of housing for industrial workers in Kaduna.
5. To identify the implications and make planning proposals for improving the housing problems of the industrial worker

### **1.33 RELEVANCE OF STUDY**

(Pam 1983) noted that about 70 percent of industrial workers reside in areas over (5) five kilometers from industrial work areas where affordable accommodation is readily available. That Industries do not often house workers, these workers live in deplorable conditions which in turn often has adverse effects or impairs welfare of the workers hence lower productivity. This therefore calls for urgent attention to arrest a situation whereby industrial productivity, which enhances the economic base of the country, is threatened.

### **1.40 SCOPE AND LIMITATION**

Kaduna has experienced a boom in industrial development especially between 1971 - 1980. Though the first textile industry in Kaduna was established in 1957, it still remains the largest manufacturing industrial sector in Kaduna. This study only takes into consideration large manufacturing industries that employ more than (500) five hundred workers in Kaduna and does not include small scale industries. Most of the industries to be considered lie within the industrial layout in Kaduna. Household craft, industries and the informal industrial sector are excluded. The study therefore will be limited to industries located within Kaduna Urban Centre.

## 1.50 RESEARCH METHODOLOGY

### 1.51 DATA COLLECTION

Data for this study were collected in the following ways)

- a) Review of official documents and informal interviews of officials of the selected industries, and .
- b) Questionnaire survey of industrial workers

First, review of official documents.

- Existing land use of Kaduna
- Layout of all industrial area in Kaduna
- Statistical and other information from industries and ministry of commerce and industries.

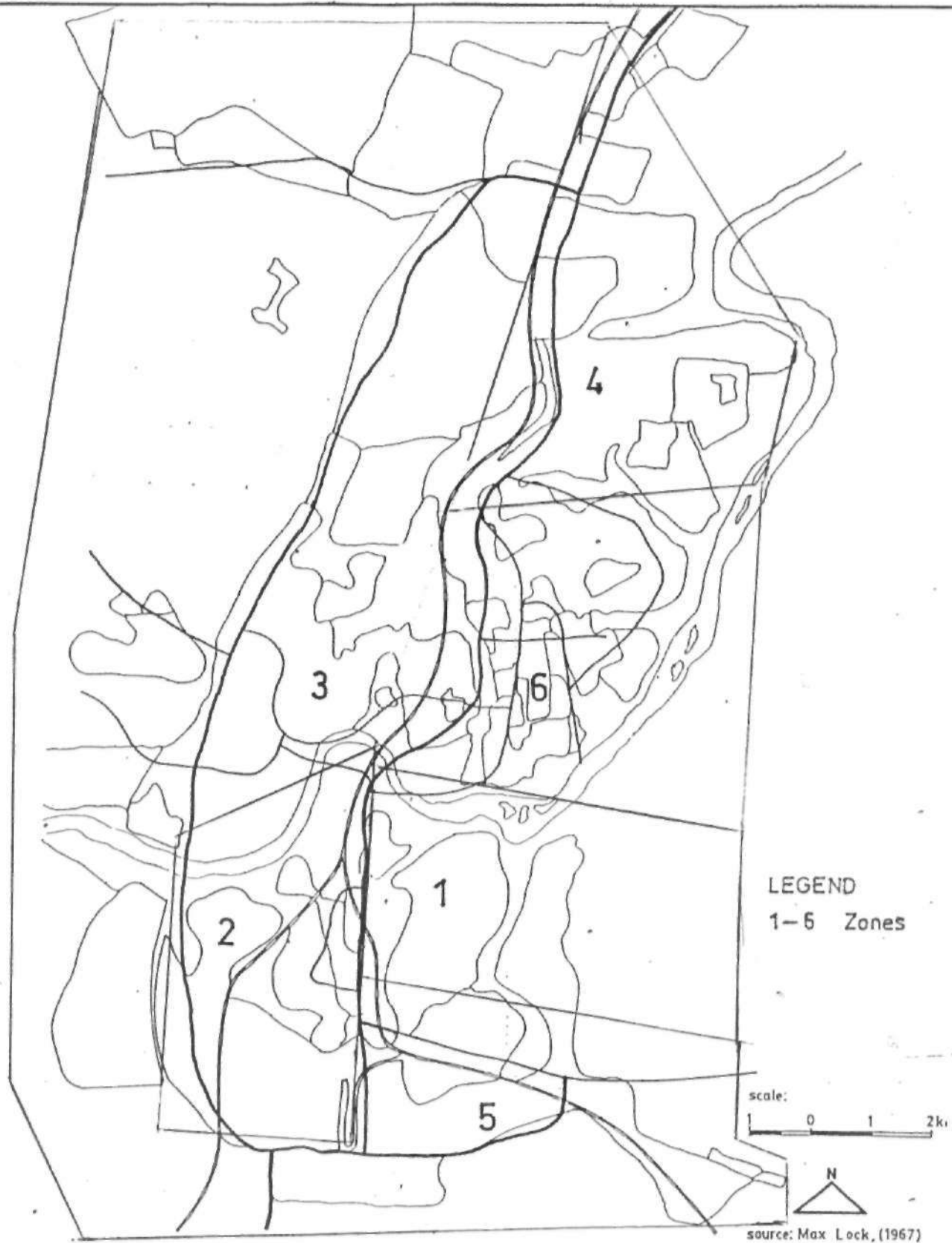
Second, Questionnaire survey

- Questionnaire for the industrial establishment and interviews of staff strength, welfare policy and other staff related issues.

To adequately study the need for housing the industrial workers, the residential pattern which different income groups in the industrial sector reside. The homogeneity in characteristics of each zone was considered. A land use map was therefore used.

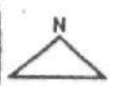
### 1.52 SURVEY DESIGN

Data collected was by administering data at work places since this was the



LEGEND  
1-6 Zones

scale:  
0 1 2k.



source: Max Lock, (1967)  
Updated in 1998

JOEL, M.W.  
MsC URP  
1998/99 Session

Fig. 1.1 ZONATION OF THE STUDY AREA

point where the workers could be found. It was also more convenient to get assistance from some workers in the distribution and collection of the questionnaires.

The questions were framed to eliminate bias and at the same time spend only a few minutes in completion of the questionnaire. The distribution of the questionnaire was carried out in such a way that both the junior and senior workers were represented. Senior management officials of industries were also interviewed on issues of welfare of staff and service conditions.

### 1.53            **ZONES**

#### Zone I:- Barnawa Narayi

Government residential areas and low cost houses built by Kaduna State Government is located in Barnawa and Narayi. Some of the low cost houses have been allocated to companies and industrial enterprises. Settlements that have developed into small rents are many here with private development taking place rapidly. Different category of workers lives here.

#### ZONE II : Kakuri, Makera, Ungwan Mission and Nassarawa

These are the areas that industrial activities are concentrated. These industries have attracted development of slums and overcrowding, since most workers want to live in close proximity to work places.

#### ZONE III:- Tudun Wada - Ungwan Muazu, Kabala West, Ungwan Shanu,

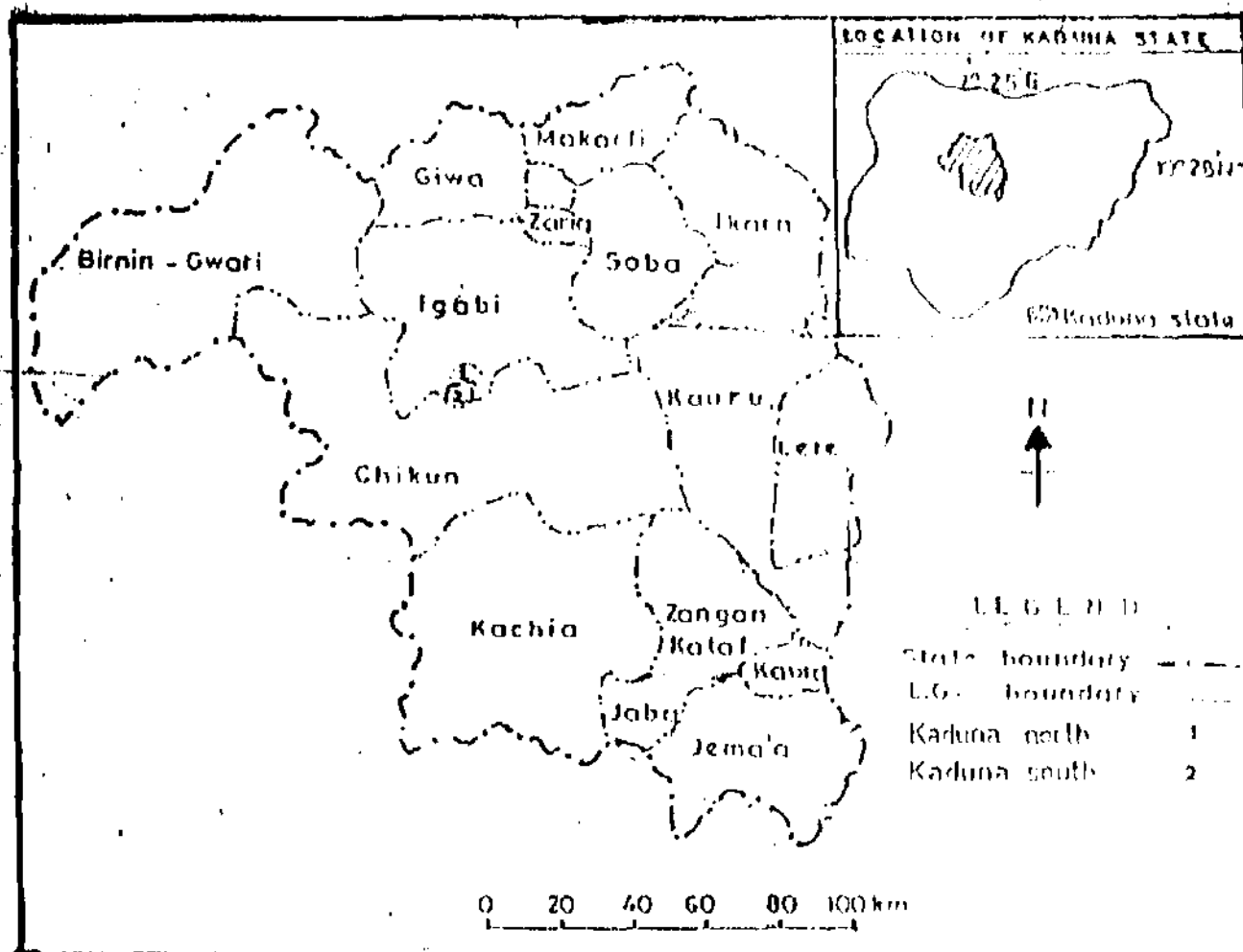


Fig 1.2 MAP OF KADUNA STATE

JOEL M. W.  
 M. SC. U.R.P.

Kudenda I & II, Badiko, Kabala.

These are areas adjoining the industrial areas in Kaduna. Private development and commercial activities thrive here. It is characterised by old and new buildings lacking adequate facilities, services and utilities.

**ZONE IV:-** Kurmin Mashi, Malaji, Kawo, Ungwan Gwari.

There are residential areas here with modern and traditional buildings.

Government institutions and other public uses are concentrated here.

**ZONE V:-** Ungwan Television, Sabon Tasha, Ungwan Boro, Ungwan Sunday and Ungwan Yelwa.

These areas house a great deal of Industrial workers in Kaduna. It is densely populated with modern and traditional buildings.

**ZONE VI:-** Ungwan Rimi, Sabon Gari, Costain.

These areas house mostly civil servants and businessmen and are characterised by modern and traditional buildings.

## **1.60 SETTING OF THE STUDY AREA**

### **1.61 PHYSICAL SETTING**

Kaduna is the second industrial city in Northern Nigeria and the Third in Nigeria. In 1965 there were forty-four industrial establishments in Kaduna employing about (9,217) nine thousand, two hundred and seventeen people. There are two industrial areas in Kaduna, both cover (800) eight hundred hectares of land with an additional area of (2,500) two thousand five hundred hectare meant for industrial expansion in the future.

The Urban area coverage of Kaduna is (160km<sup>2</sup>) one hundred and sixty kilometres. Kaduna Metropolis is administered by Kaduna North, Kaduna South, Chikun and Igabi Local Government Councils.

Kaduna metropolis has a prominent position in the Nations and economy. As the capital of Kaduna State, it accommodates major financial institutions, ministries, parastatals, multi-national corporations and a lot of the informal economy sector. Kaduna has a high average per capital expenditure. Nonetheless, poverty is still of significance when considering the welfare of the public. The urban poor in Kaduna tend to be concentrated in the core indigenous settlements and migrant residential areas. Such areas are economically depressed, have high density with relatively poor access to environmental infrastructure and services.

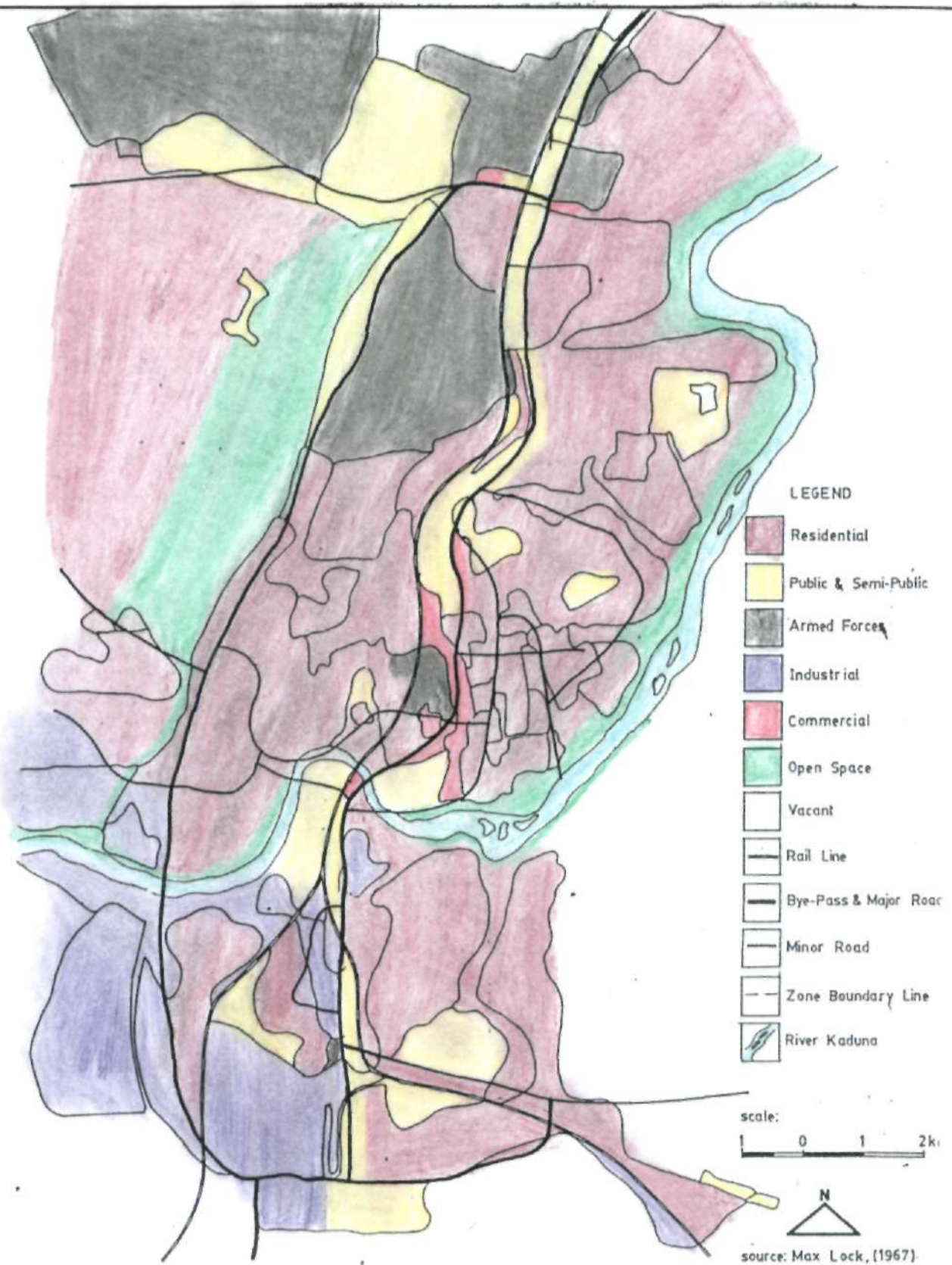
#### 1.62 POPULATION

Kaduna is currently growing at a rate of 3.5% annually, compared to the national rate of less than 3.0%. Between 1963 and 1991, Kaduna South which will form the main study area has increased about seven times. Migration to Kaduna accounts for all the population, for in the true sense it is difficult to see an indigene of the city. Since this trend is continuous, the economically active population that has relatively high demands on the public services will increase and hence intensifying pressure will increase on the supply sector of these services. Thus the need to maintain and supply key environmental services, infrastructure, energy transport, low risk and acceptable housing.



### 1.63 SPATIAL SETTING

The rapid has sustained development in Kaduna growth of the industrial base. The establishment in 1957 of the first textile mill in Kaduna marked the beginning of industrial growth. The study area where the industries are concentrated is relatively well laid out, with pockets of unplanned residential zones, characterised by overcrowding, inadequate sanitation and other municipal services and substandard housing especially for the low-income areas. These areas provide 60% of the accommodation of the low-income earners in Kaduna. The industrial zones in Kaduna are about seven kilometres from the city centre.



LEGEND

- Residential
- Public & Semi-Public
- Armed Forces
- Industrial
- Commercial
- Open Space
- Vacant
- Rail Line
- Bye-Pass & Major Road
- Minor Road
- Zone Boundary Line
- River Kaduna

scale:  
 1 0 1 2k



source: Max Lock, (1967).  
 Updated in 1998

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 1998/99 Session

Fig.1.3 LAND USE MAP OF KADUNA

Table 1.1 below gives the general land use analysis of kaduna south.

TABLE 1.1 LAND USE PATTERN OF KADUNA

LAND USE	COVERAGE (HA)	PERCENTAGES
Residential	3960	60
Industrial	903.54	13.69
Commercial	173.58	2.63
Educational	208.56	3.16
Public	382.14	5.79
Open space	972.18	14.73
TOTAL	6600	100

Source:- field survey, 1998

that there is an urgent need for action oriented efforts that would aim at advocating the acceptance of appropriate and workable planning strategies that would facilitate the combating of the problem of urbanization caused by industrialization and the *disjunction of physical planning itself*.

Nigeria is confronted with urban problems of the same magnitude as those which have confronted or confront the more industrialized countries of Europe and North America. In both of these societies urbanization has ushered in complex urban problems in the form of competition for land, long journey to work, traffic management problems, shortage of adequate housing, inadequate mortgage facilities, growth of slums, health hazards, rural depopulation, under – development of human resources, urban poverty etc. These problems exist in both the industrialized and developing countries. The resources to finance exist in advance countries, while in the emerging nations it does not exist as resources are limited or under developed, Meaning an atmosphere of relative poverty in the rural areas and poverty in the urban centre and under a context where only a few benefit substantially from the proceeds of current national economic resurgence. In a sense, “wealth” is unevenly distributed both spatially and among the masses (Galbrath 1967).

## 2.2 PROBLEMS OF INDUSTRIAL WORKERS HOUSING

The problems of urbanization and trends in emerging nations as regards housing of industrial workers will be appreciated more, if the situation of some of these nations is characterized.

The Asian cities do not increase because they possess great opportunities and employment, which can assimilate the rural in-migrants. However, economic compulsion has on its own acted as an executive mechanism in the rural areas where evidence of over – population and poverty exist.

This rural -- urban movement has resulted in expansion of just a few cities enhancing urban growth. Thereby the issue of housing becomes a problem. The most unpleasant environment surrounds the urban sector of West Bengal. Workers and their families live in abject poverty, (Myrdal, 1957; Turner, 1962). In Latin America. Unwholesome shanty dwellings occupied by poor industrial workers (Jones 1966) encircle large cities.

The situation is the same in sub Saharab African, where there has been a phenomenal growth of a few urban centres within the last two or three decades. Over crowding within the cities is a common problem. Slum conditions characterise most cities in the region. Squatting disparity between income and shelter cost, poor sanitation and inadequate shelter are just a few of the problem of the industrial workers.

Rapid in urbanization is characteristic of the developing countries and has been so since the 1950s. This is seen in the high annual growth rates attained by agglomerated settlement. (Localities of 20,000 or more inhabitants) in developing countries – a rate which was 5.1 percent during the 1950s as compared with 2.7 percent for similar sized agglomerations in the developed countries of the same period.

Nigeria is no exception to this general trend. While an average annual growth rate of 5 percent may be postulated for Nigerian towns, there are wide divergences. This rapid urban expansion has brought with it many problems associated with the difficulties of providing basic infrastructure such as electricity, inter- urban and intra – urban transportation services, providing medical, educational and recreational facilities. The most outstanding of all the problems is that of providing adequate housing for the industrial workers.

The shortage of adequate housing facilities in many Nigerian towns especially those housing industries is well known. Housing need in Nigerian urban centres has been made greater and housing problems exacerbated by a combination of factors. First there is the housing available in our urban centres is mainly in a dilapidated condition and unsuitable for habitation. Secondly, more houses are needed to relieve the existing overcrowding in many of the Nigerian urban centres. Thirdly, natural increase within the urban centres themselves demands additional dwelling units to house increasing population. Fourthly, the rural-urban migration population, which has assumed great proportions during the last two decades, has aggravated the housing needs of urban centres in Nigeria. In response to the great demand for houses, unplanned, and sub-standard private housing districts continue to emerge. These in turn tend to generate into shums.

In considering the global need for housing in the United Nations Development Decade (1960 – 70) it was stated that over 1,000 million people in Africa, Asia and Latin America were homeless or in housing which is a danger to health and an affront to human dignity. In recognition of the magnitude of present and future needs the United Nations has estimated that annual rate of housing construction of from 8 to 10 housing units per 1,000 persons is needed in the developing countries to overcome existing deficiencies and to meet future needs. This is an enormous task, since even the industrialized countries with few exceptions build 6 to 7 dwellings per 1,000 population. Although the UN rate is a target, which is unlikely to be achieved by most, developing countries. It does provide some guide on the importance that should be given to housing in national development programmes.

### 2.3 ANALYSIS OF FACTORS AFFECTING THE NIGERIAN INDUSTRIAL WORKERS PRODUCTIVITY

That Nigerian workers productivity is low is an accepted fact, but the challenge to researchers is to evaluate effect of the factors affecting product such that it would permit improvement in effectiveness and efficiency of the industrial workers performance. To optimise productivity. Its relationship with the factors, which affect it, must be qualified and established. Thomas, et als (1993) defined productivity as the relationship between man-hoods and work accomplished.

$$P_i = \frac{Q}{WHI}$$

Where  $P_i$  = Productivity for time period I

$Whi$  = Total work hours charged by the crew for time period I

$Q$  = quantity of work placed during time period I,

Factors affecting labour productivity.

Maloeny (1983) believes that the level productivity is as a result of the driving indices and restraining forces acting upon the works and these factors act positively and negatively.

Wahab (1976), Bain and Thomas (1991) Oloko (1983) suggest that following factors as having influence on productivity.

❖ Skill of workforce

- ❖ Length of work day
- ❖ Enabling environment.

Categorized by Oloko 1983 as:

- I) Factors in the employment situation
- II) Factors in the individuals which are mostly concerned with his personality system.
- III) Factors in life of the employment situation.

Also the Nigerian Employers Consultative Association, NECA (1991)

articulates these productivity factors (of production) as:

- ❖ Housing provision
- ❖ Trade – management relation
- ❖ Social and psychology conditions of work
- ❖ Wage incentives
- ❖ Adaptability to and liking for the job
- ❖ Physical fatigue
- ❖ Composition (age, sex, skill and training of the labour force.
- ❖ Organisation of the spirit of emulation in production
- ❖ Trade union practices.

The addition above of trade union practices is not outside what others have opined in the previous paragraphs, it is just a way of putting a worker in a social class that probably determines the level of output and negotiates its members wages. The influence factors affects analyzed. The key to improve productivity of construction workers lies in the integration of the factors that casually affect labour productivity



in such a way that the interplay of forces would eventually lead to improvement that is what was lost on the round would be gained be gained on the swing.

Having identified that the factors are of two directions, those having direct relationship (positive) and those that have adverse relationship (negative) with labour productivity, attention must be devoted to the enhancement of the factors that directly contribute to increase workers productivity. Equally attention must be directed at-eliminating factors that have inhibiting influence on workers productivity.

Housing quality including the location in relation to work places has been found to be one of the factors. It could effectively paralyze work, the need to study the existing housing situation of workers, the effect of various house types and conditions on workers productivity to establish which type of housing is needed and at close location to work areas is essential to increase productivity.

## 2.4 ASPECTS OF HOUSING FOR INDUSTRIAL WORKERS AND THE REQUIREMENTS.

Location requirement takes the form of guiding principles and standard, for the placement of uses on land, whole range of physical, economic and social consideration. These requirements derive from the basic need of residents, firms and institutions within the metropolitan area and beyond. Therefore, in their most elemental form, location requirements relate to health, safety, economy, convenience and the general amenities of urban living. They include consideration of danger from floods, and other health hazard, the nearer or remoteness of one use from another in terms and distance, their compatibility and the social implications on the people in the community. Three major functional area in the urban complex, include the work areas, the living areas and the leisure - time areas. The work area consists of that part of a city that is devoted to manufacturing trade and services. The living areas are viewed as the residential communities and their accessory community facilities such as neighborhood stores, playgrounds parks and elementary schools.

A land use scheme in which residential communities have easy access to work areas permits a more efficient and an economical output.

## 2.5 WORKERS HOUSING AND WORK PLACE

Work areas should be located in convenient proximity to living area. There are nearby inter connector transit and thorough fare routes here to ensure easy access back and forth the work area.

This involves a detailed formulation of principles relating to the location of industrial land use and residential landing area. The ratio of worker, residential area in relation to work areas is studied from the way industries operate. A worker who works twelve hours daily and on shift schedule, should be house close to work area.

The housing environment is a condition outside the workers control but influences their productivity and safety. Industrial workers especially the unskilled tend to live in poor housing. Substantial numbers live in squatter settlements. Evidence exist as shown by the International Housing productivity study conducted by the University Los Angeles 1970. There is a linkage between productivity, and health and housing condition. Inasmuch as housing is the focal point of a number of basic services for the worker, the impact of the housing environment on worker health and productivity however, cannot be ignored. Studies indicate for example that, higher incidence of disease is related to the decreased residential space. The economic benefits to be gained from implementing housing programmes are substantial; increasing capital formation; increased demand for local building products increased employment opportunities and most of all, better worker productivity as a reflection of better

health and Urban services. Where the housing services are so inadequate and unsanitary, a permanent negative impact on the workers lives, and the economic base, will be affected.

## **2.6 LOCATIONAL PRINCIPLES**

Locating of industrial workers housing as an aid to boosting production and enhancing welfare of the worker, have been taken into consideration in the developing locational principles and planning of industrial area. Government ministries, parastatals or government issues the standards and principles research institutions. In Nigeria, academic institution with government authority and assistance, have developed such guidelines and standard. The industrial guideline prepared by Ibadan Polytechnic is used as a guideline for designing industrial layouts and their environment.

Standards are meant to create an environment which is free from any health hazard and which conforms to acceptable standards of comfort and efficiency necessary for the well being of members of the community. They are thus meant to create a comfortable and safe environment free from hazard and nuisance. The planning authority usually sets minimum acceptable standards and these are expected to be followed. The standards are applied to:-

**The design and layout of industrial areas. These relate**  
to space, utilities, facilities and services

The designing of factory plot and factory buildings. Performance standards regarding emission of measurable

external nuisance such as noise, smoke, fumes, smells and waste products.

Adherence to these standards would provide a safe environment both for the employees and the adjacent land users.

## **2.61 PRINCIPLES OF HOUSING DEVELOPMENT NEAR INDUSTRIAL ZONES**

There are basic principles that govern the planning and design of residential areas around industrial zones.

### **a) INDUSTRIAL LOCATIONAL PRINCIPLES**

Location for residential areas and the manufacturing plants are considered based on the following aspects:- accessibility, climatic consideration, site requirements, land use considerations and the available utilities and services on or near the site.

### **b) ACCESSIBILITY**

Access is a primary requirement of all industrial areas. Are links with air transportation facilities including highways near city roads, especially that there is the need for effective employee movement to work and efficient linkage with other parts of the city and the region.

Residential areas around industrial zones are best sited to avoid noise, but generated with high accessibility such that industrial for houses are thus located close to major arteries and be readily accessible to places of work and leisure.

Accessibility to residential areas is evaluated based on the following:

- i) In areas where the industrial enterprises are small and lie within the boundary of residential areas. In these areas, accessibility problems are easily solved.
- ii) As the industry moves away, from the town, the traffic and the time to and from work, increases. In this case, incident of transport to work in workers is higher.
- iii) The transportation problems are complicated when enterprises are concentrated in one or several large area. When the traffic accumulates in a limited number of directions, excessive concentration of passengers is no more desirable than excessive dispersal.
- iv) In a town which is long in comparison to the width, industry is built along the longitudinal axis to work - home will be reduced work place home average travel and in terms of time and money.
- v) Enterprise requiring labour being brought together in close proximity to residential areas to reduce traffic.

These laid down principles show the need that the employees housing be highly accessible to industrial zones. Such housing should fall within commuting range.

## 2.62 CLIMATIC CONSIDERATIONS.

Industrial areas should be located considering wind direction and existing and future spatial extend of a town. Residential areas should always be located to the windward side to avoid a blow back of pollutants into these areas. This will help reduce the incidence of industrial pollution of the housing area by pollutants. Where an industrial area has to be located on a windward side of the city or other land uses, industrial areas must be separated from other developments by the use of a buffer zone in form of a green belt.

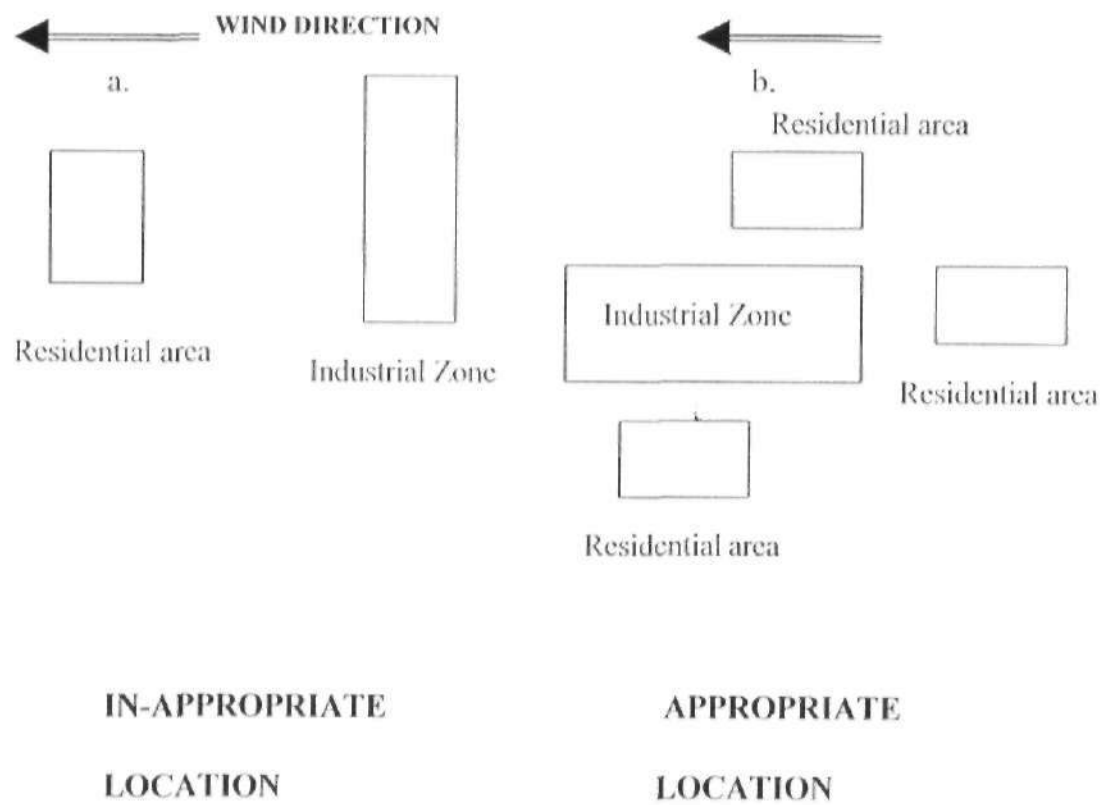
## 2.63 SITE REQUIREMENTS

Industrial areas require a reasonably flat or very gentle sloppy land, which will cover an extensive area. The slope normally should not exceed 5% and be capable of being upgraded without huge expense. In addition, the soil must have a high load bearing capacity and should be sufficiently stable to support heavy and vibrating machinery and all vehicles.

The reason for special site requirement considerations is that any industrial estate must be well drained and naturally free from flooding. To be well-drained means all the waste products of the industries, go into the river. This therefore means that locating an industry from a safe distance from streams and away from flood drains.

2.64 **LAND USE CONSIDERATIONS.**

All industrial areas should be located in a convenient proximity to residential areas and land uses like, leisure, or recreational areas, schools for industrial employees dependants markets and other land uses. These land uses can either be located in good positions to industries or bad positions.

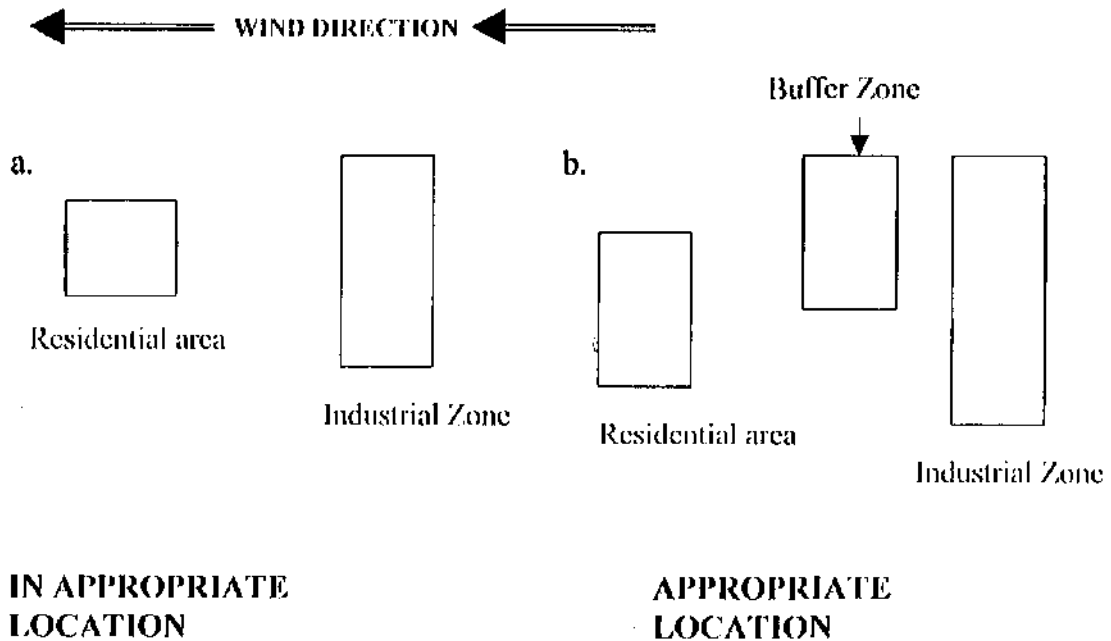




**Fig. 2.1 INDUSTRY IN RELATION TO RESIDENTIAL AREAS**

Sources:- Neufert Architectural Data

The figure above shows that the industrial zone is placed in the wind direction facing residential areas, hence pollution of the environment. To avoid the blowback, the best location above is adapted, whereby the side of the industry, industrial emission, places the residential zone will go in one direction.



**Fig. 2.2 INDUSTRY IN RELATION TO RESIDENTIAL AREAS**

Source: Neufert Architectural Standard

The diagram shows that if the residential zone is to be placed on the wind ward part. The buffer zone separating the industry from other development is usually best located in between the industry and residential areas.

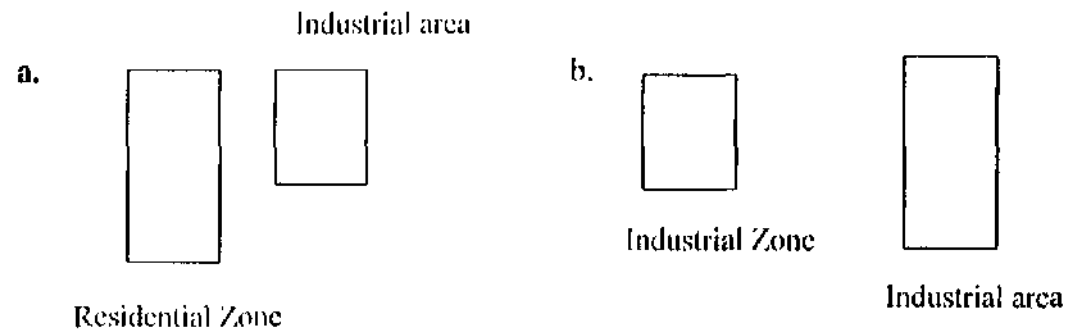


Fig. 2.3 INDUSTRY IN RELATION TO RESIDENTIAL AREAS

Source Neufert Architectural Standard

The figure above shows that in (a) the industry and residence of workers is close. For expansion purposes the industry will expand in one direction only and the residence in the other, the location is shown figure (b) for expansion. It goes either way, the buffer zone if need be could be engulfed by development.

## 2.25 CONCEPT ANALYSIS

Locating the residential area opposite the industrial zone as shown by the figure achieves the concept of high accessibility



Fig. 2.4 CLOSE PROXIMITY BETWEEN INDUSTRIAL AND RESIDENTIAL AREAS

and close proximity to industrial areas by workers: The disadvantage of this location is that it poses a problem to the workers who have to cross the high way to work and back home. An overhead bridges or under ground road could be constructed to avert this problem. The chances of polluting the residential areas are also high, especially if the prevailing wind blow in the direction of the houses.

The figure below shows that the residential zones are located on more than one side of the industry on the same side of the highway.

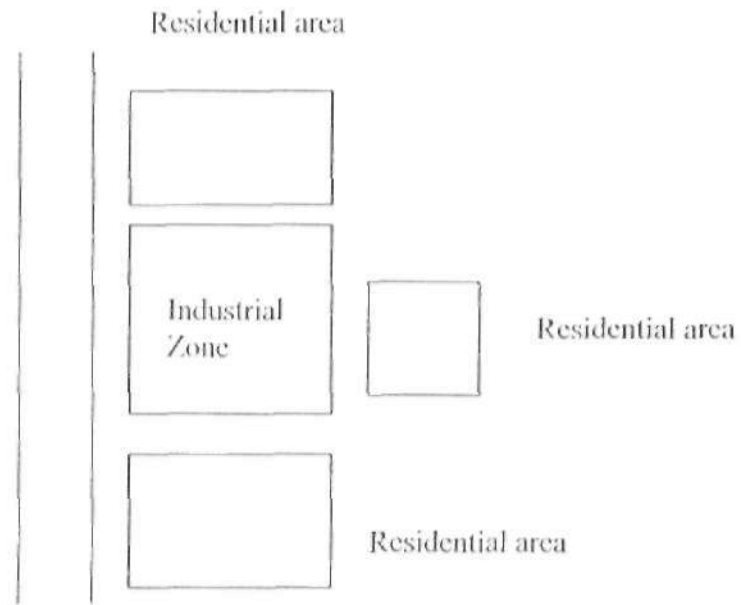


Fig. 2.5 RELATIONSHIP BETWEEN INDUSTRIAL, RESIDENTIAL AREAS AND MAJOR HIGHWAY.

The advantages of this concept are that it has high accessibility routes to work, proximity and safety to workers.

The disadvantage is that the prospects of future expansion are not there for the industry. Though the residential areas could grow, the industry cannot expand. Pollution could also occur here, so buffer zones are used to minimize or prevent pollution completely.

The other concept is shown below.

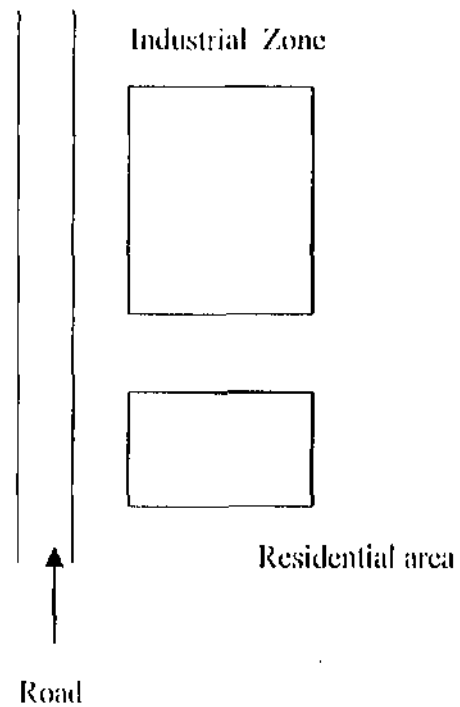


Fig.2.6 DISTANCE BETWEEN INDUSTRIAL AND RESIDENTIAL AREAS

Here the industry and residential areas are located on the same side of the road, It has good accessibility incidence of pollution completely reduced except if the residential zone is placed far away from both industry and the other land uses of the Urban area.

The above concepts are guidelines used to achieve maximum utilization of space in industrial location and residential layout.

## **2.7 OTHER REQUIREMENTS FOR EFFECTIVE INDUSTRIAL WORKERS HOUSING**

Apart from the aforementioned requirements, other related services like schools, hospitals shops, recreational areas are needed. Living area should be located in convenient proximity to work and leisure time areas. Where there are nearby transit and thoroughfare route, to ensure easy access. Residential areas should be an easy walking distance to accessory community facilities such as.

The industrial worker has little or no time for recreation so the time he spends on it must be maximized. The value which a worker places on time, and the degree to which he is willing to make a specified journey to work, journey to shops, recreational areas will depend on many variables. These variables include age, sex, economic class and reason for work.

Another form of location standard is the performance standard deriving from health, safety, and to some extent the amenity elements of public interest in this usage the performance standard provides the criteria for testing the hazard or nuisance from land use activities creating smoke, dust, noise, glare, odour or fumes or from activities generating traffic or producing waste. This helps in grouping industries as light heaving and unrestricted. Industries are grouped together so as to enhance economy of scale and increase efficiency.

Location of industries requires that other land uses be taken into consideration.

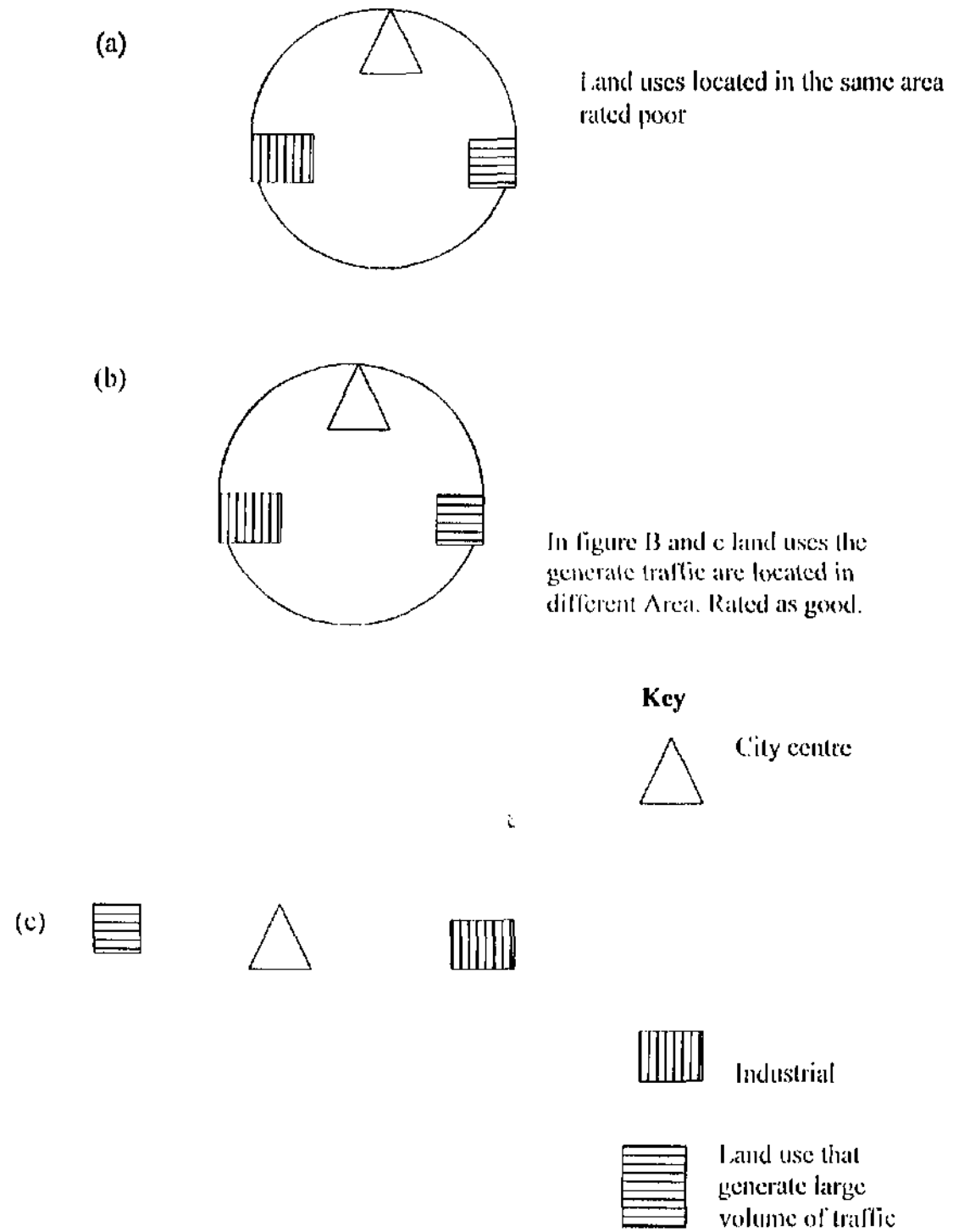


Fig. 2.7 **RELATIONSHIP BETWEEN INDUSTRIAL AREA AND OTHER LAND USES**

2.71

**RECOMMENDED DISTANCES BETWEEN SOURCES OF  
POLLUTION AND RESIDENTIAL AREAS.**

<b>Source of Pollution</b>	<b>Distance in Metres</b>
Bakery	45
Brewers; Furniture Makers, machine works	
Chemical cleaner	100
Saw mills and joineries	
Firms making agricultural Machinery	200
Gear cutting	350
Battery manufacturers	800
Last furnace, etc	2,500
Iron foundry	400

The above principles and standard are applied in designing industrial residential layouts. The distances shown are standards that must be maintained to avoid pollution of residential areas.

Source:- Architectural Data. Nefert.



## **CHAPTER THREE**

### **3.0 HOUSING POLICIES AND PROGRAMMES FOR INDUSTRIALWORKERS IN KADUNA**

#### **3.1 INTRODUCTION**

Housing supply:- Housing in Nigeria is produced and delivered mainly by three broad sectors. The role played by each sector varies from country to

Country. The sectors are:-

1. The use motivated popular sector
2. Centrally administered public sector
3. Profit motivated private sector.

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3. Profit motivated private sector.

### 3.11 HOUSING SUPPLY SECTORS.

TABLE 3.1 HOUSING SUPPLY SECTORS

HOUSING SUB-SECTOR		HOUSING SUB-SYSTEM
Public sector		Institutional Housing
		Public Housing
		Staff Housing
		Specialised Housing
Housing Delivery	Popular	Owner Occupied
System	Sector	Housing
	Private	Owner/Rented Housing
	Sector	Employees Housing

### 3.20 EFFORTS BY GOVERNMENT TO PROVIDE HOUSING IN URBAN AREA

Attempts have been made by past and present Nigerian governments to provide Housing. The emphasis may be weak but commitment has been shown.

The attempts cover six periods:-

1. Colonial period 1914 - 1960
2. The first National Development Plan period 1962-1968
3. The second National Development Plan period 1970-1974
4. The third National Development Plan period 1975-1980
5. The fourth National Development Plan period 1980-1985
6. The present.

The plans provided are classified into two period of passive commitment and the period of active commitment.

### **3.21 PERIOD OF PASSIVE COMMITMENT**

This period covers the pre-independence housing policies and post independence policies until 1975. During this period, new towns like Port Harcourt, Enugu, Kaduna, Jos and Kano were established and there become attractive places for job seeking migrants. Within this period, housing programmes were found to be essentially civil service specific, heavily subsidized, confined to a few state capitals. Then Housing was seen as a social overhead capital government failed to see housing as a priority for the

citizens because as far as the private sector investors were concerned, they were left to their own devices, hence houses but were only for profit building only for foreign firms, embassies and other wealthy clients the middle and lower income groups were to help themselves as well as built illegal structures outside allies of squat on public land.

### 3.22 PERIOD OF ACTIVE COMMITMENT

This period 1975 - 1985 can be said to be a time when the government in Nigeria took housing development as a main concern. In the third National development plan 1975-1980, the government accepted that it is part of *government social responsibility to participate actively in the provision of housing for all income groups and will therefore intervene on a large scale in this sector during the plan period (FRN, 1975)*. The plan also accepted that housing has a profound impact on the health welfare and productivity of the individual. As a result, the plan had an aim of achieving a significant increase in supply and bringing relief specially to low income groups who are the worst affected by the current acute housing shortages. An objective, the plan developed for an average urban worker therefore was that 20% of income was the *maximum rent to be paid*. To achieve this aim therefore the following programmes the federal government pursued option.

1. In 1975, an anti inflation task force was set up. This led to the setting up of a rent panel in 1976. The panel was to review the structure and

*level of rents within the country. This in turn led to the establishment of rent tribunal by all state government in 1976.*

2. The Nigerian building Society was replaced by the Federal Mortgage Bank with a capital base of N1000 million to provide loans to individuals and institutions.
3. On the 24<sup>th</sup> of July 1977, the Nigerian Construction, Building and Road Research Institute was established. It was meant to conduct research on building materials that could aid provision of housing in the country. As at now, the name is the Nigerian Building and Road Research Institute.
4. A National housing programme involving the construction of 202,000 housing units was launched. 50,000 were to be built in Lagos, 1,200 in Kano and 8,000 each in the then 17 states.
5. Involvement of finance institutions in housing finance matters. The Central Bank of Nigeria was to instruct commercial banks to give 5% of their commercial loans for housing development. In 1980, it was increased to 6%.
6. *The promulgation of the Employees Housing scheme (Special Decree) No 54 of 1979*

In order to alleviate problems of housing and ensure orderly physical development of the low-income earner, the government decided to encourage greater participation of the private sector in the housing

development. Hence at the state level each state was to establish a state committee of the National Housing Facilitation Council as provide for in the Employees Housing scheme (special provision Decree 54 of 1979.

### 3.23 STRATEGIES ADOPTED

To encourage the private sector to provide accommodation for different income groups, the government decided to adopt the following strategies.

1. Grant capital allowance on residential buildings and exempt interest on loans from tax.
2. Exempt from capital tax for the first five years and thus provide a tax incentive for investment in houses for estate development.
3. Exempt investment by employees developing staff housing from tax during the construction period.
4. Treat for the purpose of personal income tax on the employee rent allowance paid by his employee's annual salary. In addition, such rent paid by the employees shall be treated as expenses for the company taxation. This will encourage companies to invest on owner - occupied staff housing schemes rather than the current practice of paying exorbitantly for rental accommodation
5. Review and ensure effective enforcement of the provision of the employees housing scheme (special provision) Decree No 54 of 1979.

### 3.24 THE EMPLOYEES HOUSING SCHEME

The Employees housing scheme (special provision) decree no 54 of 1979 under the Federal Government state that.

- 1a. Every designated employer whether corporate or uncorroborated, shall not later than six months after the requisite order is made as provided under the section to submit for the consideration of the commissioner proposals for the establishment of a housing scheme for his employees in respect of each state of the Federation.
- 1b. The designated employer means any employer who on or after the commencement of the Decree had not less than 500 persons in his employment in any state of the Federation.
- 1c. The provision of the housing scheme involves provision on a rental basis of separate dwellings or of block of flats for employees.
- 2a. Without prejudice to the other provision of this section, every housing scheme under the Decree had to conform to such standards as may be prescribed.
- 2b. Every housing scheme shall make provisions for not less than 50 units of accommodation in respect of each designated employer and the units shall form part of an integrated development with other similar



units and shall be located contiguous or as near as may be reasonable in circumstances to the place of work of the employee concerned

1c. Not less than three quarter of the total accommodation available in any such scheme shall be for employees who are not executive or senior staff within the meaning of section 3(4) of the trade union decree 1975 (1973 No 31)

2d. The commissioner shall not later than three months after the receipt of the proposal made pursuant to section 1 of the decree.

Convey his intention to reject the proposals so, however, that where subsequent to such notice reject, the designated employee concerned makes the necessary adjustments, the scheme as provided in paragraph @ above.

2e. Where a proposal is rejected in its entirety, the commissioner shall set out the reasons for such rejection and the designated employer shall not later than three months after such rejection is to notify him, submit fresh proposals which conform in all respects to prescribed standards to the commissioner and the provision of sub - section (I) above shall apply accordingly.

If. Designated employer may fit out, furnish and supply any unit erected or acquired by him with all requisite furniture, fittings and conveniences and may sell or supply under a hire purchase agreement

furniture to the occupants of the units provided by the employer concerned.

### **3.25 LIMITATIONS OF THE DECREE**

The Employee Housing Scheme (Special provision) Decree No.54 1979 is not in line with recent National development strategy for growth and development, which is based on commercial principles including cost recovery. Under this new dispensation, price system is allowed to determine the allocation of resources and distribution of activities while industrial housing policy is more of social and public interest, the employees housing scheme Decree is not specific in the area of distance between the factory and the residents of the workers. Since the term as near as may be reasonable, as contained in the policy is highly relative and vary over space and time. For instance, a distance of two kilometre today may be or seem reasonable if transportation linkages between the two places are effective but in the near future say 10 years it is possible that a set of constraint may set in, that is, in terms of traffic congestion and in turn make the same linkages inaccessible or less accessible.

The Employees Decree is also silent on land tenure system, that is, it did not Specify the modality on how the industry will acquire land for the purpose of the said housing. Evidence shows that problems of acquiring land, hinders some industries from providing accommodation for workers, in most of our

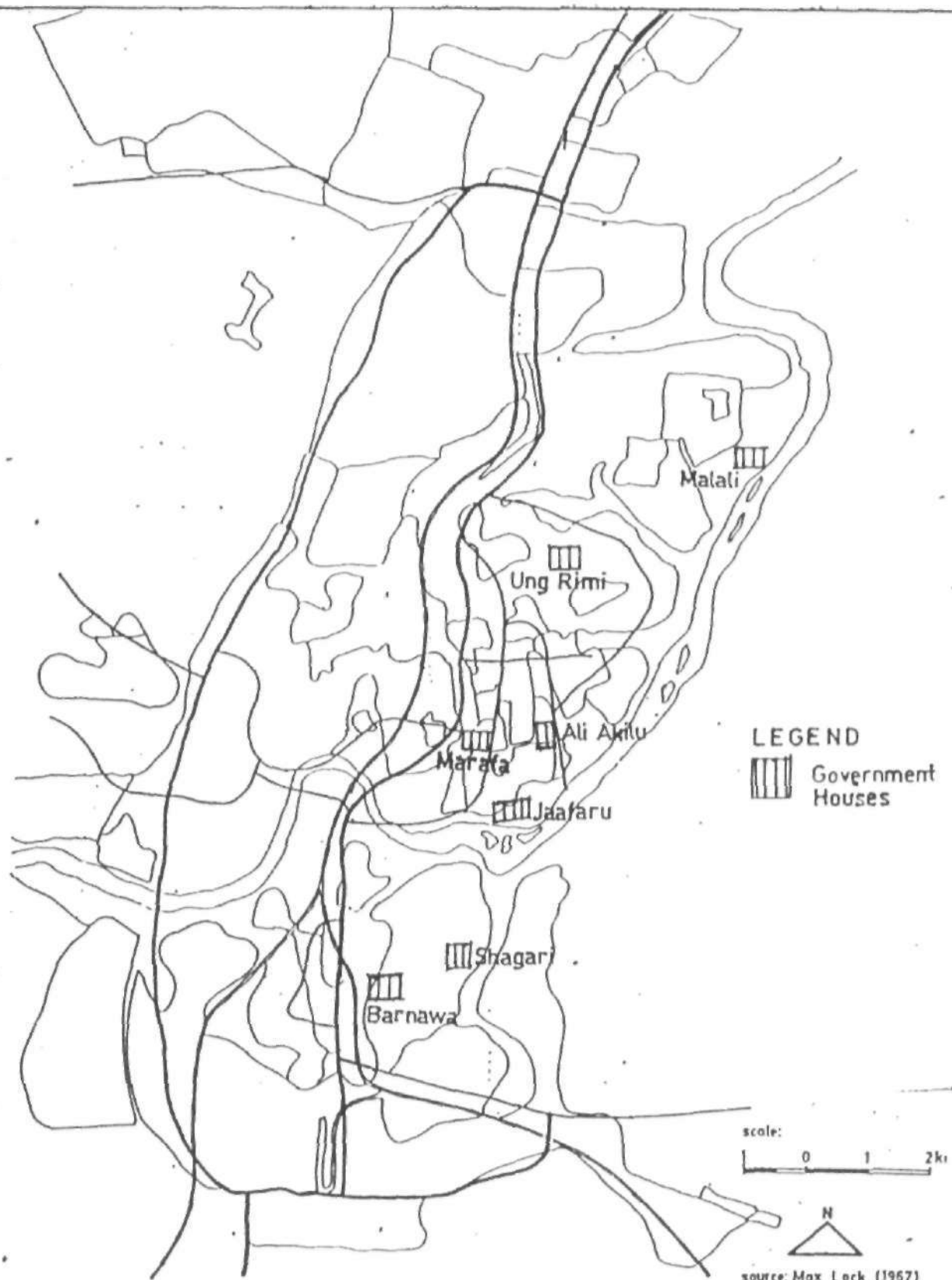


Fig. 3.1 LOCATION OF GOVERNMENT HOUSES

cities, that is Lagos, Ibadan, Enugu, Kaduna etc.

The Decree is short sighted in the area of housing finance by assuming that all industries have money to embark project. As a result, it found it not necessary to provide an alternative like minimum housing allowance or government providing loans to employers to embark on housing projects for workers. Rent allowance was not encouraged by the decree.

### **3.30 HOUSING POLICIES OF INDUSTRIES IN KADUNA**

According to the 1996 industrial census most of the country manufacturing industries are situated in Kaduna. For the purpose of the study twenty two of these manufacturing industries in Kaduna were studied. These industries it was found, employ a large proportion of the population in Kaduna.

Like in the past government policies, industrial enterprises in Kaduna have policies but almost all of them favour only the senior income earner of managerial position This senior staff category constitute only 3% of the total work force. The low income earner who is usually an unskilled migrant job seeker is given rent allowance. The houses provided for senior staff, are either provided for, by the industry if owned by them or rented by the industry in any part of the town. For the low income earner rent subsidy provided varies from N700.00 per month to N1,000.00 per month No houses are provided for the low income earner, but industries claim they will prefer giving houses to their

workers since most casualties gotten there are attributed to distance hired by the workers.

Industries that provide accommodation for workers are few. They are Kaduna Textile Mills, which provides accommodation for the senior staff numbering (20) twenty in Barnawa area. The other senior staff not provided accommodation is rented houses equivalent to their status. The United Nigerian Textile limited has the same policy like all other textiles. Where by they gives allowance of N700.00 per month as housing allowance to low income earners. This textile mill though has made an attempt to provide accommodation for the low-income earners in Nassarawa consisting of (80) eighty units of room and palour. For this, the staff pay a sum of N25.00 twenty five Naira per month as accommodation. The senior staff who live in the company's houses number twenty in number and N45,00 is deducted as monthly payment for the accommodation. The Nigerian National Petroleum Corporation has sixty five (65) duplexes in Barnawa and five hundred and one (501) bungalow of three and (4) four bedroom houses in their industrial estate in Sabon Tasha for senior staff only. Rents subsidy for workers of junior category range from N1,000 - N3, 000 per month. For the staff gotten houses by the company location of houses in relation to the company is never considered so long as it is status fitting. The low-incomes earner in search of accommodation can go as far as seven (7) kilometres in search of decent and affordable accommodation.

Defence Industries corporation also has the same policy like the textile industries.

In effect, housing policies for all enterprises like in most Nigerian firms, favour only the senior staff. Ironically this categories cannot sustain the machinery of the industries.

### **3.3 HOUSING PROGRAMMES.**

Specific industries in Kaduna have intention and have even made attempts to ease their workers housing problems. Along side the gigantic housing programmes initiated by the Federal Government, the Kaduna state government has along that line developed houses. The main objective of the housing programme during 1975 - 198 when Kaduna state Housing authority was established was to increase the availability and promote by means of increasing the supply of available dwelling places at reasonable rents, to alleviate the low income group who were worst affected by the housing shortages. Then urban worker were not to pay more than 10-15% of their monthly income on rents. Low cost houses were constructed to alleviate this problem and rented out at heavily subsidies rates. The public private enterprises rent large number for their workers. Till date the houses rent by their industries exist and are now owned by the industries.

The industries benefited from the owner occupier policies of the state.

**TABLE 3.2 HOUSING UNITS / HOUSING ESTATES BUILT IN  
STUDY AREA FOR THE PUBLIC BY GOVERNMENT**

<b>TOWN</b>	<b>HOUSING</b>	<b>NO. HOUSING UNIT</b>
<b>KADUNA</b>	<b>Barnawa I</b>	<b>638</b>
	<b>Barnawa II</b>	<b>167</b>
	<b>Ungwar</b>	
	<b>Rimi.</b>	<b>620</b>
	<b>Malali</b>	<b>1612</b>
	<b>Ali Akilu</b>	<b>260</b>
	<b>Marafa</b>	<b>110</b>
	<b>Ja'afaru</b>	<b>216</b>
	<b>Shagari Low Cost</b>	<b>604</b>
<b>TOTAL</b>		<b>4227</b>

**Source field survey 1998**

The Kaduna textile mills has 50 units of houses built by the industry with more space for expansion in Barnawa, it intends to embark on housing construction but only for the senior staff. The United Nigeria textile has available land for future expansion in Nassarawa and has programmes for building more of the remaining units to house the low income. Each block already built has twenty units of room and palour. The housing policies by industries in Kaduna favour only the senior staff category. This industries attribute to the temporary engaging nature of the junior staff cadre, despite the fact that it is this category of staff that sustain the machinery of all the industries.

## CHAPTER FOUR

### 4.0 HOUSING SITUATION OF INDUSTRIAL WORKERS IN KADUNA

#### 4.10 HOUSING NEEDS

In recent past, housing investments has been considered by many observers and exponents in the field as an aspect of development (UN). 'Need' is a planning concept, which expresses the difference between actual conditions, on the one hand, and defined minimum standards on the other. The standards and extend of needs depends entirely on the nature of standing adopted by the planners.

An important point about concept of need is that the definition of socially acceptable norms as been the prerogative of government and their planning advisers, rather than those who experience the conditions. Housing need is tied to standards, which could be defined based on demands (by the planners) referring to the subjective individual preferences. These preferences cover a



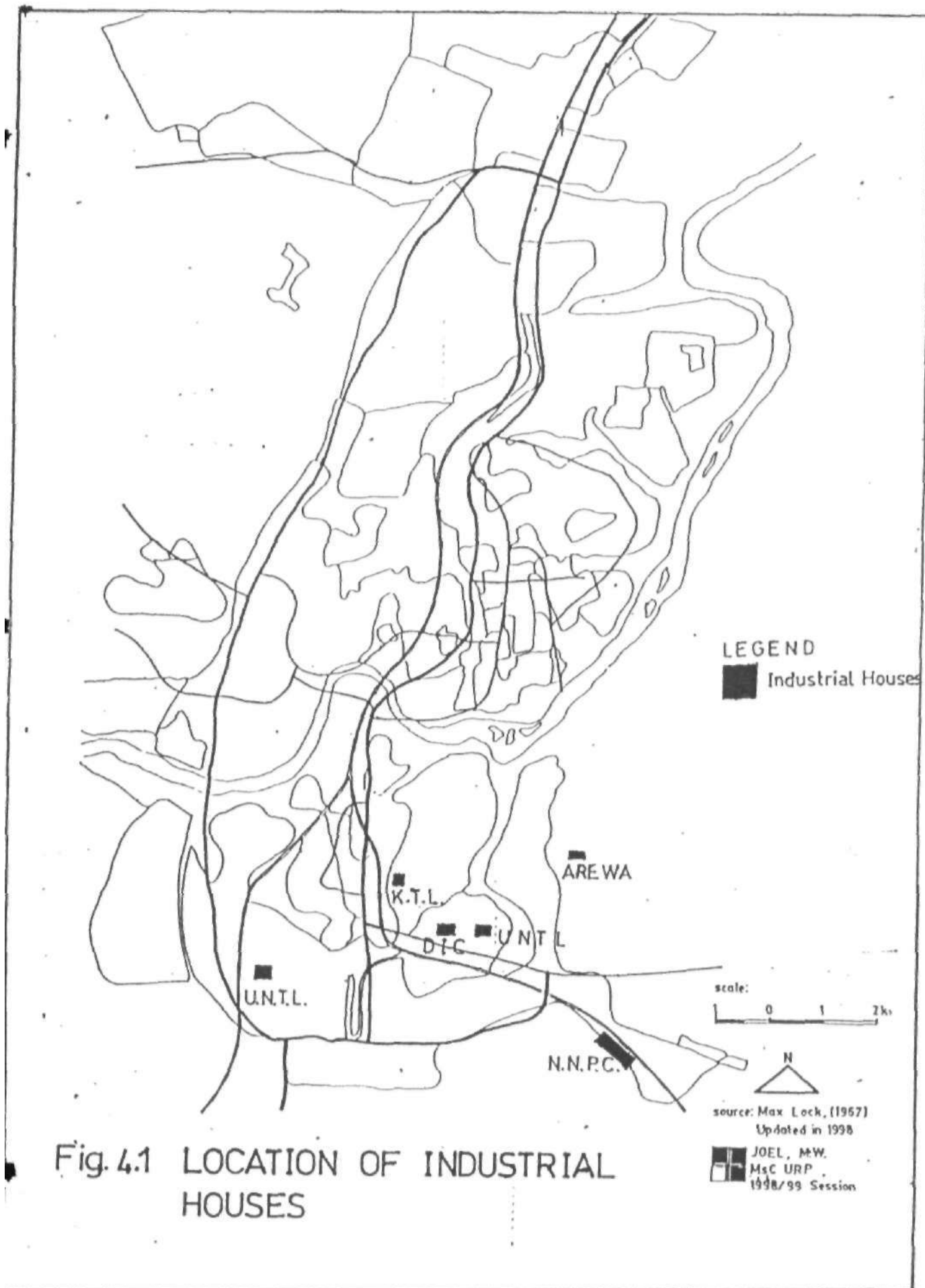


Fig. 4.1 LOCATION OF INDUSTRIAL HOUSES

wide range of environmental and housing attributes. A household therefore is in need of better housing when its present conditions fall below planning standards; but its effective demand for the improved housing is determined by its actual (subjective) preference for such housing backed by the necessary economic ability to pay for it.

The research conducted in Kaduna indicated that the main popular concerns are problems of sanitation roads, amenities, occupancy rates, to mention a few etc.

#### **4.20 THE HOUSING NEED OF INDUSTRIAL WORKERS IN KADUNA**

The industrial areas in Kaduna are located in the sub-urban fringes of Kaduna South. Residential areas of Kakuri, Makera, Nassarawa, Ungwan Romi, Television and Ungwan Sanusi bound some of the industries. These areas provide 65% of the accommodation of the industrial low income earner. The industrial zone which is seven kilometres from the heart of Kaduna is accessed from different locations by the workers. If decent housing is one of the basic human needs, then housing has a profound influence on the health, efficiency, social behaviour and general welfare of the population. However, great proportions of the people living in areas adjoining the industrial areas in Kaduna live in deplorable unsanitary and substandard dwelling units. Tenement rates are usually high, which has the

resultant effect of making the low income earner go further away from work areas in search of affordable accommodation.

The twenty-two (22) industries surveyed provide a total of eight hundred and twenty one housing units to their workers. This represents 1.7% of the workforce of the industries. It means therefore that 1.7% of the total population in these industrial establishments are provided accommodation in company owned houses. The management of the firms deems it necessary to house their senior workers so accommodation that fits the status of the senior category is provided. The housing allowance given the junior staff in most cases is not adequate therefore, the housing problem of the industrial low income earner is not only that of affordability but that of availability of the affordable houses within the closest proximity of the industrial zone. Pam (1983) noted that 70% of the industrial workers reside in areas that are over (5km) five kilometres from the Industrial zone. This is mainly because these are the only areas that affordable accommodation is readily available.

The problem of commuting over long distance to work is further increased by the fact that industries operate round the clock. Workers, who live far away resume work late, this in turn often incurs dismissal if it recurs often. Though some industries provide shift buses. The study conducted showed that it was an expensive solution, land available in industrial areas was found not to be utilized for workers housing for industrial workers.

**4.21 TYPE AND LOCATION OF HOUSES OWNED BY INDUSTRIES**

The study showed that the houses provided by these industries vary in size, quantity and quality.

The table below shows the number of houses owned and locations.

**TABLE 4.1 LOCATION OF HOUSE OWNED BY INDUSTRIES AND QUANTITY**

INDUSTRIAL	LOCATION		
	BARNAWA	NASARAWA	SABON TASHA
K.T.L	50		
U.N.T.L	60	80	
AREWA TEXTILE	35		
N.N.P.C.	65		501
D.I.C	30		
TOTAL	240	80	501

The study showed that the houses provided by these industries varied in size and quality.

Kaduna Textiles owns the two-bedroom type of accommodation only. Respondents living in these houses acknowledged that the houses has regards the quality was alright, facilities are available, adequate sewage disposal system, rooms spares and the environment around was standard. Construction material used was cement, sand mortar, with an internal courtyard for circulation. The two bedrooms were semi detached, so a block consisted of four number two bedroom apartments.

The united Nigerian Textile mills owns houses in Barnawa Narayi High Cost and in Nasarawa the sixty number, two and three bedroom type are houses built by Kaduna state Development and Property Company Limited which were sold on owner occupier to individuals and organisation. Respondents expressed satisfaction with the houses, the materials used for construction was cement, mortar, cement plastered with all facilities and amenities are standard, environmental condition very suitable for residential purposes, services available. The (80) eighty number houses owned by the Textile are located in Nassarawa and built as storey building, with cement, sand mortar. Each block of the eighty unit (80) contained twenty apartment. Room space, general facilities and utilities are all provided.

The Arewa Textiles has thirty five three bedroom type houses located at Barnawa, these houses were also built by Kaduna State Development and

Property, now owned on lease by the Arewa Textiles, located in the same area as all other buildings by the company.

The Nigerian National Petroleum Corporation owns sixty-five units of duplexes built and sold outright by the Kaduna State Development and Property Company Limited. Construction materials are prefabricated materials, space provided very adequate for internal and external circulation facilities, utilities and services of good quality. The five hundred and one houses owned by the corporation are located in Sabon Tasha, and consist of three bedroom and four bedroom type accommodation. The materials used for construction is sanderete cement blocks, in a well laid out area, with spaces provided for gardening and the general environmental condition is very good, facilities utilities and services are all provided and standard. The estate is planned to accommodate facilities like school, hospital, a clubhouse and shopping space. The respondents indicated satisfaction as regards the qualities and services provided in the houses, especially in as regards the location of the houses in relation to the industrial complex.

The Defence Industry Corporation has thirty number houses located in Makera consisting of two-bedroom type. Construction material used is cement sand mortar, with facilities utilities and other supporting services adequately provided.

The study showed that the houses owned by the industries in all these locations except for the United Nigeria Textile were only allocated to the

senior staff of the different industries, the United Nigerian Textiles houses only the senior staff in the sixty number houses in Barnawa while the eighty number room and parlour units in Nassarawa is for the junior staff only.

### **RENT ALLOWANCE**

The industries in Kaduna provide accommodation is staff depending on availability. The study conducted shows that the textile workers have an agreed standard package for the junior staff; where N700.00 is given as rent allowance per month. Peugeot Automobile limited gives an allowance of N 2,100 for junior staff as rent allowance while for senior staff it ranges from N8, 000 - N20,000 per month.

Nigerian Breweries like the other food and Beverages industries gives a package of N1, 200 per house allowance per month white the senior worker takes from N5,000 to N15,000 per month as rent allowance.

The aluminum industries gives the low income carner an allowance of N700 - N1000 for the low income carner and an allowance of N10,000 - N20,000.00 for the senior staff category.

Nigerian National Petroleum Corporation has a package of N2, 500 - N3,500 per month for the junior workers N10,000 to over N20,000 per month. The other service related industries studied all showed that the junior workers takes home saved from N700.00 per month to N1, 000.00 .

The only industry that provides housing for the junior category worker is the United Nigerian Textiles, with number eighty low income earners constituting 2.28% of the total work force. The houses attracted a fee of N25.00 per month the senior staffs how are housed paid N45.00 per month for the houses owned by the company.



#### **4.22 LOCATION OF RESIDENCES TO INDUSTRIAL ZONES.**

The study showed that the employees living in zone one comprising Barnawa, Narayi areas commute a distance of 3.5 Kilometer's to 5 Kilometer to industrial zones in Kaduna. Zone two comprising Nassarawa Kakuri Makera areas commute a distance of 500m one kilometer depending on industrial location Zone three comprising Ungwan Sanusi Tudun Nupewa, Kabala, west Badiko, Ungwan Mu'azu a distance of one kilometer to 3.8 kilometers exist between industrial zone and the residence here.

Zone four; comprising Kurmi Mashi, Malali Kawo, Ungwan Gwari, a distance of 3 kilometres to (7) seven kilometres exist between the zones.

Zone five comprising Television, Romi Sabon Tasha commute a distance of one (1) kilometre to (3) three kilometres to industrial zones.

Zone six comprises Ungwan Rimi, Costain, Sabon Gari and a distance of three (3) kilometres to Six kilometres is covered to get to industrial zones.

The implication of these distances is that 1 - In zone one, the distance of three kilometres to five kilometres is far, commuting to work and back home will mean that time be spent, depending on mode of transportation to work place, time taken varies for all the zones. The same applies to all the remaining five zones.

(See Fig. 4.1)

### 4.3 QUANTITY AND QUALITY CHARACTERISTICS OF HOUSES IN ZONES.

#### ZONE ONE -BARNAWA NARAYI

The residential areas here are mostly occupied by two groups. The high income and the low income. The state owned houses and the Government reserved areas are located here. An industrial worker living here in houses owned by the industry can be said to have all the basic amenities provided. The low-income earner living here indicated that the quantity of housing available and affordable was fair, rents determine accommodation preference. In the same zone could be found houses with low rent rates. Rent vary from =N=500 to =N=700 per room, while further towards the outskirts rent ranging from =N=300 to =N=400.00 per room per month. The low rents mean those facilities like pipe borne water, good roads and toilet facilities are lacking. For those with facilities, utilities and some services, the rents range from =N=500 to =N=700 per room per month.

(See Table 4.2)

**TABLE 4. RENTS PER ROOM AND PER DWELLING (IN NAIRA PER MONTH)**

DWELLING ZONE	1	2	3	4	5	6
Average Basic Rent Per Room	N550.00	N650.00	N700	N700	N850.00	N400
Average No. of Rooms Per Tenant dwelling	2	2	3	2	2	2
3 Bed Room Average Basic Rent Per dwelling	6,666	3,450	4,166	4,166	5,833	6,666
2 Bed Room Average Total Rent per dwelling	4,166	2,000	2,400	3,500	3,950	4,166

Source Field survey, (1998).

An industrial worker here with a family with therefore need two rooms at a minimum, which means that a textile workers, the basic rent allowance must be exceeded to be able to accommodate a family of four to six. While a low income earner of Peugeot Automobile Nigeria and Nigerian Petroleum Corporation can afford the room and palour type of accommodation in this zone comfortably.

The study showed that the house types had different qualities depending on availability of facilities.

**ELECTRICITY:** Of the (84) eighty four number questionnaire administered, fifty one respondents indicating 60.50% of the houses had exclusive meters while (22) twenty two number houses representing 26.30%

of the houses shared meter, and 13.20% have no meter, the implication is that electricity supply determines rent rates. (See Table 4.3)

TABLE 4.3 ELECTRICITY SUPPLY IN THE ZONES

ZONE TYPE	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Exclusive metre	51	60.5	15	14	57	38.6	29	21.6	13	41.7	83	93.3
Shared Metre	22	26.3	86	80	86	57.9	87	66	16	54.2	6	6.7
None	11	13.2	6	6	5	3.5	16	12.4	1	4.1	-	-
TOTAL	84	100	107	100	148	100	132	100	30	100	89	100

Source: Field survey (1998)

**SOURCE OF WATER SUPPLY:-** Of the sixty four: (64) respondents, in zone one as regards source of water supply to their houses. 50% shows that their houses have pipe borne water 15% low pipe water outside the compound they live. 30% use well water and 5% use other sources. (See Table 4.4)

TABLE 4.4: SOURCE OF WATER SUPPLY IN THE ZONES

ZONE SOURCE	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Pipe in compound	42	50	48	44.4	104	70	58	44	26	86.4	71	80
Pipe outside compound	13	15	20	18.2	20	14	9	7	2	6.2	15	16.7
Well	25	30	37	35.4	24	16	65	49	2	6.8	3	3.3
Others	4	5	2	2	-	-	-	-			-	-
TOTAL	84	100	107	100	148	100	132	100	30	100	89	100

Source: Field survey (1998)

#### **BUILDING MATERIALS USED**

In this zone, eight four of the respondents showed that 95.24% live in house constructed using cement-based materials, while 4.76% were built with mud based materials. (See Table 4.5).

**TABLE 4.5: BUILDING MATERIALS USED IN THE ZONES**

ZONE MATERIAL	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cement Based	80	95.4	98	91.59	148	100	98	79.24	30	100	88	98.88
Mud Based and Little Cement	4	4.76	9	8.41	-	-	34	25.76	-	-	1	1.12
TOTAL	84	100	107	100	148	100	132	100	30	100	89	100

Source: Field survey (1998)

**SOURCE DISPOSAL:-** Eighty four respondents indicated that 65% haved flush toilet, while 35% use the pit latrine type of sewage disposal.(See Table 4.6).

ZONE TYPE	1		2		3		4		5		6	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Flush Toilet	55	65	33	31	70	49.9	8	6	14	46.7	86	96.6
Pit Latrine	29	35	73	68	77	52.1	123	93	16	53.3	3	3.4
Bucket	-	-	1	1	-	-	1	1	-	-	-	-
TOTAL	84	100	107	100	148	100	132	100	30	100	89	100

## **ZONE TWO KAKURI, MAKERA, UNGWA MISSION AND NASSARAWA**

The residential areas here grew up mostly one to the concentration of industries in the area. Employment being an attracting factors. Hence analysis shows that industrial workers living here except for those living in the industrial owned houses, lack complete basic amenities. The quantity of houses and quality dictate rental rates. Rents vary from =N=500.00 per month to =N=800.00 month. (See Table 4.2). The high rent raters here are attributed to the proximity of the zone in relation to the industries. Most of the workers here live in one room with all their families so evidence of overcrowding can be visibly seen.

**ELECTRICITY SUPPLY:-** Of the (107) one hundred and seven returned question from residents of this zone, 14% indicated use of exclusive meters, while 80% share meter and 6% do not have meter.(See Table 4.3).

**SOURCE OF WATER SUPPLY:-** The survey indicated that 44.4% have pipe in their compounds while 18.2% have pipe outside their compounds. 35.4% use well water. (See Table 4.4)

**BUILDING MATERIALS USED:-** The respondents in this zone showed that 91.59% use cement based materials, was used to construct their houses

while 8.41% mud was used to construct with a little mixture of cement.(See Table 4.5).

**SEWAGE DISPOSAL:-** The respondents showed that 31% use flush toilet, while, 6.8% use pit latrine and 1% use the bucket sewage disposal system.(See Table 4.6).

**ZONE THREE:-** This zone comprises of Tudun Wada Ungwan Muazu, Kabala west Ungwan Shganu, Kudenda I and II Badiko and Kabala areas. Respondents here comprise of 50% low income earners and 50% high income earners due to increase in development. The high income earners were living in owned houses, for the low income earners most of them were gain fully employed in the Kudenda I and II industrial layout so promixity of houses to work areas is a factor they consider as to reason why they live in this zone.

Rents here varied from =N=500.00 per room per month to =N=700.00 per room. For staff living here, rents for a three bedroom bungalow was found to be =N=4,166.00 per month while for a two bedroom rent was =N2, 400.00 per month. (See Table 4.2)

**ELECTRICITY SUPPLY:-** The study showed that 38.60% use exclusive meters for electricity supply. 57.90% shared meter for electricity supply while 3.50% do not have any meter. (See Table 4.3).



**SOURCE OF WATER SUPPLY:-** The study showed that 70% use pipe borne water in compounds or houses while 14% use pipe outside the compounds and 16% use well water. (See Table 4.4)

**BUILDING MATERIALS USED:-** The result showed that all the houses surveyed used cement based materials.(See Table 4.5).

**TYPE OF SEWAGE DISPOSAL:-** The respondents indicate that 47.90% use flush toilet, while 52.10% use pit latrine.(See Table 4.6).

**ZONE FOUR:-** Comprising Kurmi Mashi, Malali, Kawo and Ungwar Gwari, Respondents living here were found to be mostly of the senior staff category workers who either owned their houses or rented for by the industrial establishment. These type of houses were found to be concentrated in the New Kawo and Malali layout. Room rent rates vary from N500 to N900.00 per room per month the three bedroom bungalow type houses cost N4,166.00 per month while the two bedroom type houses attracted rent of N3,500.00 per month. (See Table 4.2).

**ELECTRICITY:-** The result of the survey shows that 21.60% use exclusive meters while 66% under shared meter and 12.40% have no meter to source electricity supply. (See Table 4.3).

**SOURCE OF WATER SUPPLY:-** The survey showed that 44% use pipe borne water in compounds while 7% use pipe situated outside their compounds. 49% use well as source of water supply. (See Table 4.4).

**BUILDING MATERIALS:-** The survey showed that 79.24% use cement based materials while 25.76% used mid based materials with cement.(See Table 4.5).

**TYPE OF SEWAGE DISPOSAL:-** The study showed that 6% use flush toilet and 93% use pit latrine.(See Table 4.6).

**ZONE FIVE:-** This zone comprises of Ungwar Television, Sabon Tasha, Ungwar Bawa Ungwar Sunday and Ungwar Yelwa, the settlement here developed gradually due to migration attributed to job opportunities in the industrial establishments in Kaduna. As the houses become congested, it resulted in the growth of the settlements. Rents in this zone vary from N300 - N1, 200.00 per room per month. (See Table 4.2) Population increase here is on a yearly basis as indicated by the rate of new built houses in the zone. Most of the areas are occupied by junior and senior category workers of enterprises in Kaduna the senior staff category live mostly in owned houses in this zone in found a high concentration of Nigerian National petroleum industry staff. It is thus category of low income earners that make the rents exorbitant, so it is not unusual to see

that where a Nigerian National Petroleum corporation employee lives, no textile worker will live in the compound, the best one can see is a peugeot Automobile staff living there. This is due to the difference in the rent allowances given the industrial workers. Two bedroom houses cost N3, 950.00 per month, the three bedroom bungalow attract a fee of N5, 833.00.

**ELECTRICITY SUPPLY:-** The study showed 41:70% use exclusive metre while 54.20 use shared meter and 4.1% have no metre.(See Table 4.3)

**SOUCE OF WATER SUPPLY:-** The study showed that 86.4% use pipe borne water in houses while 6.2% use pipes situated outside the compound and 6.8% use well as serve of water supply.(See Table 4.4).

**BUILDING MATERIALS:-** Results showed that of the respondents 100% used cement mortar was used. (See Table 4.5)

**SEWAGE DISPOSAL:-** The result showed that 46.7% use flush toilet while 53.3% use pit latrine as mode of sewage disposal.(See Table 4.5).

**ZONE SIX:-** Comprising Ungwan Rimi, Sabon Gari, and constrain areas. The low income earners who live here live in substandard houses as compared to the high income, who live in standard houses. The rent rates vary from #300 - #500.00 per room per month, some low income live this far, because they can occupy boys, quarters ad pay low tenement rates.

**ELECTRICITY SUPPLY:-**

The study showed that 93.30% used exclusive meter and 6.70% shared meter.

**SOURCE OF WASTE SUPPLY:-**

The study showed that 80% use pipe situated within their compounds and 16.7% use pipe outside the compounds and 3.3% use well water.

**BUILDING MATERIALS USED:-** The study showed that 98.9% use cement based materials for construction while 1.1% use mud based materials with little cement.

**SEWAGE DISPOSAL:-** The study showed that 96.6% use flush toilet and 3.40% use put latrine and mode of sewage disposal. (See Table 4.2 to 4.6).

#### 4.4.1 SOCIO-ECONOMIC CHARACTERISTICS OF THE INDUSTRIAL WORKERS IN KADUNA.

**SIZE:-** There are about 48,464 industrial workers in Kaduna, of this amount 8.9% are in the senior staff category who are skilled and managerial staff of the industrial establishments. The 44,500 are unskilled or semi skilled staff and they constitute a greater majority. (See Table 4.7).

**TABLE 4.7: STAFF STRENGTH OF THE INDUSTRIES IN KADUNA**

INDUSTRY	SENIOR STAFF	JUNIOR STAFF
Arewa Textiles	60	3000
Nigeria Breweries	110	5500
D.I.C	70	1600
I.B.B	50	1800
Jafco	25	880
Kaduna Aluminium	40	820
Nig. Bottling Con Ltd	55	2200
Nortex	34	1900
P.A.N	120	8500
N.N.P.C & Subsidiaries	1700	8080
Sun Glass	18	600
Turners Building	24	800
U.N.T.L	70	3500
Unitex	38	650
QueensWay Aluminium	24	709
Ideal Flour Mills	30	850
K.F.C.C	30	550
K.R.P.C	1225	3000
Baree Nigeria Ltd	21	650
Seven Up Bottling	45	800
Kaduna Textiles Ltd	50	4620
Fine Tex	50	1150
<b>TOTAL</b>	<b>3984</b>	<b>44700</b>

Source: Field survey (1998).

#### **FAMILY SIZES**

Over 55 per cent are married while 44 per cent are not. Most industrial workers according to the analysis had children numbering from 3 and above.

23.6% of these have 3 children, 14.6% have 4 while 7.2% have 8 children.



Fig. 4.4 JOURNEY TO WORK

can be attributed to the introduction of the automobile into the cities, in turn the city has sprawled with the ever-increasing population aggravating the situation further. The resultant effect is that the workers have to live far away from work places. With the daily cost increase of transportation, the low-incomes earner stands to loose most of what is earned too transportation. A preventive approach whereby workers residences are arranged close to work areas will help in attaining a balance.

#### 4.50 **MODE OF TRANSPORTATION TO INDUSTRIAL AREAS.**

The survey shows that 30% of respondents in zone I go on bus, 22% private car 30% motorcycle and 18% go on foot or bicycles to the industrial areas from zone one.

From zone two 8% go to work using bus, 12% car owners, 31% use motor cycle and 39% go on foot or bicycles from zone three, 55% go to work by bus, 12% use private cars, 30% foot or bicycle.

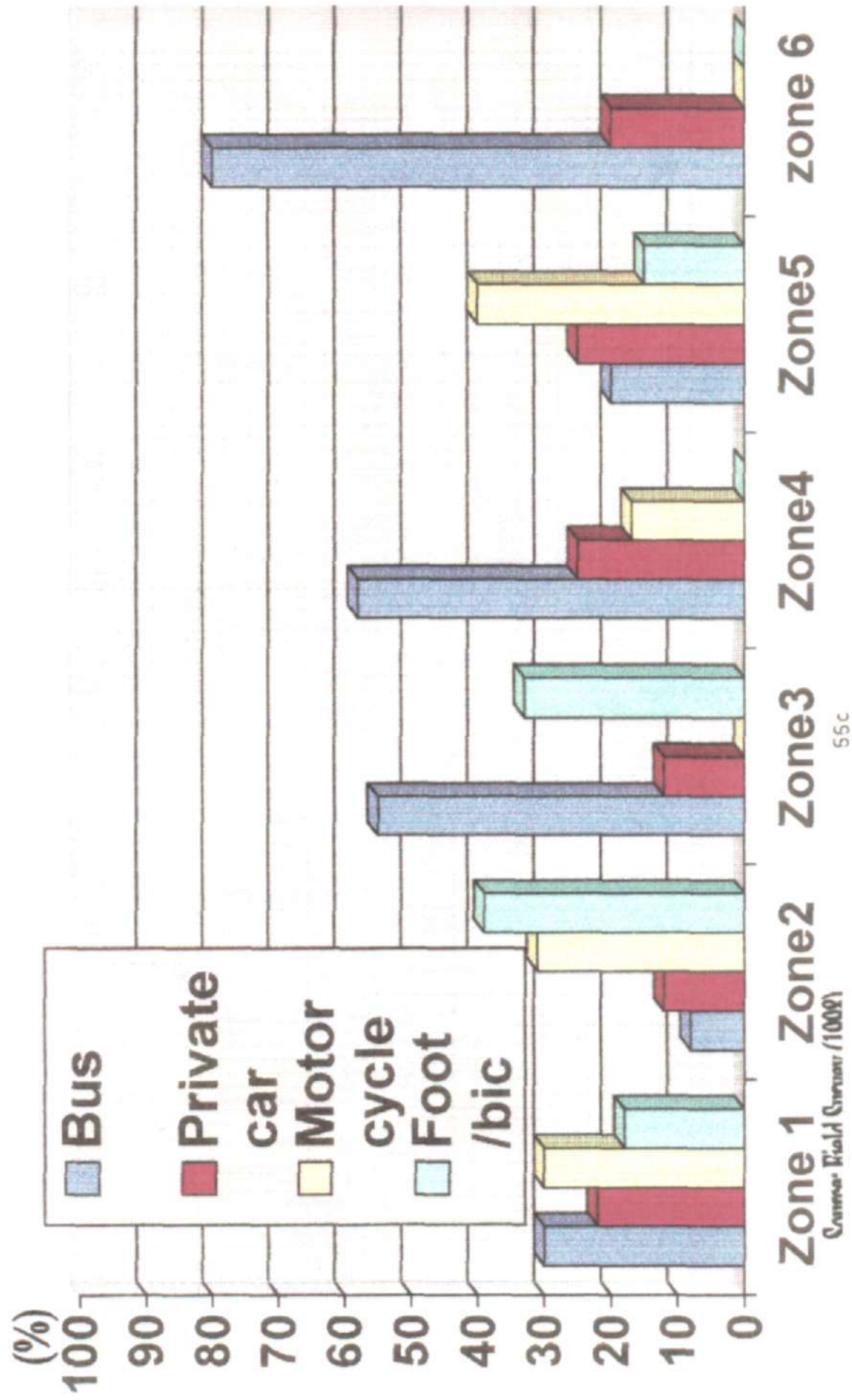
From zone four; 58% use buses to work, 25% use private cars while 17% use motorcycles.

From zone five; 20% use bus to work 25% use private car, 40% go on motor cycle and 15% go on foot or bicycles.

From zone six; 80% go on buses to work place, 20% in private care none on motorcycle or foot.



MODE OF TRANSPORTATION TO INDUSTRIAL AREAS.



#### 4.51 DOOR - TO - DOOR TRAVEL TIME (JOURNEY FROM HOME TO OFFICE)

The distance which one industrial worker living in one of the six zones travels from home to work place differs zone one - Barnawa Narayi area shows that the respondents spent 60 minutes to 80 minutes to get to their work places, 32% spent 40minutes to 60 minutes, while 18% spent 20s - 30 minutes. Those spending 20 minutes were found to be car owners.

Zone two - Nassarawa, Kakuri , Makera, respondents showed that 42% spent 40 minutes to 60 minutes to work areas, while 40% spent 20 to 40 minutes, 18% spent between 10 minutes to 20 minutes depending on industrial location.

ZONE FOUR:- Comprising Kurmi Mashi, Malali Kawo, ungwar Gwari, wards spent 60 minutes to 120 minutes to get to their work places while 15% spent between 20 minutes to 40 minutes.

ZONE FIVE: - Comprising of Television, Sabon Tasha Ungwar Boro, Romi wards, 55% of the respondents spent believe 60 minutes to 80 minutes to get to work, 25% spent 40minutes to 60 minutes while 20% spent 20 minutes 40 minutes to get to work place.

ZONE SIX:- Comprising Ungwar Rimi, Sabon Gari, costain, survey shown that 68% spent 60 minutes to 120 minutes to get to workplace 32% of the respondents spent 40 minutes to 60 minutes to work place.

The above computation took into consideration the time used to work from home, get to bus stop get transport and get to the office on time for work.

#### 4.52 JOURNEY TO WORK

**Working Time:-** Time spent by industrial workers who use public transport back home to get to vehicle stand for the backward journey for all zone was found to be less than 10 minutes. This is because of the location of the stands from the industries. It is pertinent to note that since the bus stands are unorganised, the walking time from where a worker disembarks from the vehicle is not likely to be the same as walking time from the work place to vehicle stand.

**ZONE ONE:-** In this zone, for those working in the kudenda industrial zone, 10 minutes is used by respondents to get to vehicle stand, 20 minutes may be used depending on industrial location. The total distance covered back home is almost four kilometres. Time journey varies from 140 minutes to 10 minutes especially for the morning shift whose closing time coincides with the rush hour of the public. 20% use owned cars or get transported by vehicle owners for those working in the textiles and Peugeot company, they spent less than 10 minutes to get to vehicle stand. Here a greater percentage of 55% go back home on foot. Waiting time does not exist for them. 35% of the workers in this zone spent 2-5 minutes to get to stand then use another 60 minutes to 100 minutes to get home.

**ZONE TWO:-** Most respondents living in this zone go to work on foot.

Whether employed in the Kudenda industrial layout or in the textiles. The time spent to vehicle stand varied from 5 minutes to 15 minutes. Homeward journey time was 40 - 60 minutes on the average 45% spent 40 - 60 minutes to walk back home.

ZONE THREE:- The result showed that respondent living in these areas are employed in the Kudenda industrial layout. Only 10% of the respondents were textile and other related industrial workers. They spent 5 - 15 minutes to walk to vehicle stand and others spent 5 to 10 minutes walking to vehicle stand. To get back home time taken could be 40minutes to 80 minute back home.

ZONE FOUR:- About 85% of the workers living here own vehicles, so they spent 20 minutes to 40 minutes getting back home. 15% are public transport users they spent to - 20 minutes due to location of vehicle stand variation 60 minutes to 120 minutes is also used for the return journey back home.

ZONE FIVE:- Here in this zone, the respondents walk back home depending on the industry. Those at kudenda industry layout use 10 minutes to get to the vehicle stand while those at Peugeot, textiles and other industries use 5 - 10 minutes A greater percentage living in thus zone corresponding to 65% were found to work in Kaduna south industrial layout.

ZONE SIX:- A greater percentage of people living here were found to own vehicles. While those using public transport use 5 - 10 minutes to get to public stand, that is 15% while 22% used 10 - 20 minutes to get to vehicle

stand 60 minutes to 150 minutes is used to get back home vehicle owners use from 20 - 40 minutes to get back home.

With respect to quality of houses supplied by industrial firms to employees it was found to be standard with all the basic amenities as compared to the quality of houses rented by the junior income earners not provided accommodation. The quantity supplied was far below the needed requirement, location of houses workers in relation to work places was also shown to be as far as (5) five kilometre.

Analysis of data collected showed that industries had problems, which hinder provision of houses for staff of different categories.

## CHAPTER FIVE

### 5.0 INFERENCES AND PLANNING PROPOSALS FOR HOUSING INDUSTRIAL WORKERS IN KADUNA

#### 5.10 BACKGROUND

The conventional policy of developing country governments like Nigeria has been to proclaim the right of every household to a standard dwelling, usually based on developed country concepts of housing size and quality. However, the gap between needs and resource has been so great that housing programmes have failed to meet more than a tiny fraction of the total requirement, and the gap is, in fact, widening instead of diminishing. There are two crucial aspects to the problem of providing land for housing the poor - quantity and cost.

#### 5.11 TEST OF ADEQUACY IN THE WORKERS HOUSING

##### - QUANTITATIVE ASPECTS:-

Of the twenty two industries located within the industrial area, the total senior staff strength is 3, 984, while the junior workers number 44, 700 respectively. out of 3,984 senior staff, 751 senior staff are provided accommodation, resulting in the provision of houses to 17.2% of the population of the senior staff category. The 82.80% who are not house by the industries, are either given rent allowance or rented houses by the industries.

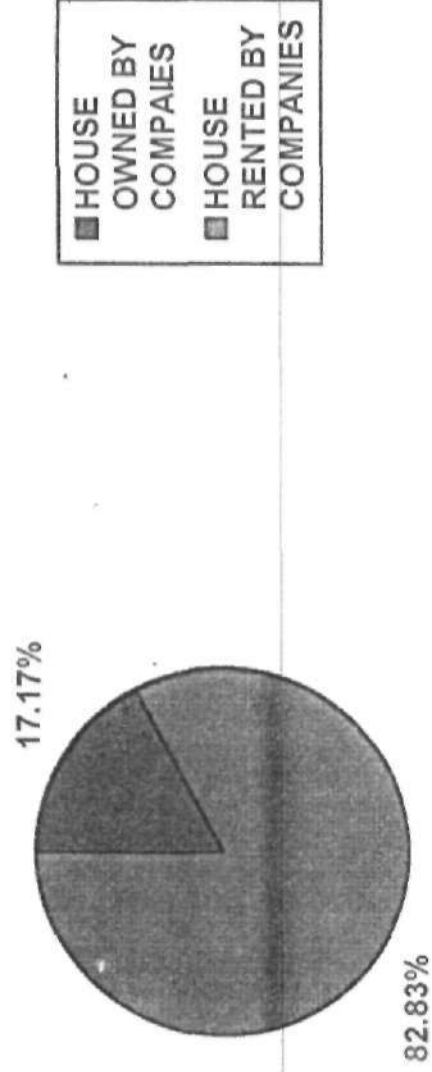
For the low income earners totaling 44,500 only eighty (80) are housed. 0.2% of the total population is provided accommodation. This quantity fall far below the requirements, majorities of the junior workers are not housed.

**TABLE 5.1: NUMBER OF WORKERS HOUSED BY INDUSTRIES IN KADUNA**

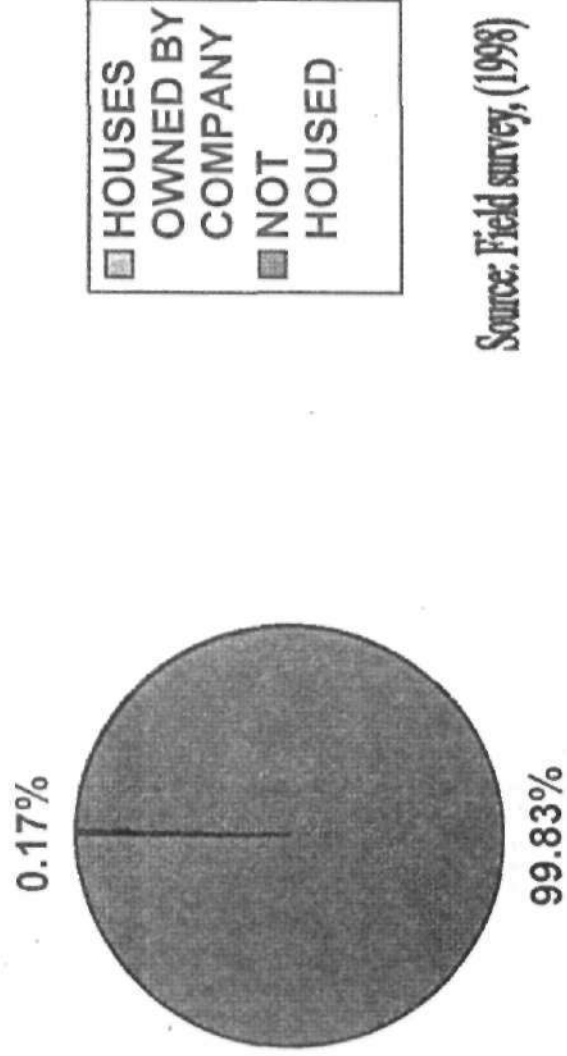
INDUSTRY	SENIOR STAFF	JUNIOR STAFF	S/STAFF HOUSED	J/STAFF HOUSED	% HOUSED BY COMP.		RENTED HOUSES %	
					S	J	S	J
Arewa Textiles	60	3000	35		58.3	-	41.7	-
Nigeria Breweries	110	5500						
D.I.C	70	1600	30		42.8	-	57.2	-
I.B.B I	50	1800						
Jafco	25	880						
Kaduna Aluminium	40	820						
Nig. Bottling C. Ltd	55	2200						
Nortex	34	1900						
P.A.N	120	8500						
N.N.P.C	1700	8080	566		33.3	-	66.6	-
Sun Glass	18	600						
Turners Building	24	800						
U.N.T.L	70	3500						
Unitex	38	650	60	80	85.7	2.3	14.3	-
QueensWay All.	24	709						
Ideal Flour Mills	30	850						
K.F.C.C	30	550						
K.R.P.C	1225	3000						
Barce Nigeria Ltd	21	650						
Seven Up Bottling	45	800						
Kaduna Textiles	50	4620	50					
Fine Tex	50	1150						

Source: Field survey (1998).

# SENIOR STAFF



# JUNIOR STAFF



Source: Field survey, (1998)



The table shows the number of Staff living in staff owned houses by the company, houses rented by the different industries and those not provided accommodation.

### **QUALITATIVE ADEQUACY**

Of the 6.05% dwelling units provided by the industries to the senior staff, (85) eighty five are of the two bedroom type 290 two hundred and ninety are of the three bedroom bungalow type while 301 are of the four bedroom type, 65 (sixty five) numbers are of the three bedroom duplex.

In the adequacy tests in term of quality, the findings show that facilities like water supply, sanitary conditions, security, electricity supply were adequate. Maintenance of building was found to be the sole responsibility of the management of the industries.

For the (80) eighty-room and palour accommodation provided by the industry sanitary facilities, sewage, electricity and maintenance was found to be very good.

### **5.12 CRITERION FOR ASSESSING THE QUALITY OF HOUSE STOCK RENTED IN EACH ZONE BY INDUSTRIAL WORKERS.**

To assess the present quality of the houses rented, the criterion of weighing was used. Building materials, type, Age of structure, condition of building. Availability of services provided like pipe water, latrine, bath, kitchen electricity and good drainage were weighed, classified and marked.

QUALITY	WEIGHT OF CRITERION	CLASSIFICATION MARK	WEIGHT MARK
1. BUILDING MATERIAL	4	a. sanderete block wall galvanised or asbestors roof 5 b. Cement rendered wall mud Galvanized iron roof sheets 4 c. Mud wall/galvanized iron roof 3	20 16 12
2. AGE OF STRUCTURE	2	a. Less than 5 years 5 b. 5 – 10 years 4 c. 11 - 20 years 4 d. 21 – 30years 2	10 8 6 4
3. CONDITION OF MAINTENANCE	3	a. Sound No Maintenance 5 b. Needs minor repairs 4 c. Deteriorating 2 d. Dilapidating 1	15 12 6 3
4. AVAILABILITY OF SERVICES; Pipe Water, Latrine, Bath Room, Kitchen, Electricity, Good Drainage	3	a. All six services 5 b. 4 out of six 4 c. 3 out of six 3 d. 2 out six 2 e. 1 out of six 1 f. None	15 12 9 6 3 0

ZONE ONE	WEIGHT X MARK	POINTS
1.a) Sanderete		
block with G.I	4 x 4	16
2.d) 21 – 30 years	2 x 2	4
3.b) deteriorating/ dilapidating	3 x 1	3
4.a) 1 or 2 out of six services	3 x 2	6
Total		29

ZONE TWO	WEIGHT X MARK	POINTS
1. b) Cement-rendered	4 x 4	16
2.e) 31 – 50	2 x 1	2
3.d) Deteriorating	2 x 2	4
4.d) 1 out 6 services	3 x 1	3
Total		25

ZONE THREE	WEIGHT X MARK	POINTS
1.a) Sanderete block wall with G.L	4 x 4	16
2.b) 21 – 30 years	2 x 2	4
3.c) need major repairs	3 x 3	9
4.b) 4 out of 5	3 x 4	12
Total		31

ZONE THREE	WEIGHT X MARK	POINTS
1.a) Sandered block wall with G.I	4 x 4	16
2.c) 11 – 20 year	2 x 3	6
3.b) Needs minor repairs	3 x 4	9
4.b) 4 out of 5	3 x 4	12
<b>Total</b>		<b>43</b>

ZONE THREE	WEIGHT X MARK	POINTS
1.a) Sandered block wall with G.I.	4 x 4	16
2.c) 11 – 20 years	2 x 3	6
3.b) Needs minor repairs	3 x 5	9
4.b) 4 out of 5	3 x 4	12
<b>Total</b>		<b>43</b>

ZONE THREE	WEIGHT X MARK	POINTS
1.b) Cement-rendered	4 x 4	16
2.d) 21 – 30	2 x 2	4
3.c) Needs major repair	3 x 3	9
4.b) 4 at of 5	3 x 4	12
<b>Total</b>		<b>41</b>

**TABLE 5.2: THE RANKING**

HOUSING GRADE BY ZONES	POINTS RANGE	ESTIMATION FUTURE LIFE	ZONE IDENTIFICATION
<u>1. STANDARD</u> A. VERY GOOD B. GOOD C. Fair D. POOR		25 YEARS	Barnawa Narayi
<u>2. SUBSTANDARD</u> C. Fair D. Poor	<u>21 - 30</u> 21-38	25	Kakuri, Makera Ungwan Mission, Nassaawa.
<u>3. SUBTANDARD</u> B. Good C. Fair D. Poor	31- 40	25	Tudun Wada, Ungwan Muazu, Kabala West.
<u>4. STANDARD</u> A. VERY GOOD B. GOOD C. Fair	31-40	25	Kudenda I & II Kurmin Mashi, Malali, Kawo Ungwan Gwar;
<u>5. SU-STANDARD</u> C. Fair D. Poor	31-40	25	Television, Sabon Tasha, UngwanBoro Ungwan Sunday
<u>6. STANDARD</u> A. VERY GOOD B. GOOD	41-50	35	Ungwan Rimi Sabon Gari Costrain

**INFERENCES**

The analysis show that the quality of houses provided by all industries to workers is standard. While, the quantity aspect fall below the demand with the result what only a fraction of the total population of 48,464 only 1.7% are housed in company owned houses.

The location of houses in relation to industries was found not to be satisfactory, most are located within a distance of 3 Km to 5 Km. Distance covered is too far. It is therefore necessary to have houses located within a walking distance of one Kilometre radius. The survey has shown the effectiveness of this as in the case of NNPC.

#### **5.13 LOCATION ASPECTS (JOURNEY TO WORK).**

The industrial owned houses were found to be located in zone one, zone two and zone five. Distance to industrial areas in relation to the residential quarters is shown below.

**TABLE 5.3 DISTANCES BETWEEN INDUSTRIAL  
RESIDENTIAL AREAS IN KILOMETRES**

<b>ZONE</b>	<b>1</b>	<b>2</b>	<b>5</b>
<b>INDUSTRY</b>			
<b>U.N.T.L</b>	<b>3.5</b>	<b>&gt;1</b>	
<b>K.T.L</b>	<b>3.5-5</b>		
<b>AREWA TEX</b>	<b>3.5-5</b>		
<b>N.N.P.C</b>	<b>3</b>		<b>500 METRES</b>
<b>O.I.C.</b>		<b>1</b>	

It shows that the workers have to travel a journey of 3.5 kilometers to 4 kilometers from Barnawa in zone one to work area in the industrial zone.

While the junior workers provided accommodation travel a distance of less one kilometre to work area located in the same zone.

Kaduna Textile workers travel a distance of 3.5 kilometre to 5 kilometre depending on if they are housed in Barnawa phase one or phase two.

For Arewa Textile workers they are all housed in Narayi area, and the distance covered to work is 4 Kilometres.

For the Nigeria National Petroleum Corporation, the staff housed in zone one in Barnawa, Naranyi, cover a distance of (3) three kilometre to get to the factory, while those provided accommodation within the industrial complex cover a distance of less than 500 m to go to work.

The Defence industry staff housing is located in zone two. And the distance covered to go to work is one Kilometre.

**TENEMENT RATES ADEQUACY:-** For the houses provided by the United Nigeria Textiles, the junior staff category pay #25.00 per room per month, while #45.00 is the rent for the senior staff. For those accommodated they forfeit the rent allowance given.

For the staff who rent apartments, the result showed that 77.36% were spending more than 20% of their income on housing, while 22.64% were spending between 20% and 40%. No staff was spending more than 40% on housing in all the zones. 90% preferred company owned houses to rented accommodation.



## 5.20 SHORTCOMINGS OF THE EXISTING POLICIES AND IMPLICATIONS.

### 5.21 POLICIES AND EFFECTIVENESS

Policy making in the private sector is largely the responsibility of each individual enterprise, so also the implementation. Limitations are inherent in any implementation system that may be adopted. All industrial enterprises know that it is necessary to provide housing for their workers, but have forces militating against them. The problems posed and raised are very important.

- i.) Can change away along Nigeria lines involving greater mutual understanding, contact, co-ordination and co-operation between all organizations responsible for the supply of housing ever work?
- ii) For whose benefit does the private sector exist ?
- iii) Should private bodies be more directly accountable to ensure that private interest do not conflict with the social aims of housing policy?

Successful implementation implies effectiveness of policy, which exposes how effectiveness is to be measured, considering that all industries are faced with problems of inadequate credit facilities, high cost of building materials and lack of land availability.

These problems, the industrialist says, are the reason why compliance with government directives has been ineffective. Government on its own part has failed to achieve the objective it had for encouraging greater participation by the private sector in housing development. The strategies too have not been implemented except for the mandatory scheme within the framework of the National Housing Fund (NHF) whereby a worker earning ₦3,000.00 in both the private and public sector must participate, here they are required to contribute 2.5% of their monthly salaries to the fund, with an interest rate of 4%, and savings to be withdrawn as retirement benefits.

### **5.30 EXISTING POLICIES AND IMPLICATIONS FOR PROMOTING OR CONSTRAINING INDUSTRIAL WORKERS HOUSING.**

The study found out that the principal actors in housing supply are the public, private popular and the private sectors.

The Public on the one hand has been operating under the shelter of government guidance and assistance in terms of grants and so provides houses to specific income groups. The private popular and the private sectors have been operating unguided and unaided by government.

Thus the provision of housing units to the low-income earner has been at will and according to the capability of the developer. These three sectors not only complement each other, but the reason given by the industries as to why

industrial employees cannot be housed revealed that if the Government had fulfilled its obligation on promises in terms of providing finance, land, tax incentives to the industrial, thus housing provision would have been realized.

### 5.31 **LAND ACQUISITION.**

Land is very important and essential for housing since it provides the site for erecting the superstructures, it has other uses like recreational and institutional uses. Land acquisition and the function of the land market is tied to the National land policy. The land use Decree of 1979 invests all the law in a state to the state Governor. The Governor therefore gives final approval for land. The Decree also forbids sale and purchase of land, but it is done with impunity. In areas of free market, housing and speculation of land are common, leading to restriction and land availability for development. Thus the high cost of urban land.

Analysis of data collected showed that there are three sources of land in Kaduna state, the state Government, Local Government, and land for sale. The findings also showed that but for the bureaucratic process, forms are purchased and processed for land.

The private sectors complained of lack of Government interest on their Certificates of Occupancy which could take three to five years before been issued.

### 5.32 HOUSING FINANCE

Finance is another very important resource required in housing development. It is required for land acquisition, for super structure and provision of associated physical facilities. Sources of finance range from short term to long term credit facilities.

As regards the housing finance issue, the Government in the 1991 National Housing policy had strategies aimed at eliminating finance problems, by directing that banks in the country give loan facilities to industries, but the bank loan, were not given the industries. This lukewarm attitude by the bankers to provide loans to the industrialist was attributed to the shaky nature of the Nigeria Economy.

### 5.33 BUILDING MATERIALS

Building materials in housing development are needed for erecting the super structure. The building regulations in Kaduna specify 100% use of conventional building material for both public and private sectors.

More than 60% of these conventional materials are import related or so tagged, not with the value added tax now existing. Exorbitant prices make construction an almost impossible task.

Due to the emphasis on use of conventional material by building regulations, locally available cheap building materials receive little patronage by the private and public sector.

#### 5.40 PLANNING RECOMMENDATIONS

#### 5.41 POLICY PROPOSAL

From overview of the problem and strategies adopted by government as solutions to housing industrial workers, no consistent policy has been followed for any length of time in order for its effectiveness to be tested. If affordable housing is accepted as an appropriate strategy, practical actions to be followed are listed below together with the respective actions to be taken.

(a) Policy sponsorship:-

- i. Establish affordable housing and service design standards for each income group in the private sectors.
- ii Consider subsidies to lowest 10% of households very low income industrial workers as a second stage programme after affordable production is fully activated.
- iii Establish a programme to encourage the formation and legitimization of co- operative housing societies between  
  
Industrialist and private developers with it ability to act as developed and long manager.
- iv Establish a programme to assure installation of major  
  
Infrastructure required to serve new development area.

v Identity and remove regulatory impediments to production of lower cost housing.

Vi Establish a system for monitoring and reporting housing production and current condition in representative urban areas with industries all over Nigeria.

(a) Land Provision:- Provide maximum assistance to private and public development of housing for low income earners by using legal powers to assemble and make available land for growth of housing stock by

i. Carrying out cadastral surveys in major urban area to ease rationalization and recording of boundaries.

ii Within the urban context, of local development plans, identify areas suitable for industrial workers housing and co-ordinate planning of infrastructure provision

**FINANCE:-** By providing adequate capitalization for growth in housing production and open system to access broad cross-section of urban population. viz the establishment of capital reserve (seed capital) sufficient to support initial housing programme by industrialist.

Establish bases for attracting increased private sector funds where by an industrial company self finances staff housing and turn key development projects.

(d) **OFF SITE INFRASTRUCTURE:-** Ensure co-ordination of needed infrastructure and services along with housing development for maximum efficiency. Develop infrastructure systems on a maximum cost recovery basis select appropriate technology consistent with affordability and geo-climatic context.

(e) **CONSTRUCTION:-** Facilitate growth in housing production through improvements in productive capacity and efficiency of indigenous resource utilization by:-

- i. Avoiding over industrialized and over capitalized building technologies which raise costs.
- ii. Maximize use of indigenous materials and methods to reduce dependency where cost - effectiveness will reign.
- iii. Establish University bases research program to explore and document practical ways of improving labour and materials productivity in housing development, with centres throughout Nigeria.
- iv Support building materials industries.

5.50

#### **PLANNING PROPOSALS AND CONCLUSION**

The housing system is dynamic; it is constantly changing. Policies work over time and their effectiveness can be reviewed over time. The most important contribution towards an improvement in housing policy formulation and

housing performance, is that made by observing and analyzing change over time. But monitoring is more than policy review. It must identify problems as they arise and provide the means of avoiding the crisis element, which has characterized past housing policies. To meet this stringent requirement, a monitoring system must take account of the trends in both private and public sectors and of the inter-relationships between them. It must equally be capable of viewing housing provision to the low-income earner as part of the social or economic system.

If the Federal Government deemed it necessary to have set objectives and strategies for housing industrial employee, it is yet to be seen in terms of implementation. Few of the industries acknowledge the existence of such a decree and the government on the other hand, collects or taxes the industries in Kaduna heavily on revenue issues.

The revenue collected from these industries means that, government knows about industrial economic importance in terms of supporting state activities, but does not care about the low income earners who work hard to produce goods that keep, the industries economically buoyant.

This has been shown in the Governments concern to only construct low cost houses for low-income public civil servants and prepare them compulsorily for retirement benefits.

What happens to the unskilled low income industrial worker is left for the industrialist in Kaduna who are mostly opportunist to determine.



This is not to say that the houses built under the low cost schemes are eventually given to the low-income public sector civil servant.

The industries in Kaduna the study shows, has some concern for the employees in that a housing policy exist. Loopholes exist because in terms of quantity house supplied there is a great deficiency. The quality of houses rented by the two categories of staff not provided accommodation by industries differs. In that the study shows that with senior staff who live in rented house, live in luxuriously furnished, qualitative house while the junior low income earner, lives in substandard dwellings and often living far away from his work place in search of affordable accommodation.

As regards distance covered by workers to get to their working places, the inference shows that there is the need that workers travel within a one Kilometers radius as against the present distance covered to industrial areas in Kaduna ranging from one Kilometre to (5) five Kilometre. This distance covered is not conducive for average low-income industrial workers to cover on a daily basis. The reason being that, health stress and this has a negative implication on productivity. It is thus better that housing if provided be located at a close distance to industries.

An effective planning proposal will only succeed if land availability for housing is set as a condition for establishing new industries, with ensuring that all possible problems are eliminated by ensuring that all land around industrial zone is kept only for industrial development and related issues not

speculative. They ensure that all-industrials development with large capacity for employments are grouped in one location. Government inspection team to visit industries from time to time to ensure housing implementation requirements is met.

Another important factor to be considered in the plan is that since most of the workers are unskilled, the housing estate provided should have a school within, including all other supporting amenities.

**REFERENCES.**

Abdul, M.S. (1981), "Industrial Estate Planning in Northern Nigeria".

Unpublished M.Sc (URP) Thesis.

Alan Murie (1976) Housing Policy and the Housing system Urban and

Regional studies No. 7 University of Birmingham.

Babs, A. D. (1980) "Inter - relationship of workplace and Residential Area

in Abeokuta - A Newly Created state capital"

M.Sc Thesis, Department of Urban and Regional planning, A.B.U.,

Zaria, (Unpublished).

Bagudu, C. D. F. (1985)"A Comparative study of public and private Housing

delivery system in Kaduna State. A case study of

Kaduna, Zaria and Katsina" M.Sc Thesis.

Department of Urban and Regional planning

A.B.U., Zaria, (Unpublished).

Beyer, G.H. (1965) Housing and society the macmillan company, London,

And Bassing stoke Guide to commercial/industrial

Investment opportunities in Kaduna State.

H.S. Murson "Housing in Third World Countries. Perspective on policy

- and practice. Macmillan International Editions. Journal of issues in development (1984) published by the centre for social and economic research. A.B.U. Zaria, Nigeria.
- Max lock and parties (1967) Kaduna 1917, 1967, 2017;  
A Survey and plan of the capital territory for the Government of Northern Nigeria.
- National Housing Policy, Federal Republic of Nigeria 1991.
- N. E. C.A (1991) "Role of management is promoting productivity. Increasing productivity is Nigeria, Umeh, P. O. C. et. Al eds, National productivity centre.
- Oloko, O. (1983 "Factors in labour productivity" p4roduction in Nigeria Osoba, A.M. ed. PPIB and NISER.
- Pam Haruna, Maikodi (1983), Physical planning Proposal for Housing Manufacturing Industrial Worker in Jos.
- Poju Onibokun (1985), Housing In Nigeria. A book of reading Edited by Poju Onibokun FNITP. NISER IBADAN.
- Seymour, T. (1979), Housing, Income and Occupational Activity in Selected Residential Areas in Kaduna.  
Centre for social and Economic research, Ahmadu Bello University, Zaria.
- Scottish Housing Hand book (1977) Assisting Housing Need, A Manual of Guidance.
- Thomas, H. R. and sanders, S. R. and Bilal S. (1992) "Comparison of labour

Timothy, T. Gyuse (1984), Dimensions of Urban Housing Problems in Nigeria. Publication No. 2, Urban Studies Series. NIPSS, Kuru.

U.N. Dept. of Economic and Social Affairs Housing Policy Guidelines for Developing Countries United Nation Reports. ST/ESA/50 New York 1996.

U.N. Seminar of expression on Land for Housing the poor. Talberg, Sweden, 1983.

**DEPARTMENT OF URBAN AND REGIONAL PLANNING  
AHMADU BELLO UNIVERSITY, ZARIA**

**QUESTIONNAIRE ON INDUSTRIAL WORKERS HOUSING IN  
KADUNA**

Dear Sir/Madam,

This study is aimed at appraising the policy for and the problem of the industrial workers housing in Kaduna with a view to making planning proposals for improvement.

Please, tick or write correct answers to all questions.

Yours faithfully,

**SECTION A**

**BACKGROUND INFORMATION/SOCIO-ECONOMIC  
CHARACTERISTICS**

1. Specific Area/Ward : .....
2. Respondent House location: .....
3. Sex of Respondent: (a) male ( ) (b) female ( )
4. Age: .....
5. Are you married? (a) Yes ( ) (b) No ( )
6. If yes, number of children:.....
7. Are you employed : (a) Yes ( ) (b) No ( )
8. If yes, who is your employer? .....
- .....
9. If you are employed, what is your cadre?  
(a) Junior staff .....
- (b) Senior staff .....
10. How much do you earn per month?  
a) less than N2,000  
a) N3,000 – N5,000  
b) N5,000 - N10,000  
c) More than N10,000
11. Do you own a house? (a) Yes ( ) No ( )
12. If the answer to (11) above is Yes, what is the type?

- (a) Room and Palour                      (b) Single room  
(c) 2 Bedroom                                (d) 3 bedroom
13. Where is the location of the house in (12) above : \_\_\_\_\_  
\_\_\_\_\_
14. If you do not own a house, are you on rentage?  
(a) Yes ( )    (b) No ( )
15. If you are on rentage, how much do you pay per month?  
a) N100 – N200  
b) N300 – N500  
c) N500 – N700  
d) N700 – N1,000
16. Is the cost of the house in terms of rent proportional to income? (a) Yes  
( )    (b) No ( )
17. If you don't own a house of your own and you are not on rentage, specify  
the type of your accommodation:  
(a) family accommodation  
(b) Employer accommodation  
(c) Others

### SECTION B

#### PHYSICAL AND ENVIRON MENTAL CHARACTERISTICS:

18. Do you have a covered kitchen? (a) Yes ( ) (b) No ( )  
If No, where do you cook \_\_\_\_\_
19. Do you share the kitchen with other families?  
(a) Yes ( )  
(b) No ( )
20. What do you use for cooking?  
(a) Firewood ( )  
(b) Kerosine ( )  
(c) Gas ( )  
(d) Electricity ( )
21. What is your source of water supply?  
(a) Pipe borne ( )  
(b) Well ( )  
(c) Others ( )
22. Is there electricity supply in your compound?  
(a) Yes ( )  
(b) No ( )
- b) If Yes, do you pay for it? a) yes ( ) b) No ( )
23. What type of toilet facilities do you use?  
a) Pit latrine ( )  
b) Water system( )  
c) Bucket latrine ( )  
d) Others .....

24. How do you dispose your refuse? \_\_\_\_\_
25. What is the nature of the material used to build for your house?
- a) Mud
  - b) Concrete blocks ( )
  - c) Red bricks ( )
  - d) Others \_\_\_\_\_
26. Is the wall of your house plastered? (a) Yes ( ) (b) No ( )
27. Does your house have good drainage to dispose had water?
- a) Yes ( ) (b) No ( )
28. Do you like the environment? (a) Yes ( ) (b) No ( )
29. If the answer to (28) above is No, why? \_\_\_\_\_
30. The roofing material of your house is:
- a) Zinc iron sheets without ceiling
  - b) Zinc sheets with ceiling
  - c) Timber and sand
  - d) Mud with timber
31. The floor is:
- a) Concrete cement
  - b) Mud plastered
  - c) Mud
  - d) Others \_\_\_\_\_

### SECTION C

#### JOURNEY TO WORK SURVEY

32. What is your regular mode of transportation to work?
- a) Private car
  - b) Public bus
  - c) Bicycle
  - d) Taxi
  - e) Foot
33. If you change mode of transportation before getting to your work place, how many times do you change it?
- a) Once ( )
  - b) Twice ( )
  - c) Thrice ( )
  - d) More than thrice ( )
34. If your mode of transportation to place of work is by receiving lift or the use of public transport, how long do you trek to the place of getting the lift / public transport?



- a) Less than 5 minutes
- b) 5 – 10 – minutes
- c) 10 – 15 minutes
- d) More than 15 minutes

35. What time are you expected to be in office in the morning?
36. When do you normally get back home? \_\_\_\_\_
37. In choosing residence, do you put the distance of the school of your dependants / work place into consideration?
- a) Yes ( )
  - b) No ( )
  - c) Not applicable ( )
40. If your answer to (39) is Yes, where would you have preferred if you were to live alone
- a) Nearer to work place
  - b) Further from work place
  - c) Either (a) or (b)

Thank you.