

SHELTER IN PERI-URBAN AREAS. A CASE STUDY OF NGONG-GICHAGI  
INFORMAL SETTLEMENT, KENYA

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the degree of Masters of Arts (Urban and Regional Planning)  
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## DECLARATION

This is my original work and has not been presented at any other University for the award of a degree.

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## ABSTRACT

Over one third of urban households in Kenya live in informal settlements, lacking basic infrastructure and urban services. There is a general consensus that the environmental and health implications of these settlements are devastating. In view of this, concerted efforts are directed to informal settlements to salvage the lives of the residents, majority of whom are poor.

This study investigates housing problems in informal settlements. In this respect, Gichagi informal settlements was selected for a detailed survey. Both primary and secondary data was collected and analyzed. A household questionnaire was administered to a sample of 54 households. Discussions, interviews and observation of salient features in the settlement formed the main methods of data collection.

The study observes the housing situation in Gichagi to be grossly precarious and concludes that there is a wide scope for improvement. Many factors have combined to frustrate decent housing in the settlement. The most significant of these include lack and/or inadequate household incomes, low educational levels of residents and lack of municipal/government/NGOs support in terms of infrastructural facilities/services provision and or upgrading. The absence of community mobilization and sensitization towards decent housing from these agencies has also have influenced the housing situation in Gichagi.

The study puts forward a number of recommendations to improve the housing situation in the settlement. The first is to raise household incomes through the promotion of income generating activities. To this end the study proposes the organization of residents in groups for purposes of undertaking business ventures and negotiating for financial assistance. NGOs, local authority and the central government should take a leading role in effecting this.

Furthermore, there is need to mobilize and sensitize the community towards house improvement. The deployment of community development workers in the settlement will enhance this goal. The local authority could also provide incentives to private organizations/individuals to invest in infrastructural facilities in the settlement. In addition, settlement upgrading initiated in 1991 should be pursued to its logical conclusion. In this respect, the local authority should revise its policies to attract private investors.

Other recommendations zero on building capacities of residents to undertake income generating activities, to improve their income status. This by no doubt, has great implications on the possible nature and extent of housing improvement in the settlement.

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study period. To them this work is honourably dedicated. God  
give them long life! - Jane M. Wasikeh

# CHAPTER ONE

## INTRODUCTION

### 1.1 Overview

Over the last few decades, most countries in Africa have experienced a rapid growth in the population and size of their urban areas. The scale and pace of the urbanization process is posing new and difficult challenges for urban policy makers, planners and administrators who have to cope with the rapid growth and ensure a healthy living environment for all in the urban centres. Since urban areas are also engines of economic growth and development, their efficient functioning is of great importance. Kenya is urbanizing by 7% per year (UNDP, Human Development Report, 1992). This urbanization is accompanied by rampant evolution of informal housing which houses the bulk of the urban population. According to Kunguru et al, (1991:3) informal settlements accommodate about 40-60% of the urban population. Informal housing also accounts for between 40 to 80% of all the housing in urban areas (Government of Kenya, 1987). In the same report the government acknowledges that about 60% of the housing units constructed in the urban areas lack adequate infrastructural services. This is a pointer to the failure of the formal housing provision programs to cater for the needs of the majority urban population. In addition, these settlements have recorded as high as 12% population growth rate per annum compared to the overall urban growth of 7% per annum.

With increasing urbanization, issues of poverty and inequality will increase in Kenya. Whilst it is true that the rural areas are generally worse off in terms of cash and service provision, the urban areas, with overcrowding, inadequate housing and growing health problems, have to be viewed with particular concern. The changing nature of Kenyan economies from subsistence and cash cropping to more diversified, export oriented, open economies will inevitably mean that the poorer sections of the population will face major upheavals in the transitional stage.

In this context, one of the major challenges is the rapidly growing informal settlements. These settlements, with their make-shift dwellings constructed of planks and other waste materials, put up in contravention of existing building codes and by-laws, and characterised by a partial or complete absence of infrastructure and services have become an inseparable part of Kenya's urban scene. The scale of the problem is increasing rapidly, as the number of people in these settlements grow almost twice as fast as in the rest of the city/towns. This demands serious attention from all those concerned.

The scale and complexity of the problem and the poor performance of past efforts demonstrate that it is difficult to address the issues of urban housing in general and informal housing, in particular, without an effective dialogue and partnership between all major stakeholder. Since the urban

poor as an interest group are a major contributor and partner in the total process of growth and development, they should also be involved in defining and addressing the problems of urban development. This state of affair calls for immediate attention to safeguard the future of these urban areas.

## **1.2 Statement of the Problem**

Shelter, one of the basic human needs, is a significant element in the living conditions of all human beings. Indeed shelter is more than a roof over one's head. It affects material and psychological well-being, health, children's school performance and productivity at work. More than a physical space, shelter is a value-laden symbol of warmth, security and identity. Unfortunately, the dream of a decent, safe and affordable house remains just that, -a-dream-for over one billion of the world's population, of which over 100 million are absolutely homeless (Shelter Forum Bulletin No. 7/Dec 1994). The Global Strategy for Shelter objective of providing shelter for all by the year 2000 is far from being realized. Available statistics show that the housing crisis is bad and getting worse. In 1987 it was estimated that one fifth of the world's population did not have adequate shelter. A further one million did not have any shelter whatsoever, while half a million, mainly children, died annually because of lack of adequate housing (United Nation, 1987) No significant global improvement in shelter conditions of the poor can be

boasted of since the first UNCHS Conference in Vancouver 1976.

In Kenya, despite the attempts made in the first and second urban projects by World Bank and USAID, for example, the availability of adequate housing for low-income families in urban centres is seriously deficient and deteriorating rapidly. The government's adoption of structural adjustment programmes imply significant reduction in resources available for housing, especially for the low-income households. While expenditure cuts have helped the government to reduce the current deficit, they have led to a postponement of urban projects awaiting funding and an increased backlog of unmet demand for supportive and facilitative urban infrastructure. With dwindling resources and limited alternatives, informal settlements will persist. Strategies endeavouring to bring informal settlements into the formal planning process have only minimally increased the housing stock. The majority of low-income urban residents still live in extremely poor housing conditions.

Kenya's shelter problem is reflected in the number of homeless and inadequately sheltered people in slums and squatter settlements. These deplorable settlements are characterized by inadequacy of basic services. In essence for most slum dwellers, home is symbolic of their desperation: garbage everywhere, no sanitation facilities, and constant disease outbreaks. And this exerts a heavy toll on human health, productivity and quality of life, particularly, for



the urban poor. As a result, inadequate delivery of safe water, waste disposal, health stations, schools and public safety are a common phenomenon in these settlements. That notwithstanding, environmental consequences of slums can not be over stressed.

A recent study by Matrix Development Consultants (1993) on Nairobi's Informal Settlements revealed that in aggregate these settlements occupy 5.8% of all the land area of Nairobi used for residential purposes but house 55% of the city's population. The average density in these settlements is 250 dwelling units (or 750 persons) per hectare compared to 10-30 dwelling units (or 50-180) persons) per hectare in middle and upper income areas. Thus informal settlements are not "isolated pockets of poverty" which can be ignored in the planning and development of urban areas but are settlements where the majority of the poor reside.

Informal settlements may be officially unacceptable or illegal, but remain the only accessible shelter for the poor in Kenya. These settlements provide shelter for the owners and contribute enormously to the rental housing stock. About 500 unapproved houses are erected and occupied every week in the urban areas, with a total of about 26,000 housing units being erected illegally every year (GOK,1990:1). This phenomenon clearly indicates the lack/inadequacy of housing for the poor, thus necessitating informal settlements.

The rapid growth of peri-urban areas and haphazard

boundary extensions will result to an upsurge of informal settlements. There is nothing wrong with these settlements perse, but the lack of basic services that characterize them requires urgent intervention to save the lives of these innocent people. Nonetheless, without informal settlements one is prompted to ask, where else would the poor live ?

Although a lot of research has been done of informal settlements the focus has been biased to major urban cities/towns: Nairobi, Nakuru, Mombasa, Kisumu and Eldoret. Little of the housing situation if any, of the smaller towns surrounding these major centres, particularly the outskirts is known. This presents a gap in research which this study attempts to fill. Ngong, a dormitory town of Nairobi is a case in point where informal settlements do exist, with little if any information known.

Ngong-Gichagi settlement exhibits unique characteristics which call for a research to appraise. The settlement dates back to 1953 emergency time, but up to date the housing structures are informal, constructed using temporary materials such as timber off-cuts, mud and wattle. Urban services, if provided at all, are extremely basic with earth roads and paths, earth drains, communal water points and shared sanitation. Unlike other informal settlements of its age, Ngong-Gichagi has received little, if any attention in form of upgrading. It was only until 1991 that the land was subdivided and plots allocated to the "squatters". Even after

regularizing tenure, little if any improvement has been noted on the housing condition as has been the case elsewhere in Nairobi and other large towns.

In addition, Ngong-Gichagi is situated on what one could call prime land for high cost housing development. The settlement actually overlooks Ngong Hills, a location which the rich would place higher bids to acquire. This contradicts the theory on housing location and departs from the usual trend of siting informal settlements/low cost housing on poorer/unattractive sites. A larger population of this settlement have little if any employment links with either Ngong-town or Nairobi. Most of them work on the surrounding farmlands, yet Ngong being a dormitory town of Nairobi one would expect most of its residents to be working in Nairobi. These and other factors present Ngong-Gichagi Settlement as a prime area for research.

This study seeks to provide information on the housing characteristics of Ngong-Gichagi informal Settlement. The thrust of the study is, however, an attempt to explain why housing in the Gichagi Settlement has remained poor, five years after land tenure was granted. The study attempts to do this through examining the socio-economic characteristics of the residents. The findings are envisaged to be useful for formulating policies and strategies for coping with housing problems, particularly in informal settlements of Ngong town. Thus policy makers, researchers and residents of Ngong-Gichagi

will find this study beneficial in terms of improving the housing situation.

### **1.3 Objectives of the study**

The primary objective of the study is to examine the socio-economic characteristics of the residents as means of facilitating in depth understanding of the housing situation in the settlement.

Specific objectives of the study are:

1. To examine the housing situation in Ngong-Gichagi Settlement.
2. To establish the housing problems and constraints in the settlement
3. To propose measures to improve housing in the settlement.

### **1.4 Study Hypotheses**

1. Secure land tenure has no significant influence on housing condition in informal settlements.
2. Low levels of income have significant influence on the nature of housing in the settlements

### **1.5 Justification of the Study**

Housing, a basic human need and an indispensable element in human life plays an important role in the development of any nation. That not withstanding, informal housing is characterized by life threatening conditions and environmental

degradation which require urgent intervention, for a sustainable living environment. Thus a focus on informal settlements at a time when their evolution is rampant is appropriate.

Well planned housing and infrastructure of acceptable standards and affordable cost when combined with essential services affords dignity, security and privacy to the individual, the family and the community as a whole. Besides this social function housing investment contributes both directly and indirectly to employment generation, raising of incomes, improved health and increase productivity of the labour force. Thus, a study of this nature contributes significantly to the general development of the country.

Security of land tenure has been observed to stimulate improvement in the housing conditions in informal settlements. Examples of these can be seen in informal settlements of Kondele in Kisumu and Dandora in Nairobi, and Kwa Ronda and Mwariki in Nakuru. On the contrary Ngong-Gichagi has exhibited little if any signs of improvement in its housing conditions; five years after regularising land tenure. This scenario necessitates a proper examination of the situation which this study attempts to address.

### **1.6 Scope of the Study**

The study focuses on informal housing in urban areas of Kenya. In specific terms, the scope of this study is limited

to Ngong-Gichagi informal settlement, in Ngong town. This problem is by no means confined to urban areas, but it is in many ways acute in these areas, particularly where rapid population growth, scarce job opportunities and inadequate welfare systems are persistent.

A problem as serious and complex as this deserves that even some unorthodox methods be considered to achieve any possible improvement, or simply to prevent a further deterioration of the situation. In effect, a study of this nature creates a basis for such an improvement. Nonetheless, emphasis is placed on the participation of residents in informal settlements as a major interest group in the process of housing development and/or improvement.

This study has largely been restricted to the problem of housing for low-income groups. This is because housing, compared to other sectors, occupies by far the greatest part of low-income settlement areas and because access to the housing opportunities is a fundamental concern of virtually every low-income household. It must also be born in mind that a good proportion of economic activities in low-income settlements are carried on in association with housing, and that solving problems of housing tenure will automatically accommodate significant elements of income-earning operations for poor households.

The scope is confined to an analysis of the housing characteristics, evolution of the settlement and finally

attempting a solution to the housing problems.

### 1.7 Study Methodology

In pursuance of this study, literature from variety of sources was reviewed to facilitate deduction on salient elements of informal settlements. A library search for literature was undertaken before commencement of the field survey. This provided the bulk of secondary data which guided the study. Examples of these sources include research materials, government documents and NGO publications. A bibliography at the end of the work contains literature sources studied.

In addition interviews with key informants were carried out. In this category respondents were selected on the basis of their knowledge about settlement policy, activities and inner working of informal settlements particularly, Gichagi settlement. Key informants were selected from community based groups, village committee officials, NGOs involved in activities of the settlement, and central and local government officials.

A household questionnaire was administered to a sample of 54 households. Random sampling technique was employed to select plots for interview. Out of 540 plots, comprising of both residential and commercial uses, 10 percent of these were selected for household interview purposes. Where there were more than one household on the plot, the first household next

to the gate was selected for interview. Only one household head was interviewed.

Personal observation was also used to in collecting data. The researcher observed and recorded activities and other visually identifiable objects in the settlement. This approach was particularly, useful in the appreciation of salient environmental aspects of the settlement. Other sources of primary data included the village elders, local authority officials, Ngong town administrators and government Officials.

Data analysis was undertaken using descriptive and inferential statistics. Computation of means, chi square tests, and cross-tabulation were undertaken. Statistics on average incomes, household size and building cost e.t.c. were thus generated.



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

The UNCHS conference held in Vancouver, Canada 1976 may be regarded as a breakthrough, since it was the first time that national governments universally acknowledged that slum and squatter settlements could play a significant role in the national development process. These settlements were no longer considered to be "an isolated and temporary phenomenon," but were now regarded as "an essential link between rural and urban development forces" (UNCHS, 1975). Governments participating in the conference officially recognized the necessity of taking appropriate measures to include uncontrolled settlements into the national development process (United Nations, 1976). This has recently been followed by Habitat 11 conference held in Istanbul June, 1996.

Housing development involves not only the provision of the house itself but also the development of the full range of facilitative and supportive facilities. These include items such as land, water, sewerage networks, electricity and so on (Syagga, 1991).

Informal housing development is the provision of housing outside the formal system. Such development is predominantly practised by the poorer populace often classified as squatters. The conventional view of squatting in the third world cities involves the illegal occupation of land and self-

construction of shelter. These settlements so formed are often seen as politically autonomous, under a permanent threat of demolition and outside the legal system. Characteristically, the urban poor build their own shelter with anything they could lay their hands on, on land they did not own (Amis, 1990:17)

The development of informal housing is a direct result of the demand-supply imbalance in the provision of housing, both in terms of quality and quantity. This imbalance is the result of various factors acting in concert. Rapid population growth and its pattern of distribution, especially in many developing countries, are perceived to be significant causes of the demand-supply imbalance in housing. Portes (1985) underscores that the emergence of unregulated settlements is not the consequence of the so called excess numbers but of a given wage structure. The process of urbanization in the developing countries is to a large extent not the result of economic development. In many cases rural-urban migration takes place not because of new economic opportunities in the city but mainly due to the hope of a better and easier life in town (Weitz, 1973).

Ondiege (1993:3-4) underscores that housing consumes 20% or more of household expenditures and is usually a major investment item for the low income families. With this understanding the formal housing available on the market is beyond the reach of the low-income population who therefore,

resort to the more affordable informal housing. Even within informal settlements, an element of exploitation of the already disadvantaged urban dwellers, in terms of house rents and the cost and availability of other facilitative services such as water is evident (Ondiege et al, 1990). In addition most residents of squatter and slum settlements, poor as they are, are mere tenants renting housing which belong to some landlords. Seemingly nothing can be done here because unplanned settlements fall outside the ambit of the law.

Restrictive housing standards usually adopted from the West, make housing developed through their use unaffordable to those who most need the housing (Agevi et al 1993; Ondiege 1993:4). Close scrutiny reveal that these standards in majority of the cases are inappropriate in the circumstances of the countries in question; and have proved restrictive to the provision of adequate housing (Syagga 1987:205-6).

Housing serves common purposes of working, eating, sleeping, child rearing and leisure. In the past housing was looked upon primarily as a physical phenomenon. In recent years however, the economic and social costs and benefits of housing have began to receive more emphasis. Housing not only provides shelter for a family but also serves as a centre of its total residential environment. As a focus of economic activity, a symbol of achievement and social acceptance, and as an element of urban growth and income distribution, housing fulfils a social need and satisfies criteria for remunerative

urban investment.

## 2.2 Housing and Urban Growth

The population of the world is becoming increasingly urban. Current population growth rates pose particular problems for the shelter-delivery system in the cities of developing countries. The world's urban population has increased from 737 million (29.2% of the total) in 1950 to 2603 million (45.2% of the total) in 1995. By the year 2005 - and for the first time in the history of humanity - more than half of the world's population, 3350 million people, will be living in urban areas. The majority of this growth will occur in developing countries (some 660 million compared with 87 million in industrialized countries) (United Nations, 1993). The expected population growth of urban areas during the next decade alone will thus be higher than the total urban population in 1950. This growth represents an unprecedented demand for housing in urban areas. More than 100 million new housing units are required in the world's urban areas during the next decade to cater for population growth alone (UNCHS/ILO, 1995).

The rapidly increasing pressure on urban areas causes considerable strain, not only on the urban infrastructure and housing, but also on the urban environment. In some cities, more than half of the population live in slums and squatter

settlements. Most people living under such conditions also face another problem: continued unemployment and underemployment. What is even worse, in most cities and towns the shelter delivery system and the demand for labour are unable to keep pace with the staggering urban population growth. It is thus not surprising that a large proportion of the 700 million people added to the urban population of developing countries during this decade alone may end up unemployed or with very low incomes, living in slums or squatter settlements.

If standards of living are to rise commensurately with these opportunities the much denser concentration of urban population over the coming decades will require far greater attention be given to the housing and other urban services. In most developing countries the formation of squatter settlements is the most prevalent method of urban residential expansion (Grimes, 1979).

Grimes (1976) also observes that countries that have responded imaginatively to housing problems, solutions are geared to the employment needs and purchasing power of low-income urban families. In this case standards of construction are realistic to enhance affordability of the houses by the poor; and the housing is situated to give access to jobs and social services. Nonetheless, governments frequently promote unrealistically high standards of housing for the poor, leading to default and delinquency in rental payments, costly

transport to work and subsequent raiding by middle income groups, whose demand for housing also remains unsatisfied.

The global strategy for shelter (GSS) to the year 2000 main objective is to facilitate adequate shelter for all. GSS recognizes that despite decades of direct government intervention, the urban poor in most developing countries lack access to the minimum acceptable standards of urban housing and services. It thus calls on governments to leave the actual production of housing units to the private and community efforts, and to provide legal, financial and institutional support to this process instead (UNCHS/ILO, 1995).

It is estimated that at least 300 million urban residents live in absolute poverty (UNDP,1994), 600 million live in life-and health-threatening houses and neighbourhoods (WHO, 1992), and that the urban poor form a substantial and growing share of those 800 million people in the developing world who suffer from chronic hunger. A global report on human settlements (UNCHS, 1987) estimated that half the urban population of developing countries lived in very poor housing. UNCHS adopted the concept of "adequate shelter" in the programme for the International Year of shelter for the Homeless (IYSH) as a means of measuring housing performance. Adequate shelter means more than a roof over ones head: it means adequate privacy,space, security, lighting and ventilation, basic infrastructure and location with regard to

work and basic facilities -all at a reasonable cost (UNCHS, 1990).

Inadequate housing can be manifested in many forms and may be regarded locally as a problem or may not be. Crowding or inadequacy of space either in terms of area or in the number of separate rooms is a common sign of inadequate housing. About 17% of the world's housing stock is made up of one-roomed shelters but this hides those larger units which are occupied by many households, each with one room, as is common in West Africa (Peil and Sada, 1984) and the Vecindades and other inner-city tenements of Latin America. In Bombay, about 67% of the households live in single-room housing units, with an average density of 4.9 persons per room (UNCHS, 1994)

As frequent as inadequacy of space and probably more dangerous, is the lack of services available to large numbers of people in urban housing. The lack of a clean water supply or a means of safe disposal of human, domestic, clinical, and industrial waste contributes to morbidity and mortality on a massive scale. It is undoubtedly true that, in general, the poor are inadequately housed and the poorer a country is, the less adequate are the housing conditions, at least for the low-income groups

### **2.3 Socio-Economic Characteristics of Informal Settlements**

Matrix Development Consultants (1993) have noted that

informal settlements are generally characterized by the following:

- Owners of structures have either a quasi-legal right of occupation or no rights at all;

- Structures (houses) are constructed largely of temporary materials and do not conform to minimum standards ;

- majority of the structures are let on a room -by- room basis and the majority of households occupy a single room or part of a room;

- Densities are high , typically 250 units per hectare compared to 25% hectares in high income areas;

- Physical lay outs are relatively haphazard making it difficult to introduce roads , pathways , drainage, water and sanitation

- The majority of the inhabitants have a low or very low incomes ;

- Urban services such as water and sanitation are non -existent or minimal;

- Morbidity and mortality rates caused by diseases stemming from environmental conditions are significantly higher than in other areas of the city (owing to poor drainage, uncollected refuse and overcrowding).

It is important to, however, note that not all settlements exhibit all these characteristics or to the same degree but the above broadly characterizes informal settlements in Kenya.



## 2.4 Income Levels

Determination of income is difficult in informal settlements as has been found by many surveys in Nairobi and other urban centres world-wide. Most of the residents are engaged in informal sector activities which do not always generate a regular income. When asked to state income and expenditure, respondents in these areas almost always give higher figures for household expenditure than for their declared income. Income is also commonly understated as people do not wish officials to know their true earnings (Matrix Development Consultants, 1993).

A review of income data contained in various existing surveys in Nairobi indicate that the majority of households in informal settlements have a monthly income of less than k.shs 2000 per month (For example, Kibua 1990). This amount is far below the estimated median household income for Nairobi as a whole in 1991 of k.shs. 3000 per month, (Housing Indicators, World Bank). Action Aid (1990) estimated that the minimum expenditure required to feed and house a family of five was k.shs. 980. This figure must have considerably increased with steep rises in the price of basic necessities.

The informal "productive" sub-sector often known as "jua-kali" generate significant value added and provide goods and services both to residents of informal settlements and residents of "formal" housing areas. For example, construction workers who began by building housing in informal

settlements have graduated into providing construction services to all housing areas. Many vehicle owners go to jua-kali mechanics based in informal settlements. Thus economic linkages between informal settlements and other areas in Nairobi and between small businesses in informal settlements and formal business and commerce exist (Matrix Development Consultants 1993). In the settlement of Kibera for example, a third of all households have a small business: manufacturing, construction, commerce, transport, rental property and personal services. Only under 70% are involved in petty retailing of food, fuel and water (K-REP study on Kibera 1991).

According to Ondiege and Syagga (1989) children contribute to family income in almost all of Nairobi's low income housing areas. The report indicated that the highest contribution per child was k.shs. 1298 and this was at Kawangware. Nairobi's average child income stood at k.shs. 409. Children are employed in petty trade and hawking, waste recycling (as scavengers), shoe-shine stands and newspaper vending, among others.

## **2.5 Basic Urban Services**

The provision of infrastructure to low income settlements in the country has been largely overlooked in the past, and these settlements should now receive a fair share of the resources applied to development. Lack of essential

elements of infrastructure give rise to poor health conditions in the communities concerned and to an environment which is not conducive to a reasonable quality of life, even though social conditions are often satisfactory. Low-income urban communities have not generally benefited from the large investments that have been made in urban infrastructure. Increasing urbanization is causing rapid expansion of population living in urban slums and squatter settlements, and health and environmental conditions are deteriorating. The need to have infrastructure integrated into comprehensive approaches to human settlements development is apparent.

Informal settlements in Nairobi are characterized by a lack of basic urban services. Unavailability, inadequacy and unreliability of water supply systems is a major problem. GOK/UNICEF, (1990) and Metropolitan Household Survey (MHS) revealed that 11.7% of the plots in informal settlements have water available directly to the plot. While majority of the households (85.6%) obtains its water from kiosks. The MHS found that 80% of the households complained of water shortages and pipes often running dry. More often communities in informal settlements usually pay more for their water supply network. Very often, people in squatter settlements are forced to drink contaminated water and have to exist without an adequate supply for normal household needs (UNCHS, 1981).

Sanitation has also been found to be grossly inadequate in majority of these settlements. The MHS estimated that 94%

of the population of informal settlements do not have access to adequate sanitation. Only a minority of the dwellings have toilets for instance, 60% of the households in Kibera and Korogocho have no direct access to a toilet. They usually share a pit latrine with approximately 50 other people (Kibua, 1990).

The Kenya consumer Study in 1992 observed that 95.4% of the population in informal settlements have "doubtful sanitation facilities". A large number of households in the same survey had no bathing facilities (37.8%). In Mukuru, 85% of the population do not have access to showers and baths; in Korogocho 65%, in Kawangware 55% and in Kibera 54%. Where there are pit latrines, people also use them as bathing facilities.

In precision, sanitation is very primitive, where it exists at all. Some residents rely on nearby waste grounds for defecation, while others adopt the "wrap and carry" approach when the sea or other dumping site is further from their dwellings. Dry pit and wet pit latrines are sometimes used where space is available, but such latrines are installed by the individual and may cause pollution of surface water or ground water. Quite often pour flush toilets discharge directly into surface drainage channels (UNCHS, 1981). Sullage from squatter households is freely discharged onto the surface without concern for its ultimate fate. Consequently, naturally formed channels containing sullage, latrine discharges and

solid waste are found throughout squatter settlements and give rise to unpleasant odours during dry periods. The same channels act as drainage for rainfall during wet periods, when they receive some degree of flushing, but whole areas are frequently flooded and pollution is widespread (UNCHS, 1981).

Drainage in these settlements is very poor in most cases there is no provision at all, leading to pools of stagnant water. Where drainage is present it is largely in the form of open earth drains. These are frequently choked with refuse. One area in Korogocho has had cement lined drains installed through assistance from the Undugu Society, but even these are often blocked by garbage (Matrix Development Consultants, 1993).

Since water-borne sanitation systems are expensive, people in low-income areas can be encouraged to use alternatives such as ventilated improved pit (VIP) latrines. In Mozambique, for instance, an equitable solution has been found, where community based latrine construction cooperatives produce slabs which everyone can afford (Mazingira Institute. *SINA NEWSLETTER*, 1986). In this way cooperatives are transforming their previously un serviced neighbourhoods into clean and healthy environments. Jobs have also been created in this way unemployed people, many of whom are women.

Contracting out cleaning services may be disproportionately expensive, as in the case of Abidjan which paid 58% of its operating budget in 1983 to the waste removal

company SITAF (MHS, 1989). Similarly, private contacts between firms and households or businesses benefit only those who can afford a relatively costly service. Permitting the rich to "buy themselves out" of the system means the poor suffer more as they can not exert enough pressure to maintain public service.

Where public resources are inadequate, privatization is more likely to succeed at the neighbourhood level through mobilizing the community to burn or dispose of refuse. NIMA 411 welfare association in Accra, Ghana is a good example, worth noting (Mazingira Institute, *SINA NEWSLETTER*, 1989). In Nima slum where refuse collection was non-existent, residents formed an association in 1980, hired trucks and began to remove the massive pile of refuse and faeces themselves. The welfare association now manages the two public toilets, charging fees from residents to maintain the toilets and to contribute to the running costs of the association. With help from UNICEF and other agencies, the association has extended its activities to primary health care and training (GOK/UNICEF, 1990). The case of Nima could easily be replicated, particularly in those countries which have a strong community approach to development, like Kenya.

## 2.6 Environment of Informal Settlements: Implications to Health

Inadequate services, poor housing conditions and overcrowding in informal settlements leads to high morbidity and infant mortality rates. These are caused principally by diarrhoea and respiratory diseases. Diseases also reduce productivity, and shorten the life-span of the residents. Residential environmental conditions in most of the low income areas have deteriorated to the extent that they can be considered hazardous to health. The most common dwelling unit is one roomed and accommodates an average household of 4-5 persons. Kitchen locations and cooking fuels have implications on health. On average 94% of the population use paraffin and/or charcoal, with greater number using paraffin only. 16% use charcoal only (KCO, 1992). The implications for respiratory health, risk of fires, and environmental degradation are therefore serious.

Studies indicate that in the high and very high density areas of Kibera, Mukuru, Soweto and Lunga Lunga the diarrhoea episode rate is between 3.5 and 4.5 per child per annum (Matrix Development Consultants, 1993). The high incidence of diarrhoea is caused mainly by poor sanitation, and poor water supply. Other studies show that 52% of the children in Nairobi's informal settlements are stunted (Urban Nutrition Survey) and this phenomenon seems to be particularly prevalent in the very low income areas of Grogon, Highridge and

Korogocho, all in Kariobangi North division. The recurrent problems of worm infestation and current diarrhoea, can all be linked to the living environment.

## 2.7 Education

Like other facilities, education facilities are seriously lacking in most informal settlements. This is reflected in considerably lower levels of education, with only 14% of the population finishing high school and 33% not going beyond primary school. Only 2% have post high school education (Kenya Consumers Organization, 1992). Nonetheless, a number of community organizations and NGOs are providing educational facilities at nursery primary and secondary levels.

Few informal settlements have any proper roadways or pathways, while board walks in areas subject to flooding are constructed by residents on an ad hoc basis and are rarely satisfactory. This limits the accessibility of dwellings, and few vehicles can enter such settlements. Any electricity supply in squatter settlements is usually based on the illegal tapping of the municipal network and is intended for household purposes. Street lighting is very rare in squatter areas and security is a real problem, particularly since the poorly-built dwellings are themselves so vulnerable (UNCHS, 1981). Residents of squatter settlements perceive the need for many elements of infrastructure, but they will remain under privileged as long as governments adopt an inflexible policy



with regard to the question of legality. Lack of access to municipal utility networks causes these poor people to pay more for certain essential services than richer urban dwellers.

## **2.8 The Urban Poor and Low-Income Housing Situation**

The idea of creating a national housing policy has been on the political and policy agenda in Kenya since 1965. Nonetheless, the tangible benefits of national housing policy have been meagre. Most of the informal settlements were established after independence. From independence up until the late 1970s official policy was to demolish informal settlement in Nairobi and other urban centres. Subsequently there was a trend towards tacit acceptance of informal settlements. These settlements grew rapidly and the authorities adopted a more permissive approach, generally not undertaking demolitions. A major departure from this trend occurred in 1990, when two large settlements, Muoroto and Kibagare, were razed by the city authorities. The national Council of churches of Kenya estimated that approximately 30,000 people were displaced by these demolitions.

The general response to informal settlements and shelter demand has followed a trend common to many countries with an initial phase of demolitions followed by attempts to provide shelter through site and service schemes and similar

approaches financed by International agencies. These projects have had very little effect as they met only a small fraction of demand and low-income beneficiaries were usually displaced as there was a shortage of housing for middle -incomes group.

Housing programs adopted in Kenya include the site and service schemes, settlement upgrading, formal mortgage and rental schemes. These programs are undertaken by various agencies, predominantly public ones (Malombe, 1990). Public rental housing strategy targeting the low income group was developed by local authorities in liaison with the National Housing Corporation . Although the strategy added to the housing stock, it failed to meet the need of the target group because the housing developed was beyond their reach in terms of cost (Ondiege,1993, Malombe 1990). With the experience of public rental housing scheme, the tenant purchase low-income housing strategy was adopted. Like the previous strategy this failed because the implementors failed to devise appropriate strategies for identifying the target group. Despite the great subsidy, the poor could not access this housing due to unwarranted competition from middle and high income groups (Syagga, 1991). Slum upgrading followed the same suit. Kibera and California flats in Nairobi are a living testimony! In both of these cases the occupants were moved to provide room for construction of better structures (high rise flats). The end result of the program was the exorbitant rates of the

flats which saw the poor out of their original habitat. The repayment rates for the housing loans advanced were too high for the poor to live up to. Consequently they abandoned the high rise flats which ended up benefiting the economically stable group of people, who could manage the mortgages.

Quite often institutional arrangements are so complex, with many different agencies having responsibility for different elements of housing, that the administrative problems of co-ordination and delivery have not been overcome. Without a national human settlements policy or plan, agencies have approached the provision of infrastructure to low-income settlements on an ad hoc basis in terms of selection and implementation of projects. Target communities have rarely been involved in the planning and implementation of projects, and after completion they had no interest in the continuing success of what they see as a government responsibility. Agencies generally have not budgeted for system maintenance, with the result that systems fail rapidly and fall into disuse. While financial restrictions have undoubtedly affected performance in the sector, there is doubt to whether existing delivery systems would have accomplished much more even if more funds had been made available. It is thus essential in future programmes to ensure that investments in housing actually benefit target groups, that the community is involved in project selection, that as broad a coverage as possible is achieved and that housing components are

integrated with other improvements. To continue to ignore the increasing problems of inadequate housing in existing communities is not only socially irresponsible but unwise from the health point of view.

The failure of housing strategies adopted in Kenya have also failed due to inappropriate and restrictive building regulations and codes. High standards demanded by these, automatically preclude the poor from enjoying basic housing which is within their means and designed to satisfy their comfort. A case in point is Umoja II where 75% of the costs went into paying infrastructure and other soft costs (professional fee e.t.c.). Without these costs the scheme would have been cheaper (Ondiege and Syagga, 1990:22). Yet the needs of the low-income groups are not as high as those demanded by the building regulations and codes. Research in this area has culminated in the development of revisions of the building by-laws and planning regulations to make them more performance oriented (Agevi et al, 1993).

Lack of finances and or access to adequate credit facilities: and tenure in informal settlements have been cited as down playing the strategies adopted to cope with the housing crisis. However, efforts are under way, like the community land trust project in Voi town, to provide security of tenure to residents. And with the realization that cost recovery was a problem, income generating options such as subletting are now being incorporated in housing projects.

The formal sector which has been unsuccessful in delivering housing is now operating more as a facilitator in the delivery process. The planning process is also changing. Mills and Armstrong (1993) observe that:

Experts are beginning to take a fresh look at informal settlements, recognizing that behind the squalor and apparent lack of order such places seem to work in some fundamental respects. This new thinking, however, tends to be based on a belief in the spirit of self-help and the concept of individual choice rather than on any deep understanding of how and why the informal sector works.

Generally, the Kenyan housing situation has been one of poorly implemented strategies in regard to addressing issues of affordability of housing developed for low-income groups. The public sector through evolving inappropriate policy frameworks have shut out or neglected the contributions of the private and informal sectors in the development of more affordable housing. This is in spite of evidence showing that the private and informal sectors are not only capable but do in fact assist in bridging the housing demand-supply imbalance.

According to Struyk, (1990) national housing policy development should primarily be based upon appraisals of how housing markets actually operate; rather than abstract assessments of needs and targets based upon computer prediction models of household formation. For Kenya this means that greater attention should be given to spontaneous development of low-income private rental housing markets.

Githiomi (1993) argues that despite considerable economic

progress in the last two decades, the general condition of housing in the country is unsatisfactory for majority of urban and rural population.

Ondiege (1988) observes that low-income households would only afford cheaper non-conventional housing un subsidized. Interest subsidization (preferably through cross-subsidies) would be necessary if the urban poor households have to spend less than 20% of their income on housing. Alternative means of lowering mortgage expenses to consumers and public financial institutions would enable lower and middle income households afford some of these housing. Household's affordability of a given housing is based on what the household is capable of paying as rent or loan repayment as determined by its income. The United Nations recommends 25% as the normal proportion of income that should be spent on housing consumption.

Kenya national housing program has been elaborated and refined since 1965 into the following main policies:

- government assistance should primarily be directed towards low income households;
- emphasis should be upon urban areas with rural areas retaining customary self-help building in villages;
- the private sector would become the main agent of housing provision. with government taking an enabling role as advocated by World Bank and UNCHS-Habitat;
- cost recovery and user charges should be applied to land and services;

- local authorities should be given more delegated responsibilities in land development and low income housing. ~~Following in with post 1988~~ world bank initiatives to develop managerial and financial capacities in local government.

However, two fundamental factors must govern the approach to the provision of housing in urban informal settlements as a component of settlements policy; the first is the concern for underprivileged people, and the second is the financial need to aim at satisfying the basic human requirement of the largest number of people possible. Consequently, the housing agency should be concerned primarily with infrastructure in upgrading and development projects in these settlements and with the machinery for integrating the infrastructure sector into settlement policy and planning. Generally however, the objectives in providing housing should be to promote health, improve the environment and provide amenities, in that order.

## **2.9 Factors Underlying Success and Failure in Informal Housing Improvements**

Lee Smith and Memon, (1988) report organizational inconvenience and malpractice in Nairobi City Council in 1983 as having retarded the development of the World Bank's Dandora project in Nairobi. Additionally, they noted that although the low income housing and land allocation were operated according to the purposes in the project in the early phases of

implementation, in subsequent phases these were undermined by land allocation to the profit seeking companies, individuals and co-operatives.

Amis (1984) observes that low income housing rental markets in Kenya have grown spontaneously following commercial markets and profit seekers such as development companies and individuals who let rooms in their owner-occupied houses. Amis also notes that rental housing has intruded into unauthorised settlements in projects undertaken by World Bank and other international aid agencies.

Pugh (1980) views rental and home ownership housing in the appropriate circumstances, as fulfilling useful social purposes for low income households. Home ownership allows for personal and family fulfilments in housing, and it deconcentrates capitalistic ownership in limited but important ways. Rental housing is appropriate for some life-cycle situation and, if provided with adequately supplied land and housing conditions in markets and in government urban policies, it provides shelter for low income groups.

Settlement upgrading has become an important element of urban development. That notwithstanding upgrading projects cannot succeed unless cost recovery is assured. Macharia and Mutero (1993:28) revealed very poor cost -recovery in upgrading projects financed by the public sector. In contrast the performance of NGO's projects has been exemplary. There are therefore, important lessons to be learned from NGO



experience. The same authors identified constraints that bear on cost recovery to be: lack of community participation during project preparation and implementation; inadequate administrative capacity of local authorities to recover costs; cost escalation and as a result of poor project preparation and contract management; questionable viability of projects; delays in conveyancing; transfer of plots to new owners; inappropriate cost recovery mechanisms; and attitudes of local authorities and beneficiaries towards recovering costs.

In order to improve cost recovery performance in future upgrading projects, Macharia and Mutero (1993:33) put forward a number of recommendations: First, costs of providing basic on-site infrastructure services should be recovered via user-charges and rates and not by means of loan charges. Second, building materials loan should be channelled via NGOs and private financial institutions and not via local authorities. Third, such loans should be made for 3 to 7 years at market interest rates. This departs from the usual loan terms i.e. maturities of 25 to 30 years and below market interest rates of 8-12 per cent per year. Fourth, financiers should not approve projects unless the resident community has been involved in project preparation. Other recommendations focus on the administrative capacity of local authorities and their attitude, as well as those of beneficiaries, towards cost recovery.

In developing countries it remains the case that (by

necessity, if not choice) poor people themselves are best equipped to produce and improve their own shelter to a standard they can afford, at a pace they can sustain, and to a higher level of quality than could be attained by either public provision or commercial development. However, it is well known that process of shelter development by the poor themselves has to be supported and facilitated by other actors and institutions if it is to be successful on the necessary scale (UNCHS, 1993).

The same author, (UNCHS, 1993), documents that support is required in three key areas: shelter inputs, services and infrastructure, and mediation. It is these areas which the poor cannot address solely through their own efforts, because they lack the economic and/or political power to develop every aspect of their own shelter. Public/private partnership provide a mechanism for assisting the urban poor in dealing with these aspects of shelter process, areas which almost by definition require joint action. Thus key relationships in most of the partnerships affecting low-income shelter are those which develop between people, third-sector organizations and the public sector. NGO's and CBO's play a key role in mediating between people and state, while government is the only institution capable of ensuring access to shelter inputs on the scale required. In terms of returns to investments (UNCHS, 1993) submits that public/ third- sector partnerships are likely to yield many more benefits than any other form of

partnership, and it is here that governments and donor agencies should focus their attention .

It is worth stressing, however, that partnerships involving the commercial private sector are rare at low levels of income because there is a tendency (driven more by ideology than good sense) to think of partnerships as a proxy for promoting 'free markets' in shelter. This is not, of course, what is meant by the enabling approach, and is a very limiting definition of the objectives of partnership.

Nonetheless, experience in North America, Canada and western Europe suggest otherwise. In all cases the impact of public/ private partnerships on the overall shelter needs of the urban poor has been very small in scale. Partnerships remain the exception rather than the norm, and have been unable to scale up their coverage to a significant level. This is a reflection of the cost and complexity of partnerships, and the unwillingness of large -scale private capital to invest in them, which is in turn a consequence of the needs/demand gap which lies at the heart of the housing problem (UNCHS, 1993). There is some evidence that program-based partnerships are more likely to achieve significant scale and impact than project-based partnerships, because of their effect on systems, structures, attitudes and policies (Suchman, 1989).

The importance of program versus project based partnerships, the need for strong and competent government,

the value of community participation and strong third-sector organizations, the need to guarantee stable cash flows and to identify clear and shared objectives, are all highly relevant to the experience of developing countries. On the other hand, there are some obvious differences which resist the relevance of these experiences. As Arrossi et al (1992, p.i) point out, housing improvement in the rich North is based on:

Well developed private capital markets within prosperous, usually-growing economies: with low inflation, well-established local tax and revenue base, and a high proportion of the population able to make large and regular payments for housing and basic services.

None of these conditions applies in most developing countries. These differences make it unlikely that the heavily administered models of partnerships that have grown up in North America and Western Europe can be copied in developing country cities.

## **2.10 Land Tenure and Informal Housing Improvement**

Land for housing low-income and the disadvantaged is a key issue facing human settlements. The United Nations Commission on Human settlements decided at its fifth session, held at Nairobi in April 1982, to select the issue of land for human settlements, with special emphasis on the problems and need of low-income and disadvantaged groups, as its theme for the sixth session, held at Helsinki in 1983. The continuing exclusion of those groups from legitimate access to land for

settlement, has been viewed by the commission as a complex and critical issue which must be understood and brought to the attention of governments, non-governmental organizations and international agencies for appropriate action.

Land is most important input into the shelter process and without it there is no possibility of the enabling approach being implemented. Without an adequate supply of land in the right place, at the right time, and at a range of prices within reach of the poor, people will be forced into higher-density rental accommodation and/or squatting on marginal lands outside the market, with damaging consequences for the orderly development of city, the cost, service provision, and the welfare and shelter standards of those affected.

However, land supply is also the area of greatest failure in shelter provision over the last ten years (UNCHS, 1991:18), largely because governments have been unable to find the right balance between liberalization and intervention in the urban land market. Land markets in developing country cities have been allowed to operate in ways which deny access by low-income groups and which promote the holding and exchange of land for speculative purposes. Land-registration and information systems are usually very weak, and attempts at government regulations have often made the situation even worse (UNCHS, 1993). The process of "commercialization" by which land enters the formal markets and becomes a tradeable commodity, is well-nigh universal in developing country

cities, and the resulting price increases situations of high competition usually exclude the poorest from land. This process has been documented in many cities especially where tenure is legitimized in informal settlements.

Most land is being made available to the low-income and disadvantaged groups through informal processes, which cannot guarantee secure land tenure. House constructed on such land are often found to be of unacceptably low standard, particularly in areas where land tenure is insecure and eviction is eminent. People are reluctant to invest their savings and their labour in housing when the probability that their houses will be destroyed is high. On the contrary, where the probability of eviction has been low and where prospects of obtaining legal tenure have been reasonably high, people residing in informal settlements have often invested considerable amounts of money and effort in consolidating their houses. The more secure the tenure, the more consolidated and developed houses were found to be. This has been amply demonstrated in studies in Santiago, Karachi and a number of other cities (Merril, 1971).

The existing land legislation and its enforcement in urban areas are crucial factors in dealing with the spread and continued existence of uncontrolled settlements. In many cases, squatter settlements grow indiscriminately and may be found on privately or publicly owned land, land with undefined ownership or land vested with chieftaincy titles. In addition

to the influence of terrain, the pattern of control of land occupation affects the location and growth of squatter colonies (UNCHS, 1982).

It has been said that security of tenure is more important than ownership per se. Varying degrees of security of tenure have developed for squatter families. In most cases improvement programs for squatter communities on government-owned land include the allocation of the invaded land under a lease system which allows security of tenure for the occupants but reserves the property rights for the government. The allocation of land use titles is seen as a reward for the inhabitants' full participation in the improvement process and is a valuable incentive.

Nientied et al. (1987) report that increased security of tenure through provision of leases increased significantly improvement activities of the households. Public facilities and maintenance activities were clearly highest among the improvements made by households. Large scale provision of gas connections began simultaneously with the regularization program. The association between the increase in extent of home improvements and the increased tenure security was clear, but due to a lack of control areas, no causal inferences can be drawn.

TABLE 2.1: Improvements made by Households in the Inter Survey

Period of Improvement	1981-83	1979-81	1977-79
Made one or more improvements	405 (77.0%)	415 (62.7%)	385 (54.1%)
Electricity	50	56	28
Gas connection	269	62	-
Home water tap	9	4	1
Bathroom (construction/improvement)	12	20	9
Latrine	36	78	42
Kitchen	20	40	15
Room(s) house wall(s)	105	129	122
Compound/walls	42	39	26
Roof	33	38	32
Door(s)	43	44	47
Plastering of walls	33	91	41
Painting/white washing	153	153	118
Other/General repairs	70	50	51
Whole new house	27	30	6
No improvements	172 (25.3%)	234 (34.1%)	385 (54.1%)
N	667	675	708
Missing cases	12	8	12

Source: Niented et al, 1987

In the 1983 survey it was found that more than half of the interviewed households had a gas connection. Over 90% of the people relied on public taps for water. The sanitary situation had also been improved by the residents. Table 2.1 sums up improvements triggered by provision of security of tenure in Baldia, Karachi.

Some positive correlation was found between income and



amount invested in improvements. A majority of households (65% in 1983) financed improvements through personal savings, in a number of cases supplemented by loans, mostly from relatives or employers. Bank loans were recorded in very few cases.

Viloria et al, (1987) report that the introduction of infrastructure and utilities, and the security of tenure in the Tondo project in Manila, Philippines were found to be the two most important factors that encouraged residents to make dramatic improvements to their residential structures. Measures of the changes in housing characteristics indicate that residents invested an equal or greater amount of resources to improve their housing compared with the investment in the project by the government. They also invested much more than families living in the control areas.

Construction and repairs of the majority of structures in Tondo were carried out in incremental stages, with old and poor quality materials being gradually replaced by those of better quality. For most families, reblocking provided an opportunity to improve their structures, and these improvements were often made regardless of whether their structures had incurred damage from the realignment procedures. Many households used stronger and better quality materials.

The usefulness of the land-tenure issue for effective community organization has been amply demonstrated. The poor in many cases have provided important support to politicians

and governmental officials who have shown a willingness to improve living conditions in existing settlements. where tenure has been insecure and the threat of eviction has prevented people from improving their houses and their neighbourhoods. Persistent calls for the regularization of tenure have resulted in improvement in living conditions for millions of people in Calcutta, Karachi, Manila and many other settlements.

The legitimacy of using land occupied by existing settlements for low-income residential purposes can be established in official landuse plans. Existing settlements, occupying land which can be used for residential development, is not required for the development of public facilities and is not located in marginal land unsuitable for settlement. need not be demolished or destroyed. The land which they occupy and improved can be officially designated as land for residential use by low-income groups. In fact , to ensue that land for low-income residential use is distributed throughout built up areas,with good access to income-generating opportunities, all lands occupied by existing settlements which can continue to be in residential use can be zoned or delineated as low-income residential areas, so as to prevent their destruction without replacement by other land uses. In Hyderabad, for example, a classification of existing settlements into objectionable land uses has been initiated, and improvement activities have concentrated on unobjectional

settlements.

Security of tenure in informal settlements can be granted in a variety of ways. The conventional view of land ownership can be replaced by a comprehensive view of man's relationship to land as consisting of a set of rights. Those rights can be held by individuals, by groups of individuals, by companies, by specific public agencies or by the government at large. The rights to a given plot of land may be distributed among a number of such entities, each one holding a different right. The variety of rights can be distinguished as rights of use, rights of development, rights of transfer rights of lease or rental, rights of mortgage and the like. In each case, where security of tenure is to be granted, a proper selection of a set of rights need to be made. Such sets of rights may vary between freehold tenure long term lease, short term lease followed by freehold, a two-tiered tenure, system specifying a separate ownership of land and rental etc. The variety of possible tenure arrangements can be studied, to ensure that there are adequate incentives for the improvement of houses and that an adequate sense of belonging to the community is generated in the tenure-granting process.

The capability of public authorities to administer improvements in land tenure in informal settlements can be strengthened. The administration of tenure change in these settlements is fraught with complications. Land tenure systems tend to become complex over time, and rights to land and

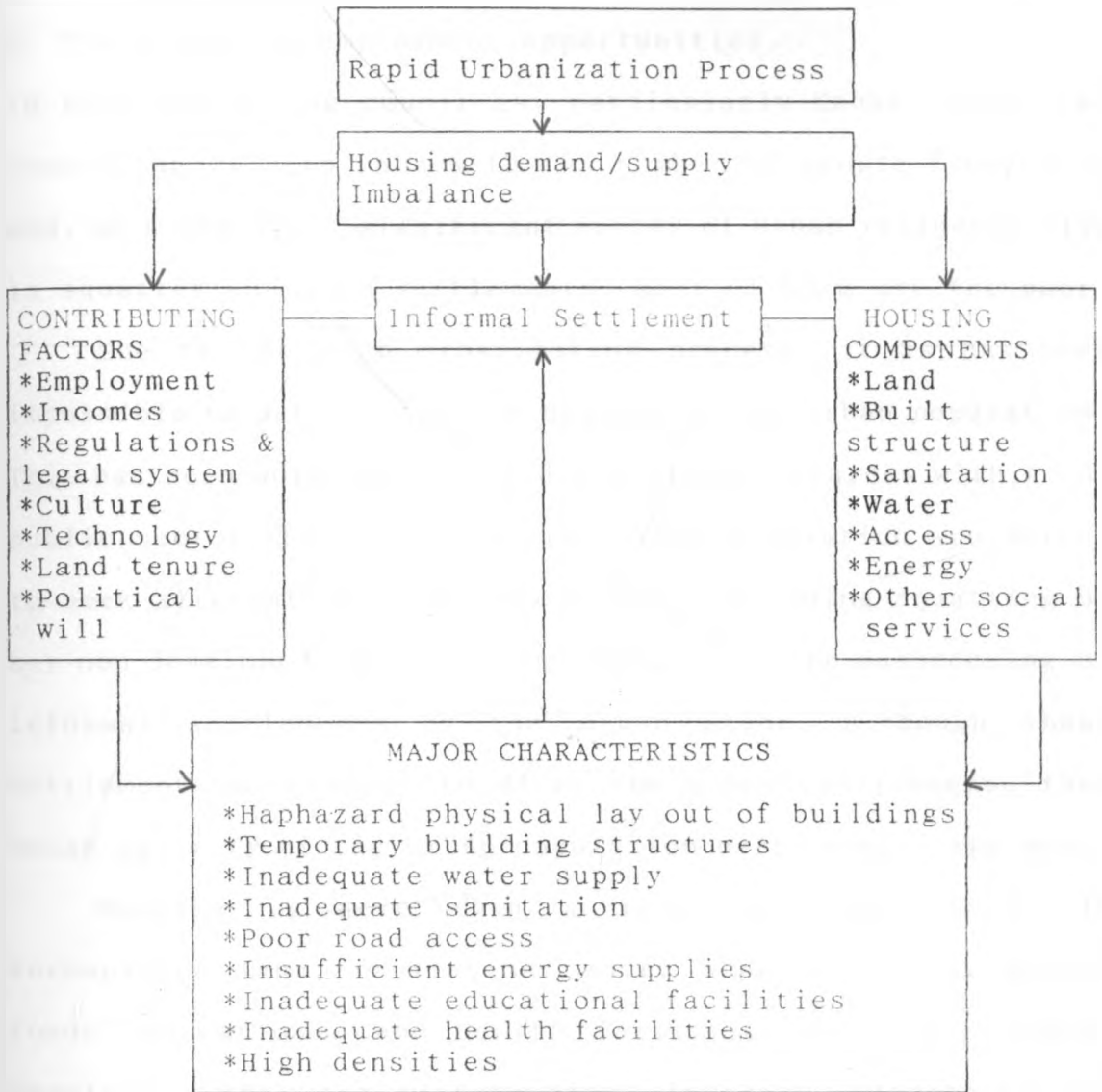
structure tend to multiply, particularly when there are official attempts to grant proper titles to plots. Experience with the transfer of ownership of houses from landlords to tenants in Colombo has brought to light the complications involved and the need for significant numbers of trained personnel to carry out the necessary procedures. Experience in Lusaka with the issuance of occupancy licences has simplified the transfer of tenure rights, and recent advances in systems of registration of rights promise further simplifications (Martin, 1979). The proper registration of all tenure rights and the forceful resolution of conflicting claims can greatly assist the transfer of tenure.

Improved tenure can lead to the renovation of properties occupied by protected tenants. Tenant protection laws and rent-control legislation have led to continuous occupation of land and housing by tenants who cannot be evicted and who pay rents which are insufficient to create an incentive for landlords to maintain and repair their properties. Many such properties have thus been allowed to decay and have gradually deteriorated. The transfer of ownership rights to tenants, coupled with technical and financial assistance where necessary, has often led to the improvement of properties. Tenants in New York, for example, have been organized into co-operatives, initiating improvements of houses and neighbourhoods in neglected areas.

Tenure-granting programmes can be linked to

infrastructure improvement programmes and to the organization of low-income communities. The granting of secure tenure can go hand in hand with a number of community development activities and, in particular, with the improvement of infrastructure. All those activities can be organized together to mobilize the people towards self-improvement and towards working together to their common benefit. The linking of tenure change with infrastructure improvements can facilitate the rationalization of plot allocation in the settlement, can clear the way for roads and open spaces and can adjust plot boundaries before actual documents establishing rights to the land are allocated. In that manner, later disputes involving the provision of infrastructure can be avoided.

**Fig 1: A Summary of Informal Settlement Parameters in Urban Areas**



Source: Researcher's own derivation

From the foregoing chapters, it is apparent that housing, like any other urban development activity, is influenced by the urbanization process. Kenya is urbanizing at a very high rate (7%). The concern over rapid urban growth is centred

around two major issues:

1. The ability of physical and social infrastructure to accommodate a growing population and.
2. The growth of employment opportunities.

In most developing countries, particularly Kenya, these two issues cannot keep pace with the number of people flowing in and, as a result, a significant number of urban residents live in squatter and slum settlements, most of whom are the poor.

Due to the high urbanization process, it is has been impossible to satisfy housing demands of the urban population. This has been worsened by the diminishing resources within the public sector. Consequently, the urban population are forced to seek alternative forms of shelter, including squatting on any non developed land. The end results is the mushrooming of informal settlements on the urban scene. Although these settlements may appear to dirty the urban environment, they house majority of the urban population particularly the poor.

Housing is more than a roof over ones head. It encompasses land, sanitation, water supply, energy, access roads, educational and health facilities and other social services. That not withstanding, informal settlements are lacking in sufficient supplies of these components. In majority of the cases, these settlements are characterized by haphazard lay-out of housing structures, inadequate water supply, poor road access, insufficient energy supplies, precarious sanitation and building units, lack and/or

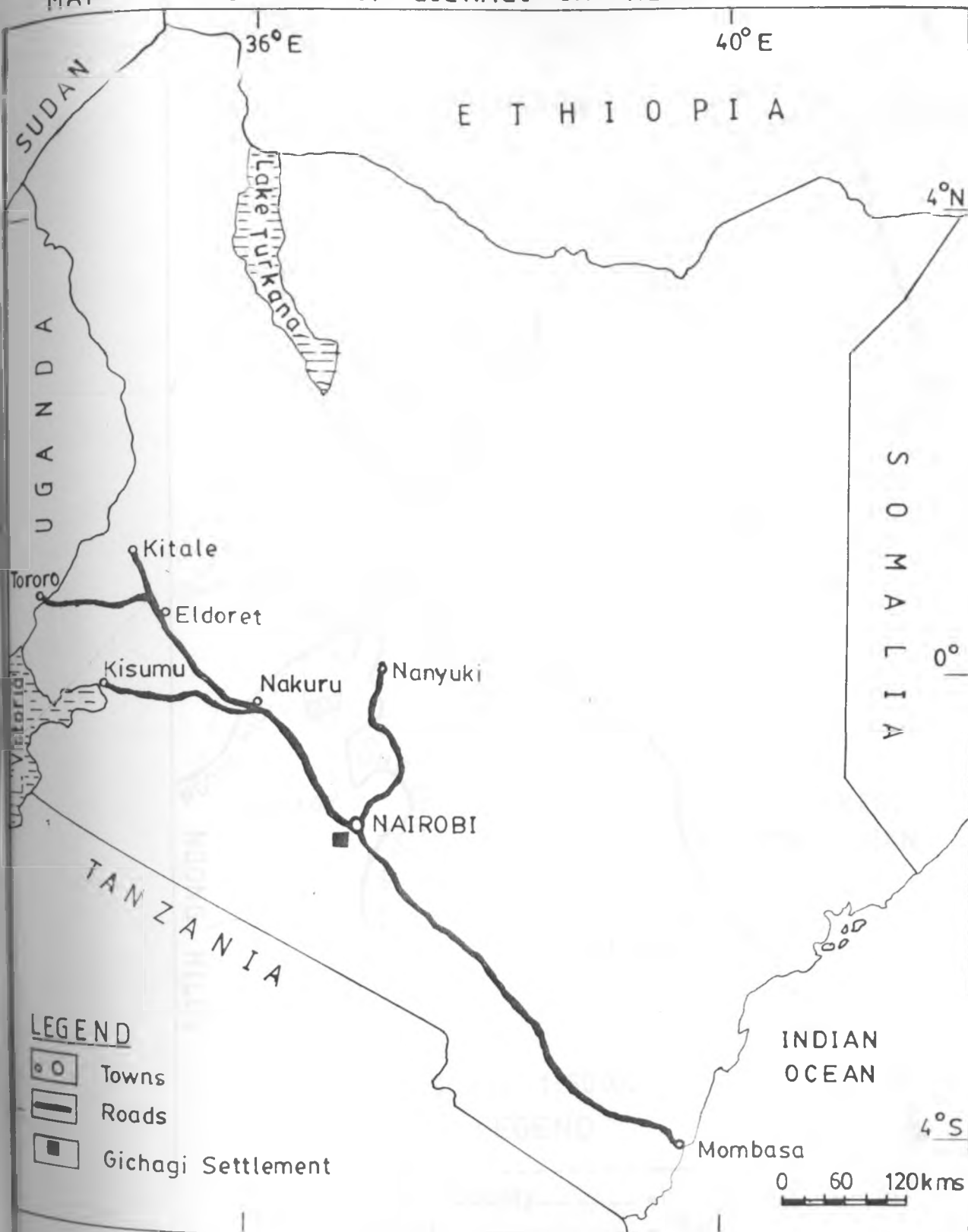
inadequate educational and health facilities and a general lack of other housing related infrastructure.

A number of factors combine to accelerate urbanization and consequently the development of informal settlements. These include employment opportunities, incomes, regulations and legal system, technology, land tenure, culture, and political will among others. The availability of employment opportunities in urban areas, acts as a pull of labour thus increasing the number of people in urban areas. But due to low incomes and other factors majority of the residents resort to informal settlement shelter. Political will, is known to determine the survival of such settlements.

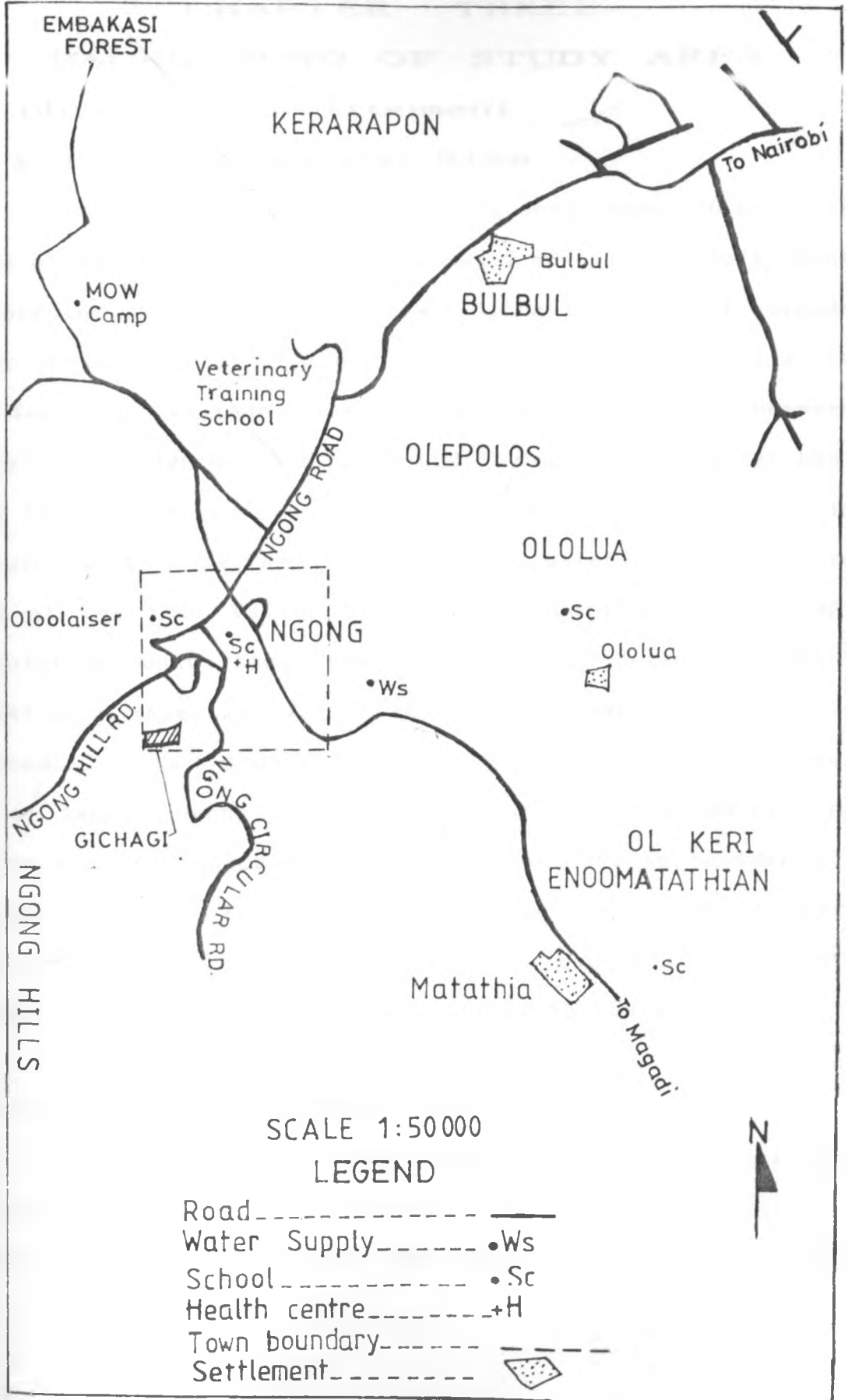
Gichagi settlement is precisely a consequence of this process (described in the model). The settlement is characterized by inadequate and inefficient levels of service and conforms to the general characteristics of informal settlements. There is nothing inherently wrong with these settlements. But the environmental and health implications in these settlements threaten the survival of the human race, particularly the poor. And this study seeks to examine factors which can help improve the living environment in these settlements through the improvement of housing conditions.



MAP 1 LOCATION OF GICHAGI IN KENYA



MAP 2 GICHAGI AND THE SURROUNDING SETTLEMENTS



## CHAPTER THREE

### BACKGROUND OF STUDY AREA

#### 3.1 Physical Environment

##### 3.1.1 Location and Size

Gichagi settlement lies in Ngong town, about 20 km south west of Nairobi city centre (see map 1 and 2). The settlement is precisely a km from Ngong town. Gichagi settlement spreads over about 46 acres of land, overlooking the Ngong Hills. It is found in Kajiado District, which is situated between longitude 36 degrees 5 minutes and 37 degrees 10 minutes East and between latitude 1 degree 10 minutes and 3 degrees 10 minutes south. Kajiado District is situated in the southern tip of the Rift Valley Province. According to the 1989 population census Ngong township had 8,775 persons of which 4,545 were males and 4,230 females. The town also had 2,279 households with a density of 237. The town extends over 37 sq. km of land. Ngong town is the divisional headquarters of Ngong division which covers an area of 3692 Km sq. (Map 1). Kajiado District is bordered by Tanzania to the south west, Taita-Taveta District to the south east, Machakos to the east, Kiambu to the north and Narok district to the west.

##### 3.1.2 Topography and

The topography of the area generally reflects the asymmetrical nature of the overall landform, characterized by plains and occasional hills and valleys. Ngong Hills is the

most dominant topographic feature in the town, rising to an elevation of 2,461 metres. The hills form an asymmetrical ridge, approximately 13 km long and 5 km wide. They represent eroded remnants of a former volcano, or string of volcanoes. Ngong town lies in the Athi Kapiti plains which consists mostly of open rolling land. Areas flanked by Ngong town is of tertiary formation.

### **3.1.3 Ecology and Water Resources**

Climate of the area exhibits extreme variability, mainly due to topographic influence. On the overall, rainfall patterns are bimodal with mean averages ranging between 600 and 900 mm. Precipitation occurs in two seasons: March to May and October to December. Ngong town lies at the high altitudes hence receive higher rainfall with relatively lower temperatures and evaporation rates. The highest temperatures occur in March while the lowest are recorded in July. The largest daily range of temperatures occurs in February. The wind direction is modified by the prevailing monsoons, and is predominantly northeast to east in October to April, while it is east to southeast the rest of the year. In precision, the major climatic constraints are low and unreliable average rainfalls and high winds. The average monthly temperatures are 16<sup>0</sup>c. Ngong town lies in the agro-climatic zone III i.e irrigation potential zone. Rainfed crops can do well here in this region.

The town lies in the upper Athi catchment drainage area basin whose headwaters are in the Ngong Hills. There are no major rivers in the area albeit Ngong hills contribute to the Mbagathi, Nolchoro, Kandis rivers to the east and Loodo Ariak river to the west. About 25 small streams have their origins high in the hills on both the eastern and western flanks. Almost all the springs and surface water is seasonal.

Springs, surface water and both deep and shallow aquifers of Ngong hills supply thousands of people in the town with their water requirements. Water demand has recently risen with high increase in population resulting in serious shortages. Water rationing in all piped water schemes has then followed.

According to Tana Athi River Development Authority (TARDA) report on Kajiado District in 1986 ground water occurrence in the district is based on hydro-geologic formations. The report indicates the volcanic areas of Ngong and Loitokitok account for 81 boreholes out of the 153 boreholes drilled in the district. Majority of the boreholes are located within Ngong area and indicative yields range from 0 m<sup>3</sup> to 864 m<sup>3</sup> per day; while the total depths vary from 61 m to 292 m. All of these boreholes struck water of good quality, though in varying quantities.

According to the Ministry of Water Development (MOWD). Kajiado District (1994) Ngong division has 15 water supplies. These are maintained by MOWD, National Water Pipeline Corporation

(NW&PC), and the local community, each in charge of four, one, and ten water supplies respectively.

Springs in Ngong Hills and individual wells supplement water supply in the area. Traditionally, Ngong hills has been a source of water. Indeed the very name "ngongo" refers to the eye, spring or source of water. That notwithstanding, water shortage is the norm of most settlements in the town. Majority of the schemes turn the water on every 3 days. To cope with this situation several water projects have been initiated in the area in recent years.

#### **3.1.4 Natural Resource Base**

Ngong area has two forest reserves :Oloolua forest consisting of 667.7 hectares and Ngong hills, 3077 hectares. The afforestation and conservation efforts are not geared for economic extraction, but for environmental amenity. Forest species are mostly a combination of indigenous and exotic. Along the western foot of Ngong hills there are patchy deposits of gypsum crystals. These are in very small amounts to be of economic value. Nonetheless, gypsum for local consumption is exploited on a commercial scale at Isinya in the district. Production commenced in 1968 and the bulk of the material produced is used by Athi River cement factory.

### 3.2 Demographic and Settlement Patterns

Ngong town is the leading urban centre in terms of population size in the district. In 1989 the town had a population of 9,300 compared to 1583 and 4004 in 1969 and 1979 respectively. Rural -urban population influx and increasing settlements for purposes of land speculation around Ngong township explains the high increase in its population. Ngong division has experienced the largest population density estimated at 21 persons per square km in 1988 and projected to grow to 27 persons per sq. km. in 1993. The district's intercensal growth rate is 5.66%. In 1979 there were only 13 persons per sq. km.

An analysis of the population projection sex structure shows that Ngong division has more males (60277) than females (56,766). The dominance of males in urban centres like Ngong, (63%) can be attributed to migrant male labourers from other districts and by few Maasai men who seek employment in such centres.

Table 3.1: Ngong Division Population Projection by Sex 1994-1996

Year	1979	1994	1996
Male	23525	53185	60277
Female	22155	50088	56766
No. of households	7613	16064	19507

Source: Population census. 1979

The pattern of settlement is characterized by concentration around water points and near urban and rural centres. Settlements tend to follow a linear pattern, especially along major roads.

A tarmac road crosses Ngong town from Nairobi to Magadi. This has influenced intense human settlement. Over 80% of the other trading centres within the division are concentrated around the Ngong Hills.

There has been a substantial in-migration in the entire district has resulted in the decline of population proportion of the Maasais. Most of the in migration is assumed to be taking place in major urban centres and in high potential agricultural areas i.e. Namanga, Magadi and Kajiado. Ngong town due to its proximity to Nairobi has attracted a lot of immigrants. According to the 1989 census major ethnic groups other than the Maasai are Kikuyu, Kamba, Luo, Luhya and some few others not statistically significant.

### **3.3 Socio-Economic Profile**

#### **3.3.1 Livestock Sector**

Overall, Kajiado District is 92% range land, inhibiting arable or intensive livestock activities in most parts. Pastoralism related activities have dominated since time immemorial. Ownership claim over all livestock has been a long time belief by the Maasai. Their battle prowess has ensured huge livestock herds historically.



Livestock has been and remains the main source of subsistence and a store of wealth in the area. Products like milk and blood have major dietary roles among the Maasai. Nonetheless, rainfed arable activities are feasible within 8% of the district. Such areas include the Ngong hills slopes, Kilimanjaro foothills, Chyulu hills, Sultan Hamud area and Namanga.

Ngong area has a concentrated dairy development, where breeds or crosses of Ayrshire Friesians, Jersey and guernseys are found. These are supported mainly by zero grazing units, which were started in 1983 and numbered 147 by 1988. Rabbits, pigs and apiculture (beekeeping), a recent introduction in the district, are also concentrated in Ngong area. Due to unfavourable marketing conditions in the pig industry the population has declined.

Table 3.2 indicates areas under livestock production in the division. Boundaries between group ranches date back to formation and registration time in mid 1960s under Kenya livestock development programme (KLDP) funded by the World Bank. The outlined areas refer to the local/natural pasture. This is very common in Ngong division where the dairy herd is concentrated. Cultivation zones complement the livestock sector after harvesting i.e. maize stalks. Other fodder production is through irrigation. The main livestock reared in the area are cattle, sheep goats, and donkeys. Meat, milk, hides/skins are the major livestock products.

Table 3.2: Distribution of ranches in Ngong division

Number of group ranches	Total Ha.	Membership	Individual ranches	Total Ha.
5	129,314	1,815	78	-

Source: District Livestock Production Office, Kajiado, 1992

### 3.3.2 Agricultural Sector

The traditional background of the Maasai has been pastoralism. In spite of this tracts of potential arable land existed, but were used for dry season grazing. Ngong area falls within this arable land. Cultivation date back to the 1920s, when the Kikuyu were displaced and confined to marginal areas of Ndeiya bordering Ngong zone. They infiltrated and influenced sedentary and agricultural practices in the area. Furthermore intermarriages served to accelerate this process.

Agricultural production range from subsistence to commercial production. However, commercial production is most prevalent in Ngong areas, since farmers are oriented towards the market. Extensive use of agricultural inputs (chemical fertilizers, certified seeds and pesticides) is prevalent. In some areas farm machinery like tractors and ploughs are used.

Land parcels in Ngong area are small and most of the owners practice mixed farming . It is worthwhile to note that

a substantial proportion of land users are 'tenants', having leased from livestock oriented owners. This has discouraged farm developments or long term investments. A significant proportion of the dairy breeds are reared in these farms. Due to lack of grazing area, fodder especially nappier grass, is cultivated. In these farms maize is mainly grown for production of stover as animal feeds, due to the high interest in dairying because of the proximity to Nairobi's milk market.

Food and root crops are mainly cultivated under rained zones and to a lesser extent in the irrigation areas. Maize and beans are the most important and are usually interplanted. Root crops, particularly, irish potatoes, are grown significantly in the area, mainly for subsistence. In Ngong area, horticulture is rainfed or irrigated from boreholes or piped water. Horticultural crops grown include onions, tomatoes, karella, chilies and okra. These are grown on small scale, mainly for domestic and export markets. Cultivation is mainly a domain of immigrant farmers and a few prominent community members. Initial cultivation was on subsistence crops, although today market considerations prevail.

The main food crops in the division are maize, beans and irish potatoes. While cash crops include coffee and horticulture. Small farm area in the division is about 300 sq km. The region has a high potential for root crops, particularly irish potatoes, sweet potatoes and cassava.

However, it is only the irish potatoes which are grown on a significant scale .The other two are grown on a very small scale. These crops are grown mainly for domestic consumption. Horticultural crops are grown along river valleys in the division. The yields realized by farmers are generally low.

Agricultural production has considerably increased over the years especially in the high and medium potential areas of Ngong, Loitokitok and Ngurumani. Between 1983-87 area under maize and beans cultivation increased by 40%, covering slightly over 1% of the total land area in the district. Irish potatoes has shown a growth of 80% while horticultural production grew by 53% in the last development period.

### **3.3.3 Mining and Quarrying**

There are small scattered mining and quarrying activities in Ngong area. Its produce are mainly building stones for the building industry in Nairobi.

### **3.3.4 Forestry**

Forest species consist of a combination of indigenous and exotic trees. Afforestation and conservation efforts are not geared towards economic extraction but largely for environmental conservation purposes.

### **3.3.5 Commerce, Trade, Manufacturing and other Services**

There has been an increase in small commercial and jua kali activities in the market centres. Ngong town provides common trading activities. However, the informal sector activities are upcoming. The major trades include tailoring, carpentry shops, motor vehicle garages, welding, posho milling, hairdressing and salons and selling agricultural produce. There are four industries situated in Ngong area (Associated Alloyshid, Halal Meat Company, Kimbe Foods and Aromatic Foods, Creative Designs Company, Deams and Mecolite). Ngong town has an operational jua kali cooperative society with about 28 artisans. There are also two flour grinding mills and a slaughter house in the area. Most meat produced are transported to Nairobi market as carcasses. Active trade in hides and skins is prevalent. Most of these are also transported to Nairobi for processing.

### **3.3.6 Employment**

The number of those in wage employment, self employed and unpaid family workers has increased. Primary production dominates the employment sector. Disguised unemployment in agriculture and livestock is manifested. Low returns characterise employment opportunities in livestock sector. Hiring of labour occurs only during peak seasons in the small farm sector. About half of the labour force is invariably

migrant labour. Most of the farmers who are immigrants lease farms from the Maasai for a duration ranging from one year to five years. In small urban centres within Ngong area, there is open unemployment.

### 3.4 Social and Economic Infrastructure

#### 3.4.1 Health Facilities

In Gichagi health facilities are completely absent. Residents depend on the government health centre about a km away in Ngong town. Frequent shortages of staff and drugs characterizes this facility. A few clinics are scattered in town, but these are very costly for the urban poor to afford. Table 3.4 gives a summary of the distribution of health facilities in the entire division. Also refer to map 2 for the distribution these facilities in the town.

Table 3.3: Distribution of Health Facilities: Ngong Division

Sponsorship	Hospital	Health Centre	Dispensary	Clinics
GOK	0	1	7	-
NON GOK	0	3	2	2
TOTAL	0	4	9	2

Source: Inventory of Infrastructure, Kajiado District ,1992

#### 3.4.2 Education Facilities

A number of pre-primary schools exist in the area. Ngong division has a total of 75 pre-primary schools with about 115

teachers. The enrolment is about 34,000 pupils. Many of these schools are privately owned and well utilized. Primary schools are over utilized in Ngong township. There are 45 primary schools in Ngong division with a total of 457 trained and 88 untrained teachers. The total enrolment is 13,876. Out of these 6,467 are females and 13,876 boys.

Secondary schools enrolment is comparatively low. In 1987 Ngong division had a total of 8 secondary schools. By 1992 the number had risen to 11 i.e. 37% increase was realized. Majority of the school leavers do not proceed with secondary school education due to financial problems and marriage reasons (girls are married off at a tender age).

On the contrary, Gichagi settlement has no single school. Just like in the case of health facilities, the residents rely on schools based in Ngong town. This may be quite cumbersome especially for pre-primary children and parents who have to ensure the safety of their children.

### 3.4.3 **Roads**

Generally, major roads in the district tend to follow the north-south direction connecting to Nairobi-Mombasa road. Considering the economic activities in the area one can say the current road network is adequate in terms of its extent. Nonetheless, there is much scope for improvement through upgrading and maintenance. The Ngong-Nairobi road, Ngong-Kiserian road and Magadi road are tarmacked. The Ngong-Nairobi

road is relatively busy, particularly in the morning and evening hours. The road width and alignment are satisfactory given the present and anticipated levels of use. Drainage structures (culverts, channels and ditches) are often blocked, giving rise to road over flows and subsequent mining surface damage. Side hill cuts need stabilization in several locations if future high maintenance costs are to be avoided. The road linking Ngong-Gichagi with Ngong town has been improved and is in good condition for present use. In spite of this, black cotton soils prevalent in most places hamper the construction and motorability of roads. Table 3.6 illustrates the road state in the division.

That not withstanding, Gichagi settlement is well connected to Ngong town by two earth roads. The roads were constructed recently by the central government. In terms access roads within the settlement there is a lot of scope for improvement. The haphazard lay out of housing structures in the settlement has made accessibility a problem. Although a plan was prepared by the Ol Kejuado county council in 1991, implementation has not been effected. During rainy seasons, access roads remain muddy and slippery thus impassable to both motorists and pedestrians, see plate 1).



Plate 1: Access road in the settlement. (Note the muddy state of the road)



Source: Field Survey, 1996

Table 3.4: Road Classification in the Division

Unclassified roads in km	Classified roads in km					
	A	B	C	D	G	TOTAL
53	-	64.9	57	103.1	-	278.0

Source: Ministry of water development. Kajiado district

#### **3.4.4 Electricity**

Electricity is a crucial ingredient for the development process. Ngong town is served with electricity. However, the impact in these areas is very minimal, since only limited areas have access to this facility. Majority of the low-income settlements are lacking electricity and Gichagi is among them.

#### **3.4.5 Banks and Credit Facilities**

Ngong town is served by one Barclays Bank, established in 1990, and offers a variety of services. Agricultural Finance Corporation in the town complements the bank through credit services. There is a departmental post office with five automatic phone types affiliated to Nairobi.

#### **3.5 Women Groups**

In recent years women have organized themselves in groups and engaged in various development activities. Some groups are involved in income generating activities while others are welfare associations. Women are usually organized and have a lot of potential in terms of development, which has not yet been fully developed. According to Kajiado district Atlas 1990, Ngong division had a total of 113 women groups, with an average membership of 41.

Women group activities include, agriculture, livestock, home improvement, handicraft, business, land buying, industrial production and welfare in Ngong area. Note the

shift of women groups from traditionally accepted activities(e.g. handicraft, welfare) towards productive and income-generating activities (agriculture, livestock, business). Home improvement includes activities such as pit-latrines and water-jar construction, building of improved housing e.t.c. In this context women play an important role as agents of development.

In spite of this, women groups have affected their membership and effectiveness. The problems include : political interference leading to subdivision of groups, lack of proper management, illiteracy, communication problems due to distances among members, lack of staff for supervision and most important lack of markets for the products produced by the groups. Some groups have been involved in production of bead work and Maasai artifacts. Their markets to date have mostly been tourists in Nairobi and Mombasa.

### **3.6 Self - Help Movement**

The harambee spirit is spreading rapidly in Kenya, and Ngong has not been left behind. Schools, churches and women groups have benefited from local community contribution. However, the community has not yet been fully mobilized to participate in all sectors of development. Thus there is room for improvement.

A number of constraints face the self-help movement in Ngong. The location of projects is sometimes influenced by

politics. Misuse of funds and delays in implementation of projects demoralize the local people and make them apathetic to future contributions. A shortage of community development assistants (CAD's) at locational level to monitor and organize the initiations and completion of the projects has negative implications on the harambee spirit in the area.

### **3.7 Church**

The church institution plays an important role in the development of the town and region at large. The church has established several schools health facilities and other small income generating projects in the area. A number of churches exist in the area among them are Roman catholic mission. Church missionary society and African Inland mission. Furthermore, a number of denominations have sprung up in the district albeit, most of them are concentrated in Ngong area.

The resident of Gichagi are served by varied churches within the locality. Nontheless no church is based in the settlement except for African Inland Church who are on the immediate neighbouring plot.

### **3.8 Informal Settlements**

Like any other town in the country informal settlements persist to supplement formal housing in Ngong. Mathare, Bulbul, Kibiko and Gichagi are among the well known informal settlements in Ngong. Out of all these Gichagi commonly known

as "Gichagi cia Gatwiku" is the largest, oldest and mother of all informal settlements in town.

### **3.9 Historical Context of Ngong Gichagi Settlement**

The settlement can be traced back into the colonial era. The site was selected by the then Provincial Commissioner (PC) of Southern province<sup>1</sup> for his labourers. The PC who lived in Ngong, a stone throw away from this settlement found it convenient for his labourers to operate from close proximity. It was also an official policy for employers to provide accommodation for their labourers. At this time there were only a few huts which provided, the foundation for the present settlement.

In 1949 the colonial government declared Maasai land a closed district. Entry in this region was only permitted for pass holders. At the time of emergency (1952), the natives were ordered to live in groups for easier policing against Mau Mau activities. As a result, majority of the Africans living around Ngong area were collected and settled in Ngong-Gichagi settlement. Here they were guarded by a home guard, Koigi Muguchia. Thus the population in the settlement increased and remained here until independence, when the ban on Maasai land was lifted. It is worth noting the Kikuyu people were co-

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<sup>1</sup> Southern Province consisted of Narok, Kajiado and Machakos districts

existing with the Maasai as early as pre-independence time. Most of them found themselves in Maasai land through trade which led to

intermarriages. Land problems in Kikuyu land also sent many Kikuyus to seek for land in Ngong area, which had agricultural potential. The Maasai extended their hospitality by accommodating the Kikuyu and allowed them to settle in their land as their affine. Bride price payment to the Kikuyu was often in the form of land. Permission to cultivate was sometimes given by individual Maasais. The Kikuyu also provided cheap labour to the European settlers in the area as farm labourers.

At independence, Maasai land was open to all; movement in and out of the area was opened. This actually marked another cycle of settlement in Ngong-Gichagi. People from all parts of Kenya moved into the settlement. This was aggravated by the fact that no land adjudication existed. The only form of control was verbal permission to build from the chief. At this time the settlement was under the custody of chief Gatweku Gwirobu. Indeed this settlement is locally referred to as "Gichagi cia Gatweku" taking after his name.

In 1957 when land demarcation commenced in the area, the land was distributed to the Maasai and many of the Kikuyu were pushed out. However, with demarcation and title deeds the right to sell land culminated into many Maasais selling land to outsiders. Consequently the eastern side of Ngong hills is

predominantly Kikuyu, albeit with many Maasai. Gichagi settlement was demarcated trust land but squatting continued. However, in 1968 the late President Kenyatta resettled some of Gichagi squatters in Kinangop. In 1976 about 55 more squatters were resettled in Kiambogo. A few of the original settlers were left behind. Some leased land among the Maasai, but at the expiry of the lease went back to Gichagi. No eviction has been threatened from the authorities concerned in the history of the settlement. Indeed if the concerned authorities had an interest in ending the settlement, it would have ended it at the time when some squatters were resettled in 1976.

The survival of this settlement can be associated to political will. It is alleged that the political big wigs in the area garner a lot of support from the inhabitants of the settlement. Despite its economically favourable/attractive site, the poor have been allowed occupation. In 1991 the 46 acre land parcel was sub-divided to the residents. A committee of elders was convened to identify who deserves plot allocation, based on the length of stay in the settlement. Priority was given to families who had lived in the settlement for more than 10 years. A total of 540 plots was allocated. The average residential plot is about 0.020 acres while the business plot is 0.034 acres. So far allotment letters have been provided on a long lease basis. However, a myriad of problems surround the plot allocation criteria. In some cases there was double allocation but the committee of

elders is in the process of ironing out the anomalies. (See plate 2)

Plate 2: General out look of Gichagi settlement



Source: Field survey. 1996



# CHAPTER FOUR

## SOCIO-ECONOMIC PROFILE OF RESIDENTS

### 4.1 Introduction

This chapter gives an evaluation of the socio-economic characteristics of the residents, as a means of reflecting on the housing circumstances of households. This was necessary to provide a logical basis for formulating pragmatic proposals, to raise the existing housing conditions to acceptable standards.

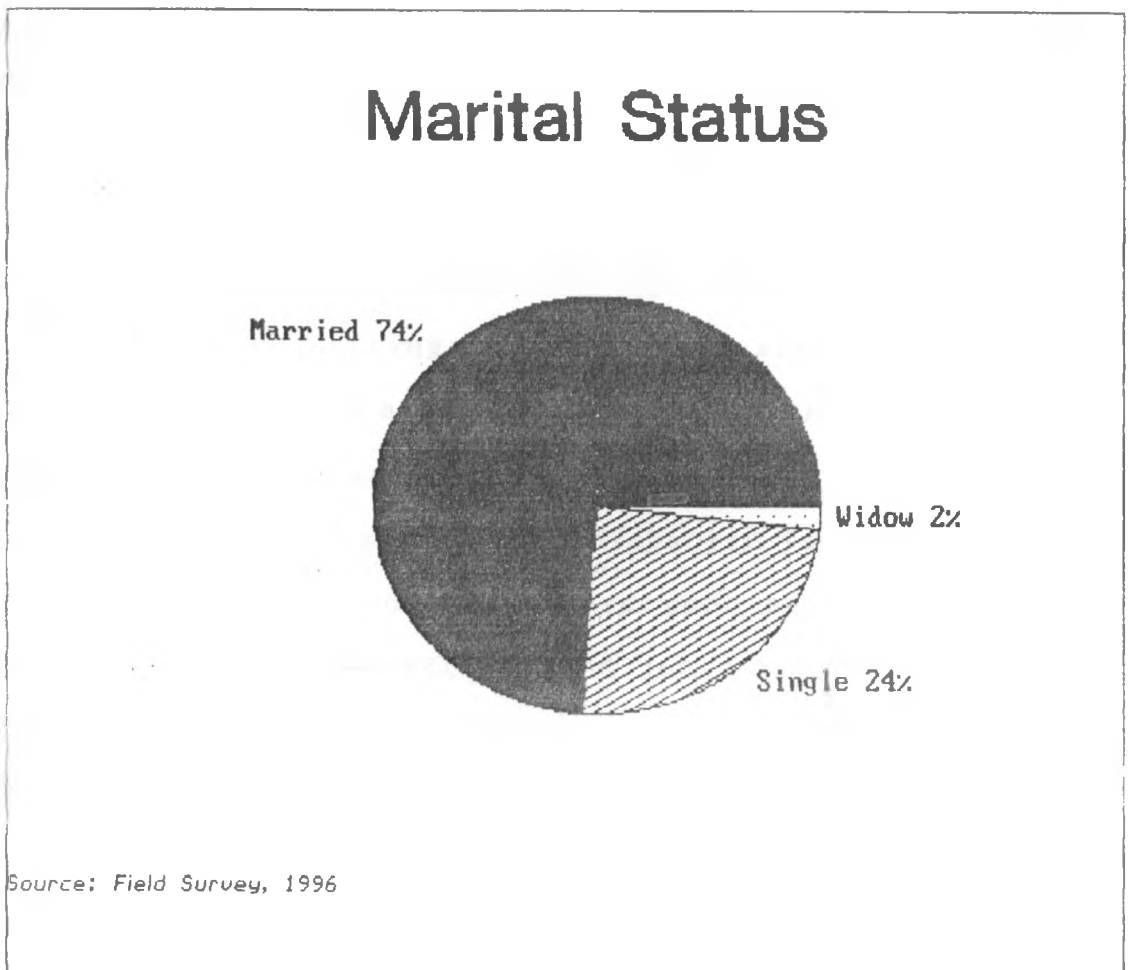
A household questionnaire was administered to a sample of fifty four households which comprised of both tenants and owner occupiers. Secondary literature also provided a considerable data to the study. Discussions and interviews of relevant persons were a main source of data. Observation provided supplementary information and indeed acted as check/control of primary data.

### 4.2 Sex and Marital Status of Household Heads

Household characteristics in Gichagi settlement seem to be similar to those of other informal settlements in Kenya. The study revealed that most of the households are headed by men who accounted for 70% of the respondents. Female household heads stood at 30%. In addition, most (76%) household heads were married while only 24% were single. These

findings are similar to Syagga and Malombe (1995) findings in Kisumu and Nakuru informal settlements. In Kwa Ronda, Kaptemba and Mwariki settlements most households were found to be headed by males, majority of whom were married.

Figure 2: Marital Status of Household Heads



This is also the case in most of Nairobi informal settlements as reiterated by the Metropolitan Household Survey

of 1989 where by, 83% of the households in low income areas were found to be headed by males. On the contrary only about 17% of the households were female headed.

Like any other urban settlement in developing world, the male population seems to be dominant. This scenario could be understood in the context of the African family where men are the household heads and consequently bread winners. As a result more men migrate to urban areas in search of jobs. Women on the other hand are left in rural areas to manage the homesteads.

The relatively high proportion of female headed households in Gichagi could be explained in terms of its relatively rural setting as opposed to similar settlements mainly based in urban areas like Nairobi. In majority of cases women tend to operate in rural areas while men seek for employment in urban areas. This disparity is important given that most of these households are poor and lack tradeable skills to enable them access good jobs. In addition, female headed households almost always earn less than their male counter parts because males stand better chances of getting employment as unskilled labourers, construction workers, watchmen etc. Women are also constrained by the fact that they have to take care of young children and therefore, confined to income generating activities that can be carried out close to the home, usually vegetable selling and petty commodity trade.

**Table 4.1: Sex of Household Heads**

SEX	FREQUENCY	PERCENT
Male	38	70.4
female	16	29.6
Total	54	100.0

Source: Field Survey, 1996

### **4.3 Education of Household Heads**

Formal education, in principle, holds out the promise of equal opportunity and social equality. Figure 2 shows the levels of formal education of household heads in the settlement of study. Majority of the household heads, (61%), have had primary education while 17% acquired secondary education. About 22% have no formal education. This presents difficulties in employment opportunities open to them, particularly, in the present competitive yet education biased job market. Even informal employment requires some basic education for proper management. These findings depart from other studies carried out in informal settlements. For example, Syagga et al (1995) established that majority of the household heads in Manyatta and Nyalenda settlements in Kisumu had attained secondary education. The same situation was observed in Nakuru informal settlements, namely, Mwariki, Kwa Ronda and Kaptemba. This could be attributed to the fact that majority of the residents in these settlements are engaged in formal employment within the industrial sector of these towns.

However, the opposite is true for Gichagi.

The Metropolitan Household Survey in 1989, also underscores that slums/unplanned settlements have fewer residents who have completed primary school education. It was however, observed in the same study that in Kawangware, Kibera, Mukuru and Korogocho about 23% to 30% of the residents had secondary education. But in Gichagi only 17% of the respondents had secondary education.

Reasons for low levels of education are varied and range from lack fees to cultural traditions especially in relation to female education.

Overall, however, most low income areas lack education facilities. This is reflected in considerably lower levels of education, with only 14% of the population finishing high school and 33% not going beyond primary school. Only 2% have post secondary education (Kenya consumer Organization, 1992)

#### 4.4 Household Composition

The average household size in the settlement was 5. A good number of households consist of 3-5 persons i.e. 48.1%. while 34.6%, are composed of 6-9 persons (see figure 4). This is a relatively large size given the average room size of 7m<sup>3</sup> and the meagre earnings of the household heads. Household members ranged from one to 14 in a single household. This concurs with findings from Nyalenda and Manyatta settlements where an average household size was found as five persons

among tenants and 5.6 among owners. In the same households members ranged from one to thirteen among tenants and one to twelve among owners (Syagga and Malombe 1995). On the contrary, the Metropolitan Household Survey (1989) shows that the average household size in Nairobi's informal settlements is 3.59 persons, with a range of 2 to 4 persons per household. The difference in household composition could be explained in terms of the tendency of households in peri-urban areas to give birth to many children mainly because they are more tied to cultural beliefs as compared to their counterparts in urban areas. In most African communities, large families are a symbol of wealth and more so a blessing from God, thus most people favour the idea of large families. Large families in informal settlements may be attributed to their reluctance to practice artificial family planning as compared to their contemporaries in middle and high income residential areas, particularly, in Nairobi and other large towns.

Figure 3: Education of Household Heads

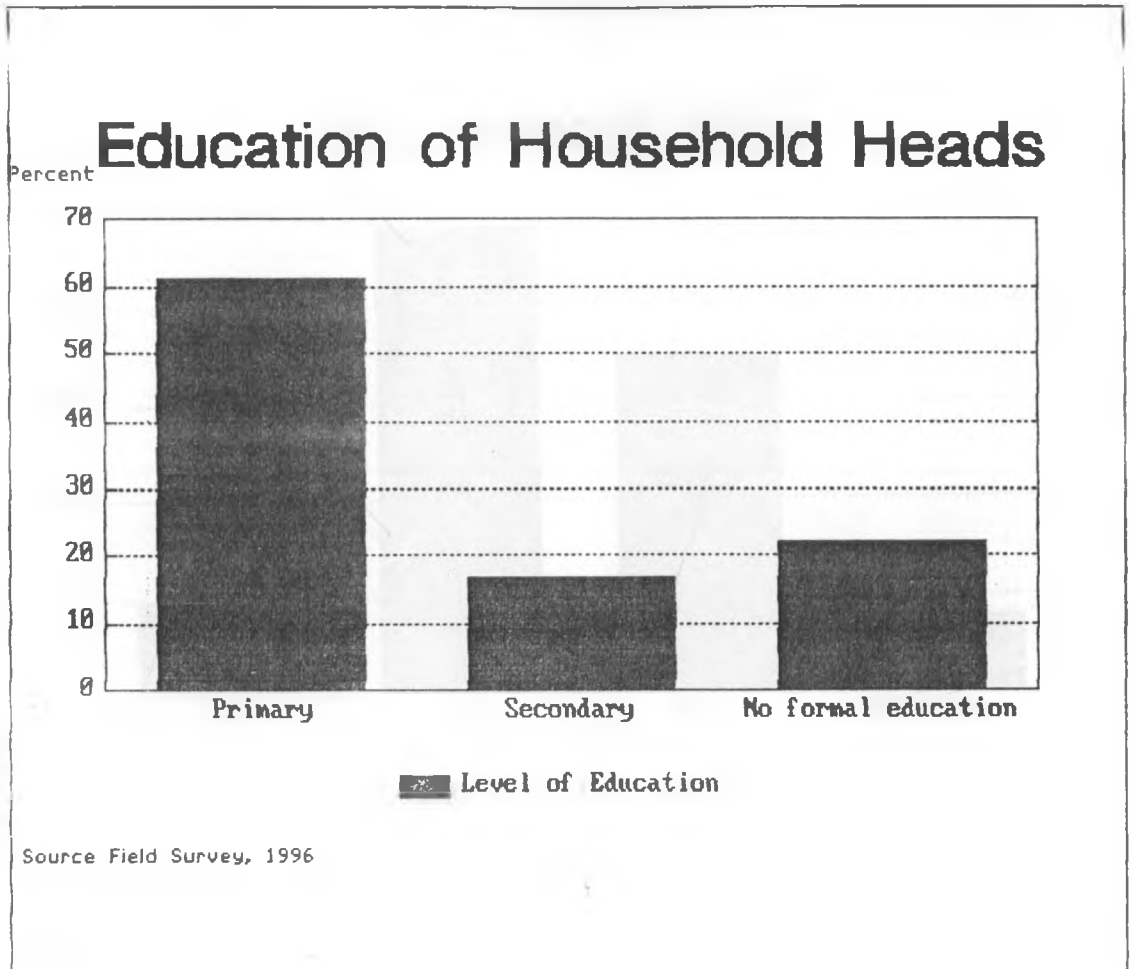


Figure 4: Composition of Households in Gichagi

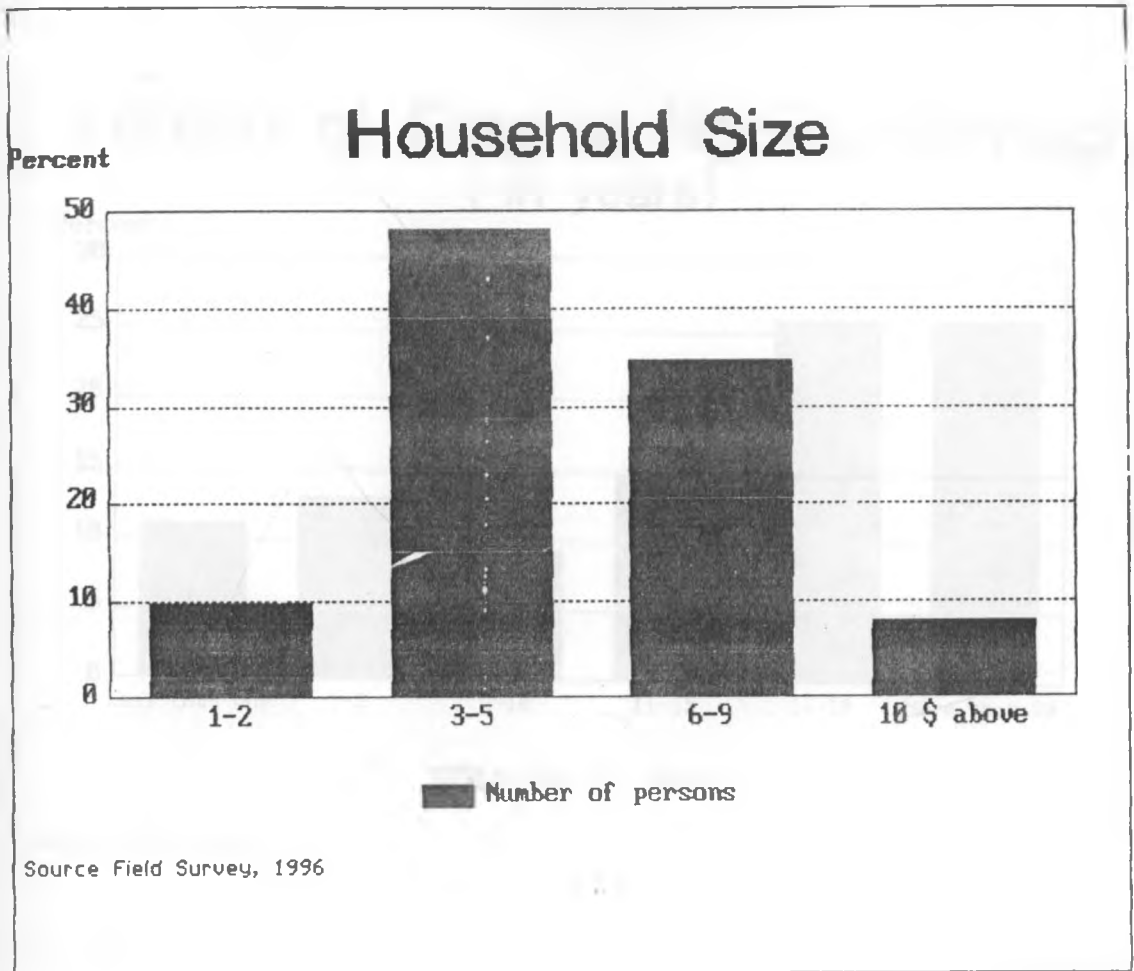
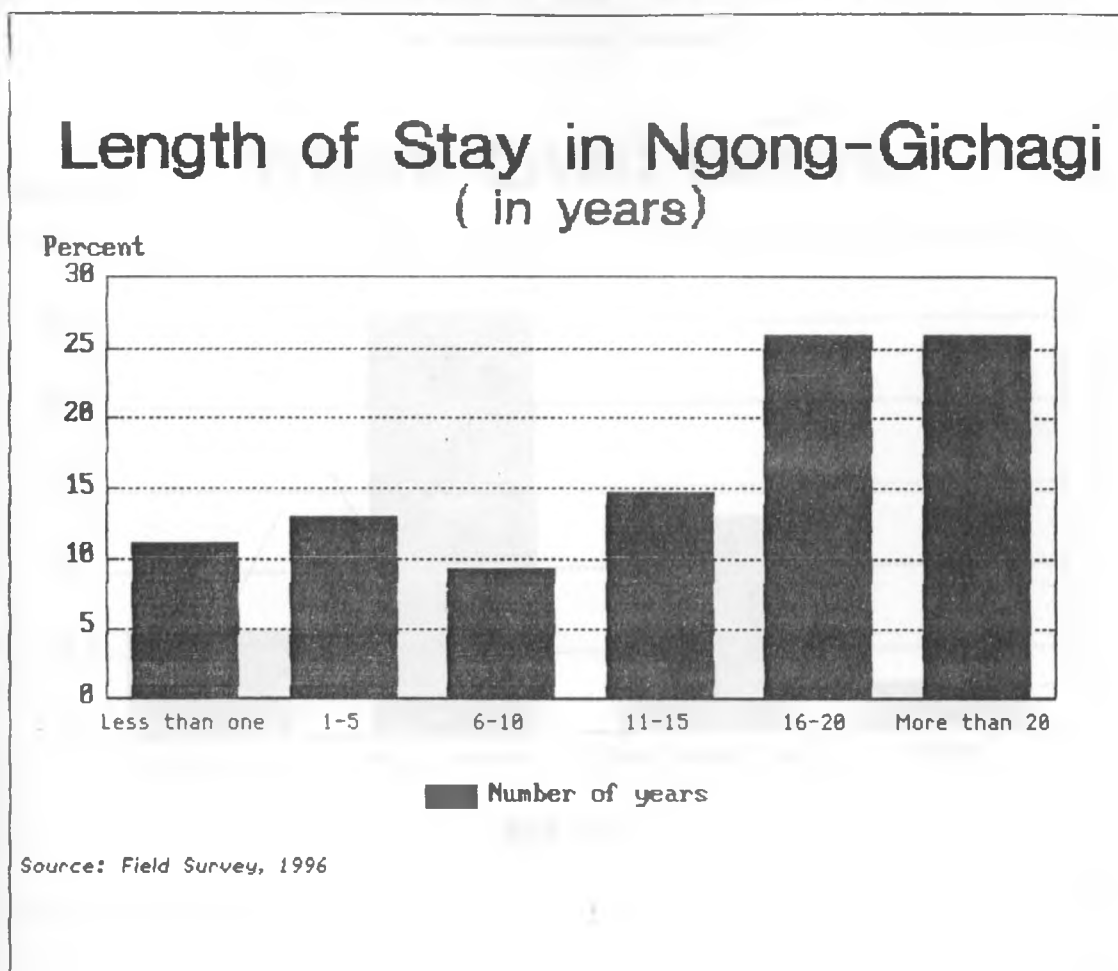


Figure 5 indicates that, majority of the residents have lived in the settlement between 11-20 years, a total of 51.8%. This points to the age of the settlement and the stability of the residents in relation to residential mobility. This may also imply that these are settled families, who would be keen to better their housing environment and habitat in general. A few of the residents, 11.1% have lived in Gichagi for less than a year.

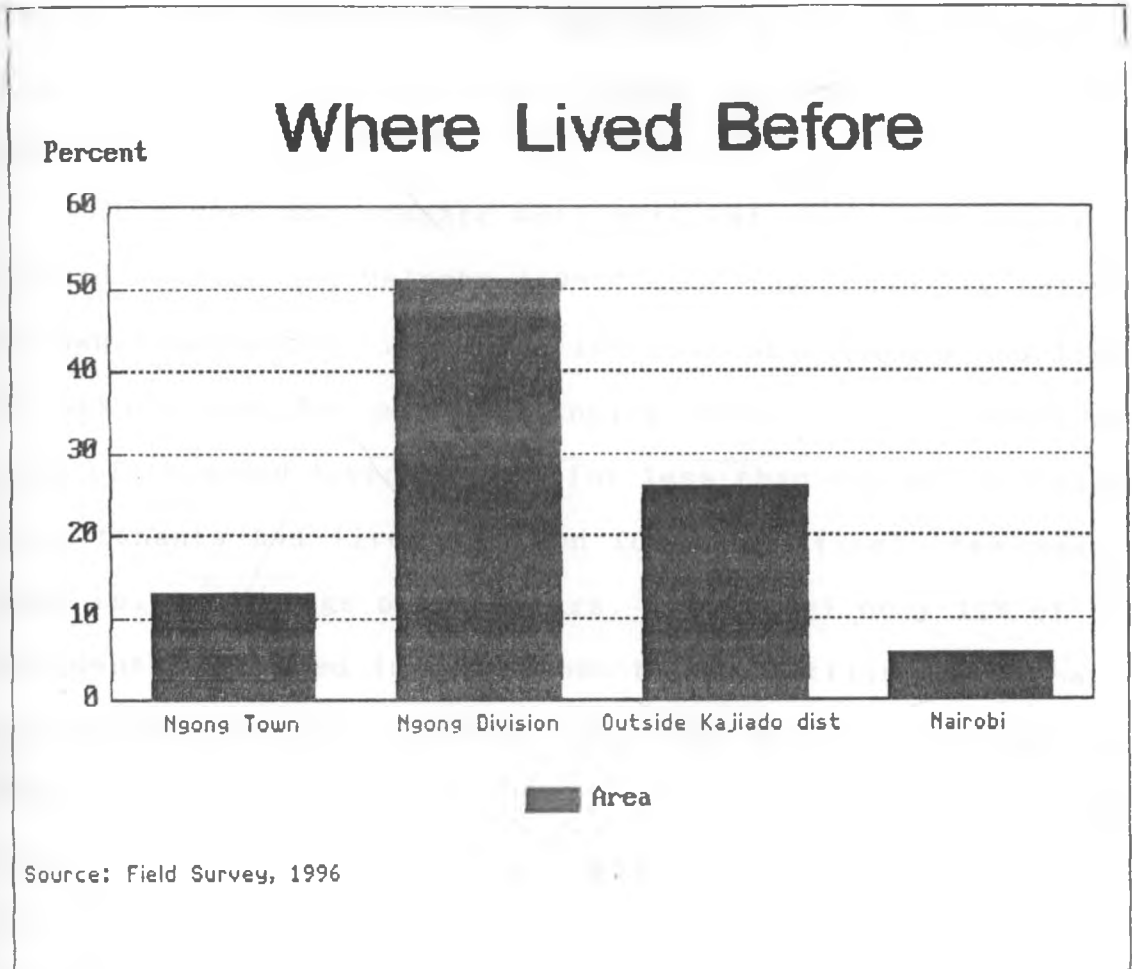


Figure 5: Respondents Length of Stay in Gichagi



As figure 6 shows 51% of the respondents lived elsewhere in Ngong division before settling in Gichagi. This points to the linkage the respondents had with the settlement hinterland. A significant percentage, (25.9%) of the respondents had lived outside Kajiado district. The study revealed that a small percentage (5.6%) of the residents had lived in Nairobi before moving to Gichagi settlement. This does not seem to augur well with the proposition that Ngong is a dormitory town of Nairobi. However, this could be misleading in the sense that most

Figure 6: Respondents Former Residences



Nairobians are relatively well to do and put up their own housing whenever they choose to settle on the outskirts of Nairobi. In cases where they rent, they select formal housing that is commensurate with their status and affords them comfort which they treasure. In addition, such people must be economically stable to afford the transport costs to commute from Ngong to Nairobi on a daily basis. On that basis Nairobians are not likely to reside in unplanned settlements like Gichagi. Nonetheless, a study covering the whole town may

reveal otherwise, to support the contention that Ngong is functionally part of Nairobi. Nairobians are mainly settled in high cost housing in Oloolua, Scheme 305 and parts of Bulbul settlements.

This does not compare well with informal settlements in Nakuru. Syagga and Malombe (1995) show that majority (51.9%) of owner-occupiers in Nakuru informal settlements had lived in Nakuru town for periods ranging from 1 to 15 years and none of them had lived in town for less than a year. Although, most tenants had lived in town for a relatively few years, that is, an average of 5.8 years. In Gichagi only 12% of the residents had lived in Ngong town before settling in Gichagi. An explanation could be that Ngong town has a poor industrial base which usually form a major source employment for the urban poor. This is manifested in the high number of residents (51%) who lived in the towns hinterland before settling in Gichagi. These areas include Ongata Rongai, Kibiko, Kiserian and Upper Matasia which have active markets capable of attracting labour, especially informal labour.

Table 4.2: Reasons to Migrate to Gichagi

Reason	Frequency	Percent
Affordable housing	5	9.3
Business prospects	4	7.4
Land/plot strategy	27	50.0
Proximity to work	4	7.4
Eviction *	4	7.4
others	10	18.5
Total	54	100.0

Source: Field Survey, 1996

People move for many reasons, ranging from evictions to the desire to acquire their own house or building site. Reasons for residential mobility are in themselves consequences of the situations faced by city/town dwellers. More than five reasons were recorded amongst tenants and owner occupiers. Most were centred around the notion of need, while strategies to gain employment or access to rented accommodation market are less frequently cited. However, since some reasons overlap in either their basis or effects, they were brought together under a single heading. This re-arrangement produces six major reasons for mobility as shown in Table 4.2.

The reason ranking highest as indicated in Table 4.3 is land/plot strategy. The land/plot strategy, include the wish for independence and to gain property title. Those who changed their residence for this reason are self seekers who wish to

follow their own strategies for social integration. About 50% of the population settled in Gichagi with a motive of acquiring a plot. Plot ownership in urban areas is considered a major investment in Kenya today, due to its high economic returns. At the time of the study, a 0.02 acre plot in Gichagi sold at k.shs 200,000. Given their meagre earnings most plot owners are tempted to sell plots off to satisfy their other immediate needs, mainly subsistence. A discussion with village elders showed that several plots have exchanged hands since plot allocation in 1991.

Moreover, 18% of the respondents moved to Gichagi due to other reasons. These include family circumstances, economic reasons, marriage (especially for girls) and staying with relatives. Proximity to work only accounted for 7.4% of the reasons for moving to the settlement. This is a major deviation from causes of residential mobility especially in inner city slums, where proximity to employment opportunities is a major factor in the choice to live in informal housing. Eviction is used in this case to denote expiry of land lease that result in repossession of land by the owners, leading to landlessness for families involved. Families who found themselves in such circumstances resorted to shelter in Gichagi, which was the only accessible place for them at that time of great need.

The main reasons for moving in Gichagi settlement slightly vary with those of other similar settlements in

Kenya. For example, Syagga and Malombe (1995) show that the main reason for moving to informal settlements in Nakuru and Kisumu was cheap rent for rooms. Another major reason was to search for employment. As already indicated above Ngong town has poor prospects for employment particularly, for the urban poor who lack tradable skills. Ngong town's close proximity to Nairobi may explain its inadequate development of industrial sector. Most of the goods in the town are manufactured in Nairobi. In this context, Nairobi acts as major pool for employment than Ngong town. Consequently, most non-skilled persons in Ngong town seek employment in Nairobi which has better terms of payment and also reside in Nairobi to save on fare and other implicit commuting costs.

Table 4.3: Length of Stay Intended in Gichagi

Period	Frequency	Percent
For life	27	50.0
For long	18	33.3
For a short while	6	11.1
Does not know	3	5.6
Total	54	100.0

Source: Field Survey, 1996

The study revealed that 50% of the population intend to live in the settlement for as long as they live. This may mean that they have no other home apart from the slum. Such

a revelation is important in terms of infrastructural provision/need in the settlement. The Kajiado county council may need to reconsider their infrastructural policy to save the lives of this poor people. Comparatively, only 11.1% of the residents plan to move out of the settlement. These are likely to be those squatting in the settlement and employed in the formal sector in Nairobi and Ngong.

Most residents expressed lack of satisfaction with their living environment. Over half (55.6%) of the residents said they were not happy with their living conditions while 42.4% seemed to be happy. That notwithstanding, only a few of them indicated they would move out of the settlement. Majority of them (50%), said they would live in the settlement until death do them part. For those who said they would move out they indicated they would do so to get access to large pieces of land where they would practise farming.

Informal discussions with the residents revealed that majority of the people had no land in rural areas. Having settled in the settlement during colonial times, majority of them viewed the settlement as the only place they can call home. It was more evidently expressed in children who do not know any other home apart from the settlement.

#### **4.5 Employment and Income**

Figure 7 shows the main source of income of household heads in the settlement. About 40% of the household heads are

farm labourers, 30% are engaged in businesses/trades which are predominantly informal. Informal retailing, otherwise referred to as hawking, forms an integral part of incomes in the settlement. Most of the participants trade in perishable goods i.e vegetables and fruits as well as sweets, cigarettes, charcoal, cooked fish, meat and soft drinks. Hawking is largely a response to harsh urban socio-economic environment. Many of the participants, it was observed have no other sources of employment, formal or informal. Hawking therefore plays a central economic role in a significant number of households. This is also true for majority of the households in Nairobi's informal settlements as reiterated by Mitullah, 1990.

Additionally, 10% of the households are engaged in wage employment in the formal sector. The poor educational background of the respondents explain their low participation in the formal employment. The small percentage involved in wage employment mainly fall in the lower cadres of their professions (clerks, messengers, cleaners, typists). About 20% of the household heads had no source of income. These were mainly women who depend on hand outs from male friends and sometimes on their children's labour. Over half (59.2%) of the respondents were employed on temporary terms. Only 14.8% were employed on permanent terms.



#### 4.6 Income

The average monthly income of household heads is k.shs 2625. Income levels range from k.shs 200-9000 per month. This average hides quite a lot since income are very irregular given the casual mode of employment of majority of the respondents. Furthermore, most people exaggerate their income to conceal their earnings to officials.

The employment and income levels of households in Gichagi is parallel to other informal settlements in the country. A review of income data contained in various existing surveys in Nairobi observes that majority of households have a monthly income of less than K.shs 2000 per month (Kibua, 1990; GOK/UNICEF, 1990; Matrix Development Consultants, 1993). Table 4.5 shows the main places of work for the household heads.

Table 4.4: Respondents Work Places

Place of work	Percent
Ngong -Gichagi	20.0
Ngong town	19.9
Ngong urban fringe	50.0
Nairobi	11.1
Total	100.0

Source: Field Survey, 1996

About half of the respondents work in the urban fringe of Ngong town as indicated in Table 4.5. There are several farmlands around the town whereby food crops like potatoes,

maize and vegetables are grown. The hinterland provides significant employment to these poor households. On the contrary, only 11.1% of the residents work in Nairobi. As already mentioned in the text, most Nairobians who reside in Ngong town choose to live in posh housing as opposed to slums and squatter settlements like Gichagi. A survey of the entire town may show more Nairobians living in the area, particularly, in the neighbourhoods of Ololua, scheme 305 and some parts of Bulbul.

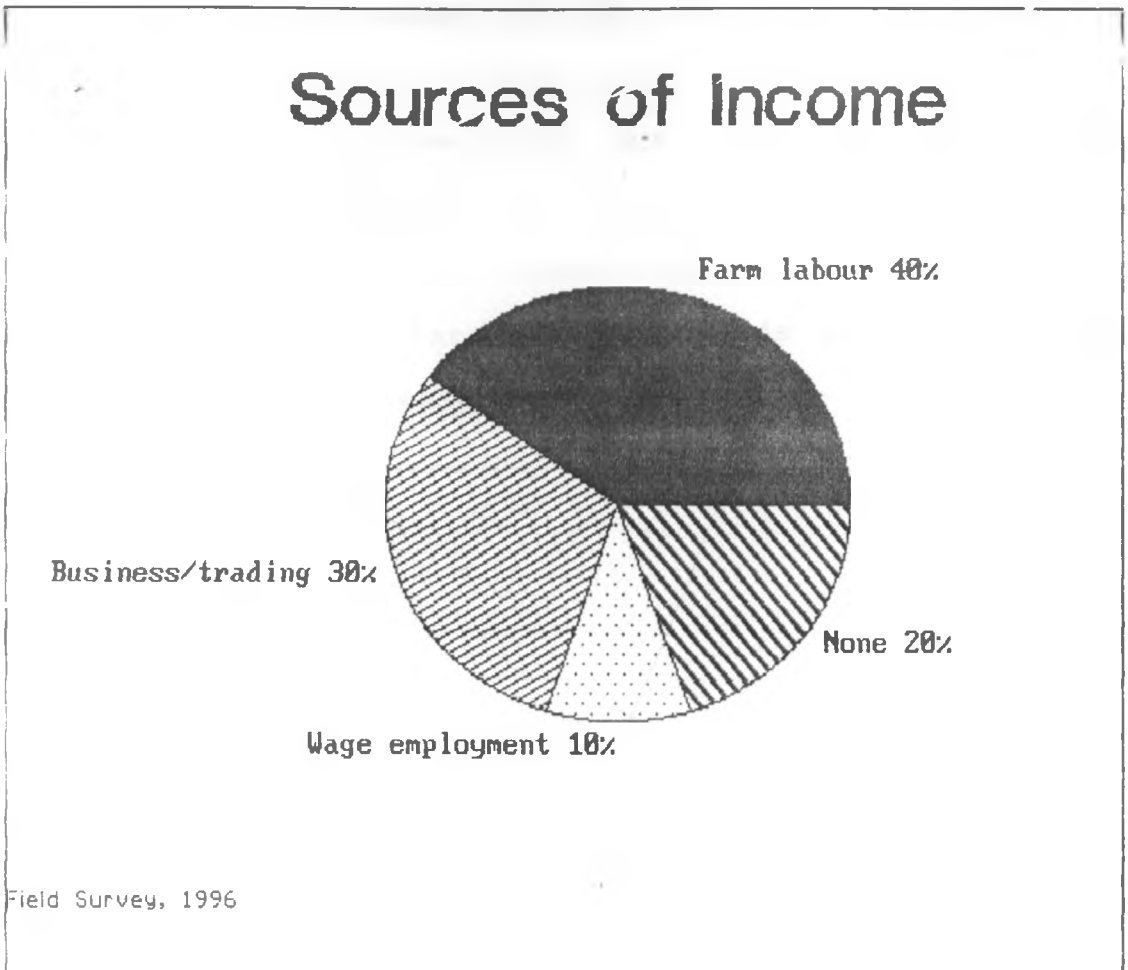
#### 4.7 Self- Help and Women's Groups

Information on general self help community based groups in Gichagi was not readily available. Nonetheless, it is clear that financial difficulties and other problems of poverty have prompted the community, particularly women, to organize themselves on a self help basis to improve their standard of living. The groups can be categorized as follows:

- welfare groups
- religious groups
- savings and housing improvement groups

The basic aim of these women's groups is to uplift women's standard of living and that of their families. To achieve this they engage in income -generating activities, ranging from petty commodity trading to activities such as buying of household equipment/utensils and money collections.

Figure 7: Household Heads Major Sources of Income



#### 4.8 Summary

Inadequate and elusive incomes of majority of the respondents explain the poor housing conditions in the settlement. Given a mean average income of k.shs 2,625 adequate shelter is almost impossible for most households without assistance from elsewhere. In addition, majority of the respondent were involved in petty informal businesses which are on and off, depending on the availability of stock. Such business is highly characterised by low returns and yet

for majority the poor its the main source of income. This implies that a good number of the population is engaged in hand to mouth business which leaves little or nothing to invest in housing. In precision, poverty is the main factor militating gainst decent or acceptable housing in the settlement. Low and elusive incomes combined with tie informal nature of employment for most households present a hedge against credit worthiness/ accessibility.

## CHAPTER FIVE

### HOUSING SITUATION IN NGONG- GICHAGI SETTLEMENT

#### 5.1 Introduction

This chapter focuses on the housing conditions and characteristics in Gichagi. The chapter analyses the existing housing situation, highlighting the strengths, weaknesses and the potentials if any. A wide range of housing supportive infrastructure and services are captured. These include water supply, sanitation, energy, access roads, educational and health facilities and other social services among others.

#### 5.2 Housing Characteristics

Most of the housing units in the settlement are of temporary construction as shown in Table 4.5. Also see plate 3. Majority of the households are owner occupiers who consist of 87% while renters are 13%. The Metropolitan Household Survey in Kenya in 1989 show that in slums and squatter settlements on public land - Kibera, Mukuru, and Korogocho - 15.4%, 13.6% and 17.2% of the residents are owner-occupiers, respectively. In Kawangware and Kangemi settlements, 12.8% and 18.2% were owner-occupiers, respectively. The high number of owner-occupiers in Gichagi compared to other settlements in Nairobi is significant as it indicates the level of accessibility to housing amongst the urban poor. This is directly associated to plot allocation in favour of squatters

already residing on site. A discussion with the village elders revealed that most of the housing units were built on communal basis and hurriedly, after receiving the news of plot subdivision.

Table 5.1: Nature of Housing

Nature	Frequency	Percent
permanent	1	1.9
Temporary	53	98.1
Total	54	100.0

Source: Field Survey, 1996

Plate 3: A typical housing unit in Gichagi (note the temporary materials used).



Source: Field Survey, 1996

A chi-square test of the nature of house construction by land ownership revealed there is no significant relationship between ownership of land and the nature of house construction in the settlement at a chi-square value ( $\chi^2 = .59933$ , degree of freedom (DF) = 1, and a significance Level (SL) = .43883 which is greater than the critical value at .05.

Table 5.2: Composition of Housing Material

Wall material	Percent	Roof material	Percent	Floor material	Percent
Block	1.9	GCI	98.1	Cement	1.9
Brick	1.9	Others	1.9	Earth	98.1
Timber	63.0				
Mud & wattle	27.8				
Others	5.6				
Total	100.0		100.0		100.0

Source: Field Survey, 1996

About 98% of the housing units are of temporary construction. The most commonly used wall material is timber which accounts for 63% of the wall material used. Mud and wattle account for 27.8% of the wall material in the settlement. Roofing is mainly composed of GCI which accounts for 98.1% of roofing material in the settlement. On the other hand, 98.1% of the housing units have earth floors. Earlier discussion in the text indicates this scenario as presenting both environmental and health problems. And given the age of

this settlement, the question of why housing has remained in a precarious state up to date persists.

There is a lot similarity in the nature of housing units in Gichagi with settlements of the same category in Kenya. For example, Nachu study, (1990) underscores that in Mukuru slum of Nairobi, rooms are mostly wooden and in poor conditions. Nachu study observes that 70% of all structures are built of temporary materials - such as plastic, card board e.t.c. Average rent is K.shs 200, and usually range from 100-300. Furthermore, a study by Matrix development consultants (1993), observe that most houses in Kibera are constructed of mud and wattle and have corrugated iron roofs. They are usually built in rows and are 3 metres squares.

Like any other informal settlement in Kenya, Gichagi has many rooms and households on most plots. Half of the households occupy 3 rooms as indicated in Figure 8. The average number of rooms occupied per household in the settlement is 3. A total of 35.4% of the households live in 1 to 2 rooms. Households occupying more than 3 rooms is 14.8%. Given that majority of the residents are owner occupiers explain why they can afford to live in 3 rooms. This compares well with informal settlements in Nakuru where 62.4% of the owner-occupiers occupy more than 2 rooms (Syagga and Malombe, 1996). In spite of this, the situation in Gichagi departs from Matrix Development Consultant (1993) findings, that most common dwelling unit in low-income areas is



one room and accommodates an average household of 4-5 persons.

About 87% of the respondents own the houses they occupy, while 13% rent housing in the settlement. This scenario reveals less occurrence of absentee landlords common in major urban centres of Kenya, where commercialization of rooms is prevalent. The mean rent per month was k.shs 157. Rents range from K.shs 100 to 300 per month. Indeed low rents is one of the reasons given for staying in the settlement. For owner occupiers the average building cost per housing unit was computed to be k.shs 12,000. The minimum building cost was k.shs 2000 and the maximum cost stood at k.shs 50,000 as at 1996. It is important to bear in mind that these figures are estimates and not real costs. Moreover, most people tend to exaggerate money spend and as such these figures should not be taken to be absolute. Most respondents approximated building costs to 1996 estimate. Thus they may not reflect the real cost of buildings at the time of construction.

A total of 57.1% of the respondents pay K.shs 150 rent per month. Less than 14.3% of the respondents pay K.shs 300 rent. In addition to low rents, no deposit was asked by landlords before tenants moved into the rooms. The rent deposit phenomenon is synonymous with house renting in Nairobi.

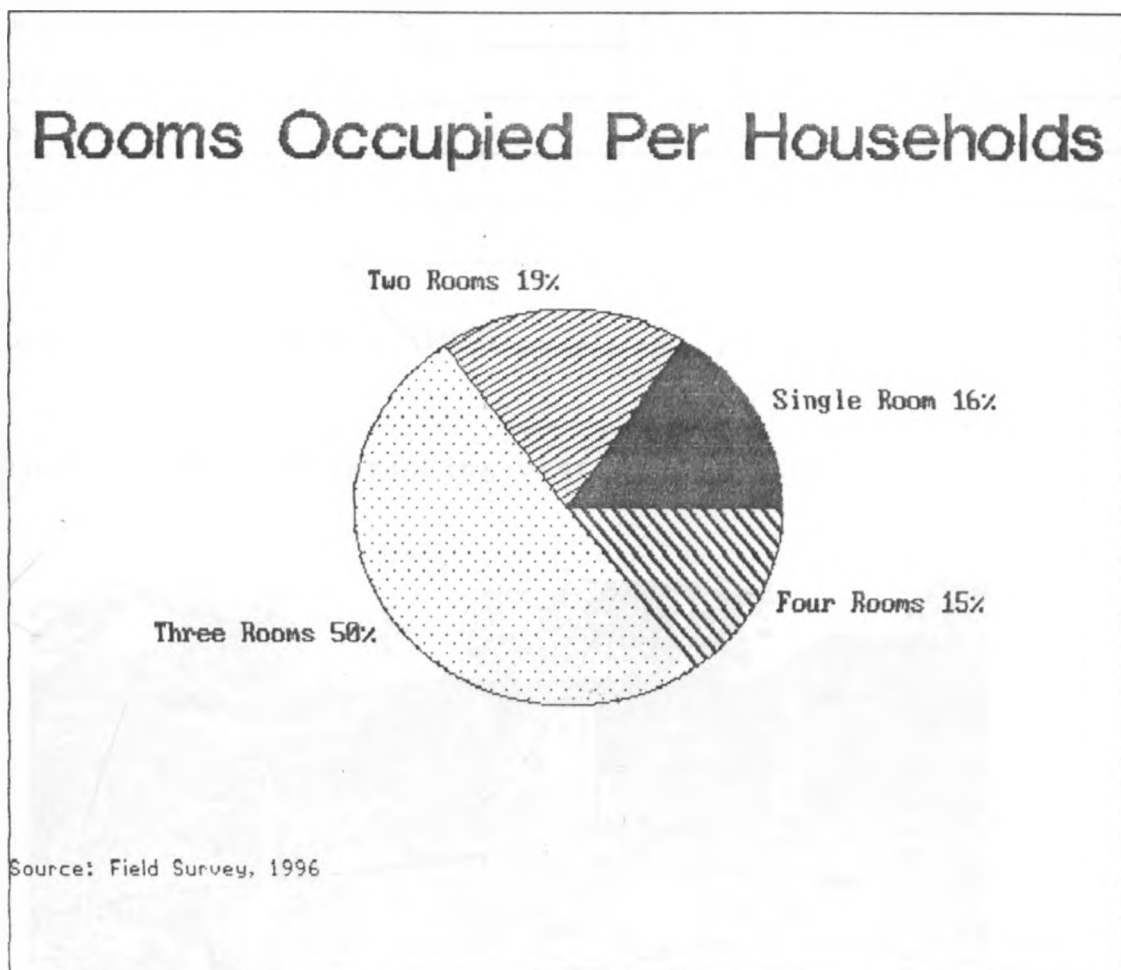
The rents paid in Gichagi are similar to those paid in informal settlements in secondary towns of Kenya like Kisumu,

living conditions. On the contrary, 42.6% were satisfied with their living conditions. Water scarcity ranked highest on the list of problems in Gichagi. Firewood scarcity, small plot sizes and lack of electricity were among the other problems which featured prominently on the list. Ol Kejuado county council prepared a plan for this settlement in 1991 which culminated into plot sub-division. That notwithstanding, the rest of the plan remains un implemented. The plots were allocated on long lease terms. Over half of the respondents, (59.3%) indicated they acquired plots through direct allocation, while 39.7% inherited plots either from parents or/and relatives.

Out of the sampled plots for study, 72% were occupied by a single household. The maximum number of households on a given plot were five. These occurred mainly where rental business was prevalent. Other than housing, the residents utilise their plots for kitchen gardening, animal domestication and petty business in form of retail kiosks (see plate 4). Planning for the future. 51% of the respondents indicated plans to put up business kiosks. Only 9.3% have plans to put up permanent housing in the future. It is a common practice amongst poor households to show satisfaction with the little they have and lack ambition. After all, even if they wished for better things, accessing them is almost impossible due to prohibitive handicaps in most systems. Table 5.3 indicates households' envisaged future developments

Nakuru, and Eldoret. The situation in Nairobi is, however, different. Semi permanent rooms rent at K.shs 80 to 250 per month, while permanent rooms rents range from K.shs 300 to 600

Figure 8: Rooms Occupied Per Household



per month. Landlords use the increasing demand for houses to continually raise rents. This is particularly, true in Kangemi, Kawangware and Dagoretti (Matrix Development Consultants, 1993).

The average housing unit size is 7m<sup>2</sup>. However, 55.6% of the respondents recorded lack of satisfaction with their

on their plots.

Table 5.3: Future Activities on Plots

Activity	Percent
business Kiosk	51.9
Rental rooms	13.0
Animal domestication	7.4
Permanent house	9.3
None	18.4
Total	100.0

Source: Field Survey, 1996

Plate 4: Kitchen gardening practised on a plot



Source: Field Survey, 1996

## 5.2 Housing and Supportive Infrastructure

### 5.2.1 Introduction

The availability of housing and its supportive infrastructure has grown particularly slowly, even in Kenya's formal housing. One reason for this is that the implementation of these services requires heavy investment. In addition, a marked reduction in the sanitary deficit for the poor sections of the large cities would require a particular great effort and much creativity. Generally, the level and quality of service in informal settlements is low. The situation is no different in Gichagi settlement.

### 5.2.2 Water Supply

One of the problems facing Ngong town and other urban areas in Kenya, particularly informal settlements is the unreliability of water supply systems. Even where supplies are reasonably adequate, problems of inequitable access by the poor are prevalent. The main source of water is a borehole (see plate 5). The water is connected in form of a communal water point. This is provided by the Africa Inland Church which share a common boundary with the settlement. A 20 litre container of water costs k.shs 1.50. Water is rationed; the kiosk is opened at 10.00 a.m and closed at 1.00 p.m. daily.

Nonetheless, during the rainy seasons the water kiosk remains closed as households are expected to harvest rain

water. However, most of the households have not put in place proper gadgets for rain water harvesting. In times of water scarcity vendors sell water at a double rate of the official charge by the African Inland Church one, i.e. k.shs. 3.00 per 20 litre container. Fetching water is mainly done by children assisted by women when they are not out looking for their daily bread. About 85.2% of the respondents transport their water on their backs or heads. A 20 litre gallon of water is relatively heavy to subject a child to as this may present health problems in future. Due to the underlying rocks the water tends to be saline. Water pollution is common given the poor sanitation systems in place.

Plate 5: The one and only communal water point in Gichagi



Source: Field Survey, 1996

The water supply situation in Gichagi is quite similar to informal settlements in Nairobi, Kisumu and Nakuru. As the Metropolitan Household Survey (1989) observed, only 11.7% of the plots in low-income areas of Nairobi had water connected to their plots. Majority (85.6%) of the people in slums obtain water from kiosks sold in tins. Other sources of water include roof catchment, boreholes or river water. Kiosk vendors in slums/squatter settlements sell water almost three times the official water rates.

Table 5.4: Water Problems

Problem	Percent
Unreliable	7.4
Inadequate	50.6
Pollution	11.4
Expensive	11.1
Saline	20.0
Total	100.0

Source: Field Survey, 1996

Insufficient supplies of water, with inadequate provisions for ensuring that supplies remain uncontaminated create favourable conditions for the presence of high incidence of endemic diseases (e.g diarrhoea, dysenteries, typhoid fever, amoebiasis and other intestinal parasites) and food poisoning. In addition, it favours the spread of eye and ear infections, skin diseases, scabies, lice and fleas. In

precision the main housing problem was linked to water - to the small amounts available, to the difficulty of access, and to its poor quality, and to the lack of facilities for its removal once used.

### 5.2.3 Waste Disposal Systems

Generally speaking, very few urban residents have access to sewerage systems. This is so inspite of the government's aim to supply sanitary waste disposal services to the urban population on a wider scale. In Kenya, only 21% of urban dwellings have private latrines (GOK/UNICEF, 1990). Most latrines are found in low-income areas where there is lack of sufficient sanitation.

Table 5.5: Waste Disposal Systems

Waste water	Percent	Solid waste	Percent	Human waste	Percent
Open ground	92.6	Open space	29.6	Pit latrine	90.3
Drainage ditch	3.7	garbage pit	70.4	Night soil	3.7
Others	3.7				
<b>Total</b>	<b>100.0</b>		<b>100.0</b>		<b>100.0</b>

Source. Field Survey, 1996

Waste management systems are grossly precarious in the settlement as depicted in Table 5.5 Overall, 92.6% of the household dispose of their waste water haphazardly on any open space. While 70.4% dispose of their solid waste in garbage



pits usually in a corner of the plot. These garbage pits are usually, shallow holes not protected in any manner. As a result they fill up very fast, and the litter spreads around the plots, thus a breeding place for disease vectors and pests. Pit latrines account for 96.3% of the human waste disposal systems. Sharing of this systems amongst the residents is a very common phenomenon. The latrine structures are constructed in a very precarious way, oftenly, without proper doors and roofs. Provisions for baths or showers are almost non existent. Pit latrines where they exist, act as bathing facilities. (See Plate 6).

Plate 6: Pit latrines are the dominant toilet facility in Gichagi



Source Field Survey, 1996

Majority of the households felt they had inadequate sanitation in the settlement. This was mainly attributed to lack of sewers, use of open drains, lack of containers for refuse disposal and lack of provision for bath rooms. This lack of facilities is not unique to the settlement but cut across almost all similar settlement in Kenya. As indicated in the Metropolitan Household Survey (1989), 58% of the households in the low-income areas of Nairobi use pit latrines. These are mainly in squatter upgraded areas (93%), slum areas (75%) and private housing (80%). The type of toilet is related to the presence of piped water and provision of sewerage facilities. Given that informal settlements have the least share of the above facilities, it is not by chance that they rely to a large extent on pit latrines. The same study underscores that in Mukuru 85%, Korogocho 65%, Kawangware 55%, and Kibera 54% of the households had no provisions for bath or showers (MHS, 1990).

The absence of hygienic forms of disposal of human wastes has been linked to a large incidence of infections. This leads to contamination of food, water or fingers by faecal matter containing pathogenic organisms and their subsequent ingestion by susceptible individuals. Most of the infections contracted this way are intestinal parasites, the main cause of high morbidity and, especially among the children, mortality rates in the settlements with poor sanitation. The combined effects of the above three deficiencies can be devastating. WHO (1988)

asserts that in the poor urban settlements of the third world's large cities:

*...a child born today is 40-50 times more likely to die before the age of five than one born in the same moment in a prosperous developed country" or as we may add , in the more affluent urban sections of the very cities in which these settlements are located.*

#### 5.2.4 **Energy**

The main source of energy is wood fuel. This is supplemented with paraffin usually used for lighting as opposed to cooking (Refer to plate 7). In actual fact, 98.1% of the respondents use both wood fuel and paraffin. Electricity is conspicuously lacking in the settlement yet the neighbouring African Inland Church (AIC) plot is well lit. Electricity is a known stimulus to economic activities, thus a need to consider its installation in the settlement. The reliance on fuel wood threatens the survival of Ngong hills, which is only a few metres away from the settlement.

Plate 7: A woman carrying firewood fetched from the surrounding hills. It is the most common energy type used



Source: Field Survey, 1996

#### 5.2.5 Health Access

The population in Gichagi, which is a marginal one, has limited access to health care mainly due to their low socio-economic status and low levels of literacy. Not even a single health facility is found within the settlement. Majority of the residents seek health services in the neighbouring Ngong town, a km away.

#### 5.2.6 **Summary**

Lack of supportive urban infrastructure and services plus small plot sizes all have significant influence on housing in Gichagi. The high cost of basic infrastructural installation and maintenance are out of the reach of the poor. Unless the local authority and/or any other agency meets its costs, then adequate housing for this poor households remains almost a mystery!

## **CHAPTER SIX**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **6.1 Summary of Findings**

##### **6.1.1 Sex and Marital Status of Household Heads**

The study observed that most of the households are headed by men (70%). Female headed households account for 30%. Additionally, majority (76%) of household heads are married. The prevalence of a significant number of female headed households calls for attention, since women disproportionately fall in the disadvantaged group of people. A chi-square test of household heads by marital sex by marital status revealed there is a significant difference in marital status and between males and females.

##### **6.1.2 Education of Household Heads**

Majority (61%) of the household heads have primary school education. About 17% of them have acquired secondary education, while 22% have no formal education.

##### **6.1.3 Household Composition**

The average household size was 5. About half (48%) of the households were composed of 3-5 persons, while 34.6% had 6-9 persons. Household members ranged from 1-14 in a single household.

#### **6.1.4 Length of Stay in Gichagi**

Majority of the residents (51%) had lived in the settlement for over 15 years. On the contrary, only 11% had stayed for less than one year. This implies that the residents are a stable community and this has significant implications on the need for their habitat betterment. Before settling in Gichagi, more than half of the respondents had lived elsewhere in Ngong division. A small proportion (25%) had lived outside Kajiado district. Comparatively only 5.6% had lived in Nairobi. Half of the respondents migrated to the settlement in pursuit of a plot. Other reasons for settling in Gichagi were given as availability of cheap housing units, business prospects, proximity to work and eviction from their previous residences.

The study also underscores that about half (50%) of the respondents intend to live in the settlement for the rest of their lives. About 33% said they would live in Gichagi for long, without being specific of the time span. Only 11% had intentions to move out to to her areas. This finding is important in terms of service levels required in the settlement.

#### **6.1.1 Settlement Upgrading**

One of the main findings of the study was that the settlement dates back to pre-independence times. Since then,

it thrived as a squatter settlement, until fairly recently when plot subdivision/upgrading was initiated. This process has three main components namely; regularization of tenure, financing of technical and social infrastructure, and provision of building material loans. Only regularization of tenure was undertaken, leaving out the other two components.

The study recommends that the process initiated of upgrading of the settlement should be pursued to its logical conclusion. For the success of the upgrading scheme the consultation and participation of project beneficiaries is an essential ingredient. Besides people's own willingness to participate, there is need for an institution that can stimulate participation by being responsive and flexible in style. However, for low income households and community groups to be able to make decisions on the development and management of their domestic environment, they must be equipped to do so. In this regard, the government, as a facilitator, should ensure that adequate support in technical, financial, legislative and informative terms is available. The use of grade II by-laws will be the most appropriate for upgrading considering the elusive and poor income levels of households.

#### **6.1.5 Housing Characteristics**

The study observed that inspite of tenure regularization in 1991, housing conditions have remained precarious. The physical dwelling structures are mainly (98%) of temporary



construction with timber walls (63%), GCI roofs (98%), and earth floors (98%). The average room occupancy per household was 3. However, about half of the households occupy 3 rooms. Very few (14%) occupy more than three rooms. Atypical average room size was 7m<sup>2</sup>. The average monthly rent per room was kshs 157. Rents ranged from Kshs 100 to 300 per month. The average building cost per room was Kshs 12,000 as at June, 1996.

More than half (72%) of the plots were occupied by a single household. The maximum number of households on a plot was 5, mostly common where rental business was prevalent. Majority of (87%) of the respondents were owner occupiers while only 13% were renters.

#### **6.1.6 Water Supply**

Gichagi is served with one communal water point in form of a kiosk. The water supply is provided by the African Inland Church who are their immediate neighbours. The water supply is very inadequate and rationing is practised. During rainy seasons, the water kiosk remains closed. In return the residents attempt to tap rain water to meet their water demands. Nonetheless, the study observed no proper gadgets for roof catchment. A 20 litre gallon of water costs Kshs 1.50.

#### **6.1.7 Waste Disposal Systems**

Waste management system are grossly precarious. The dominant mode of waste water disposal is the open ground which

used by 92% of the respondents. Solid waste is mainly (70.4%) disposed of in open pits, while 29,6% of the respondents dispose their solid waste in any open space. Human waste is mainly (96.3%) disposed of in pit latrines.

#### **6.1.8 Energy**

Majority of the respondents. (98%), use fuel wood for cooking. Most households combine fuel wood and paraffin to satisfy their energy requirements. Electricity is lacking in the settlement.

#### **6.1.9 Access Roads**

Two earth roads connect the settlement with Ngong town. Road access within the settlement is interrupted with haphazard lay out of buildings. Some housing units are constructed on road space rendering motor access difficult. The study observed that the roads remain muddy and slippery during the rainy seasons, thus impassable. No public commuter services were observed to link the settlement to Ngong town and/or other urban centres.

#### **6.1.10 Education and Health Facilities**

The settlement has no provision of education and health facilities. Majority of the households depend on the facilities in Ngong town for their educational and health services needs. The AIC has put up a primary school in its

compound which immediately borders the settlement. Some of the respondents use it although they complained that their fee rate are relatively high.

#### **6.1.11 Community Based Groups (CBOs)**

The study observed a few CBOs in the settlement mainly engaged in welfare, religious and income earning activities. However most of the groups were dormant but there existed a high scope for improvement.

#### **6.1.12 Household Incomes and/or Employment**

Low income and/or absence of it seems to be a major factor undermining the realization of basic housing in the neighbourhood. The study demonstrated that majority of the residents, though allocated plots, had no reliable sources of income. Majority of the populace are engaged as farm labourers on the surrounding farms. Without a substantial steady income the realization of decent housing in Gichagi will remain a dream for a long time. The little income obtained from informal activities, in which majority of the household are engaged, goes on food and clothing thus little if any is left for housing improvement. Moreover, no saving is possible given their meagre earnings and this makes obtaining loans difficult.

#### **6.1.13 Access to Urban Land and Tenure**

Title deeds to land are generally used /required for collateral in terms of accessing loans. The study found out that no title deeds had been issued to the residents although plot allocation was completed in 1991. This denies the residents an opportunity to apply for small loans to better their living standards. On this premise, the process of accessing title deeds to the residents should be relaxed and eased for faster acquisition of this very helpful documents. The effect of tenure type on plot management/housing can not be overstated. Residents renting housing tend to have little incentive to either invest in the plots or to consider the long term effects of their plot management. Lack of titles make access to credit almost impossible and this would be a strategy of increasing household incomes amongst the urban poor.

#### **6.1.14 Housing Tenure and Improvement**

The study has demonstrated that majority of the residents are owner-occupiers and have lived in Gichagi for more than 11 years. This could mean that these households are a settled lot with minimal chances of changing their residences. Furthermore, such a scenario has great implications on the need for improving the living environment of these households, particularly their housing conditions. Owner occupiers are known to take improvements on their housing with more

enthusiasm as compared to tenants. In this respect, appropriate housing improvement programme undertaken in consultation with residents will by no doubt have significant implications on the housing conditions.

#### 6.1.15 **Summary**

The complete absence of local authority basic services leaves a large number of unassisted people. The settlement lacks basic urban services and infrastructure that go along with housing. Lack of access to the county council utility networks is apparent, despite the fact that the settlement is within the designated town boundaries.

#### 6.2 **Conclusions**

Experience throughout the world has shown that realizing the goal of adequate shelter for all needs continuous efforts of central, regional and local governments, of the construction and building materials industries, of financial institutions and, not least, of all the people who need shelter. Nowhere, has it been possible for governments to make direct provision of shelter for all the people. A different approach is necessary and well long over due. The government approach should facilitate a regulatory and financial environment in which the private and informal sectors, community groups and individuals can play an increasing role in meeting their shelter needs.

People living in informal settlements, though they cannot be provided for, should nevertheless receive the kind of social, economic and environmental support that enables them to provide for themselves. The roles of government and local authorities - and their responsibilities towards the communities they are supposed to serve- should be redefined. Currently, the intervention that are made are fragmented, uncoordinated and too limited in scope. A much more holistic approach is needed in tackling the problems of deteriorating living conditions and disintegrating social fabrics.

### **6.3 Towards Future Policy: Options**

1. National policies on the upgrading of informal settlements should be established. Political and administrative impediments hindering the delivery of housing in upgrading programmes must be overcome. Housing authorities should be prepared to expand upgrading programmes for these settlements and to co-ordinate the activities of the different agencies concerned with different elements of housing. They must be provided with the resources and staff to do this, and government policy should be such as to provide incentives for agencies to collaborate on these programmes. This option will guide settlement upgrading and enhance logical implementation of the same.

2. In order to realize a greater coverage against limited

resources, a basic needs approach is necessary in selecting elements of housing and levels of service. This will often culminate into lower standards being adopted than has been allowed under existing building codes, and arrangements should be made to allow the relaxation of restrictive regulations. The adoption of grade II by-laws will promote decent housing for the urban poor whose income can not allow them access to formal housing.

3. The target community must be involved at all stages in all housing upgrading projects. Sociological techniques for soliciting public opinion and ensuring active participation must be developed at the beginning of any upgrading programme for informal settlements. The elements of housing installed must be socially acceptable and affordable in order to win the commitment of beneficiaries.

4. In order to reduce poverty, there is need to formulate a strategy which will more effectively use the combined resources available and develop an institutional framework in which these resources could be deployed. Action needs to be taken at the level of communities so that essential services can be provided. Communities in addition need to be provided with organizational tools to enable them to take increasing responsibility, in organizing services, whether it be shelter, education, health or other basic services. These tools must

include ways of negotiating with those who control resources such as administration, local authorities, and landlords. Co-ordination of these small-scale community initiatives will help increase their effectiveness.

5. Action must also be taken at the level of the local authorities. Communities cannot provide themselves with all services; this must be done through the local authorities, and it is indeed mandated to provide a range of these services. Changes are needed in policy and practice at the town level (through the county council) and at the level of central government. Policy changes will however, only ensue if the political system is predisposed to take some of the initiatives required. Urban management practices should change to respond to a major client, the poor majority.

6. It is important that the urban poor should participate as a major group in the process of urban development. At present the urban poor act more as beneficiaries rather than partners in development programmes planned and implemented by various government and non-governmental organizations. In this process the issues and problems articulated and developed by the professionals and planners in government and non-governmental organizations take priority. The effectiveness of such programmes largely depend on their understanding of the issues of poverty and of the skills, values and attitudes towards



low-income groups. It is the researchers contention that, if the poor are involved in all the activities related to urban poverty from problem definition to programme planning and implementation, the effectiveness of these efforts would increase significantly.

#### 6.4 Recommendations

The study proposes the following recommendations in light of the foregoing conclusions:

1. Loans should be advanced to households to promote small businesses/income generating projects. The guiding principle behind these loans should be to improve household incomes which reverberates to housing improvement. Given the resource constraints within governments and local authorities, NGOs should be encouraged to complement the former in promoting decent housing and the general living standards in secondary towns. Furthermore, NGOs and other International agencies concerned with habitat improvements should consider extending their services to peri-urban areas in the country like Ngong. This will by far help alleviate the problem of concentrating efforts in a few areas while others suffer. Indeed this will go a long way to curb duplication of services in the same areas which in actual fact have no economic justification.

2. Financial institutions usually consider the poor as high risk creditors. To guard against this the residents could be

encouraged to organize themselves in business or trading associations which could be used to negotiate for loans. The group would then lend to its members and also ensure that individuals honour their debts in time. In this regard the group would act like a pressure group to promote their credit worthiness. Underwriting criteria by these institutions which require documentary proof of income could put the urban poor at a disadvantage, since majority of them are within the informal sector. Moreover they are illiterate and have no bank accounts. Individual vetting by community development organisations with financiers would be appropriate.

3. In order to improve the income status of residents community development work should be enhanced. This could be done through provision of adequate personnel to frequently visit, encourage and give advise to residents on how to access technical advice as well as credit and on viable income generating activities. Community development work should not only tap public resources but also tap local resources available within community based groups (CBOs) and NGOs. This collaboration needs to be encouraged by the county council and central government officials.

3. Community mobilization and/or sensitization towards better housing is imperative in Gichagi. A few community based groups prevail in the settlement. However, their full

potential has not been exploited to full capacity. A little training and proper group organization will by no doubt lead to better results in terms of acceptable housing environment. The deployment of community development assistants and social workers in the settlement will help exploit local initiatives and resources towards better housing. Community efforts are, particularly, effective in the management of sanitation, house building and other social services.

4. In terms of decent housing structures in the settlement, the low cost permanent structures should be encouraged. This is in light of the residents poor income and the durability and relatively low maintenance costs of these housing. Mixed land uses for residential, commercial and light/cottage industries in the settlement should form a major component of housing improvement. This will promote self employment and reduce residents travel costs to far off working places.

#### **6.5 Areas for Further Research**

1. The study revealed a significant proportion of female headed households (30%) in the settlement. Given that women disproportionately fall in the disadvantaged group of people, there is need for a study to measure the accessibility of women to urban housing and other related facilities in the settlement. This study should also examine their access to employment and income generation activities as this will

enhance the wellbeing of their households.

2. A study to assess the modality of upgrading the settlement through provision of full or partial infrastructure, combined with employment creation is necessary.

3. There is need to explore the possibilities of strengthening community based organizations and establish the optimal scope for intervention to realize acceptable housing in the settlement.

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**APPENDIX 1**

DEPARTMENT OF URBAN AND REGIONAL PLANNING

UNIVERSITY OF NAIROBI

NGONG-GICHAGI STUDY: HOUSEHOLD QUESTIONNAIRE

1.0. Plot number \_\_\_\_\_

1.2. Location (village/estate) \_\_\_\_\_

1.3. Marital Status \_\_\_\_\_

**Household Details**

2.0. Number of people in the household \_\_\_\_\_

Please fill in the details of household members

Sex	Age	Education Level	Relation to the Household head	Remarks

2.2 How long have you lived in Gichagi? \_\_\_\_\_

2.3 Where were you living before coming to Gichagi?  
\_\_\_\_\_

2.4 Why did you migrate to this settlement?  
\_\_\_\_\_  
\_\_\_\_\_

2.5 How long do you intend to stay in Gichagi? \_\_\_\_\_  
in years/month/days.

2.6 If you plan to move where would you move to and why ?  
\_\_\_\_\_  
\_\_\_\_\_

## Housing Structure

3.0 Who owns this house? 1. occupier [ ] 2. employer [ ]

3. Rented [ ]

If rented what is the rate per month? Kshs \_\_\_\_\_

If owner occupier how much did it cost to build? kshs \_\_\_\_\_

If employer owned how much do you pay? kshs \_\_\_\_\_ 3.1

What is the nature of the house occupied?

1. Permanent [ ]

2. Temporary [ ]

### 3.2 House Construction Material

Wall	Roof	Floor
1. Block	1. Tiles	1. Earth
2. Masonry	2. G.C.I	2. Tiles
3. Brick	3. Grass	3. P.V.C
4. Timber	4. Asbestos	4. Teak
5. Mud & wattle	5. other (specify)	5. Parquet
5. Other (specify)		6. Cement

3.3 How many rooms do you occupy? \_\_\_\_\_

3.4 Size of house occupied \_\_\_\_\_ by \_\_\_\_\_ m = \_\_\_\_\_ sqm-

3.5 Are present living conditions in your opinion satisfactory?  
 ? 1 Yes [ ] 2 No [ ]

3.6 What do you like about living in Gichagi?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3.7 What problems do you experience with this settlement/house?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

3.8 What attempts have you made to solve these problems ?

\_\_\_\_\_

\_\_\_\_\_

3.9 Would you be willing to participate in harambee groups to:

1.Improve the existing structures ? 1.Yes [ ] 2.No [ ]

2.Build communal facilities 1.Yes [ ] 2.No [ ]

3.Raise money towards general improvement of the area

1. Yes [ ] 2. No [ ]

### Land Ownership

4.1 Do you own this land/plot ? 1.Yes [ ] 2. No [ ]

4.2 If yes, what type of ownership ?

1. Freehold [ ] 2.Short lease/rent [ ]

3. Long Leasehold [ ]

4.3 What is the size of land/plot in acres/ha ? \_\_\_\_\_

4.4 How did you acquire this land ?

1.Inherited [ ] 2.direct allocation [ ]

3.Market purchase [ ]

4.5 If purchased at what cost was this ? Kshs. \_\_\_\_\_

4.6 From whom did you purchase the land ? \_\_\_\_\_

4.7 Do you pay rates for this land ? 1.Yes [ ] 2.No [ ]

4.8 How many households live on this plot? \_\_\_\_\_

4.9 What are the main activities undertaken in your plot ?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

5.0 What future developments do you plan to undertake on this plot

1 \_\_\_\_\_ 2 \_\_\_\_\_

4 \_\_\_\_\_ 5 \_\_\_\_\_

### Infrastructure Facilities

#### 6 Water

6.0 Where do you fetch water from ?

1.Piped \_\_\_\_\_ [ ] 2. River \_\_\_\_\_ [ ]

3.Well \_\_\_\_\_ [ ] 4.Borehole \_\_\_\_\_ [ ]

5.Rain water \_\_\_\_\_ [ ] 6.Others(specify) [ ]

6.0 If piped is it 1. Individual connection [ ]

2. Communal tap [ ]

6.1 What other water sources are available in Gichagi ?



1 \_\_\_\_\_ 2 \_\_\_\_\_  
 3 \_\_\_\_\_ 4 \_\_\_\_\_

6.2 How do you transport the water ? (only where applicable)

1. Motor vehicle [ ]      2. Mkokoteni [ ]  
 3. Wheelbarrow [ ]      4. Human transport [ ]  
 5 Others please specify \_\_\_\_\_

6.3 How much do you pay for water ?

piped/per month in Kshs.	Per 20 litre container in Kshs.	Flat rate per month in Kshs.

6.3 What water problems do you face in Gichagi ?

- 1 Saline [ ]      2 Unreliable [ ]  
 3 inadequate supply/rationing [ ]      4 Pollution [ ]  
 5 Expensive [ ]      6 Others  
 (specify) \_\_\_\_\_

**Sanitation**

7.0 How do you dispose off waste water ?

1. Pour on open ground [ ]      2. Pour in a drainage ditch [ ]  
 3. dispose in sewerage system [ ]

7.1 Does waste water remain close to your house ?

- 1 Yes [ ]      2. No [ ]

7.2 How do you dispose off your solid waste ?

1. open ground [ ]      2. garbage pit [ ]  
 3.garbage bin [ ]  
 4. Others (specify) \_\_\_\_\_

7.3 What system do you use to dispose off human waste ?

- 1 Pit latrine [ ]      2 Bucket night soil collection [ ]  
 3 Septic tank flush toilet [ ]      3 Sewerage system [ ]  
 6 Open pit [ ]

7.4 What problems do you encounter with the disposal of:

- 1.Solid waste \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2. Waste water \_\_\_\_\_

3. Human waste \_\_\_\_\_

### **Electricity**

8.0 Is your house served with electricity ? 1. Yes [ ] 2. No [ ]  
If Yes how much how much do you pay per month ?  
Kshs \_\_\_\_\_

8.1 If No what is your alternative source of energy ?

1. wood [ ] 2. Paraffin [ ] 3. solar [ ]

4. biogas [ ] 5. others specify \_\_\_\_\_

### **Employment and Income**

9.0 What is your occupation \_\_\_\_\_

1 Nature of employment ? 1. Permanent [ ] 2. temporary [ ]  
3. Casual [ ]

9.2 Where is your work \_\_\_\_\_

9.3 What is your monthly income (Kshs.) \_\_\_\_\_

9.4 What are your other sources of income ?

1 \_\_\_\_\_ 2 \_\_\_\_\_

### **Transport**

10.0 What mode of transport do you use to your place of work

1. walk [ ] 2. Bicycle [ ] 3. Private [ ]

4. Public transport [ ] 5. Others specify [ ]

10.2 What is the cost of a return trip (public transport) ?  
Kshs. \_\_\_\_\_

10.3 What problems do you experience with transport facilities  
in this area ?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

### **Health**

11.0 What diseases frequently affect the household ?

1 \_\_\_\_\_ 2 \_\_\_\_\_

3 \_\_\_\_\_ 4 \_\_\_\_\_

11.2 Do you have any health facilities in Gichagi ?

11.2 Do you have any health facilities in Gichagi ?

1. Yes [ ] 2.No [ ]

11.3 If no, where is the nearest health facility ?

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11.4 If yes, what problems do you experience with these medical facilities ? 1.Expensive [ ] 2.Poor attention[ ]  
3.Congestion [ ] 4.Lack of drugs [ ]  
5. Lack of health equipment[ ] 6. Travel distance [ ]  
7. Open time is limited [ ]

11.5 In your opinion how can these problems be solved ?

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### **Educ at ion**

12.1 Do you have any schools in Gichagi settlemnt?

1. Yes [ ] 2. No [ ]

12.2 If yes name them

1. \_\_\_\_\_ 2. \_\_\_\_\_  
3. \_\_\_\_\_ 4. \_\_\_\_\_

12.3 If no where are the nearest schools ?

### **Recreat ion**

13.1 What recreational facilities do you have in Gichagi ?

1 Play ground [ ] 2 Parks and theatres [ ]

3 Social halls [ ] 4 Others (specify) [ ]

13.2 What problems do you face in relation to recreation ?

1. \_\_\_\_\_ 2. \_\_\_\_\_  
3. \_\_\_\_\_ 4. \_\_\_\_\_

**Thank you for your co-operation!**

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