

**REGULARIZING INFORMAL SETTLEMENTS FOR SUSTAINABLE  
HOUSING DEVELOPMENT FOR THE URBAN POOR: THE CASE  
OF NAIROBI, KENYA**

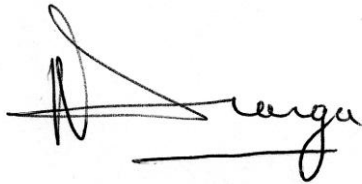
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**THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF DOCTOR OF PHILOSOPHY IN ARCHITECTURE IN THE SCHOOL  
OF ARCHITECTURE, HOUSING AND PLANNING OF THE FACULTY OF  
HUMANITIES, DEVELOPMENT AND SOCIAL SCIENCES, UNIVERSITY OF  
KWAZULU-NATAL**

## DECLARATION

I declare solely that this thesis was carried out exclusively by me. It is being submitted for the degree of Doctor of Philosophy in Architecture in the University of KwaZulu-Natal, Durban. It has not been submitted before for any degree or examination in any other university.

A handwritten signature in black ink, appearing to read 'Stephen Onyango Diang'a', with a horizontal line underneath the name.

**Stephen Onyango Diang'a**

**17<sup>th</sup> day of March, year 2011**

## ABSTRACT

In Kenya, as in most developing countries, the provision of adequate housing for the urban poor has been an elusive exercise for the past five decades. Since the early 1960s when serious concerns were raised over housing provision for low income groups and the proliferation of slums and informal settlements, various intervention strategies have been applied without much success. The failure of these interventions has been attributed to high costs of implementation hindering their replication, and displacement of targeted beneficiaries by better endowed income groups upon their completion. As a result, the realised moderate density housing has been transforming into multi-storey housing with intense densification. Housing and the built environment in general are realised within the prevailing systems of social, physical, and economic, settings and are influenced by development and urbanization trends. The purpose of this study therefore was to identify, account and document the prevailing systems of settings and the embedded systems of activities in the informal settlements that determine and sustain them in the city of Nairobi, Kenya. The study analysed these systems at the city, the neighbourhood, and the dwelling levels with the objective of establishing relevant systems of settings and their embedded systems of activities appropriate for adaption in the regularization of informal settlements for sustainable housing development for the urban poor in Nairobi.

Both qualitative and quantitative research methodology was utilised in this explorative study. The research methodology applied entailed questionnaires, interviews, observations and discussions. Three case study areas were selected representing three different settings for informal settlements namely; informal settlement on government land with minimal level of interventions; community based informal settlement upgraded for rental housing; and site-and-service settlement informally transforming into multi-storey tenements. Theories and concepts that informed this study include Environment-Behaviour Relations, Environment-Attitude Relations, Sustainable Livelihoods, Social, and Market Theories. The study was conducted in Mathare Valley informal settlement of Nairobi which is located approximately six kilometres from the city centre. The settlement was selected because of the varied informalities it hosts in addition to being the oldest informal settlement in the city.

The findings of the study show that the social, economic and physical systems of settings are crucial determinants of housing outcomes and determine the location, nature and characteristics of these settlements including the activities they embody at the city, the neighbourhood and the dwelling levels. Similarly, the study shows that the dwellers adapt to the prevailing systems of settings in response to their livelihood constraints, opportunities and capabilities. As a consequence, limitations arising from economic constraints have led to the predominance of rental housing over owner-occupied housing. Limited access to land has led to crowding and densification. Poverty and unemployment has led to uncontrolled commercial activities within residential neighbourhoods.

The study recommends that intervention approaches spearheading regularization of informal settlements commence by considering the problem of informal settlements at city level where their recognition and acceptance is important. This should then be related to job opportunities, ease of access to work, and other social amenities. At the neighbourhood and dwelling levels where the two are intertwined, emphasis should be given to maximum utilization of land and development of housing typologies that evolve with economic improvement of the nation. The government and local authorities should still be responsible for infrastructure development whereas private investors encouraged to develop rental housing targeting the low-income groups and on land designated for such purpose by the government. Market forces should be allowed to determine rent levels.

## **DEDICATION**

In memory of my parents Paul and Teresia Ogutu both of whom passed on in the course of my writing this thesis.

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## LIST OF ACRONYMS

AHT	Amani Housing Trust
CBO	Community Based Organization
CBS	Central Bureau of Statistics
CKRC	Constitution of Kenya Review Commission
DFID	Department for International Development (UK)
GLA	Government Land Act
GOK	Government of Kenya
ITDG	Intermediate Technology Development Group
KENSUP	Kenya Slum Upgrading Programme
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
LAA	Land Adjudication Act
LCA	Land Consolidation Act
LGRA	Land Group Representatives Act
LTA	Land Titles Act
MDG	Millennium Development Goal
MKM	Muungano wa Kambi Moto
NCC	Nairobi City Council
NGO	Non-governmental organization
NISCC	Nairobi Informal Settlement Coordinating Committee
SDI	Slum/Shack Dwellers International
UN-HABITAT	United Nations Centre for Human Settlements
MoLS	Ministry of Lands and Settlement
MoLG	Ministry of Local Government
NCC	Nairobi City Council
NGO	Non Governmental Organization
NHP	National Housing Policy
NISCC	Nairobi Informal Settlements Coordination Committee
NLP	National Land Policy
PID	Preliminary Index Diagram
PPA	Physical Planning Act
RLA	Registered Land Act
RTA	Registration of Titles Act

UN United Nations

UNHSP United Nations Human Settlements Programme (UN Habitat)

## **CHAPTER ONE**

### **BACKGROUND AND STATEMENT OF THE PROBLEM**

This chapter discusses the background to the study, the statement of the research problem, significance of the study as well as the key research questions. The chapter also presents the framework of chapters and the definitions of key terms used.

#### **1.1 Challenge of housing the urban poor**

The persistence and continued growth of informal settlements in the cities of developing countries including Nairobi is an indication that the past intervention policies and strategies which began in earnest over fifty years ago have not succeeded in reversing the trend. According to the United Nations Human Settlements Programme (UN-Habitat 2006), the number of slum dwellers in the world has increased from 715 million in 1991 to 913 million in 2001 and to 998 million in 2005. Projections to 2020 suggest that the world will have 1.4 billion slum dwellers. It is generally agreed in literature that the most pressing problem facing the housing industry in the Third World insofar as housing the urban poor is concerned is the shortfall of supply of adequate houses over demand (Turner 1976; Amis and Lloyd 1990; Hamdi 1991; Agevi 2003; Harris and Arkub 2006). This, coupled with the associated constraints of access to land, tenure security, and development trends has resulted in the urban poor living in deplorable conditions in slums and informal settlements. The inability of governments to eradicate or even curb the growth of informal settlements has elicited numerous studies and strategies adopted albeit with little tangible impact.

In the past five decades there has been a broad range of housing development interventions aimed at resolving the housing problem both globally and at national levels ranging from forced evictions and resettlements through large scale public sector interventions of different kinds, to local pro-poor and inclusive approaches such as upgrading, enabling environment and city development strategies. The World Bank and other international funding organizations have played a major role in prescribing and funding solutions for developing countries. None of these strategies have been able to resolve the problem and in most instances, have not benefited the targeted urban poor,

ending in turn benefiting the better endowed social groups. In their analysis of informal settlement challenges in Africa, Huchzermeyer and Karam (2006:3) argue that approaches that have been developed to address the challenge of informal settlements have fallen short of reducing the challenge. Several factors have been attributed to this impasse. These range from rapid urbanization and population growth, urbanization of poverty, poor economic performance, to unsatisfactory modes of housing delivery systems among others.

In Kenya, as in most developing countries, housing is grossly inadequate. The major challenges it is argued stem from rapid urbanization, high population growth rate, poor economic growth, and foreign debt burden among others. This, coupled with lack of clear policies, and political will to tackle the problem has resulted in the deterioration of urban physical environment and living conditions especially of the urban poor. As a consequence, the urban poor have resorted to providing housing for themselves in all manners of ways, including illegal occupation of land and construction of unapproved shelters in what are commonly referred to as informal settlements. These settlements have mushroomed in all the major urban centres of the country and are characterised by high densities, overcrowding, lack of infrastructure and services among others. It is now an accepted fact that governments in developing countries lack resources to meet the housing shortfalls and Kenya is no exception.

### **1.1.1 Rapid Urbanization**

Kenya's rapid urbanization is evidenced by the increase in urban centres in the past four decades especially after political independence. According to estimates (CBS 2001), the number of urban centres in Kenya have increased from 34 in 1962 to 227 in 1999. The urban population growth rate has over this period grown from 5.4% in the 1960s, to 7.9% in the 1970s, 8% in the 1980s and to 15% per annum in 2003 (Republic of Kenya and UN-Habitat 2003). In real numbers the urban population has risen from 747,651 in 1948 to 10 million in 1999. By the year 2005, the urban population was expected to rise to 16 million, and in 2015, it is expected to rise to 41.6 (APHRC 2002).

Nairobi, which is the primate city, bears the brunt of the rapid urbanization. The city's projected population estimate currently stands at 3.0 million people (CBS 2001). Its contribution to the total national urban population decreased from 32% to 23% between 1980 and 1999 as a result of urban growth in other centers but it still remains one of the fastest growing cities in Africa (World Bank 1993). Between 50% and 70% of the city's population live in crowded informal settlements where environmental and health conditions are very poor. These informal settlements cover only 5% of the total residential land area of the city (Matrix Development Consultants 1993). Despite the above precarious position, projections indicate that the city will absorb a further five million people over the next two decades, mainly migrants from the rural areas (APHRC 2002) most of whom will live in informal settlements.

Informal settlements of Nairobi reflect the legacy of neglect from colonial times, when a deliberate policy of constrained provision of housing for Africans was instituted (Leys 1975). The colonial government believed that a substantial population of the city including Africans, Arabs, and Indians represented "surplus" labour that exceeded the needs of the town and its economy (Hake 1977). Even after independence, and continuing into the first post-colonial regime, the burgeoning migrant urban population was officially viewed as a nuisance and a health hazard to city residents. The government advocated for rural resettlement, which was tantamount to designating many urban wageworkers as undesirable vagrants (Leys 1975: 9). Studies indicate that there are currently 110 slums and informal settlements in Nairobi covering slightly over 1,000 hectares with an estimated population of between 755,000 and 1,000,000 people in high density settlements of up to 1,200 people per hectare (ODA 1995). The government's inability to finance low-income housing is now widely acknowledged and the growth of informal settlements will continue to outweigh other modes of housing delivery as the urban population continues to grow. In addition, the supply of land is highly inelastic and the practice of creating landlords among the poor is not sustainable in the long run.

### **1.1.2 Insensitive development trends**

In the initial years, Nairobi grew without any plan but distinction between the social groups started right from the onset. With its origin from the arrival of the railway in 1899, the first housing interventions were institutional based with the railway corporation and the government leading in the provision of subsidized rental housing geographically

separated on racial grounds. As the African population grew, native villages developed (Mombasa, Pangani and Masikini) marking the beginning of informal settlements. The two villages of Mombasa and Pangani were pulled down to pave way for other racial groups and the population moved to Pumwani upon which they built their own houses with the difference that some street plan was followed (Thorntone White, Silberman et al. 1948:18). These were the first acknowledged owner-occupied housing in Nairobi which also offered considerable single roomed rental units with their 'Swahili house' typology. The first public housing scheme was Kariakor developed for the resettlement of former First World War military carrier corps (thus the corrupt form - 'Kariakor'). This too adopted the single room rental dwelling unit. Several other public housing estates were developed in the 1940s, 50s and 60s both by the Government and the City Council which currently dominate public rental housing in the city. The colonial government policy towards informal settlements was predicated on containment, labour supply, public health and racial segregation (School of Public Policy 2001).

Upon independence from Britain, the adoption of Growth and Redistribution orthodoxy in the 1970s saw the government, and funding agencies develop sites-and-services projects on green-field basis for low-cost housing. These contributed to the housing stock overall but missed the target of housing the poor as the schemes ended up attracting the better endowed middle income group. In the 1980s the government adopted Structural Adjustment Programmes (SAPs) which were expected to lead to economic growth. This on the contrary adversely affected the urban poor, who had to dig deeper into their pockets to benefit from cost-sharing services, such as health care and education. Service provision in the slums deteriorated. The Nairobi City Council which is charged with the provision and management of services within its jurisdiction, could not cope with the problem of housing the poor due to a combination of factors: the poor economic situation; rapid population growth; limited resources; inefficient revenue collection; strict control by the Ministry of Local Government; and poor management (School of Public Policy 2001: 11).

Several civil society organizations came to the fore in response to the state's withdrawal from urban services provision. These focused mostly on welfare activities and managed to improve education, sanitation and refuse collection in some settlements on a limited scale. The majority of slum dwellers continued to be tenants of structure owners but in the recent past, some have organized themselves into federations to present a unified voice against

eviction and “land grabbing” bringing into play the aspect of social capital and its concept of ‘set of trust, institutions, social norms, social networks, and organizations that shape the interactions of actors within a society and considered an asset for the individual and collective production of well-being’ (Syagga, Mitullah et al. 2002). This study considers social capital as an important asset of the urban poor and useful in their struggle to improve their livelihoods and living conditions.

### **1.1.3 Land tenure**

Land is one single major obstacle to the development of housing for the urban poor in most Third World countries. In Nairobi, land occupied by the informal settlements is either public or private, depending upon location. The laws and regulations governing land administration in Kenya are complex, fragmented and overlapping. There are mainly three forms of land tenure: private leasehold, freehold and *de facto* tenure. Private lease/freehold land is held by individuals, companies, corporations and government. The *de facto* is non-formal tenure or squatting as it is commonly referred to, comprising of temporary forms of tenure that include occupancy rights and temporary occupation rights. Informal settlements are mostly found in non-formal *de facto* tenure and occur on government land and undeveloped private land. Studies indicate that as a result of the lack of clear titles and policy on tenure guarantees to households in informal settlements, the reach of housing finance and practice of progressive housing are limited (HJCHS 2005:5). It is also noted that the availability of serviced, affordable land in close proximity to employment for housing remains a major hurdle in the development of housing market.

Although the state owns 50 per cent of the informal settlements land according to Syagga (2001), individual have over time negotiated informal arrangements with the authorities to erect structures and collect rents. The result is that an estimated 80 per cent of the informal settlements dwellers are tenants (Alder 1999). Structure owners are under no obligation to maintain the premises or provide basic services. The ambiguous tenure status of those living and working in informal settlements – structure owners and tenants alike – prohibits them from enjoying their rights as urban citizens.

Housing development is intricately linked to land ownership. Shelter and land ownership have for decades been considered jointly with the premise that ownership is a prerequisite to housing development and offers the individual household access to other opportunities

including credit, public services and livelihood opportunities. What has generally been ignored is the commoditization of land and shelter in the open market with its effect of alienating the intended beneficiaries. UN-Habitat (2003b:164) report on housing indicate that formal titling in informal settlements has not been encouraging and as several writers suggest (Payne 1977; Angel 2001; Fernandes 2001 ; Payne 2001b; Choguill 2007), is of doubtful benefit to the poor, slowing and formalizing supply, and dramatically reducing affordability in some cases. The urban poor cannot compete for land in the open market due to high and unaffordable cost of land. That by itself blocks the poor from building their own structures in the first instance. With public land under the control of scrupulous administrators and politicians, the only option open to the urban poor is to rent from the structure (house) owners.

There are arguments that the urban poor's preference for rental housing is to some extent linked to the rural/urban linkages. According to Tostensen (2004) many households pursue a circular migration strategy or semi-permanent split in a rural and an urban part by means of 'straddling' i.e. not relinquishing their roots on either side of the rural-urban divide. As a result, some households consider themselves as temporary urban dwellers and prefer to invest more in their rural housing considered a retirement home. Most Kenyan communities distinguish between a house and a home whereby a rural dwelling is considered to be a home whereas the urban dwelling is considered to be simply a house and of temporary occupancy. For such dwellers, rental housing is possibly a preference.

#### **1.1.4 Poverty**

Poverty has contributed enormously to the inability of the urban poor to improve their housing conditions. The Welfare Monitoring Survey (WMS) (Republic of Kenya 1997) data show that while absolute poverty increased from about 48 percent to 53 percent in rural areas of Kenya between 1992 and 1997, poverty in urban areas increased by a much bigger margin from about 26 percent in 1992 and 1994 to about 50 percent in 1997. Thus, although poverty has always been considered a predominantly rural phenomenon, it is increasingly becoming a crucial urban problem as well. The resultant effect of the rapid urban growth, poverty, economic deceleration, and poor domestic policy performance, has been the continued existence of sprawling slums and informal settlements. Poverty according to Durand-Lasserve (2006:3) induces insecure tenure, which itself worsens poverty in slums. Studies on the socio-economic situation of households living in informal

settlements indicate a strong correlation between urban poverty, tenure status, access to services, and citizenship (Ibid, 3). Tenure status as he argues is one of the key elements in the poverty cycle and that the map of informal settlements in most cities of developing countries coincides with that of urban poverty.

Urban poverty in Kenya has its roots mainly in migration and began with people moving towards the country's towns and cities as early as the colonial era in search of wage employment. This flow accelerated in the late 1980s and early 1990s, as a result of a stagnating economy and has continued to date. Surplus income from urban employment is at times sent to rural areas, whereas rural relatives may provide some food in return. Perhaps as a result of that situation, and the fact that it is hard to access land, most of the urban poor in Kenya live in rented accommodation. Their housing is usually in the form of rows of single rooms, within temporary or semi-permanent structures built on legal or illegal subdivisions of public or private land. There are often as many as five people to a nine square metres single rooms. These rooms are poorly lit and ventilated, and also double up as kitchens, resulting in indoor air pollution. The provision of basic services is bad; in some slums such as Kibera, as many as 200 people share a single pit latrine.

At individual and household level (micro level) over 50 per cent of Nairobi's population live below poverty level (i.e. less than a dollar a day) (OECD 2002). For such population, the primary concern is feeding and shelter becomes secondary despite its basic role in human comfort. At the macro level, the state is faced with a plethora of demands and limited resources to meet the rising housing demands. In line with shifts in the understanding of poverty, the current consensus appears to be that if poverty is to be tackled in a sustainable and meaningful way at the city level, all aspects of poverty should be addressed simultaneously. Spicker (1999) argues that if poverty is multidimensional any policy which focuses on one element or aspect risks ignoring others. The key to poverty alleviation according to this approach lies in improving productivity (the enabling approach) plus improving human assets/capital. This new approach to development and poverty alleviation has evolved into what is now known as 'livelihood approach to development'. It puts people at the centre of development. Based on the sociological approach to housing studies, this study explores the role of social capital and environment behaviour relations in the promotion of rental housing in informal settlements regularization programmes.

Urban poverty is commonly associated with cumulative deprivation at individual, household and community levels which lead to high levels of vulnerability. The Government of Kenya has not developed a clear policy in response to urban poverty. Rather, its interventions have been in the form of scattered projects, usually externally driven, in the major low-income settlements (Huchzermeyer 2006 ).

## **1.2 Statement of the problem**

Several issues arise from the foregoing introductory background to informal settlements experiences in Nairobi. These settlements are people's responses to unfulfilled needs arising from among others, poverty, inability to access land, failure by the authority to provide adequate housing, and market pressures arising from housing shortage. The built environment they create, like any other built environment, embodies various systems of settings and embedded systems of activities including neighbourhood networks of paths and roads, open spaces, water points, sanitation units, storm and foul water drainage channels, varied dwelling typologies, shops, schools, and clinics, amongst, all fulfilling the needs of the dwellers to the best of their ability given the prevailing conditions. Whereas the government considers these settlements to be substandard and advocates for their replacement with housing of appropriate standards, several facts are evident. Firstly, government lacks resources to adequately address the housing problem of the urban poor given the multi-disciplinary and multi-dimensional nature of the problem. Secondly, for the urban poor, the problem is not merely that of lack of adequate housing but encompasses various aspects of livelihood strategies and capabilities which in varied ways, impact upon their ability to access adequate housing. Thirdly, there has been a tendency of displacement of the targeted urban poor upon regularization and upgrading of the settlements as a result of market forces and gentrification. Fourthly, a substantial sum of money is paid annually by dwellers in the form of rent to profit driven absentee landlords who hardly re-invest their earnings into the development and maintenance of the dwellings and infrastructure. Fifthly, having conceded that informal settlements play a positive role in the provision of housing for the urban poor and the urban economy, the trend of regularizing them and incorporating them into the urban fabric has not been effectively explored to ensure that the interventions are responsive to the plight of the urban poor and that they address the present and future well-being of the beneficiaries.

Housing development targeting the urban poor has been an elusive exercise for several decades now. Researchers have argued that the standards set in upgrading programmes are in most instances too high thus attracting other better endowed social groups (Alder 1999; Gulyani and Connors 2002; Agevi 2003). Researchers also argue that the poor are too poor to afford upgraded houses and that they have more pressing priorities like unemployment. Due to the economic pressures, they readily convert such houses into cash for other uses. Ideally, this problem could simply be resolved by generation of more income and absorption of the urban poor into productive economic activities or in other words, a commensurate national economic growth. Yet this has been the objective of governments and donor communities for decades and which has borne no fruits to date as is evidenced by the sprawling informal settlements. Issues that need to be addressed include the form of tenure that can benefit the urban poor without exposing them to market forces that lead to disposal of assets – land and shelter; social structures that address the plight of the urban poor; and, shelter and infrastructure standards that are appropriate to the needs of the urban poor whilst at the same time not too attractive to the other social groups. In other words, what is the appropriate balance between what the urban poor possesses in terms of livelihoods assets and opportunities, the environment they have created, and upgrading? Are the prevailing systems of settings and activities found in the informal settlements appropriate and necessary for adoption in regularization and upgrading of these settlements?

For the urban poor, poverty remains the major obstacle to accessing adequate housing. Among the strategies adopted by the urban poor are informal income generating activities some of which occur within their neighbourhoods and even the dwelling units. Thus housing under these circumstances goes beyond the provision of shelter and embodies livelihoods activities and poverty eradication.. There is now an emerging consensus that policy makers and development actors should seek to identify what the poor have, rather than what they do not have, and in so doing focus on their assets (Moser 1998). As informal settlements and slums are a manifestation of urban poverty, there is need for regularization and upgrading interventions to also focus on the livelihoods of the urban poor and their coping strategies in addition shelter and infrastructure provision. All these factors exist within the prevailing social, physical and economic settings. Clear understanding of the varied systems within these settings it is hoped would lead to the

establishment of appropriate parameters to assist in the regularization of the informal settlements.

### **1.3 Purpose of the study**

The purpose of this study is to identify, account and document the systems settings and the embedded systems of activities at community, neighbourhood and dwelling levels that influence the physical, social, and economic characteristics of the built environment in informal settlements. It aims at establishing appropriate settings that contribute towards effective and sustainable intervention strategies and programmes. Environment-Behaviour Relations, Attitude-Behaviour Relations and Livelihoods play a crucial role in the analysis of the built environment and its inhabitants.

### **1.4 Objective of the study**

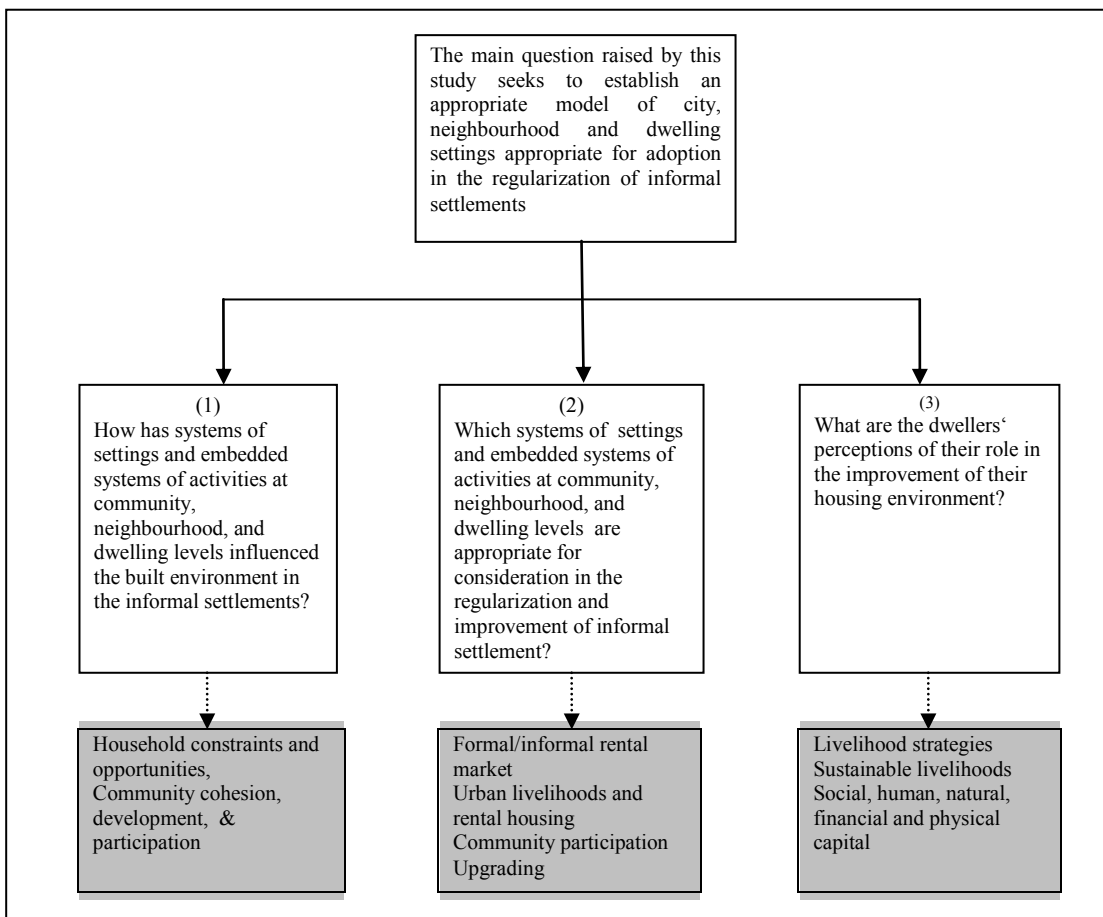
The following are the objective of the study:

1. Identify systems of settings and their embedded systems of activities at the city, neighbourhood, and dwelling levels which influence the characteristics of the built environment in informal settlements.
2. Establish systems of settings and embedded systems of activities at city, neighbourhood, and dwelling levels appropriate for adoption in the regularization and upgrading of informal settlements.
3. Establish dweller's perceptions of their role in the improvement of their housing environment.

### **1.5 Research questions**

Arising from the statement of the problem and the objectives of the study, the research questions are:

1. How has systems of settings and the embedded systems of activities at city, neighbourhood, and dwelling levels influenced the built environment in informal settlements?
2. Which systems of settings and embedded systems of activities at city, neighbourhood, and dwelling levels are appropriate for consideration and adoption in the regularization and upgrading of informal settlement?
3. What are the dwellers' perceptions of their role in the improvement of their housing environment?



**Figure 1. 1: Research Questions and scope**

**Source: Author**

Figure 1.1 is an illustration of the research questions. Issues arising from the questions and considered in this study are indicated in the shaded box with dashed arrows. These also express the scope of this study.

## 1.6 Study justification

Slums around the urban centres of Kenya are growing at an alarming rate. The social evils, health, and fire hazards associated with the slums are but catastrophes in waiting. According to Agevi, (2003b), it is important to note that inadequate or insecure shelter may eventually lead to social and political instability and will certainly hamper physical and economic development. Recognizing the failure of policies for the provision of public shelter, governments have moved away from total reliance on public production of housing to cope with urban growth. This meant not only abandoning the idea that informal settlements were an anomaly in urban development and that informal settlement population was to be sheltered through public sector housing schemes, but also starting to look into ways of supporting spontaneous housing processes (UN-Habitat 1992). However, past housing interventions have not succeeded in resolving the housing problem of the urban poor. There is need for a clear understanding of how the urban poor live and how their livelihoods and their built environment influence one another.

Studies in informal settlements have tended to focus more on policies, planning, construction technologies and housing typologies. Others have focused on social and economic characteristics of the targeted groups. There are very few studies that relate the physical housing environment to the livelihoods of the beneficiaries and yet the realized housing in informal settlements is to a large extent a reflection of the livelihoods of the dwellers. The argument that certain standards are too high for the urban poor is a clear indication of the link between the housing environment and livelihoods. New occupants who replace targeted groups manage to do so because their livelihoods can afford them those standards and those replaced move out because their livelihoods cannot afford them the new standards. The assumption here is that the choices people make in locating their dwellings are commensurate with their livelihood capabilities.

Availability of data and understanding of the relationship between livelihoods and housing environment are critical as both determine the sustainability of housing interventions. Thus livelihoods and environment-behaviour relations emphasized in this study is not only of academic interest but of practical importance. Lessons and conclusions drawn from this study will assist in the formulation of appropriate structures, policies, strategies and procedures in the improvement of the well-being of the urban poor and their housing environment.

## 1.7 Assumption of the study

Characteristics of informal settlements in Nairobi vary considerably from one neighbourhood to the other. There are however some elements that are common to majority of the settlements. This study assumes that these settlements are characterised by:

1. High population of low-income social group
2. Poor housing quality
3. Lack of infrastructure and services
4. Lack of security of tenure

The study also assumes that despite the varied backgrounds of the inhabitants, the urban poor share a common desire to live in improved housing environment and that informal settlements offer basic housing needs for households who cannot compete for formal houses in the open market.

## 1.8 Scope and limitations of the study

This study falls within the housing discipline but has been undertaken from the perspective of architecture. The author is an architect by profession and had undertaken a Masters Degree in Human Settlements. Emphasis is on people, their physical environment and the forces within their means that shape their housing environment. Housing is a multidisciplinary and multidimensional phenomenon but due to the author's background, the study tends to focus more on the built environment.

## 1.9 Conceptual Definitions of terms

**Human settlement:** The settlement of a group of persons in a specified place. A national system of settlements which includes metropolitan areas, towns, villages, plantation estates, mining camps and recreation areas.

**Informal settlements:** This term is used in this study to include illegalities and irregularities associated with informal settlements which include squatting on both public and private land, illegal subdivision of plots, unplanned and unapproved development of settlements and irregularly constructed buildings.

**Squatter settlements:** This term is used specifically in reference to informal settlements arising from squatting.

**Slums:** These are neglected part of cities where housing and living conditions are appallingly lacking. They include informal and spontaneous squatter settlements without legal recognition or rights. The operational definition of a slum that has been recently recommended (by a United Nations Expert Group meeting held in Nairobi from 28 to 30 October 2002) for future international usage defines a slum as an area that combines to various extents the following characteristics (restricted to the physical and legal characteristics of the settlement, and excluding the more difficult social dimensions).

- Inadequate access to safe water;
- Inadequate access to sanitation and other infrastructure;
- Poor structural quality of housing;
- Overcrowding;
- Insecure residential status

**Regularization:** In this study, regularization is taken to mean first and foremost, the process of restructuring informal settlements with judicial, administrative and social component. The goal of regularization is to ensure permanent settlement of residents with better living environment. Secondly, regularization is taken to mean the formalization of illegalities and irregularities associated with informal settlements at all levels of the urban built environment.

**Upgrading:** This entails a package of basic services; clean water supply, sewage disposal and access roads.

**Housing:** The use of the term ‘housing’ is elaborated under Literature Review but is used to include the immediate physical environment, both within and outside of buildings, in which families and households live and which serves as shelter.

**Housing policy:** This refers to government statement on ways and means of tackling housing issues. Also, series of measures undertaken by governments and local authorities

to maintain and/or increase the quantity and quality of housing stock. Includes allocation of fiscal resources and strategies to meet housing needs.

**Adequate shelter (housing):** Objective of the Global Strategy for shelter to year 2000: housing for all with adequate space, privacy, security, lighting and ventilation, basic infrastructure, services and facilities, and access to employment and transport, at reasonable cost.

**Building code or Building regulations:** Ordinance and regulations controlling the design, construction, materials, alteration and occupancy of any structure, for the protection of public health, safety and welfare. Code includes technical standards for electrical, plumbing and sanitary work.

**Community:** A concentrated, identifiable group of people who live and work in close proximity and form a self-conscious unit, having a sense of common identity and common interests, satisfying daily needs through a system of interdependent relationships.

**Community participation:** The active role of a local community in planning and implementation of community development and improvement programmes beneficial to implementing all decisions directly affecting their lives. Also, the activities undertaken by low-income households, with or without outside assistance, to improve their living conditions.

The term ‘community participation’ is used to embody all sorts of activities ranging from house construction to discussions about loan repayment schedules by groups of people as well as by individual persons. In the context of urban low-income housing, people who are living in a delimited area identify with that area, share an interest in its development, and form a community. The assumption is that in squatter settlements or slums, communities do already exist, while in sites and services schemes they have to be developed (Desai 1995:38).

**Environment:** The external milieu, natural or constructed to which an individual or group is responsive. The physical, chemical and biological agents and economic, social and cultural factors affecting living organisms and human activities.

**Built environment:** An area in which buildings or other structures have been constructed. The part of the environment which is predominantly constructed, as distinguished from the natural environment.

**Housing environment:** This includes the built forms, roads, drainage, electricity, communication, open spaces, social activities, and economic activities

**Informal housing delivery process:** That process of realizing housing by the informal settlements dwellers that commences with acquisition or occupation of land, parcelling of the land, acquisition of materials, labour for construction, finance, construction of houses, extension of houses, interventions etc.

**Sustainable development:** The Brundtland Commission (1987) definition of sustainable development as development which meets the needs of the present without compromising the ability of future generation to meet their own needs is still the most widely used definition.

**Owners:** Defined in this study as those with the legal or *de facto* right to occupy, let, use or dispose of their dwelling. This includes those who are in the process of acquiring the right to ownership (e.g., through payments on a mortgage). Ownership always relates to the tenure of a dwelling but not always to the land on which it is built. As such, it embraces ownership in leasehold tenure through to ownership of structures on land that is contested, as in the case of many settlements founded through land invasion. Thus, some owner households hold a full legal title to a serviced dwelling in a formally planned urban settlement whereas other owners now possess a legal title to a house built on land that was acquired illegally. *De facto* ownership includes homes where the household owns the structure but not the land on which it is built, for example, in the case of land invasions (UN-Habitat 2003a).

**Household:** A household is defined as ‘a person or co-resident groups of people who contribute to and/or benefit from a joint economy in either cash or domestic labour’

**Tenure:** Tenure is the manner of holding land or building from an owner over a specified period of time.

**System:** An assemblage of interrelated parts that work together by way of some driving process.

**Setting:** The context and environment in which a situation is set; the background

**Systems of settings:** In the built environment this represents components which form part of a system of settings which in turn, is embedded in different ways into larger systems of settings such as blocks, compounds, neighbourhoods, and settlements.

## CHAPTER TWO

### THEORETICAL AND CONCEPTUAL FRAMEWORK

#### 2.1 Introduction

Concepts, models and theories are terms often used in many different ways by researchers to communicate experiences and developments in research. In this chapter, theories and concepts underpinning informal settlements growth and interventions are reviewed. According to Nachmias and Nachmias (1976) a concept is an abstract symbol representing an object, a property of an object or a certain phenomena. In order to facilitate research and communication, each scientific discipline develops its own set of concepts. A valid concept has to fulfil two basic requirements namely, clarity and precision which are obtained through definitions (Nachmias and Nachmias 1976). There are two types of concept definitions identified by researchers namely: conceptual and operational. The former describes concepts by using other concepts and the latter provides a series of instructions detailing the operations that the researcher must carry out in order to demonstrate empirically the occurrence represented by a concept. Rapoport (1985: 256) argues that conceptual frameworks are “neither models nor theories”. According to him, Models “describe how things work, whereas theories explain phenomena. Conceptual frameworks do not describe how things work nor do they explain a phenomenon, rather, they help to think about phenomena, to order material, revealing patterns and pattern recognition typically leads to models and theories (Nachmias and Nachmias 1976).

Theory on the other hand can be used to guide actions, and can be used to manifest and systematize daily activities and practices (Hamdi 1996). Theories offer opportunities to explore new unrealized aspects of the world which are important in establishing thinking beyond what is, to what might be, or what ought to be. According to Hamdi (1996: 28), theories offer alternative to the prevailing belief in the everyday reality which itself is known in part through the way reality is conceptualized. Theories speculate about the world in new ways or suggest possible new worlds leading society away from becoming mired uncritically in convention (Hamdi 1996: 28).

Theory comes from the Greek *theoria*, meaning contemplation, spectacle and mental conception rooted in sight (Oxford Dictionary). Since the 17<sup>th</sup> century, theory, in English, has been distinguished from practice: theory refers to speculation. Over time it has come to mean a scheme with which to explain things, actions and actors distinct from practice but not necessarily in opposition to it. In recent thinking one major goal has been to overcome the separation between theory and practice and to seek theory in practice in what is called ‘praxis’ (Hamdi 1996: 28). Theory lies at the core of everything we contemplate or speculate about and provides the potential for thinking about new ways to do things.

The purpose of this chapter is to identify theories underpinning the growth and development of informal settlements and conceptualize the process of generation of housing for the urban poor that takes into consideration the actors and factors of the general and specific contexts. This includes the socioeconomic, sociocultural, physical, geographical and political aspects of housing. The review of literature situates these aspects within the emerging alternative development ideology which gives emphasis to people centred development. The study focuses on the built environment, the inhabitants, their livelihoods, and the systems of settings and the embedded systems of activities that prevail in these settlements.

## **2.2 Theories Underpinning Informal Settlements**

The definition of the origins of informal settlements entails a plethora of theories. In this section, theories underpinning informal settlements are discussed. An early attempt at defining informal settlements was undertaken by the ‘Chicago School’ in the 1930s (Sietching 2004). This considered informal settlements as residential differentiation resulting from the different income levels of different ethnic groups who competed for ‘valuable’ or desirable urban land (Burgess 1925 as cited by UN-habitat 2003c). Secondly, ‘Alonso’s neo-liberal theory of slums’ suggested that informal settlements are a response to the housing needs of urban dwellers who cannot afford a formal dwelling due to discriminatory urban regulations and public spending (Smith 1980). Thirdly, ‘post-modern theory’ of urban landscape or ‘factorial ecology’, perceive informal settlements as the product of skills segregation within urban spaces - urban dwellers settle according to their profession and social status (Flood 2000).

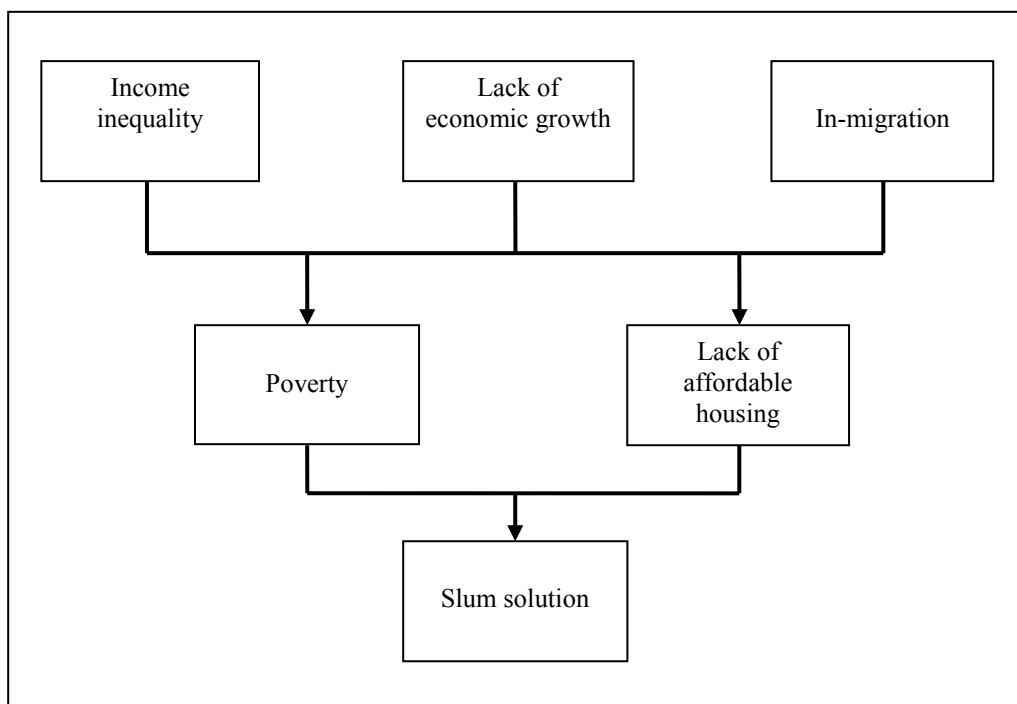
In developing countries, however, four major elements of theories on informal settlements are commonly referred to: land management; colonial legacy; inadequate economy; demand and supply disequilibrium. The first view as argued by Fekade (2000) is that inefficiency of urban authorities, along with poor land management practices and inadequate urban planning schemes, cause the “informalization” of urban areas. The second view links the expansion of informal settlements to political and historical factors, especially colonialism, postcolonial practices and civil and political instabilities (Debusmann and Arnold 1996; Global Urban Observatory 2003). The third view suggests that the introduction of a new economic system has played an important role in the development of informal settlements. This theory argues that the introduction of urban trade, income and class differences is spatially translated into residential discrimination and social exclusion (Huchzermeyer 2002). The fourth view explains the emergence and growth of informal settlements by the disequilibrium between the demand and supply of urban commodities (land, services and infrastructures). This viewpoint explores the sustainability and persistence of informal settlements and postulates that while effort is deployed to improve slums, new informal settlements are mushrooming in other parts of the city (Jacopsen, Hasan Khan et al. 2002).

The plethora of explanations suggests that there is no single theory that can fully explain the emergence and the expansion of informal settlements. It is usually argued that informal settlements are the result of combination of factors such as poor management, especially failed urban policies, poor governance, corruption, inappropriate regulations, dysfunctional land markets, social insecurity, poor economic performance and lack of political will.

Research by Blight (1998) shows that informal settlements flourish on marginal or less valuable urban land such as riverbanks, steep slopes, dumping grounds, abandoned or unexploited plots, along transportation networks, near industrial areas and market places, and in low lying areas or wetlands. Malpezzi and Sa-Adu (1996) research also indicates that informal settlements dwellers have similar socio-cultural backgrounds. There is also a perpetuation of the settlement pattern showing that dwellers tend to have previously lived in informal settlement or are planning to move to a future informal settlement (UN-Habitat 2003c). This suggests that established settlements duplicate themselves and serve as a stepping-stone for the emergence of future settlements on the nearest available land.

Kengne (2000) observes a close correlation between the informal economy and informal settlements. This is attributed to the fact that knowledge, skills and experience are not prerequisites for accessing the job market, as it is the case within the formal or public sectors (Happe and Sperberg 2003). Migrants to the urban areas fuel the informal economic sector which employs more than 70% of the labour force, and contributes an average of 40% of the GDP of developing cities (Kengne 2000).

Another factor that helps to explain the proliferation of informal settlements according to Fekade (2000) is the rigidity of urban planning regulations associated with poor governance that lead to a severe shortage of land, squatting, and infringements of building regulations. The end result of all these factors is rapid, unstructured and unplanned expansion, conflicting land tenure and property rights, poor-quality dwellings, decay of the physical environment, severe social problems, and low socio-economic status for informal settlements occupants summarized in Figure 2.1.



**Figure 2. 1: Inequality, poverty and slum formation**  
**Source: (UN-Habitat 2003c)**

In all, theories underpinning informal settlements relate to development ideology, urbanization, social norms, market forces and environmental responses. These have more impact on housing trends and are discussed in more detail below.

### 2.2.1 Development theory

Housing problem has been perceived as a developmental problem in the sense that it is directly influenced by development trends. Hettne (1995) defines development theory as sets of ostensibly logical propositions, which aim to explain how development has occurred in the past, and/or how it should occur in the future. He notes that development theories can either be *normative*, that is they can generalize about what has generally been the case in an ideal world; or *positive* in the sense of dealing with what has generally been the case in the past. Development studies is explicitly normative according to Hettne (1995: 12).

Development has also been perceived as a process of expanding the real freedoms that people enjoy and requires the removal of major sources of ‘unfreedom’, poverty as well as tyranny, poor economic opportunities as well as social deprivation, neglect of public facilities as well as the intolerance or over-activity of repressive states (Sen 1999). This enables greater well-being that includes an expanded set of economic opportunities, better health, better housing, more education and greater political and civil liberties.

Well-being, as conceived by Sen (1999) and Dasgupta (1993), is a measure of actual and potential quality of existence and encompasses both the attainments of an individual and the choices that he/she enjoys. Dasgupta (1993) defines well-being as a function of ‘utility’ and an index of the worth to the freedom a person enjoys. Sen (1985) introduced the term in the development context by noting that the quality of a person’s existence encompasses ‘being’ and ‘doing’ (What Sen calls ‘functioning’) from an available set of choices (what Sen calls ‘capabilities’). For example, as Grootaert and van Bastelaer (2003) puts it, the standard of living of members of a family in Burkina Faso can be partially assessed by observing whether the entire family is healthy and the school-age children are literate. The entire family is able to stay healthy because the head of the household has the choice of borrowing from a community lending institution, and school-age children are literate because they have the choice of attending a community-supported school. Development theories examined in this study include: Modernization and growth, Basic needs and redistribution, Structural adjustment, Sustainable development, and participatory development. The implications of these theories on housing are further discussed in chapters four and five.

### 2.2.2 Urban theory

In literature, the term ‘urban theory’ is understood to cover a range of perspectives and interpretations of the urban world that aim in their different ways to provide a general understanding of city life. According to Parker (2004: 4), all urban theory deals with one or more aspect of culture, consumption, conflict and community and explains them as thus:

*—Culture includes systems of belief, together with the physical built environment (buildings, bridges, streets and parks), the content and means of communication (newspapers, books, television, radio, the Internet, etc.), as well as traditional cultural production (art, theatre, literature, orchestral music) and popular culture (movies, fashion, comic books, popular music). Consumption refers not just to the consumption of goods and services, but also to the nature of the exchange and means by which such goods and services (private and public) are produced. Conflict relates not just to visible physical violence such as riots or civil disorder, but to less visible struggles over resources (for example, between urban residents and developers), but also between social classes and different interest and status groups. Community involves all aspects of the social life of cities, from the size of the population to its distribution, demographic make-up, and changing characteristics over time. Community is also a ‘value-term’ for —ontiguous association that bears with it a series of assumptions about how humans, should live in close confine with one another” (Parker 2004: 4).*

Theory in the context of urban studies has more than an academic value to the present and future prospects of city life. Theories inform policies which spell out interventions to be pursued. When policies based on one perspective fail to cure urban ills, allegiance shifts to another. One reason theories go in and out of fashion is probably that there is no one right answer to the urban dilemma and choice has to be made among options which appear to work (Carley 1990: 22). In considering the potential for area-based neighbourhood (or informal settlement) improvement or renewal, it is important to understand the advantages and constraints of area approaches of which regularization and upgrading are part of, as compared with other ways to tackle urban interventions. In this section, three schools of thought, or paradigms, which appear to have been paramount in post-war British and American urban policy are reviewed namely: environmental determinism, the cycles of disadvantage thesis, and structural analysis.

## **Environmental determinism**

The rise of ‘urban ghettos’ in public housing areas of post-war modernist design highly populated by people disadvantaged in areas of employment, health, education and other socioeconomic indicators has led to the resurgence of the debate on environmental determinism (Carley 1990: 23; Bohl 2000 : 777). In its basic interpretation, environmental determinism held the view that the physical environment, rather than social conditions, determined the way of life and that manipulation of the physical environment had a direct and determinate effect on social behaviour (Carley 1990: 23). According to Broady (1986) environmental determinism implied a *“one way process in which the physical environment is the independent and human behaviour the dependent variable”*. Social malfunction of housing environment in the West were attributed to this theory and resulted in widespread clearance of run down neighbourhoods, their replacement by large areas of system-built council estates or the decanting of residents to large peripheral estates (Carley 1990: 23).

Environmental determinism came under repeated attacks between 1920 and 1940 as its claims were found to be severely controversial. According to Carley (1990), the criticisms of environmental determinism, particularly the destruction of communities by clearance, are legion. Its legacy as a guide to action is still dominant. As observed by Coleman (1985: 177), anti-social behaviour on council estates is directly related to design deficiencies such as deck access or overhead walkways, and can therefore be put right by redesign. He argues that:

*... the design-disadvantage research has led to a more general understanding of the way human behaviour tends to deteriorate under the stress of inappropriate habitats. As each design variable worsens, there is an increasing probability that more families will fail, in more ways, to develop their children’s capacity for adjusting to civilized life.*

The focus is on the physical environment as a major determinant of social patterns. These approaches are generally accepted by designers, but according (Carley 1990: 23) they are deficient as a whole explanation of interrelated housing and poverty problems and fail to account for the preferences of different social groups, or even the obvious importance of good management and maintenance in housing. In London for instance, the successful recycling of ‘failed’ post-war tower blocks and inter-war four storey walk-ups to mixes of new and old tenants in new mixed tenure arrangements, as at Surrey Docks, indicate that

design factors alone are insufficient as a guide to appropriate policy or architecture in a complex urban environment (Carley 1990: 23).

Although partially discredited as a theory of social action, the attraction of environmentally-determined solutions to urban problems remains strong because they are simple and appear to offer direct solutions to complex problems. Of course, if a problem is a physical problem like derelict land, physical solutions may well be appropriate. But most residential, as opposed to industrial, neighbourhoods are complex social entities, best understood by those who live there. As argued by Carley (1990) environmental determinists are right to stress that the environment does matter. No one, however poor, enjoys living in the squalor of run-down neighbourhoods. Design is important and design which takes into account the needs and preferences of different socio-economic groups can work, and can reinforce positive social change. But the process of urban living is complex and interactive, and good housing design represents only one part of the complex equation which describes high quality, balanced neighbourhoods (Carley 1990).

### **Cycles of disadvantage and spatial concentration of the urban poor**

The persistent problems of poverty and social disadvantage have drawn interest in the understanding of human urban problems in terms of recurring cycles of socio-economic disadvantage, into which poor households are seen as trapped. Leading in this impetus were sociologists Park and Burgess of the Chicago school (Shevky and Bell 1955). The basic premise of this approach is that physical, economic and social handicaps reinforce one another to ensure life-cycle and inter-generational multiple deprivation on the part of the urban poor, who are spatially concentrated and can be identified as so (Carley 1990). Parker (2004) argues that at an extreme interpretation, there is an implicit assumption that the origins (or ‘culture’) of poverty can be found in the inadequacy of individuals and families who live in these deprived environments. This theory extensively influenced policy efforts and saw social policy determine spatial organization. In the USA as observed by Donnison and Soto (1980) this perspective resulted in Community Action Programs, the influential Model Cities Program and the setting up of the Office of Economic Opportunity. Parker (2004) notes that the influence of this thesis has waned but its policy influence remains strong in the West.

### **The neighbourhood in the world economy**

Globalization has brought about a significant shift in resource management at the local level. Efforts to break cycles of disadvantage at the local level seemed to give poor results in the face of international and national economic and demographic forces. Uncertainties engulf local priorities which now become influenced by forces outside local control. Big businesses are now centralizing into what *The Economist* calls global corporations, completely detached from concerns of localities or even nation states. A related factor with implications for local planning has been the phenomenon of deindustrialisation and industrial shift. The latter serves as a kind of structural framework within which the fortunes of inner city neighbourhoods may depend.

The implications of globalization are not only felt at planning level but also at employment and macro- and micro-economic levels. Industrial shift describes a readjustment of productive activities at an international level, particularly the transfer of certain sectors, for example textiles, the car industry, electrical industries, and shipbuilding from the industrialised countries like the UK to certain developing countries (in southeast Asia, South Korea, Brazil, Mexico, Argentina, etc.) based on shifts in comparative advantage (Coetzee, Graff et al. 2001). As a result, neighbourhoods have become part of world systems; urban problems and prospects are inextricably linked with broad social, economic and demographic movements; and action at the neighbourhood level cannot change the nature of the world capitalist, industrial system.

#### **2.2.3 Urban Housing Market Theory**

Housing market theory states that the range of options available in the housing market (or supply) enable consumers (or demand) to exercise, at least in theory, their 'residential choice' (Cocato 1996). In capitalistic states, society is generally stratified on the basis of income levels. Cocato (1996: 10) argues that when the 'consumers' are the poorest groups, these choices are usually limited to the informal portion of the market. In this context according to Gilbert and Ward (1982: 81), it is a frequent over simplification to reduce the market to the two-fold division, formal-informal, considering the informal sector as a 'temporary dysfunction caused by rapid growth and imbalances in the distribution of resources and income'.

Housing markets are characterised in various ways. Lim (1987) for instance considers legal aspects such as: 'legality of land occupancy, legality of the physical characteristics, and type of occupancy.' Struyk et al. (1990) on the other hand focuses on form of production, quality, form of tenure, and security of occupancy. Van Lierop (1989), defines the term housing market as designating a conceptual framework within which a variety of interrelated and mutually influenced processes take place and that each of these processes, or sub-markets, has its own operating procedures, its own standards, and its own costs. Housing markets respond to systems of settings and in informal settings, most sub-markets coexist side by side in spatial entities such as neighbourhoods, blocks or even individual dwellings, and quite often they overlap each other (Coccatto 1996).

The urban housing market is a framework of supply and demand. Factors that determine demand are changes in family income, distribution of income, rate of household formation (as a function of population growth) and household size; household priorities, nature of employment, age, and occupation. Supply in the urban housing market is determined by all factors of production directly involved in the construction and maintenance of housing as well as in management, marketing, insurance and related services. Early housing interventions were based on the assumption that households in the informal settlement were owners of the dwellings they live in and that they strive to improve these dwellings with continued stay. However, in his critique of Turner (1976; 1982) Burgess (1982: 61) argues that self-help does not have just a use value as argued by Turner but a potential market value which in essence is the informal sub-market. Once consolidated with security of tenure and basic infrastructure, self-help housing loses its pure use value and becomes a commodity that can be rented or sold. Several studies have since confirmed the existence of well-established housing sub-markets in informal settlements (Hart Deneke and Silva 1982). Rental housing appear in the context of extra household income in low-cost self-help housing schemes. Hart Deneke and Silva (1982) observe that nearly two thirds of the population has had access to housing through a situation involving a landlord-tenant relationship.

Landlordism in informal settlements occurs at various levels ranging from true land owners to tenants who sublet dwellings rented by them. This phenomenon is well captured by Kumar (Kumar 1996a) in his model of low-income landlordism. This concept defines both forms and conditions which influence development and dissolution of landlordism in the cities of

Developing Countries (Kumar 1996a: 321). Landlordism is defined as the activity of women and men who let accommodation. It does not refer to those who only own land (Kumar 1996a: 317). Kumar identifies three types of landlords, namely subsistence, petty-bourgeois and petty-capitalist.

The subsistence landlord has only one house and initially uses it solely for self-consumption of its use value. If the household needs to augment its income (for example for completion or maintenance of the dwelling or to meet daily needs), the household may choose to rent out part of the dwelling in order to achieve additional income. This conversion of use value to exchange value is part of a survival strategy and not a deliberate move. The household thus enters the rental housing market by default. The greater the number of households in informal and low-wage formal employment, the more this form of landlordism would predominate in informal settlements.

The petty-bourgeois landlord, like the one, owns one house only but unlike the subsistence landlord, he/she deliberately produces rental accommodation in order to generate additional income. Income from rental housing is used to repay loans, purchase consumer durables, or accumulate savings for house improvements. The aim is to improve the household's quality of life. The petty-capitalist landlord owns more than one property and produces rental units in order to expand and reproduce capital in the form of landed property. Rental units are provided for their exchange value. These forms of landlordism are not static. Internal conditions such as the composition of the household, the number of income earning members, dependants, and various external factors can transform subsistence landlords into petty-bourgeois landlords as much as petty-bourgeois landlords can become petty-capitalist landlords and the reverse can also occur.

#### **2.2.4 Social Theory**

Social theory refers to the use of theoretical frameworks to explain and analyze social action, social meanings and large-scale social structures. The field is interdisciplinary, drawing ideas from and contributing to such disciplines as anthropology, economics, history, literary theory, mass communications, philosophy, sociology, and theology. Housing is often considered to be a social activity. This is evident in most local authorities where housing affairs are situated within the department of social services.

### 2.2.5 Environment-Behaviour Relations Theory

In formulating a theoretical perspective for understanding the interaction between informal settlements interventions and livelihoods the explanatory theory of Environment-Behaviour Relations (EBR) as developed by Rapoport provides a useful prototype. In his explanatory theory of EBR, Rapoport approaches the study of housing from a scientific point of view. The epistemological assumption of this approach is that science provides the only reliable way of acquiring knowledge (Rapoport 2001). An explanatory theory identifies (a) the variables important for understanding some observed outcome and (b) explains how those variables interact to produce that outcome. According to Rapoport (2001), explanatory theory:

*...helps us to understand the world, and can be contrasted with so-called architectural –theory”, which is a (usually unfounded) normative position about how buildings should be. Explanatory theory is not normative, but tries to understand (and thus explain) the patterns, linkages and forms of interaction between environment and behaviour, including their mechanisms. These are investigated empirically since empirical testing is central to explanatory theory.*

Although such theory must be general and able to explain general phenomena, it should be applicable to specific cases by introducing specifics (Rapoport 2001).

The purpose of design according to Rapoport (1980a: 11) is to make ‘better environment’. This also is the goal aimed at by regularization and upgrading of informal settlements. The product of mans’ activity in providing shelter for all needs is the built environment. Several factors guide and influence this activity and these have generally been viewed from three major perspectives namely: socio-cultural, socio-economic and political. Through these means, the universal objective of mans’ activity in the environment is seen as the provision of conducive environment for his existence. The question that arises is what is ‘better environment’? ‘Better’ or ‘worse’ according to Rapoport (1977) refers to environmental quality. The discipline of Man-Environment Studies (also referred to as Environment-Behaviour Studies) is concerned with the systematic study of the mutual interaction of people and their built environment. This discipline differs from traditional design in stressing man, including his social and psychological environment and in being systematic. While basing its knowledge of people on the findings and approaches of a

number of social and behavioural sciences, it differs from them by its stress on the physical environment which, by and large, these disciplines have neglected (Rapoport 1977). This approach entails a holistic evaluation of the settlements built environment including forms of shelters, organization of space, system of settings, cultural landscape and other fixed, semi-fixed and non-fixed features, including all the actors within the established context. It is for this reason that this study adopts the explanatory theory of environment-behaviour relations as expounded by Rapoport (Rapoport 2001) and used to study housing and the built environment. Through its approach of dismantling components within the domains of housing, environment, and culture, the concept of Environment-Behavior Relations (EBR) provides a framework suitable for the evaluation and analysis of the informal settlements and their particular settings, and addressing the issues of the impact of improvements on environmental quality including the aspects of compatibility, affordability, tenure systems, livelihoods and lifestyles.

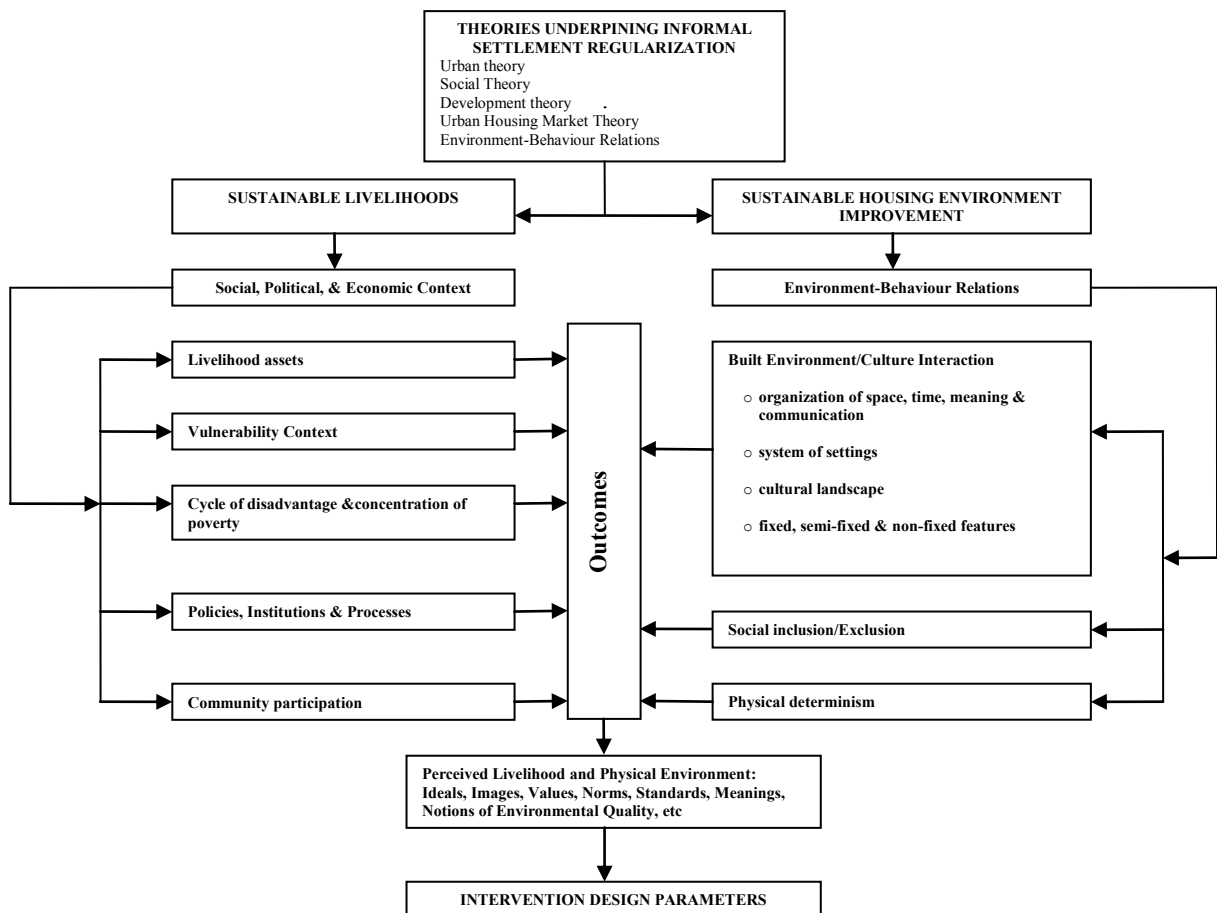
#### **2.2.6 Livelihoods concept**

The other important aspect of man's activity in the environment is how he/she ekes a living or in other words, livelihood. The term livelihoods can be used in many different ways but the definition adopted in this study is that espoused by Chambers and Conway (1992), Moser (1998) and DfID (2001), defining livelihood as comprising the capabilities, assets (including both material and social resources) and activities required for a means of living. It is livelihoods that dictate the choices available to us including where we live, how we live, whether we own the dwelling we live in or rent, where our children go to school and many other choices.

Conceptually livelihoods connote the activities, entitlements and assets by which people make a living. Sustainable livelihoods describe the links between all levels that affect households, starting from how households secure assets, what they do with them, what gets into their way whilst obtaining them and who controls the resources on which assets are based. It recognizes that households need access to assets so as to provide for their basic needs and to gradually increase them over time. These assets help buffer households against various forms of vulnerability. It also recognizes that there are barriers or influences to accessing assets which determine the levels of services received as well as quantity of assets built over time and therefore the degree to which the households can sustainably withstand vulnerability. The access to, use of, and interaction among the assets

serves as a foundation of a livelihood system. In general, housing is a complex, multidimensional and multidisciplinary process influenced by various factors of urbanization, population growth, economic performance, governance, culture, politics among others. Theories and concepts guiding this process are as varied as the factors involved. Figure 2.2 is a summary of the Theoretical and Conceptual Framework adopted for the study.

According to Rapoport (2001), the important role of theory in housing is to subsume much data in easily remembered and used formats (known as compressibility). The logic is that there is too much information, numerous disconnected pieces of empirical research, which, in effect, become counter-productive (Rapoport 2001). It is however noted that housing is a multi-disciplinary phenomenon and no one theory can suffice in addressing the multiplicity of issues arising from the process. It has been an often voiced criticism of housing studies that much research undertaken is either atheoretical or does not make explicit the framework adopted (Kemeny 1992). Consequently, much research



**Figure 2. 2: Theoretical and Conceptual Framework**  
**Source: Author**

on housing has been oriented to specific practical and policy issues and has adopted an atheoretical, empiricist approach (Clapham 2002: 57). In conceptualizing a framework for this study, a three fold approach has been adopted. First, the study of the informal settlements is situated within the specific context, considering the prevailing economic and political settings affecting housing for the urban poor. Secondly, an elaborate framework considers the interactions of man and environment at various levels of the environment namely; geographical, operational, perceptual and behavioural. Lastly, the approach considers a livelihoods framework of analysis exploring the constraints and opportunities of the urban poor. The objective is to address the problem of regularization of informal settlements within the broad perspective of systems of settings including the elements of poverty, attitude/behaviour and market forces. This places the problem of housing within the wider social process, necessitating a sociological approach to understanding the problem.

### **2.3 Sociological approach to housing solutions**

In the past, theoretical approaches pursued in the study of housing have tended to focus mostly on legislative and institutional analysis, neo-classical economics on housing markets, geographical location, and sociological thoughts. In a review of these approaches, Clapham (2002:59) observes that despite their many differences, they share many similarities and problems, which have determined the nature of housing research and that all of them lack a convincing focus on the behaviour of the actors in housing system, particularly the households. He argues that the studies assume that households are rational and instrumental in their approach to housing decision and that there is little empirical work to investigate and attempt to understand how different households perceive and react to the housing context facing them. This observation is also supported by Jacobs and Manzi, (2000) who claims that for many academics, housing studies are undertaken primarily to improve policy practice, the expectation being that new research can inform policy makers in their efforts to resolve social problems.

Sociological approaches focus on constraints on choice. This has provided valuable insights into the outcomes of the housing system (Clapham 2002:58). Thus the sociological approach to housing study provides an appropriate basis for the understanding of human behaviour and the resultant built environment including the various forms of

tenure. Disciplines such as sociology, environmental psychology and behaviour, and education all include research foci addressing people place interaction as explained by Wang (2003:50). First, they resonated with issues raised in environmental design in general which also concerns architecture. Second, social science research has long made use of a range of research methods, from experimental to interpretive approaches. As observed by Wang (2003:50), architectural and housing research can benefit from this acceptance of a diversity of methods that nevertheless offers a developed sense of each method's strengths and weaknesses. Third, the social science domain offers an extensive literature arranging these methods into systemic frameworks that are both comprehensive as well as definitive of quality. A central problem of much of housing studies is that it retains a narrow focus on housing policy and housing markets, and neglects broader issues. As argued by Kemeny (1992), the theoretical development of housing research remains rudimentary and leaves much to be desired. The current trend in housing studies is for researchers to draw inspiration and concepts from older, more established cognate fields such as urban studies and to the social science disciplines.

#### **2.4 Housing and Environmental-Behaviour Relations**

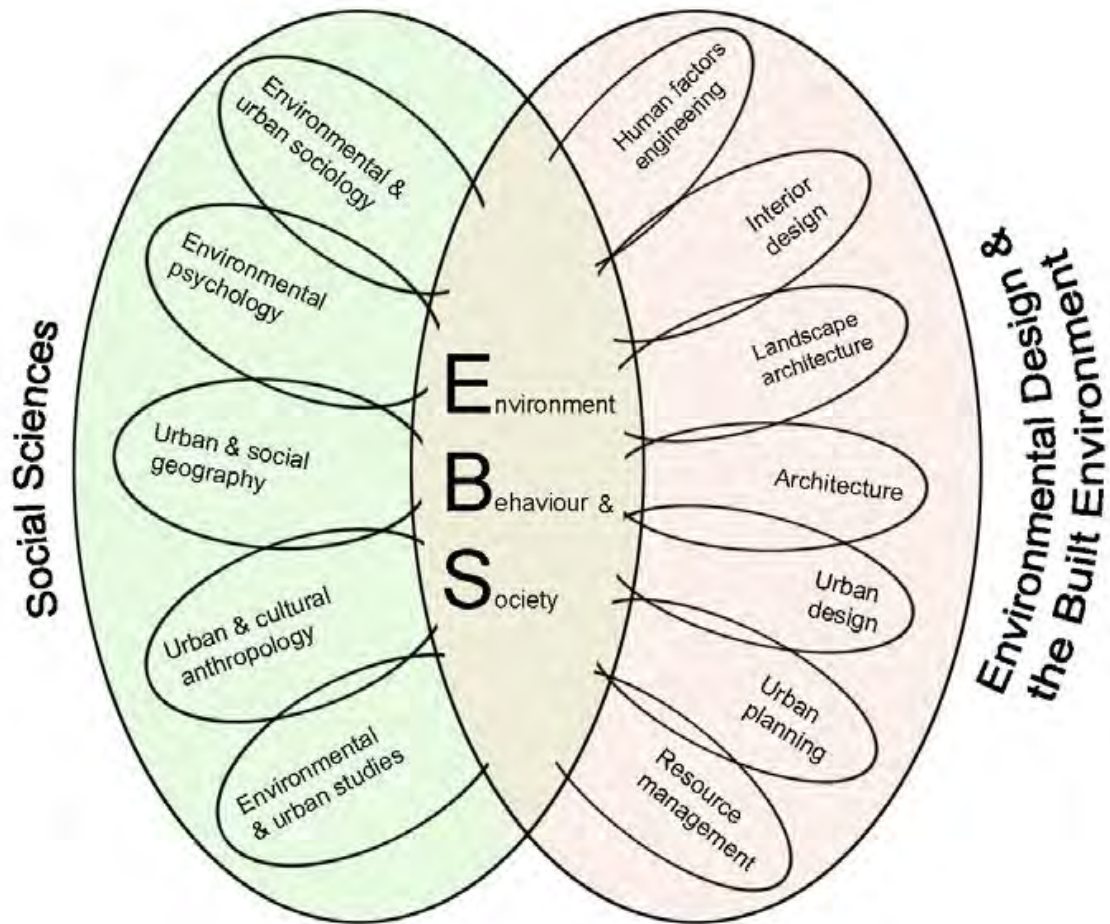
In this section, the concept of Environment-Behaviour Relations (EBR) is further elaborated and applied to housing and the built environment. Starting on the premise that upgrading of informal settlements is a design intervention, design is seen as a conscious attempt to help provide appropriate systems of settings in response to systems of activities for households, social groups and communities. Design is seen as a problem-solving activity which must be based on an understanding of EBR among other factors. As argued by Tipple and Willis (1999), it is conceivable that a designer might design an environment that he/she intensely disliked if it were appropriate and supportive for the group in question. The designer's satisfaction would thus come from a problem understood, analyzed and solved.

Environment-Behaviour Studies (EBS) as explained by Moore (2004) developed from the confluence of architecture, urban design and urban planning on the one hand and the social and behavioural sciences on the other and emerged from two sets of complementary concerns, one in the professional disciplines of environmental design and the built environment, and the other in the socio-cultural and behavioural sciences. It relates to

environment design in the form of traditional modernist architecture, urban design and planning and has grown in part from the concern that these disciplines have not given sufficient attention to factors of behavioural, social, cultural, individual perceptions and preferences, group norms and dynamics, and cultural values and expectations in the planning and design of our human environment (Moore 2004).

In the behavioural and social sciences disciplines particularly psychology, sociology, and anthropology, EBS grew from the concern that while much was known about individual, group and cultural processes, perception, cognition, preferences, values, attitudes, social norms, semantic structures, cultural differences, and so on – little was known about the relation of these social understandings to the physical environment (Moore 2004: 2). Thus the field of EBS has emerged in an attempt to fill this gap, to develop empirically-based understandings of the reciprocal interaction among individuals, social groups, cultures and the environments in which they live, and to apply such understandings to the better planning and design of the built environment (Moore 2004: 2). The field thus also includes studies of environmental intervention, and the processes of communication, information dissemination and research application to urban policy, planning, urban design and architecture (Moore, Tuttle et al. 1985). This knowledge is considered in this study to be crucial to architects and others involved in housing interventions and policy designs. Figure 2.3 developed by Moore characterises the range of EBS as the confluence of many parts of the social sciences and the built environment professions. Of concern to this study is the environmental design and the built environment.

A theory is explanatory if it derives a phenomenon instead of assuming it. In order to be useful, an EBR approach must be based on theory which according to Rapoport (1998) has to be a coherent overall conceptual framework. According to Rapoport, EBR is more than a tool to aid in programming and design; it needs to be seen as theory of design. The purpose of theory is to set goals and objectives and to provide criteria for making choices among alternatives. The purpose of such criteria is to guide the answer to the question: what should be done and why? The question of how it should be done deals with implementation, with the various constraining and enabling variables such as economics, politics, structure, materials, site conditions and the like; while important according to Rapoport, he considers them modifying factors.



**Figure 2. 3: The confluence of many parts of the social sciences and the built environment professions in EBS**

Source: (Moore 2004)

The design process can be visualized as an attempt to create better environments. Evaluating the success of such attempts according to Rapoport is essentially a two-stage process: the first ascertaining whether objectives have been met and the second whether these objectives are valid. Rapoport considers EBS to be about the nature of objectives. If design is about creating ‘better’ environments then theory helps decide what is better, for whom, under what circumstances, why, how one knows it is better, etc. (Rapoport 1995: 36). This concept is elaborated below under conceptualization of environment, perception of environment, environmental quality, and environmental components. EBS is a broad area involving a multiplicity of theories as illustrated by Moore (2004) in Figure 2.4. He further illustrates its application to environmental design and the built environment in Figure 2.5.

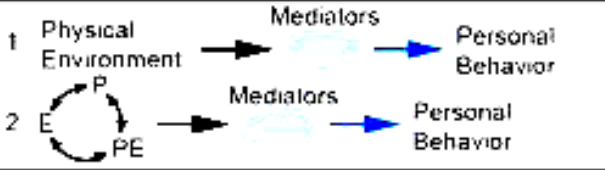
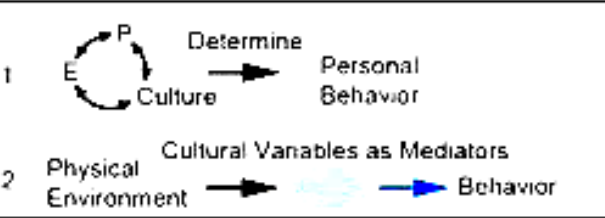
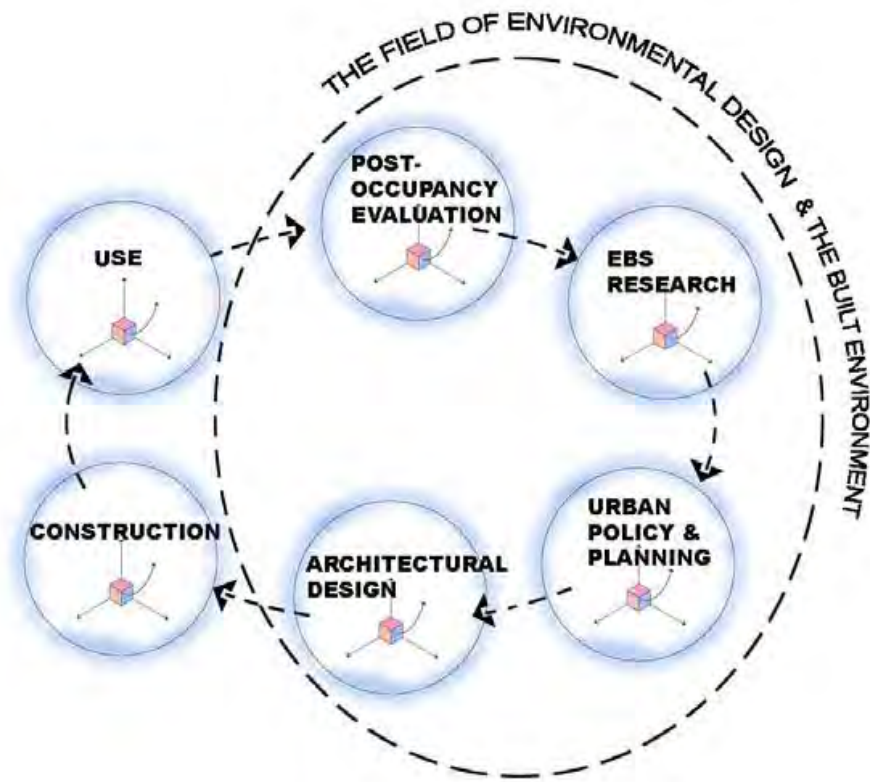
<b>Major Theories In EBS</b>	<b>Environment and Behavior Relationship</b>
Person-Based Theories	Personality Disposition $\xrightarrow{\text{Predict}}$ Environmental Behavior & Outcomes
Social Group-Based Theories	Social Rules & Norms of Group $\xrightarrow{\text{Determine}}$ Individual Behavior in the Environment
Empiricist Theories	Physical Environment $\xrightarrow{\text{Causally}}$ Personal Behavior
Mediational Theories	
Cultural Theories	
Phenomenological Theories	Body Subject & Subcortical Routines $\xrightarrow{\text{Influence if not Determine}}$ Spacial Behavior
Structuralistic Theories	Interaction of Structures $\xrightarrow{\text{Account for}}$ Behavior Events
Organismic Theories	Underlying Organic Principles $\xrightarrow{\text{Determine}}$ Behavior
Transactional Theories	Inseparable Psychological, Contextual & Temporal Facts $\xrightarrow{\text{Define}}$ Phenomena

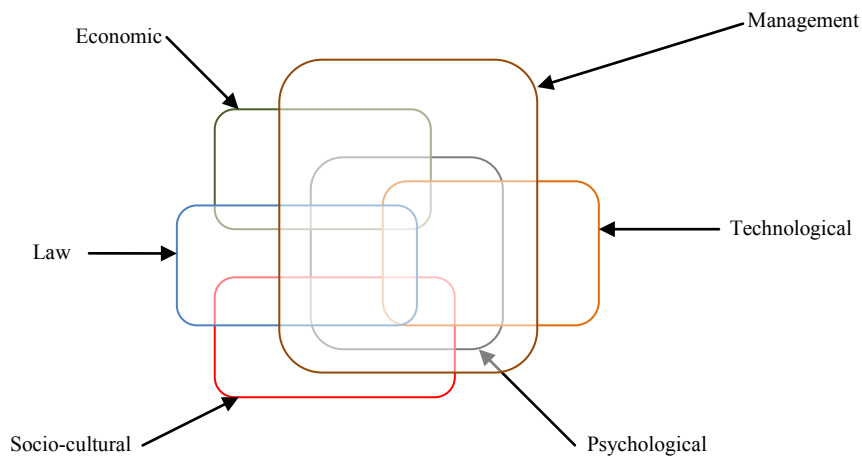
Figure 2. 4: A diagrammatic summary of many of the major theories of environment, behaviour and society  
 Source: (Moore 2004)



**Figure 2. 5: The cyclic process of the built environment and the professions of environmental design**  
**Source: (Moore 2004)**

#### **2.4.1 Conceptualization of housing environment**

Environment has been described as the circumstances, objects, or conditions by which one is surrounded (Merriam-Webster’s Online Dictionary accessed 2009). Thondike and Barnhart (1992) Dictionary describes environment as all the surrounding conditions and influences that affect the development of a living thing. Cambridge International Dictionary (1997 describes environment as the conditions one lives, or works in and the way that they influence how one feels or how effective one can work. What is common within these descriptions is that environment is made up of objects and that these objects influence the well-being of humans and all other living things. The objects of interest to this study comprise the built environment. The phrase built environment refers to the man-made surroundings that provide the setting for human activity. Built environment is generally not regarded as an academic discipline in its own right, but as an interdisciplinary "field of application" which draws upon the individual disciplines of economics, law, management, design and technology as illustrated in Figure 2.6.



**Figure 2. 6: Interdisciplinary Characteristics of Environment**  
**Source: Author**

Four complementary conceptualizations of the environment developed by Rapoport (1977) have been found to be most useful:

1. the organization of space, time, meaning and communication;
2. a system of settings within which systems of activities (including their latent aspects) take place;
3. a cultural landscape;
4. comprising of fixed, semi-fixed and non-fixed elements.

This conceptualization of the environment enables housing environment to be dismantled into the various attributes for ease of observation and evaluation. At micro-level, dwelling is seen to comprise of a system of settings spatially organized and with meaning to the dweller. System of settings as pointed out by Baumgartner (1988) enables observation to be conducted relating housing to larger systems of settings such as blocks, compounds, neighbourhoods, settlements and even regions. Also involved are lifestyles and rules about what behaviour is appropriate in which setting and which influences acceptability and definitions of crowding, privacy, nuisance, etc. – and thus environmental quality (Baumgartner 1988). This according to Rapoport (1986; 1990a) is important, because what happens, or does not happen, in some settings influences what happens, or does not

happen, in others. It also helps to explain the role and nature of neighbourhoods, settlement patterns and transportation routes (Rapoport 1986; 1997b).

At its broadest, Rapoport (1977: 26) defines environment as *“any condition or influence outside the organism, group, or whatever system is being studied”*. Of the various conceptualizations, Ittelson (1960) further describes the environment as an ecological system with seven components namely:

1. *Perceptual – the way in which individuals experience the world, which is a principal mechanism linking people and environment.*
2. *Expressive – which concerns the effect on people of shapes, colours, textures, smells, sounds and symbolic meanings.*
3. *The domain of aesthetic values of culture and the whole area of values.*
4. *Adaptive – the extent to which the environment helps or hinders activities.*
5. *Integrative – the kinds of social groupings which are facilitated or inhibited by the surroundings.*
6. *Instrumental – which refers to the tools and facilities provided by the environment.*
7. *The general ecological interrelationship of all these components.*

A different formulation by Lawton (1970), describes the environment as an ecological system having five components:

- 1) *The individual.*
- 2) *The physical environment, including all natural features of geography, climate, and man-made features which limit and facilitate behaviour, and the “resources” of the environment.*
- 3) *The personal environment, including individuals who are important sources of behaviour control – family, friends, authority figures, peer-group members and so on.*
- 4) *The suprapersonal environment which refers to the environmental characteristics resulting from the inhabitants’ modal personal characteristics due to groupings by age, class, ethnic origin, lifestyle or other specific characteristics.*
- 5) *The social environment consisting of social norms and institutions.*

According to Corraliza and Berenguer, (2000), research on factors determining environmental behaviour has traditionally focused on the study of personal variables (e.g.,

values, beliefs), mostly ignoring the direct role of situational variables (situation, physical-environment traits). The study of environmental attitudes has been characterized by the exhaustive study of the different cultural (values) and psychological (beliefs) factors that describe the relationship between the environment and the human being. The organization of the environment is thus a result of the application of sets of rules which reflect differing concepts of perceived environmental quality. Depending on the meaning of “good” environment, the images which people have about “good life” and the appropriate setting for it, it should be expected that the variety of places designed always make better places through the application of sets of rules and values based on definitions of environmental quality.

Environmental perception on the other hand is concerned with how environment is apprehended and how this known environment relates to the “real” environment. According to Rapoport (1977: 26), the concern is with the distinction between *emic* aspects (how things look within a system) and *etic* ones (the way an outside observer evaluates the same events) in terms of cognitive anthropology. Given the various conceptualizations of the environment, the perceived environment will include perception of both people and their artefacts. It is through perception that the built environment is ordered.

In conclusion and in concurrence with Rapoport (2001) and Corraliza and Berenguer (2000), environment is a series of relationships among elements and people and these are orderly – they have pattern. The environment has a structure and is not a random assemblage of things. It both reflects and facilitates relations and transactions between people and the physical elements of the world and that these relationships in the world are primarily spatial – basically objects and people are related through separation in and by space. However, critiques of this interpretation of environment indicate that it lacks a strong link between the role of politics and economics in the man-environment relations. This is crucial to this study and an attempt is made to incorporate the two in the form of the context within which man-environment activities take place.

#### **2.4.2 Built Environment quality**

The built environment includes both the buildings in which people spend their time (home, school, workplace, recreational facilities, shops and malls, etc.) and the broader built

environment of human settlements (villages, towns, suburbs, and cities). It is not only a physical environment, it is also a social environment, where people gather and relate to one another. Housing is a setting of the built environment that offers shelter from the elements in addition to security and other human needs. Housing is a basic determinant of health, and many organizations, including governments and the World Health Organization have developed standards for what is perceived to be healthy housing. The design, construction, and operation of built environments including housing has enormous implications for human health. Two major meanings of the concept of environmental quality have been developed by Rapoport (1984, p. 476) as follows:

1. *The simpler is related to things such as air and water quality, noise, consequences of overpopulation, depletion of resources, radiation, thermal pollution and the like. These are the ones emphasized by environmentalists', Departments of the Environment, Environmental Protection Agencies and the like.*
2. *The more complex interpretation is that related to the much more available qualities of the natural and built environment which gives satisfaction to people and which they choose, either by moving towards good environments or leaving bad environments (migration or habitat selection). Wants, preferences and choice provide the best framework for considering home environments – housing and neighbourhoods. This second meaning refers to psychological and socio-cultural qualities of the environment.*

Environmental quality profile according to Rapoport (1977) is a way of trying to describe and communicate the many components of the concept. Essentially in that connection, four things can vary:

- 1) The *nature* of the components
- 2) The *ranking* of these components (i.e., their relative importance)
- 3) The *absolute* importance (or magnitude) of these components *vis-à-vis* other things that are not of environmental quality, but still play a role in choice, which is being emphasized.
- 4) The components can be *positive* or *negative*, i.e. the *pulls* and *pushes* respectively of migration or habitat selection, the attributes liked or disliked respectively.

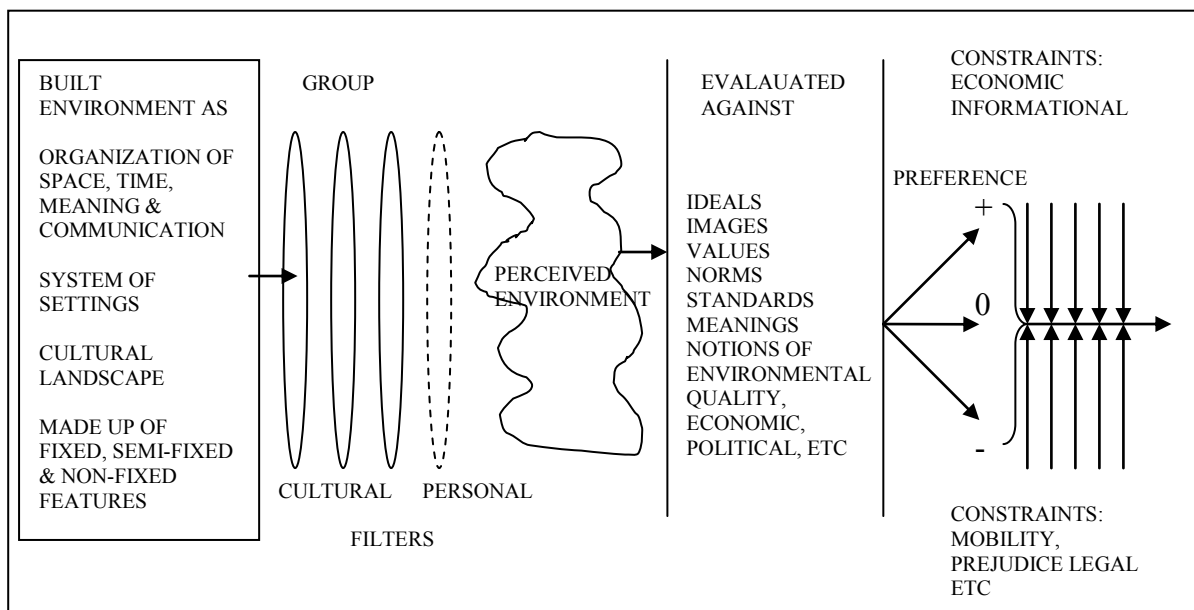
In relation to informal settlements, the prevailing view is that informal settlements may be analysed on these basis as they offer choices for large urban populations in the urban centres of the Third World. They are of value, may provide a better social environment than other areas and that even physical standards gradually improve, so that imposing unrealistic absolute standards is undesirable (Turner 1968; Turner and Fitcher 1972; Peattie 1982).

### **2.4.3 Housing and cultural attributes**

There are numerous definitions of culture but Rapoport (1980a) concludes that these definitions fall under three general views. One defines it as a way of life typical of a group, the second as a system of symbols, meanings, and cognitive schemata transmitted through symbolic codes, and the third as a set of adoptive strategies for survival related to ecology and resources. These three views are seen not as being in conflict but rather as complementary. In housing an important question is why, when considered cross-culturally (or cross-social groupings) there are so many different forms of housing in such different settlement types although activities in dwellings are much less variable and fewer in number (1987; Oliver 1997). The general answer has been –cultural differences,” particularly since housing as the primary setting *par excellence*, has traditionally been the most typical product of vernacular design and, therefore, most directly related to culture (Rapoport 2001 pp 147). Thus, designed environments of particular cultures are settings for the kind of people which a particular group sees as normative, and the particular life-style which is significant and typical, distinguishing the group from others (Rapoport 1980 pp. 9).

Housing has been considered as a system of settings within which a certain system of activities takes place (Rapoport 1990a; 1998). Within this system of settings, the environmental quality of housing is described as a set of attributes, obtained by dismantling housing and can be represented as a profile ((1990a; Rapoport 1995b) Rapoport, 1995d (1990); Khattab, 1993). In this respect, Rapoport argues that housing choice is of a particular system of settings and its associated environmental quality (Rapoport, 1985, 1995c, (1985), 1995a, (1990a)). This quality is determined by the cultural group’s ideals, images, schemata and meanings, and norms, standards, expectations and rules. Variable environmental quality profiles are defined by specific filters and evaluative criteria to help answer the question of what is a –good” or –better”

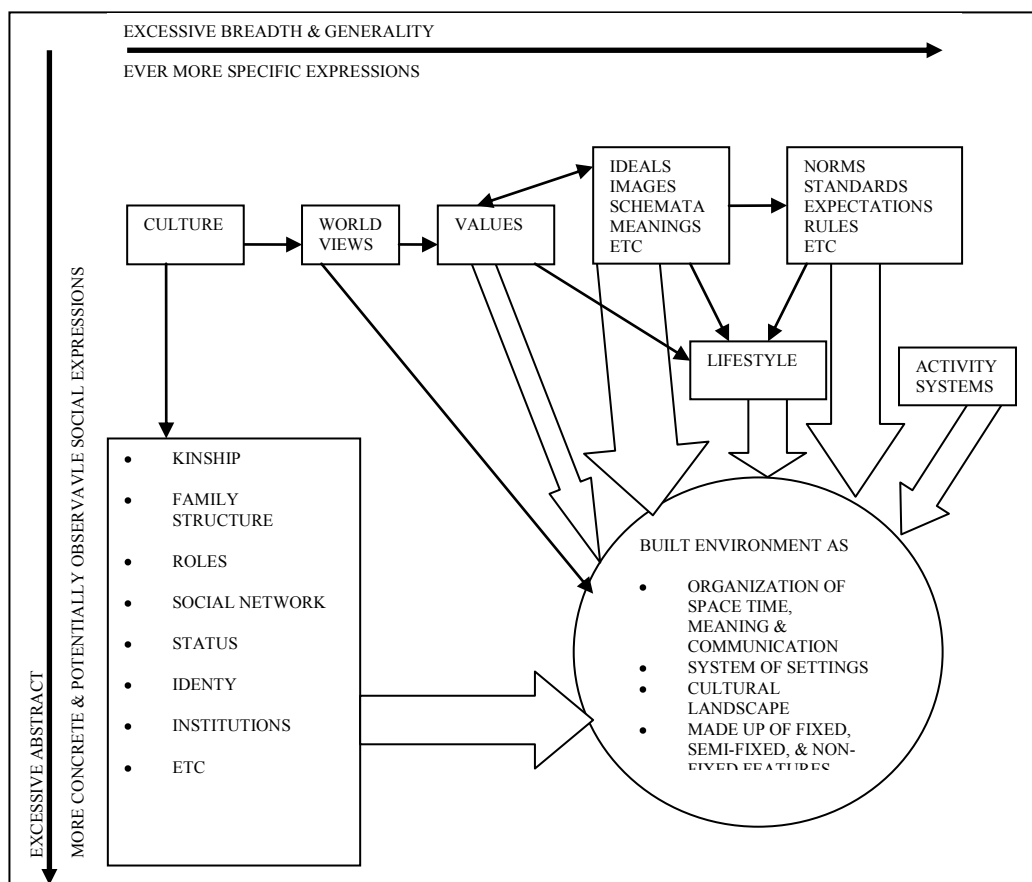
environment, better for whom, why and how one knows it is better. Figure 2.7 is an illustration of the environmental quality evaluative process starting with the built environment concept which in turn is influenced or filtered by culture, groupings, and individuals, to realise a perceived environment. The perceived environment is evaluated against ideals, images, values, norms, standards, meanings, etc. The resultant preference is subject to economic, informational, as well as mobility constraints in realising the desired choice.



**Figure 2. 7: Model of evaluative process of environmental quality**  
**Source: Rapoport(2001)**

The definition of culture varies considerably across disciplines but it has also been defined as a way of life of a group of people who have a set of values and beliefs which according to Giddens (1993) embody ideals, and are transmitted to members of the group through enculturation. These lead to a world view – the characteristic way of looking at the world and, in the case of design, of shaping the world (Rapoport 1995a). According to Rapoport, the world is shaped by applying rules which lead to systematic and consistent choices whether in creating life-style, a building style, a landscape, or a settlement. This principle equally applies to informal settlements as built environment and the urban poor as forming cultural groups within their settlements.

In analysing the relationship between culture to the built environment Rapoport (2001 pp. 148) dismantles culture on the lines of two definitional approaches to derive measurable variables. On the basis of definitional approaches that ask what culture is, he derives observable social expressions such as kinship, family structure, social network, status, identify, institutions amongst others. On the basis of definitional approaches that ask what culture does, he derives the variables world view, values, ideals, images, schemata, meaning, norms, standards, expectations, rules, lifestyle, and activity systems. This array of cultural elements influences the built environment. This concept is illustrated in Figure 2.8.



**Figure 2. 8: Dismantling of “culture” and relating it’s expression on the built environment**  
**Source: Rapoport (2001)**

The width of arrows corresponds approximately to the hypothetical feasibility and ease of relating the various elements (Rapoport 2001). The variables in the model enables one to begin to analyze and synthesize the many existing housing studies, much information in the popular press and media, and also to relate material from many places, groups and periods (as well as changes (Rapoport 1997a). This is applied to this study in the attempt

to understand the factors influencing nature and characteristics of informal settlements in the case study areas.

## **2.5 Sustainable livelihoods and housing**

The development of informal settlements has been related to poverty and failure of development strategies among other things (Payne 1984; Hamdi 1991). Poverty, unemployment, high cost of conventional building materials, insecure land tenure and poor access to basic infrastructure and services have immensely accentuated the vulnerability of low-income families, to living in unhealthy and life threatening conditions (Syagga 2001). To circumvent this, governments all over have in the past adopted development strategies as a way of improving production and increasing incomes to uplift the well-being of its people. Housing is one of the indicators of well-being and households strive to live in better housing environment. The term “development,” has featured prominently over the years as a strategy for mankind to better its living conditions. Several development approaches have been formulated and applied in developing countries including modernization strategy, basic needs/redistribution and structural adjustment among others. Economic growth has always been the focus of these approaches with the assumption that this growth would naturally lead to the elimination of poverty. This has not been tenable for the majority of the urban poor in developing countries but is a strategy that is still pursued. Thus poverty alleviation becomes the driving force for the improvement of well-being even in housing development programmes including regularization and upgrading.

In an attempt to refocus attention to poverty alleviation and thus improve the well-being of the poor, development agencies have moved towards holistic, poverty focused interventions. In assessing current thinking on development approaches, Rossiter (2000), observes that refocusing on poverty has spawned a plethora of studies geared towards analyzing the nature of poverty and how it might be reduced. Out of this has emerged the concept of sustainable livelihoods as a framework of analysis to assist in the understanding of social, political and economic processes which explain how people become poor, why they remain poor and what should be done to address this problem. This approach is based upon evolving thinking about poverty reduction, the way the poor live their lives, and the importance of structural and institutional issues which stem from concerns about the

effectiveness of development activities (Chambers and Conway 1992; DFID 2001). It is broad, encompassing and aims at increasing the sustainability of poor people's livelihoods through livelihood promoting activities and recognizes the multiple dimensions of poverty identified in participatory poverty assessments. There is now an emerging consensus that policy makers and development actors should seek to identify what the poor have, rather than what they do not have, and in so doing focus on their assets (Moser 1998). In section 2.2.6 above on Livelihoods concept, a link was established between livelihoods and housing for the urban poor. What follows below is conceptualization of livelihoods attributes that directly or indirectly influence housing outcomes in informal settlements and intervention strategies.

In line with shifts in the understanding of poverty the current consensus appears to be that if poverty is to be tackled in a sustainable and meaningful way at the city level, all aspects of poverty should be addressed simultaneously. Spicker (1999) argues that if poverty is multidimensional any policy which focuses on one element or aspect risks ignoring others. The key to poverty alleviation according to this approach lies in improving productivity (the enabling approach) plus improving human assets/capital. This new approach to development and poverty alleviation has evolved into what is now referred to as livelihood approach to development which puts people at the centre of development.

As defined by Chambers and Conway (1992) Livelihoods refer to the means of gaining a living and includes livelihood capabilities, tangible assets and intangible assets. The livelihoods of the poor are mostly based on multiple activities and sources of food, income and security. Security here refers to secure ownership of or access to resources and income-earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. The livelihoods approach was first developed to look at issues of rural rather than urban poverty. This almost inevitably led to a discussion of environmental sustainability and the management of natural resources. Diana Carney (1998) claims that a livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future while not undermining the natural resource base. The most common framework currently in use to analyse Sustainable Rural Livelihoods (SRL) uses much of the work developed by the Institute of Development Studies. At the centre of this analysis of rural (not urban) livelihoods are five different types of assets used by individuals and households to

construct their livelihoods. These are: natural capital; social capital; human capital; physical capital; and financial capital.

The key element of livelihoods approaches is that people are the starting point. Conceptually livelihoods connote the activities, entitlements and assets by which people make a living. Sustainable livelihoods describe the links between all levels that affect the households, starting from how households secure assets, what they do with them, what gets into their way whilst obtaining them and who controls the resources on which assets are based. It recognizes that households need access to assets so as to provide for their basic needs and to gradually increase them over time. These assets help buffer households against shocks and stresses such as ill-health or unemployment. It also recognizes that there are barriers or influences to accessing assets which determine the levels of services received as well as quantity of assets built over time and therefore the degree to which the households can sustainably withstand shocks and stresses. The access to, use of, and interaction among the assets serves as a foundation of a livelihood system. These assets as stipulated by Chambers and Conway (1992) broadly include the following:

***Natural/biological assets*** upon which livelihoods will in the first instance depend and whose access is crucial to households namely, land, water, flora, fauna, common property resources, etc. For instance, tenure is a key physical asset to acquire. Having a degree of ownership of land is often the starting point for households to consolidate shelter.

***Physical assets*** which include physical infrastructure, particularly roads, markets, clinics, schools, and water supply. Properly planned infrastructure and better building reduce vulnerability to sudden impact of disasters like fire, earthquake, and epidemics related to poor housing environments. These are some of the aspects that regularization aim at addressing.

***Financial assets*** derived from productive activities and investments. Most resource access in urban areas results from cash exchanges, derived from access to jobs, credit or saving opportunities. The building of financial assets is seen as a key activity for greater livelihood security. For the urban poor, financial assets are often fragile. Most of the urban poor are forced to work long hours in the informal sector with very low incomes. Working in poor conditions such as waste picking serves to increase vulnerability to disease and ill-

health and limitations in earnings limit housing choices to the deplorable informal settlements.

*Human assets*, which in this instance refers to labour, is the major asset for the urban poor. Cities provide a variety of opportunities for earning income. The benefits from different household members entering into a range of activities based on skills, knowledge and ability increases the chances of sustaining a household. However, some coping strategies serve to increase vulnerability and threaten household sustainability, as for instance, child labour creates barriers to adequate education.

*Social assets* refers to the social networks, membership of groups, relationship of trust, access to wider institutions of society upon which people draw in pursuit of livelihood. As opposed to rural settlements, low income urban settlements are characterised by limited social assets such as lack of extended family structure, established networks of contacts or strong relationships of trust which are readily accessible in the rural setting.

*Political assets* includes participation and empowerment. While participation implies active involvement by the population, empowerment refers to the expansion of peoples' capabilities to define and set their own goals and objectives, assess the implications of choices available to them and assume responsibility for actions to achieve their agreed upon objectives. Participation and empowerment are therefore mutually reinforcing and enable people to assume their rights and responsibilities as citizens. In practice, any attempt to enhance people's access to assets and to transforming structures and processes will rapidly confront political issues. Having a say in democratic processes is therefore a vital asset in sustainable livelihoods.

### **2.5.1 Core concepts of sustainable livelihoods**

The livelihoods approach puts people at the centre of development. It focuses on individuals, households and community at micro level of neighbourhoods and macro level of the city. It is argued that it is at this level that the thinking about the achievement of objectives such as poverty reduction, economic reform or sustainable development becomes effective (Sen 1992; Chambers 1995; Moser 1996). At a practical level (DFID 2001), the approach:

- starts with an analysis of people's livelihoods and how these have been changing over time;
- fully involves people and respects their views;
- focuses on the impact of different policy and institutional arrangements upon people/households and upon the dimensions of poverty they define (rather than on resources or overall output *per se*);
- stresses the importance of influencing these policies and institutional arrangements so they promote the agenda of the poor (a key step is political participation by poor people themselves);
- works to support people to achieve their own livelihood goals (though taking into account considerations regarding sustainability).

This corresponds well with informal settlements regularization that focuses beyond shelter improvement and incorporates overall improvement of the well-being of the dwellers. Sustainable livelihoods approach assumes that sustainable poverty reduction will be achieved only if external support (i.e. support from outside the household) works with people in a way that is congruent with their current livelihood strategies, social environments and ability to adapt. People, rather than the resources they use or the governments that serve them, are the priority concern (Moser 1998).

The livelihoods approach is also a holistic approach which attempts to identify the most pressing constraints faced by people and promising opportunities open to them (DFID 2001). It builds upon people's own definitions of these constraints and opportunities and, where feasible, it then supports people to address/realise them. The livelihoods framework helps to 'organise' the various factors which constrain or provide opportunities and to show how these relate to each other. In this way it attempts to gain a realistic understanding of what shapes people's livelihoods and how the various influencing factors can be adjusted so that, taken together, they produce more beneficial livelihood outcomes.

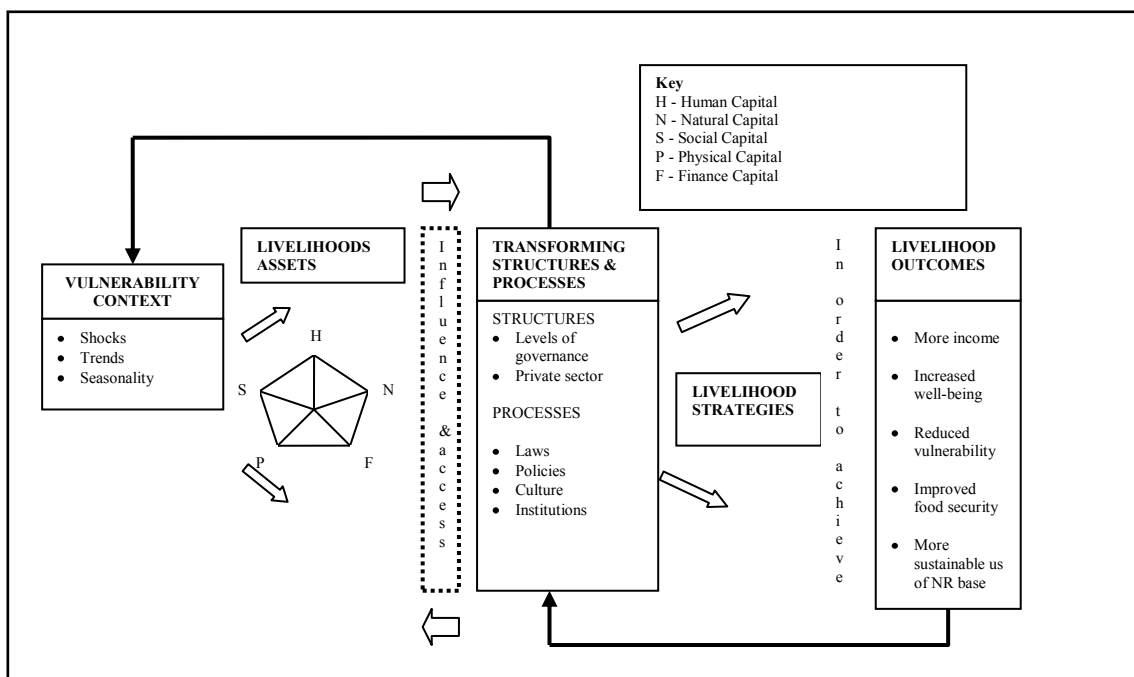
The livelihoods approach is as dynamic as people's livelihoods and the institutions that shape them (DFID 2001). It seeks to understand and learn from change so that it can support positive patterns of change and help mitigate negative patterns. It explicitly recognizes the effects on livelihoods of external shocks and more predictable, but not necessarily less damaging, trends. Attempting to capture and build upon such livelihood

dynamism significantly increases the scope of livelihood analysis. It calls for ongoing investigation and an effort to uncover the nature of complex, two-way cause and effect relationships and iterative chains of events. The true dynamism of livelihoods can be reflected in process and modes of analysis which is an important area for monitoring and learning. These processes and modes include building on strengths, macro-micro links, and sustainability.

Livelihoods approach is household and community centered, and thus location sensitive. Household members contribute in different ways depending on their various roles, responsibilities and capabilities (Moser 1996). Households draw on social capital and a mesh of obligations (Putnam 1993; Chambers 1995; Douglass 1998).

### 2.5.2 Sustainable livelihoods framework

The key elements of the sustainable livelihoods model are assets, livelihood strategies, livelihood outcomes, and the underlying structures and processes that direct the interplay of these elements. The framework considers livelihoods as being shaped by a multitude of different forces and factors that are themselves constantly shifting (DFID 2001). It can also be argued that the forces and factors that shape livelihoods are in turn also influenced by livelihoods. People-centred analysis as depicted in Fig. 2.9 and developed by DFID



**Figure 2. 9: Sustainable livelihoods framework**  
**Source: DFID (2001)**

(2001) begins with simultaneous investigation of people's assets, their objectives (the *Livelihood Outcomes* which they are seeking) and the *Livelihood Strategies* which they adopt to achieve these objectives. In the process of gaining a living, the individuals face various constraints (the *Vulnerability Context*) which in the case of housing may include forced eviction, fire, flooding, insecurity, etc. Their livelihoods are also influenced by institutional settings (*structures and processes*) which may set regulations and policies that impact on livelihood outcomes. These elements of the sustainable livelihoods framework are elaborated below.

### **2.5.2.1 Vulnerability context**

The context within which the urban poor live influences the assets they possess, the livelihoods they achieve and the strategies they adopt. Conceptually this has two broad dimensions: factors that influence their vulnerability on one hand, and policies, institutions and processes that guide it on the other (Rakodi and Lloyd-John 2002). The term 'vulnerability' refers to varied situations. According to Moser (1998), vulnerability refers to:

*...the insecurity of the well-being of individuals, households or communities in the face of a changing environment. Environmental changes threatening welfare can be ecological, economic, social or political .... With these changes often come increasing risk and uncertainty and declining self-respect. Because people move into and out of poverty, the concept of vulnerability better captures processes of change more than static measures of poverty.*

To understand the sources of vulnerability, Carney (1998) suggests that it is necessary to analyze trends (resource stocks, demographic change, available technologies, political representation and economic trends), shocks (the climate and actual or potential conflicts) and culture (as an explanatory factor in understanding how people manage their assets and the livelihood choices they make). The framework differentiates between:

- long-term trends, such as demographic trends or changes in the natural resource base;
- recurring seasonal changes, such as prices or employment opportunities; and
- short-term shocks, such as illness, natural disaster or conflict.

Factors that make up the 'Vulnerability Context' are considered important because they have a direct impact upon people's asset status and the options that are open to them in pursuit of beneficial livelihood outcomes (Moser 1998). As depicted by DFID (2001) 'Shocks' can destroy assets directly (in the case of forced evictions, floods and civil conflict such as witnessed in Nairobi slums in the 2008 post election violence.). They can also force people to abandon their home areas and dispose of assets (such as land and house) prematurely as part of coping strategies. 'Trends' on the other hand may (or may not) be more benign, though they are more predictable. They have a particularly important influence on rates of return (economic or otherwise) to chosen livelihood strategies. 'Seasonal shifts' in prices, employment opportunities and food availability are one of the greatest and most enduring sources of hardship for poor people in developing countries. Unlike their rural counterparts, the urban dwellers are more dependant on cash economy and vulnerable to additional elements. Residents of informal settlements in Nairobi are prone to rent hikes by landlords, evictions by land owners and developers, and diseases, all of which are elements of vulnerability.

#### **2.5.2.2 Livelihoods assets**

Livelihoods approach seeks to gain an accurate and realistic understanding of people's strengths (assets or capital endowments) and how they endeavour to convert these into positive livelihood outcomes (Chambers and Conway 1992; Moser 1998). The approach is founded on the understanding that people require a range of assets to achieve positive livelihood outcomes and that no single category of assets on its own is sufficient to yield all the many and varied livelihood outcomes that people seek. Assets have been defined in a variety of ways by Chambers and Conway (1992), Carney (1998), Moser,(1998), DFID (2001), and (UNDP 1999) but this study adopts Moser's definition because of its reference to the context of urban livelihoods.

According to Moser (1998), identifying what the poor have, rather than what they do not have, strengthen people's own inventive solutions, rather than substitute for, block or undermine them. Moser (1998: 1) like Chambers and Conway, (1992) categorizes the assets of poor urban individuals - women, men and children - households, and communities in terms of a fivefold -asset vulnerability framework." These include labor and human capital, social capital, physical capital including housing and other physical properties, financial capital and finally, natural capital which includes land and other

resources on land. Slum dwellers opposed to evictions for instance consider the land as an asset in their possession. Their coming together to resist the eviction or demand for services and security is an element of their social capital. Their micro-finance institutions and merry-go-rounds are their financial assets. Understanding and tapping these assets may contribute to the success of informal settlements regularization strategies. According to the framework, asset endowments are constantly changing. Assets are considered to combine in a multitude of different ways to generate positive livelihood outcomes. 'Positive livelihood outcomes' is in this study equated to 'improved well-being' which is the objective of regularization. Of the five assets considered above, social capital, physical capital and natural capital are considered to be most relevant to this study and are elaborated below. Although human capital and financial capital are equally important and contribute to the realization of housing and the built environment, their detailed consideration would go beyond the scope of this study.

### **Social capital**

To counter some of the aspects of vulnerability in informal settlements, dwellers often form groups to fight for their rights or address issues of common interest to them. This is an important aspect in people-centred development approach where emphasis is placed on participation of beneficiaries. This aspect constitutes social capital. There is much debate about what exactly is meant by the term 'social capital'. Woolcock (2002: 18) defines social capital as "the networks and norms that facilitate collective action".

Putnam (1993) defines social capital as *those features of social organization, such as networks of individuals or households, and the associated norms and values that create externalities for the community as a whole. He and others have recognised that these externalities can be either positive or negative. Negative externalities can result from interpersonal interactions, as demonstrated by certain interest groups – or, in extreme cases, malevolent organizations such as the Mafia in Italy or the Interahamwe in Rwanda. In such situation he recons, social capital benefits members of the association, but not necessarily non-members of the community at large.*

James Coleman (1997) opened the door to a broader – or "meso" – interpretation of social capital by expanding the unit of observation and introducing a vertical component to it. He defines social capital as *a variety of different entities [which] all consist of some*

*aspects of social structure, and [which] facilitate certain actions of actors – whether personal or among groups, rather than individuals.* This definition expands the concept to include vertical as well as horizontal associations and behaviour within and among other entities, such as firms. Vertical associations are characterised by hierarchical relationships and an unequal power distribution among members.

The third most encompassing view of social capital according to Grootaert and Bastelaer (2002:2) includes the social and political environment that shapes social structure and enables norms to develop. In addition to the largely informal, and often local, horizontal and hierarchical relationships of the first two concepts, this macro view also includes the most formalised institutional relationships and structures, such as the political regime, the rule of law, the court system, and civil and political liberties.

In the context of the sustainable livelihoods framework social capital it is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives (DFID 2001). These are developed through:

- networks and connectedness, either vertical (patron/client) or horizontal (between individuals with shared interests) that increase people's trust and ability to work together and expand their access to wider institutions, such as political or civic bodies;
- membership of more formalized groups which often entails adherence to mutually-agreed or commonly accepted rules, norms and sanctions; and
- relationships of trust, reciprocity and exchanges that facilitate co-operation, reduce transaction costs and may provide the basis for informal safety nets amongst the poor.

The above are all inter-related. For example, membership of groups and associations can extend people's access to and influence over other institutions. Likewise trust is likely to develop between people who are connected through kinship relations or otherwise. Of all the five livelihood framework building blocks, social capital is considered the most intimately connected to *Transforming Structures and Processes*. There is, therefore, a close relationship between social and human capital. Social capital, like other types of capital, can also be valued as a good in itself. It can make a particularly important

contribution to people's sense of well-being (through identity, honour and belonging). Social capital can be used in negative as well as positive ways (DFID 2001):

- Those who are excluded from strong groups that convey multiple benefits may be disadvantaged in a variety of other ways (e.g. landless women with few skills).
- Networks may be based upon strictly hierarchical or coercive relationships that limit mobility and prevent people from escaping from poverty.
- Membership of a group or network often entails obligations (e.g. to assist others in times of distress) as well as rights (to call upon assistance). Calls for assistance may come at difficult times.

Social capital as adopted in this study and related to regularization addresses community and neighbourhood organizations that address issues related to land, evictions, infrastructure and services, security, garbage collection, and maintenance of communal spaces.

### **Natural capital**

Natural capital is the resource from which flow resources and services useful for livelihoods. In urban context, natural capital does not play a very significant role in the housing environment (Meikle, Ramasut et al. 2001). There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and biodiversity to divisible assets used directly for production (trees, land, etc.) (DFID 2001). Within the sustainable livelihoods framework, the relationship between natural capital and the *Vulnerability Context* is particularly close. Many of the shocks that devastate the livelihoods of the poor according to the framework are themselves natural processes that destroy natural capital (e.g. fires that destroy structures and forests, floods and earthquakes that destroy agricultural land) and seasonality is largely due to changes in the value or productivity of natural capital over the year. Health (human capital) will tend to suffer in areas where air quality is poor as a result of industrial activities or natural disasters such as floods. Important in the process of regularization are structures and processes such as land allocation systems and regulations that guide its use.

According to DFID (2001) these structures and processes govern access to natural resources and can provide the incentives or coercion necessary to improve resource management. For example, if markets are well-developed, the value of resources is likely to be higher, prompting better management (though in some cases, developed markets can lead to distress sales by the poor resulting in increased poverty).

### **Physical capital**

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods. These for instance include physical infrastructure, particularly roads, markets, clinics, and schools. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive. In the urban setting, housing is one of the most important assets as it is used for both productive (renting room, using the space as a workshop area etc) and reproductive purposes (Moser 1998) in addition to shelter. Moser (Moser 1998) expands physical capital to include tools and equipment that people use to function more productively. Thus in the urban setting, tools such as carpentry tools, sewing machine, bicycle are used to earn income that improve well-being. These are used in activities that require spatial settings at community and neighbourhood levels. According to DFID, the following components of infrastructure are considered essential for sustainable livelihoods:

- affordable transport;
- secure shelter and buildings;
- adequate water supply and sanitation;
- clean, affordable energy; and
- access to information (communications).

The framework considers infrastructure as commonly a public good that is used without direct payment. Without adequate access to services such as water and energy, human health deteriorates and long periods are spent in non-productive activities such as the collection of water. The opportunity costs associated with poor infrastructure can preclude education, access to health services and income generation (DFID 2001).

## **Financial capital**

Financial capital denotes the financial resources that people use to achieve their livelihood objectives (DFID 2001). The primary role of financial capital is the availability of cash or equivalent, that enables people to adopt different livelihood strategies. For the urban poor, labour is a key asset for deriving income as a result of the 'commoditized' nature of cities which increases dependency on cash income (Moser 1998). The availability and accessibility of affordable credit is important in reducing the likelihood of severe indebtedness of the urban poor and accessing additional capital. There is a link between financial capital and human capital as earnings from labour are pegged to skills possessed by the individual. Two main sources of financial capital are considered by the framework:

- *Available stocks: Savings are the preferred type of financial capital because they do not have liabilities attached and usually do not entail reliance on others. They can be held in several forms: cash, bank deposits or liquid assets such as livestock and jewellery. Financial resources can also be obtained through credit-providing institutions.*
- *Regular inflows of money: Excluding earned income, the most common types of inflows are pensions, or other transfers from the state, and remittances. In order to make a positive contribution to financial capital these inflows must be reliable (while complete reliability can never be guaranteed there is a difference between a one-off payment and a regular transfer on the basis of which people can plan investments).*

Financial capital is also the asset that tends to be the least available to the poor. Indeed, it is because the poor lack financial capital that other types of capital are so important to them (Moser 1998). In the informal settlements, activities of NGOs and CBOs indirectly inject financial capital through their activities such as training and support of cottage industries aimed at improving the well-being of the dwellers.

### **2.5.2.3 Livelihoods transforming structures and processes**

Structures and institutions within the DFID livelihoods frame are institutions, organizations, policies and legislation that shape livelihoods. These are similarly evident in the regularization of informal settlements. They operate at all levels, from the household to the international arena, and in all spheres, from the most private to the most public

(DFID 2001). Structures according to the DFID framework are the hardware – the organizations, both private and public – that set and implement policy and legislation, deliver services, purchase, trade and perform all manner of other functions that affect livelihoods. They draw their legitimacy from the basic governance framework. This is most obvious in the case of governmental organizations. Structures are important because they make processes function. Without legislative bodies there is no legislation. Without courts to enforce it, legislation is meaningless. Without traders, markets would be limited to direct trades between buyers and sellers. An absence of appropriate structures can be a major constraint to development. One of the most common problems in development is that Transforming Structures and Processes do not work to the benefit of the poor. This can be a deliberate outcome driven by the failure of prevailing – elite controlled – governance arrangements to recognize the legitimate interests of the poor.

Processes on the other hand can be thought of as software. They determine the way in which structures – and individuals – operate and interact (DFID 2001). They entail:

- *Policies - which inform the development of new legislation and provide a framework for the actions of public sector implementing agencies and their sub-contractors.*
- *Institutions – which have been variously defined as the ‘rules of the game’, ‘standard operating practices’, ‘routines, conventions and customs’ or ‘the way things are done’. They are informal practices that structure relationships and make the behaviour of organizations somewhat predictable. Thus, informal arrangements on land access are institutions, as are markets. ‘Rules of the game’ operate both within structures and in interactions between structures.*
- *Institutions are embedded in and develop out of the culture of communities or larger societies.*
- *This culture will often include widely recognized hierarchies of power relations that confer a particular status on people and constrain their behaviour and opportunities according to factors that are essentially out of their control (age, gender, etc..)*
- *Processes are important to every aspect of livelihoods as exemplified below:*

- *They provide the incentives – from markets through cultural constraints to coercion – that stimulate people to make particular choices (about which livelihood strategy to pursue, where to pursue it, how much to invest in different types of livelihood assets, how to manage a resource, etc.).*
- *They grant – or deny – access to assets.*
- *They enable people to transform one type of asset into another (through markets).*
- *They have a strong influence on inter-personal relations – how different groups treat each other (DFID 2001).*

One of the main problems faced by the poor is that the processes that frame their livelihoods systematically restrict them and their opportunities for advancement (Moser 1998). This is a characteristic of social exclusion and it is one reason why it is so important that governments adopt pro-poor policies. These aspects have a strong bearing to informal settlements regularization programmes.

#### **2.5.2.4 Livelihood strategies and outcomes**

Livelihood strategy is a term used by the framework to denote the range and combination of activities and choices that people make or undertake in order to achieve their livelihood goals (including productive activities, investment strategies, and reproductive choices) (DFID 2001). Studies have drawn attention to the enormous diversity of livelihood strategies at every level – within geographic areas, across sectors, within households and over time (Chambers and Conway 1992; Carney 1998; Ashley and Carney 1999; Meikle, Ramasut et al. 2001). This is a dynamic process in which people combine activities to meet their various needs at different times. A common manifestation of this at the household level is ‘straddling’ whereby different members of the household live and work in different places, temporarily (e.g. seasonal migration) or permanently (Moser 1998).

The sustainable livelihoods approach, seeks to develop an understanding of the factors that lie behind people’s choice of livelihood strategy and then to reinforce the positive aspects (factors which promote choice and flexibility) and mitigate the constraints or negative influences. This expansion of choice and value is important because it provides people with opportunities for self determination and the flexibility to adapt over time. Different livelihood activities have different requirements, but the general principle is that those

who are amply endowed with assets are more likely to be able to make positive livelihood choices. That is, they will be choosing from a range of options in order to maximize their achievement of positive livelihood outcomes, rather than being forced into any given strategy because it is their only option (DFID 2001).

'\_Livelihood Outcomes' are the achievements or outputs of '\_Livelihood Strategies' achieved through the use of available '\_livelihood assets' and possibly directed by '\_structures and processes' that transform livelihoods. When thinking about '\_Livelihood Outcomes', it is important to understand not only the aims of particular groups but also the extent to which these are already being achieved. If certain social groups are systematically failing to achieve their aims, it may be because their aims conflict with the aims of other, more powerful groups or they do not have the means (assets) to achieve them (DFID 2001).

## **2.6 Operationalizing the model**

Conceptually, the study considers livelihoods as influencing the quality of housing environment of the urban poor. Figure 2.10 below gives a summary of livelihood attributes and their influence on housing environment as discussed above. Livelihoods and quality of housing environment are interdependent and improvement of one affects the other. Since well-being is the objective of any societal change or development as this change is referred to in social science, livelihoods plays a dominant role in the determination of the housing environment. Housing quality as an independent variable is dependent upon livelihood transformations which in turn are dependent upon development and urbanization trends. Resource distribution is dependent on development ideology pursued and the market forces. social change and market forces on the livelihoods of the dwellers. Improved livelihoods lead to improved housing environment either through improvement of existing house or a move to a better environment.

Independent variables	Dependent variables	Related variables
<p><b>Livelihoods</b></p> <p><b>Livelihood assets</b></p> <ul style="list-style-type: none"> <li>• Human capital</li> <li>• Physical capital</li> <li>• Social capital</li> <li>• Financial capital</li> <li>• Natural capital</li> </ul> <p><b>Livelihood strategies</b></p> <p><b>Livelihood Vulnerability</b></p>	<p><b>Housing environment</b></p> <p><b>Physical</b></p> <ul style="list-style-type: none"> <li>• Shelter, infrastructure and services,</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>• Community cohesion and participation, social amenities</li> </ul> <p><b>Financial</b></p> <ul style="list-style-type: none"> <li>• Mortgage finance, rent, owner occupation</li> </ul> <p><b>Natural</b></p> <ul style="list-style-type: none"> <li>• Land</li> </ul>	<p>Attitudes</p> <p>Behaviour</p> <p>Norms</p> <p>Meanings</p> <p>Values</p> <p>Lifestyle</p> <p>Regulations</p> <p>Policies</p>

**Figure 2. 10: Livelihood attributes that influence housing environment**  
**Source: Author**

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

In chapters one and two above, the study background, problem statement, research objectives, research questions and theoretical and conceptual framework were described. In this chapter, the procedures followed in conducting the study are described. It covers research design which basically covers schemes, outlines or plans that are used to generate answers to research problems. This includes descriptions the research methodology adopted, description of case study area, population sampling procedure, pre-testing of research instrument, and data collection and analysis techniques.

#### 3.2 Research Design

This study is explorative in nature as implied by the objectives and research questions. Qualitative research method was found to be most suited to the study. Qualitative research is characterized by an approach that seeks to describe and analyze the culture and behaviour of humans and their groups from the point of view of those being studied. This entails commitment to view events, actions, norms, values, and meanings. from the perspective of people who are being studied (Orodho 2005). The phenomenon under study being regularization of informal settlements and the implication of systems of settings and activities that defines its built environment, qualitative research method involving observation and interviews was deemed most appropriate.

The study approaches the housing problem from a holistic, people centred approach based on the concepts of sustainable livelihoods and Environment-Behaviour Relations. A household's livelihood opportunities and constraints to a large extent determine the resources available which in turn determine the choice of dwelling including, its location, quality and ability to own or rent. These aspects are considered as systems of settings and activities in the study. The means of living is itself influenced by various factors such as level of education, type of employment, level of income, physical health, nutrition, the quality of the living environment itself, all of which are referred to here as livelihood attributes. These in turn are influenced by development, urbanization, and market trends,

as well as by government policies, regulations and governance. Thus the research methodology applied in this study seeks to establish appropriate systems of settings and systems of activities that are necessary for successful regularization of informal settlements. The combination of methods used aims at identifying aspects of spatial organization and utility within the built environment of informal settlements. Included are livelihoods strategies, behaviour, attitudes, policy and the general context that need to be analyzed with the objective of informing the informal settlements regularization process, making it more responsive to the needs of the urban poor.

The study embraces the changing global programming environment which is currently changing to rights based programming. Within these rights is the right to adequate housing as spelt out in the Habitat Agenda. The link between the rights-based programming and qualitative research as observed by Mugenda (1999) is the participatory and holistic nature of these processes. The issues under observation in this study relate to social, political and economic development for which the tendency is the use of qualitative research in search of sustainable solutions to the myriad of problems facing the societies and communities under study. The data analysis focuses on four themes: spatial organization and utility of the built environment at neighbourhood and household levels, activity systems within this built environment, tenure, and community participation.

### **3.2.1 The review of related literature**

The first stage of the study entailed review of literature on key concepts and theories underpinning the study. This included review of literature on development theory, urban theory, housing market theory, and concepts on Environment-Behaviour. These were considered on the understanding that the problem of housing the urban poor in developing countries is directly linked to the developmental and urbanization processes of the past decades, livelihood constraints and opportunities, and behaviour and attitudes of the actors involved in the entire housing process. Further literature review was undertaken to gain knowledge of the study area and to consider and build upon the results of other similar research work. Chapters 4, 5 and 6 draw heavily from the literature review. A systematic critical literature review and analysis was undertaken of research reports, policies, legislation and other secondary publications on issues of urbanization, development, livelihoods, environment behaviour-relations and informal settlements regularization. In addition to validating the initial research questions, the literature review which also draws

from Environment-Behaviour Relations research by Rapoport (1997-2001) and Sustainable Livelihoods Framework developed by Chambers and Conway (1992) and DFID (2001) among others, identified and discussed a range of housing environment components impacting on individuals, communities, the state, and non-governmental organizations efforts in the informal settlement regularization processes.

### **Development trends**

Housing is a component of social well-being and the discipline that focuses on the improvement of social well-being is development. Regularization of informal settlements is a housing intervention with the objective of improving the housing environment and well-being of the dwellers. It is for this reason that the study undertook a critical review of development concepts and their implications on housing delivery. This review situated housing within the development context and covered implications of development ideologies on housing, development practices and housing delivery covering Modernization and Growth, Basic Needs Provision/Redistribution with Growth, Structural adjustment, Sectoral, Multi-sectoral, and Integrated development approaches. Also reviewed were alternative development approaches including Social Capital and sustainable development.

### **Urban livelihoods**

Urban form is a direct outcome of the ways in which different societies are organized. Urban population is supported by urban economic growth. It is the imbalance of economic growth to urban population growth that manifests itself in the development of slums and informal settlements. Thus a review of urbanization trends was undertaken to define its implications on housing the urban poor.

As opposed to rural living where farming activities form the major means of eking a living, the urban setting brought with it service and manufacturing oriented activities of which labour became an important component of production and thus introducing the concept of wages and salaries as earnings accruing to labour offered by workers. This is the core concept of urban living. Literature on urban livelihoods was reviewed to establish the influence of urban living on accessing adequate housing.

### **Informal settlements**

The core of this study is regularization of informal settlement with emphasis on rental tenure which dominates informal settlements. Review of literature in this regard included definition of informal settlement and characteristics of these settlements. The objective of this review was to establish factors contributing to the development of informal settlements, concepts of housing in informal settlements, the housing problem and policies aiming at solving them. This also formed an introduction to the context of informal settlements in Nairobi and the link between livelihoods and informal settlements. Within the context of informal settlements, the review discusses spatial organization within the settlements, socio-cultural and socio-economic aspects.

### **Tenure**

Tenure is the most critical element in the regularization of informal settlements. Cities in developing countries are home to a heterogeneous mix of tenures: owners, landlords, tenants and sharers jostle for residential accommodation in pursuit of urban livelihoods and social well-being. Review of literature on tenure focused on rental tenure versus ownership and analysed the relationship between tenants and landlords and various trends in social and cooperative housing that target the urban poor. Also reviewed were policy approaches to rental housing, rights and innovations. The argument in the review is whether the predominant rental tenure system in the informal settlements can influence policy direction in housing.

### **Community participation**

The concept of sustainable livelihoods puts emphasis on the assets of individuals, households and communities. To this effect, participation takes a centre stage. Among the livelihood assets, social capital is the most relevant in attempting to build on community strength. Review of literature in this instance focused on the concept of community, empowerment, reciprocity, networking, social cohesion, rules and penalties.

Policy mapping involved the collection of detailed policy related, socio-demographic data from relevant sources including Central Bureau of Statistics, Ministry of Lands and Housing, Survey of Kenya, and Nairobi City Council (NCC). On the influence of government policies on informal settlements regularization, the following documents were analyzed:

1. Housing policy related documents to establish government attitude towards informal settlements including resource allocation and possible direction thereafter.
2. Physical Planning Policy to establish urban land-use considerations for informal settlements.
3. Building Code regulations and its quality/cost implications.
4. The government's five years Development Plans to establish resource allocation to informal settlements.
5. Poverty eradication strategy papers.

Also reviewed were the general thinking in the regularization policies and processes and the role played by regulatory machinery. These included reviews of studies undertaken on sites-and-services projects, upgrading projects, and self-help housing schemes. In locating existing informal settlements and their development over time, various maps of the city were reviewed. These were also reviewed in relation to urban land-use patterns.

Among the objectives of this study was to identify, appropriate tenure for upgraded settlements that does not result in the displacement of the intended beneficiaries. On the basis of this, literature on land tenure and rental housing were reviewed. These included Communal Land Trusts, community owned housing schemes, land and housing markets, and rental schemes.

### **3.2.2 Interviews**

Interviews were used to obtain in-depth data from identified sources indicated below. Interview schedules were applied in all interviews to meet the specific objectives of the study. Unstructured interview approach was used to obtain deeper information by probing the interviewees. Interview schedules applied are included in appendices 2, 3, and 4. In the case study area, questionnaires were administered and households interviewed to establish data on household characteristics, duration of stay in the area, reasons for choice of residential area, views on aspects of quality of the dwelling and communal neighbourhood open spaces, infrastructure and services, community participation, tenure preferences, current intervention strategies, and performance of shelter structures and building materials. Focus groups comprising of village elders, youth and women groups were identified and interviewed to gain insights into the historical development of the areas under study, and aspects of housing, social, economic, and social trends.

Interviews with housing policy experts and practitioners drawn from various institutions were conducted to establish the current, past and envisaged policies on housing interventions. The heads of institutions or their representatives interviewed included:

- Director of Housing, Ministry of Lands and Housing. The Housing department is responsible for the formulation and articulation of government policy on housing and was involved in the formulation of the 2003 National Housing Policy for Kenya. The aim of the interview was to establish the government's stand on implementing policies that it formulates or adopts.
- Director, City Planning and Architecture, Nairobi City Council who is responsible for the overall planning of the city and approval of proposed developments. Development control falls within the Director's docket and in the interview intended to establish the City Council's willingness and capacity to address the mushrooming of illegal structures.
- Director of Housing and social services, City Council of Nairobi who is responsible for public housing in the city and have also been involved in the development of site-and-services projects and owner-occupier housing projects. The director is also responsible for social amenities including community centres and markets.
- Director, National Housing Corporation who is responsible for financing and developing housing in rural and urban areas. This Corporation has to a large extent been financing middle and upper income group housing and the interview set to establish reasons for lesser involvement in low income group housing.
- Director, National Cooperative Housing Union. The union has worked closely with several housing co-operative societies in housing development and training of housing co-operators. The objective of this interview was to establish the extent and performance of community participation in housing development.
- Director, Intermediate Technology Development Group. This is a NGO involved in the promotion of appropriate technology. Stabilised earth blocks and sisal cement roofing sheets were used in the Mathare 4A case study area and the interview set to establish the performance of such materials as experienced by the Technology Group in their past projects.
- Director, Amani Housing Trust. It is this Trust that oversees the implementation and management of Mathare 4A which was selected as a case study. The interview set to

establish the challenges faced by the Trust right from the inception of the project to its current situation.

#### **3.2.4 Case study areas**

The objective of this study entails an evaluation of a case to shed light on the phenomenon. Case study as defined by Mugenda and Mugenda (1999) is an in-depth investigation of an individual, group, institution or phenomenon. Most case studies are based on the premise that a case can be located that is typical of many other cases. The case under study is viewed as an example of a class of events or group of individuals. The research methodology applied in this study is qualitative but some aspect of quantitative methodology has also been applied. Whereas a quantitative method aims at selecting a truly random and representative sample that will permit generalization from the sample to a large population (Patton 1987:51) a qualitative method aims at obtaining the greatest amount of information on a given problem. Thus in qualitative method the researcher has to look for information rich cases, which Patton (1987:52) defines as *those from which one can learn a great deal about issues of central importance*.

Mathare Valley informal settlement was selected for this investigation as it represents an appropriate case for the phenomenon under study. It is the oldest informal settlement in Nairobi and presents various categories of informal settlements including squatting on government, city council, and private land. It also presents cases of uncontrolled development on previous sites-and-services interventions. The most recent and interesting intervention in the area is the upgrading of Mathare 4A neighbourhood for rental housing only. It also presents attempts by squatters to acquire the land through land buying companies which have resulted in varied settlement patterns. The villages making up the community of Mathare Valley form distinct neighbourhoods with distinct characteristics partly as a result of land ownership parameters and responses to housing demands by formal and informal developers. Three of the villages have been selected for case study. These three have been selected as a result of a preliminary survey of the area conducted by the researcher as the entire Valley is too large to be surveyed within the scope of this survey, three of these villages have been selected for case study on the basis of the distinct characteristics they depict. These are discussed in detail in Chapter Seven.

To depict the situation of informal settlements in the area prior to improvement interventions, Mathare VB was selected as the first case study. This was followed by Mathare IVA (also referred to as Village IVA) which was selected for its intervention programme which focused on housing development, rental tenure, and community participation. The third case was Ngei estate which is a site-and-services project meant for low rise dwelling but which has informally converted to high rise tenements of up to seven storeys high. The main objective of this study is to establish the systems of settings and activities that characterise the informal settlements.

#### **3.2.4.1 Population and sample**

The main objective of this study is to establish the systems of settings and activities that characterise informal settlements and their implication in the regularization of these settlements. Each case study was selected on the basis of distinct characteristics. As each case is different from the other, sample design had to be specific to each case. However a common approach of selecting representative clusters within the case study areas was applied to all the cases in the form of clustering. Four clusters were selected in each case, representing a total of 10 per cent of the household population. The criteria used in identifying the clusters included the physical characteristics of the dwellings, network of roads and footpaths, open spaces, activities such as commercial, recreation, and sanitation. In Mathare IVA and IVB, where the dwellings are single storey, cluster population was approximately 50 dwellings. In Ngei II similar sizes of clusters had more than 600 dwellings due to multiple storey blocks. That by itself was an indicator of the high density found in Ngei II as compared to the other two case study areas.

Whereas it is practical to collect data in each dwelling in the Mathare IVA and IVB, it was not practical to do so in the Ngei II cluster. The reason for opting to carry out the survey in clusters was two fold. The objective of this study was to establish systems of settings and activities at neighbourhood and dwelling level. The cluster offered a manageable sample to carry out qualitative study of the environment and behaviour of the dwellers within a defined neighbourhood space, observing the ordering of space and related activities. At dwelling level, a four units were selected in each cluster for detailed study on the basis of cluster representative sample. In the case of Ngei II, Dwellings for detailed study were selected on the basis of the number of storeys constituting a block. Within the block, one dwelling was selected for detailed study per floor. To establish the household

characteristics in the study areas, data was collected from the number of dwellings in each cluster in Mathare IVA and IVB. In the case of Ngei, data for this purpose was collected from the selected blocks of apartments in each cluster.

#### **3.2.4.2 Data collection procedures**

Data for this purpose has been collected by way of observations and interviews of residents. Areas for in-depth study were selected by way of preliminary survey of the area and review of aerial photographs. At household level, a representative sample was randomly selected on the basis of the preliminary survey of the case study area. Deliberate sample design (Kothari 1995) approach also known as non-probability sampling was adopted. This involves purposive or deliberate selection of particular units of the universe for constituting sample which represents the universe. It is also known as convenience sampling. The selected units were marked on the map of the area. Research instruments were designed for data collection and included structured questionnaires administered to household heads and their spouses (Appendix 1). Interview schedules were developed and administered to government officials (Appendix 2), Amani Housing Trust officials (Appendix 3) and focus groups (Appendix 4).

#### **3.2.4.3 Pilot survey**

A pilot study was conducted to test the suitability of questions, and manner of conducting the survey. The pilot study helped ensure that the items were tested for what they were intended to (validity) and that they consistently measure the variables in the study (reliability).

#### **3.2.4.4 Main survey**

The main survey was conducted over a period of two months by the author assisted by four trained field assistants who were also involved in the pilot survey. Experience from the pilot survey indicated that most household heads could only be reached after working hours and over the weekends. Where household heads could not be reached, spouses were interviewed.

#### **3.2.4.5 Observations**

Observations were made at two levels. First, observations were made at community and neighbourhood levels to establish systems of community and neighbourhood settings and

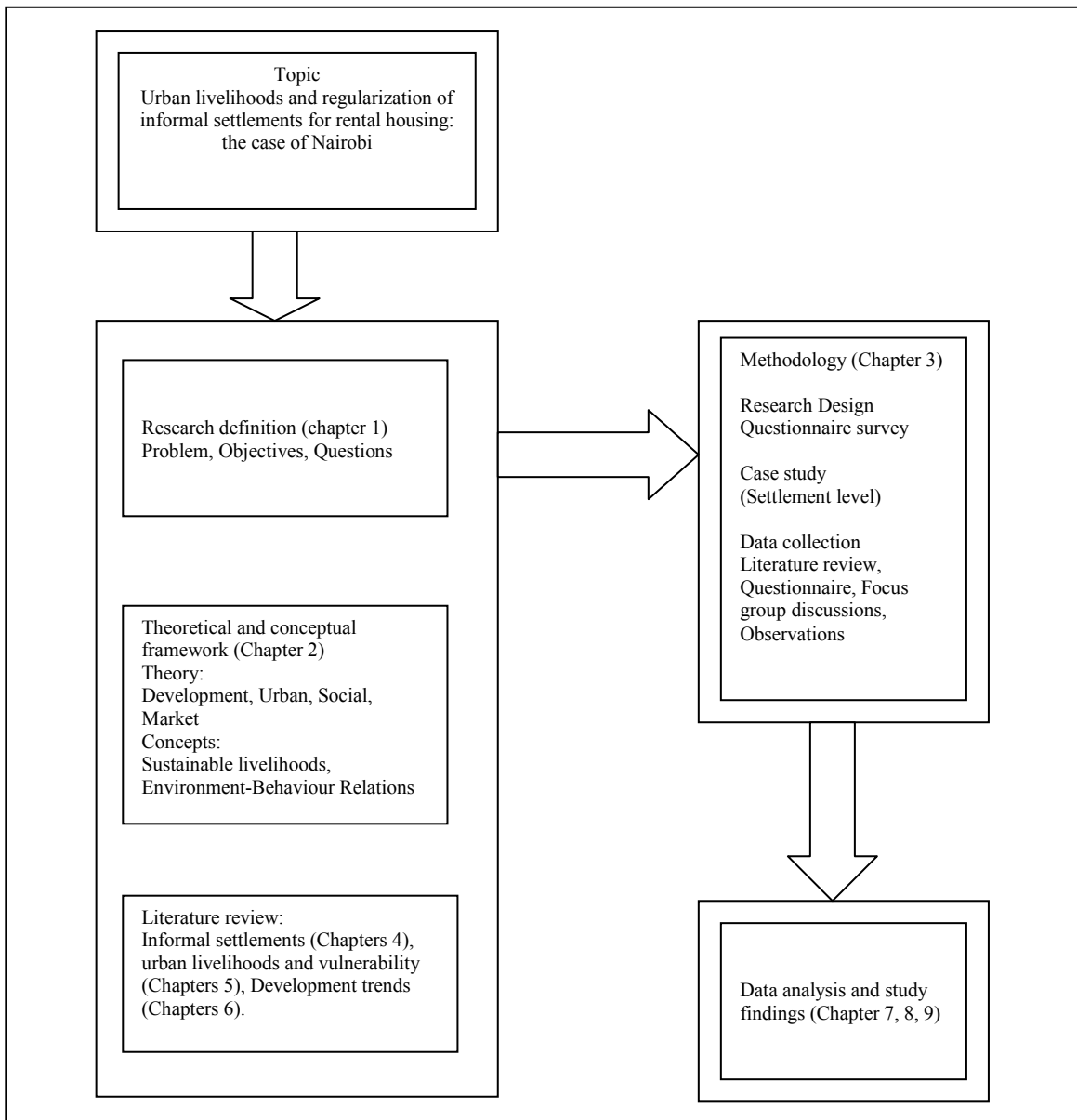
activities. These include clustering of dwellings, networks of roads and footpaths, open spaces, communal services such as water points, latrines, clinics, social halls, markets, schools, shops, bars, restaurants, and other commercial activities. An observation schedule was used for this purpose (Annex 6a). Similarly, observations were made at household level to establish spatial organization and use at the dwelling level. These included settings for cooking, lounging, sleeping, storage, studying for school going children, sanitation, laundry, and garbage disposal. Observations at this level also included lighting, ventilation, floor and wall finishes, construction techniques and performance of building materials. Activities adopted by households and undertaken within the dwelling to enhance livelihoods were also recorded through observation. Generally the objective of the observations undertaken was to establish:

- Households' adoption of the available space both internally and externally.
- Households' lifestyle as exemplified by spatial utility and household assets.
- Performance of building materials and finishes.
- Modifications to structures and finishes conducted by households.
- Response to institutionally planned and implemented housing environment

Recording of observations was aided by use of photography and sketching. The researcher and four trained assistants undertook the observations over a total period of six months. Local guides from the settlements were enlisted to guide the researchers through the settlement.

### **3.3 Data analysis**

Qualitative data analysis was conducted by aid of NVivo qualitative data analysis software. Statistical Package for Social Science software was used in the analysis of quantitative data. Descriptive statistics namely mean, median and standard deviations were used to describe the samples main characteristics and represent all the individual scores of subjects in the sample. Figure 3.1 below is a summary of the research design.



**Figure 3. 1: Research Design**

**Source: Author**

### 3.4 Study organization

Chapter One is the introduction to the study and sets the study background, followed by definition of the research problem, objectives of the study and research questions. Also included in the introduction are the study assumptions, justification and significance of the study, scope, and limitations.

Chapter Two sets the theoretical and conceptual framework of the study. The chapter discusses theories underpinning informal settlements and the concepts adopted in the structuring of the study.

Chapter Three considers matters of Research Methodology. The chapter discusses the research approach and design, measurement and scaling techniques, research methods, and the methods of analysis.

Chapter Four discusses urbanization and development processes and their impact on the formation of informal settlements and their perpetuation.

Chapter Five discusses informal settlements development and intervention and introduces the nature of informal settlements in the city of Nairobi, Kenya.

Chapter Six is the introduction to the case study area and gives an overview of the ten villages or neighbourhoods that form the Mathare Valley informal settlement. It concludes with the selection of three neighbourhoods forming the core of the case study.

Chapter Seven is the case study of Mathare 4B which presents the setting an informal settlement on government land and with very minimal intervention since its inception in the 1920s.

Chapter Eight is the case study of Mathare IVA which is an upgrading undertaking for rental housing. The community ownership of the project under a trustee presents a unique solution to the housing problem. The chapter reviews the overall performance of this project within the objectives of the study.

Chapter Nine is a case study Ngei II which is a site-and-service scheme that has defied development controls to end up with high-rise apartment blocks of up to eight storeys in some cases, creating another form of informality in the settlement.

Chapter Ten presents study findings and conclusion.

## CHAPTER FOUR

### URBANIZATION, DEVELOPMENT AND INFORMAL SETTLEMENTS

#### 4.1 Introduction

It is generally accepted that the problem of housing the urban poor in developing countries is directly linked to the developmental processes of the past decades. It is very unlikely for one to comprehensively discuss issues related to housing the urban poor without reference to development and urbanization processes as the two are interlinked at various levels. Urbanization in essence, is an element within the broader context of development. As populations shift from rural agrarian based mode of production to concentrate in urban industrial production centres, demand for housing the masses increases. Basically, it is the housing deficit arising from the imbalance of urban population growth against economic growth that manifests itself into the development of informal settlements. Questions arising from the complimentary relationship between housing and development form the focus of this chapter. The purpose of the chapter is twofold: first, to consider the prevailing thinking on housing in development and urbanization context and secondly, to review the implications of past development and urbanization strategies on housing the urban poor.

International community's concern on housing emerged soon after the Second World War. Then the focus was on rebuilding those nations and cities having suffered from destruction. In the 1960's attention turned to those parts of the world named *'underdeveloped'*, *'developing'* or *'Third World'*. It was acknowledged that:

*'Though the countries of the world differ greatly in their levels of economic and political systems, the importance of housing and its related facilities as vital elements in determining the standard of living and as integral part of development process... are generally recognized'* (UN 1968).

With this realization, official authorities took upon themselves to actively contribute to solving the housing problem by stimulating large scale, top-down planned house construction by both public and private enterprises. Housing policies became major tools

for influencing economic development and social welfare. The West was able to resolve the problem of housing the urban poor to large extent through rationalization of the building process and mass production of mostly high-rise residential accommodation. In the developing countries, the housing situation worsened with the unprecedented urban growth, increasing poverty, and inequality. As developing countries attained their political independence in the 1960s, most adopted Western development models hoping to replicate the trends witnessed in these developed countries with very minimal success.

The Global Strategy for Shelter to the Year 2000 (GSS), which was adopted by the General Assembly of the United Nations in December 1988, recognized that *“despite efforts in many countries to prepare national shelter strategies and to adopt other measures that will promote achievement of the goal of shelter for all... more than 1 billion people have shelter unfit for human habitation”* (UNCHS 1988). It further recognized that *“this number will increase dramatically, partly as a result of population and urbanization trends”* (UNCHS 1996b).

In response to these challenges, the international community under the umbrella of the United Nations drew up the *“Millennium Development Goals”* for humanity in the 21<sup>st</sup> century. High on the agenda is the eradication of extreme poverty and hunger. Issues of environment and shelter are considered under Goal 7 – Environmental sustainability. As Rapley (1996) argues, the issue of eradication of poverty is not new in the development agenda and can be traced back to the classical economics of Adam Smith. Over the decades, the development paradigms advocated by the international community have generally impacted negatively on the urban poor and further marginalized them. The question asked by most researchers is whether development has worked for the developing countries. Development indicators such as health and literacy does indicate that there have been marked achievements in developing countries. However, poverty indicators and overall well-being show that the situation in these countries is worsening.

#### **4.2 The concept of development**

Development as argued by Coetzee, Graff et al. (2001) is a contested concept. There has been much debate and controversy about development, with many changing views as to its definition, and the strategies by means of which, it may be pursued. The past five decades

has seen the promotion and application of many varied views of development. A lot has been written about development especially since the mid 1980s. Potter (2002) notes that a major theme in the literature is that ideas about development have long been controversial and highly contested. Nevertheless, development theories are still applied to development policies globally.

Development, as commonly understood in social sciences, stands for change both in visible material terms and in invisible non-physical terms. Development also refers to the changing way of life of people in their total societal context, thus encompassing both the material manifestations of peoples' actions and interactions, the ideas, their worldviews and beliefs. According to Elliot (1994), 'development' is something to which we all aspire and ideas about the best means of achieving our own aspirations and needs are potentially as old as human civilization. However, Hoogvelt (1976 as cited by Verschure 1979) emphasizes that not all changes in man and society have been considered to be development and that the meaning of change is very much related to world views of particular cultures and societies.

As a concept, development covers both theory and practice, that is, both ideas about how development should or might occur, and real world efforts to put various aspects of development into practice (Potter 2002). In his review of the history of development thinking, Hettne (1995) suggested that development involves three things: development theories, development strategies and development ideologies.

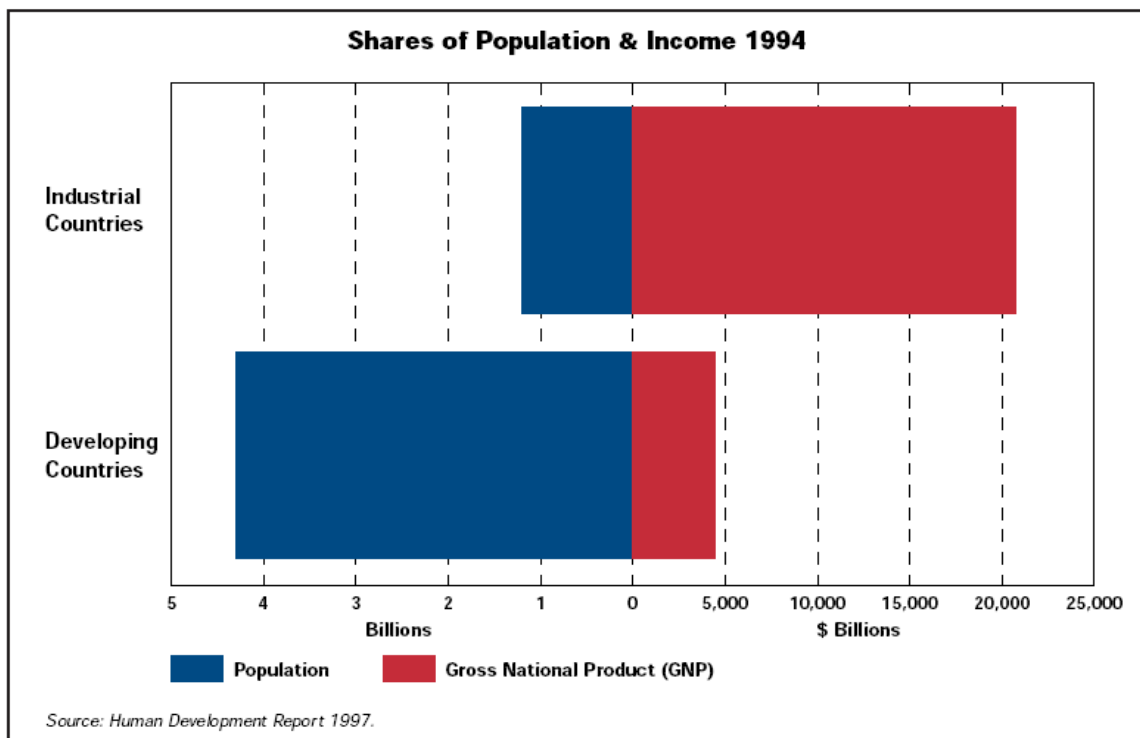
A theory is a set of logical propositions about how the real world is structured, or the way in which it operates. Thus Hettne (1995) defines development theories as *sets of ostensibly logical propositions, which aim to explain how development has occurred in the past, and/or how it should occur in the future*. He notes that development theories can either be *normative*, that is they can generalize about what has generally been the case in an ideal world; or *positive* in the sense of dealing with what has generally been the case in the past. Hettne (1995) observes that *development studies is explicitly normative and that researchers and practitioners in the field want to change the world, not only analyse it* (Hettne, 1995: 12). The arena of development theory is primarily, although not exclusively to be found in the academic literature, that is writing about development. It is, therefore, inherently controversial and contested.

Development strategies on the other hand, can be defined as the practical paths to development which may be pursued by international agencies, states in both the so-called developing and developed worlds, non-governmental organizations and community-based organizations, or indeed individuals, in an effort to stimulate change within particular nations, regions and continents (Hettne 1995). The definition adopted by Hettne (1995) is that of *development strategies as efforts to change existing economic and social structures and institutions in order to find enduring solutions to the problems facing decision-makers*. As such, he argues that the term ‘development strategy’ implies an actor, normally the state but to sound less top-down, he suggests that it is necessary to think in terms of a wider set of development-oriented actors. Development strategies or agendas aim at achieving defined goals and objectives. The thinking about how to go about achieving these goals is what constitutes development ideologies. According to Hettne (1995), these goals will reflect social, economic, political, cultural, ethical, moral and even religious influences. For example, both in theory and in practice, early perspectives on development were almost exclusively concerned with promoting economic growth. Subsequently, however, the predominant ideology within academic literature changed to emphasize political, social, ethnic, cultural, ecological and other dimension of the wider process of development and change (Potter 2002: 62). As argued by Potter (2002: 62), theories in development are distinctive by virtue of the fact that they involve the intention to change society in some defined manner.

Development thinking is an all inclusive phrase that includes aspects of development theory, strategy and ideology. Addressing change for better well-being, development processes are dynamic and various theories produced have commanded attention at various periods but not in a sequential manner (Dagdeviren, van der Hoeven et al. 2002). There have been overlaps with earlier theories not being totally as a set of new idea about development has come into favour, earlier theories have not been totally discarded and replaced. Rather, as observed by Potter (2002), *theories and strategies have tended to stack up one upon another, co-existing, sometimes in what can only be described as very intricate and contradictory manners*. Hettne (1995:64) in discussing development has observed the tendency of social science paradigms accumulating rather than fading away. The classical discourse, which had its roots in the late 1940s and was institutionalized in the 1950s and 1960s, assumed the possibility of an autonomous, (inter)disciplinary field, containing a set of theoretical cores with development economics as a respected member

of the family (Hettne 2002). The relevant theoretical schools, competing but yet in dialogue, were: modernization, structuralism, dependency and another development. These have been amply applied to developing countries like Kenya over the past four decades.

Development has also been defined as a process of expanding the real freedoms that people enjoy (Sen 1999). In his argument, Sen (1999) observes that *development requires the removal of major sources of \_unfrædom‘: poverty as well as tyranny; poor economic opportunities as well as social deprivation; neglect of public facilities as well as the intolerance or overactivity of repressive states.* This broad definition of development enables greater well-being including an expanded set of economic opportunities, better health, more education and greater political and civil liberties. This has been the objective of the Government of Kenya since independence and has been spelt out in all the subsequent five years Development Plans.



**Figure 4. 1: Global Shares of Population and Income**  
**Source: (UNDP 1997)**

Poverty alleviation has become a catch phrase in the new development discourse. Critiques of the new development dispensation, argue that what is called \_development‘

has not always been an effort to overcome poverty (Kothari 1993; Pieterse 1998). They argue that in the Western industrialized countries, development did not entail moving out of a state called poverty into one which is commonly referred to as ‘poverty alleviation’. The West simply entered a period of technological change, starting in the late 18<sup>th</sup> century, which in the course of time led to the phenomenon of industrialization that, over time, ushered in an era of progress and prosperity. Poverty in the Western countries has been a phenomenon that grew as a result of affluence, and of internal crises and contradictions of capitalism as happened in the 1930s and as has started happening in recent decades, especially in the US and other industrialized countries (Kothari and Minogue 2002). Poverty in developing countries is not any different given the fact that most have adopted capitalist approaches to development. There is ostensibly marked disparity in income distribution globally as indicated in Figure 4.1 where 25 per cent of the global population controls approximately 80 per cent of the global income (UNDP 1997). This income disparity is also reflected at national levels and is worse in developing countries

### **4.3 Housing in a development context**

The concept of ‘housing in a development context’ is based on concepts and ideas having emerged directly or indirectly from late 19th and early 20th century European and North American theory and practice on housing. Housing in development context is a broader interpretation of housing, seeing housing as a continual activity – a ‘process’ as argued by Turner and Fichter (1972). This housing process encompasses various material provisions (shelter, land, access to service facilities, etc.) supports personal and community life (social organization, community grouping and decision making, etc.) and expresses itself in the way people arrange their concrete surroundings materially revealing the thinking, the significance of people’s environments embedded in context of values and worldviews. According to Payne (1977), this approach has arisen as a reaction against reductionist tendencies which provided a simplified view of housing and is justified on the basis of the complexity of the housing process itself. Housing in a development context is seen as broadening of scope needed to explore the meaning and problems of housing in a total societal context and is thus related to the underlying meaning of development.

An interesting attempt to relate housing investment to overall growth pattern was that of William and Mary Wheaton (1972, as cited by Payne 1977) who put forward a model

which attempted to illustrate how the allocation of housing resources changed at various stages of economic development. Their purpose was to discover which stage was likely to produce the best returns, in terms of capital formation, for the lowest cost. Self-help was identified as the best investment value, although the rationale for this was not clear. One of the main limitations of this, like many other economic models, was that it was conceived in a political and social vacuum. Payne (1977) argues that the realities of established power structures, whether capitalist, socialist or totalitarian, were ignored. As a result there is an oversimplification of the various alternatives for economic development into a continuum of the following three development stages:

1) For the early stages of economic development and urbanization, prior to any large government commitment to housing programmes, the model puts forward a gradual, common distributional deployment of resources. Throughout this phase the resource share of low-cost housing is commensurate with the growth of urban migration and the resultant appearance of squatter communities.

2) In the second stage of resource allocation, private sector investment and public investment is able to cope with housing demand.

3) Third stage represents the point at which population growth becomes overwhelming in absolute terms and cities are flooded with migrant families for whom neither the public nor the private sector constructs much low-cost accommodation. In such circumstances the migrants build their own shelter in the form of squatter huts, thus by their own efforts raising the proportion of housing resources deployed in the low-cost category.

Beyond this stage the model assumes some national commitment to improving the housing situation so that the influence of the various development paths on the relative importance of public, private and popular housing becomes more discernible and, in theory, predictable. This however has not been attained in developing countries where informal settlements constitute more than 75 per cent of the urban population (UN-Habitat 2003b).

#### 4.4 Development practices and housing delivery

Having discussed development ideologies and their implications on housing, this section discusses development practices applied to the housing problem of the developing countries. These practices began in earnest in the 1960s and were greatly influenced by the international donor community. Those considered here include Modernization and growth of the late 1940 to early 1970s, Basic needs/Redistribution with growth of the 1970s to 1980s, and structural adjustment of 1984 to 1990s.

##### 4.4.1 Modernization and Growth

The concept of development has been associated with modernization. Modernization often refers to the transformation which takes place when a traditional or pre-modern society changes to such an extent that new forms of technological, organizational, or social characteristics of “advanced” society appear. Modernization as currently perceived is a Western construct. In classical Greek and Roman thought, people aspired to knowledge that could be applied (Nisbet 1980). The idea of a cumulative addition to existing knowledge, complemented by a striving towards greater material and spiritual control, soon became a beacon of the development history of the West. These provided the fundamental elements of a view of improvement in conditions of life. Nisbet (1980) lists the most important components of this deeply rooted approach:

- *A single, linear time-frame, within which it is possible to improve the quality of life;*
- *Social reform founded in a strong conception of the past and its contribution to the present;*
- *The inevitability of the future, including aspects of hope and expectations regarding the future;*
- *The controllability of welfare, stability, equality, freedom, peace, and justice;*
- *A reciprocal relationship between rationalism and idealism; and*
- *Confidence in the autonomous contribution of future generations (Nisbet 1980).*

The conception of Western reality is found implicitly in the writings of classical nineteenth century sociologists and economists. The founding figures of these disciplines

(e.g., Auguste Comte, Herbert Spencer, Karl Marx, Emile Durkheim, and Max Weber) all dealt in their work with the transition from traditional to modern society. Present day modernization theory touches on almost all the aspects highlighted by these founding fathers, namely;

- Changing nature of social relationships;
- Division of labour;
- Industrialization
- Class conflict and social cohesion;
- Rise of capitalism; and
- Relationship between state and civil society

The optimistic classical view of the potential for growth and stability further links up with comparable views by modernization theorists regarding economic matters such as the following:

- Optimum allocation of resources;
- Comparative advantage;
- Links between industry and agriculture; and
- Growing middle class.

Literally modernization means a process of bringing up-to-date (Chodak 1973: 252): older things are adapted to such an extent that they can stand the test of modern times. Implicit in the meaning of modernization is the idea of replacing or exchanging older things with something more recent (Smith 1973: 61). Characteristics of modernization according to this concept are:

- Increased social complexity;
- Control of the environment
- Increasing specialized adaptation;
- Production and absorption of knowledge;
- Rational understanding and flexibility; and
- Social maturation.

According to Alex Inkeles and D.H. Smith (1974) the characteristics of so-called modern person are:

- Openness towards new experience;
- Readiness to accommodate the process of transformation resulting from changes;
- Continues broadening of life experiences and a receptiveness to new knowledge;
- Ability to exercise effective control;
- Ongoing planning, continuous calculability/predictability of action, and a different experience of time;
- High premium on technical skill;
- Expectation of educational and occupational mobility;
- Understanding the principles of production;
- Changing attitudes to kinship, family roles, family size, and the role of religion;
- changing implementation of communication and the media;
- changing consumer behaviour; and
- acceptance of social stratification.

They argue that the extent to which these characteristics are exhibited gives an indication of the degree of modernization that has been reached. In terms of these characteristics, modernization is presented as an historical continuum, a process with definite and distinguishable conditions. Depending on the number of characteristics that are present, a particular level of modernization can be said to exist. The assumption underlying this view is that movement towards modernization is a linear process.

The modernization strategy of the late 1940s to the early 1970s used Keynesian economic models of demand-led growth and were influenced by the development theories of Harrod-Domar, Rostow and Lewis (Rossiter, 2000). Such strategies included: import substitution; the creation of internal markets; the eradication of precapitalist relations and modes of production and rapid industrialization. These were propagated on the belief that the gains of industrialization in the North could be transferred to the Less Developed Countries, and that poverty, inequality and unemployment would disappear naturally with growth. This approach was commonly known as the ‘\_tickle down’ theory. The benefits of

growth and development were expected to trickle down to the poor from growth-specific policies.

Social policies at this time were characterized by the provision of western style hospitals, prestigious educational establishments and the provision of purpose built housing schemes built to modern minimum standards to house the new urban workers. Government subsidies were introduced to expand the delivery of health, education and housing services for the poor. This approach of extensive state intervention and mass production of public goods dominated urban development practice up until the early 1970s. In the pre-independence Kenya, public low-income housing schemes in Nairobi such as Kaloleni, Ziwani, and Ofafa Jericho estates were constructed within this period. The approach regarded poverty as a transitional phenomenon, as were inequality and unemployment, which would disappear naturally with growth. However, the effects of economic growth did not ‘trickle down’ to the poor; instead their conditions worsened as their numbers increased.

The reconstruction of war-torn Europe provided the model for state-directed *modernization* of the ‘new nations’. In this model, development was largely sociological and political in nature, and under-development was defined in terms of differences between rich and poor nations. Development implied the bridging of the gap by means of an imitative process, in which the less developed countries gradually assumed the qualities of the developed. Marxist theory essentially shared this perspective (Hettne 2002: 7).

#### **4.4.2 Basic Needs Provision/Redistribution with Growth**

The limited financial resources of national governments in the South and their rapid pace of urbanization meant that modernization strategies were unable to meet the basic needs or to improve the lives of the urban poor. This led to a shift of policy from ‘growth’ to the World Bank’s ‘redistribution and employment’ in aid programmes. Hoogvelt (1976) termed this shift to redistribution with growth as a change from ‘global Keynesian to global social democracy’. World Bank sought to target many of its loans to the poorest groups in Least Developed Countries; the marginal farmers, landless labourers and shantytown dwellers, lending massively for rural development and the improvement of squatter areas. At this time the orthodoxy in housing policy for low income population

shifted, from conventional state housing, which had failed to meet need, on any meaningful scale, to site and service and upgrading initiatives. There was an acceptance of the arguments of the self-help housing, informal sector, and intermediate technology schools advanced by Turner (1976). Typical site-and-services projects involved providing areas of land equipped with basic urban services for people to construct their own shelter. Although some case studies indicate that these types of projects have brought material benefits to the urban poor, many evaluations show that little impact has been made with regard to the overall socioeconomic situation of the people living in the settlements. Frequently, these projects failed to reach the poorest groups, who would often be unable to afford the payment instalments or even secure loan finance, for a serviced site. This was the case with the Dandora site-and-services project in Nairobi where the targeted urban poor were displaced by upper wage earners. Cost recovery became a problem and the project was never replicated. The intended objective of replacing the slums and informal settlements was thus not achieved.

#### **4.4.3 Structural adjustment**

The general focus of policies and strategies on poverty alleviation, meeting basic needs and attempts at redistribution were brought to a halt by the foreign debt crisis developing countries encountered in the 1970s and changes in policies of lending agencies. The debt crisis undermined any progress towards meeting basic human needs. These countries were forced to spend a greater percentage of their national budgets to finance debt repayments. Concern over the alleviation of urban poverty was replaced by structural adjustment programmes (SAP). The Bretton Woods Institutions drafted an extensive Structural Adjustment Programme, overseeing its implementation (Hilson and Potter 2005). Emphasis was on removal of market imperfections for the purpose of promoting growth, largely in an effort to distinguish a set of allegedly efficiency-raising policies from stabilization programs. Being the principal financiers of SAPs, the IMF and World Bank demanded that reforms be made to recipient countries agricultural markets and macro-economic policies as a pre-condition for the approval of the SAP. This also included demands for fiscal discipline, changes to taxation, new public spending priorities, competitive exchange rates, increased foreign spending, privatization, and deregulation (Crisp and Kelly 1999).

Structural adjustment programmes precipitated a shift to urban management and urban productivity interventions, rather than channelling aid to specific projects or programmes. This approach entailed policies concerned with urban development, decentralization, privatization, private sector and NGOs involvement in service delivery, regulatory reforms and initiatives to encourage community groups to invest in their own development initiatives (World Bank 2004). The theory was that by freeing up the constraints on markets through privatization, institutional reform and capacity building, cities would become more productive and the opportunities of the poor would be improved. This was called the ‘enabling approach’ in which there was a theoretical movement away from large scale government projects which are spatially-focused to an emphasis on policy and institutional environments. This approach encouraged the non-statist provision of urban services (Harris 1992; Moser 1996; UNDP 1999).

Structural adjustment programmes were intended in part to remove the ‘urban bias’ of large government development programmes, by removing anti-agricultural price distortion. This in many countries affected urban poor communities adversely as they suffered from food price increases; contraction of industry and the public sector; and reductions in public expenditure. Moser (1996) refers to these urban communities affected by structural adjustment as the ‘new poor’. Despite the rhetoric of the enabling approach there was still a very strong focus on projects and sectoral programmes concentrating on shelter and basic infrastructure. De Haan (de Haan, Drinkwater et al. 2002) concludes that it is this type of sectoral urban development project, that has neglected employment creation and questions of sustainability, ‘that is responsible for their failure’.

Within this context of enabling environment, Kenya prepared the National Plan of Action for habitat II Conference (Republic of Kenya 1996) and subsequently prepared a revised National Housing Policy (Republic of Kenya and UN-Habitat 2004) which emphasizes the role of the informal settlements in shelter delivery. The plan of action recognizes that the human settlements sector consists of a large number of agencies in the public and private sectors, NGOs, CBOs and International Organizations.

SAPs were designed to improve a country's foreign investment climate by eliminating trade and investment regulations, to boost foreign exchange earnings by promoting

exports, and to reduce government deficits through cuts in spending (Crisp and Kelly 1999). Although SAPs differ somewhat from country to country, they typically include:

- a shift from growing diverse food crops for domestic consumption to specializing in the production of cash crops or other commodities (like rubber, cotton, coffee, copper, tin etc.) for export;
- abolishing food and agricultural subsidies to reduce government expenditures;
- deep cuts to social programmes usually in the areas of health, education and housing and massive layoffs in the civil service;
- currency devaluation measures which increase import costs while reducing the value of domestically produced goods;
- liberalization of trade and investment and high interest rates to attract foreign investment;
- privatization of government-held enterprises.

The World Bank and the IMF argued that SAPs are necessary to bring a developing country from crisis to economic recovery and growth. Economic growth driven by private sector foreign investment is seen as the key to development. These agencies argue that the resulting national wealth will eventually "trickle down" or spread throughout the economy and eventually to the poor. The achievement of social well-being is not an integral component of SAPs but a hoped-for result of applying free market principles to the economy. The process of adjustment, as described by many World Bank and IMF officials to developing countries, is one of "sacrifice," of "present pain for future hope."

Many groups argue that SAPs impose harsh economic measures which deepen poverty, undermine food security, and self-reliance and lead to unsustainable resource exploitation, environmental destruction, and population dislocation and displacement (Dagdeviren, van der Hoeven et al. 2002). These groups, which include non-governmental organizations (NGOs), grassroots organizations, economists, social scientists and United Nations agencies, have rejected the narrow conception of economic growth as the means to achieve social and environmental objectives. They believe SAP policies have increased the gap between rich and poor in both local and global terms.

Despite claims to the contrary, World Bank-imposed SAPs have paid little or no attention to their environmental impact. SAPs call for increased exports to generate foreign exchange to service debt. The most important exports of developing countries include timber, oil and natural gas, minerals, cash crops, and fisheries exports. The acceleration of resource extraction and commodity production that results as countries increase exports is not ecologically sustainable. Deforestation, land degradation, desertification, soil erosion and salinization, biodiversity loss, increased production of greenhouse gases, and air and water pollution are but among the long-term environmental impacts that can be traced to the imposition of SAPs (Thomas and Allen 2000).

#### **4.5 Urban context**

When people congregate to live closely in a geographical locality, the realised built environment is referred to as an urban settlement or centre if it acquires a population size of 2,000 people and above as is the case with definition of such centres in Kenya (Republic of Kenya 1978). The subsequent growth of such centres demographically is referred to as urbanization. This however is a contentious definition as there are several variations from region to region. Urban centres are characterised by distinct modes of production and means of livelihoods among others. Population dynamics indicate that people migrate from rural to urban areas in search of better employment opportunities to improve on their livelihoods. The process of urbanization presents an enormous challenge as cities have to sustain ever growing populations and offer all the necessary facilities of which housing is a major challenge (Meikle 2002).

There are numerous factors that influence the individuals' opportunities and capabilities in gaining 'reasonable' livelihoods and thus accessing 'adequate' housing in the city. It has been noted that urbanization in developing countries is proceeding faster than the rate of economic development thus causing constraints on existing infrastructure and services including housing. The nature of urbanization in these countries has also brought with it increasingly higher levels of poverty. These are issues that need to be addressed in every housing intervention programme. According to Dasgupta (1996), every housing programme needs to be integrated with the livelihood and lifestyle of its inhabitants so that it can be sustainable even after external support is withdrawn. In this chapter, the implications of urbanization are reviewed against livelihood outcomes and the housing

environment. Housing environment in this instance embraces the physical, social, cultural, and economic aspects. First, the chapter reviews urban context, urbanization trends and their implication on housing for the urban poor. This is followed by a review of the implications of livelihoods and vulnerability of the urban poor on housing environment and choices.

The livelihoods of the urban poor are defined to a large extent by the opportunities and constraints under which they are operating in the urban setup. In order to understand the nature of sustainable urban livelihoods it is necessary to understand the urban context under which it operates. Key aspects of the urban context considered in this study as impacting on sustainable urban livelihoods are: social, economic, governance, environment, health, and urban/rural linkages. There is however very little literature that links housing outcome directly to livelihoods. Whenever housing is linked to livelihoods, the link is more on the physical capital aspects with the house considered as an asset that can generate income in the form of rent in addition to offering shelter (Chambers and Conway 1992; Moser 1998; DFID 2001; Meikle, Ramasut et al. 2001).

#### **4.5.1 Social context**

Social context in this instance describes the activities and actions that are undertaken by groups of individuals and households with the objective of achieving common goals. Informal settlements contain a diversity of household types which are often fluid in their structure (Meikle, Ramasut et al. 2001). This may cause tension or harmony depending on issues at hand. Issues related to security of land or rent for instance tend to bond the community as opposed to issues of ethnicity and politics that tend to create disharmony and tension. Within the social context a key asset for both the urban and the rural poor is social capital. This may include the wider networks of social relations between poor and non-poor including systems of patronage as is evidenced with charitable organizations such as the Round Tablers and Rotary Clubs of Kenya among others. These organizations have done a lot of work to improve the well-being of slum dwellers including building toilets, storm water drains, health clinics, and water points.

Identification of social capital as a valuable and critical resource which contributes to the well-being of the poor, especially during times of crisis and socio-economic change, is widely acknowledged - not only by development professionals (Moser 1996; Dersham and

Gzirishvili 1998; Douglass 1998) - but also by the poor themselves (Meikle, Ramasut et al. 2001: 5). According to Meikle (2001), there is evidence that the existence of informal social networks significantly decreases the likelihood of poor men and women perceiving their household's housing conditions as vulnerable (Moser 1996; Dersham and Gzirishvili 1998; Douglass 1998).

The major challenge to social capital in informal settlements or in urban settings for that matter is the weak social cohesion in the urban setting that tends to inhibit the functioning of community as envisaged in the rural settings. Meikle (2001: 202) argues that the various theoretical interpretations of urban poverty have clear implications for social capital. The debate is whether the urban poor suffer from conditions of social disintegration and the erosion of community, or whether they rely on strong networks of solidarity between groups and individuals. There are ideas of urban blight, linking poverty to family break-up, drug use, crime and social disintegration (which would be expected to undermine the social capital of the poor) – an idea often linked to studies of the ‘inner city’ in developed/northern countries (Wratten, 1995). There are also ideas that point to the existence of strong community and household networks and the importance of ‘social capital’ as an asset for the urban poor (Douglass, 1998, Dersham and Gzirishvili). Still further are ideas of social exclusion with a resulting breakdown of cohesive communities. These ideas point out why some households are able to organize to improve the conditions of their life spaces, and others are not and can be traced along the dimensions of individual, household, social and community networks of mutual support as observed by Douglass (1998).

#### **4.5.2 Economic context**

Economic context embodies all the economic opportunities that people engage in and which attract them to the city. Cities are considered to be engines of growth (Harris, 1992, UNCHS, 1996) and are the locations for complex networks of activities essential to basic human functions of living and working. They operate by drawing on the skills and labour of their populations (Mattingly, 1995). As a result, cities often represent economic opportunities for the poor, while (at the same time) increasing their vulnerability to a hoard of constraints of which access to adequate housing is paramount among the poor. The urban poor, whether or not they are migrants, survive through undertaking a variety of activities, which mainly take place in the informal sector (Meikle 2002: 5). Some of these

activities which occur within their housing environment may determine the settings of the built (physical) and the social environments of their neighbourhoods. It is therefore important that these are considered in the planning and design of housing intervention programmes.

Human capital in the form of labour as discussed in Chapter Two above is an important asset for the urban poor and is mostly applied in earning income in the city. The city economy and thus employment opportunities are affected by national and international macro policy and frequently have mixed impacts on poor households (Douglass, 1988). Modernization policies of the 1960s for example increased formal employment as a result of growth in manufacturing industry in Kenya. However, structural adjustment policies of the 1980s reduced formal employment whilst creating growth in the informal sector (Meikle 2002). The end result was proliferation of informal settlements in major cities such as Nairobi.

#### **4.5.3 Governance**

Governance as an element of the urban context is important for the formulation and implementation of policies, management of public affairs including infrastructure and services. According to Meikle, (2001: 6), the urban poor are linked into structures of governance through their dependence on the delivery of infrastructure and services by city institutions, as well as through the impact of meso- and macro-level policies (Beall and Kanji, 1999 Katepa-Kalala, 1997). The failure of city institutions to deliver services has been cited as a contributory factor to the proliferation of informal settlements. Often, these institutions are unable to address the needs of the poor and in some cases actively exclude and discriminate against them (Meikle, Ramasut et al. 2001: 6).

The UN-Habitat report on Rapid Urban Sector Profiling for Sustainability (RUSPS) for Nairobi indicate that Nairobi City Council (NCC) suffers from poor governance and a lack of vision for the city (UN-Habitat 2006b). The Council according to the report, has no institutional organ for policy development or monitoring and evaluating service effectiveness and policy impact. Corrupt practices, lack of transparency as well as poor and inequitable revenue collection are prevalent (UN-Habitat 2006b). Although the government has produced a document on poverty reduction strategy, there are no clear

NCC poverty reduction strategies according to this report while community outreach and involvement at grassroots levels are limited, ad hoc and only occasional.

The advent of NGOs involvement in the activities of improving the well-being of dwellers of informal settlements has provided substitutes for government action in some instances. Such civil society organizations according to Meikle (2001: 6) can have a critical role, in urban areas, in strengthening democracy and in directly reducing poverty to ensure that inclusive development strategies are secured. It should not, however, be assumed that all civil society organizations play a positive role in urban poverty reduction; some may have a neutral or even a negative impact (Miltin, 1999, Douglass, 1998, Rakodi, 1999 Beall, 1999) as cited by Meikle, 2001). Whether the poor are actively involved in systems of city governance also depends on their legal status, which is often ambiguous. The high cost of shelter in cities, for example, means that poor households are frequently forced to illegally occupy marginal land. They therefore lack the tenure rights which are normally linked to the right to register and vote (Meikle, Ramasut et al. 2001: 6).

#### **4.5.4 Environment and health**

Environment and health issues are of concern in informal settlements which are characterized by poor sanitation and refuse disposal among other ills. It is now generally recognized that these environments with high densities and unsatisfactory quality of the residential and living environments pose health problems for the urban poor thus contributing to their vulnerability.

Within the urban context, the situation of the urban poor has been described as vulnerable (Moser 1998). Several approaches have been used in literature to define vulnerability ranging from conditions considered to be vulnerable to activities that lead to vulnerability. The emphasis here is on coping strategies and the well-being of the dwellers. Vulnerability aspects considered here include trends (urbanization, economic, land speculation, governance, politics, technology, poverty etc), shocks (unemployment, illnesses, social upheavals, weather, inflation etc), seasonality (weather, employment, prices etc). These are reviewed within the new development thinking focusing on well-being and poverty reduction.

In the case of Nairobi, it has been noted that unlike in the rural areas where several government institutions strive to enhance opportunities in economic production to

disadvantaged people, in the urban areas the government does not have a similar comparative advantage due to existing restrictive regulations of local authorities that restrict the economic efficiency with which the poor can pursue their trading, artisanal and service livelihoods. Broad indications therefore suggest that poverty in urban areas is both increasing and changing in nature (Republic of Kenya and UNCHS 2001)

#### **4.6 Urbanization trends**

Urbanization has been described as the process of becoming urbanized or acquiring urban characteristics. It is also used in reference to the increase in the urban share of total population. Aspects of urbanization include demographic, structural or behavioral change process from the original rural systems of settings and influences a country's development processes and path. Since 1950s, urbanization has become a worldwide phenomenon and virtually every country of the Third World has been urbanizing rapidly (Gilbert, 1991). Urban form is a direct outcome of the ways in which different societies are organized. As argued by Gilbert and Gugler (1992), in an unequal world, it is not surprising that urban societies should also be unequal. Indeed it has been argued that cities have served elite groups throughout history and that it is only in elite societies that cities can actually develop. Wholly egalitarian societies based on what Polanyi (1957 as cited by Verschure 1979) calls 'balanced reciprocity' cannot produce cities. He argues that without a central power and a mechanism to generate a surplus over consumption and to concentrate it into urban areas, cities cannot grow. It is only in societies based on 'redistribution' where a surplus over consumption can be appropriated by a particular group, that urbanization is possible. This however has not been the case in developing countries. In the developing countries there is a skewed redistribution of the resources resulting in a small upper and middle income social group and a large low income group that is characterized by poverty. Today large areas of the world are integrated into a single economy. Rural areas and mining centres produce for distant populations and consume products manufactured far away. Within this world economy, individual cities perform specialized functions and their individual prosperity depends greatly upon their position in this economic system. Gilbert and Gugler (1992) argues that the size, role, and characteristics of individual cities reflects the world role of the societies of which they form part. The strength of the linkages between different cities and the world system vary greatly. Nevertheless, in so far

as the development of the world economy has created an interlinked economic system, different cities perform the roles allocated to them within that system.

In the discussion on Third World urbanization, two major theoretical viewpoints can be identified: urbanization is considered by some as a natural process of development, and by others, a consequence of certain deliberate development strategies.

#### **4.6.1 Urbanization a natural process**

A rather major tendency is to view urbanization as a 'natural' process of evolution i.e. all human communities follow an evolutionary linear path of development which leads mankind from small 'rural' communities to larger scale 'urban' communities (Verschure 1979). Mumford (1938, 1944), in his major work on the evolution of man, accentuates how mankind increasingly masters his environment and, through techniques and specialization, creates an urban community, as a spatial expression of the dominance of man over nature. Sjoberg (1965), reiterating this general idea, accentuates the importance of socio-cultural and power structure, and favourable environmental conditions (fertile soil, climate, etc.) related to the evolution of urbanization.

Although some emphasis may vary, in general, the proponents of this thinking differentiate little or none between urbanization in western societies and in the Third World. Urbanization is a normal and universal law of evolution, which all human societies follow. These ideas have been greatly propagated and deepened by Anglo-Saxon scholars (e.g. the Chicago School), which accentuated ecological laws and systematic evolutions. More recently, the proponents of these viewpoints have however accentuated that the growth process of cities in developing countries, does not necessarily follow exactly the same pattern of evolution as the industrialized countries.

Davis (1976) enumerates four important differences in the growth process of Third World countries:

- 1) In the underdeveloped countries urbanization is not related to social change in the same way as it was in the early days of the development of the European countries.

2) The intensity of the phenomenon is different. In the developing countries, the largest urban centers are growing much faster now than those in the industrialized countries during their initial stages of development.

3) The importance of overall population growth as against urban growth is greater in the developing countries when they passed through similar stages of development.

4) In the industrialized countries the process of urbanization was accompanied by a relative and absolute decline in the rural population. In the currently developing countries, on the other hand, the rural population is continuing to grow at a rate far in excess of the urban growth indices of the industrialized countries during their initial stages of development. Apparently the majority of the under-developed countries are experiencing a constant reduction in the area cultivated per capita.

Although this school of thought has thus gradually recognized the differences in urbanization between developed and developing countries, the main hypothesis still stands, namely that urbanization and development are inextricably linked; moreover it is accentuated that urbanization is a necessary and thus a desirable condition for development. Urbanization, it is argued, is an inevitable result of development and, although temporary discomfort resulting from rapid urbanization may occur, these ‘intermediate’ phases are the inevitable price to be paid for development. The connection of this hypothesis stands or falls with the definition of development, which in this theory is assumed to be economic growth and industrialization as exemplified by western nations. Moreover, it is within the natural evolutionary process of mankind that one moves from pre-industrial to transitional, to modern urbanization; indeed urbanization is seen to be identical to cultural development and advances in science and technology. As emphasized by Berry (1973), support for existing evolutionary theory rests heavily upon empirical studies contrasting the modern industrial city, especially in a Western European cultural context, with present-day pre-industrial or transitional cities in Africa, the Middle East, Asia and South America.

Paradoxically the very school of thought which urges that urbanization is a necessary condition for (economic) development, has much more difficulties in defending social contributions of urbanization. Although e.g. Friedmann (1969) stressed the positive social

and cultural aspects of urbanization, several scholars following this thinking accentuate the paradoxes of increased poverty, unequal distribution of resources, spatial inequality, and the rise of urban conflicts in Third World urban cities.

#### **4.6.2 Urbanization a historical process**

Another school of thought emphasizes the strong historical, socio-economic and political conditioning of urbanization. Far from rejecting evolutionary thinking the general hypothesis is that urbanization is not a natural or inevitable process but a deliberate act, linked to particular process of industrialization in the course of past history and formation of social systems (classes) and transformation of cultures. Stuckey (1975) distinguishes two directions in this theory:

One direction emphasizes urbanization as the result of a capitalistic mode of development stressing the inter-relationship between the dominant centre of capitalistic economy (industrialized countries) and the dependent periphery of capitalistic economy (Third World countries) and is based on a Marxist interpretation of reality (historic materialism). A second direction does acknowledge some general principles of the center-periphery model, using some concepts taken from Marxist analysis, without necessarily following the ideological base of this historic materialism, (nor for that matter adhering to capitalistic ideologies).

General arguments advanced in the dependencia thinking on development by authors Frank, (1969) and Amin (1977) have been particularly interpreted in the study on urbanization, thus accentuating that the urbanization of many Third World cities, far from contributing to an overall development (economic, cultural, political and social aspects of human life) has induced patterns of dependence and underdevelopment caused by exploitation and capitalistic accumulation which have benefited both the center (industrialized countries ) and the elite in the periphery (capitalistic enclaves) of Third World countries, but not the masses in this periphery. This theory is advanced as underpinning the causes of poverty in the Third World and the resultant housing problems they experience.

Many scholars distinguish between planned and unplanned urbanization characterizing the planned urbanization as the one following the pattern of western type urban growth

with controlled ‘orderly’ physical development, and the ‘unplanned’ urbanization following the indigenous or ‘uncontrolled’ types of settlement formation. This distinctiveness is primarily a physical one and increasing evidence from socio-economic research indicates that the people inhabiting these two types of settlement forms are closely linked. Cities around the world have been seen as the cause of environmental degradation and resource depletion, casting an ecological footprint across the globe far beyond their regions. More often than not, cities are seen as problematic – congested, polluting, with poor housing, collapsing infrastructure, crime and poverty. Yet it is cities that drive economies and it is within them that innovation occurs and an increasing part of global output is produced (Jenks, 2000)

It is projected that by the year 2030 ‘nearly 5 billion (61 per cent) of the world’s 8.1 billion people will live in cities’ (UNFPA, 2000, p.25). 90 per cent of the of the growth in urbanization will be in developing countries. Jenks (2000) argues that the very size of the cities and the high proportion of the world’s population living within them will inevitably concentrate problems. These will include intensive use of resources such as land, water and energy, the over-stretching of infrastructure, poor sanitation and health, and social and economic inequalities.

Mitlin and Satterthwaite (1996, p.50) observe that cities may have problems, but they are not necessarily a problem in themselves. It is the failure of effective governance within cities that explains the poor environmental performance of so many cities rather than an inherent characteristic of cities in general. There are more positive perceptions, such as those conveyed in the ideas for higher-density compact cities advocated in developed countries by for example Williams et al (1996). According to Jenks (2000, ), the perception of these concepts in developing countries appears to be similar, with the belief that compaction will result in reductions in travel distances and thus vehicle emissions, and that the high densities can create greater viability for service provision, public transport, waste disposal, healthcare and education. Jenks (2000) concludes that despite many problems, even the densest, fastest growing cities in developing countries have positive benefits for those living there. They can provide ‘enhanced opportunity for millions of people’ and ‘refuges from a stifling, restrictive rural life’ that may no longer be economically sustainable (Seabrook, 1996, p.5).

According to Elliot (1994), the major implication for future sustainable urban development is that uneven growth within countries of the developing world is highly concentrated in one or two centers. This is due not only to the large influx of migrants from rural areas to the cities but also to natural increase of urban populations (linked to their age structure).

The process of urban change in the developing world are also without historical precedent. In nineteenth-century Europe, people migrated to the towns and cities in search of employment and economic advancement. The industrial activities in these areas depended on this process of migration to raise output and generate wealth. Urbanization, industrialization and modernization (the adoption of urban values) were processes which occurred simultaneously in the cities of Europe and were mutually reinforcing. Currently in the developing world, urbanization is occurring independently from industrialization and modernization. In consequence, urban unemployment and poverty is very high. Coping with urbanization and its impacts on human settlements constitutes the major challenge to planners, administrators and policy makers May (1989). There is a demonstrable need to plan not only for the improvement of shelter and living conditions, but to initiate a new action agenda to provide the means by which disadvantaged peoples and regions can be drawn into the social and economic development process. Learning from the successes and failures of past decades and charting new directions for the future is therefore of critical importance (Habitat, 2004)

#### **4.6.3 Rural/urban interface**

There is a substantial body of research on rural-urban migration accumulated over the last three decades with overwhelming evidence to the effect that: most people move for economic reasons (Kearney (1986). However, Baeck (1971) argues that the reasons for rural peasants migration to cities are much more complex than implied in a simplified model of economic push-and-pull factors. Baeck (1971) argues that the process of urbanization in the developing countries is to a large extent not the result of economic development and that in many cases rural-urban migration takes place not because of new economic opportunities in the city but mainly due to the hope of the migrants for a better and easier life in town. In a country like Kenya, this can only be considered as one of the many reasons why people migrate to cities as varying conditions in the rural areas contribute to migration.

Little (1970) has demonstrated that many African migrants see their cityward move as temporary, and do not consider the city as the ultimate living environment and that their tie with the 'home' villages are much stronger than previously assumed.

McGee (1971) argues that the unilinear dualistic development model (rural-urban) should be abandoned in favour of a more complex set of settlements which can exist within the same nation. Rural-urban link in the case of Nairobi is considered to be very strong. Most resident in the city maintain a strong tie with their rural homes and studies indicate that most prefer to invest in their rural homes for their retirement age. The high level of rental tenancy in the informal settlements of Nairobi is attributed to this rural-urban linkage.

#### **4.6.4 Colonial exploits and the origins of urbanization**

Urban development in Kenya began with the colonization of the country by the British Imperialist in the late 19<sup>th</sup> Century. Even the pre-colonial urban systems that existed were markedly transformed by colonialism which took place between the late 18<sup>th</sup> and 20<sup>th</sup> Century. Colonization had economic purpose – it was exercised to facilitate commercial expansion in response to the demands of the European industrial revolution. This commercial expansion generated urban consequences as necessary components of the process. Thus, though urban environment emerged from the colonial process of commercial expansion, they served as important bases from which political control and economic domination by the colonial elites were organised and exercised. Exclusive political control and economic domination by the colonial elites gave rise to a colonial society consisting of a two tier dominant and subordinate relation of colonisers and colonised.

In the above context colonial urban environment development can be conceived to have been organised around the control of the economy rather than production process itself. The primary function of the colonial urban environments as can be deduced from the aforementioned political and economic relationship was to facilitate colonial exploitation of Kenya's agricultural, mineral and human resources which lied in the hinterland as well as to reinforce political control over the indigenous people.

Since the attainment of formal political independence in 1963, Kenya has experienced tremendous social, economic and cultural transformation which has influenced

development of internal structures and form of urban environments in Kenya. However, injustices which colonialism internalised in the colonial urban development are still reproduced by the contemporary urban development process. For example, inequalities that colonialism structured are continually reproduced and justified through urban application of the theory of modernisation in the post colonial period. In Nairobi alone, more than 50% of the population live below poverty line, earning about 15% of the City's income. This population cannot effectively participate in urban markets be they for services, housing and land. But they have legitimate claim to urban resources and institutionalisation of processes undermining their access to the resources represent violation of basic human rights. State in Kenya adopted modernization theory to conceptualise the country's development model. According to the theory of modernization Kenya could start industrialisation by concentrating resources on the select few and that once the industrialisation process begins the wealth produced will spread to those sectors left out in the vanguard of development. Development itself was conceived as economic growth and thus, inequalities and unemployment were accepted as unavoidable consequences of the process to economic prosperity. Within the context the theory of modernisation the state in unequal relations which characterised colonial urban environment development processed

#### **4.7 Urban livelihoods**

Urban livelihoods infer living and irking a living in an urban set up. However, there is no generally agreed definition of urbanism. Urban living is to a great extent alien to most of the Sub-Saharan countries. Other than the ancient West African cities such as Timbuktu and Kano, and a few ancient traces in along the Eastern coast and the Zimbabwe ruins, most of Sub-Saharan Africa was not urbanized and people lead egalitarian form of life structured under clans and ethnic groupings in what is akin to rural living. It is only upon colonization that most African countries started urbanizing. Urban living by which is meant living in urban settings is a concept derived from the rich industrialized countries. As opposed to rural living where farming activities form the major means of eking a living, the urban setting brought with it service and manufacturing oriented activities of which labour became an important component of production and thus introducing the concept of wages and salaries as earnings accruing to labour offered by workers. This is the core concept of urban living. According to Chambers (1995: 195), the concept of

employment is derived from the rich industrialized countries where it is used to mean, *“having an employment a job, a workplace and a wage”*. This concept has been transferred to other countries where conditions are different without modifying it to suit the local conditions. It is now argued that *“livelihood”* is a more comprehensive concept than employment because it captures the complex and diverse ways with which poor households access a living. The term *“livelihood”* is broadly defined in Chapter Five. Here an attempt is made to link its usage to urbanity.

#### **4.8 Vulnerability Context**

The concept of vulnerability context has been discussed in Chapter Two above under the heading – Theoretical and Conceptual Framework. In this section the concept of vulnerability is applied to the housing environment and with the aim of establishing vulnerability indicators. Vulnerability, poverty and access to adequate housing are interlinked. The need to analyse poverty and vulnerability from a multi-disciplinary perspective has been increasingly recognized (Hulme and Shepherd 2003). This is particularly true for understanding the complex interplay among vulnerability and livelihood strategies. The sustainable livelihoods (SL) framework is a qualitative approach that seeks to understand relationships among social actors. The SL is inspired by Sen’s capabilities and entitlement approach (Sen 1981; 1999) and understands a livelihood as the capabilities, assets (both material and social resource assets) and activities required for a means of living (Chambers and Conway 1992).

According to Moser (1998), the concept of vulnerability, although often used as a synonym for poverty, is not the same. Whereas in fields such as disaster management, epidemiology and food security vulnerability has been specifically defined, in housing there has been little attempt to define the term. In the field of food security/famine as observed by Downing (1991), a well-accepted definition of vulnerability is *“an aggregate measure, for a given population or region, of the risk of exposure to food insecurity and the ability of the population to cope with the consequences of the insecurity”*. In relation to poverty, vulnerability is more dynamic and better captures change processes as *“people move in and out of poverty”* (Lipton and Ravallion 1995). Poverty at household level is not static as strategies opportunities shift. The meaning of the term *“vulnerability”* has been expanded considerably over the years to include a range of elements and situations of

–livelihood security”, including exposure to risks, hazards, shocks and stress, difficulty in coping with contingencies, and linked to net assets (Longhurst 1994).

Moser identifies two dimensions of vulnerability; its *sensitivity* (the magnitude of a system’s response to an external event), and its *resilience* (the ease and rapidity of a system’s recovery from stress) (Blaike and Brookfield 1987). Thus, Moser (1998) defines vulnerability as insecurity and sensitivity in the well-being of individuals, households and communities in the face of a changing environment, and implicit in this, their responsiveness and resilience to risks that they face during such negative changes. Vulnerability context that threaten well-being in urban livelihood can be ecological, economic, social and political, and they can take the form of sudden shocks such as forced evictions and relocation, long-term trends related to policies and governance, or seasonal cycles related to weather and even financial fluctuations. With these changes often come increasing risk and uncertainty and declining self-respect.

*...the insecurity of the well-being of individuals, households or communities in the face of a changing environment. Environmental changes threatening welfare can be ecological, economic, social or political... With these changes often come increasing risk and uncertainty and declining self-respect. Because people move into and out of poverty, the concept of vulnerability better captures processes of change than more static measures of poverty (Moser 1996; Moser 1998)*

*What is clear is that the continent's economic difficulties have made it reliant on and thus vulnerable to the policy dictates of the international agencies, especially the International Monetary Fund (IMF) and the World Bank. Rapid urbanization in a situation of continued poverty has outpaced the financial and administrative capacity of governments to ensure that cities provide efficient locations for economic activity and satisfy the basic needs of all their citizens (Rakodi 1997: 18).*

Addressing issues arising from vulnerability of individuals, households or communities goes beyond the concerns of housing *per se*. At the same time, addressing these issues impact on housing and the overall well-being of the occupants. Graham Tipple’s (2005) study looks at vulnerability of housing as opposed to the common livelihood approach of looking at the vulnerability of dwellers. He looks at the effects of disasters on housing and

its occupants and the benefits which housing provision can bring to the need to reduce vulnerability, through how and by whom it is constructed and the opportunities it provides for income earning.

Mark Pelling (2002) brings in the angle of 'social vulnerability'. The social vulnerability approach argues that access to physical safety is shaped by individual and collective access to assets. Assets that directly influence vulnerability to environmental hazards have been identified to include secure land and housing, basic physical infrastructure and social services, and institutional arrangements and information flows that provide for disaster preparedness, mitigation, response and recovery. (Blaikie, Cannon et al. 1994). The assets according to Moser (1998) are underlain by people's access to economic resources, social claims and political rights. The social and spatial distribution of these endowments is shaped by the historical development of the city and by the political regime in which it takes place (Pelling 2002: 61).

Issues to be addressed in relation to vulnerability and arising from urbanization include urbanization trend and how this is linked to development models and the resultant trend of perpetual poverty amongst the dwellers. Emphasis should be given to the difference between the way the West urbanized and the trend in Africa, migration to urban centres not coupled with economic growth to absorb it, limited infrastructure development, burgeoning informality, incapacity among the local authorities, spatial distribution of the poor into marginal areas lacking facilities, politics etc.

Sustainable livelihoods framework refers to the risks that households face and which form threats to their assets as shocks. The framework was designed to analyse rural livelihoods and this has been well documented Chambers and Conway (1992). Its application to urban settlements has been limited. Shocks in urban settings may arise from human conflicts, natural disasters, economic downturns, employment constraints, and health hazards. As in the rural settlements, informal settlements dwellers strategise in order to cope with the daily constraints and opportunities they face. These are significantly different from those faced by their rural counterparts.

Human asset is to the urban poor the most important asset. Labour employment forms the major source of income for this class of people. As such, health and well being is a crucial

factor as poor health means inability to work and thus no income. Yet the environment in which they live presents a high level of health risks. Poor sanitation, high population densities and over crowding compromise good health. The only evident natural shocks in this context are freak floods. In most instances, informal settlements develop along land not suitable for human settlement such as riparian reserves, flood plains and steep hill sides. The weather which is a significant factor in rural areas has less impact in the urban setup.

Cash is indispensable in the urban environment. Commoditisation of all aspects of life requires poor urban households to generate an income that is sufficient to afford basic consumption and food security before shelter needs can be considered. Inflation has been cited as the major economic stress to the urban dweller. Its effect is felt mainly in the erosion of households' purchasing power. Beall and Schutte (2006), in a study on urban livelihoods points out that the major problem for the poor urban households is their inability to establish savings that they can rely on during emergencies, seasonality, income loss and other shocks. This forces households to seek credit through various means, making access to credit a critical livelihood strategy. Money lenders exploit this distress by attaching household assets or charging exorbitant interest. Debts if not well managed also contribute to economic shocks. The overall outcome of economic shocks if not contained is eviction from house in the case of rental housing.

Conflicts in the form of civil commotions often disrupt livelihoods. Politically instigated violence and ethnic feuds contribute to the vulnerability of households. Unlike in the rural areas where weather conditions can lead to crop failure and thus cause distress to households, in the urban set up, variation in job opportunities is a major vulnerability attribute. Weather conditions are also known to contribute to deterioration in health conditions which in turn affect earning capabilities.

Wage employment in most developing countries is on a daily basis and on a first come first served basis. With high levels of unemployment, this mode of employment is erratic and does not form a steady source of income. This section reviews the various coping strategies adopted by the urban poor. These include sourcing of income, shelter provision, commuting to work, and sourcing basic needs such as water, fuel and food.

## **4.9 Alternative development approaches and housing**

In recent years, more innovative approaches to development have come into focus. These include people centred approaches which focus on the assets of the people and their capability. These new approaches are discussed here.

### **4.9.1 Social Capital as a development approach**

Woolcock (2002: 18) defines social capital as “the networks and norms that facilitate collective action” and according to Isham (2002b: 4), it has worked its way into the marketplace of economic ideas. The related concept is ‘social network’. According to Isham (2002b: 3), forty years after the introduction of the concept of human capital in the corpus of economics, the related concept of social capital has taken hold and is a concept with much appeal and promise, but full of definitional and operational ambiguities. Social capital is predecessor to human capital.

The rise of social capital has not gone unquestioned. Arrow, 2000; Solow 2000) while acknowledging the importance of the ‘social dimension of development’, questions whether with its ambiguous definitions throughout the social science literature, it can adequately capture the complexities of such a dimension. Criticism concerns the appropriateness of the capital metaphor: are networks and norms really forms of capital? In this regard, too, the concept of social capital compares favourably with the concept of human capital, which faced similar resistance when first introduced by Theodore Schultz. Both human capital and social capital are composed of durable aspects of human behaviour that accumulate through an identifiable production process: the ‘household production’ of knowledge and social interactions, respectively (Becker 1996).

Development is a process of expanding the real freedoms that people enjoy (Sen 1999). In particular it requires the removal of major sources of ‘unfreedom’: poverty as well as tyranny; poor economic opportunities as well as social deprivation; neglect of public facilities as well as the intolerance or overactivity of repressive states. Development enables greater well-being: an expanded set of economic opportunities, better health, more education and greater political and civil liberties.

Well-being, as conceived by Amartya Sen and Partha Dasgupta, is a measure of actual and potential quality of existence: it encompasses both the attainments of an individual and the choices that he/she enjoys. Dasgupta (1993) defines well-being as a function of *utility* (because it is the most reliable approximation of her rational desires), and an index of the worth to his/her of the freedom he/she enjoys.

Sen (1985) introduced the term in the development context by noting that the quality of a person's existence encompasses *being* and *doing* (What Sen calls *functioning*) from an available set of choices (what Sen calls *capabilities*). For example, as Grootaert and van Bastelaer (2003) puts it, the standard of living of members of a family in Burkina Faso can be partially assessed by observing whether the entire family is healthy and the school-age children are literate. The entire family is able to stay healthy because the head of the household has the choice of borrowing from a community lending institution, and school-age children are literate because they have the choice of attending a community-supported school.

#### **4.9.2 Sustainable livelihoods approaches to development**

The concepts of integrated and multi-sectoral approaches to development remained popular with donor agencies and national governments as a panacea to poverty alleviation until the onset of the concept of *“sustainable development”* at the World Commission on Environment and Development (WCED, 1988) and the Earth Summit (UNCED, 1992). Since then, however, most policies that have been developed with this label are in reality environmental-protection or environmental management policies (Schnur and Holtz, 1998). Although environmental protection is a necessary condition for sustainable development, it is not sufficient to alleviate poverty particularly in the developing countries like Kenya where more than 50% of the population live below the poverty line (GK, 2000).

Defining the ecological system as the primary system around which other development concerns gravitate could in many respects be tantamount to imposing *“elitist”* views about environmental issues and blocking progress and human development (Syaga, 2001). A balance must therefore be drawn between ecological, social and economic development goals as no one system is more important than the others. It is therefore important to identify, assess and effectively manage the tradeoffs between the ecological and the

livelihoods imperatives in any given context. Despite the many development paradigms to-date many development agencies have recorded limited success in eliminating poverty. As a result, new ideas are emerging about development, and several agencies are revising their strategies and placing greater emphasis on elimination of poverty through the concept of sustainable livelihoods (SL) (Ashley and Carney, 1999; IISD, 1999; Sanderson, 2000).

The key element of the livelihoods approaches is that people are the starting point. Conceptually, livelihoods connote the activities, entitlements and assets by which people make a living. SL describes the links between all levels that affect the households, starting from how households secure assets, what they do with them, what gets into their way whilst obtaining them and who controls the resources on which assets are based. It recognizes that households need access to assets so as to provide for their basic needs and to gradually increase them over time. These assets help buffer households against shocks and stresses such as ill-health or unemployment. It also recognises that there are barriers or influences (structures and processes) to accessing assets which determine the level of services received as well as quantity of assets built overtime and therefore the degree to which the households can sustainably withstand shocks and stresses. The access to, use of, and interaction among the assets serves as a foundation of a livelihood system. These assets broadly include: Natural/biological, Physical assets, Physical assets, Financial assets, Human assets, Social assets, and Political assets.

Natural/biological assets the natural resources upon which livelihoods will in the first instance depend and whose access is crucial to households namely, land, water, flora, fauna, common property resources, etc. For instance, tenure is a key physical asset to acquire. Having a degree of ownership of land is often the starting point for households to consolidate shelter. Physical assets for example include physical infrastructure, particularly roads, markets, clinics, schools, and bridges. Properly planned infrastructure and better building reduce vulnerability to sudden impact of disasters like fire, earthquake, and epidemics related to poor housing environments.

Most resource access in urban areas results from cash exchanges, derived from access to jobs, credit or saving opportunities grouped under financial assets. The building of financial assets is almost always a key activity for greater livelihood security. For the urban poor, financial assets are often fragile. Most of the urban poor are forced to work

long hours in the informal sector with very low incomes. Working in poor conditions such as waste picking serves to increase vulnerability to disease and ill-health. Human assets is labour based. Cities provide a variety of opportunities for earning income. The benefits from different household members entering into a range of activities based on skills, knowledge and ability increases the chances of sustaining a household. However, some coping strategies serve to increase vulnerability and threaten household sustainability, as for instance, child labour creates barriers to adequate education.

Social assets refers to the social networks, membership of groups, relationship of trust, access to wider institutions of society upon which people draw in pursuit of livelihood. Low income urban settlements are characterized by limited social assets such as lack of extended family structure, established networks of contacts or strong relationships of trust which are readily accessible in the rural setting. Political assets include participation and empowerment. While participation implies active involvement by the population, empowerment refers to the expansion of peoples' capabilities to define and set their own goals and objectives, assess the implications of choices available to them and assume responsibility for actions to achieve their agreed upon objectives. Participation and empowerment are therefore mutually reinforcing and enable people to assume their rights and responsibilities as citizens. In practice, any attempt to enhance people's access to assets and to transforming structures and processes will rapidly confront political issues. Having a say in democratic processes is therefore a vital asset in sustainable livelihoods.

The Department for International Development's (DFID) Natural Resources Advisers conferences held in 1998 and 1999 (Carney 1998; Ashley and Carney 1999) discussed the part the livelihoods approach might play in the battle against world poverty and observed that livelihoods approach can improve the quality and relevance of programmes committed to poverty reduction, and that there was no distinction between rural and urban population in the application of livelihoods approach. They defined sustainable livelihoods (SL) as: "A way of thinking about the objectives, scope and priorities for development, in order to enhance progress in poverty elimination. SL approaches are underpinned by a set of principles, draw on many tools (including the SL framework) and can be applied in different ways."

The International Institute for Sustainable Development (IISD) has also since 1991, through its Community Adaptation and Sustainable Livelihoods programme, been trying to understand how people in the developing world can escape from poverty and build a sustainable future for their children (IISD, 1999). The program is currently testing a method called appreciative inquiry which gets a community to focus on achievements rather than problems, and seeks to go beyond participation to foster inspiration at the grassroots level. Once local people have created a vision of what is possible, they must communicate it to officials in government and business if they are to participate in decision-making. The program aims at helping the communities achieve this goal through community-based media, where local people, development professionals and journalists together design media productions in a participatory workshop. When the productions are played to focus groups of government and corporate officials, they can stimulate more equal and effective communication between a community and decision-makers.

Thus while various tools may be used to achieve poverty-focused development activity, the process is underpinned by several core principles namely: people centred approach, responsive and participatory approach, multi-level approach, partnership, sustainability and dynamism. This approach considers sustainable poverty elimination as achievable only if external support focuses on what matters to people, understands the differences between groups of people and works with them in a way that is congruent with their current livelihood strategies, social, environment, and ability to adapt. On responsiveness and participation, it is argued that poor people themselves must be key actors in identifying and addressing livelihood priorities. Outsiders need processes that enable them to listen and respond to the poor. On the other hand, poverty elimination is an enormous challenge that will only be overcome by working at multiple levels, ensuring that micro-level structures and processes support people to build upon their own strengths and conducted in partnership with both public and private sector. For sustainability of this approach, four key dimensions are suggested namely: economic, institutional, social and environmental sustainability. All are considered important and a balance has to be found between them. Lastly, external support must recognize the dynamic nature of livelihood strategies, respond flexibly to changes in people's situation, and develop longer-term commitments.

From the above principles it is evident that Sustainable Livelihoods approaches demand collaboration between sectors and different disciplines as well as continuing learning experience. However, what is most important is to distinguish between the coping and adaptive strategies of the populations being targeted. Many mistakes have been made in the past when solutions to poverty alleviation have been based on coping strategies rather than adaptive strategies. The coping strategies are often short-term response to an epidemic or emergency situation such as civil war, flood or drought by the people. Whatever actions they take if replicated in projects would be tantamount to providing short-term coping strategies or refugee solutions which are unlikely to be owned by the people for a long time. It is thus necessary to determine the adaptive strategies which entail a long-term change in behaviour patterns as a result of changing circumstances. For instance, the fact that people live in unplanned settlements arises out of changing economic facts of housing shortage and lack of affordability. The non-use of toilets in the unplanned settlements is a coping strategy because the toilets are not there but not because people consider it a cheaper alternative. People in unplanned settlements require affordable housing, and often have good ideas about how best such housing can be provided. Similarly, while informal sector is an alternative employment, working longer hours or picking solid waste without protective clothing is a coping strategy and not an adaptive strategy worth glorifying in sustainable livelihoods.

#### **4.10 Sustainable development and informal settlements**

The 1987 World Commission on Environment and Development (WCED) (also known as the Brundtland Commission) report is accepted widely to have been influential in bringing the concept of sustainable development into the popular conscience, particularly in the developed world. WCED defined sustainable development as development which meets the needs of the present without compromising the ability of future generations to meet their own needs. Although there is already a vast body of literature offering expanded version of this concept, there is little dispute over the above definition.

Several issues arise in relation to sustainability. Is it in terms of the environment, use of scarce resources, cost recovery or some other parameter? The other question asked is for whom is the sustainability; the individual, the household, the community, the city or the country? These issues may have different connotations to different stakeholders at

different points of time. Other areas that may also require consideration as concerns sustainability include segments of the human settlements sector, such as, the delivery system of housing, maintenance of urban basic services, transport sector, poverty programmes, local governance, people's empowerment etc.

#### **4.10.1 Defining informal settlements**

There is no one generally agreed definition of informal settlements. Definitions vary widely from country to country. There are also varied terminologies purportedly describing the same phenomenon. These include squatter settlements, slums, low-income settlements, semi-permanent settlements, shanty towns, spontaneous settlements, unauthorized settlements, unplanned settlements, and uncontrolled settlements. In most instances, the terminology used is a reflection of attitudes towards these settlements (Srinivas 2006).

Informal settlements are also referred to in different local names such as Ranchos in Venezuela, Callampas and Campamentos in Chile, Favelas in Brazil, Barridas in Peru, Villas Misarias in Argentina, Colonias Letarias in Mexico, Barong-Barong in Philippines, Kavettits in Burma, Bastee and Juggi-johmpri in India and Kampung in Indonesia. In Kenya, such settlements are referred to as Mabanda in Kiswahili or simply slums in English. Both terms used in Kenya are expressive of the characteristics of these settlements which is impoverished housing. What is prominent in the Kenyan context are the distinct names given to each of the informal settlements such as Kibera and Mathare, Korogocho.

UN-Habitat (2003b:89) observes that there are two elements that are central to all the definitions of informal settlements namely: the housing in question is either illegally built; and few services and community facilities (if any) are built in the immediate neighbourhood. Informal settlements are also defined as residential areas that do not comply with local authority requirements for conventional (formal) townships. They are, typically, unauthorized and are invariably located upon land that has not been proclaimed for residential use. They exist because urbanization has grown faster than the ability of government to provide land, infrastructure and homes.

Slums and informal settlements are contested terms often used interchangeably to describe the same phenomenon. There is no internationally accepted definition of a slum. However, the United Nations Human Settlements Programme (UN-Habitat 2002b: 21) preferred definition for international use and which is adopted in this study is:

*—a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. A slum is often not recognized and addressed by the public authorities as an integral or equal part of the city. It is an area which combines to various extent the following characteristics: insecure residential status; inadequate access to safe water; inadequate access to sanitation and other infrastructure; poor structural quality of housing; and overcrowding (UN-Habitat 2002b: 21).*

It is evident that the definition of informal settlements and slums emanates from the quality and characteristics of the built environment in these settlements. The responsibility of ensuring that the built environment is of acceptable quality is vested upon the government and by extension, the local authorities who define and oversee the implementation of what is deemed to be minimum building standards. At the global level the Millennium Development Goals make reference to adequate housing which in essence refers to certain minimal standards. Debate over what constitutes minimum standards has been going on for several decades. The argument has been that standards set up by authorities have been unrealistically high. In Kenya a task force set up by the government came up with what was deemed to be adequate standard for low income housing. The minimum of two habitable rooms plus a cooking area and sanitary facilities all covering a gross floor area of 36 square meters per dwelling as envisaged in the National Housing Policy (Republic of Kenya 2004: 11) has never been realized.

The problems faced in the definition of informal settlements apply equally to the characteristics of these settlements. It is however generally accepted that informal settlements exhibit the following characteristics: Infrastructure that is inadequate; Environments that are unsuitable; Population densities that are uncontrolled and unhealthily high; Dwellings that are inadequate; Poor access to health & education facilities and employment opportunities; Lack of effective governance and management by local authorities (UN-Habitat 2006).

They are consequently areas of increasingly high risk with regard to health, fire and crime. However, informal settlements are also often characterized by: Significant personal investment in dwellings; Strong social infrastructure; Effective community leadership; Strong linkages with the more formally-housed community. These factors, coupled with insufficient land and finance to “just solve the housing problem” dictate that informal settlements be regarded as places of vitality and opportunity—and not simply as places to be eradicated (RZA 2003).

There are essentially three defining characteristics that help us understand informal settlements as observed by Srinivas (2006:2) namely: the physical, the social and the legal with reasons behind them being interrelated.

**a. Physical Characteristics:**

*A squatter settlement, due to its inherent "non-legal" status, has services and infrastructure below the "adequate" or minimum levels. Such services are both network and social infrastructure, like water supply, sanitation, electricity, roads and drainage; schools, health centres, and market places.. Water supply, for example, to individual households may be absent, or a few public or community stand pipes may have been provided, using either the city networks, or a hand pump itself. Informal networks for the supply of water may also be in place. Similar arrangements may be made for electricity, drainage, toilet facilities etc. with little dependence on public authorities or formal channels (Srinivas 2006:2).*

**b. Social Characteristics:**

*Most squatter settlement households belong to the lower income group, either working as wage labour or in various informal sector enterprises. On an average, most earn wages at or near the minimum wage level. But household income levels can also be high due to many income earners and part-time jobs. Squatters are predominantly migrants, either rural-urban or urban-urban. But many are also second or third generation squatters (Srinivas 2006:2).*

**c. Legal Characteristics:**

*The key characteristic that delineates a squatter settlement is its lack of ownership of the land parcel on which they have built their house. These could be vacant government or public land, or marginal land parcels like railway setbacks or "undesirable" marshy land. Thus when the land is not under "productive" use by the owner, it is appropriated by a squatter for building a house. It has to be noted here that in many parts of Asia, a land owner may "rent" out his land for a nominal fee to a family or families, with an informal or quasi-legal arrangement, which is not however valid under law (Srinivas 2006:2).*

**4.10.2 Factors contributing to the development of informal settlements**

Several factors have been identified in literature as contributing to the growth and development of informal settlements. Srinivas (2006) identifies two factors: one internal to the dwellers of informal settlements and the other external. According to him, internal reasons include, lack of collateral assets (to access land), lack of savings and other financial assets; daily wage/low-income jobs (which in many cases are semi-permanent or temporary). External reasons he argues include, high cost of land and other housing services; apathy and anti-apathy on the part of the government to assist them; high –acceptable” building standards and rules and regulations; lopsided planning and zoning legislation.

Durand-Lasserve (2006) on the other hand attributes the persistent growth of informal settlements to poverty and insecure occupancy and approaches it from a policy point of view arguing that:

*—global rise of urban poverty and insecure occupancy status takes place in a context of accelerated globalization and structural adjustment policies combining: (i) deregulation measures; (ii) massive government disengagement from the urban and housing sector; (iii) attempts to integrate informal markets — including land and housing markets — within the sphere of the formal market economy, especially through large-scale land ownership registration and titling programs.” (Durand-Lasserve 2006)*

As a consequence, these policies, along with the lack of, and/or inefficiency of safety net programs and poverty alleviation policies, have resulted in increased inequalities in the distribution of wealth and resources at all levels and in most countries. Structural

adjustment programmes instituted by the World Bank for example directed the public sector away from direct involvement in housing delivery. As a result, the public sector involvement in the provision of serviced land or housing for low-income groups in Kenya was drastically reduced. The poor are thus left to compete for land and housing alongside the high and middle-income groups. As envisaged, the profit driven private sector targets its land and housing development activities at high and middle-income groups with regular employment and access to formal credit. The urban poor in Kenya have no choice but to rely on informal land and housing markets for access to land and shelter fostering the expansion of irregular settlements in cities (Agevi 2003).

#### **4.10.3 The concept of housing in informal settlements**

There are many interpretations and concepts expressed in defining housing. Understanding ‘housing’ and ‘housing problem’ which is central to this study calls for a clear understanding of what the term ‘housing’ stands for. Some definitions characterize housing as ‘shelter’ or ‘group of houses’ thus stressing the physical spaces of a house or a group of houses. Some descriptions of housing or shelter include:

— *housing is a decent shelter for a family...*” (Chamecki 1974)

~~housing: the providing of shelter or lodging, the shelter or lodging, houses collectively, and enclosing frame~~” (Encyclopedia Britannica)

*shelter, i.e. physical protection from the elements and from intruders, is the most pervasive function of the dwelling*” (Burns and Grebler 1977).

This initial definition is now mostly expanded to encompass more than just the ‘houses’ but also the physical housing environment including related facilities and spaces. According to the UN (1976), *“The concept of housing is more than merely a physical shell. Housing encompasses all the auxiliary services and community facilities which are necessary to human well-being. The residential environment, neighbourhood, micro-district or the physical structure that mankind uses for shelter and the environs of that structure, including all necessary services, facilities, equipment and devices needed for the physical health and social well-being of the family and the individual”*.

Thus, ‘housing’ is not ‘shelter’ or ‘household facilities’ alone but comprises a number of facilities, services and utilities which link the individual and his family to the community and the community to the region in which it grows and progresses (UN 1976). Another set

of definitions emphasizes not only the physical objects ‘houses’ and possibly the adjacent physical facilities, but also refers to the manifold activities, rules, regulations, agreements, policies, etc., made to produce, construct and organize these physical objects and surrounding environments. Thus Turner and Fitcher state that *“any housing system depends on a service of more or less organized and institutionalized services, the number and complexity of which vary with the nature of the context. No house can be built and maintained without skilled labour (and management), and without an exchange system which allows the users to obtain the resources they do not possess themselves”* (Turner and Fitcher 1972).

Adding another dimension to housing definition, Wakely (1976) brings in other parameters that influence housing outcome stating that: *“The complexity of these (housing) problems necessitates the consideration of many different parameters such as land, finance, legislation, technology and political priorities... building, machines and artifacts are designed ...legislation is drafted, plans are drawn up, budgets are prepared and institutions are set up”*. (Wakely, Schmetzer et al. 1976).

Housing has also been defined as related to purpose, to meaning, to an expression of human values, preferences, and a way of life of people and of the entire society. According to Van Ettinger, (1977), *“The house is not an object, a ‘machine to live in’; it is a universe that man constructs for himself by imitating the paradigmatic creation of the gods, the cosmology”* (Verschure 1979). Van Ettinger (1977) relates housing to life stating that, *“The life of a man has its natural center in what happens in and around and the house. Housing is connected with the essence of his life. Having a roof over one’s head is a human right”*

Other authors accentuate the role of housing in social, economic and political development, in which important decision-making processes are involved. Thus, *“Housing not only provides shelter for a family but also serves as a center of its total residential environment. As a focus of economic activity, as a symbol of achievement and social acceptance, and as an element of urban growth and income distribution, housing fulfils a social need and a satisfies criteria for remunerative urban investment. In the fulfilment of social needs, housing plays both a direct and indirect role, and both roles are decisive. In its direct role housing serves as the area where the individual becomes capable of*

*experiencing community and privacy, social well being, and shelter and protection against hostile physical forces and disturbances. In its indirect role housing serves as the area where an abundant supply of social relationships and services are accessible, such as places for social intercourse, education, recreation, sports, social welfare and health protecting services, shopping and transportation” (UN 1976)*

Debate on housing in developing countries has focused on the idea of informal settlements as a vehicle of ownership for the poor for several decades. Their incremental growth although substandard, it was argued, provided housing that constituted the possibility of having a fairly decent home over time. The idea developed by Turner and other researchers in the 60s was that self-help processes, such as those going on in informal settlements, could result in ownership for the poor if infrastructure and security of tenure were provided. In a rather optimistic vision that ignited debate on self-help housing, they argued that what was frequently regarded as the problem was in fact the universal solution to house the poor (Abrams 1964; 1968; 1972; Turner 1976).

The assumption of many self-help theorists that everybody in a squatter settlement is an owner (or potential owner) was never true (Coccatto 1996: 4). Evidence from different countries reveals that a large segment of the urban poor lives in rental accommodation in squatter settlements and informal sub-divisions (Gilbert 1993). Ownership through squatting has now become an impossible dream for many poor households. As Van Der Linden (1986) puts it: *“squatting is no longer what it used to be”*. For some families, ownership even in its cheapest form has become increasingly inaccessible. As ownership becomes less feasible, rental and shared housing become more frequent option among poor households (Coccatto 1996: 4).

The concept of housing in Kenya presents a myriad of definitional problems. On a broader sense housing in Kenya can be classified as either rural or urban. Within these two broad classifications are classifications into social or economic groupings expressing the social stratification existing in the country. Pegged to this is the problem of housing quality with the urban poor bearing the brunt of the poorest quality of housing. In the rural areas housing is often of indigenous architecture although this has changed rapidly over the years. Rural housing is directly linked to livelihoods or lifestyle and there has been little attempt to address its quality whether good or poor, acceptable or not. There is to some

extent direct correlation between what is termed as informal settlements in the urban areas and rural housing. Some of the informal settlements such as Kangemi, Kawangware or Dagoretti, are actually rural settlements incorporated into the city through boundary extensions (See figure: 5.3, page 126 Nairobi's boundary extensions 1900-1963). The wattle and daub wall construction found in most informal settlements on the other hand is derived from the indigenous architecture of rural housing.

This study adopts a broad definition of the term 'housing' which encompasses the definitions enumerated above and summarized as a physical product, commodity, environment, meaning and process. These varying aspects of housing are to be taken into consideration in the analysis and evaluation of housing problems and solutions for the urban poor. Housing is also a physical manifestation of dwellings and related amenities within a given setting.

#### **4.10.4 The problem of housing in informal settlements**

It is generally agreed that the most pressing problem facing the housing industry in the Kenya insofar as housing the urban poor is concerned, is the shortfall in supply over demand and the associated aspects of rapid population growth, poverty, and quality of shelter. It is estimated that globally the urban population stands at 3.3 Billion and that by the year 2030 it will have risen to 4.9 Billion representing more than a half of the global population (UNFPA 2007). Most of this urban growth will occur in developing countries where by 2030 the urban growth will bring a further two billion people into the cities doubling their size and adding more strain to the already overstretched infrastructure and housing shortage. It is here that the link between 'housing' and 'development' comes into play. The problem of housing is then seen to be acute in developing countries and thus seen as a developmental problem requiring developmental solution. In Kenya this position is clearly reflected in the incorporation of housing development programmes in subsequent five year Development Plans since independence.

The concept of 'housing in a development context' is based on concepts and ideas having emerged directly or indirectly from late 19th and early 20th century European and North American theory and practice on housing (Payne 1977). Housing in development context is a broader interpretation of housing, seeing housing as a continual activity – a 'process' as argued by Turner and Fichter (1972). This housing process encompasses various

material provisions (e.g. shelter, land, and access to service facilities) that supports personal and community life (social organization, community grouping and decision making, etc.) and expresses itself in the way people arrange their concrete surroundings materially revealing the thinking, the significance of people's environments embedded in context of values and worldviews.

This approach arose as a reaction against reductionist tendencies which provided a simplified view of housing and was justified on the basis of the complexity of the housing process itself. Such broadening of scope was needed to explore the meaning and problems of housing in a total societal context and thus related to the underlying meaning of development. An interesting attempt to relate housing investment to overall growth pattern was that of William and Mary Wheaton (1972) who put forward a model which attempted to illustrate how the allocation of housing resources changed at various stages of economic development. Their purpose was to discover which stage was likely to produce the best returns, in terms of capital formation, for the lowest cost. Self-help was identified as the best investment value, although the rationale for this was not clear. One of the main limitations of this approach, like many other economic models, was that it was conceived in a political and social vacuum. The realities of established power structures, whether capitalist, socialist or totalitarian, were ignored. As a result there is an oversimplification of the various alternatives for economic development into a continuum of the following three development stages:

- 1) For the early stages of economic development and urbanization, prior to any large government commitment to housing programmes, the model puts forward a gradual, common distributional deployment of resources. Through out this phase the resource share of low-cost housing is commensurate with the growth of urban migration and the resultant appearance of squatter communities.

- 2) In the second stage of resource allocation, private sector investment and public investment is able to cope with housing demand.

- 3) Third stage represents the point at which population growth becomes overwhelming in absolute terms and cities are flooded with migrant families for whom neither the public nor the private sector constructs additional low-cost accommodation. In such

circumstances the migrants build their own shelter in the form of squatter huts, thus by their own efforts raising the proportion of housing resources deployed in the low-cost category.

Beyond this stage the model assumes some national commitment to improving the housing situation so that the influence of the various development paths on the relative importance of public, private and popular housing becomes more discernible and, in theory, predictable. This is the situation prevalent in most Third World countries including Kenya.

#### **4.10.5 Formal versus informal**

The debate about formality and legality status of settlements and housing is not all clear. According to Durand-Lasserve (2006:1), the term “informality” raises the same definitional problems for human settlements as when it is applied to economic activities and to employment which in most cases is negative. He argues that the main characteristics of formal and informal are known, but in many situations the borderline between the two remains blurred. Based on criteria used, a settlement with the same characteristics regarding land, urban planning, and housing can be considered either as formal or informal.

“Illegality” as argued by Durand-Lasserve (2006:2) also poses similar definitional problems. He observes that when used by government authorities, it reveals a clearly repressive intention the most common of which is eviction. Generally, illegality in human settlements refers mainly to conformity with planning and construction norms and, more importantly, to tenure situations (Durand-Lasserve 2006:2).

The terms “informality” and “illegality” are used almost interchangeably as if they refer to a similar thing. As observed by Durand-Lasserve (2006:2) a vital omission in the understanding of the debate is that informal housing processes are not considered as important as the condition of illegality in policy making. In most cases, it is largely agreed that legality is paramount to housing investments. However, according to Durand-Lasserve (1990), this can be a misleading argument, since individuals living in these settlements have developed a sense of security that for instance, do not necessarily relate to the legal debate on rights to land.

Response to these processes has been the legalization of land tenure. According to De Souza (2000), the main issue in these experiences of legalization is, to consider full individual property rights as the prevailing response to informality. He argues that emphasizing full property rights one is neglecting the extant tenure system that can be informal but should not necessarily be considered illegal. As claimed by De Souza, (2000) there is need to revise views on informality to reshape legality that can be more suitable for the reality in focus. That is, the promotion of alternative tenure rights appears to be more appropriate to individuals living in squatter settlements than more conventional rights. This concept is explored further in Chapter Seven on Tenure preferences.

The distinction between informal housing processes and illegal land tenure situation can improve the understanding of the nature of tenure security perceptions among households living in informal housing settlements. Payne (1977) argues that by isolating the ideological and ethical content of legal/illegal housing tenure, it can become more reliable, an approach to incorporate the extant concept about informal housing processes and tenure relations that are the existent and prevailing patterns shared among individuals living in these areas. By doing so, one could then shape urban policies that could lead to a more social/spatial included society. Expanding the understanding of property rights towards the recognition of extant tenure systems in informal housing markets, can be a step forward in the vital debate about social inclusion.

From a bottom-up perspective, i.e. for individuals, their demand for housing is almost necessarily, at some point in time and space, followed by claims of property rights leading to tenure disputes. This is because the legal systems perpetuate full property rights as opposed to alternative tenure systems that already prevail in informal housing settlements. For instance in Brazil, there is room for individuals to challenge these properties rights both in legal and political terms. Of concern to this study is the problem of including/excluding extant tenure systems in policy making and the responses towards the integration of urban space and individuals.

The term “illegality” poses similar definitional problems, but with distinctively more repressive connotations (Durand-Lasserve 2006). When used by government authorities, it reveals a clearly repressive intention, or hints at a menace. The most visible expression — if not the most common — of repression is eviction. References to illegality in human

settlements refers mainly to conformity with planning and construction norms and, more importantly, to tenure situations.

Settlement type also has direct ramifications on the core issue of impact on the lives of slum dwellers' tenure. Land tenure refers to the rights of individuals or groups in relation to land. The exact nature and content of these rights, the extent to which people have confidence that they will be honoured, and their various degrees of recognition by the public authorities and communities concerned, will all have a direct impact on how land will be used. Tenure often involves a complex set of rules. Some users may have access to full use and transfer rights. Other users may be more legally limited in their use of these resources, which illustrates both the diversity of rights to land and the existence of a wide range of options, from full ownership to less singular forms of possession and use. Areas commonly designated as "slums" in the literature refer to three main types of settlements listed below:

- Squatter settlements on public or private land.
- Illegal commercial suburban land subdivisions on private or customary land.
- Occupation of overcrowded, dilapidated buildings in city centers or densely urbanized areas.

But for the majority of slums dwellers, according to UN-Habitat, insecure residential status means first of all insecure tenure, as opposed to secure tenure, which "is the right of all individuals and groups to effective protection by the State against unlawful evictions". *Insecure tenure* covers a wide range of local situations, from total illegality to various forms of tolerated occupation, or occupation legitimized by customary practices. According to UN-Habitat (2003b), security of tenure describes an agreement between an individual or group for the rights to use land and residential property, which is governed and regulated by a legal and administrative framework (legal framework includes both customary and statutory systems). The security of tenure derives from the fact that the right of access to and use of the land and property is underwritten by a known set of rules, and that this right is justifiable. The tenure can be affected in a variety of ways, depending on the constitutional and legal framework, social norms, cultural values, and to some extent, individual preferences. In summary, a person or household can be said to have secure tenure when they are *protected from involuntary removal from their land or*

*residence by the State*, except in exceptional circumstances, and then only by means of a known and agreed legal procedure, which must itself be objective, equally applicable, contestable and independent. Such exceptional circumstances might include situations where physical safety of life and property is threatened, or where the persons to be evicted have themselves taken occupation of the property by force or intimidation.

Informal settlements are characterised by several illegalities. According to Fernandes (1999) these illegalities range from a vast informal economy and innovative survival strategies to the increasingly “sophisticated” mechanisms of popular justice, which have been identified in many cities. Given the fact that a large proportion of urban population in developing countries (30 to 60%) lives in irregular settlements, it is now widely accepted that regularization policies are – at least in the short-term – the only realistic solution to improving the housing conditions of the urban poor (Durand-Lasserve and Royston 2002).

Human settlements are the spatial dimension as well as the physical expression of economic and social activity. No creative act takes place without being influenced by settlement conditions. At the same time, every individual settlement, no matter how small or physically and economically isolate, is part of an overall system. Thus the creation of workable human settlements inevitably becomes an objective of, an indicator of and a prerequisite for social and economic development in that places where people can live learn and work in conditions of safety, comfort and efficiency are a fundamental and elementary need (UNCH, 1992). This forms the basis of this study.

There is no homogeneity in the nature of informality within the informal settlements. However, four distinct categories based on land tenure can be identified:

1. Informal settlements on government land either by squatting or on temporary occupation license
2. Informal settlements on private land arising through incorporation of rural areas into the city by extension of city boundaries
3. Informal settlements on subdivided farm land
4. Deteriorating public housing

Each of these categories presents unique characteristics making blanket solution not feasible. Settlement characteristics in these informal settlements range from temporary and make-shift structures on government land, to permanent structures on sub-divided farm land. There are also cases of slums located on hazardous land such as river embankments and power line way-leaves, with little or no hope of regularization and upgrading. Housing solutions to such settlements can only be addressed through resettlement on new sites or in improved and densified settlements. Several of the old public housing estates have gradually deteriorated to the extent that they have become slums. This is attributed to poor maintenance by the local authority, overcrowding and poor infrastructure. This has come about as a result of the local authority's inability to maintain the houses, overcrowding through subletting, and inadequacy and overloading of the existing infrastructure. Yet others are on prime land but with low densities that need upgrading.

Densification and congestion is high in the informal settlements of Nairobi as is evidenced in settlements such as Kibera and Mathare Valley located on government land. Very little house improvement takes place in these settlements. On freehold land that was formally African rural areas such as Kawangware and Kangemi, authority to build is granted by the owner of the land. Such settlements are relatively less densely populated but the structures remain temporary in nature. Lastly, there are housing developments on subdivided land, which were formally farmlands. Here, multistorey permanent structures have been developed with total disregard to the one dwelling per plot regulation resulting in high population densities. Although such developments have water and electricity, the breach of planning regulations and lack of adequate foul drainage system qualifies them as illegal settlements. Each of these informal settlement patterns presents different characteristics and problems. It is this condition that complicates the process of intervention in the informal settlements of Nairobi.

#### **4.10.6 Policy**

Lack of policy to adequately address the citywide spatial planning for the inclusion and integration of the informal settlements into the urban fabric is one of the obstacles in the improvement and provision of services to the settlements. There has not been a conscious effort to plan for, and manage the proliferation of the informal settlements. Leaving urban growth at the mercy of spontaneous and irregular development as has been witnessed in developing countries is a recipe for chaos. The rapid informalization of these cities urban

spaces is a threat to their physical and economic growth, affecting the provision of services and infrastructure among others. This situation is exacerbated by the rapid population growth in these cities. Whereas the role played by informal settlements in the city's economic growth is acknowledged, the city's development cannot be surrendered to spontaneity and informality more so when the projected population growth indicate that a city has to accommodate further millions of people over the next decades, mainly migrants from the rural areas

Housing policies are responses to demands for housing goods and services and for the resources used (Turner, 1983). Kenya has drafted a new housing policy with an overall goal of facilitating the provision of adequate shelter and healthy living environment at an affordable cost to all socio-economic groups and to foster sustainable human settlements (ROK, 2003). The Housing Policy is generally based on the two main themes of the United Nations Habitat Agenda (UNCHS 1996) namely "adequate shelter for all" and "sustainable human settlements development in an urbanizing world". It is an acknowledged fact that the challenges of human settlements are global. Equally, many of the problems are also specific, requiring local solutions. Whereas the adoption of the global agenda for housing intervention may bring with it the diverse information on global trends and practices, it is the interpretation and contextualization of the specific local issues that determines the policy's successes or failures. Several issues have to be addressed by the national housing policy including, "adequate shelter" in the Kenyan context, whether adequacy of shelter should vary from region to region, or from town to town, or within a town? The response to these questions has to do with the issues of income and standards. Several authors have argued that Kenyan building standards have been prohibitively high and have impacted negatively on housing delivery process (Agevi 2003; Huchzermeyer 2006 ). Every individual aspires for a better living condition and so does a nation. However economic realities sets limits to these aspirations. Calls by donor community and other actors in the housing provision sector for the building standards to be lowered raises question as to what level these standards should be lowered to if at all they have to be lowered or whether flexibility in implementation would be a more appropriate approach.

As stated in the National Housing Policy (MOL&H. 2004), the government of Kenya recognizes that security of land tenure as well as availability of adequate quantities of land

in suitable location at affordable prices is a central requirement for clearing the backlog of housing demand for the urban poor. The challenge to the realization of this policy is the availing of adequate and affordable land to the urban poor. Given the magnitude of the housing inadequacy, conventional tenure regularization involving subdivision of plots and issuance of title deeds is not tenable. Thus there is need to relate land tenure system issues to the broader regularization aspects of informal settlements involving decongestion, redistribution, and improvement of slums and informal settlements within a spatially organized, well managed, and sustainable urban space that fulfils the requirements of all communities.

#### **4.11 Conclusion**

Development and urbanization trends have direct bearing on housing outcome and livelihoods. The link between development as modernizing and subsequently leading to housing improvement has weakened since it gained popularity in the 1960s. The shift is towards recognising what the people possess in the form of assets and how best these can be blended into development strategies that are sustainable. Development themes meant to set agenda and strategies for periodic development plans such as is the practice in Kenya remains meaningless when not adhered to or when appropriate parameters needed to realise the goals are unrealistic. Thus the current theme of “Kenya Vision 2030” which aims at industrialization by year 2030 could remain but a dream if appropriate mechanisms are not laid at the right time. A vibrant economy is the most appropriate catalyst to housing development and improved livelihoods.

Urbanization which is growing at a fast rate is encouraging but the only way to engage such population is through industrial production which is predominantly a preserve of urban centres. This is why Kenya’s industrialization strategy commonly referred to as “Vision 2030” is of paramount importance.

## CHAPTER FIVE

### INFORMAL SETTLEMENTS TRENDS AND INTERVENTIONS

#### 5.1 Introduction

The phenomenon of informal settlements in the city of Nairobi, Kenya, as in most cities in developing countries has become increasingly complex and represents a social, cultural, economic, environmental, and political challenge. In this chapter, informal settlements are defined and factors contributing to their development and persistence examined. The chapter also introduces the nature and extent of informal settlements in Nairobi. Past informal settlements intervention strategies of the early 1960s to 1990s are also discussed. These include slum clearance and public housing, sites-and-services, slum upgrading, government assisted self-help programs, enabling environment, and participatory approaches. In the conclusion, the chapter considers other innovative policy options from which a trend is established, adopted, and argued throughout this study. The discussion leads to the gap in literature with regard to the relationship between intervention strategies and the prevailing systems of urban, physical, social, and economic settings in Nairobi.

Kenya lies astride the equator on the Eastern coast of Africa (Fig. 5.1) and Nairobi which is the capital city is located approximately 480 Kilometres East of the port city of Mombasa. The country is divided into eight administrative provinces (Fig. 5.2). The development of urban settlements in Kenya is a reflection of the historical development of the country as a whole and began with colonization by the British Imperialist in the late 19<sup>th</sup> century. Prior to this, the only semblances of urban settlement were a few trading centres of Arab origin along the coastline dating back to the 9<sup>th</sup> Century AD (Obudho and Mhalanga 1988: 3). Agrarian economy based on subsistence agriculture and pastoralism requiring little special skills to warrant concentration of population existed in the hinterland. However traditional markets existed and formed important nucleus and spatial system some of which coincided with the Arab trade routes into the hinterland and later adopted by the settlers. Colonization had commercial intent and was undertaken to facilitate commercial expansion in response to demands of the European industrial revolution. This is evidenced by the pioneering Imperial British East Africa Company (IBEAC) which was among the first to set business in the then British East Africa, the

forerunner of the East African Protectorate which was late partitioned into Kenya Colony and Uganda Protectorate.



**Figure 5. 1: Location of Kenya**  
Source: [www.wikipedia](http://www.wikipedia), 2008



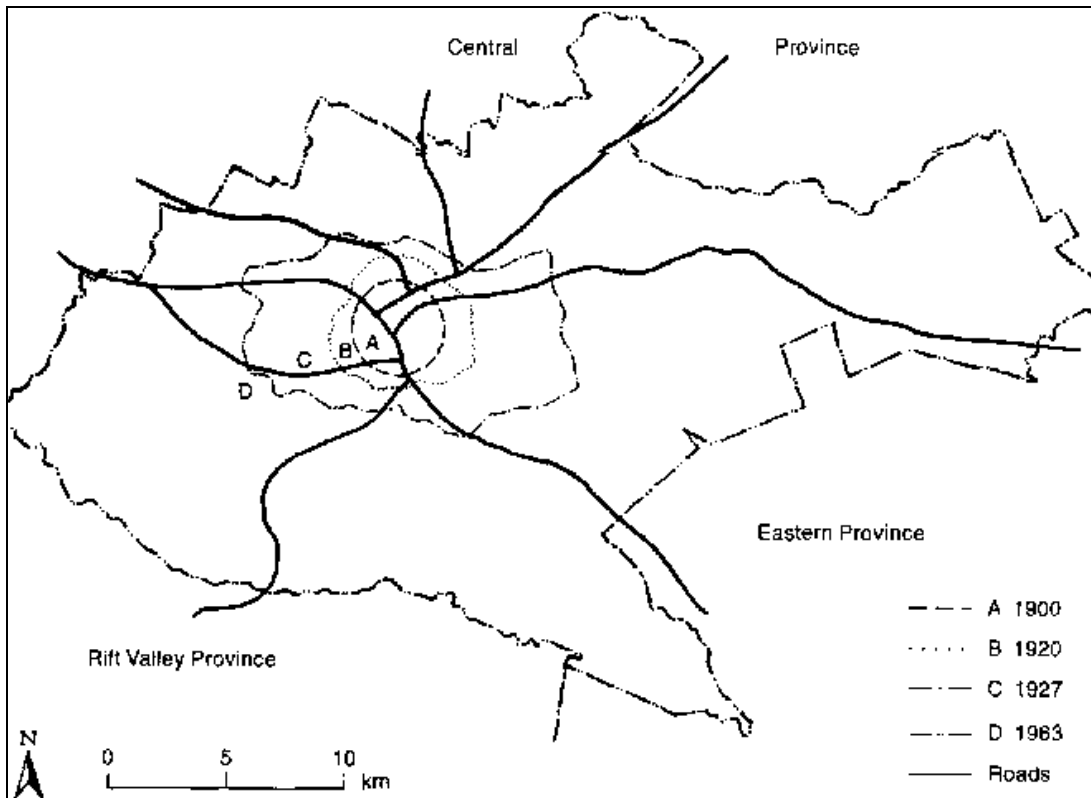
**Figure 5. 2: Map of Kenya**  
Source: [www.wikipedia](http://www.wikipedia), 2008

The commercial expansion witnessed generated urban consequences as necessary component of the process. Although the urban environment emerged from the colonial process of commercial expansion, they served as important bases from which political control and economic domination by the settlers were organized and exercised (Obudho and Mhalanga 1988: 5). The establishment of administrative centres countrywide either as Provincial, District, or Divisional headquarters marked the origins of various urban centres in the country as these later developed into commercial and industrial centres. Other urban centres developed within the “White Highlands” to cater for the needs of the white settlers (Obudho and Mhalanga 1988: 5).

Located at the confluence of several small rivers draining from the highlands into the Athi Plains (see Figure 5.3), Nairobi was a watering place for the Maasai pastoralists. The name Nairobi is a derivative from Maasai word for a place of cold water – *Enkara Nairobi*. There was no permanent African settlement since the place was grazing land and a livestock watering point for the pastoralist Maasais. The birth of the city dates back to 1899 when the construction of the Mombasa to Kisumu railway reached here. However, prior to this, a settler by the name Sergeant Ellis had established a small transport depot at the site to keep provisions for oxen and mules in 1896 (Obudho and Aduwo 1992 ). During the construction of the railway, engineers who had been laying rails across the Athi Plains at great speed found their progress checked by the small declivity from which the Nairobi River left the forest foothills of the Kenyan Highlands (Obudho and Aduwo 1992 ). Anticipating difficulties in getting a permanent route into and across the Rift Valley, the Railway authorities made this well-watered spot their mid-point depot, and later their headquarters.

Sir George Whitehouse, the then Chief Engineer, shifted the railway headquarters from Mombasa to Nairobi heralding the subsequent growth of Nairobi as a commercial and business hub of the then British East Africa protectorate (Walmsley 1957). The early settlement consisted mainly of the railway buildings with residential areas racially designated for Europeans and Indians, the latter being mainly the labourers employed in the construction of the railway line. There was no settlement designated for Africans. The initial boundary of Nairobi was defined in 1900. In 1907 it became the capital of Kenya.

A municipal council to run Nairobi was in place by 1919. In 1950, a vital planning decision took place and the urban settlement was elevated to a city status by the Royal Charter and with wartime economies receding, it began to develop in earnest (Obudho and Aduwo 1992 ). A further boundary alteration was done in 1928 after the enactment of



**Figure 5. 3: Nairobi’s boundary extensions 1900 to 1963.**  
**Source: (Thorntone White, Silberman et al. 1948: 10)**

the Local Government Ordinance of 1928 roughly corresponding to the present day Central Business District (Fig. 5.3.). Subsequent boundary extensions which brought the hither to African ‘reserves’, coffee and sisal estates into the jurisdiction of the city are illustrated in Fig. 5.4. The corresponding population growth, density and further projections to the year 2020 are indicated in Table 5.1.

Nairobi developed on the basis of racial segregation. Africans who formed a major part of the population by 1963 lived in the eastern parts, while the Europeans and Asians lived in the western suburbs with access to better services. This trend has continued with race being replaced by incomes levels and population densities. The western suburbs characterized by low densities and leafy environment are inhabited by generally the more

affluent members of society whereas the eastern suburbs with high densities relatively flat topography and fewer trees are dominated by lower and middle income groups.

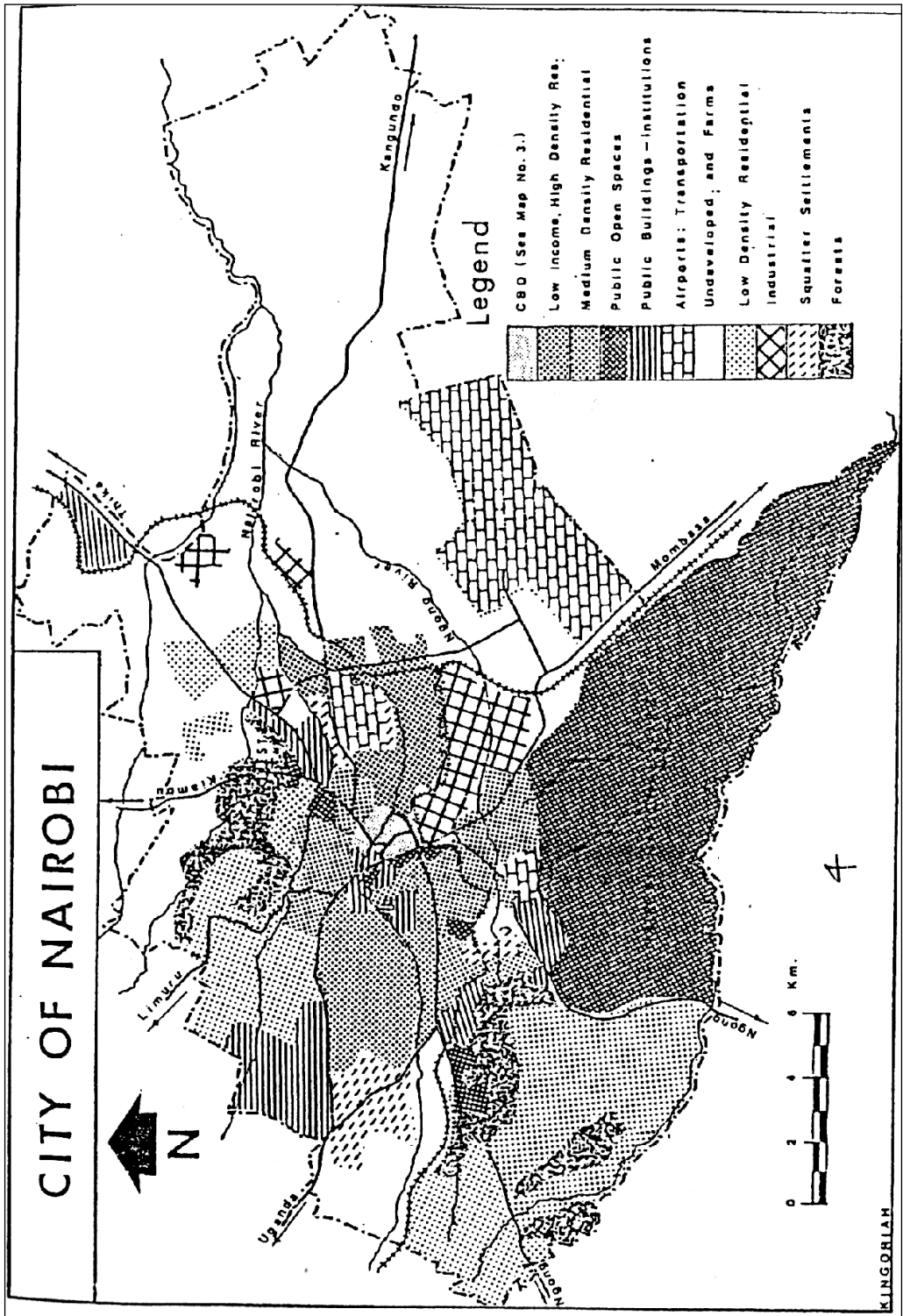


Figure 5. 4: Nairobi Land Use  
Source: (Okoth-Ogendo 1978)

Year	Area (Hectares)	Population	% Increase in Population	Density (persons per hectare)
1906	1,813	11,512	159.4	6.3
1928	2,537	29,864	60.0	11.8
1931	2,537	47,919	3.5	18.9
1936	2,537	49,600	119.6	19.6
1944	2,537	108,900	9.3	42.9
1948	8,315	118,976	188.1	14.3
1963	68,945	342,764	48.6	5.0
1969	68,945	509,286	48.6	7.4
1979	68,945	827,755	62.5	12.0
1989	68,945	1,324,570	60.0	19.2
1999	68,945	2,143,254	60.8	31.1
2010	68,945	3,750,000	75.0	54.4
2020	68,945	5,592,000	49.1	81.1

**Table 5. 1: Population of Nairobi Between 1906 and 2020**  
**Source: (Situma 1992: 167)**

The early planning of Nairobi was based on a distinct zoning system. Subsequent boundary extensions have however resulted in mixed uses. Obudho and Aduwo (Thorntone White, Silberman et al. 1948) identify six distinct and different land use divisions, namely; the Central Business District (CBD); Industrial Area; public and private open spaces; public land; residential areas; and undeveloped land. The varying population densities are depicted in Table 5.2.

The early growth of Nairobi during the period 1899-1926 was haphazard. It was only in 1926 that an attempt was made to prepare a Master Plan for the town. In 1948, –The Nairobi Master Plan for a Colonial Capital” was realised. This master plan laid down guidelines for the City’s development for the next 20 years. According to Olima (1988 ) however, with independence in 1963, the master plan became obsolete because:

- a) City boundaries were extended from an area of 90 square kilometres to embrace an area of 690 square kilometres by 1964.
- b) Population growth had increased beyond 1948 plan targets.
- c) With the change of government and orientation, a new set of policies were needed to guide the development of the city along non-colonial lines.

Settlement/Estate	Population	No. of Housholds	Area (hectares)	Density (persons per hectare)
<b>Low Density or High Income Areas</b>				
Karen	9,764	3,381	2,730	3.6
Muthaiga	6,786	1,681	1,410	4.8
Lavington	18,966	5,815	1,100	17.2
Loresho	15,784	5,131	950	16.6
<b>Medium Density or Middle Income Areas</b>				
Langata	16,118	5,051	4,450	3.6
Higridge	46,642	13,019	4,230	11.0
Parklands	11,456	3,369	460	24.9
Kitsuru	27,459	8,603	2,090	13.1
<b>High Density or Low Income Areas</b>				
Kibera Silanga	16,518	6,281	20	825.9
Korogocho Gitathuru	22,899	7,415	30	763.3
Mukuru Nyayo	36,232	10,224	230	157.5
Mathare	69,003	24,525	150	460.0

**Table 5. 2: Population Sizes and Densities in a Select Number of Areas in Nairobi in 1993**

**Source: (Mittulah 2003; UN-Habitat 2006b)**

The period between 1963-1973 witnessed prolific growth thus creating intense pressure on housing and other community services. In response, the Nairobi Metropolitan Growth Strategy (NMGS) of 1973 was conceived with the explicit aim of easing off pressure on the city's infrastructure by extending its boundaries. The NMGS consisted of a series of policies relating to the pertinent issues of urban growth and the broad physical structure within which the new intended planning policies could be realized.



**Photo: 5. 1 A view of the leafy low density section western of Nairobi with the CBD in the background**  
**Source: Author**



**Photo: 5. 2 View of the plains in the background viewed from the CBD**  
**Source: Author**



**Photo: 5. 3 A view of Nairobi's CBD**  
**Source: Author**

The NMGS was modelled to be a sound planning framework for the growing city. It was therefore conceived to be flexible and, with the appropriate interventions, the strategy could have seen the city through the year 2000 had it been implemented well. However, the Nairobi City Council failed to follow it up with detailed studies. The biggest blow was the failure by the City Council to conduct periodic reviews of findings and recommendations as city circumstances changed over time. Thus the growth of the city continued unchecked and in the last decade or so, Nairobi has experienced an unprecedented wave of corruption at City Hall where deviation from the City's planning guidelines and by-laws has become the norm rather than an exception (Huchzermeyer and Karam 2006).

Current urbanization strategy for Nairobi is theoretically hinged on the "Development Plan System." This presupposes that all physical implications occasioned by physical urban development are taken into account. However, this notwithstanding, Nairobi is rapidly decaying and its rich pattern of the well balanced city-space of lows and highs in a park like arrangement is giving way to the unplanned concrete jungle.

Photo 5.1 shows the more affluent section of Nairobi located on woody slopes. Photo 5.2 is an aerial photograph of the Eastern part of the city located on relatively flat grass plains and housing mostly the low income groups. Photo 5.3 shows the Central Business District with its high-rise commercial buildings.

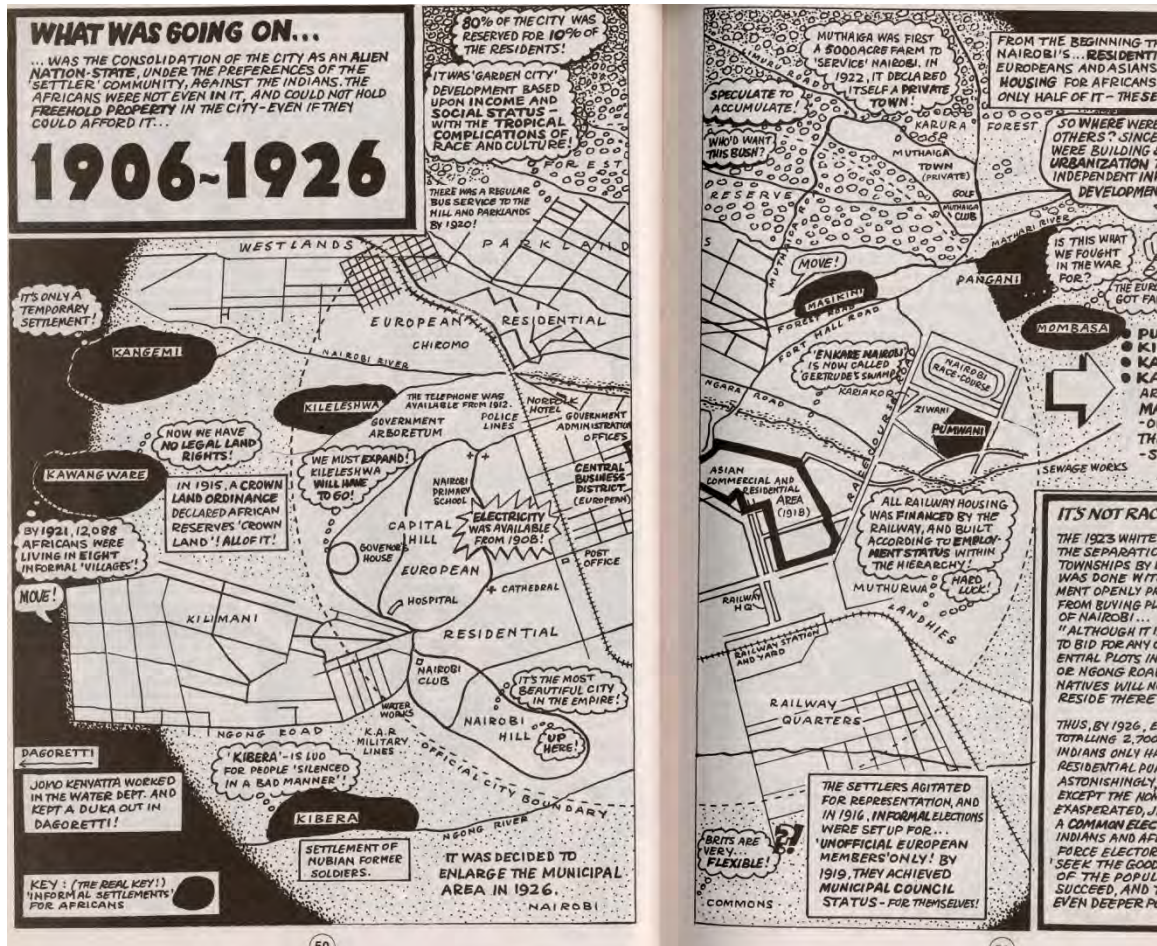
## 5.2 Growth of informal settlements

### 5.2.1 Colonial era

The origin of informal settlements in Nairobi dates back to the colonial era. In its early stages of development, there was no provision for African housing. Unauthorised settlements sprang up because Africans were displaced by the arrival of European settlers. The Europeans expropriated large tracts of land around Nairobi and did not allow Africans to enter the city unless they had a permit. (Olima 2001). Basic, temporary accommodation was only provided to those Africans – mostly men – who were formally employed (Obudho and Aduwo 1988 ). Many Africans too considered the city a work place preferring to maintain strong links with their rural homes where they settled upon retirement. Early attempts to house Africans started with Pumwani in 1923. Informal settlements began to spring up in areas not authorized in a process similar to the modern Kenya informal dwellings.

The settlements lacked services, and the colonial government's response to them alternated between indifference and outright hostility (Mitullah and Kibwana 1998). These settlements were viewed by the Europeans as havens for prostitution, illicit brewing and, later, African nationalism and were declared unlawful by the colonial government. This led to forced eviction of the dwellers and demolitions. Laws such as "Vagrancy Act" and "Public Health Act" were enacted to legally sanction such evictions and demolitions. *For example, Kileleshwa was demolished in 1927 after European settlers in surrounding areas complained that it was a 'breeding ground for crime and disease'. The same fate befell Kariokor in 1931 and Pangani in 1938* (Mitullah and Kibwana 1998). As migration into the city in search for better life picked up, more informal settlements began to spring up. The Mathare Valley settlement absorbed many rural immigrants, as well as evictees from other locations (cited in Mitullah and Kibwana 1998). Kibera was established in 1912 when the 'Nubians' (Sudanese exsoldiers) were granted permission to settle in Makina, also served as an urban entry point for rural immigrants (Mitullah and Kibwana 1998).

According to Hirst and Lamba (Mitullah and Kibwana 1998), only the interest of the white settler population was being taken into consideration in the colonial consolidation period between 1906 and 1926 ignoring those of Indians and



**Figure 5.5: Nairobi's Spatial Configuration 1906-1926**  
**Source: (Hirst and Lamba 1994: 50)**

Africans. Africans were not allowed to hold freehold property in the city even if they could afford it (Mitullah and Kibwana 1998). The disparity between the rich and the poor began as early as this with 80 percent of the city's residential land being reserved for 10 percent white settler residents. Africans, who were not in European employment, built informal settlements through independent informal sector development without the benefit of town planning from 1890. Fig. 5.5 by Hirst and Lamba (1994) illustrates what was happening at that time.

### 5.2.2 Mixed approaches after independence

After achieving independence in 1963, Kenya experienced a phenomenal increase in urban populations and demand for housing. This was due to several factors: continued rural-urban migration; population growth due to improvements in healthcare services; the expansion of city boundaries; and the relaxation of influx controls. This is evident in the figures:

- In 1962, Kenya's urban population was 7.8 percent of the total population; by 2002 it was 35.2 percent.
- The housing shortfall has grown correspondingly: by 1990, the annual shelter deficit had reached 40 000 units; by the year 2000 it was 80 000 units; and by 2003 the official estimate was 150 000 units, though in all probability the real figure was much higher.
- In 1983, it was estimated that 35 per cent of all urban households lived in slum conditions in informal settlements. The figure frequently quoted today is 55 per cent of a much larger population, at least in Nairobi.

In the 1960s and early 1970s, various policies were implemented to address the shortage of housing. Sessional Paper No. 5 of 1966/7, *'Housing Policy for Kenya'*, while emphasising the construction of subsidised public housing for rental, also provided for the demolition of informal settlements. Thus a number of slum clearances, for example those in Pumwani and Grogan, echoed the pre-independence demolitions: the prescriptions of the *Public Health Act* were used as justification. Urban planning was generally regarded as regulatory, interventionist and controlling: an acceptable urban housing unit had to be built with suitable materials and was defined as having at least two rooms, a kitchen and toilet, and a maximum of five occupants.<sup>30</sup> However, such demolitions proved largely ineffectual since they only displaced, but did not solve, the problems. Furthermore, the publicly provided or publicly funded housing disproportionately favoured the middle and upper income groups.

In the mid- and late 1970s, with new development theories linking basic needs and growth, there were some spirited attempts to improve the conditions of the poor in Kenya. Squatter upgrading and site-and-service provision were typical of these attempts. Most of the projects were initiated during the period of the National Development Plan of 1974-1978. The 1970-74 Development Plan had stated that demolition would be postponed until

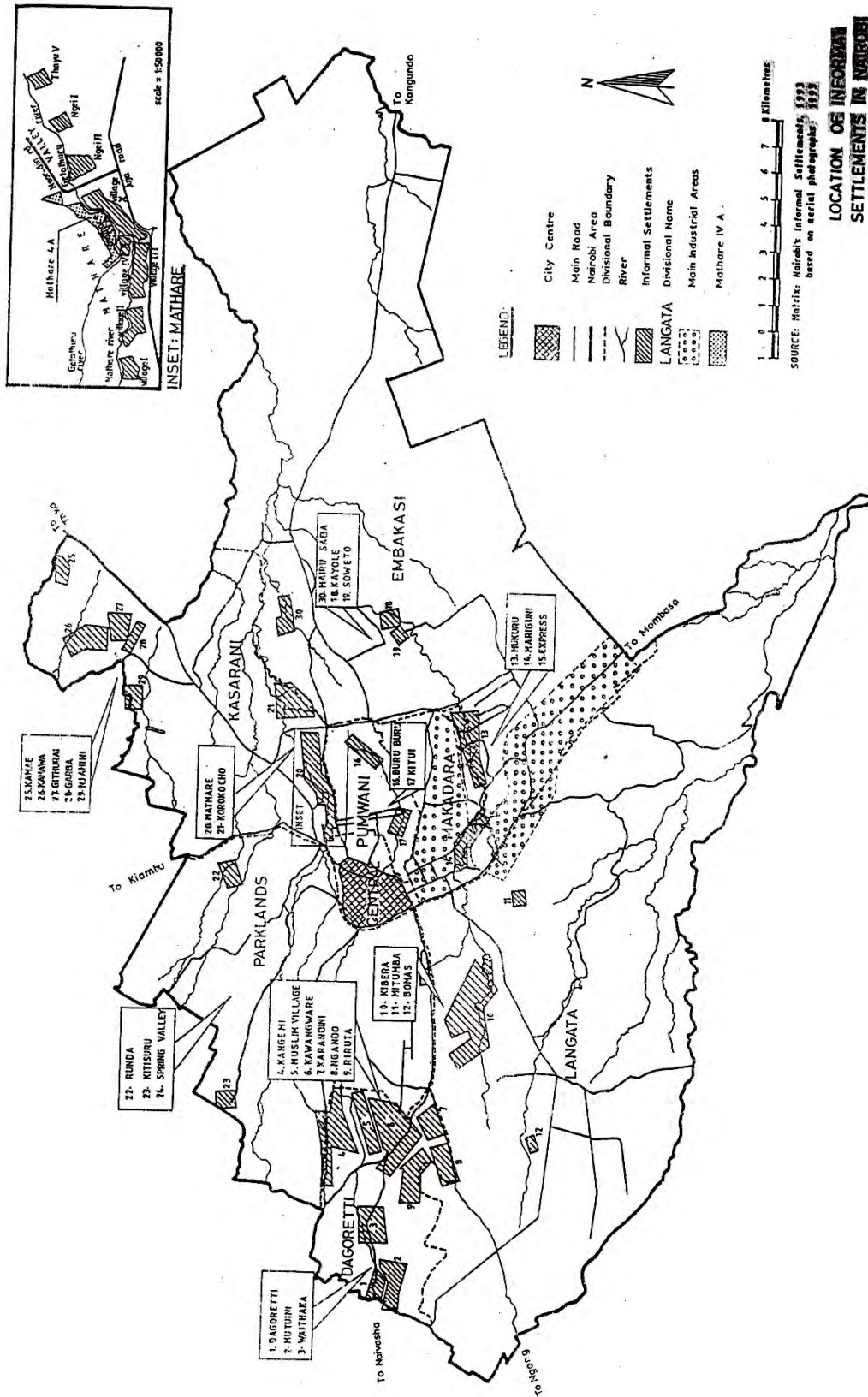


Figure 5. 6: Location of informal settlements in Nairobi  
Source: Matrix Development Consultants (1993)

NAME OF SETTLEMENT	TOTAL AREA IN HECTARES	DWELLING UNITS PER HECTARE	AVERAGE PERSONS PER UNIT	ESTIMATED POPULATION	LAND TENURE INDICATION
Mariguini	14.2	300	4	17,040	Vacant industrial plots owned by City Council
Express	16.8	300	4	20,160	
Mukuru	54.4	300	4	65,280	
<b>Subtotal</b>	<b>85.4</b>			<b>102,480</b>	
<b>LANGATA DIVISION</b>					
Kibera	225.6	220	5	248,160	Government land, partly with Temporary Occupation Licences
Mitumba	1.5	200	4	1,200	
Bomas	2.1	200	4	1,680	
<b>Subtotal</b>	<b>229.2</b>			<b>251,040</b>	
<b>KASARANI DIVISION</b>					
Mathare	73.7	200	4	58,960	Mainly private owned by individuals or Land Buying Companies. Approx. 30% Government Land.
Korogocho	49.2	230	5	56,580	
Thome	7.3	100	3	2,190	
Njathini	8.8	100	3	2,625	
Garba	13.7	100	3	4,125	
Githurai	21.8	100	3	6,540	
Kahawa	30.5	100	3	9,150	
Kamae	9.9	100	5	2,985	
Others	10.0	300		14,995	
<b>Subtotal</b>	<b>224.9</b>			<b>158,150</b>	
<b>DAGORETTI DIVISION</b>					
Ngando	12.0	100	5	6,000	Mostly privately owned by individuals.
Riruta	15.0	100	5	7,500	
Karandini	23.0	100	5	11,500	
Kawangware	111.0	100	5	55,000	
Muslim Village	37.0	100	5	18,500	
Kangemi	75.0	100	5	37,500	
Dagoretti	14.5	100	5	7,250	
Waithaka	41.0	100	5	20,500	
Mutuini	45.0	100	5	22,500	
<b>Subtotal</b>	<b>373.5</b>			<b>186,250</b>	
<b>EMBAKASI DIVISION</b>					
Maili Saba	39.7	100	3	11,910	Government Land
Kayole	23.3	200	3	13,980	
Soweto	10.0	200	3	6,000	
<b>Subtotal</b>	<b>73.0</b>			<b>31,890</b>	
<b>PUMWANI DIVISION</b>					
Buru Burur	4.5	140	3	1,890	Government and City Council Land. TOL with structure owners
Kitui/Pumwani					
Village	10.0	250	4	10,000	
<b>Subtotal</b>	<b>14.5</b>			<b>11,890</b>	
<b>PARKLANDS DIVISION</b>					
Runda	11.5	100	3	3,450	Private land awaiting development
Kitsuru	11.3	100	3	3,375	
Spring Valley	1.7	100	3	501	
<b>Subtotal</b>	<b>24.5</b>			<b>7,326</b>	

**Table 5. 3: Summary data of informal settlements in Nairobi**  
**Source: Matrix Development Consultants (1993)**

the housing shortage was eliminated. However, there had been no radical change in urban management. Regulations on minimum standards for housing construction were rigid. A focus on owner-occupation and full cost recovery, coupled with the financial pressures of that time, also made it difficult to implement these plans. Therefore, informal settlements continued to grow.

In the 1980s, Kenya was plagued by a debt crisis and international financial institutions imposed structural adjustment policies, severely restricting social spending. This only served to increase the size of informal settlements, as the then government withdrew from active policy intervention: ~~the~~ authorities adopted a *laissez faire* approach, generally not undertaking demolitions, but not instituting large scale improvement projects either.” Figure 5.6 and Table 5.3 shows the spread of informal settlements in Nairobi.

### **5.3 Past Interventions and Policy Evolution**

Attempts to address housing development issues in Kenya have been tackled from a developmental approach as discussed below.

#### **5.3.1 Modernization and urban growth 1960s – early 1970s**

In the 1960s most developing countries adopted the Modernization and Urban Growth policy upon attaining independence. What was applied was the modernization strategy of the late 1940s to the early 1970s which used Keynesian economic models of demand-led growth and were influenced by the development theories of Harrod-Domar, Rostow and Lewis (1994). Such strategies included: import substitution; the creation of internal markets; the eradication of pre-capitalist relations and modes of production and rapid industrialization. In planning and architecture, the principles of garden city were applied with the construction of blocks of flats interspaced in lush green areas for the labour force. In Nairobi, rental housing was provided by the City Council and was then the preferred tenure system for the lower income social group.

In most developing countries, modernization and urban growth is a process that began with colonization. Urbanization as understood in the West was to a large extent a new phenomenon in Africa. Where pre-colonial cities existed, the Western planning principles contrasted distinctively with the indigenous towns. Today, some African cities still exhibit

indigenous towns alongside gridiron Western planned models of modern cities as can be found in cities such as Kano in Nigeria, Fez in Morocco, and Mombasa in Kenya among others. The colonizers approach was to model the African cities in line with their own cities. However, a distinct difference was the racial segregation. In Kenya for instance, the African population was incorporated in the city as a labour force and public and institutional rental housing provided for them in separate neighbourhoods thus introducing the rental tenure system hitherto unknown to the indigenous population.

In Nairobi, informal settlements did not arise with independence as is generally believed. The process of colonization brought with it the displacement of indigenous populations who even at those early stages started squatting on land alienated from them. The residents of these informal settlements were either originally from Nairobi or had migrated into the city. The settlements lacked services, and the colonial government's response to them alternated between indifference and outright hostility (Hirst and Lamba 1994). Comparative analysis of policy approaches to slums shows that, currently, cities are still practising many of those approaches that were in use decades ago. For instance, eviction and slum clearance can still be witnessed today as reported by COHRE (Rossiter 2000): *In the settlements that are the subject of this COHRE report, a number of forced evictions have occurred — affecting market traders in Laini Saba, Kibera, among others. Furthermore, a Member of Parliament has claimed that the fires in Mukuru on 12 February 2006, which left over 20 000 people homeless, were deliberately started as a land-grabbing exercise* (COHRE 2006).

Focus on housing in the West began soon after the Second World War to address the housing shortages arising from the vagaries of the war. This interest was later applied to Africa albeit at a different scale. During the first phase of housing policy development in these countries beginning in 1945 up to roughly the early 1970s when the World Bank entered the housing field, the emphasis was upon the building of houses, or the public housing approach. Harris and Giles (2003, p. 174) refer to this as 'permanent housing for rent', using the British variation of the approach, as it followed the model developed by the United Kingdom for its own people but which it also encouraged in its colonies when resources were available. The problem was that resources were rarely available, and when they were, and were spent on housing, that was only provided for civil servants and the military (Choguill, 1992, p. 214). Even if houses could have been built, the poor were

rarely in a position to pay the true rents on such structures, and few governments at that time were able to extend subsidies to housing for the general public. A contemporary World Bank study (Grimes, 1976) examined the lowest cost house constructed by governments in six cities (Amedabad, Bogota, Hong Kong, Madras, Mexico City and Nairobi) and concluded that the median incomes of residents was below that threshold where one could hope to afford such a 'cheap' house in all six cities. Even with significant subsidies, in most of the cases, affordability was still elusive (2006).

In the World Bank's first decade of urban sector lending (1972-82), one of the primary areas of intervention was the provision and improvement of housing for the urban poor. During these early years, the urban sector at the Bank supported discrete projects with an emphasis on affordability, cost recovery and replicability. In contrast to the era of slum clearance by national governments in the 1960s, the rise of the influential self-help paradigm in housing projects during the 1970s and 1980s was based on two types of approaches: the provision of sites-and-services, and in-situ slum upgrading. During this time, the Bank financed 50 urban sector loans in 35 countries, with sites and services and in-situ upgrading absorbing almost 60 percent of its allocations (UN-Habitat 2003c).

During this period, slums were considered as illegal, and an unavoidable but temporary phenomenon (mostly linked with accelerated rural-urban migration) that can be overcome by economic development in both urban and rural areas (COHRE 2006). They were either ignored or demolished and the objective was to build more public housing to replace the slums. There was emphasis on physical planning and production of public buildings. Governments realized there were inadequate resources to sustain this approach to housing development which also entailed heavy subsidies. In the 1980s, attention shifted to self-help housing. The high cost of this approach to housing is the main reason why the housing needs of the poor have not been met. The other reason is that with development focused on cities, migration to cities for better opportunities made the realization of housing the poor in public housing untenable.

The reason why this approach succeeded in the West despite the high levels of subsidization is that these economies were growing at a much higher rate compared to those of developing countries. It should also be noted that the reaping of African resources by the West also contributed to the high economic growth rates in those countries. When it

became clear to the public authorities that economic development was not going to integrate the slum populations, some governments opted for a repressive option with a combination of various forms of harassment and pressure on slum communities, leading to selective or mass eviction of slum dwellers (Choguill 2007: 146).



**Photo: 5. 4 Huruma Estate, Nairobi City Council rental housing**  
**Source: Author**

Evictions did not solve the housing problem and resulted in the shifting of the urban poor to the peripheries of the cities where land was available and development controls not applied effectively. According to the UN-Habita report (UN-Habitat 2003c), the continuing spatial growth of cities brought about an endless cycle of new evictions and the creation of new slums at the periphery of cities, outside of the municipal boundaries, or it accelerated the overcrowding of dilapidated buildings within cities. Demand for land and housing from the urban poor during the 1970s and 1980s gave rise to the rapid development of informal markets and to the commoditization of all informal housing delivery systems, including those in squatter settlements (UN-Habitat 2003c: 130). In Kenya, there were calls by the government for people to return to the rural areas and farm following high levels of unemployment but which went unheeded.

Social policies at this time were characterized by the provision of western style hospitals, prestigious educational establishments and the provision of purpose built housing schemes

built to modern minimum standards to house the new urban workers as shown in Photo 5.4. Government subsidies were introduced to expand the delivery of health, education and housing services for the poor. This approach of extensive state intervention and mass production of public goods dominated urban development practice up until the early 1970s. The approach regarded poverty as a transitional phenomenon, as were inequality and unemployment, which would disappear naturally with growth. However, the effects of economic growth did not ‘trickle down’ to the poor; instead their conditions worsened as their numbers increased.

### **5.3.2 Redistribution with Growth/Basic Needs Approach**

Lack of resources to sustain the modernization strategies led to a shift in policy to the World Bank supported ‘redistribution with growth’. This was in realization that the public sector could not provide conventional housing in sufficient numbers at affordable prices for the majority low income urban residents as had been previously generally assumed. The argument was that if the poor actually built their own houses, even with appropriate external assistance, the cost could be reduced sufficiently to allow them to enter the home ownership market. This was a significant departure from the provider paradigm where state provided public housing for rental and saw the introduction of the owner occupier where the state supported individuals to own their houses. The approach entailed the recognition of informal settlements by governments leading to their upgrading; provision of land for sites-and-services development; and financial assistance to allottees. In reality, the approach served the middle income households more than it did the targeted low income households.

The concept of self-help was introduced by the architect John Turner who through his work with the poor in Chile changed the thinking in informal settlements and greatly influenced policy makers at the World Bank (UN-Habitat 2003c: 130). The sites and services concept was a simple one: governments should provide tracts of urban land divided into plots and basic support services and then let the poor build their own houses on those plots. Full cost recovery was basic to the approach and essential in that few governments had the funds to subsidize such housing (Cohen 1983; Badcock 1984; Murphy 1990). Even with minimal government investments, such projects were still too expensive for at least 20% of most urban populations and, in some cases, a considerably higher proportion (Hamdi 1991). Arguments were fronted that the standards adopted were

too high and attributed to the high cost of these projects. Efforts to reduce standards was opposed by many local governments arguing that in such cases sites and services would be little more than instant slums. According to UN-Habitat report (Choguill 2007), emphasis on up-grading of existing housing rather than the more comprehensive sites-and-services, also failed to meet the required cost recovery objectives.

In Kenya, the major project undertaken under this approach was the Dandora Community Development Project, a sites-and-services development. This was a collaborative effort between the World Bank, the Government of Kenya and Nairobi City Council. The project involved the provision of infrastructure including sewer connections, water supply, refuse collection facilities, roads with surface water drainage, street lighting and open spaces; 6,000 serviced plots (Kearne and Pariss 1982; Swan 1983). The concept of core housing was provided with each core comprising of a toilet and shower block. The allottees received financial assistance to construct their houses. Other facilities included 4 primary schools, 2 health centers, 384 market stalls, a sports centre, workshops and shopping areas. Agreeing on the standards to be adopted delayed the project for almost two years (UN-Habitat 2003c). Evaluation of the project came up with mixed reactions according to Syagga (Malombe 1992).

The World Bank Appraisal Report of 1978 applauded the project as being successful in cost recovery by the beneficiaries. An evaluation by Saad Yahya and Associates (Syagga 2001: 10) reported that the project fell short of its objectives in the area of cost recovery for the shelter component and building materials loans. Although lack of community participation has been cited among the project's drawback, it should be realized that this was greenfields development and community establishment was only realized after allocation of the plots to individual households. MacInnes (2001) on the other hand emphasizes the livelihoods and Environment-Behaviour Relations in his analysis of Dandora. He points out that there is need for an understanding of the beneficiaries' livelihoods (entailing all aspects of eking a living) from wherever they were coming from and how this would impact on their relocation to the new development. He argues that in the case of Dandora, the new environment did not allow for this and as a result, more than 35% of the minimum income allottees could not endure the new patterns of socio-cultural behaviour. There is however consensus that the project contributed significantly to the housing stock in general. Housing transformation has since taken place in Dandora and

some of the originally single storey units have been replaced by multi-storey blocks in response to housing markets. What has been evidenced here is that land value has surpassed the value of the houses built on these plots and better endowed investors have been buying the plots and replacing the single storey houses with multi storey blocks of apartments. Fig 5.7. is an aerial view of a section of Dandora.



**Figure 5. 7: An aerial view of a section of Dandora Sites-and-Services Project**  
**Source: Google Earth (2008)**

The problem of housing the urban poor proved to be too enormous to be resolved through the sites-and-services programmes and thinking shifted toward the creation of an ‘enabling environment’,

### **5.3.3 The Enabling Approach/Urban Management**

The Enabling Approach was a policy oriented approach within which individual nations could develop policies to address issues related to liberalization of the housing delivery processes to solve national housing problems. The objective of this approach was to maximize the contribution of all the actors in housing production within a supportive legal and regulatory framework. This called for community mobilization and organization, and state withdrawal from the providing housing in favour of supporting local determination and action. Attention was directed toward devising ways of providing the economic,

financial, legal and institutional environment that was needed to support the housing sector (1988: 5). This was a significant departure from the earlier policies embodying the construction of houses and self-help aiming at direct solution to the housing shortages in various countries. The enablement strategy more realistically was directed at removing bottlenecks from the quest for housing solutions. It entailed the improvement of markets which supply five major components in the housing process: land, finance, labour force capacity, infrastructure and building materials. This approach arose from the need to involve slum dwellers not only in the construction processes of slum improvement, but also in the decision making and design processes that establish priorities for action and support for implementation (1995).

Policies emanating from enablement approach were based on the principles of subsidiarity and recognition that, to be efficient, decisions concerning investment of resources in domestic, economic, social and physical development have to be taken at the lowest effective level. The lowest effective level associated with housing development is that of community and neighbourhood although socio-economic characteristics are drawn from household level. It was recognized that for decisions to be rationally and responsibly made at this level, many communities for instance needed support in the form of training, organizational assistance, financial help and managerial advice (UN-Habitat 2005c: 25).

Enabling approach also came along with complex and divisive politics of devolution, decentralization and de-regulation. Led by the United Nations Agencies and the World Bank, the approach directed that governments only provide enabling environments for the production and consumption of shelter in the form of viable policies. This was reinforced with the call for integrating environmental, social and economic policies in development under Agenda 21 (Hamdi 1991), and the calls by Habitat II Agenda for multi-sectoral collaboration between public, private and NGO sectors as well as the need for community participation or partnership in shelter development (UNCHS-Habitat 1996). The development of informal settlements is *—a rational response to the shortage of effective housing supply within the formal, controlled sector. It is likely, therefore, that if formal supply were efficient, informal-sector housing would become a thing of the past. In the long term, indeed, the ending of informal-sector development should be a result of effective enabling strategies and the extent to which the sector is losing ground could be used as a test of the success of a government commitment to enablement.*” (UNCED 1992)

Erguden (UNCHS-Habitat 1996) argues that *“despite occasional reverses, there is general agreement today on the enabling approach in the formulation of housing policy, though differences continue to surface between those who place more faith in markets to deliver both efficiency and equity goals, and those who emphasize “sustainable human development” as a framework within which markets must be carefully managed”*.

The debt crisis of the of the late 1970s caused by economic depression, stagnation and the oil crisis prevented the Third world countries from meeting their basic needs. To address the crisis, the World Bank and International Monetary Fund led policy members to decide that deeper intervention was necessary to improve a country's overall well being. Focus was shifted to urban management and performances of markets. It was argued that making markets function better make cities more productive and would ultimately benefit the poor in terms of resource access and distribution. Governments were to play lesser roles in direct production of housing and focus more on making the markets work efficiently. As observed by Schildrman (UNCHS-Habitat 1995), in many countries, however, the urban poor suffered from the removal of subsidies on products like food or services and from the slimming down of the public sector and industry. Production of public housing ceased during this period whilst the growth of informal settlements accelerated.

#### **5.3.4 Sustainable Urban Development**

The problem of housing in the Third World has been linked to rapid urbanization which has brought with it strains on available resources. Concerns on the use of resources led to the Brundtland Commission of 1987 which defined sustainable development as *“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”*. It is one approach that is most talked about but least implemented globally. In relation to urbanization, *“sustainability”* is seen as dynamic, multi-dimensional process covering environmental as well as social, economic and political-institutional sustainability. It embraces relationships between all human settlements, from small urban centres to metropolises, and between towns and cities and their surrounding rural areas (Erguden 2001: 2). UN-Habitat (2004) identifies the main challenges to achieving sustainable urbanization as:

- *The potential conflicts between economic growth and environmental sustainability:*
- *Urban economic development is often threatened by changes in national and global economies.*
- *Urbanization is associated with social and political changes, which can undermine traditional social networks and result in increased inequity and exclusion:*

(UN-Habitat 2002: 4)

In Kenya as in most developing countries, the major challenge to urbanization is urban poverty. According to the Central Bureau of Statistics (2002), urban poverty increased from 29.3 percent in 1992 to 49.2 percent in 1997. A UN-Habitat report observes that National and local authorities have not managed urban development in favour of the poor and that a comprehensive response is needed in terms of long term policies, governance and economic, environmental and physical planning.

### **5.3.5 Global strategies towards shelter improvement**

Global strategies towards shelter improvement commenced with the first United Conference on Human Settlements (Habitat) held in Vancouver Canada in 1976. This led to the adoption of the Global Strategy for Shelter to the Year 2000 by the United Nations General Assembly in 1988 which provided a framework for Governments to facilitate adequate shelter for all (UN-Habitat 2002: 4). The strategy also addressed the issues of alleviation of poverty, improvement of health, participation of women, improvement of the living environment of people and promotion of sustainable development. The strategy further spelt that the operational focus for promoting the objective of facilitating shelter for all, is action at the national level within the framework of national shelter strategies which are integrated with macroeconomic policies for optimum utilization of natural and human resources, they are to be based on standards that are nationally appropriate and socially acceptable. The Global Strategy also recognised that the adoption of enabling shelter strategies could mobilize resources on a sustainable basis and facilitate access to available resources by all population groups and partially alleviate economic constraints that affect many countries.

The Millennium Development Goals are the world's time-bound and quantified targets for addressing extreme poverty in its many dimensions—income poverty, hunger, disease, lack of adequate shelter and exclusion—while promoting gender equality, education, and

environmental sustainability. The Millennium Development Goals are part of the Millennium Declaration and were developed during the 2000 U.N. Millennium Summit held in September at the United Nations headquarters in New York City. The purpose of the summit was to help determine what role the United Nations should play in

<b>Phase and Approximate Dates</b>	<b>Focus of attention</b>	<b>Major Instruments Used</b>	<b>Key Documents</b>
Modernization and urban growth: 1960s-early 1970s	Physical planning and production of shelter by public agencies	Blueprint planning: direct construction (apartment blocks, core houses); eradication of informal settlements	Physical development plans, Human settlements strategy
Redistribution with growth/Basic Needs: mid 1970s-mid 1980s	State support to self-help ownership on a project-by-project basis	Recognition of informal sector; squatter upgrading and sites-and-services; subsidies to land and housing;	Vancouver Declaration (Habitat I. 1976); Shelter, Poverty and Basic Needs (World Bank, 1980); World Bank evaluations of sites-and-services (1981-83); INICEF Urban Basic Services
The Enabling Approach/Urban Management late 1980s-early 1990s	Securing an enabling framework for action by people, the private sector and markets	Public/private partnership; community participation; land assembly and housing finance; capacity-building	Global Shelter to the year 2000 (1988); Urban Policy and Economic Development (World Bank 1991); Cities, Poverty and people (UNDP, 1991); Agenda 21 (1992); Enabling Housing Markets to Work (World Bank, 1993)
Sustainable Urban Development mid 1990s onwards	Holistic planning to balance efficiency, equity and sustainability	As above, with more emphasis on environmental management and poverty alleviation	Sustainable Human Settlements Development: Implementing Agenda 21 (UNCHS, 1994)
HABITAT II: 1996	–Adequate shelter for all” and –Sustainable human settlements development”	Culmination and integration of all previous policy improvements	The Habitat Agenda (UNCHS, 1996); Global Report on Human Settlements (UNCHS, 1996)

**Table 5. 4: Summary of housing intervention strategies**  
**Source: Adoption from UN-Habitat 2004**

the 21st century. The Goals also embody basic human rights - the rights of each person on the planet to health, education, shelter, and security as pledged in the Universal Declaration of Human Rights and the UN Millennium Declaration. The second United Nations Conference on Human Settlements (Habitat II) held in Istanbul, Turkey in 1996 articulated the evolving framework of enabling aspects of housing development process and more active role to be fulfilled by stakeholders. The framework also laid emphasis on local authorities' participation and more decentralization and utilization of diverse modalities of partnerships (C.B.S. 2004).

In conclusion, each of the five intervention strategies contributed significantly to housing development in most developing countries including Kenya. In the long run, these approaches failed to meet housing demands for the urban poor and remained as experiments. Table 5.4 summarizes the five phases of housing development interventions discussed above indicating the focus of attention and the major instruments used in the realization of the intervention strategy.

#### **5.4 Regularization and upgrading strategy**

The term regularize' according to the Cambridge English dictionary means to change a situation or system so that it obeys laws or is based on reason. In housing, regularization is often used in reference to the process of formalizing the illegal status of settlements arising from illegal occupation of land or squatting. Regularization as a long term solution to informal settlements is considered as a process of restructuring these settlements with judicial, physical, administrative and social components. According to Mercado and Uzin (UN-Habitat 2003c), the goal of regularization is to ensure permanent settlement of residents with better living and environment conditions. In this respect, land tenure takes a center stage in determining what is legal or illegal about the settlement. The process of regularization entails the surveying of land, allocation to beneficiaries and issuance of title deeds or other forms of tenure documents. It can however be argued that in the informal settlements, tenure irregularity is but one of several forms of irregularities prevalent in such settlements.

Regularization is often envisaged as a housing intervention strategy with the objective of formalizing the informal status of the settlements through official recognition, tenure

regularization, and provision of services and infrastructure. The underlying principle is that formalization enables services to be provided and security of tenure inspires the residents to invest in the improvement of their shelter. It is also based on the assumption that the dwellers are the shelter owners and squat on government or private land. Informal settlements in Nairobi on the other hand are predominantly rental dominated. In the case of Nairobi, this is not the situation as dwellers are predominantly tenants and squatting in the real sense is minimal. Rental tenure in the informal settlements is market driven and responsive to housing conditions. The rental tenure system falls within the Neo-liberal theory with its emphasis on deregulation and reduction of state role. The rental tenure system in informal settlements of Nairobi is a significant departure from the owner-occupied tenure system associated with regularization. Although literature indicate that land tenure and regularization attempts have largely failed as is evidenced by the persistence of informal settlements in developing countries, Fernandes (Erguden 2001) suggests that understanding urban informality, particularly conditions that lead to access to land and housing, are essential to evaluating the effectiveness of regularization programs and that regularization policies need to be implemented within the context of overall urban planning strategies and cannot be formulated in isolation. This is the basis of this study which aims at exploring this gap, for an effective regularization strategy within the context of Nairobi.

According to Fernandes (1996), illegality in urban areas usually takes many forms, ranging from vast informal economy and innovative survival strategies to the increasingly – –sophisticated” mechanisms of popular justice which have been identified in many cities. In the case of spontaneous settlements, planning regulations are in most instances never adhered to. There is never any consideration as to where to locate such settlements at city level as the dwellers seek the most convenient areas that offers opportunities to a means of livelihood. These irregularities are more pronounced at neighbourhood level where in most instances access and way-leaves for services are usually lacking. Buildings on the other hand are constructed without observing the building standards and regulations. Land subdivisions also poses some levels of irregularities in cases where planning regulations such as laid down standards for road widths, provision of services and density regulations are not observed.

In a broader sense therefore, regularization process as envisaged in this study entails the formalization of aspects of the informal settlements' housing environment, processes and procedures perceived by the government and local authorities to be irregular, and which impacts negatively on the harmonious existence and operation of the housing environment. These aspects include the uncontrolled, unplanned, spontaneous, and irregular development of housing within the city which contributes to the manifestation of slums.

Having defined regularization as the process of changing what is irregular or illegal into obeying laws or set procedures, it is appropriate to identify and define aspects of irregularity, illegality or informality associated with informal settlements that can be subjected to regularization processes with the objective of improving the housing environment of the urban poor and making housing adequate and accessible for them. According to Durand-Lasserve (2001 ), the division between legal/illegal intermingles with formal/informal housing categories and that the pattern that emerges is very unclear since illegality is not predicted on informality and vice-versa. This is mainly because legality varies according to the letter of the local legislation and what is legal in one place, can be illegal in another (Gilbert, 1990). However, the common aspects of irregularities in developing countries as observed by Mercado and Uzin, (1999) emanate from three main characteristics:

1. Illegal occupation of land belonging to the government or a private owner.
2. Chaotic growth and land division, without consideration for norms or plans made by local authorities, limit and hinder future development, especially when the process has gone far.
3. Lack of basic infrastructure: water, sewerage, rain water drains, electricity and paved walks and roads.

The fact that 50% of Nairobi's population lives in informal settlements that occupy only 5% of the land (1990) is by itself irregular. The congestion arising from this situation affects the well-being of the inhabitants. Having some of these settlements on power way-leaves and road reserves is irregular and illegal. Some of the informal settlements can be regularized in one way or the other including in-situ upgrading whereas others on

hazardous land have to be relocated. These forms of irregularities pose challenges to city planners and have to be addressed at city spatial organization level.

Illegal subdivision as argued by Aldrich (1995) is an indicator of informal market process to subdivide land and construct houses without going through the formal process of housing construction. These are not ‘spontaneous settlements’ or ad hoc developments on marginal or vacant land. These are much closer to the formal market provision of housing and that process creates special kinds of problems for occupants. In Nairobi for instance, the City Council has declined to adopt infrastructure in some of these settlements or extend its services to such settlements as is the case with Zimmerman estate.

The debate about informality and illegality in housing is not all clear though. A vital omission in the understanding of the debate is that informal housing processes are not considered as important as the condition of illegality in policy making. In most cases, it is largely agreed that legality is a paramount to housing investments. However, this according to Mercado and Uzin (1996) can be a misleading argument, since individuals living in these settlements have developed a sense of security that do not necessarily relate to the legal debate on rights to land. De Soto (Matrix Development Consultants 1993) argues that the main issue in these experiences of legalization is, to consider full individual property rights as the prevailing response to informality. By emphasizing full property rights one is neglecting the extant tenure system that can be informal but should not necessarily be considered illegal. De Souza, (1996) observes that there is need to reconsider views on informality to reshape legality that can be more suitable for the reality in focus. In his view, the promotion of alternative tenure rights appears to be more appropriate to individuals living in squatter settlements than more conventional rights (2000).

In the case of Nairobi, past practice has been to apply international prescriptions to solving the problem of informal settlements. In this respect, it can be argued that standardised solutions to housing problems, squatter upgrading and reduction in building and planning standards present some limitations in resolving settlement problems (de Soto 2000). Similarly, Kenya Government has no clear urban development policy. Instead various instruments are used for addressing problems in different sectors and sub-sectors. An attempt at co-ordination for Nairobi was the creation in 1996 of Nairobi Informal

Settlements Co-ordination Committee (NISCC). The Committee developed a strategic action plan that was approved by Nairobi District Development Committee and which proposed moratorium on demolitions and evictions and an end to further allocations of settled land. The outcomes of past housing intervention strategies in Nairobi are discussed in section 4.9 above.

## **5.5 Housing Markets**

It has been argued in Chapter One of this thesis that housing environment is made up of systems of settings and activities. Within these systems is the housing market which determines supply and demand for land, regulations, location, infrastructure and services. These are important variables in regularization of informal settlements. Housing market also determines households' choices and accessibility to housing. Housing in capitalistic states in general is segmented into social and economic groupings. Each social group experiences different constraints and opportunities in the demand and supply of housing that corresponds to each groups' social status as is evidenced in Kenyan urban centres including Nairobi. Inevitably the hardest hit of the social groupings is the low income group or more precisely the urban poor. Studies on housing markets acknowledge the social stratification of housing market with arguments that housing markets for the higher income groups are more able to balance the forces of supply and demand as opposed to the low income social groups (de Soto 2000). Theories underpinning housing markets as envisaged in this study have been elaborated in Chapter Two of this thesis – Theoretical and conceptual framework. In this section emphasis is on housing market implications on the provision and access to housing by the urban poor including its influence on regularization and upgrading processes. There are many factors that influence housing market in general. This study focuses on factors that influence informal housing market including the supply and demand for land, regulations, location, infrastructure and services.

According to Grimes (Republic of Kenya and UNCHS 2001), the urban housing market can be defined in a framework of supply and demand with effective demand being defined as:

*a function of income levels and the price of housing and other goods. It is made up of consumption expenditure by families at all income levels, government expenditure on housing, and the demand for structures as assets in investment portfolios, usually exercised by financial sector. Over time, demand is determined by increase in family income, changes in the distribution of income, and the rate of household formation, which in turn depends upon population growth and size of households. Rich and poor alike demand housing for its quality and location and exercise preferences for housing services compared with other consumer purchases. As incomes rise and basic housing need are satisfied, a smaller proportion of income may be devoted to housing (Kreibich and Olima 2002; COHRE 2004; Durrand-Lasserve 2006).*

The supply of housing services depends upon the amount of productive resources – land, labour, capital, and management – made available for expansion and maintenance of the urban housing stock. On the supply side housing market includes all factors of production directly involved in the construction and maintenance of housing, as well as in the provision of management, marketing, finance, insurance, and related services. The supply of housing stock changes only slowly because housing is a relatively durable good. Annual increases in dwelling units typically constitute only about 1 to 3 percent of the existing housing stock. Consequently the supply of housing is also inelastic (Grimes 1976). In the face of large increase in the formation of urban households and the progression of income levels, shifts in demand tend to outstrip the response of suppliers. In the market rationing process, the relatively inelastic supply of housing is allocated to the highest bidder. Low-income households are able to purchase only what higher-income households do not want.

The housing market assumes first, that the markets work perfectly; second, that full information is available to all; third, that no collusion takes place among buyers and sellers; and, fourth, that institutional and regulatory constraints are absent. But housing markets, like many others, are replete with imperfections that prevent demand from being exercised or supply from responding to the desired extent. Housing becomes more scarce and thus more costly. By raising the cost of housing to all, the process of delivering housing services to the poor is made more difficult. More families than is necessary find themselves unable to afford suitable housing, and low-income groups are least able to compete for the scarce supply. Under such circumstances, low-income households are

forced to lower their expectations and settle for lower-quality accommodation – structurally, spatially, and locationally – than otherwise would be necessary. In developing countries such housing quality are found in informal settlements. According to Kumar (Grimes 1976: 82), The system of tenure that arises as a result of pressure on housing stock includes the common forms of tenure that is, owner and renter accommodation but in addition there are shared and sub-rented dwellings. Rental payments can be horizontal – that is to other low-income families – or vertical – to middle- and high-income landlords (Grimes 1976: 83). This is evident in the case of Nairobi where few absentee owners offer rental housing to majority tenants. Imperfections in housing markets can be classified as broadly as institutional or economic in nature. Institutional constraints generally arise from legal barriers and administrative controls that have been erected to protect specific groups or interests. Modification of these constraints improves the operation of housing markets (2003). The economic imperfections on the other hand are less straight forward and may be short term or long term in effect.

Within the operations of the housing market are institutional constraints which include zoning, building codes, minimum wage legislation and unionization of workers, rental controls (Kumar 2003) . Zoning is used to restrict land parcels from being allocated to the highest bidder, either by imposing limited categories of use or by restricting unit density. Building codes ostensibly designed to protect the consumer as far as quality of structures is concerned often protect suppliers of outmoded materials or favored building trades. Minimum wage legislation and unionization are known to limit the flow of labour into the housing sector and for raising unit construction costs. Rent controls distort the market by inhibiting expansion and maintenance of the housing stock. Even though rent control may bring about lower rents on controlled buildings, all other poor families are forced to compete for uncontrolled housing similar in quality but with higher rental payments.

### **5.5.1 Informal housing submarkets**

Differentiation between formal and informal housing markets has existed in Nairobi right from its inception in 1899 with the arrival of the Uganda Railway. The Railways was the first to offer institutional rental housing for its employees. The housing market in Kenya has evolved considerably since independence in 1963. The 1968/76 National Housing Policy promoted a strong role for the government in providing affordable housing for the citizens through the National Housing Corporation (NHC), municipal councils, and civil

service housing. In the 1960s and early 1970s the NHC was the market leader in the supply of housing and was responsible for the development of government run and managed public housing. In the late 1970s and onwards, however, the urban housing situation in the country deteriorated. Demand for housing radically outstripped supply as people migrated to cities, the national economy – itself suffering from poor performance – could no longer finance public housing, and poor governance led to the near collapse of parastatal institutions, including NHC (Saleh 1999). The advent of structural adjustment policies in the 1980s and 1990s compounded the problem as government down-sized the civil service and the housing benefits associated with it.

Throughout the post-colonial period the private sector was active in the housing sector, supported by a private construction and building materials industry. Private housing developers and private service providers, however, worked largely in the high-end of the market among a small but growing middle class of non-civil servant wage earners. Low-income urban households, largely poor rural migrants, constructed semi-permanent, ill-serviced housing units in informal settlements or became tenants paying rent to the owners of these types of structures.

Others took up employment as domestic workers, securing shelter in servant's quarters of their employers. As per the 1999 Population and Housing Census, the total housing stock in Kenya stood at 10.4 million dwelling units – 19.5% of these were in urban areas. Seventy-seven percent of the households in urban areas live in rental housing, whereas in rural areas 87.3% of households own their houses. The rural-urban disparity in homeownership patterns reflects the relative high cost of housing in urban areas. It also reflects the importance many Kenyans place on investing what limited resources they have to housing construction in their ancestral home areas, where most would like to retire. An additional factor is the uncertainty of temporary and informal employment, the need to relocate within close proximity to employment, and hence the preference for rental options as apposed to homeownership. Kenya's average urban annual housing demand is estimated at 150,000 units and supply is in the range of 25,000 units, resulting in a shortage of approximately 125,000 units. Moreover, 50% of the existing structures in urban areas are in need of repair/rehabilitation. In addition, 300,000 units will require improvement in the rural areas (Republic of Kenya 2009).

### **5.5.2 Market displacements**

Current dynamics accompanying the liberalization of land markets in many developing countries, and nationwide land titling programmes carried out in the name of economic development and poverty reduction (Saleh 1999) are increasing the market pressure on urban low-income settlements. This is in a global context where resources generated by economic growth are rarely allocated to housing and resettlement projects for the low-income groups. Many of the evictions that result from these dynamics are not recorded as such, either because they do not require the use of force or because some form of compensation is paid to the displaced households, regardless of how fair and equitable this compensation may be. This frequently results in a deterioration of the economic and housing conditions of the evicted, and ultimately in the formation of new slums. This is what is now called ‘market-driven displacements’ or, in some circumstances, ‘market driven eviction’. It encompasses all situations where displacements are the direct or indirect consequences of a development aiming to make a more profitable use of the land. Forced evictions, as well as negotiated ‘market-driven displacements’, are closely linked with market pressures, except in cases where evictions are the consequence of expropriations for public interest (need for land for infrastructure), or are justified for safety or public health reasons (sites exposed to hazards and/or unsuitable for urbanization). Although no reliable figure is available, in most cities the scale of market-driven displacements or evictions clearly overrides that of forced evictions.(pp208).

### **5.6 Conclusion**

The supply of formal housing in a developing country like Kenya cannot match the demand. The situation is worsened by long periods of neglect resulting in a huge housing backlog. The problem however extends beyond supply and demand of housing. Economic trends in the rural areas have direct bearing on urban population with people migrating to urban centres as subsistence farming becomes unsustainable. It is evident that systems of settings at national level impact on systems of settings at the city level. This study however has not considered the settings at national level as this would be beyond the scope of the study and the focus has been on the city and more specifically the city of Nairobi, Kenya. The growth of informal settlements as discussed in this chapter is only reversible through economic impetus targeting the whole nation. This is not new and past intervention approaches discussed here have attempted at achieving this. Acknowledging and understanding the prevailing systems of settings and the housing environment and

quality they generate it is hoped enables policy makers, planners and designers to link housing delivery to the operation of the systems. Social settings for example could help housing delivery through political will and the households' social capital. Economic settings at macro and micro levels could be utilised address the plight of informal traders in generating more income and thus improving livelihoods and livelihood capabilities leading to improved housing environment. Private developers could be encouraged to develop housing responding to market demands as markets regulate the flow and access to resources.

## CHAPTER SIX

### MATHARE VALLEY DEVELOPMENT TRENDS

#### 6.1 Introduction

This chapter presents an introduction to the Mathare Valley settlement and the case study area. Mathare Valley as it stands today is a conglomeration of both formal and informal settlements. However, the informality of the settlement far overshadows the formality as even the permanent high-rise tenement blocks mushrooming all over the valley have elements of informality as is explained in the subsequent sections of this chapter. The chapter analyses the general context of the settlement comprising of the urban, physical, social, and economic settings. It is from this background information that the settings for the case study area are determined.

Mathare Valley is an informal settlement in Kenya's capital city of Nairobi. It is located along the Mathare and Gitathuru river valleys approximately 6 Km to the East of Nairobi's city centre and is the second largest settlement of this nature after Kibera (see the map of Nairobi in Figure 6.1 showing the location of the settlement and Figure 6.2 showing the villages making up the settlement). The settlement is bounded by Pangani to the west (originally an African settlement before their houses were razed to the ground and the land given to Moslem Asians), Juja Road to the south, Outer Ring Road to the east, and to the north, a section of private housing, the Mathare Mental Hospital, Police housing, several company sports-grounds and a drive-in-cinema. Across the Outer Ring Road is a light industrial area offering employment to a large section of the population. These boundaries enclose an area of approximately 200 hectares stretching approximately six kilometers. Juja Road connects the entire Valley to the rest of the City and there exists an efficient public service transport to the City Centre. According to Etherton (Mwangi 1997; Syagga 2001), squatters have lived in Mathare Valley since the early 1920s. The settlement developed around nine separate villages stretching along five kilometres of the river valley. According to the last official census conducted in 1999 by the Kenyan government, Mathare had a population of 69,003 people living in 24,525 households (Central Bureau of Statistics 2001). Other sources put Mathare Valley's population at about 600,000 people which is debatable.

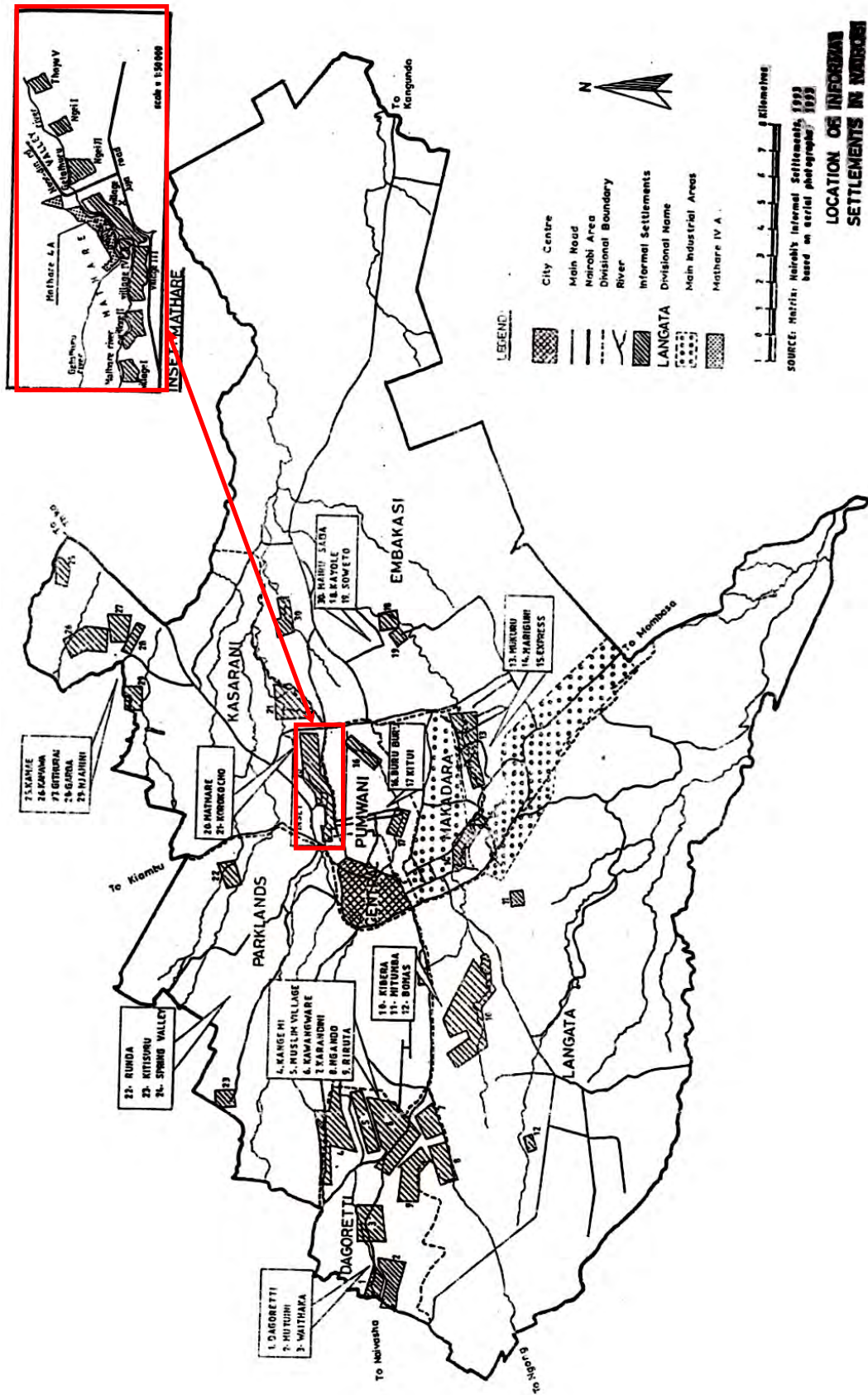
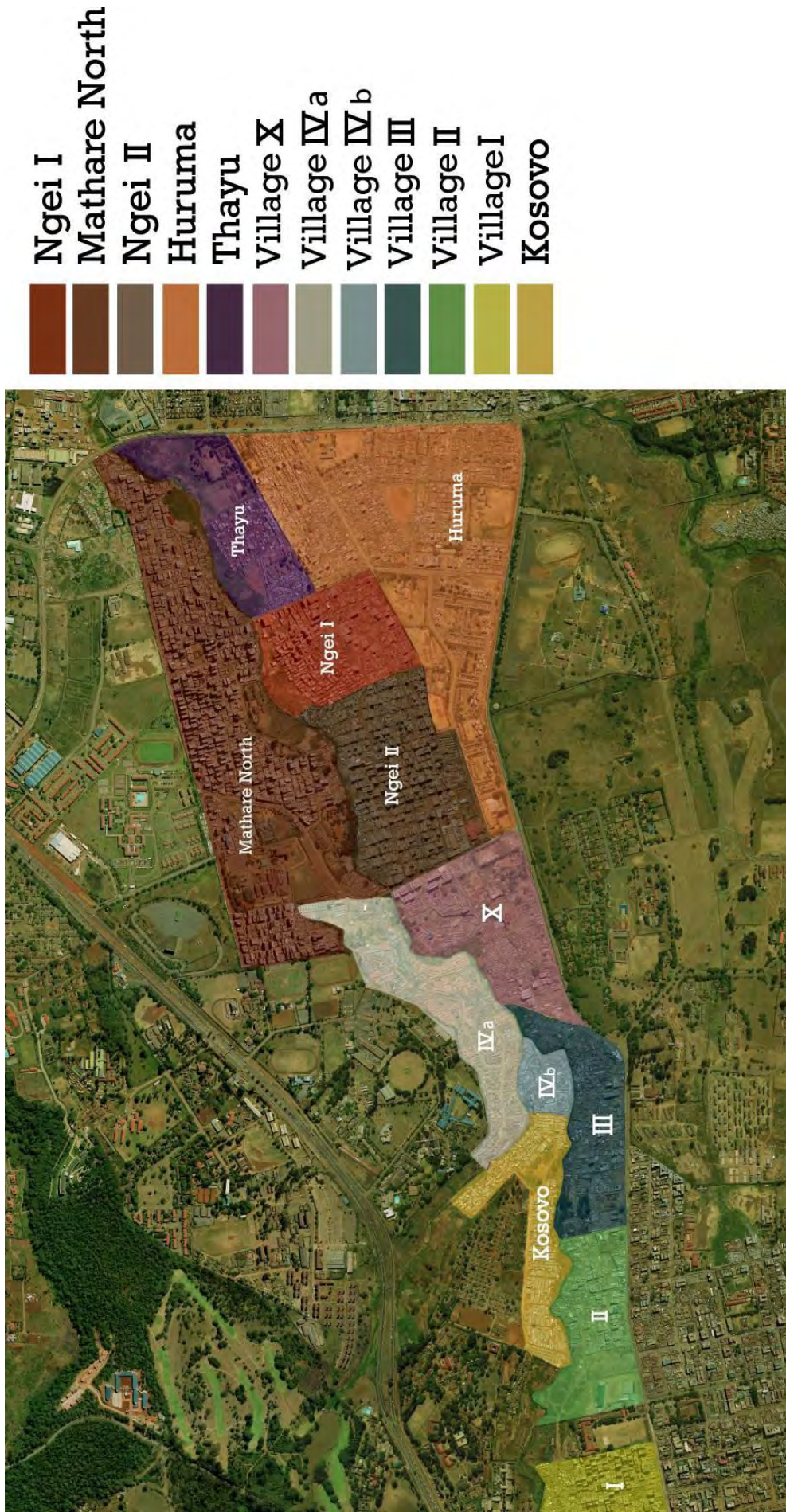


Figure 6. 1: Map of Nairobi indicating location of Mathare Valley settlement  
 Source: Matrix Development Consultants (1993)



**Figure 6. 2: Mathare Valley Villages and environs**  
**Source: Derived from Survey of Kenya aerial photograph by author**

## **6.2 General context**

The general context gives an overview of the prevailing situation in Mathare Valley. Factors identified under the general context and discussed below include: Growth and development of the settlement, Administrative units, Health, Education, Employment, and Social. Data for the general context has been obtained mostly from literature. This has been complemented by observations, interviews, and maps.

### **6.2.1 Growth and development of the settlement**

In its formative years Mathare Valley had a rural characteristic comprising of nine villages scattered on land rented from Indian owners. The land had been subdivided into large plots in the 1920s and 1930s and allocated to individuals and part retained by the state. Figure 6.3 shows the land subdivision throughout the Valley. Part of the land was allocated to Indian businessmen for quarrying purposes by the colonial government. By 1971, land ownership was distributed between the state, Nairobi City Council, and the housing companies as shown in Figure 6.4. This subdivision of the land has played a major role in subsequent ownership and development characteristics of housing in the Valley. Some of the Indians settled on the plots they were quarrying while others treated them solely as a quarrying source. A few of the plots still have the Indian owner's houses standing. In 1954, following the declaration of state of emergency, parts of the settlement was demolished on the assertion that they were harbouring Mau Mau dissidents and most of the dwellers sent into detention (Etherton 1971). Village I for instance was completely razed to the ground. Aerial photographs from 1959 show only 9 structures in Village I, 10 in IVb and 5 in Ngei II Etherton (World Bank 2003). After independence there was a great influx of people into the Valley prompting the newly formed government to attempt to evict them but to no avail.

The settlement developed in the 1960s around ten separate villages stretching out along five kilometres of the Mathare and Gitathuru rivers. These villages have since undergone tremendous transformation but still form the core of the settlement's neighbourhoods. Most of the Indian landlords it is claimed simply vanished and squatters started laying claim on the land, a problem that still persists to date. The composition of land ownership has also changed since 1969 when 34 per cent of the land was owned by the state, 8 per cent by Nairobi City Council and 58 per cent by individuals (Etherton 1971). Prior to

1969, the then existing nine villages were illegally built on all the three categories of land mentioned above. However, the advent of co-operative societies and land buying companies in the 1970s saw more of the land change to private ownership and some of the squatters forcibly evicted.

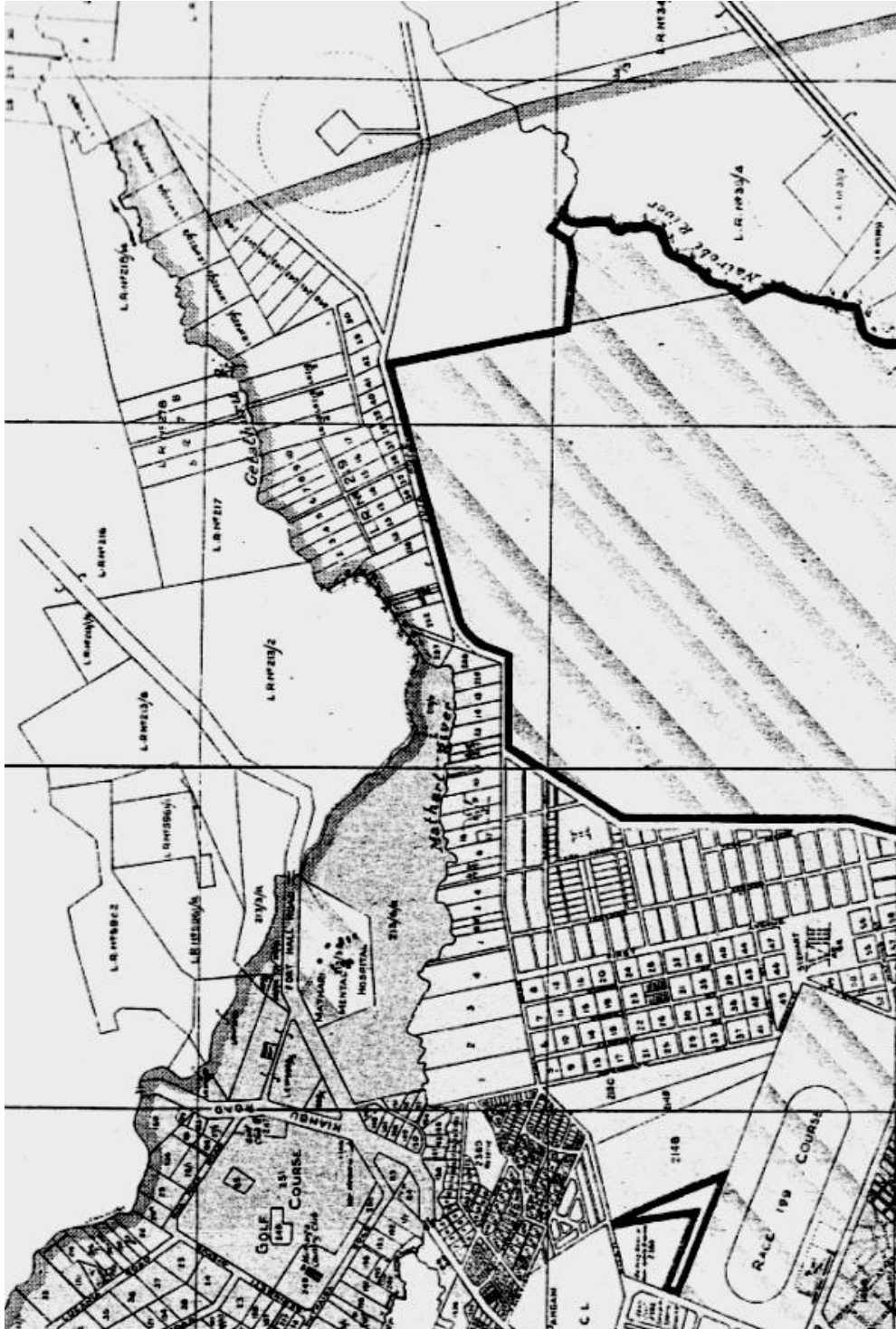
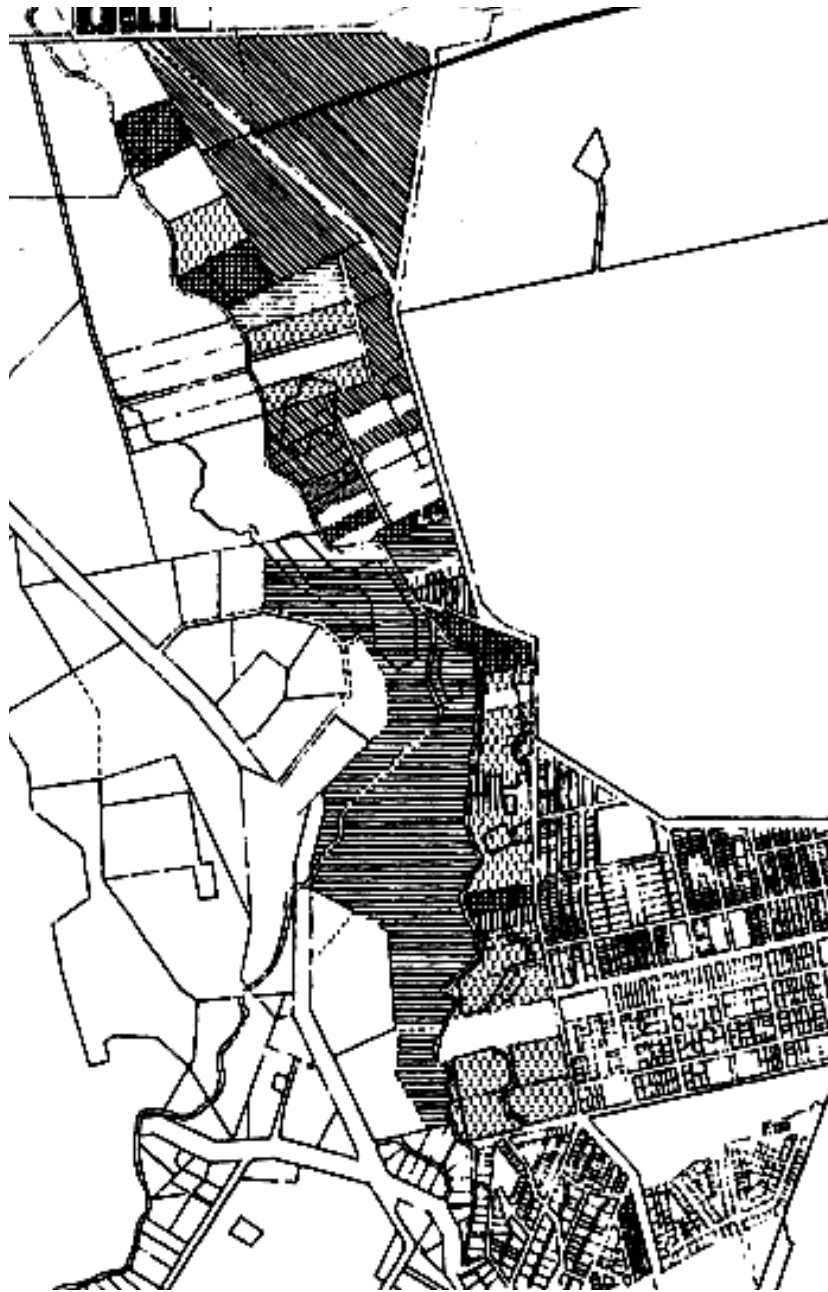








Figure 6. 3: Distribution of plots in Mathare Valley and the surrounding areas  
Source: Etherton (1971)



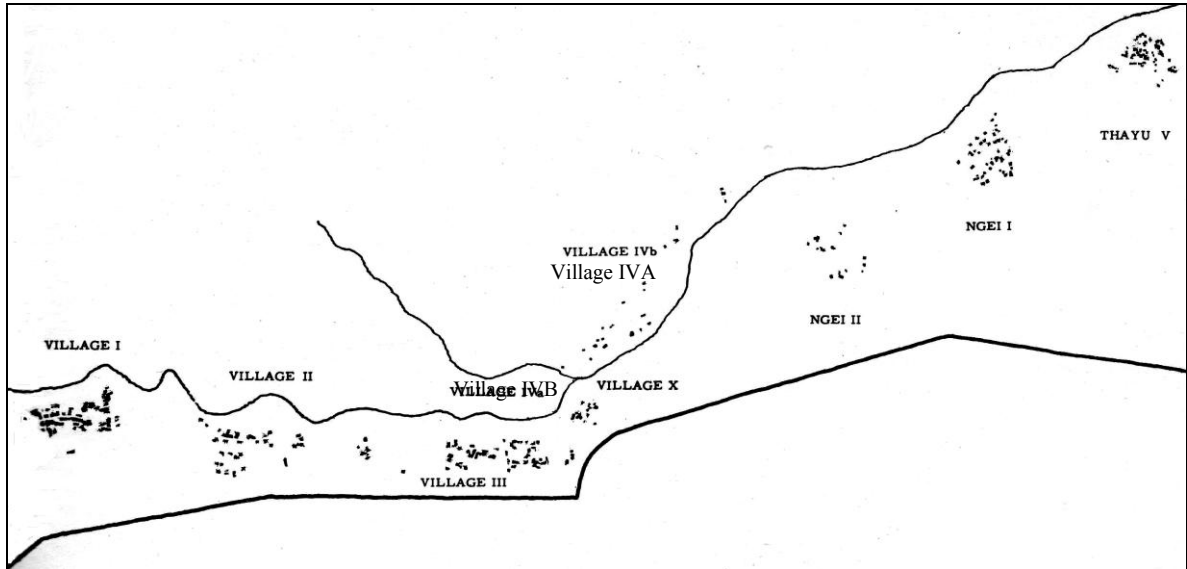
-  PURCHASE AGREEMENT SIGNED BY COMPANY
-  PURCHASE AGREEMENT SIGNED BY INDIVIDUAL
-  TITLE DEED HELD BY COMPANY
-  TITLE DEED HELD BY INDIVIDUAL
-  LAND OWNED BY NCC
-  STATE LAND

**Figure 6. 4: Ownership of land in Mathare Valley**  
**Source: Etherton (1971)**

The villages were initially distinct separate settlements with rural characteristics. The spaces between them were used for cultivation. This physical and social identity of the villages has since disappeared now that the open spaces have been acquired and developed by individuals and housing companies. According to Etherton (1991), Mathare Valley used to be a self supporting settlement whilst at the same time dependent on certain facilities and attractions in the surrounding areas. Pangani on the Western end provides a variety of shops, health centres, clinics, schools and churches. Kariobangi site-and-service housing provides similar facilities on a smaller scale. Casual employment, sale of illicit brews, hawking form sources of livelihoods.

An interesting phenomenon of Mathare Valley are the housing companies which purchased land initially with the objective of settling its squatter members but later venturing into speculative tenement blocks. These companies started off initially as cooperative societies with the objective of acquiring land for their members and settling them. However, because of stringent regulations coordinating cooperative societies the companies opted to settle for companies. Currently shelters in this informal settlement vary from makeshift structures to multi-storeyed permanent tenement blocks. The levels of informality vary with the definition of informality. Mathare North for instance is a World Bank funded sites-and-services development with plots and infrastructure developed for structures not exceeding two stories. However, most of the plots have been developed with structures of up to eight stories thus making them illegal structures.

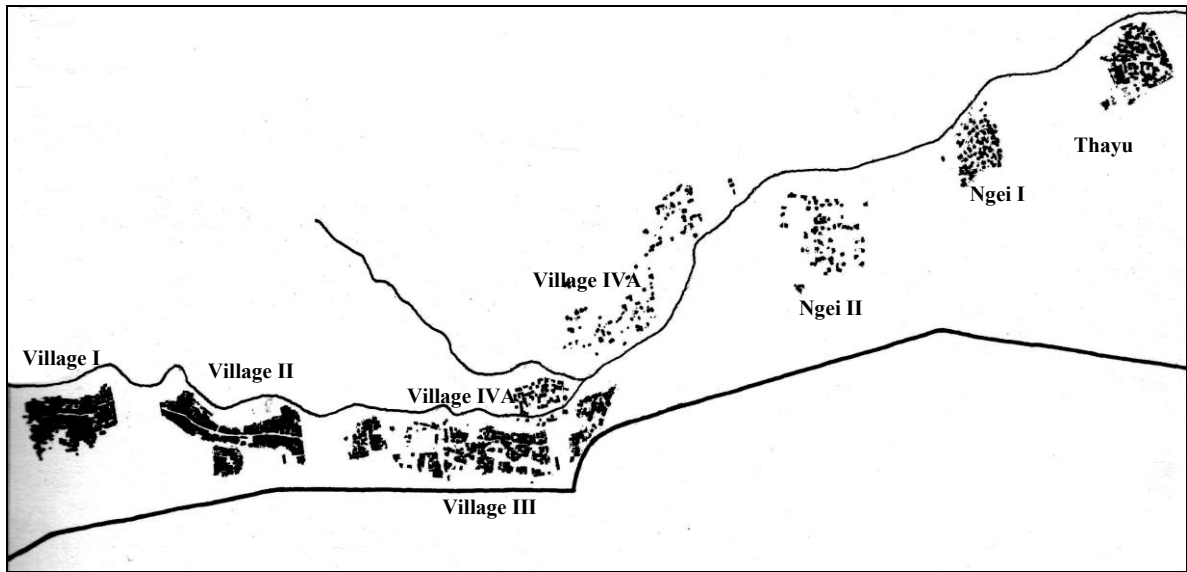
Soon after independence in 1963 there was an influx of rural to urban migration in search for job opportunities. The supply of housing far outstripped supply and informal settlements such as Mathare Valley offered cheap alternatives. The rapid densification of this settlement is captured in the aerial photographs of 1964, 1966, 1969 and 1971. These are clearly illustrated in Figures 6.4 to 6.8. In Figure 6.8, the Villages can be seen against the plots they occupy



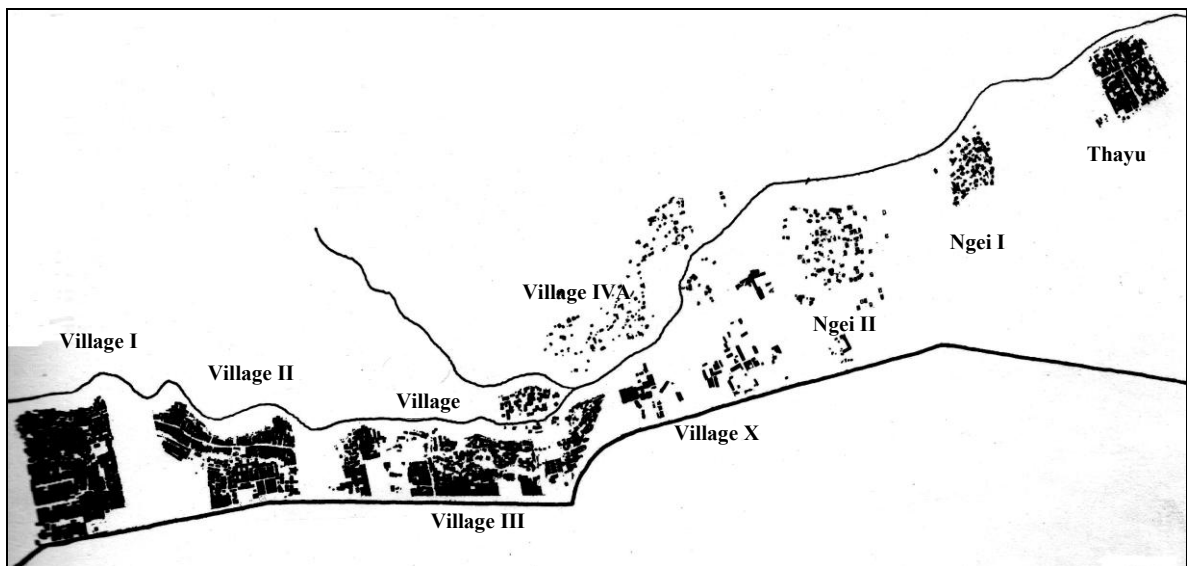
**Figure 6. 5 Mathare Valley settlements, 1964**  
**Source: (1971)**



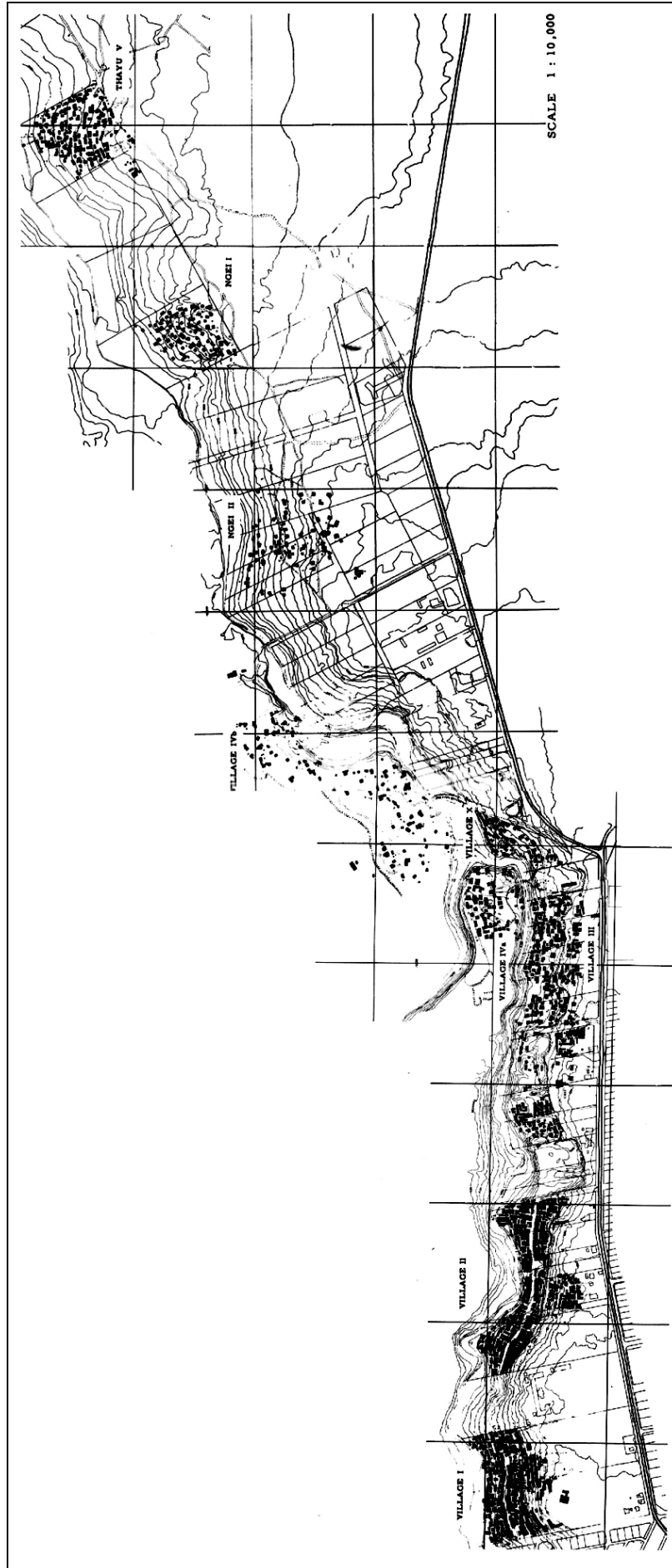
**Figure 6. 6 Mathare Valley settlements 1966**  
**Source: (Etherton 1971)**



**Figure 6. 7 Mathare Valley settlements, 1969**  
 Source: (Etherton 1971)



**Figure 6. 8 Mathare Valley settlements, 1971**  
 Source: (Etherton 1971)



**Figure 6. 9: Mathare Valley settlements, 1971 showing villages in relation to the then existing plots**  
**Source: (2001)**

### **6.2.2 Administrative units**

Administratively Mathare falls under Nairobi Province headed by a Provincial Commissioner appointed by the government. Nairobi Province is one of eight provinces in Kenya. It shares common boundaries with Nairobi city, the capital of Kenya, but functions as a state unit. The province differs in several ways from other Kenyan provinces and is the smallest in area. It is entirely urban and has only one local authority, Nairobi City Council.

Mathare Valley falls within two constituencies namely Starehe and Kasarani each with a parliamentary representative elected by universal suffrage every five years. At the City Council level the settlement falls within three wards – two in Starehe constituency and one in Kasarani. There are also two administrative Divisions, and 3 Locations. The Division is headed by a District officer while the Location and Sub-location by Chief and Sub-chief respectively. The Valley is further divided into villages as already discussed above which are recognized by the Provincial Administration but are not official. The boundaries between village communities are not visible to outsiders but are very clear to the residents. Each of the villages has a village elder. The elected officials for Mathare are councilors who represent wards and the Member of Parliament who represents the constituency. At the grass root level Mathare has locals known as elders who head the different villages that make up Mathare. Officially the elders do not hold any legal power though sometimes the government works with them to help mobilize the community around certain issues such as security. The traditional governance structure in Kenya prior to colonization relied on a Council of Elders in each village. While informal settlements in Nairobi have Chiefs and assistant Chiefs assigned to them, the Council of Elders still actively participates in village politics. The Council comprises of elders, almost always men, from a particular settlement and their main tasks are to resolve disputes and liaise with the Chief and his Assistant to coordinate issues.

### **6.2.3 Health**

There are two health centers run by the government and which offer subsidized health services. A number of NGOs also provide health facilities in the Valley. Table 6.1 is a list of organizations providing health care the area. Spot checks on these facilities revealed long queues which is an indication that there is still a shortage of health facilities to cater for the large population.

Health Facility Name	Affiliation	Patients treated per day
MSF-Blue House	Medecins Sans Frontieres	
Baraka Dispensary	German Medical NGO	100+
Lions Huruma	Ministry of Health (MOH)	20-30
National Churches Council of Kenya (NCCCK)	Faith-based	150+
Mathare North Center	Ministry of Health (MOH)	20-30
Mathare Mental Hospital Ministry of Health (MOH)	Mathare Mental Hospital Ministry of Health (MOH)	
Pangani Health Center Ministry of Health (MOH)	Pangani Health Center Ministry of Health (MOH)	
Eastleigh Health Center Ministry of Health (MOH)	Ministry of Health (MOH)	
St. Theresa's Health Center	Faith-based	

**Table 6. 1: Health facilities found in Mathare Valley**  
**Source: Dignitas (2008)**

#### 6.2.4 Education

Mathare has three public primary schools and a youth polytechnic. There are a number of private nurseries and primary schools run by individuals or church organizations. The private schools are all considered Non-formal as they are not registered with ministry of education. A village elder indicated that residents consider some of these private schools as purely commercial oriented entities without much interest on children's performance. All the private schools in the informal settlement have no adequate land for such institutions. In some case, several dwelling blocks are combined to form classrooms and children have no play grounds. In contrast, the Nairobi City Council schools located in Huruma and which also serve some of Mathare neighbourhoods are located on large plots with adequate sports grounds. Table 6.2 is a list of schools serving the Valley.

Literacy level in Mathare has improved over the years. 65 per cent of the population has attained primary education whereas 25 per cent have attained secondary education. There is a large disparity between male and female literacy levels with 75 per cent of male having attained primary education against of 15 per cent female (see Table 6.3). The Government policy of free primary education has seen the number of enrolment increase.

However, children of school going age can still be seen in the streets. There were claims by parents that they cannot afford charges still claimed by schools for things such as lunch, examinations and tuition. In addition, they have to buy school uniforms. It was not possible to establish the number of children not attending school during the survey but a school headmaster in Mathare IVB claimed that up to 30 per cent of children of school going age could be missing out on education.

School	Type	Number of students
Kiboro Public Primary –	mixed	Approx. 900
Mathari Old Public Primary	Mixed	Approx. 900
St. Teresa’s	Public Primary, Secondary Girls	
St. James	Mixed Non formal Primary	
Genesis	Non formal Primary Secondary Mixed	
Valley View	Non formal Primary Mixed	
Mathare Community Outreach	Non formal Primary Secondary Mixed	
Hope School of Achievers	Non formal Secondary Mixed	
Mathare Youth Polytechnic	Public Tertiary Mixed	

**Table 6. 2: Schools in Mathare**  
**Source: Dignitas (2008)**

Population	Literacy level
General population	Primary Level (65%) Secondary Level (25%)
Male	Primary Level (75%) Secondary Level (15%)
Female	Primary Level (55%) Secondary Level (10%)

**Table 6. 3: Literacy level**  
**Source: Dignitas (2008)**

### 6.2.5 Employment and income

Majority of the residents are casual labourers working in various parts of the city’s commercial and industrial areas as unskilled workers, guards, masons, house helps, amongst others. A sizeable percentage run small scale businesses such as green groceries, mini shops, butcheries, hairdressing, barber shops, charcoal, paraffin outlets, etc. Yet others are structure owners or –slum lords” who own blocks with rental rooms. Average

income is Kshs 150 per day although unemployment rate is high. For the majority the budgeting priorities appear to be: 1. Food, 2. Rent and 3. Education.

The average housing cost is Kshs 1,000 shillings monthly. It costs about 100 Kshs per day to feed a family of five on one meal a day (Dignitas 2008). Table 6.4 is an indication of employment levels in the Valley.

<b>Employment</b>	<b>Percentage and Age Groups</b>
Casual labour and Hawking	10% (Ages 18-25 Hawking second hand clothes)
Illicit Brewing	6% (Over 25 years old)
Formal employment	2% (Ages 25-40 yrs)
Other	2%
Unemployed population	80% Plus

**Table 6. 4: Employment levels**

**Source: Dignitas 2008**

It was observed that commercial activities are undertaken almost everywhere. Some businesses are set on pavements by the roadsides, some in dwellings converted into businesses venues and others by the dwelling doorsteps. The Main economic activities include:

1. Casual labour: construction industry, washing clothes
2. Small business – vegetable, food, shops
3. Illicit brewing and drugs
4. Formal employment

### **6.2.6 Social**

Mathare Valley is characterised with crime, poverty and deprivation. It is at the same time a centre of activity, energy and creativity. The valley is divided in numerous villages. Ethnic tensions and conflicts in Mathare have been a recurrent phenomenon and are often socio-economically or politically instigated. For example, in the 1990s, Mathare 4A village was upgraded by the German donors and the Catholic Church under the

<b>Organization</b>	<b>Focus area</b>
Mathare Youth Sports Association	Using sports to address youth issues such as drug abuse, environment, sexual matters
Medecins Sans Frontieres	Runs a clinic mainly for HIV/AIDS patients
The Catholic Church	Spiritual, Educational programmes (schools, bursaries)
Redeemed Gospel Church	Spiritual, Educational programmes
Compassion International	Child sponsorship mainly for Education support
Kenya Network of Women with Aids	Support of people living with AIDS – education, food, treatment
Jamii Bora Trust	Economic
World Vision	Educational sponsorship
Naioth Centre	Spiritual, Health, Education, Economic
Lepta CBO	Personal development, leadership, education
Roots CBO	Youth empowerment
Maji Mazuri CBO	Youth empowerment, education
Dreams Youth Group	-
Pequinions Youth Groups* -	-
Mathare Mothers Development Center -	-
Mathare Senior Self Help Group -	-
Mathare Squatters women Group -	-
Mathare Slums New Awake -	-
Mathare Youth For action -	-
Mathare Single mother -	-
Majirani Women Group -	-
Mathare Slums Youth Self Help Group -	-
Mavuno Maji Mazuri Self Help group -	-
Ushirika Mathare 4B women Group -	-
You and I for our community mathare youth	-
-	
Hope Ministries	Education, Spiritual
Hope World Wide	Child support

**Table 6. 5: Non Governmental Organisations in Mathare**  
**Source: Dignitas (2008)**

coordination of the Ministry of Public Works. This initiative faced a lot of opposition from the community members due to the evictions that would pave way for new infrastructures. Ethnic tensions even arose during the allocation process with the perception that one specific ethnic group was being favored. Today the upgraded houses are predominantly occupied by one ethnic group. Insecurity is paramount in the area and this has led to the formation of vigilante groups of young men known as the “Falibans” and “Mungiki” who “man” and extort money from the villages as protection fees. It was established during the survey that these organized groups have been forcing residents to pay Kshs 20 per household for their protection. Residents who fail to pay end up being beaten, their property looted. However, despite all these ethnic tensions, there are tens of social groups operating in the area. A resident indicated that these groups could run into hundreds as most are not formally registered. They operate at different levels in the community. There are some smaller groups that look into the aspects of cleanliness and security of the blocks they occupy whereas others are large groups that are associated with international organizations fighting against forced evictions. Table 6.5 shows some of the NGOs operating in the Valley.

### Religion

The majority of Mathare residents are Christians. There is the presence of other smaller traditional religions and an even smaller number of Muslims. The churches are viewed and have acted as development partners with the community. Table 6.6 gives the proportions of religions in the area including the number of churches and mosques. The settlement is predominantly Christian.

Religion/Churches/Mosques	Percentage
Christianity	55%
Islam	5%
Other	40%
Churches	20
Mosques	1

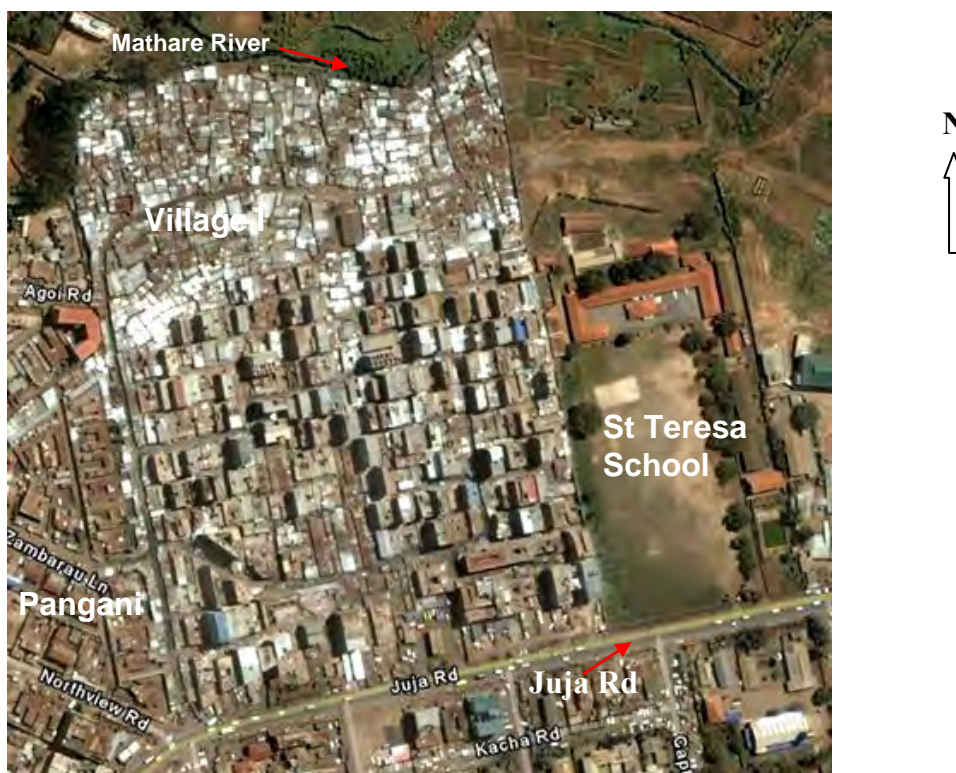
**Table 6. 6: Proportions of religion and the number of churches and mosques**  
**Source: Dignitas (2008)**

### 6.3 Mathare Valley Villages

The origin and growth of the ten villages that make up the neighbourhoods of Mathare Valley have been discussed above. In this section, the characteristics of each of the villages are discussed. Figure 6.9 shows the approximate boundaries of these villages.

#### 6.3.1 Village I

Village I is bordered by Pangani estate to the West, St Teresa School to the East, Juja Road to the West and Mathare River to the South. Informal settlements started developing in this area in 1962 on land that was owned by an Indian Muslim. A group of people who had been moved from Eastleigh and Pangani area settled here. The land comprised of two plots of 9.6 hectares each (a total of 19.2 hectares). Topographically the land falls within



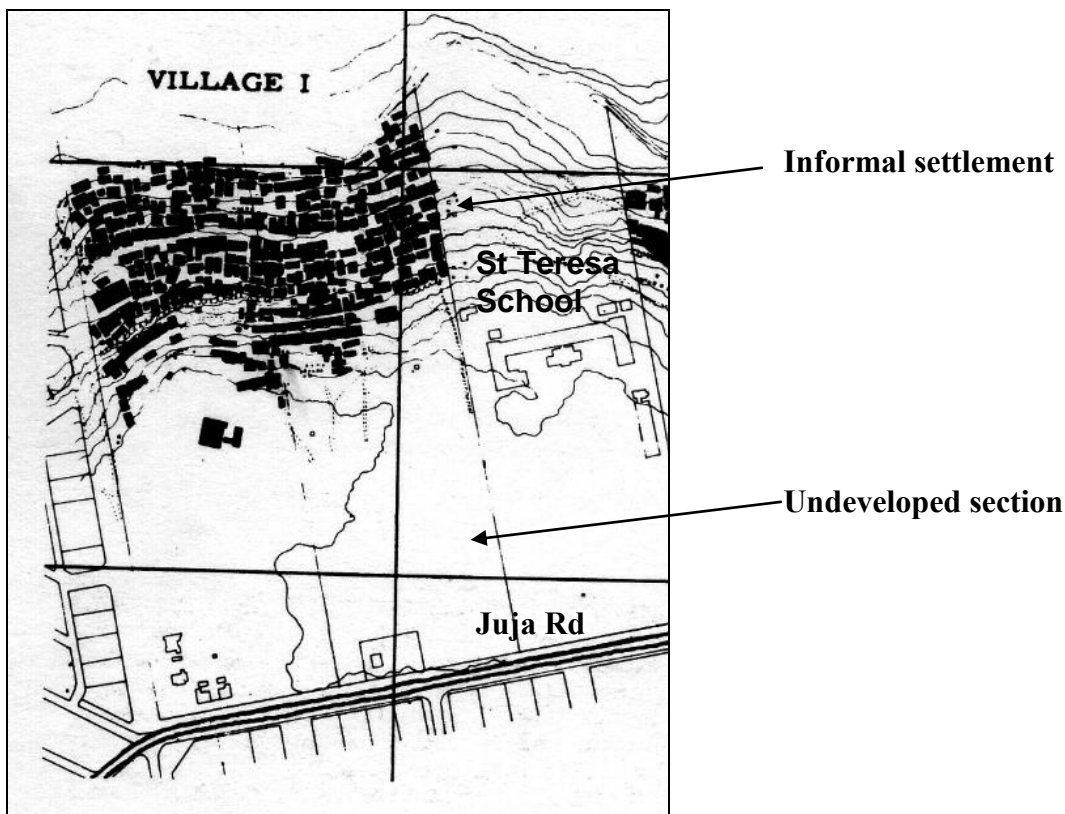
**Figure 6. 10: Current aerial view of Village I showing slum structures to the north and permanent structures to the south.**

**Source: Google Earth (2009)**

two sections. The section nearer Juja Road is relatively flat whereas that nearer the river is steep. The Indian owners had settled on the flatter section. It is on the steep section that the informal settlement developed. The village has an estimated population of 10,000 people and 2280 households. This village has been separated from the rest of Mathare Valley by

St Teresa School. However, it is only a physical separation otherwise all the other characteristics of the settlement are common with the rest of the Valley. An interesting phenomenon is the extent to which the squatters have respected boundaries or have been contained within the plot boundaries as is evident in Figure 6.10 and 6.11. St Teresa School was able to utilise its entire plot up to the river where school gardens are located. To the West are private residential properties on small plots and fully developed.

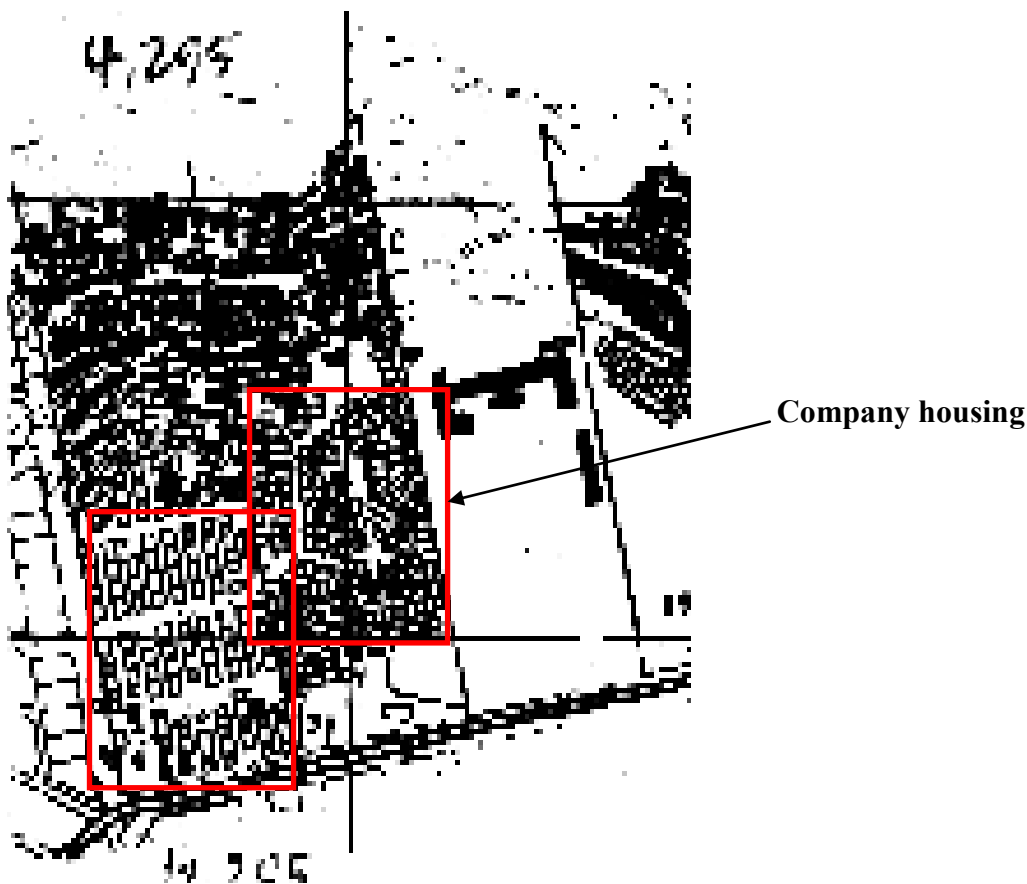
The land was bought by two companies (each buying a plot) with the aim of settling its members in the late 1960s. The two companies built a total of 389 structures with a provision for 3,000 rooms thus accommodating approximately a similar number of households on the basis of one room per household. Figure 6.12 Shows Company housing on the two plots. Each company came up with its own housing layout. No development took place on the steep section occupied by the squatters. Other than increased densification over the years, this steep section of the land still retains its original informal characteristics. In the 1980s, the single storeyed company housing gave way to permanent high-rise tenement blocks some developed by the two housing companies but most by speculative individuals who later acquired the plots.



**Figure 6. 11: Village I layout in 1969 before the company houses were built.  
Source: (Etherton 1971)**

Village I is one of the most neglected section of Mathare Valley in terms of interventions. This is attributed to the fact that it is located on privately owned land coupled with the fact that the land is steep. The village has a community hall, three nursery schools and a village elder’s office. Several NGOs operate in the area.

The City Council trunk sewer that runs along Mathare Valley serves this Village. Three city Council toilet blocks exist in addition to a number of pit latrines. The village is also served by a number of water points. Security of tenure is a major hindrance to the improvement of this village



**Figure 6. 12: 1971 plan of Village I showing company housing located nearer Juja Road and squatter settlement next to Mathare River**  
Source: Etherton (1971)

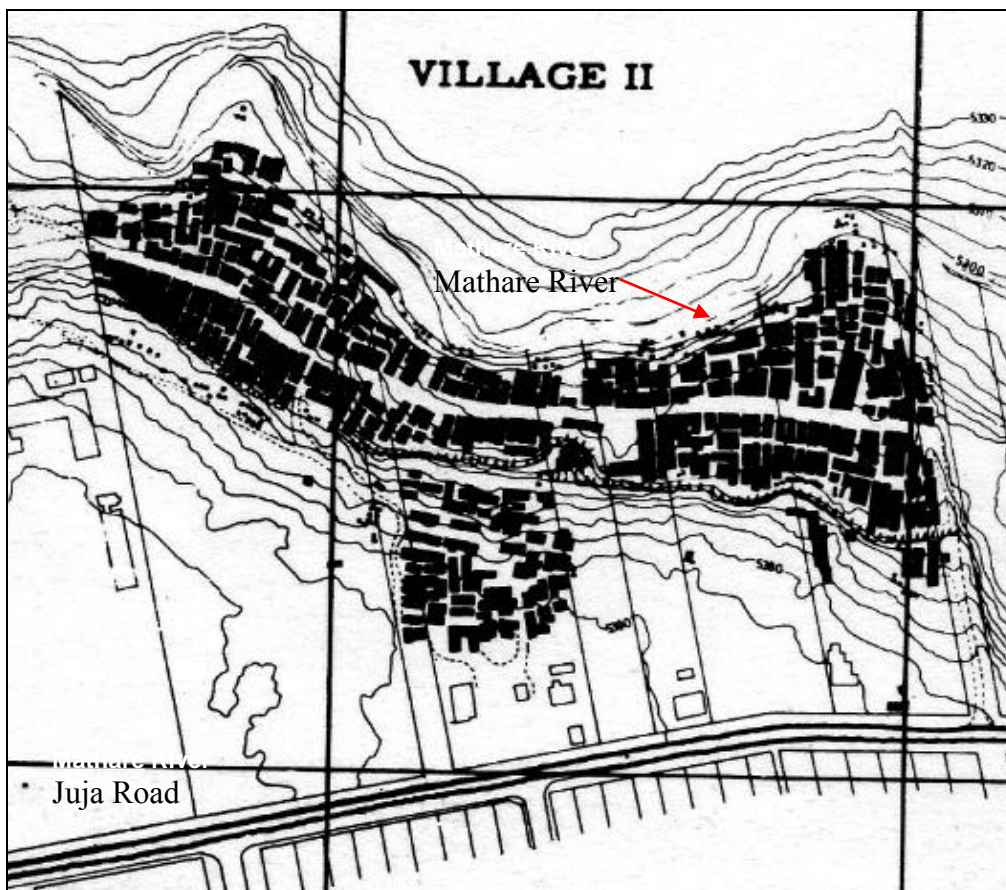
### 6.3.2 Village II

Village II located to the East of St Teresa School originally occupied six plots stretching up to an access road that links Juja Road to the earth road that serves the informal settlements down the valley. However in recent years, structures on two of the plots have been demolished to pave way to institutional development. The plot adjacent to the school has been developed by an Islamic institution. It was pointed out that the other cleared plot



**Figure 6. 13: Aerial view of Village II. Section demolished in recent years is shown on the left of the photo.**

**Source: Author**



**Figure 6. 14: Village II in 1971**

**Source: (Etherton 1971)**

has also been acquired by the same institution. Five land housing companies acquired land in this area in the 1960s and built rental housing units for its members. Previously the

Village covered a total of 55 hectares. It has no primary school but pupils are able to attend the nearby school outside the settlement.

Village II has seen some level of shrinkage since the 1970s with two plots being cleared of dwellings. Two plots adjacent the St Teresa School have been acquired by an Islamic organization (see Figure 6.13). Both plots had been purchased by different housing companies which built houses for their members on what appears vacant in Figure 6.14.

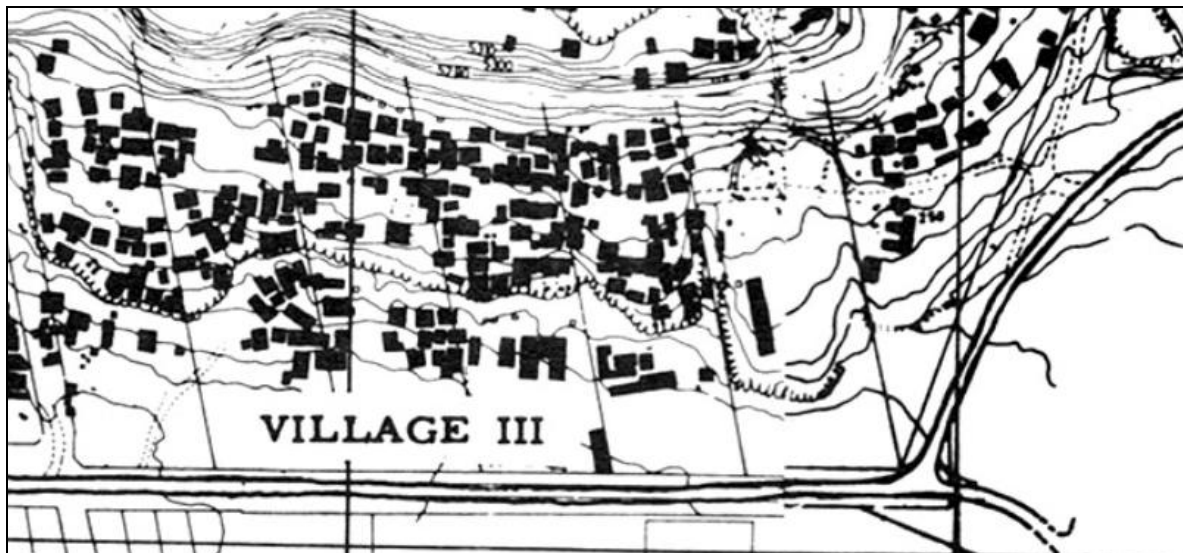
Although the remaining four plots are all owned by different companies, physically the entire area has a slum characteristic. The riparian reserve is the densest like all other plots extending to the river. Two of the plots have since been subdivided and sold. There has been no intervention aimed at improving the neighbourhood as the dwellings are on private properties. Elders interviewed indicated that squables within the companies and claims by some members of ownership of plots within these plots have hindered meaningful development.

### **6.3.3 Village III**

This village was settled in 1960 by workers from the nearby quarry. The land measures 7.2 hectares. In the 1960s and 70s, the section next to Juja Road had bungalows belonging to Indian plot owners but down the Valley and hidden from view from the road informal settlements mushroomed. The land which originally belonged to private individuals was later purchased by the land buying companies. The section near the river has not undergone much transformation save for densification (see Figure 6.15). When quarrying stopped, the disused land was occupied by squatters. Much of Village III is thus located inside the disused quarry. It is here that the slum settlement stretches up to the main Juja Road as opposed to the other villages where permanent high-rise blocks of apartments abut the road. The land is privately owned by housing companies and individuals. There have been clashes between the landlords and the squatters for a long time. Fires believed to be set on by arsonist hired to force the squatters out have been frequent. In 1999, the residents sort legal assistance from Kituo Cha Sheria – a non-governmental organization giving legal advice to the poor. They got a letter restraining the landlords from carrying out the intended evictions. They lack security of tenure and live under fear of eviction



**Figure 6. 15, Aerial photograph of Village III in 2005**  
**Source: Author**



**Figure 6. 16: Village III in 1971**  
**Source: (Etherton 1971)**

Due to lack of security of tenure, this area has had very minimal improvement. Charitable organizations have assisted the residents with construction of public toilets in conjunction with the City Council. Water point have also been erected in a similar manner. The structures however remain poor and are mostly owned by absentee landlords. Densification of the area started early as can be seen in Figure 6.16 above. The neighbourhood's population is estimated to be approximately 10,000 people occupying about 600 households (Pamoja Trust 2008). Tenants pay between Kshs 500 and Kshs 1,000.



**Photo 6. 1: A vandalised toilet block with a curtain on a cubicle that is still in use despite having no running water**

**Source: Author**



**Photo 6. 2: hole dug into sewer pipe for use as a toilet. Sewage overflows at times.**

**Source: Author**

Two City Council toilets serve the residents. Incidentally there are two toilet blocks that have been completely vandalised and not in use (see Photo 6.1). The sewer system is clogged due to overuse and lack of maintenance.



**Photo 6. 3: The main spine road serving the village which is also the commercial hub**  
**Sources: Author**

In some instances, holes have been dug into the pipes for use as toilets as can be seen in Photo 6.2 below. Narrow open drains run along the narrow passages between the row of houses with foul smell and discharging the waste into the Mathare River. The area has no common solid waste disposal system. The area is served by one formal primary school. Kiboro Primary School and St James and Valley Primary are privately owned. Undugu society which is an NGO offers vocational training opportunities for the youth. The main earth road is a hive of economic activities as can be seen in Photo 6.3. This road links this village to the others. Most residents are self employed or casual labourers. Village elders form part of the administrative machinery linking the residents with the local Provincial Administration office.

#### **6.3.4 Mathare IVA (Village IVA)**

Village IVA is one of the oldest and was settled before the First World War. In 1968, a group of people whose means of livelihood was through sale of beer settled here on government land. Additional settlers came in 1968. The Village covers an area of approximately 19.2 hectares on what was previously government land but which has since been allocated to a trust that holds it on behalf of the community. This is an unprecedented phenomenon in the city of Nairobi. At the time of the initial socio-economic survey conducted by Gitec Consultants in 1992 on behalf of the government, the area had a total population of about 8,000 households (approximately 30,000 to 32,000 people). The residents belong to the lowest income earning group in the urban context with an average

income of Kshs. 2,000 in 2008 terms. Wattle and daub structures were the only type of structures in the area prior to the ongoing upgrading. These were mainly erected for rental purposes by “absentee owners” who do not live in Mathare 4A and whose only interest was to obtain rent for their investment. Rents ranged between Kshs. 300 to Kshs 400 per month when the survey was conducted in 1992. Tenancy was on room basis and the room sizes ranged between 9 and 12 square meters. Fifty percent of the households were using sub-standard pit latrines while the rest were relieving themselves in the open air, mostly by the river. The prevailing infrastructure at that time was summarized as follows:

- The only existing access system was a rudimentary earth track, barely passable by traffic during dry weather and impassable during the rainy season.
- There were only two existing public toilets for the entire population, one of which was not functional, and the other one had been rehabilitated through the efforts of the residents. Clean water was available but from private “water kiosks” spaced far and irregularly apart and at costs 3 to 4 times the official Nairobi City Council rates (Eherton 1971).

The Catholic Archdiocese of Nairobi was entrusted by the Government of Kenya with the ownership of Mathare 4A upgrading programme due to its familiarity with the problems in the area and their commitment to social development as exemplified in other social projects undertaken by the church in the past. The Archdiocese set up the Amani Housing Trust under the Succession of Titles Act to implement and administer the project for the benefit of the residents. The project is governed by a Consultative Board with representation from the Catholic Archdiocese of Nairobi, the Ministry of Public Works and Housing, The ministry of Lands and Settlements, the Local Administration (District Officer and the Chief), the Nairobi City Council, the elected area representatives and direct representatives of the residents. It has been funded by the Federal Republic of Germany through Kreditanstalt Für Wiederaufbau (KfW) at a cost of DM 17 million.



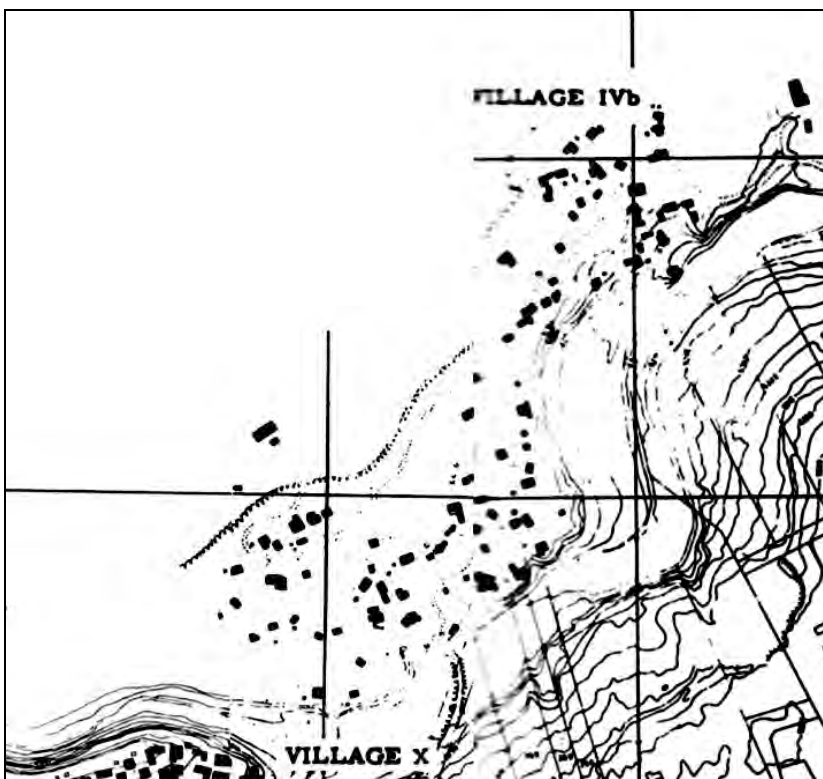
**Figure 6. 17: Aerial photograph of Mathare IVA in 2005 showing new dwellings with brown roofs**

**Source: Author, based on Survey of Kenya**

The project is incorporated in the wider context of a programme under the auspices of the St. Benedict's Catholic Church which also runs a dispensary, a feeding programme for mal-nourished children and conducts counselling services for AIDS victims. The project land was transferred by the Government on leasehold basis to the Archdiocese of Nairobi to hold it on trust on behalf of the area residents.

The approach adopted by the programme was two-fold. The first step involved conducting two concurrent studies before the implementation process. The first study involved a Feasibility Study carried out in the major informal area to find out how the shelter needs of the poor had been addressed and a Social Economic survey of the area. The Feasibility Study noted limited success in previous programmes largely because of poor security of tenure, limited community participation and the project not benefiting the targeted

beneficiaries (Gitec Consultants 1995). In line with the Government of Kenya policy on slum improvement, the Catholic Archdiocese of Nairobi in collaboration with the Government and sponsorship from the German Government initiated the Mathare 4A Development Programme in 1992 with the objective of improving the livelihoods of the beneficiaries. Figure 6.17 shows the transforming housing in the area Figure 6.18 shows the settlement in its formative years with scattered detached dwellings in 1971. Mathare IVA has been selected for detailed study which is presented in Chapter Eight.



**Figure 6. 18: Mathare IVA in 1971 showing scattered structures**  
**Source: (Gitec Consultants 1995)**

The rehabilitation programme was initiated on a pilot basis which commenced on 8<sup>th</sup> May 1992 following an agreement reached between the Government of Kenya, the German Government (through its donor agency KFW) and the Catholic Archdiocese of Nairobi. The pilot phase covered 3 Ha. of the slum area and was funded through a grant of US\$ 1.5 million. This incorporated approximately 1,700 households. A pilot study was undertaken by GITEC Consultants in 1995. The pilot phase was completed in September 1996. Upon completion of the pilot phase, a separate agreement to cover the entire Mathare 4A was signed on 21<sup>st</sup> January 1997. This phase comprised of 4,300 households and was to cost Kshs. 420 million. The pilot study covering about 20,000 inhabitants showed that the

erection of formal multi-storey houses would have led to massive subsidies (Etherton 1971). Charging higher rents on the other hand would have resulted in the poor residents shifting to other slums and subsequently replaced by more affluent people.

The project reclaimed the government land and compensated the absentee owners for the structures on the land. With this property, the Catholic Archdiocese of Nairobi then upgraded the infrastructure and created the non-profit Amani Housing Trust to which tenants pay fair rents, the surplus of which goes back into the improvement and maintenance of the neighbourhood. Thus, residents at least partially contribute to the development capital for their neighbourhood. The implementation of the project has been marred by protests by the intended beneficiaries and is still at implementation stage 17 years from its inception.

### **6.3.5 Village IVB**

Mathare IVb is located at the junction of the Mathare and Gitathuru Rivers on approximately 5.5 hectares of land belonging to the government (see Figure 5.19). The neighbourhood has approximately 2,310 households (Approximately 8,000 to 9,200 people). The residents of this neighbourhood belong to the lowest income earning group in the urban context with an average income of Kshs. 2,000 in 2008 terms. Corrugated iron sheets on wooden frames are the predominant material for walls and roof. There are very few wattle and daub dwellings. The mostly single roomed dwellings are mainly erected for rental purposes by 'absentee structure owners'. Rents range between Kshs. 1,000 to Kshs 1,500 per month as per the survey conducted in 2009. Tenancy is on room basis and the room sizes range between 9 and 12 square meters. The prevailing infrastructure at the time of the survey can be summarized as follows:

- The area is mostly not accessible by vehicles. Vehicle access terminates along the eastern end of the settlement. A major pedestrian walkway forms a loop and from it are branches of narrow footpaths serving the dwelling units. The narrow paths also have storm water drains running along them. Some of these open drains have been paved with natural stone blocks. The area is served with four public toilets and sixteen pit latrines mostly located near the river bank.
- Clean water is available from water points erected by the City Council.



**Figure 6. 19: Aerial view of Village IVB. Mathare and Gitathuru rivers meet here. Source: Survey of Kenya (2005) modified by Author**



**Figure 6.20: Aerial view of Village IVB in 1971 showing mostly detached houses. Village X is seen on the right side Source: (Gitec Consultants 1995)**

As can be seen in Figure 6.20, the structures in this neighbourhood are so closely built with hardly any open spaces. Densification of this neighbourhood did not take place at the same pace as the neighbouring Village X mostly due to the two rivers surrounding it which limited its accessibility (see Figure 6.21). In the 1980s, a foot bridge was constructed

over Mathare River to the south making it more accessible. This neighbourhood has been selected as a case study area and is presented in detail in Chapter Seven.

### **6.3.6 Thayu - Village V**

Thayu or Village 5 occupies approximately 15 hectares of land. The land was acquired by a housing company in the late 1960s which demolished all the original houses and built company houses for its members. The settlement was planned on a grid pattern which is still evident today (see Figures. 6.22 below). The adjoining plots to the East and West were never squatted on and are today owned by two different church denominations. In 1971, 75 per cent of the land was open space. The company obtained the title deed for the plot and to date very little intervention has taken place on the site as it is deemed private development. Figure 6.21 shows the development on the plot today whereas Figure 6.22 shows the development in 1971 indicating very little change. The plot still lacks basic amenities such as water, sewerage, and adequate roads.



**Figure 6. 21: Thayu (Village 5) showing orderly layout of company housing.  
Source: Author**



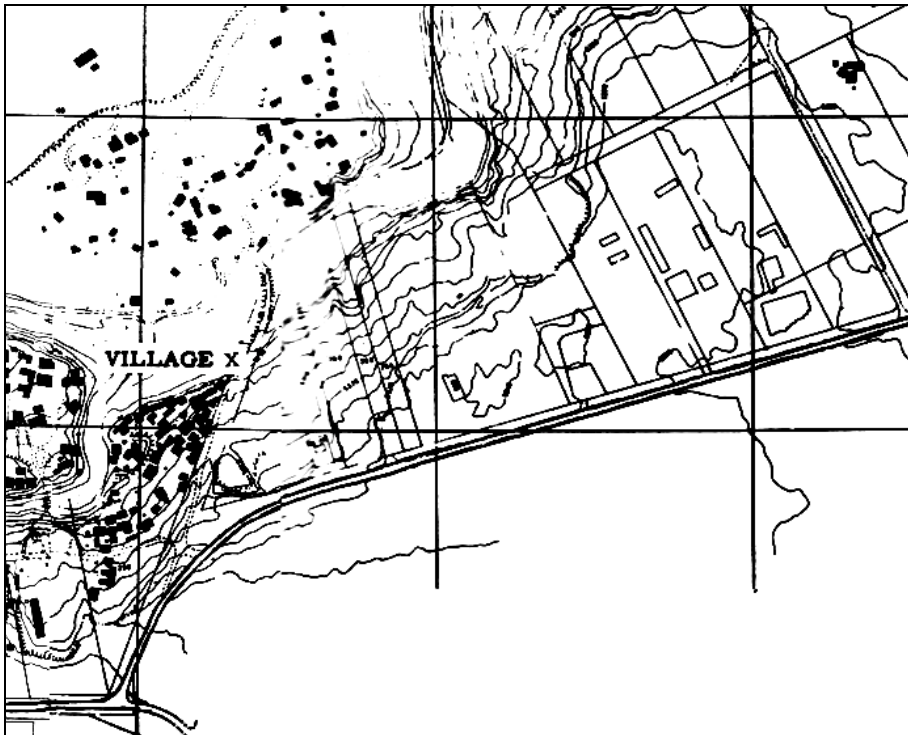
**Figure 6. 22: Thayu Village V in 1971**  
**Source: (Etherton 1971)**

### **6.3.7 Village X**

This is another village with very little mention in literature. Originally occupying a 2.4 hectares plot, this land was acquired by a land buying company. Information obtained from a village elder indicates that the land was bought by a company with only one member and has since changed hands with the new owners having squabbles with the squatters. Housing developed later to the East of the small Village X linked with this village to form a larger village (see Figures 6.23 and 6.24).



**Figure 6. 23 Aerial view of Village X showing dense housing. The plot divisions are still evident. Source: Author**



**Figure 6. 24: The original Village X**  
**Source: (Etherton 1971)**

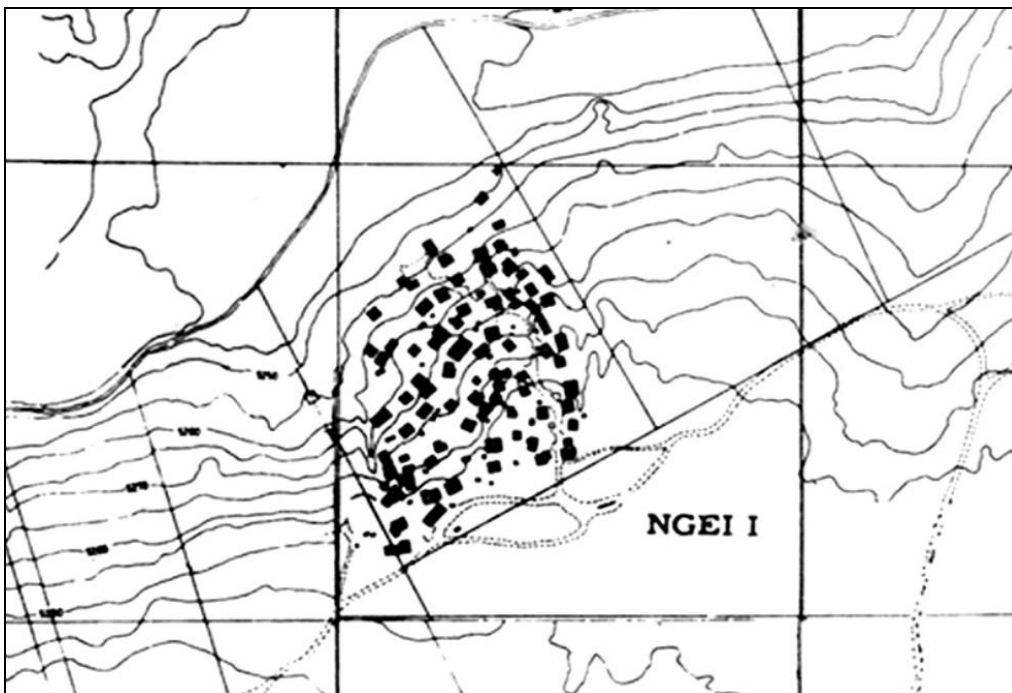
### **6.3.8 Ngei I**

Ngei I is a plot that was purchased by a housing company with 157 members. The plot was vacant at the time of purchase. It is one of the few companies that managed to settle its member on purchased plot. The 12.6 acres plot was planned to house all the members with each being allocated space to put up a structure. According to the village elder, guidelines were issued on how and what to build. The structures had timber walls with corrugated roofing sheets. The layout on site was made on a grid pattern. Circulation was generally left to occur on spaces between the structure and no defined roads were provided for.

Ownership was never transferred to individuals and this it is claimed has hindered investment to improve the houses. The village has retained its original characteristics as can be seen in Figures 6.25 and 6.26.



**Figure 6. 25: Current aerial view of Ngei I**  
Source: Author



**Figure 6. 26: Ngei I showing detached dwellings in 1971**  
Source: (Etherton 1971)

### 6.3.9 Ngei II

According to aerial photographs of this area, there were no structures on this site in 1959. In 1969 there were 78 structures. According to Etherton (1971) the neighbourhood population grew fast between 1964 and 1966. By 1971, housing area occupied 5 per cent of the land, followed by cultivated area of 43 per cent and open space of 52 per cent. Two housing companies bought this parcels of land and acquired development plans which they



Figure 6. 27: Ngei II, 2005  
Source: Author

submitted to the city council for approval. This was however not forthcoming as the proposed structures with timber walls did not meet the council's housing development standards. At a later date, the companies started constructing permanent structures using concrete blocks. Some of these structures still stand although many have since been demolished to pave way for high-rise blocks.



**Figure 6. 28: Ngei II in 1971.**  
**Source: (Etherton 1971)**

### **6.3.10 Mathare North**

This is a World Bank funded site-and-service scheme. It took into consideration the vertical expansion associated with previous site-and-service schemes in Nairobi. This was arrived at after what was experienced in Dandora which was the first site-and-service project in Nairobi. Its development as will be seen later influenced the development of high-rise blocks in Ngei and parts of Huruma. The development was meant not to exceed four storeys but this has been ignored and higher blocks of up to eight storeys erected illegally. It is for this reason that the settlement is categorised as informal in this study. The housing typologies in the neighbourhood are similar to Ngei which has been selected for detailed study. Figure 6.29 is an aerial photograph of the neighbourhood.



**Figure 6. 29: Mathare North, 2005**

**Source: Author**

### **6.3.11 Kosovo**

Kosovo village is one of the ten villages that comprise Mathare informal settlements. Established in 2003, the area currently has over 3000 households with over 1600 structures some of which are in the Mathare River riparian. The Department of Urban and Regional Planning in collaboration with Pamoja Trust and University of California, Berkeley recently engaged the residents in a community-led upgrading exercise to provide for basic services, infrastructure and mitigate environmental impacts.

Currently, there is a threat of eviction of people settling along river reserves in the name of cleaning Nairobi Rivers. Around 127,000 people are said to be affected. These evictions are as a result of a common notion among local and central governments all over the world that slums are dirty and indeed are greater polluters of urban river systems than other land uses.

A study by Pamoja Trust Kenya (2009) established that pollution of Mathare river in Kosovo has nothing to do with settlement in the riparian reserve but inadequate sanitation and waste infrastructure. Kosovo is neither provided with sewer connection nor a proper waste management programme. Some waste is also imported from as far as Eastleigh, 5 kilometres away from the riparian reserve. Evidently, evictions along the riverside cannot lead to cleaning of this imported filth.



**Figure 6. 30: Kosovo and Gitathuru, 2005**

**Source: Author**

Infrastructure provision is quoted as key, together with a sustainable neighbourhood plan for the settlement. The design part of the project anticipates a sustainable green Kosovo, with requisite networks and partnerships to keep it vibrant. Figure 6.30 shows an aerial view of this neighbourhood which is well planned with access roads provided.

### **6.3.12 Huruma**

The name Huruma applies to quite a number of neighbourhoods in this part of Mathare Valley. It originated from the resettlement in 1975 of former Kaburini informal settlement residents whose homes were burnt down when fire broke up in the settlement. The term is a Kiswahili for word for ‘mercy’ and was coined by the beneficiaries in acknowledgement of mercy extended to them by the City Council. It is located on the Eastern end of Mathare Valley. The City Council housing development along Juja Road is adjacent to the original village bear the same name Hurama. Today, name ‘Huruma’ is associated with six villages which developed after the initial ten villages namely: Kambi Moto, Mahira, Redeemed, Ghetto, Gitathuru and Madoya. The six villages occupy a total land area of 4.1 hectares. Five of the six villages, with their 6,564 people in 2,309 households, are involved in the upgrading initiative spearheaded by Pamoja Trust on an area covering 3.8 hectares. The five villages have a high density of 1,630 people per hectare. Like in the other neighbourhoods of Mathare, a typical dwelling this neighbourhood is the standard 3 by 3 meters single room. Like most informal settlements the basic services in Huruma like water, sewage, road access, and toilets are inadequate and sometimes non-existent.



**Figure 6. 31: Aerial view of Huruma in 2005**

**Source: Author**

The 300 households settled here were each given plots measuring 120 square meters serviced with on-plot piped water supply, a wet core with shower and toilet. The area was thus planned as a site-and-service development similar to the Dandora site-and-service scheme. Roads, surface water drains, sewerage and street lighting were all provided. Allottees were expected to develop six rooms on an incremental basis on their individual plots to accommodate a maximum of six households. However, a large number of the allottees were unable to raise the necessary finance to construct the stipulated type of houses for which NCC provided a standard design at a fee.

Over the years, the National Council of Churches of Kenya (NCCCK), having recognized the potential of self-help groups, organized people in the Huruma settlement into building groups which had the dual function of organizing self-help and of encouraging the members to save for the construction of their houses. The support from NCCCK was limited and beneficiaries, having mobilized additional finance, only managed to construct one or two rooms. Some of the building groups in Huruma formed with the support of NCCCK

however transformed themselves into housing cooperatives. One such group is the Huruma Housing Cooperative Society.

The average monthly income amongst the six villages of Huruma is Ksh 5,000 which while low, is still technically above the poverty line. Income generating activities for women include sale of cooked and raw foodstuffs and production and sale of the infamous illegal brew. Men generally work as casual laborers and in informal business trades as artisans, carpenters, and mechanics. Business people ply their trades or wares from small stalls within the settlement or from a small piece of ground along a pathway or the paved road cutting through the settlement. There is no formal marketplace. There are no government sponsored or NCC schools in all of Huruma's settlement, so primary school children mainly attend informal schools in the nearby Korogocho settlement.

Kambi Moto is the village that has been working with Pamoja Trust and Muungano wa Wanavijiji to upgrade its housing stock, and is located in a 0.4 hectare area zoned as a road reserve to connect a playing field with the Huruma Shopping Center. The village is small, housing 539 households (1,241 individuals), and was comprised of clusters of structures spread throughout the City Council land adjacent to middle-income units in the area. The settlement was razed in 1995, 1997, and 1999, which led residents to dub it "~~K~~ambi Moto," meaning "camps of fire" in Kiswahili.

The overriding goal of the Huruma Upgrading process was one of integrated transformation—both of the community and ultimately its environs, including environmental infrastructure and housing units. The upgrading process at the Huruma settlement included a combination of physical and institutional components, including acquisition of secure land tenure for residents and subsequent provision of adequate housing and basic services for individual households, to be built and financed by those households. Crucial to this physical transformation was development of an institutional framework *within* the community that would allow it to manage, sustain, and deal with issues concerning the settlement.

Led by Pamoja Trust, in conjunction with Muungano wa Wanavijiji, and eventually the Department of Planning in Nairobi City Council, the upgrading process was organized around the principle that only through self-organization and initiative would the residents

of Kambi Moto win secure tenure from the Nairobi City Council, which is key to eventual improvement of the physical elements of their community. Residents would organize, finance, and contribute labor to all phases of site and materials prep, and construction with only minimal assistance from staff of the Pamoja Trust. During the process, the Trust's role would be limited to initial training of community members for participatory planning, then as liaison/facilitator between the community, the NCC, and the Department of Planning, and finally as technical advisor during construction. In addition, the Trust developed the preliminary savings scheme model and worked with designers and finance professionals to create a housing model that could be constructed in phases that coordinated with realistic finance schedules of individual households in the community.

The Huruma upgrading project began in earnest in 1999, when an ongoing conversation between residents of the relatively small informal settlement of Huruma and the non-profit Pamoja Trust resulted in a commitment by both to work together to turn the community's desire to improve its physical environment into effective action with visible results. The first of those visible results—34 units of formal housing, complete with basic kitchen and toilet facilities—were completed five years later in Kambi Moto (the first of Huruma's six individual villages to begin the upgrading process) and marked a huge change in the quality of life of their new residents whose previous housing had been constructed of mud, wattle, and corrugated iron, with no formal cooking or toilet facilities. These units also stood as evidence of the success of the community's self-organization, which was an element Pamoja Trust considered *critical* to the success of the upgrading project as a whole. It was through self-organization that residents were able to work with Nairobi City Council to gain communal title to the land. Working together the community also organized and managed a daily savings scheme, which was the second most critical component to the upgrading project, as it cultivated a culture of savings and repayment that gained residents access to outside capital loans that ultimately financed construction of the new upgraded units. There are now 62 completed units in Kambi Moto.

#### **6.4 Case study area**

In summary, Mathare Valley presents various typologies of housing interventions . Each has had an impact on the area. It also presents varied settings of land ownership which have led to varied characteristics of the built environment. In its formative years the

Valley's creation was a response to the socio-economic settings of the colonial government with its systems of racial segregation. The settlement thrived because of its hidden location away from the view of the colonisers. Even then, the settlements were cleared on the grounds of security threat during the struggle for independence. After independence the Indian landlords on whose land the Africans squatted were replaced by housing companies. This created another setting for low cost housing for the working class. Squatting which continued on state and City Council land presents another setting. Here, densification continued to very high levels as the risks of eviction were less. The housing companies transformed into speculative tenement developers and together with individual developers introduced yet another setting of high-rise tenement blocks. On state and City Council land, site-and-service schemes were developed creating another system of settings. A more recent setting is the rental housing in Mathare 4A. It is therefore evident that Mathare Valley presents an interesting opportunity for evaluation of housing intervention.

As a case study, the challenge presented by Mathare Valley is its sprawling nature. It is for this reason that the researcher decided to select three neighbourhoods that best represents the varied characteristics of the Valley and which are in line with the objectives of this study. Village 4A, Village 4B, and Ngei II were thus selected for case study. The case study starts with Village 4B which is an old and very dense settlement on government land. It has retained its original state save for the high densification. It has received minimal intervention. This is followed by Village 4A which too is on government land but has been upgraded as a community owned rental housing. The last case study is Ngei II which presents a setting for high-rise tenement blocks. Here three categories of land ownership are presented in one neighbourhood i.e., state land, City Council land, and company land. All three have been coordinated into an intricate sit-and-service development. Flouting of building regulations is the hallmark of this informal settlement presenting a totally different system of settings. These three cases are presented in Chapters Seven, Eight, and Nine.

## CHAPTER SEVEN

### MATHARE VILLAGE IVB CASE STUDY

#### 7.1 Introduction

The general introduction to Mathare IVB has been given in section 6.3.5. This chapter presents the analysis of this neighbourhood. The neighbourhood is an informal settlement located on government land that has undergone considerable densification over the years. It is also a neighbourhood that has experienced limited upgrading initiatives. Figure 7.1 shows Village IVB and its adjacent neighbourhoods. Background information to the formation of this and the neighbouring neighbourhoods have already been discussed in Chapter Six. This chapter presents the case study on Village IVB which was selected for study on the basis of its high density, location on government land, tenants/structure owners relationship, and minimal interventions so far. Table 7.1 is a sample of the table used to collate data from the site.

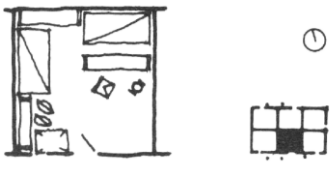


**Figure 7. 1: Mathare IVB and surrounding neighbourhoods**

**Source: Author**

#### 7.2 Residents' characteristics

It is important to establish the characteristics of the population in every case under study. This section presents household characteristics in terms of household heads by sex and age, marital status, family composition and size, duration of stay in the neighbourhood, occupation, and level of education,

Dwelling location, layout & other details	Household size & composition	Nucleus family/Single parents	Number, Age & sex of children	Single/Relatives / friends/others	
	Occupation and age of Adult occupants	Father Age			
		Mother Age			
		Others Age			
		Age			
		Age			
		Age			
	Household head duration of stay			Spouse duration of stay	
	Floor area				
	Ventilation				
	Natural lighting				
Floor finish					
Wall construction					
Roof construction					

**Table 7. 1: Sample of data collection table**  
**Source: Author**

A population sample of 285 households representing 12 per cent of the population was selected on the basis outlined in the Methodology and dwellings to be surveyed identified from the aerial photographs and verified on the ground. Characteristics of households considered here include household structures, level of education, skills, duration of stay in the settlement, and means of livelihoods. As indicated in Table 7.2, male headed

Household Heads by Sex	Frequency	Percent
Male	249	87.4
Female	36	12.6
Total	285	100.0

**Table 7. 2: Household Heads by Sex**  
**Source: Author**

households comprising 83 per cent of the household heads dominate the neighbourhood.

Family composition comprising of husband, wife and children also dominate the settlements (Table 7.3). Only 12 per cent of the households have 1 child while 16 per cent have 4 children each. The largest households have 6 children but these only form 5 percent of the households. This indicates that the number of children in the settlement is high. This is an important factor considering that the dwellings are mostly single roomed and parents have to share the same space with their children. The number of persons in a dwelling which is inclusive of children of all ages ranges from 1 to 11 as indicated in Table 7.3. Household sizes ranging from 3 to 7 persons constitute 66.3 per cent of the households in the neighbourhood. Of these, households with 5 persons form the largest proportion and comprise 18.9 per cent of the households. The setting for sleeping as an activity therefore presents a phenomenon requiring the attention of spatial designers and policy makers.

Single people are a minority at only 6.3 percent. This may not be the reality on the ground and the figure could be much higher as most household heads interviewed reported on behalf of their families and it was noted that the general belief in the area is that those with families stand a better chance of being considered in a housing improvement programme. Nucleus families dominate the households surveyed and constitute 84.2 per cent of the households as indicated in Table 7.3. The balance of 15.8 percent comprise of households with extended families (2.1 per cent), households comprising of relatives (2.1 per cent), households of people who are not related and are staying together to share the dwelling (2.1 per cent), single parents (7.4 per cent) and single males and female (1.1 per cent each). Households consisting of unrelated members are predominantly single males either living alone or sharing.

Crowding in the single roomed dwellings is high as is reflected in Table 7.5. Five persons per dwelling form the largest concentration of persons per dwelling and constitute 18.9 per cent of the dwellings. The highest numbers of persons in a dwelling stood at 11 and these were mainly extended families comprising of parents, children and grandchildren. Only 6.3 per cent of the dwellings are occupied by single persons not sharing with anyone.

Family Composition	Frequency	Percent	Cumulative Percent
Husband/wife	6	2.1	2.1
Husband/wife/1child	36	12.6	14.7
Husband/wife/2children	42	14.7	29.4
Husband/wife/3children	39	13.7	43.1
Husband/wife/4children	48	16.8	59.9
Husband/wife/5children	39	13.7	73.6
Husband/wife/6children	15	5.3	78.9
Husband/wife/over 6children	21	7.4	86.3
Mother/2children	3	1.1	87.4
Mother/3children	3	1.1	88.5
Mother/4children	6	2.1	90.6
Mother/6children	6	2.1	92.7
Grandmother/grandchildren	3	1.1	93.8
Single	18	6.3	100.0
Total	285	100.0	

**Table 7. 3: Family composition**

**Source: Author**

Household relationship	Frequency	Percent	Cumulative Percent
Nucleus Family	240	84.2	84.2
Extended Family	6	2.1	86.3
Relatives	6	2.1	88.4
Single Parent	21	7.4	95.8
No Relation	6	2.1	97.9
Single Male	3	1.1	98.9
Single Female	3	1.1	100.0
Total	285	100.0	

**Table 7. 4: Household Relationships**

**Source: Author**

The age bracket of household heads is relatively youthful with 67.1 per cent falling within 20 to 39 years of age (see Table 7.6). Those above 50 years of age only constitute 11.8 per cent of the household heads. This is an interesting observation considering the fact that the village has been in existence for more than five decades. This is probably an indicator that the elderly population have alternative homes in the rural areas and return to them upon retirement from employment. Education has for long been considered as a gateway to better life. Education level of household heads is generally low. Those with no formal education constitute 27.4 per cent as shown in Figure 7.7. A significant 29.5 per cent failed to indicate their level of education. 40 percent however have attended primary education up to some level. This means that the level of literacy is reasonable. With only

Persons per dwelling	Frequency	Percent	Valid Percent	Cumulative Percent
1	18	6.3	6.3	6.3
2	15	5.3	5.3	11.6
3	33	11.6	11.6	23.2
4	45	15.8	15.8	38.9
5	54	18.9	18.9	57.9
6	42	14.7	14.7	72.6
7	33	11.6	11.6	84.2
8	18	6.3	6.3	90.5
9	21	7.4	7.4	97.9
10	3	1.1	1.1	98.9
11	3	1.1	1.1	100.0
Total	285	100.0	100.0	

**Table 7. 5: Household Size**

**Source: Author**

Age bracket	Frequency	Percent	Cumulative Percent
20-24	24	8.4	8.4
25-29	69	24.3	32.7
30-34	65	22.9	55.6
35-39	33	11.5	67.1
40-44	41	14.3	81.4
45-49	20	7.2	88.6
50-54	12	4.3	92.9
55-59	12	4.3	97.2
60-64	5	1.8	98.6
70-74	4	1.4	100.0
Total	285	100.0	

**Table 7. 6: Age of Heads of Household**

**Source: Author**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid None	78	27.4	38.8	38.8
Primary	114	40.0	56.7	95.5
Secondary	9	3.2	4.5	100.0
Total	201	70.5	100.0	
Missing System	84	29.5		
Total	285	100.0		

**Table 7. 7: Education level – spouse.**

**Source: Author**

3.2 having attained secondary education, it can be assumed that those with better education are able to find better paying jobs and live in better neighbourhoods within the city.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Unemployed	12	4.2	4.2	4.2
Casual labourer	69	24.2	24.2	28.4
Self Employed Mechanic	6	2.1	2.1	30.5
Self Employed Carpenter	27	9.5	9.5	40.0
Self Employed Welder	15	5.3	5.3	45.3
Self Employed Cycle Repairer	3	1.1	1.1	46.3
Self Employed Tailor	9	3.2	3.2	49.5
Vegetable Vendor	9	3.2	3.2	52.6
Roaster Maize Vendor	3	1.1	1.1	53.7
Shop Keeper	9	3.2	3.2	56.8
Butcher	3	1.1	1.1	57.9
Salonist	3	1.1	1.1	58.9
Cook	3	1.1	1.1	60.0
Charcoal Seller	3	1.1	1.1	61.1
Herbalist	3	1.1	1.1	62.1
Preacher	3	1.1	1.1	63.2
Posho meal Operator	3	1.1	1.1	64.2
Mason	33	11.6	11.6	75.8
Electrician	3	1.1	1.1	76.8
Driver	9	3.2	3.2	80.0
Painter	3	1.1	1.1	81.1
Pharmacy Attendant	3	1.1	1.1	82.1
Security Guard	18	6.3	6.3	88.4
Clothes Vendor	6	2.1	2.1	90.5
Construction Equipment Operator	3	1.1	1.1	91.6
Cobbler	6	2.1	2.1	93.7
Traditional Brewing	3	1.1	1.1	94.7
General Hawking	9	3.2	3.2	97.9
Domestic Worker	3	1.1	1.1	98.9
Waiter	3	1.1	1.1	100.0
Total	285	100.0	100.0	

**Table 7. 8: Occupation of Household Head.**

**Source: Author**

Employment forms the major source of income for majority of the household heads. Respondents were asked to indicate the nature of work they do. According to the survey conducted by the researcher, the largest group of household heads constituting 24.2 per cent comprise of casual labourers (Table 7.8). This is a category of the labour force that

has no specific skills. They are employed on daily basis subject to availability of work on a first come first served basis. The number of masons heading households at 11.6 per cent is significantly noticeable when compared to other skills in the construction industry. The rest are engaged in all forms of employed and self-employed activities as can be seen in Table 7.8. This list includes the few workers in formal employment such as drivers, construction equipment operators and pharmacy attendants. There was no proof of formal or informal training demanded during the survey and the accuracy of this figure can be questioned. It is also an indicator that acquiring skill may not necessarily elevate a person beyond slum settlement. Only 4.2 per cent registered as unemployed. Thus, unemployment should not constitute a major reason for rent defaulting which is a common occurrence in the area.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Housewife	138	48.4	59.0	59.0
	Self Employed Tailor	18	6.3	7.7	66.7
	Fish vendor	3	1.1	1.3	67.9
	Vegetable Vendor	21	7.4	9.0	76.9
	Groundnuts vendor	3	1.1	1.3	78.2
	Shop Keeper	9	3.2	3.8	82.1
	Salonist	6	2.1	2.6	84.6
	Posho meal Operator	3	1.1	1.3	85.9
	Sweeper	6	2.1	2.6	88.5
	Clothes Vendor	12	4.2	5.1	93.6
	General Hawking	6	2.1	2.6	96.2
	Domestic Worker	6	2.1	2.6	98.7
	Health Worker	3	1.1	1.3	100.0
	Total	234	82.1	100.0	
Missing	System	51	17.9		
Total		285	100.0		

**Table 7. 9: Occupation of Spouse**

**Source: Author**

Household spouses are similarly engaged in both employed and self-employed activities as indicated in Table 7.9. Majority (48.4 per cent) however stay home as housewives, looking after young children not of school going age. Permanency in a particular neighbourhood is an important factor in the determination of resident participation in community activities and neighbourhood development. Mobility of tenants is high with 34.7 per cent of household heads having lived in the area for not more than 5 years (See Table 7.9).

Another 23.2 per cent had lived in the area for up to 15 years. Thus, 57.9 per cent of the household heads had lived in the area for up to 15 years. Considering that the remaining household heads had lived in the area for more than 20 years, it can be concluded that the residency in the area is relatively stable offering reasonable potential for community participation. Majority of household heads (82.1 per cent) indicated that they have never lived in any other neighbourhood other than Mathare 4B (see Table 7.11). This response is again questionable as some respondents believed that this research aimed at identifying beneficiaries for intended settlement upgrading and as such stating that they have never lived elsewhere is an indication of belonging to the neighbourhood and as such qualifying for house allocation.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5	99	34.7	34.7	34.7
	6-10	66	23.2	23.2	57.9
	11-15	54	18.9	18.9	76.8
	16-20	30	10.5	10.5	87.4
	21-25	21	7.4	7.4	94.7
	over 26	15	5.3	5.3	100.0
	Total	285	100.0	100.0	

**Table 7. 10: Duration of stay in Settlement. Source: Author**

There was no checklist provided of other neighbourhoods in the questionnaire and the respondents were simply asked to indicate other neighbourhoods they have lived in. Out of seven neighbourhoods indicated, only two are not informal settlements. Jericho is a city council rental housing estate whereas Eastleigh is a former Indian neighbourhood that has since independence undergone considerable illegal densification. Varied reasons were given for choosing to stay in Mathare 4B as indicated in Table 7.12. Affordable rent tops the list of reasons given at 66.3 per cent of household heads. This is followed by proximity to employment both self-employment and employment by others. Single room dwelling that dominate the informal settlement is not preferred by majority of the dwellers. 77.9 per cent of the household heads indicated that they were not satisfied with the dwellings and would prefer to live in at least two roomed dwelling (see table 7.13). There is a conflict between what is desired and what the households can afford. Inadequacy of toilet facilities, piped water and well constructed buildings were expressed as leading to dissatisfaction with the dwellings.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	234	82.1	82.1	82.1
	Mathare North	15	5.3	5.3	87.4
	Huruma	18	6.3	6.3	93.7
	Mabatini	6	2.1	2.1	95.8
	Mwiki	3	1.1	1.1	96.8
	Eastliegh	3	1.1	1.1	97.9
	Jericho	3	1.1	1.1	98.9
	Kawangware	3	1.1	1.1	100.0
	Total	285	100.0	100.0	

**Table 7. 11: Residence prior to present**

**Source: Author**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Affordable Rent	189	66.3	71.6	71.6
	Affordable Rent/Proximity to place of work	45	15.8	17.0	88.6
	Affordable/Proximity/Self-employment opportunity	27	9.5	10.2	98.9
	Affordability/Self-employment	3	1.1	1.1	100.0
	Total	264	92.6	100.0	
Missing	System	21	7.4		
	Total	285	100.0		

**Table 7. 12: Reason for Staying in Settlement.**

**Source: Author**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	63	22.1	22.1	22.1
	No	222	77.9	77.9	100.0
	Total	285	100.0	100.0	

**Table 7. 13: Is accommodation satisfactory?**

**Source: Author**

### 7.3 Neighbourhood systems of settings and activities

Neighbourhoods have been defined in Chapter 3 as localities where dwellers live closely and that they are typically generated by social interaction among people living near one another. Conceptually, neighbourhoods as built environment comprise of systems of

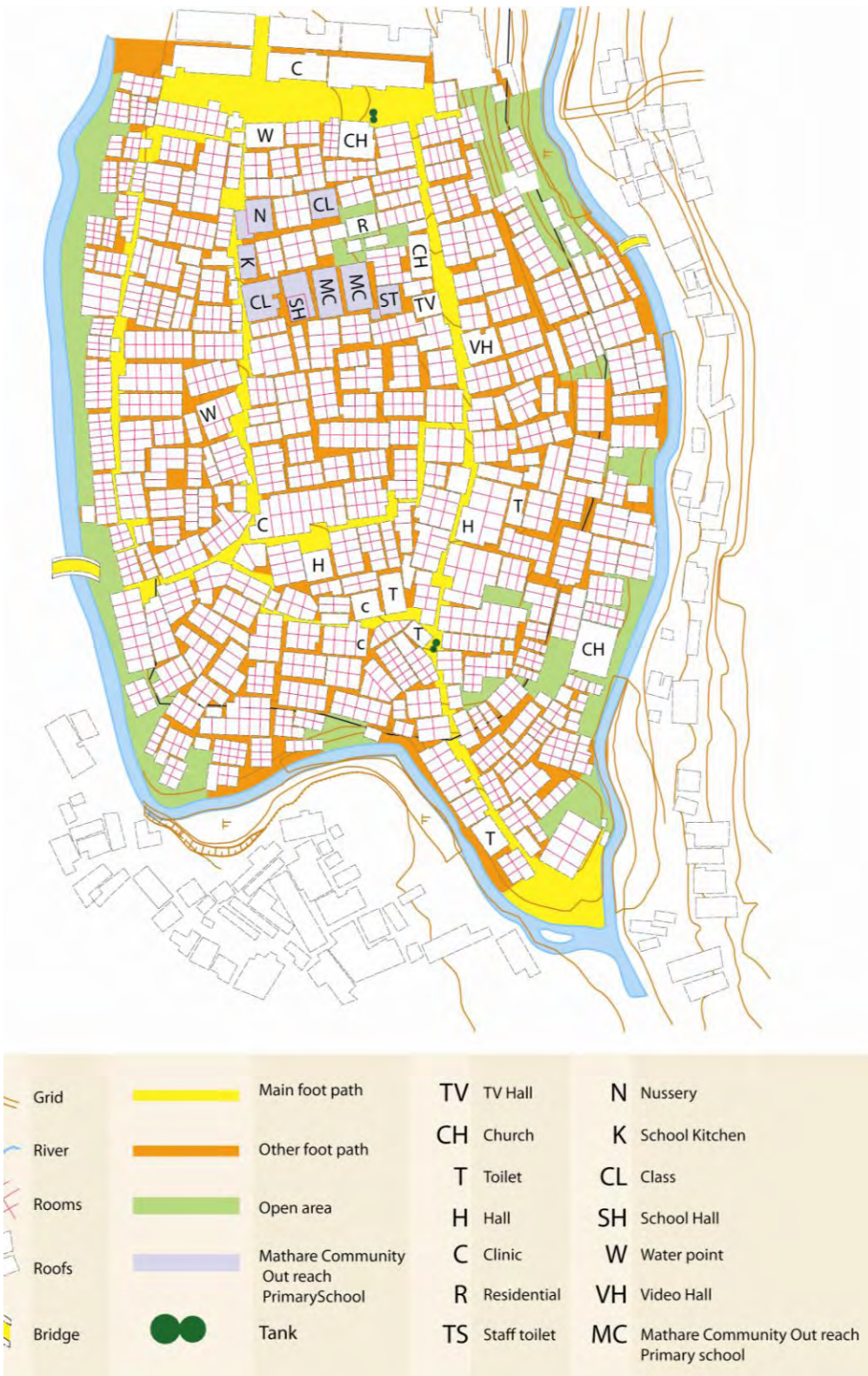
settings and embedded systems of activities. Applied to Mathare IVB, the systems of settings and the embedded systems of activities include the physical settings, clustering of dwellings, networks of roads and footpaths, open spaces, commercial, social, religious and services elements. Also considered as an important built environment determinant according to Rapoport (2001) are lifestyles and rules about what behaviour is appropriate in which setting (Mumford 1954), which influences acceptability and definitions of crowding, privacy, etc. – and thus environmental quality.

### **7.3.1 Physical settings**

It is an environment that has witnessed very minimal improvement intervention. The built environment according to the conceptual framework of this study comprises of interrelated systems of settings of which the physical setting plays a major role. Several factors influence the outcome of the physical setting and this section analyses and documents these factors. The question poised is, what influences the design and use of space and are these interrelated? Data on the physical setting was collected by way of observations, photography and sketches. Data was also collected through focus group interviews. Considered here included positioning and clustering of buildings, circulation spaces, open spaces, vegetation, and infrastructure. Also analysed is the hierarchy of space in terms of public and private spaces. This is followed by analysis of open spaces between the crowded clusters of dwellings in terms of use.

Mathare 4B location has been explained in Chapter Six where its unique surrounding by Mathare and Gitathuru Rivers slowed down its invasion by squatters. During the rainy season when the river swells access to the ‘island’ would be cut off. The introduction of a foot bridge over Mathare River in the 1980s opened up the area by improving pedestrian access. Motor vehicle access is still not provided for and it is only in the recent years that vehicles are able to reach the Western tip of the neighbourhood with the development of Kosovo and Gitathuru neighbourhoods.

Figure 7.2 shows the clustering of single roomed dwellings in the entire neighbourhood. It also shows major footpaths marked in yellow which also serve as commercial streets and smaller footpaths marked brown and open spaces serving as access to the dwellings and open spaces for household activities marked brown on the figure. Facilities such as toilets, schools and churches are also indicated. The dwellings are built with metal sheet walls and



**Figure 7. 2: Map of Village IVB showing configuration of household units, passages, opens spaces, and communal facilities.**  
**Source: Author**

roofs unlike the earlier houses that were built with wattle and earth. This shift in use of materials can be attributed to crowding with no land available from where to source earth

for building and repair of the houses. Corrugated iron sheets are used on walls along with metal sheets from cut drums.

The rusty look that dominates the area as can be seen on Photo 7.1 is attributed to frequent fires and reuse of burnt sheets which are no longer galvanized. A few of the wattle and earth structures still stand.



**Photo 7. 1: Rusty metal sheet walls and corrugated iron sheet roofs reused after salvaging from previous fires in the area.**

**Source: Author**

### **7.3.1.1 Clustering of dwellings**

The clustering of dwellings in this settlement can be understood from a historical perspective tracing its development from the early years through to the current situation as it responded to population growth and economic trends of the city of Nairobi and the country at large. Interview with an elder who has lived in the area for more than 30 years indicates that the area used to be a quarry and was first settled upon when quarrying stopped in the early 1960s. The first people to settle in this area were labourers working in the quarries. They were later joined by other workers and job seekers from elsewhere. As land was available, all the initial dwellings were detached units as can be seen in the 1960 layout in Figure 7.3. They were also owner-occupied. In the struggle for independence, the dwellings were demolished by the colonial government in 1952 when the state of emergency was declared. Settlement resumed in 1964 shortly after independence as



**Figure 7. 3: Spaced out dwellings in the early 1960s**  
**Source: Etherton (1971)**



**Figure 7. 4: Current aerial view of Mathare IVB with detailed study area boxed marked in red and shown in figure 7.4.**  
**Source: Etherton (1971)**

migrants from rural areas flocked into the city in search for employment. Mathare 4B was never purchased by the land buying companies and remained government land up to date.

Allocation of land on temporary basis within the neighbourhood eventually became the responsibility of the local Chief and District officers. This marked the

beginning of densification as every available land was allocated at a fee illegally set by the administrators. Figure 7.4 shows an aerial photograph of the Village with the section analysed in Figure 7.5 marked in red.



**Figure 7. 5: Clustering of houses, open spaces and open drains.**  
**Source: Author**

In the 1970s, a new housing typology began to evolve in the form of row housing. With the initial settlers as landlords, the use of land became intense. This trend was however disrupted by frequent demolitions which saw claim to land by initial settlers disrupted. As the land belonged to the government, structure owners were not able to build permanent buildings due to lack of security. They continued to build rows of housing for the increasing number of tenants. Currently the area is characterised by narrow corridors which act as open spaces, passages and even open drains. Figure 7.5 shows typical clustering of row houses.

### 7.3.1.2 Open spaces between buildings

Open spaces within clusters of building have also undergone transformations over the years in response to population and economic pressures. In its formative years, the area was dominated by detached dwellings with the immediate surroundings forming semi private open spaces where households could have small cultivations. The dwellings were connected to one another by a network of narrow footpaths. As densification increased as already described, only incidental spaces where structures could not be effectively located remained as open spaces. Such spaces have formed interesting nodes as narrow footpaths open up to them. Figure 7.5 show such spaces marked “OS” (Open spaces). These are used as relaxation areas by adults and play areas by children. Open spaces are used for varied activities. A few are used as vegetable gardens (see photo 7.2), others located along busy pedestrian footpaths are dotted with displays of items for sale, whereas a number of such spaces are not utilized positively as they end up being garbage dumps. In one instance, such a space was being used as a body building gymnasium, using improvised weights as shown in Photo 7.3.



**Photo 7. 2: Small maize and vegetable garden in one of the open spaces**  
Source: Author



**Photo 7. 3: A body building open air gymnasium in one of the open spaces**  
**Source: Author**

Storm and foul water open drains too have interfered with the open spaces with some being dominated by drains. The worst open spaces though are the narrow footpaths with dwellings opening onto them. These handle too many activities to the extent of interfering with the wellbeing of the dwellers. It is along such spaces that households carryout their daily chores of clothes and dish washing, drying of clothes, bathing of children, etc. It is also along such passages that the dwellers utilize as outdoor resting spaces. Level of privacy is considerably compromised. As indicated in Table 7.14, 48.4 per cent of the household heads consider the spaces in front of their dwellings too public with only 15.8 per cent being satisfied with privacy level. Some of those who do not mind the compromised privacy level also use the spaces in front of their dwellings for commercial purposes. Majority of household heads (90.5 per cent) indicated that their spatial needs have not been met (Table 7.15).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Too public	138	48.4	48.4	48.4
	Public but Appropriate	102	35.8	35.8	84.2
	Private Enough	45	15.8	15.8	100.0
	Total	285	100.0	100.0	

**Table 7. 14: Privacy levels in front of dwelling**  
**Source: Author**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	27	9.5	9.5	9.5
No	258	90.5	90.5	100.0
Total	285	100.0	100.0	

**Table 7. 15: Are spatial needs met?**

**Source: Author**

### 7.3.1.3 Infrastructure and shelter

As an unplanned settlement, infrastructure in Mathare 4B is generally lacking or inadequate. Pedestrian circulation has evolved with time as the settlement underwent densification. The main thoroughfares which are footpaths are clearly defined and are wider than the rest (see Figure 7.2). Attempts have been made to pave some of these footpaths with cement/sand screed alongside the drainage system. Charitable organizations have been instrumental in the paving of these paths/open drains. The open drains drain both foul and storm waters. In most cases, the open drains dominate the footpaths making walking along them difficult. Photo 7.4, 1 to 4 illustrates the relationship between the footpaths and foul/storm water drainage system. In addition to circulation and drainage, these passages serve a multiplicity of activity systems ranging from washing and drying of clothes to rest places for adults and play areas for children. The open drains are littered with all manners of trash and these are drained into the two rivers that almost surround the settlement adding to its pollution. Plastic packages dominate the trash. Street cleaning which is the preserve of the City Council of Nairobi is periodically done by residents. The stench emanating from the drains grace the air all over this neighbourhood. When the drains are chocked with garbage, the residents pullout the garbage onto the footpaths which when it rains is washed back into the drains.

There are no garbage collection points and the rivers still remain the main location for garbage disposal. The Mathare and Gitathuru Rivers which in the early 1960s and 70s used to be the source of water for domestic use by the residents of this area are now heavily polluted. There are also no vehicular access roads a fact that has led to the loss of properties every time a fires occurs in the neighbourhood as fire fighting engines cannot access much of the area. Similarly garbage collection vehicular too cannot access the area. Building materials for the dispensary and the toilet blocks had to be ferried on wheelbarrows across the narrow footpaths.



**Photo 7. 4: Multiple use of space as open drainage, footpath and clothes drying area**  
**Source: Author**

The narrow footpath between the residential blocks forms the immediate open space and supports numerous systems of activities in addition to pedestrian circulation. These include washing of clothes and dishes, drying of clothes, lighting of charcoal stoves, outdoor relaxation, and children's play area. These footpaths also serve to light and ventilate the dwellings in addition to embodying the storm and foul drainage. Observations indicated that these paths are overloaded with activities and in most instances, present unhealthy environment. Mothers and toddlers spend most of their time in these paths/open spaces. Older children and men tend to spend their time along broader open spaces and the broader footpath.



**Photo 7. 5: One of the community managed toilet block built through Constituency Development Fund**



**Photo 7. 6: The interior of toilet block showing misuse despite management by youth group. A lone bulb lights the interior even during the day**

To address the issue of sanitation, the city council in collaboration with charitable organizations put up three toilet blocks to serve the entire neighbourhood. An example of

such a block is shown on Photo: 7.5. This however has not eliminated the use of pit latrines along the river banks as they are inadequate and the distances to be covered by some of the residents prohibitive for calls of nature. Vandalism, lack of maintenance, and outright misuse is of grave concern to the residents (see Photo 7.6, 1 and 2). To address this, several youth groups have taken over the management of these toilets, charging the resident a minimal fee of Khs. 5.00 per use or an agreed monthly payment per household. Trunk sewer running along the river valley helped in the provision of sewerage system in the area. Ironically, even with proximity to the trunk sewer and piped water supply, the provision of toilet facilities is grossly inadequate.

Misuse of the toilets is prevalent. Children often do not use the pans and the attendants have to wash off stool from the floors quite often. Scarcity of piped water also contributes to the filth in the toilets as stool piles up in the pans. Attendants complained of residents with the habit of not flushing the toilet even when water is available.



**Photo 7. 7: Toilet block to with a water-point adjacent to it, located along the main thoroughfare.**

Water points have been provided alongside the toilet blocks (see Photo 7.7). However, water vendors still operate in the area as some residents are not close to the water points. There is also an element of water rationing and water vendors take advantage of this situation to provide water at a minimal fee.



**Photo 7. 8: Footbridge over Gitathuru river connecting Mathare 4B and Mathare 4A. Pit latrines can be seen in the foreground.**

**Source: Author**



**Photo 7. 9: Footbridge over Mathare River connecting Village 3A and Mathare 4B**

**Source: Author**

The two bridges over the two rivers is a community initiative with the assistance of charitable organizations. Maintenance is lacking and the one over Mathare River had to be reconstructed afresh after it became unusable after years of neglect. Photos 7.8 and 7.9 shows the two pedestrian bridges made of steel structures.

Electricity is available in the area and a high lamp post has been provided to light up the area although it is not located on this particular neighbourhood. Although dwelling superstructures have not seen much improvement over the years, infrastructure has been given more emphasis with Non Governmental Organizations and charitable organizations chipping in both financially and materially in improving aspects of sanitation and drainage.

#### **7.3.1.4 Town planning considerations**

Mathare 4B is an unplanned informal settlement and as such, layout plans do not exist. According to City Council of Nairobi the area is not developed and appears as such on their planning drawings for the city alongside other informal settlements. Few of the permanent structures in the area such as the MCEDO Beijing School and Upendo Self-help Dispensary have not been built with City Council approval but there is no overall plan of the area within which they are located. It is now hoped that the Kenya Slum Upgrading Programme (KENSUP) initiated by the Government in collaboration with UN-Habitat will spearhead the planning and integration of the settlement into the Nairobi city system through upgrading programmes. The approach this integration and upgrading should take are expressed in the recommendations of this study.

#### **7.3.2 Social setting**

Social setting in this context refers to the social and communal activities and facilities undertaken jointly by the neighbourhood groups. These include groups that address issues of evictions and tenancy, landlords and tenants, welfare, water and sanitation. According to the survey, one aspect that bonds this community is eviction threats. The others include rent payment, provision of social amenities and hazards arising from fires and flooding.

Mathare 4B neighbourhood has a peoples representative system headed by a chairman. The chairman is elected by representatives. There are 10 community representatives in the neighbourhood. They are organized under the guidance of the Sub-chief although they are not part of the government administration. Their main objective is to look into the welfare of the community and one of its achievements is to deter forced evictions. The village organization observes ethnic, gender and youth balance. A number of NGOs operate in the

neighbourhood. Some are accredited with the development of waterborne sanitation, open storm water drainage, primary school education, health facility, and water points.

There are two community halls run by the community and located along the main thoroughfare. These are marked “H” on Figure 7.2 (page 208). There are also video halls where residents watch movies at a small fee. These are marked “VH” on the same figure. The oldest of the halls has been in existence since the early 1970s. They are multipurpose halls and cater for a number of activities including meetings, video shows, prayers assemblies, and indoor games among others. Photo 7.10 shows the oldest of the halls with a well set veranda which the youth use to play traditional board game. There are smaller youth organizations which work with NGOs periodically on issues related to environment cleaning.

There are groups formed on ethnic basis which look into the welfare of their ethnic group and assist with financial issues related to funerals and hospitalization. These however are not confined to the neighbourhood only and are linked to residents from other parts of the city on clan basis.



**Photo 7. 10: Community hall located along the main thoroughfare with youth playing a board game along the veranda**  
**Source: Author**

Slum/Shack Dwellers International (SDI) operates in the area and is largely identified with two types of settings:

- Activities offered by community-based organizations serving youth during before and after school periods (evenings, weekends and summers);
- Add-on or insertion programmes in schools and other institutional settings.

Whenever people congregate in settlements, rules and regulation arise whether formal or informal. Apart from regulations governing the community organization, smaller clusters have set their own rules relating to security of their immediate surroundings and cleanliness. There are some clusters with access gates which are locked at night. Residents here indicated that there are several silent rules which members of some clusters observe like playing of loud music, use of drying lines, own affairs.

### **7.3.3 Economic settings**

Economic setting incorporates all the means undertaken by dwellers to meet their economic needs and includes activities undertaken either within the neighbourhood, dwelling or elsewhere in the city. Informal economy is the most prevalent economic sector in the village as is the case with most informal settlements in Nairobi. Majority of the dwellers earn their livelihoods through employment outside the neighbourhood. However, there are a number of informal economic activities that take place within the neighbourhood.

The growth of informal settlements owes its origin to provision of cheap and affordable dwellings. This then is the first economic activity. The direct beneficiaries of the mode of economic activity are the dwelling structure owners who are also referred to as “landlords”. They constitute 10 per cent of the dwellers. Most of the current structure owners have inherited them from their parents. Of these structure owners, only 20 per cent reside in the neighbourhood and in their own structures.

#### **7.3.3.1 Street-based economic activities**

Commercial activities are found all over the neighbourhood. However, there are concentrations of these activities along the main thoroughfares. These include numerous small shops/kiosks, food outlets commonly referred to as ‘hotds’, stands put up at various

times of the day to sell vegetables, cooked foods and used clothes. These thoroughfares marked yellow in Figure 7.2 are of extreme mixed-use in character as they host both commercial and residential units. Within the narrower streets a few vegetable and cooked food stands are found. Service oriented commercial activities are also common. Sections of the footpaths that are wider tend to attract more commercial activities. Photos 7.11 and 7.12 show the varied use of the pedestrian passages for commercial activities.



**Photo 7. 11: Vegetable selling along the main thoroughfare**  
Source: Author



**Photo 7. 12: Selling of kitchen utensils and sandals along the main thoroughfare also lined up with clothe lines, open storm water drain and overhead power lines**  
Source: Author

### **7.3.3.2 Other economic activities**

Property based economic activity refers to the –slum landlords” also referred to as structure owners. It is a lucrative business as the earnings are high in comparison to investment. Maximization of profit has led serious densification of the area as speculators utilize every available space for residential and commercial purposes. As mentioned earlier, what limits the level of investment is the lack of security of tenure as the land belongs to the government.

Limited access to piped water has led to water vending businesses. Water points are manned and residents and water vendors buy from these agents. Traditional medicine men/women are also found here and operate from their houses.

## **7.4 Dwellings systems of settings and activities**

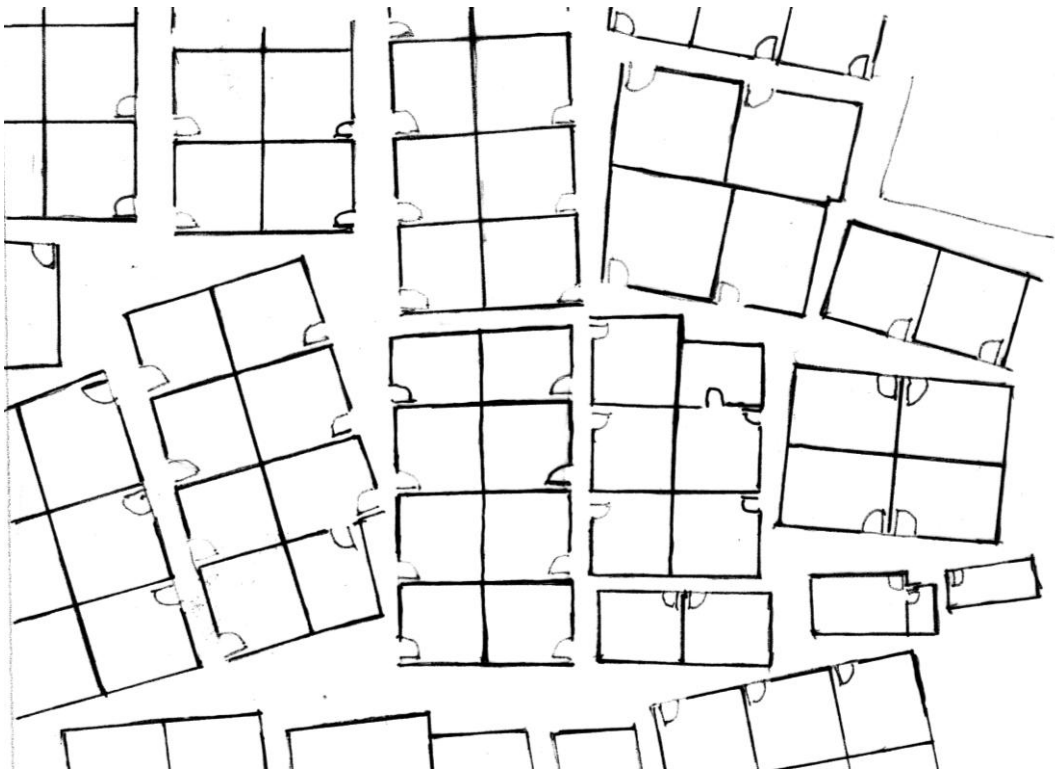
According to the study, there is one common housing typology defining the dwellings’ systems of settings and activities. This is the single roomed dwelling built in rows of blocks, set back to back. Even though the setting of the dwelling units limits the systems of activities that it hosts, it was observed that the systems of activities in each dwelling had the following basic systems of activities: sleeping, cooking, eating, storage and resting. Sanitation is however excluded from the dwelling as this is undertaken communally and at a different location. This section analyses the dwellings configurations and the embodying systems of settings and embedded activities.

### **7.4.1 Dwelling configuration**

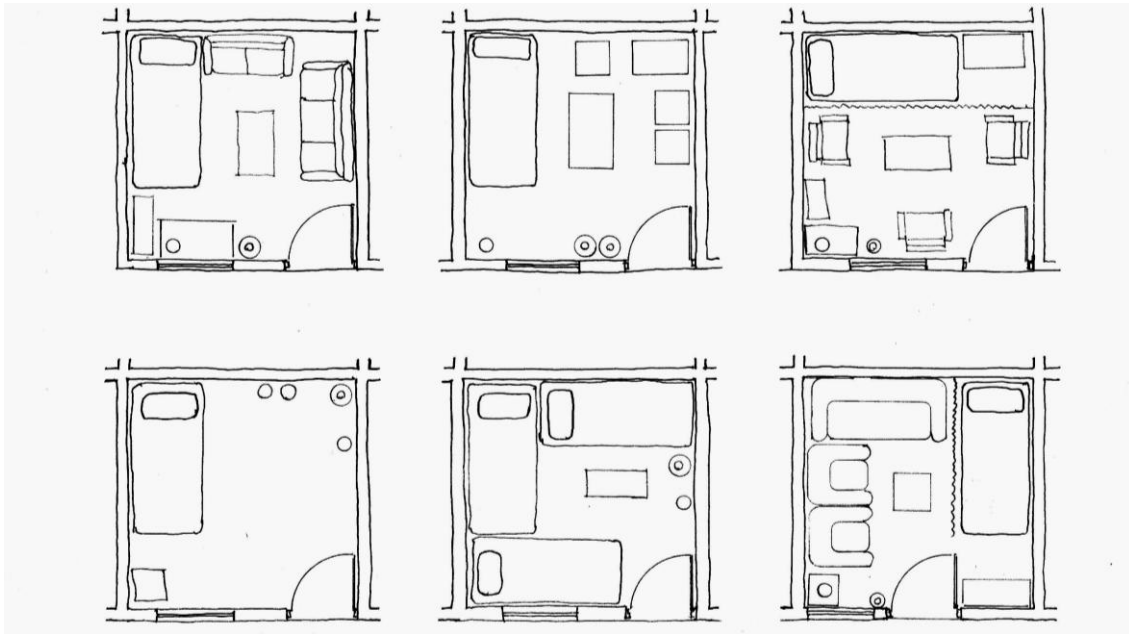
Layout plans shows some ordering of space with the blocks respecting the land contours to a large extent. It is on the superstructures that disorder is evident with the structures built with crude materials that are temporary in nature. Photo 7.13 is a typical example of the dwelling superstructure. Systems of activity settings were sketched in each of the dwellings surveyed samples of which are indicated in Figure 7.7. The standard 3 by 3 meters room configuration and the location of the door give limited possibilities on room arrangement and thus the dwelling settings. Sleeping, cooking and lounging are the dominant systems of activities in these dwellings as can be seen in the figure.



**Photo 7. 13: Dwelling constructed out of recycled corrugated iron sheets**  
Source: Author



**Figure 7. 6: Back-to-back single roomed dwelling units set closely with a varying path widths in-between**  
Source: Author



**Figure 7. 7: Sample sketches of activity settings as observed in the dwellings.**  
**Source: Author**

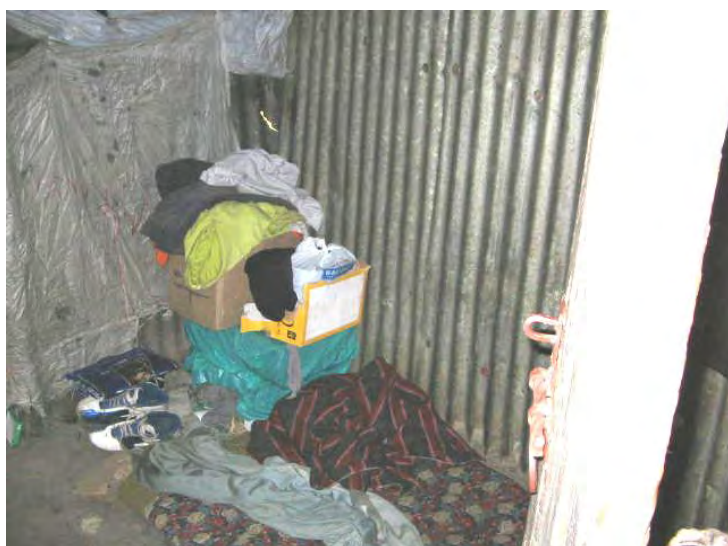
Eating as an activity utilizes the same space as lounging and multiple use of space for a number of activities is a common occurrence. For example the bed is used as a seat when the need arises.

#### **7.4.1 Setting for sleeping activity**

Sleeping as a system of activity dominates the dwelling system and takes prevalence over other activities in the dwellings surveyed in terms of duration. According to data collected through interviews, the number of hours spent in the dwelling sleeping range between 4 and 10 hours. As most of day hours are spent by households at work or in school as is the case with children, it is evident that the major role of the dwelling is to offer a secure place to retire at night. The study therefore gave significant attention to the manner in which households achieve this activity within the setting of the dwelling. Bed space defines sleeping space but there are instances where spaces slotted for other activities such as lounging or cooking are adopted for sleeping purposes at night. Spatially the dwelling constitutes of 9 square meters of floor area. On the average, each household comprises of four members. This gives a unit area of 2.25 square meters per person. According to the Kenyan Building Code (2001), the minimum floor area recommended for a habitable room is 3.72 square meters per person.

64 per cent of the dwellings have one single bed in the dwelling. 22 per cent have two single beds and only 4 per cent have three beds. The use of double-decker beds is much lower than would have been expected and only 6 per cent of the dwellings surveyed had double-decker beds. A further 4 per cent had no beds but mattresses were laid on the floor. It was observed that due to spatial limitations, double beds are not used by spouses. Children sleep on mattresses on the floor which are rolled up during the day to pave way for lounging and other activities including eating.

An interesting aspect is the sleeping arrangement for older teenage children. In some households, such children are accommodated by neighbours with no families and in some instances, the households are forced to rent additional rooms for the children. Fear was expressed that such children are often exposed to sexual abuse when sleeping outside their parents dwellings.



**Photo 7. 14: Sleeping space in a bachelor's dwelling showing mattress on the floor and storage of personal effects in plastic bags and boxes as viewed from the entrance door**

**Source: Author**

Sleeping area for the adults is considered to be the most private space within the dwelling and this is evidenced by the screening off of this space by means of curtains which remain drawn even during the day. The sleeping space is also used for storage of personal effects including clothing, shoes, medicine and documents. Photo 7.14 shows the simplest form of sleeping area with only a mattress on the floor and other personal effects stacked in a corner in this dwelling that belongs to a bachelor. Two individual sharing a dwelling is a

common occurrence and in such instances, the individuals screen off their bed-space using curtains. Two cases were presented of house sharing in which the housemates slept in turns.

#### **7.4.2 Setting for lounging activity**

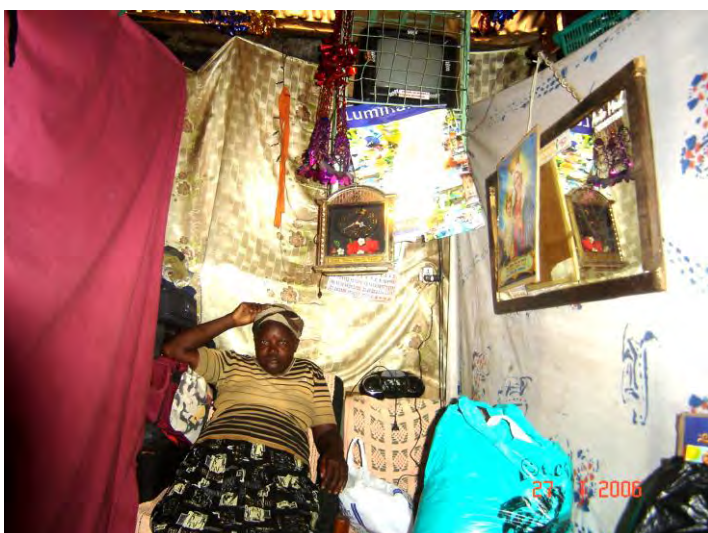
Lounging is perhaps a lavish term to be used in describing the living space in these dwellings but it is used in this study to refer to the space set aside for activities associated with living rooms in more elaborate dwellings. Lounging as an activity entails relaxation, passing time, entertaining guests, and several other activities variably undertaken by households. Lounging as an activity is given prominence in the dwelling even though it takes much lesser hours when compared to sleeping. Furniture provision defines the spatial utility for this activity. Furniture provisions range from use of simple stools to more elaborate sofa sets. In several occasions, the bed is partly used as a seat and thus incorporated into the lounging space.

Lounging in these dwellings takes place mostly in the evenings and over the weekends. 86 per cents of male household heads indicated that they use this space in the evening when they return from work. The confined space is not considered by many to be conducive for spending longer hours. Housewives therefore tend to spend their relaxation time either seating by the door side or along the immediate open spaces such as the common passages between the blocks. Children spend most of their relaxation and playing time outdoors.



**Photo 7. 15: Curtains hanging from the doors to provide privacy**  
**Source: Author**

A factor that contributes to the discomfort of using this space is the poor lighting and ventilation. There are no glazed windows in these dwellings and the wooden shutters are rarely opened. In most instances, lighting is achieved through the door opening. To improve on privacy and allow reasonable light and ventilation into the room, the doors are often left open and curtains provided as shown in Photo 7.15.



**Photo 7. 16: Interior of house on Photo 7.15 showing lounging area with sleeping areas screened of to the left and right.**

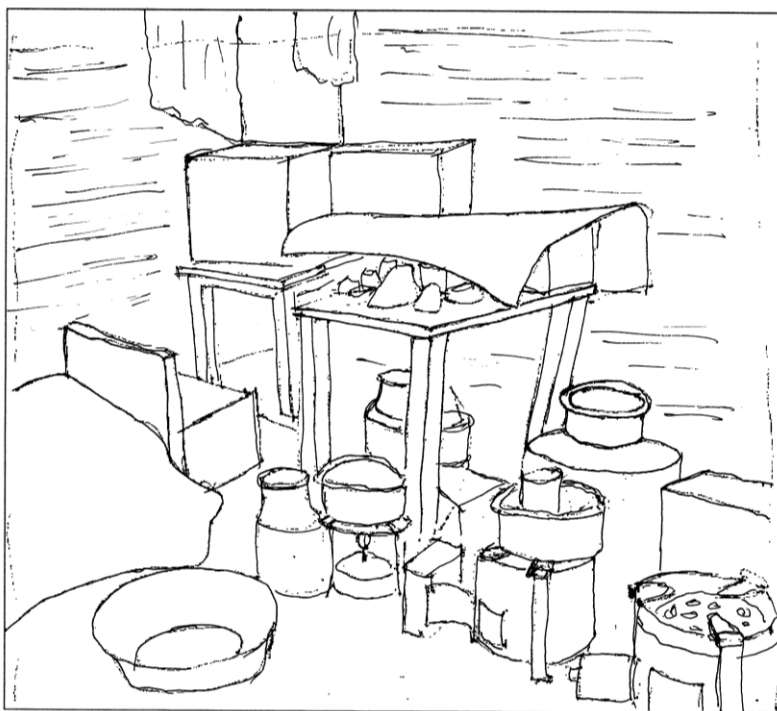
**Source: Author**

#### **7.4.3 Setting for cooking activity**

Cooking is generally confined to a much smaller space as compared to other activities such as sleeping and lounging in the dwellings. Cooking space also treated with lots of flexibility. Some households shift the cooking stove towards spacious area of the room when cooking and stack it away when not in use. Certain foods are even cooked outdoor using charcoal stoves in some households especially when they require prolonged period of cooking as is the case with the mix of maize and beans. Cooking is a process that begins with food preparation before the actual cooking begins. It also entails the storage of some of the foods such as maize or wheat flour and other ingredients such as spices, salt and cooking oil. There is also storage of fuel used for cooking such as paraffin and charcoal. There are no flues over the stove location and fumes from these stoves exit from the window, door, or in some cases, the space between the walls and the roof. There were reports that fumes from attached neighbouring dwellings at times filter into the dwellings.

There are no elaborate fixtures and fittings in the cooking areas such as worktops, cupboards and sinks. Food preparations such as the cutting of vegetables, meat, and mixing of dough is done either on the floor, any available top such as coffee table, stool or even of a tray placed on the laps. Those interviewed indicated that they were aware of kitchen fittings as found in other settings but such were beyond their reach.

Cooked foods are generally left in the cooking pot for the next meal and there are no elaborate storage spaces. Such pots are either left on the cooking stove after it has been put off or on tables used as general storage area for utensils. On four cases exhibited some form of cupboard storage space for foodstuff. Long term preservation of food by refrigerating is none existent as dwellings have no electricity. Kitchen utensils are in most instances clustered on the floor in cooking pots but there are few cases where these are kept in cupboards or on table tops. The utensils are very basic and include aluminium cooking pans, enamelled iron dishes and cups, plastic dishes and cups and in some cases glasses. Figure 7.8 is a sketch showing cooking area with utensils located behind a bed.



**Figure 7. 8: Cooking area showing stoves and utensils**  
**Source: Author**

#### 7.4.4 Setting for eating activity

Eating takes place in the same space as lounging, utilising the same furniture. 86 per cent of those interviewed indicated that the most important meal in their households is dinner. This is followed by lunch which in most cases is taken by housewives and young children mostly not of school going age. Majority of household members on employment leave home early in the morning and do not come back till evening. Breakfast is not given much importance and some dwellers leave for work without taking breakfast. Seating arrangements for meals vary but the most common is seating around a table. 92 per cent of the dwellings surveyed have a table which is also used to place food during meal times. In some households, the bed is also used as a seat during occasions such as eating or when all the available seats have been occupied. Younger children are served meals while seated on the floor. Figure 7.9 shows an arrangement of a dining table with seats which are also used as lounge chairs.



**Figure 7. 9: Eating area which also doubles up as a lounge with sleeping area screened off with a curtain at the back**

**Source: Author**

In the poorest of the households where the only notable item are the mattress on the floor, the cooking stove and utensils, the food is placed on the floor and improvised items such as plastic containers used as seats. This was observed in two dwellings occupied by single men. Observations indicate that the setting for eating and lounging are intertwined and is

also infringed by food preparation as the area set aside for cooking cannot take all the activities associated with cooking as is found in dwellings adhering to minimum standards set by the government.

#### **7.4.5 Setting for sanitation**

Sanitation in this context refers to toilets and baths and is linked to public and individual health. Water plays a major role in sanitation and the lack of water often leads to vulnerable health conditions. The provision of toilet blocks by the City Council, charitable organizations and Community Development Fund (CDF) projects have greatly improved sanitation in the area. There was no indication of congestion during the survey conducted by author. This however could be attributed to the hours of the day when the survey was conducted which was between 10.00 am and 6.00 pm when most people are at work. 48 per cent of the dwellers expressed congestion in the morning hours when people are preparing to go to work.

In the survey conducted by Etherton (Baumgartner 1988 as cited by Rapoport 2001), there were 99 pit latrines at a rate of 47 persons per pit for a population of 4,732. There was no piped water then so water points did not exist. Today the area has waterborne sewerage system on to which 4 toilet blocks are connected. Each block has on the average, 14 compartments giving a total of 54. This is supplemented by approximately 35 pit latrines approximately 8,000 to 9,200 people according to the survey. The toilet blocks are centrally located and serve a big population. Pit latrines are located nearer the river banks thus adding to the pollution of the river.

The main drawback to the efforts being made to improve sanitation is the dwellers' attitude towards the cleanliness and appropriate use of the facilities. The painted wall and cement-screed floor finishes have not helped the cleanliness situation in the sanitation blocks as they are not easily washable and the walls are soiled with faecal stains put there by those not using toilet paper, mostly children. Photos 7.17, shows a recently built Constituency Development Fund (CDF) toilet block.



**Photo 7. 17: Community Youth Group project funded through CDF**  
**Source: Author**

All the toilet blocks are managed by Community Youth Groups who are responsible for their cleanliness. The trench system ensures that all compartments are flushed but the erratic water supply by the city council compromises hygiene levels.



**Photo 7. 18: Young children are bathed by their mothers in front of their dwellings**  
**Source: Author**

Adults and older children bath in make-shift enclosures or in the toilet blocks. These toilet blocks are managed by youth groups who charge fees for use and keep the toilets clean. The level of abuse is relatively high and the walls of compartments are smeared with feces. Some users do not direct the faeces into the trough and all the toilet blocks have

bad stench. However, compared to the pit latrines which have earth floors and are never washed, the toilet blocks are a significant improvement to sanitation in the neighbourhood and are appreciated by all.

Personal hygiene involving activities such as brushing of teeth, washing of face in the morning and washing of feet, take place in front of the dwellings. This contributes to the continued surface water drainage in the space that doubles as the foot path and access to the dwellings. Dish washing as noted above also takes place in this space. Young children are bathed in front of the dwellings as can be seen in Photo 7.18 above

#### **7.4.6 Maintenance of improved slum area**

The biggest drawback to upgrading is maintenance of the upgraded infrastructure. In most cases, organizations undertaking the upgrading do not consider maintenance of the facilities upon upgrading and the residents lack resources to undertake such maintenance repairs. Storm and foul water drainage channels are all clogged with dumped waste and where attempts at cleaning them are made, the garbage is simply placed adjacent to the drain and is washed back when it rains. A major step forward is the youth involvement in the operation of the public toilets. Their presence offers security against vandalism and the money they charge assists in minor repairs and cleaning.

#### **7.5 Vulnerability of households**

There are two kinds of vulnerability observed in the area. The first is perceived vulnerability. In the past, the fear of eviction was a real threat. However, through civil rights movements, tenants have achieved reasonable security against eviction. There is still fear of eviction amongst the residents and this can be categorized as perceived vulnerability. The second is real vulnerability and this is associated with hazards such as fire, flooding and insecurity. Fire hazard tops the list of household vulnerability. The area has been devastated by fires in the past and due to lack of access for the fire engines and combustible materials used for construction very little property is salvaged. Although flooding is a seasonal occurrence and only affects those living close to the river, lack of land forces the dwellers to reside here and rebuild their structures each time they are washed away.

## **7.6 Conclusion**

Location of this neighbourhood on state land and the role played by government administrators namely the Chiefs and the District Officers has created a setting that offers some form of tenure security for the structure owners. This is however treated as temporary occupation. The administrators ensure that no permanent structures are built for residential purposes whereas the structure owners have no confidence to put up permanent structures. This setting ensures that the housing typology is of the lowest rent in the area and also of the poorest quality in terms of materials used in their construction.

The random layout of the structures although appearing chaotic has created interesting incidental spaces offering much needed open spaces. Smaller open spaces are more effectively utilised as compared to larger spaces which in most instances turn into garbage dumps. The attitude of haphazard garbage disposal is a serious environmental concern. Community and NGOs involvement in the improvement of drainage has resulted in cleaner environment. The location of this neighbourhood on government land has encouraged the involvement of charitable organizations in the improvement of the area as opposed to neighbourhoods on private land. The involvement of youth in the management of toilet blocks has brought some sanity in the use of these toilets.

## CHAPTER EIGHT

### MATHARE IVA CASE STUDY

#### 8.1 Introduction

The general introduction to Mathare IVA has been given in section 6.3.4. This chapter presents the analysis of this neighbourhood. The neighbourhood is an upgrading initiative deploying the more recent approaches to slum upgrading namely people centred approach. As it is in its final stages of implementation, it offers interesting challenges to researchers on the performance of these approaches. Figure 8.1 shows the location of this neighbourhood in relation to the surrounding neighbourhoods.



**Figure 8. 1: Mathare 4A and surrounding neighbourhoods**

**Source: Author**

The objectives of the upgrading programme included:

- Speedy infrastructure upgrading for the improvement of the housing environment with self-supportive administration and maintenance of services and facilities.
- Continuous improvement of housing situation in a process of ‘development from inside’ with substantial contribution to housing investment from internally generated financial resources.
- Preservation and strengthening of the multi-functional residential, social, commercial and economic character of the area.

## 8.2 Characteristics of households

The survey conducted by the author forms the bulk of data analyzed in this section. A population sample comprising of 2 percent of the number of households was selected and identified on the aerial photograph of the area. Data from the baseline survey conducted by Gitec consultants is also reviewed to establish trends that have occurred since the study was conducted in 1992. Characteristics of households considered here include household structures, level of education, skills, duration of stay in the settlement, and means of livelihoods.

### 8.2.1 Household structure

Respondents were asked to indicate the structure of their households whether nucleus or single and whether they stay with relatives. The results indicate that the settlement is dominated by male household heads (see Table 8.1). In terms of sex (Table 8.2), 78.7 percent of the households are male as opposed to 21.3 female household heads. 79.1 percent of households are nucleus families comprising of husband, wife and children. A significant 12.9 percent are single parents. The balance of 8 percent comprise of households with extended families (2.5 per cent), households comprising of relatives (2.5.

Household type	Per cent
Nucleus Family	79.1
Single Parent	12.9
Extended Family	2.5
Relatives	2.5
No Relation	3.1
<b>Total</b>	<b>100.0</b>

**Table 8. 1: Household Relationships**

Source: Author:

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	129	78.7	78.7	78.7
Female	35	21.3	21.3	100.0
Total	164	100.0	100.0	

**Table 8. 2: Household Heads by gender**

Source: Author

per cent) and households with no relations (3.1 per cent). Households consisting of unrelated members are predominantly single males either living alone or sharing. The number is significantly smaller than the 10 per cent recorded in the 1992 survey conducted by Gitec Consultants.

### **8.2.2 Occupation**

Employment forms the major source of income for majority of the household heads. Respondents were asked to indicate the nature of work they do. The response indicates that 64.6 per cent of the household heads are skilled workers as shown in Table 8.3. Unskilled workers constituting 39 per cent of the household heads are predominantly casual workers who are employed on daily basis subject to availability of work and on a first come first served basis. The large proportion of skilled workers living in the neighbourhood is an indication that acquiring skill may not necessarily elevate a person beyond slum settlement. Only 4.3 per cent registered as unemployed. Thus, unemployment should not constitute a major reason for rent defaulting.

Compared to the baseline survey conducted in 1992 by Gitec consultants, the composition of household heads has not shown any significant shift to indicate that the improved housing environment has attracted people with better skills and thus better income. 38.3 of the household heads are self employed. Of these, 76.2 are hawkers and vendors. Not included in this group are those offering services such as herbalists who only constitute 1.2 per cent of the labour force. This category comprises of herbalists, butchers, cobblers, and charcoal sellers.

Employment forms the main source of income for the urban poor. In Kenya the formal sector has largely failed to meet the challenges of employment creation and income generation due to slow economic growth and declining levels of investment (Gitec Consultants 1995). The informal sector on the other hand has overshadowed the formal in terms of employment creation (Gitec Consultants 1995). In Mathare 4A, 30 % of household heads reported to work in formal employment with a regular salary. A great majority are employed in the informal settlement either employed by informal entrepreneurs (mainly as craftsmen), as casual workers or self-employed. The distinction between formal and informal employees is not very distinct. Admission of unemployment is unpopular and most household heads will maintain that they have some formal

engagement. Unemployment is therefore higher than the 2.5 % reported. Information on income in the area is hard to compute as most respondents are not comfortable in giving their actual income. Most households earn less than Kshs. 4,000 per month although up to

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Unemployed	7	4.3	4.3	4.3
Casual labourer	42	25.6	25.6	29.9
Self Employed Mechanic	7	4.3	4.3	34.1
Self Employed Carpenter	13	7.9	7.9	42.1
Self Employed Welder	6	3.7	3.7	45.7
Self Employed Cycle Repairer	1	.6	.6	46.3
Self Employed Tailor	7	4.3	4.3	50.6
Vegetable Vendor	5	3.0	3.0	53.7
Food Kiosk Operator	1	.6	.6	54.3
Roaster Maize Vendor	1	.6	.6	54.9
Shop Keeper	8	4.9	4.9	59.8
Butcher	1	.6	.6	60.4
Salonist	1	.6	.6	61.0
Cook	1	.6	.6	61.6
Charcoal Seller	1	.6	.6	62.2
Herbalist	2	1.2	1.2	63.4
Preacher	1	.6	.6	64.0
Posho meal Operator	1	.6	.6	64.6
Music Kiosk Operator	1	.6	.6	65.2
Mason	19	11.6	11.6	76.8
Electrician	4	2.4	2.4	79.3
Driver	4	2.4	2.4	81.7
Painter	1	.6	.6	82.3
Pharmacy Attendant	1	.6	.6	82.9
Security Guard	12	7.3	7.3	90.2
Clothes Vendor	4	2.4	2.4	92.7
Construction Equipment Operator	2	1.2	1.2	93.9
Cobbler	2	1.2	1.2	95.1
Traditional Brewing	1	.6	.6	95.7
General Hawking	4	2.4	2.4	98.2
Domestic Worker	1	.6	.6	98.8
Waiter	1	.6	.6	99.4
Water Vendor	1	.6	.6	100.0
Total	164	100.0	100.0	

**Table 8. 3: Occupation of Household Head**  
**Source: Author**

30 per cent have attained secondary education that would previously afford them better remunerated employment. It is evident from the income levels in Table 8.4 that the levels cannot support mortgage repayment for formal housing.

Income/Month (Kshs)	Number	% of Respondents
Up to 500	16	10.0
501 – 2,000	38	23.3
2,001 – 4,000	27	16.7
4,001 – 9,000	27	16.7
9,001 – 15,000	11	6.7
Unknown	46	26.0
<b>Total</b>	<b>164</b>	<b>100</b>

**Table 8. 4: Household income levels**

**Source: Author**

### 8.2.3 Duration of stay

Survey on duration of stay sought to establish the length of stay in the settlement and the length of stay in the current house. Respondents were asked how long they had stayed in the house, when they first settled in Mathare Valley and where they were staying previously. More than 60 per cent of the respondents claimed that they had lived in Mathare 4A for between 5 and 20 years. 11.5 per cent claimed that they had lived in the area for more than 30 years (Table 8.5). In the baseline survey, it had been observed that the respondents had anticipated the length of stay to eventually become a criterion of the selection of beneficiaries so that the results were likely to be biased towards reporting of long durations.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5	52	31.7	31.7	31.7
	6-10	47	28.7	28.7	60.4
	11-15	26	15.9	15.9	76.2
	16-20	19	11.6	11.6	87.8
	21-25	12	7.3	7.3	95.1
	over 26	8	4.9	4.9	100.0
	Total	164	100.0	100.0	

**Table 8. 5: Duration of stay in Settlement**

**Source: Author**

Duration of stay in the current house indicated that 32 per cent had stayed for a period of between one and five years. 29 per cent indicated that they had stayed in the same house for between 6 and 10 years and above. Only 5 per cent had stayed for periods exceeding 26 years. As would be expected, the duration of stay is longest in the original wattle-and-daub temporary structures. Prior to upgrading according to the respondents, shifting practices in the area occurred more frequently when structures become too worn and not repaired by structure owner or when heavy rains force people to move from flooded areas.

### **8.3 Neighbourhood system of settings and activities**

This section analyses the Mathare 4A neighbourhood in terms of the physical, social and economic settings. These are related to the embedded systems of activities and lead to the understanding of the built environment and how it relates to its users and their behaviour.

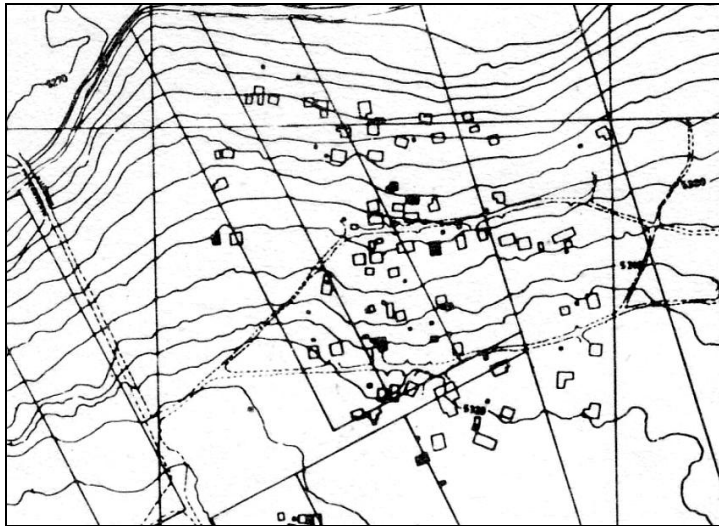
#### **8.3.1 Physical settings**

This section presents the setting of Mathare 4A built environment. It is an environment that is in the transformation process from an informal slum settlement to an upgraded low income neighbourhood as discussed above. The built environment according to the conceptual framework of this study comprises of interrelated systems of settings of which the physical setting plays a major role. Several factors influence the outcome of the physical setting and this section analyses and documents these factors. Data on the physical setting was collected by way of observations on the ground, review of aerial photographs, and interviews with the focus group. Considered here was positioning of buildings or clustering leading to the configuration of the settlement. This is followed by analysis of open spaces within the crowded neighbourhood in terms of their utility, public/private spatial hierarchy and maintenance.

##### **8.3.1.1 Clustering of buildings**

Informal settlements to the north of Mathare River have not been under pressure for invasion as those abutting Juja Road. This can be attributed to accessibility with the river forming a barrier against settlement invasion. According to the village elders interviewed, there were no bridges to access the area and it remained predominantly farmed by squatters. The settlement was then characterised by scattered units occupied by individual households in a pattern akin to rural settlements. The dwellers supplemented their income

with proceeds from growing maize, beans, and vegetables in the neighbourhood. The influx of people into the Valley after independence saw the population rise steadily. According to the village elders, at first the original settlers built additional rooms for rental in their immediate surroundings.



**Figure 8. 2: Village IVA in the 1960s showing scattered houses**  
Source: (Etherton, 1971)

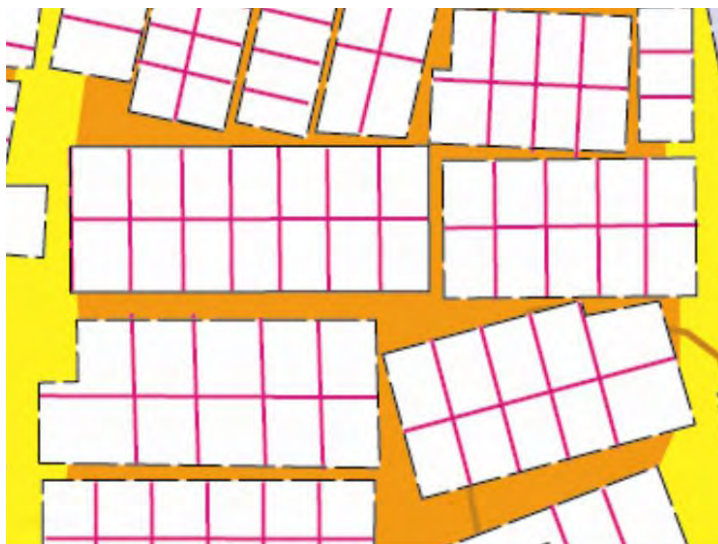


**Figure 8. 3: Clustering of houses before upgrading showing an informal arrangement not based on a rigid grid system**  
Source: Author

The task of allocating places for dwellings was later taken over by government officials notably chiefs who are part of government administration. A pattern emerged thereafter with a systematic allocation of every available land. Figure 8.2 shows in the 1960s whereas Figure 8.3 shows a section of the now dense settlement in 2000. The dwellings comprise of single room units measuring on the average 3 by 3 meters. They are set back-to-back in blocks comprising of between six to sixteen units.

#### 8.3.1.2 Open spaces between buildings

Dwelling units are set very close to one another to optimise on available land. On the average the spaces between the buildings are on the average between 1 and 1.5 Meters apart. This space serves a multiplicity of functions. As observed in the survey, these spaces are environmentally unsatisfactory. They are un-surfaced (i.e. not paved with any form of hard wearing finishes such as concrete or tarmac), endure heavy pedestrian traffic, serve as storm and foul water drains, clothes drying area, children's play area, dishes and clothes washing area among others. With eaves overhung projecting onto this space, natural day lighting and ventilation of rooms is compromised. Figure 8.4 below shows the layout of a group of dwellings within the area. The mesh of passages although appearing to be random offers a sense of hierarchy within some clusters. Some are thoroughfare while others lead to dead ends.



**Figure 8. 4: A section of dwelling configuration showing spaces between buildings with major circulation in yellow and more private circulation in brown**  
Source: Author

The varying orientation of the blocks also creates pockets of large and small spaces used as outdoor spaces. These spaces were picked and marked out in the aerial photograph for analysis. Photos 8.1 and 8.2 illustrates the characteristics of the passages between the buildings in prior to upgrading and after upgrading.



**Photo 8. 1: Space between two adjacent blocks used as passage, play area, lighting and ventilation before upgrading**  
Source: Author



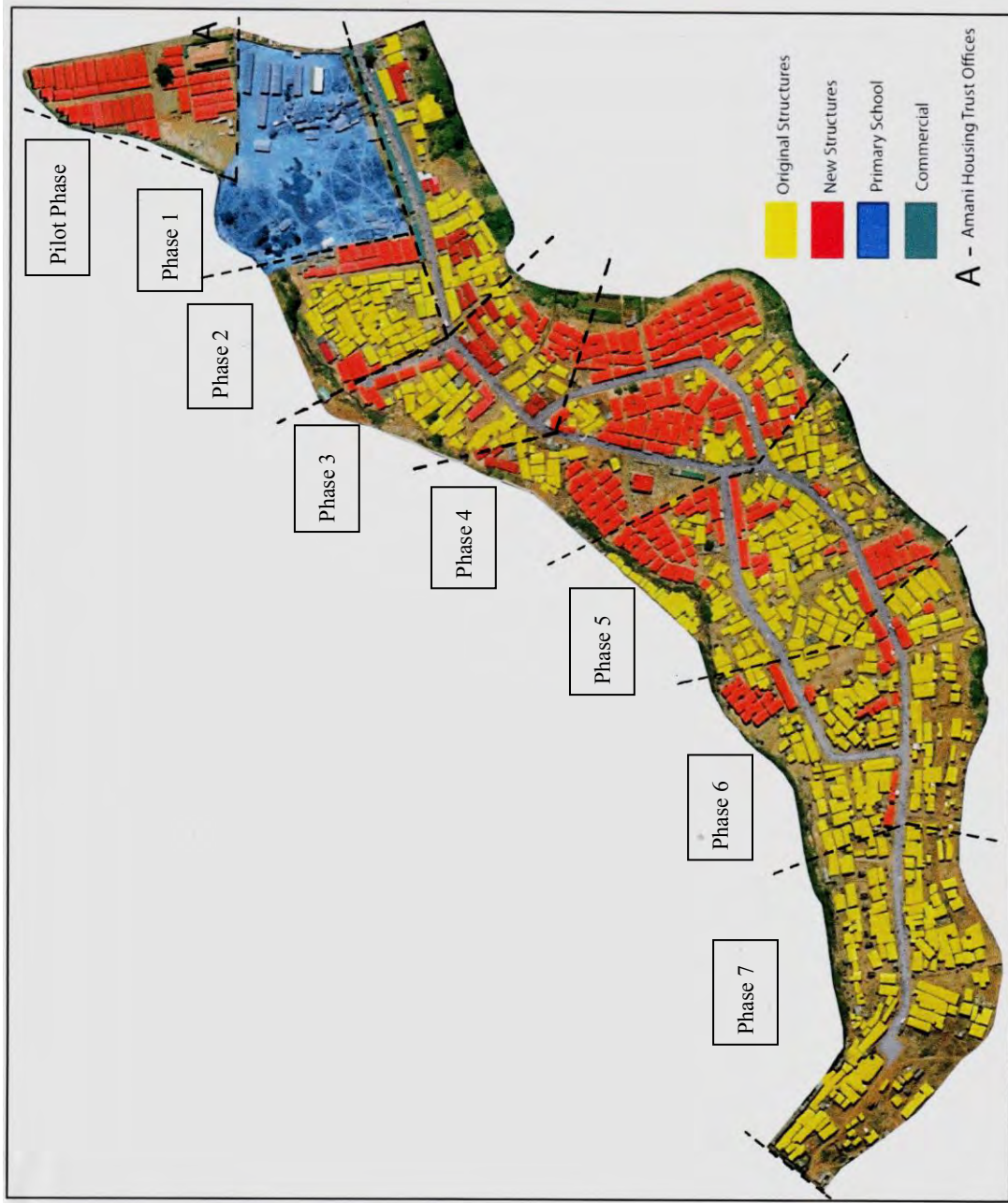
**Photo 8. 2: Multiple use of space between dwellings showing a footpath doubling as clothes drying area and children's play area**

### 8.3.1.3 Implications of upgrading on physical settings

In the socio-economic surveys of Mathare 4A, residents were given a wide variety of infrastructure development options for them to identify needs and priorities. Table 8.6 is a summary of the residents' priority ranking of development measures. Toilet and sewerage was ranked top followed by water reticulation. Housing improvement came in third position. Education facilities fourth, electricity fifth while roads were ranked seventh. However in the implementation of the project, this order was not adhered to and infrastructure including roads, water, and sewerage took top priority on the basis of the objectives of the programme. The lower preference for the housing improvement or replacement was mainly caused by the fear that full housing development would increase

<b>Ranking</b>	<b>Development Measures</b>	<b>Percentage Points</b>
1	Toilets and Sewerage	65
2	Water Reticulation	45
3	Housing Improvement	45
4	Education Facilities	33
5	Electricity	22
6	Health Facilities	17
7	Roads and Footpaths	16
8	Places of Worship	11
9	Public Washing	10
10	Employment	7
11	Public Toilet	7
12	Refuse Collection	7
13	Stormwater Drainage	5
14	Security Lighting	5
15	Family Planning	3
16	Recreation	2

**Table 8. 6: Priority Ranking of Development Measures**  
**Source: GITIEC Consultants 1995**



**Figure 8. 5: Mathare 4a infrastructure and development phases**  
**Source: GITEC Consultants**

rents to unaffordable levels and hence, force tenants out of the area. In addition, it seemed more feasible for the population to bear some more time with the poor housing conditions rather than carry on with the extremely deplorable sanitary station.

A relatively high rating was given to the provision of electricity. This can be attributed to the growing reliance on electronic goods such as radios and television in addition to lighting. (Hurricane lamps commonly used are pollutants and inconvenient to use between sleep). It was probably also envisaged that the provision of electricity would improve security through street lighting. Community facilities such as education, health and places of worship were also highly ranked. Recreation facilities such as sports cinema etc. did not receive much attention.

Initial subsidy for infrastructure was availed by donors in line with Government's policy to cut down in subsidies in all areas of the economy. With the exception of initial subsidies on investment, donor and government made it clear that maintenance and operation for both infrastructure and dwelling houses was to be fully cost covering. It is evident that even when focusing on the assets of the poor, the development of infrastructure cannot rely entirely on their assets of the poor and has to be subsidized by the government. Seven implementation stages were established inclusive the pilot phase. The phases are shown in Figure 8.5. Housing improvement was ranked third by the residents.

#### **8.3.1.4 Infrastructure**

Physical capital is the tangible and most evident of the various forms of intervention. It is also the major determinant of the retention or displacement of the target group in a project as infrastructure improvement often results in increased rents and attraction of the better endowed social groups. To avert this, the programme opted for rental housing, keeping the rents at the existing levels in the slums. The programme had to contend with accommodation of displaced households during the shelter and infrastructure improvement. The approach adopted involved determination of upgrading elements by both the technical point of view and the preferences of the target group. Thus, although the provision of sanitary facilities ranked highest in the list of needs and timing priority, basic road and footpath network was considered first because most of the other infrastructural services use this basic layout for networks.

The provision of infrastructure was given prominence according to the priority ranking (Table 8.6). Sewerage took top priority followed by water supply. This is an indication that the absence of these services was causing constraints to the residents. Roads and footpaths took seventh position. These have been completed and make a significant improvement to the settlement. There was a positive response from all those interviewed. Photos 8.3 and 8.4 show the state of drainage before and after upgrading. Even in the upgraded scheme, the concept of surface drainage in the space or passage between the blocks was retained. This has caused a challenge among the dwellers especially where there is no cooperation among them. In some instances this concept was carried too far as can be seen in Photo 8.5 below where steps have been split to allow for surface drainage questioning the competence of the professional consultants involved.



**Photo 8. 3:Unpaved drainage prior to upgrading**  
Source: Author



**Photo 8. 4: Paved drainage after upgrading**  
Source: Author



**Photo 8. 5: Surface drainage in upgraded section**  
**Source: Author**

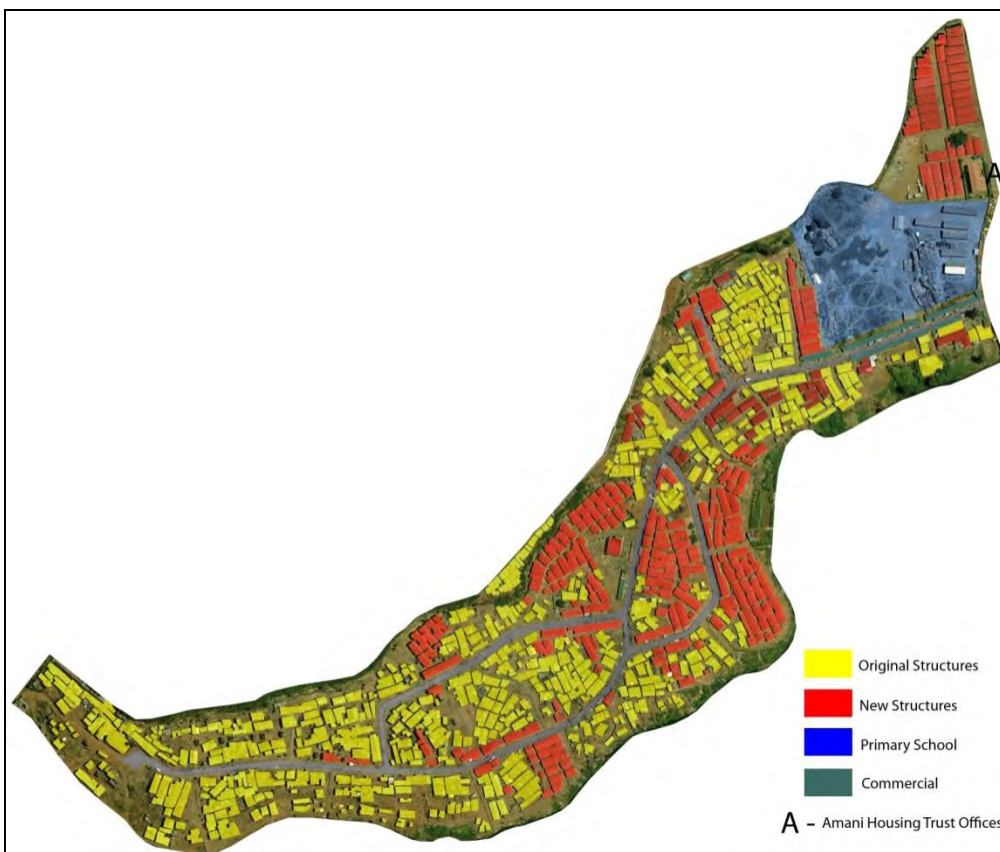
In the early stages of the implementation of the project there were great disparities between the quality of the roads and those of the old structures they were serving as depicted in Photo 8.6.



**Photo 8. 6: High standard road alongside original houses built with improvised materials**  
**Source: Author**

### 8.3.1.5 Town planning considerations

The City Council Standards were applied to the road design. This allowed for a 12 and 9 metres wide roads. An analysis of gravel and bitumen sealed roads was carried out by the project consultants and a conclusion reached to the effect that a full standard bitumen road offered better service to the community. On the other hand, the quality of difference between the existing mud structures in the area and the quality of the full standard bitumen road is striking.



**Figure 8. 6: Layout of Mathare IVa showing progressive upgrading of infrastructure and dwellings**

**Source: Author**

In an attempt to keep the multi-factional characteristics of the area characterised by a mixture of residential, commercial and small-scale informal industrial manufacturing functions, the access system adopted preserved this mixture. The access system addressed the accessibility of heavy commercial vehicles Commercial vehicles ferrying produce and taxis which still do not ply the area. There however exists a conflict between the use of the provided footpaths and the adjacent commercial activities which are extended on to the paths displacing the pedestrians. As shown in Figure 8.6, in addition to improvement of

the dwellings and infrastructure, provision was given for a primary school, dispensary and commercial zone. It was however observed that commercial activities were taking place all over the area and the paved pedestrian walkways had been taken over by hawkers to display their ware as shown in photo 8.7.



**Photo 8. 7: Hawking along paved pedestrian walkway**  
**Source: Author**

#### **8.3.1.6 Maintenance of improved slum area**

Maintenance of improved housing environments in Nairobi has been grossly deficient to the extent that the general infrastructure is in deplorable condition. Maintenance of upgraded facilities normally rests with different entities. These fall under shelter, infrastructure and services. The responsibility of maintaining shelter rests with shelter owner which in this instance is Amani Housing Trust (AHT). The maintenance of the general infrastructure of roads, drainage systems, fall under the City Council Engineer. The operators of all public utility services are responsible for their maintenance. Thus Water and Sewerage Department of the City Council is responsible for water supply and sewerage. The Medical Officer of Health of the City Council is responsible for the solid waste disposal. Kenya Power and Lighting Co. Ltd. (KPLC) is responsible for electricity supply.

Maintenance within Mathare 4A programme has seen a significant improvement in the quality of the environment. Previous structure owners built poor housing structures and never invested their rent income in neither the maintenance nor improvement of the structures. The general infrastructure is however facing difficulties as they are getting too little attention from the City Council. AHT reached an agreement with Nairobi City Council to waive the payment of rates in lieu of providing infrastructure maintenance comprising of roads, footpaths and storm water drainage. The capacity of AHT to carryout maintenance is wanting as the annual operation and maintenance costs exceed the rent income meant to finance these operations. Political interference has resulted in AHT charging rents far below the current markets rates. The average cost covering rent would be Kshs. 457 per month but the trust is charging only Kshs. 297 per month. The choice of stabilized earth blocks and sisal cement roofing sheets has itself resulted in higher maintenance costs. The high level of weathering of the earth blocks has resulted in rendering of the section of exposed walls at added costs.

### **8.3.2 Social settings**

Social setting is an important aspect of the built environment. Of concern here is how the society organizes itself to address issues concerning their built environment and includes physical facilities specifically for social use. This section presents and analyses data on community organization, community facilities, rules and regulations, community groups and facilities, and political implications.

#### **8.3.2.1 Community organization**

In this section, community participation in the upgrading of the informal settlement is analyzed. As stated in Chapter Two on Theoretical and Conceptual Framework, the objective of community participation adopted by this study is ‘the creation of opportunities to enable all members of a community and the larger society to actively contribute to and influence the development process and to share equitably in the fruits of development’ (GOK 2002). This section responds to the third research question which seeks to establish the residents’ perception of their role in the upgrading programme. The section also evaluates the concept of project ownership and management by ‘tenants’ as opposed to ‘owners’.

Forming community is a complex process the intricacies of which researchers have grappled with for decades. Until modern times, community formation in the past was seldom done with conscious intent or plan. Yet, successful communities have discrete characteristics that bind them together for a common course. Literature indicates that while all interacting groups of human beings are capable of becoming a community, only some do. And of those who attempt to intentionally forge community, only some are successful. The hallmark of what characterizes a community have already been discussed in Chapter Two on Theoretical and Conceptual Framework. These characteristics are applied to analyze community participation within the case study area.

It has been argued in Chapter Two that the sense of community only arises where individuals in a group give one's selves to others. The sense of community incorporates a balance between self-interest and shared-interests within and among members of a group. These are crucial factors in community formation. When enough participants in a group develop an attitude of caring for the well-being of the whole, or the common good, the prospect of community is present. Establishing the social cohesion and interaction that existed prior to the commencement of the upgrading programme has been an uphill task. Very little has been documented on this aspect. Discussions with tenants reveal that the binding factor prior to the commencement of the programme was the tenant/landlord relationship. As each block of room tenements ordinarily belong to a landlord, the tenants' common concern and binding factor other than the physical sharing of the block was their relationship with the landlord. This entailed amount of rent payable, rent collection mode, and concerns on general maintenance of the units.

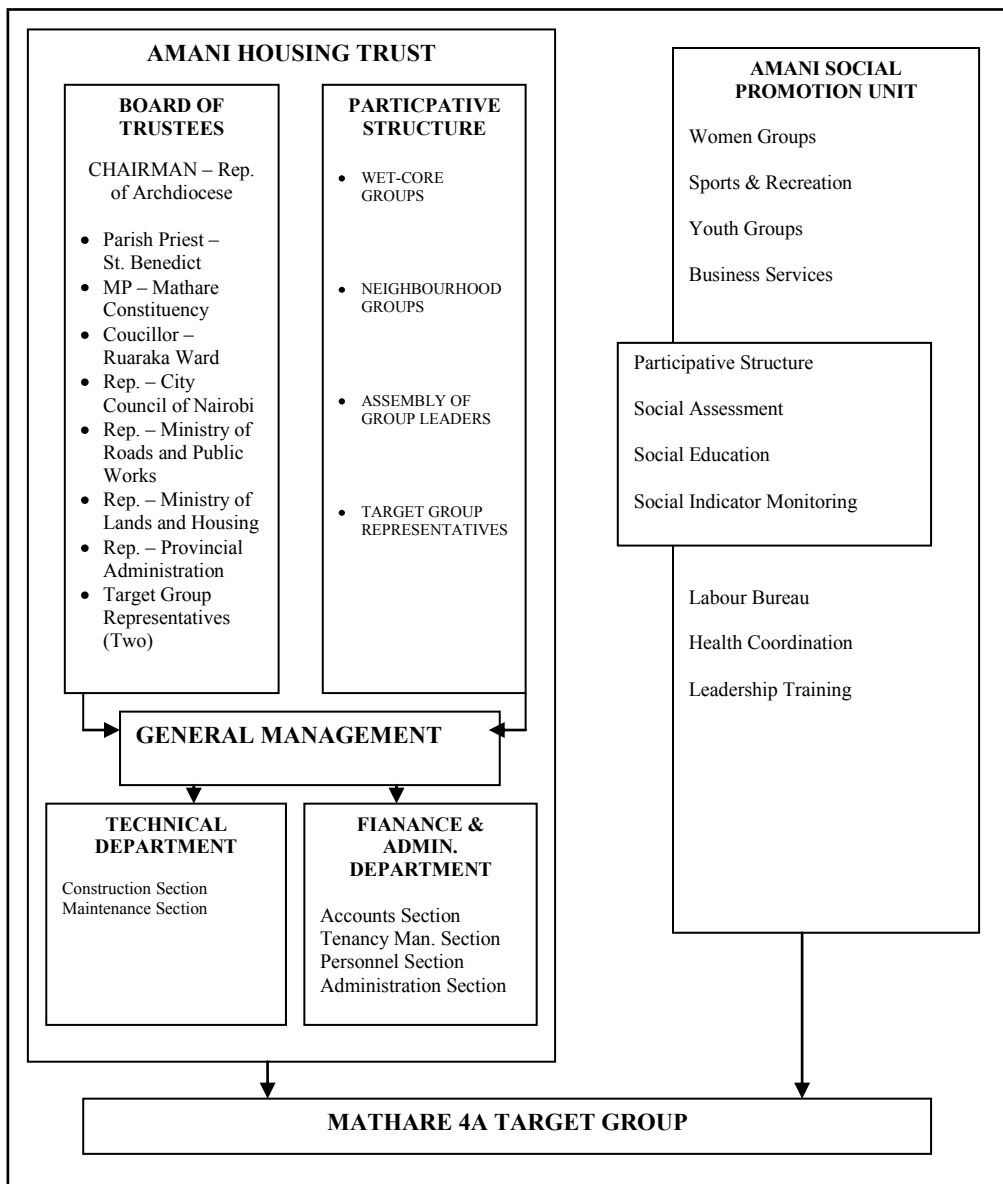
Slums in Nairobi are characterised by groupings into neighbourhoods which are often referred to as villages. Mathare Valley is no exception and the settlement is divided into eight villages. There are no distinct boundaries between the villages to an outsider but these are very distinct to the residents. The origin of these villages is not clear but there is indication that they date back to the origins of the slums and subsequent growth. In some instances, the villages were created by groups of households displaced from other areas of the city by the authorities through the policy of slum demolition of the 1960s. Some are defined on the basis of ethnic groups and developed slowly through shifting, familiarities, rural home linkages etc. Mathare 4A is one such village. It is dominated by the Luo ethnic group who constitute more than 50 per cent of the population.

Whatever drives people to cooperate and collaborate in the first place, is not quite as important in the context of community as what makes them continue to associate. Resilient connections between and among people are what is important in the formation of viable communities. Successful efforts by a mix of participants tend to attract the attention of other less connected individuals who may seek to join the group that is succeeding. The question here is whether this situation exists in the case of Mathare 4A.

The benefits to be reaped from the upgrading of the settlement became the major reason and purpose for grouping of people to bargain for their rights. Tenants targeted by the project and who are the major group in the settlement easily united for a common cause. Structure owners realizing the impending loss of earnings from their investments also formed a group to fight for their rights. This however only addresses one aspect of community building and by itself does not constitute a community.

As indicated earlier, Mathare Valley land was originally leased to an Indian businessman for building stone quarrying. When the quarrying was exhausted, illegal squatters settled on it. Land buying companies were allocated sections of the land settled by squatters. This led to along running tussle between the squatters and the new landowners leading to several violent eviction some of which entailed arsonist attacks. The fight against the new landlords could also have contributed to the bonding of the communities found here.

From the programme development approach, the objective was to achieve a sense of “project ownership” geared towards improvement of their well-being. Thus, the imitators of the programme came up with an offer to the target group of improving their well-being but under terms spelt by them. Certain important decisions had been made by the initiators and consultations with the target group were not going to change that. One such decision was the rental tenure of the programme. The other important decision was the consideration of infrastructure as the primary goal for the programme and housing as a secondary goal dependent on the rent income from tenants. These decisions have had grave repercussions on the success of the programme.



**Figure 8. 7: Organizational structure of Amani Housing Trust**  
**Source: (Gitec Consultants 1995)**

The other issue that bound the residents together originates from the initial approach to upgrading of Mathare 4A. As mentioned in Section 8.1 above, the initial approach was to construct formal housing. However, residents expressed fear of ‘economic eviction’ should this be undertaken due to unaffordable levels of rent as had been experienced in similar developments in Nyayo High Rise – Kibera and Nyayo High Rise – Pumwani. This concern put the residents on a common path and paved the way for the rental housing approach that has been implemented. The initial steps towards fomenting a community relationship commenced with formal registration of residents in the pilot area following

the socio-economic survey undertaken in October 1992. A structure to manage the programme was set as shown in Figure 8.7.

### **8.3.2.2 Community rules and regulations**

Rules and regulations are centred on various organizational structures of the target group. These include the Assembly of Leaders (Muungano). In the case of Wet-core organization, the rules and organization are centred upon the following areas:

1. Organization of the Wet-core group
  - i. The Wet-core members must elect a chairperson.
  - ii. Further suggested roles for the group: Vice-chairperson, Secretary and Treasurer, also to be elected.
  - iii. Election procedures: secret ballot.
  - iv. Elections for positions in group (chairperson, secretary, treasurer) to be conducted bi-annually
  - v. At least one lady should occupy one of the positions in the wet-core group
  - vi. Meetings shall be held at least once a month.
  
2. Responsibilities of Wet-Core group
  - i. Organization of rotational cleaning for toilets and bathroom.
  - ii. Keeping the area around the wet-core clean, by organizing garbage collection.
  - iii. In improved areas: jointly defining garbage collection point in the area.
  - iv. Organizing garbage collection service, with AHT or other service provider (youth group)
  - v. Further suggested responsibilities: assistance of wet-core members in case of emergencies, such as sickness or death of family member.
  
3. General principles for team work
  - i. Showing respect to all members of the wet-core.
  - ii. Being sincere with ourselves and other team-members
  - iii. Respect agreed times, for meetings, presentations and breaks.

- iv. Respect rules for communication: participate with your opinion, listen to other team members, take into consideration their contributions, respect different ideas and order of interventions.

4. Use of toilets

- i. Use only toilet paper as agreed by the we-core group (non-blocking paper)
- ii. Put paper into paper bin or container after use
- iii. Do not drop solids or plastics into the toilet.
- iv. Pay water only to the authorized wet core-core member.
- v. If you smoke do not drop butts on the floor or into the toilet.
- vi. Do not write on the walls.
- vii. Do not spend unnecessary time in toilet. Others are waiting.
- viii. Help keep your toilet clean. Leave it as you expect to find it.
- ix. If you notice any mess. Report to the wet-core chairperson.
- x. Wash your hands after using the toilet.
- xi. Your suggestions for improvement are welcome.

5. Terms of payment

- i. Select a 'water seller' among the member
- ii. Define price of water, e.g. Kshs. 1 per 20 litre jerrican.
- iii. Define times for water purchase, e.g. 6 a.m. and 6 p.m.
- iv. Households to buy water on a daily basis, according to their consumption needs.
- v. Water seller to provide treasurer with money form water sale every evening.
- vi. Treasurer to communicate water sale entry with chairperson every second day.
- vii. AHT water bill to be paid by chairperson, with result form water sale.
- viii. Chairperson to provide every wet-core member-household with receipts form AHT.
- ix. Surplus from water sale to be used for whatever collective need of wet-core group

Analysis indicates that the wet-core group is the most active of all the organizations in the programme.

There are two sets of rules applicable to tenants. The first set of rules is spelt out in the lease agreement. This is a tenant/landlord covenant. Its drawn by the landlord (AHT) and is one sided as it only spells out what the tenant has to fulfil. There is no formal commitment of the Landlord to the tenant other than the provision of shelter. The other set of rules is a loose form of mutual agreement based on the community participation structure. The Wet Core committees form the administrating structure of these sets of rules. Adherence to these sets of rules has been lacklustre and this has been the born of contention within the programme.

### **8.3.2.3 Target Group (Muungano)**

Residents of the project area were constituted into the Target Group as tenants and structure owners with the assurance that they would be the project beneficiaries. The Absentee structure owners were excluded from the long term benefits but were financially compensated. As indicated by the consultants, the clear definition and registration of target group members at an early stage of the development helped to build up confidence with the implementation agency (Etherton 1971).

At the inception of the project, the role of the target group was to spell out their preferences and to articulate their fears and expectations on possible future developments. Although interaction and communication with the target group was very intense during this phase and decisions were made on the basis of this information, a direct participation in the decision-making process did not take place, apart from the function of the two target groups members in the Consultative Board (United Nations 1981:5). Later in the development of the project, the target group was involved in decision-making with powers to accept, modify or reject the general development approach. The target group played a role in co-determination of the following:

1. Compensation of structure owners (assessment and determination of claims by structure owners).
2. Relocation of target group members due to construction requirements.

3. Assessment of cases claiming social hardship due to project measures and proposal of adequate remedy.
4. Allocation of available causal jobs during construction of infrastructure and temporary housing.
5. Acceptance of new tenants and corresponding allocation of rooms
6. Determination of adequate rent levels
7. Enforcement of rent collection and legal eviction of ‘hard-core’ defaulters.

In addition, the target group was mandated to engage in several self-administration tasks including:

1. Up keep and management of Public toilet
2. Organization of security patrols
3. Management of wet-core groups
4. Organization of regular garbage collection.

Several groups were envisaged in the community development initiatives for Mathare 4A (see Table 8.7). Of these, only the wet-core has made significant impact.

According to the survey, 66 percent of Mathare 4A residents did not know of the existence of various committees. Only 29 per cent were incorporated in at least some committee. There were several other informal groupings which are not formally recognized. These include “Merry-go-round” credit advancement schemes, funeral funding, clan groupings etc. Ethnicity is prevalent in the area. As a social grouping, ethnic groupings have the potential of enhancing social networking within a community. However, in Mathare Valley this phenomenon has been used negatively by politicians to incite the residents.

The lack of ownership and disconnect between the community and the AHT has seen the residents revolt against the trust on matters of rent payment and ownership of the project. Residents have insisted on owning the dwellings as they were funded from grant finance for their own benefit and they do not see the point of paying rent to AHT. This is an indication that the residents are not in support of the main objective of funding the project from rent income.

Committee		Perceived importance of the committees by type of residential area							
		Very important		Important		Not important		Does not exist	
		Equipped	Non-Equipped	Equipped	Non-Equipped	Equipped	Non-Equipped	Equipped	Non-Equipped
1	Wet-core Management Groups	32.9	8.7	34.1	18.8	3.1	9.6	30.0	63.0
2	Assembly leaders	5.1	6.7	23.6	20.5	10.4	11.1	61.0	61.7
3	Security	3.0	13.7	9.4	20.4	4.4	3.7	83.2	62.1
4	Health	1.9	12.4	12.9	23.4	3.6	3.4	81.5	60.9
5	Business	1.7	4.1	17.4	24.2	6.1	10.8	84.8	61.0
6	Rent	7.3	5.1	17.5	21.0	5.6	12.3	69.6	61.6
7	Relocation	4.1	3.4	12.3	20.7	8.0	14.5	75.5	61.4
8	Social	1.7	6.7	18.2	21.2	5.8	7.6	74.3	64.6
9	Maintenance	5.1	7.8	14.1	22.7	1.9	5.5	78.9	64.1
10	Conflict resolution	4.1	10.9	8.1	22.7	1.7	6.1	86.0	60.3

**Table 8. 7: Percentage distribution of households by perceived importance of the committees by types of residential area**  
**Source: (Gitec Consultants 1995)**

### 8.3.2.4 Neighbourhood groups

At the inception of the project it was realized that structured neighbourhood organizations did not exist and the project initiated the formation of such groups comprising of forty households. These groups of households in turn elected three leaders each. The rule was that one of the three leaders had to be a woman. There was good response from the community and attendance to meetings enjoyed as much as 60% turnout. This approach was eventually extended to the entire project area.

### 8.3.2.5 Community facilities

Community facilities here refers to facilities and services provided for the benefit of the entire community. This means that these facilities may serve several neighbourhood

according to the definitions of community and neighbourhood adopted in this study. These include educational, religious, recreational, commercial, health and security.

### Education

Education is now recognized as a basic pre-requisite for development. Besides encouraging changes in behaviour which aim at improving the human conditions, it also instils self confidence and self-reliance in the individual and enables informed decision making in such areas as health and nutrition, family planning, water and sanitation, and food production and its management (Unicef 1992). Today, any meaningful development project which aims at improving the quality of life must also address means of improving the levels of education of the targeted population.

A majority of Mathare 4A residents have formal education as indicated in Table 8.8. According to the survey, 57 per cent have primary education whilst 23 per cent have secondary education and above. Only 10.4 per cent of school going age children do not attend school. Of this, 81.8 per cent do not attend school because of lack of school fess. This can be attributed to poverty levels within the settlement. Of the 22 per cent of households who had children in school, 71 percent reported that the fee at all levels is expensive.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid None	18	11.0	11.0	11.0
Primary	105	64.0	64.0	75.0
Secondary	20	12.2	12.2	87.2
Village Polytechnic	18	11.0	11.0	98.2
Polytechnic	3	1.8	1.8	100.0
Total	164	100.0	100.0	

**Table 8. 8: Education level - Household head**

**Source: Author**

28 per cent indicated that fee was affordable and 1.4 per cent acknowledged that it was cheap. Thus affordability remains the biggest challenge to acquiring adequate education followed by availability of physical facilities. Informal schools at pre-primary school level are a common occurrence as a response to lack of formal educational facilities and are run by the communities. These schools are ill equipped and teachers not properly trained. Mathare 4A has six such schools. Photos 8.8 and 8.9 shows one of the two nursery schools

in the area. Grass cannot grow on the open space due to the high pedestrian traffic. Photo 8.10 shows the newly completed area primary school with adequate facilities.



**Photo 8. 8: Nursery school with inscriptions for children and play area in the foreground**  
**Source: Author**



**Photo 8. 9: A classroom in session in the nursery school shown in Figure 8.8**  
**Source: Author**



**Photo 8. 10: Aerial view of the newly completed Mathare Primary School**  
**Source: Google Earth (2010)**

### **Health**

Numerous health risks associated with the poor sanitation, high density and overcrowding have been recorded. Overcrowding mean that disease outbreaks spread quickly. This is exacerbated by poor ventilation and natural lighting. The back-to-back housing configuration and the narrow passages between the blocks compromise ventilation and natural lighting. Prior to upgrading, diarrhoea and respiratory diseases were prevalent. According to the study by APHRC (Gitec Consultants 1995) children between 3.5 and 4.5 were more prone to diarrhoea. Pit latrines used prior to upgrading constituted a health hazard as most were shallow and overflowed whenever it rained. The productivity of human capital is highly dependent upon the individual's state of health. Health here refers to the complete physical, mental and social well-being of an individual, not just the absence of infirmity. Good health depends on effective multi-sectoral interventions and initiations at all levels from the national level right down to the household level. Health issues interact with other development aspects like improvement in water supply and sanitation, level of education and the quality of environment.

Baraka Medical Centre is a health facility run by Amani Housing Trust within Mathare 4A social centre and caters for residents from the area and beyond. 59.5 per cent of the

residents seek medical attention use the facility. 31.4 use the private facilities operated by individuals. Only 6 per cent use government facility located in the adjacent Mathare



**Photo 8. 11: Patients' waiting area inside Baraka Medical Centre**  
Source: Author



**Photo 8. 12: Multipurpose hall above Baraka Medical Centre with folding partitions for multiple use.**  
Source: Author

North. Congestion at the Baraka Medical Centre is an indication of inadequacy of affordable health facilities resulting in an average waiting time of 4hours as compared to 1

hour in the private clinics. Traditional herbalists only cater for 2.4 per cent of the cases. Patients needing enhanced diet are referred to the feeding programme managed by St. Benedict parish and Baraka Medical Centre for both adults and children. The effect of the health facilities on the productivity of human capital has not been assessed in this study but can only be implied. Photo 8.11 shows the reception area of the well staffed and maintained medical centre. Above the centre is a community hall also managed by Amani Housing Trust. It is equipped with folding partitions for ease of multiple use as shown in Photo 8.12.

### **Garbage Collection**

The programme addressed garbage collection by providing collections points at a maximum of 50 Metres walking distance for any household. However, the disposal of the garbage from these points by the City Council has not been effective and none were in use at the time of the survey as their proximity to the residential houses rendered them a health hazard when uncollected. Some of them have been taken over by artisans for light



**Photo 8. 13: Abandoned garbage collection point**

**Source: Author**

manufacturing and charcoal selling. Photo 8.13 shows an abandoned garbage collection point due to its close proximity to dwellings whereas Photo 8.20 shows a collection point converted into a metal workshop. Photo 8.14 shows garbage along the footpath part of which has been removed from the open drain. Observations during the survey by researcher indicate that residents have resorted to using collections point located away

from residences. Council vehicles collect the garbage once a week although several weeks pass by.



**Photo 8. 14: Abandoned garbage collection point converted to metal furniture workshop**

**Source: Author**



**Photo 8. 15 Gabage along drainage channel**

**Source: Author**

### **8.3.2.6 Politics**

Politics has had a major impact on the implementation of the upgrading programme just as much as it did in the informal settlement prior to the programme. Political influence emanates from the political representation line up starting from village elders, through the councillors, government officials and members of parliament. According to discussions with the focus group, this political leadership line up was responsible for the allocation of land for construction of dwellings and other facilities. Politics in Kenya is tribal based and this has caused clashes in the settlement. Kenya has 42 ethnic groups. However, the dominant ones are Kikuyu, Luhya, Luo, Kamba, and Kalenjin. The origin of the respondents was established on the basis of their home district. Several respondents still identify with their home districts despite the fact that they have been born and bred in Nairobi and other towns. 52 per cent of the population belong to the Luo community. This is followed by the Kikuyu at 17 per cent, the Kamba 16 per cent and the Luhya 10 per cent. Prior to upgrading intervention, ethnicity in the settlement was reflected in terms of 'landlords' i.e., the structure owners who were predominantly Kikuyu and the tenants (Gitec Consultants, 1992). Ethnic tension exists in the settlement as expressed by respondents. There is concern over the dominance of the Luo community as expressed by some members of the settlement community. Rural urban linkages are still strong and only 2.8 per cent consider Nairobi their home area. Several of the informal community organizations are based on ethnic backgrounds. Ethnicity does not seem to play a major role in the day to day affairs of the community.

### **Security**

Crime has been a major problem in the settlement. Extorting vigilante groups were formed in the name of providing security for the residents. These groups took on ethnic biases, feuding periodically and worsening the security situation. Residents and business owners have to pay protection fees. In an article by Gakiha Weru appearing in the local daily (Daily Nation, 11/12/2006), a human rights activist Kang'ethe Mungai, who was involved in efforts to reconcile the groups, says:

*—...the situation was complicated when plot owners and landlords enlisted the help of Mungiki. This is how Mungiki gained a foothold in the area. Today, tenants and landlords alike live at the mercy of the gang. Landlords pay protection money to ensure that tenants are allowed to occupy their houses. Tenants, on the other hand, pay for their security. In*

*yet another twist, the Talibans came into the picture. It also happened that the majority of the tenants were from Nyanza while the Mungiki members are mainly from Central Kenya. "When the Mungiki placed the area under their control, there was resentment by the Talibans, who felt that since most residents were from their communities, they should be collecting the protection money. "The Mungiki, on the other hand, argued that the structures were owned by members of their communities, and they had the sole right to operate in the area. The simmering resentment was bound to explode into the violence we are witnessing now, " says a resident" (Daily Nation, 11/12/2006)*

The landlord/tenant tension that existed then is no longer there now that structure owners have been replaced by AHT. However, the Mungiki/Taliban vigilante groups although outlawed, still persists as expressed by tenants and reported in the local newspapers. Level of crime generally is reported as having declined since the settlement was upgraded.

### **8.3.3 Economic settings**

As explained in section 7.3.3 above, economic setting incorporates all the means undertaken by dwellers to meet their economic needs and includes activities undertaken either within the neighbourhood, dwelling or elsewhere in the city. Informal economy is the most prevalent economic sector in the village as is the case with most informal settlements in Nairobi. Majority of the dwellers earn their livelihoods through employment outside the neighbourhood.

#### **8.3.3.1 Financial capital implications**

Financial capital is the money or equivalent that enables people to adopt different livelihood strategies. The main source of financial capital for the urban poor is wage earnings from labour deployment. This can be complemented by incomes from the other forms of assets through transfers such as sale of land, use of land as collateral for financial credit, credit arrangements from social networks, and renting outs, etc, where available. Savings which would be an alternative source of financial capital is however not realizable among the urban poor due to low income levels. In a market economy, financial capital is crucial to the sustenance of livelihood strategies.

Due to the financial vulnerability of the Mathare 4A residents, the development programme considered the financial affordability of development measures for the target group. Thus, the programme is a heavily subsidized undertaking. Residents are expected to

contribute to the programme by reliable payment of affordable rent. No profits are retained by the implementing body – Amani Housing Trust. Rent incomes are used for immediate improvement of existing structures, maintenance of the new infrastructure and administrative costs.

Funding for the project was sourced from four sources namely:

- Indirect government subsidies (99 leasehold land and no cost to programme and with nominal land rent. This translates to Kshs. 100 million indirect subsidy),
- Direct government monetary assistance, this has solely been through grants to the government by the Federal Republic of Germany.
- Grant financing from the donor has been limited to investment expenditures which includes social and technical infrastructure and short term initial deficits in the administrative set-up.
- Own programme resources. The programme's own resources are generated from rental income. The programme institution has to prove that it is capable of fully keeping up with operational costs and invest surplus income in the development of formal housing. For projects directly benefiting vulnerable social groups it is often tolerated that recurrent costs of the project institutional are subsidized over a considerable time period.

Rents charged by AHT are below the market rate and this by itself has created the problem of sub-letting or sale of tenure rights. Cases of rent default are rampant. Only 1,000 households paid rent on time. Rent defaulting according to the management is instigated by local leaders on the pretext that the project was formulated to assist the tenants and hence they should not pay rent. Others feel they are too poor to pay rent while an insignificant proportion is genuinely unable to afford. None of the defaulters have been evicted in recognition of the in-built policy of minimum displacement.

AHT charges rents of Kshs 350 for old structures and Kshs. 400 – 500 for new structures. Affordability indicator on computed rent/income ratio is 25 per cent of income. This means that for households to afford rents of Kshs 400, their income should be not less than Kshs 1,600. 33.3 per cent of the households earn less than Kshs. 2,000 but rent default for one or two months stood at 54 per cent. Resident's main reason for default is lack of jobs. This is possible as half of the household heads were casual workers with unstable wage

earnings. The underlying financial logic of the project is that rental income covers operational and maintenance costs and even allows reinvestment in further construction. This is currently not feasible. The situation has been worsened by the 2003 Ministry of housing and Public Works rent waiver and the fact that rents are too low. The 2004 operational costs stood at Kshs 18.0 million whilst maintenance costs stood at Kshs 10.5 million.

Financial resources are insufficient to realize the necessary repair and maintenance works. Rent increases are extremely unpopular among the target group. As rents in the programme are very low compared to rents of houses of similar standards in other slum areas of Nairobi illegal subletting is common. Compared to the previous structure owners who use to live outside the area and act through agents ready to use violent means of enforcement, AHT presence and visibility is prominent and is blamed for everything. The rental scheme limits the possibilities of resident's own contributions and in the present form, does not provide incentives.

#### **8.3.3.2 Rent income and expenditure**

Attitude towards informality has not spared the rental tenure focus of the project. In a study conducted by Neuber (Gitec Consultants 1995) it was established that as many as 150 tenants were occupying the rooms illegally. It turned out that some tenants legally occupying the rooms were selling their rights to new comers attracted to the area by the improved infrastructure and low rents. Tenants who wanted to leave offered their valid tenant cards to outsiders who paid between Kshs. 10,000 and Kshs. 30,000. This is a significant sum for dwellings of this nature and is an indication that the rents charged by AHT were far much lower than the going market rent. In other instances, the residents themselves bought out these cards from those willing to sell and then rent the room at higher rents of between Kshs. 700 and Kshs 800 per month to outside tenants. This has been a major upset to this programme whose major objective is to retain the targeted beneficiaries within the programme and cause as little displacement of households as is possible. The practice of amassing rooms by buying out residents if unchecked is likely to lead to a new crop of structure owners. Rent levels in Mathare Valley are determined generally by the quality of the house. Mathare 4A falls within single storey, back to back barrack style housing of adobe walls and galvanised iron sheets. The characteristics of

informal slum settlements are prevalent here. Falling within the lowest herb of the housing stock, rents chargeable can only be reflective of this fact.

In 1992, prior to the commencement of the programme, one roomed house was renting at Kshs. 237 per month. In 1995, there was an insignificant rise to Kshs 261. There was reluctance of tenants to pay, or consider increment of their rents. Subletting created another market whereby bonafide tenants were offering their houses to outsiders without notifying AHT and charging them double the going rent. Any rent that is not commensurate with the market rent can be considered to be subsidized. In this respect, Mathare 4A rent subsidized not through direct injection of funds but through loss of income the trust is loosing by not charging market rent.

Immediately after taking over the structures, AHT started collecting rent from the 865 rooms. Of these, 86 were vacant based on the February 1994 register of tenants. In an anticipation of extending their benefit of room allocations, some families spread out into several rooms. Such occupation was considered illegal and this reduced the number of effective tenants by a further 46. This brought the final number of tenants to 733. AHT set up modalities for rent collection which is clearly stipulated in the lease agreement. This falls within the Tenancy Management Section of the trust.

	<b>Rent Prior to disruption</b>	<b>Government recommended rent</b>
Improved housing units	400 – 550	400
Unimproved housing units	330 - 380	200
Special cases	50	50
Special cases	20	20

**Table 8. 9: Rent levels in Mathare IVA**  
**Source: Reconstructed from APHRC (2002)**

The initial rent collection system comprised of voluntary payments by each tenant as was demanded by the participative structure. This was coordinated and agreed upon by the ‘Rent Committee’ comprising of two members of the project management and two

members of the target group elected by the '69 Leaders' from their group. It was expected that tenants would act responsibly and pay rent promptly out of their own volition. Target group members in the Rent Committee had blocked any sanctioning measures and assigned the role of reminding defaulters to the respective neighbourhood leaders. This system did not work and was considerably abused by tenants. This is evident from the low rent payment evidenced in the early months. This system failed as can be seen by the low rent payment figures in Table: 8.9.

According to the management, the initial lenient collection practice was unavoidable to win the long-term support for firmer methods. The lack lustre performance of tenants led to the adoption of firmer rent collection system to cab habitual defaulters with several months of arrears. A more stringent approach was applied involving the possibility of eviction for non-payment. The Tenancy management section was beefed up with a Rent Officer and a Debt Collector. This is the system that is still in place. Leaders and the project staff were assigned to follow up defaulters. The Rent Committee is charged with the responsibility of determining rent levels, control rent collection efficiency, rent enforcement measures and rent utilization monitoring. The change to more aggressive rent collection system saw the rent default levels fall from two months to one and half between April 1994 and June 1995 (2003). This is within acceptable range for this social group.

Government decided to waive rent arrears arising from the violent protest. The waiver covered October 2000 to March January 2003. Political settlement of rent dispute resulted in AHT losing approximately Kshs. 110,000,000 of which 41 was as a result of damages caused by arson vandalism, and claims from contractors. Rent waiver alone caused a loss of Kshs. 69,000,000. Lowering of rent level for residential housing caused more losses for AHT. Gitect Consultants put this loss at Kshs 17,425,00 (Gitec Consultants 1995).

Rent defaulting is a factor that has dominated the Mathare Valley informal settlements and indeed other informal settlements in Nairobi for a long time. Dubbed 'room hopping' tenants have used this approach as a strategy to avoid rent payment. It entails defaulting from rent payment for a period followed by eventual shifting to a new house with a different landlord. Previously this did not affect the overall population of the settlement as the shifting occurred within the settlement. This is no longer the case as the new 'landlord'

AHT controls the entire settlement with well documented room occupancy. As a result, there is a significant shift of tenants away from the settlement.

**8.3.3.3 Rent as revenue base for the management trustee**

The underlying financial problem of Mathare 4A upgrading programme emanates from its rental concept. This problem poses threats to the project’s ability to undertake sustainable operations and to operate in an overall peaceful environment according to SUM Consult (SUM Consult 2004). As conceived from the inception, rental income is used to cover operational and maintenance costs with the balance earmarked for investment in further construction. This has not worked as anticipated. Operational costs and maintenance costs have been high with very little savings left for investment. This is despite the fact that the initial investment capital has been treated as a grant with no cost recovery reflected on the rent applied. In 2004, the operational deficit of the Programme was Kshs. 9.4 million. Expenditure on maintenance rose to Kshs. 10.6 million in that year whereas operational costs rose to 18 million.

<b>Building type</b>	<b>Current rent</b>	<b>Recommended Market rent</b>
Improved housing	400	650
Unimproved housing	200	325

**Table 8. 10: Current rent versus market rent Mathare IVA**

**Source: Author**

With a rent collection efficiency of 85%, the anticipated annual income in 2004 was Kshs. 17,425,000. Annual operation costs was Kshs. 17,025,000. Annual maintenance cost was Kshs. 9,782,000. This resulted in a deficit of Kshs, 9,782,000. AHT has for several years operated with a deficit meaning that it has not been able to achieve the objective of the programme of investing surplus income into the project. This situation arises out of the fact that the rent charged is significantly lower than the market rent as shown in Table 8.10. Rent level appears to be arbitrarily laid to curb political insurgencies.

**8.3.3.4 Natural capital implications**

Natural capital comprises of various forms of resources from intangible goods such as the atmosphere to tangible such as land and trees. In the urban setting however the emphasis is

on land tenure systems. Access to land is crucial for any form of development. Land ownership is the most difficult asset for the urban poor to acquire. Most of the land around Nairobi is under private ownership and inaccessible to the urban poor who have to compete for it in the open market. Thus the poor resort to squatting on public or private land in areas vulnerable to various shocks. Mathare 4A addressed the issue of land tenure, service provision and tenants who have been mostly ignored in most housing improvements. The land in the project area belonged to the Government which allocated it to the Catholic Archdiocese of Nairobi. In essence, the Church holds the land in trust on behalf of the tenants. The question that arises is to what extent do the tenants associate themselves with the land held in trust on their behalf? This also raises the question as to whether there exists sufficient community cohesion and continuity in perpetual community ownership of the project. Tenants however are not an entity and as Malombe (Gitec Consultants 1995) argues, although the ownership rights are with the church, there are possibilities that tenants might be dissatisfied with this arrangement in the future as their participation was very limited. This could lead to rejection of the tenure system. The system adopted according to Malombe (2004) is vulnerable to change of leadership within the church or government.

The Mathare 4A area is not recognized as an official housing area as it does not comply with the conditions set in the City Council By-Laws (1997). It sits mostly on a disused quarry and riparian reserve. However, the Government and the Council have tolerated its use for residential purposes. The other issue of contention was the claim of right to ownership by the structure owners who attempted to evoke the provisions of the Limitation of Actions Act (Chapter 22 of the Laws of Kenya). As the land was owned by the Government, this proviso did not apply. The 1992 socio-economic survey established that 90 per cent of the residents in the area were tenants. Out the 10 per cent structure owners, 70 per cent were absentee structure owners whereas 30 percent were resident structure owners. The structure owners were compensated for their structures.

Prior to regularization of the settlement, the residents were prone to eviction and demolition of dwellings at times without any notice. Where residents persisted on staying on the land despite its allocation to private developers arsons were often used to force out the dwellers before securing the land. The dreaded mode of eviction narrated by residents

is that of removing doors or roofing sheets to force a rent defaulting tenant out of the house.

### 8.3.3.5 Commercial activities

Aspect of commercial activities was addressed by creating a commercial zone along a section of the spine road as shown in Figure 8.6. The provision is however too small to cater for such activities in the neighbourhood and a number of dwellings have been converted to commercial activities. The concentration of these activities within a locality has failed as these are now occurring all over the neighbourhood. Hawking for example is rampant along all the major circulation routes. Pavements have been converted to display area for items on sale and pedestrian have been pushed to walk along the roads. So far there is not much conflict between vehicles and pedestrians as the volume of vehicular traffic is low. Photos 8.16 and 8.17 show some of the activities along the commercial zone.



**Photo 8. 16: Carpentry workshop set in a shop along the commercial zone and extending on to the pedestrian walkway**

**Source: Author**



**Photo 8. 17: A clinic with a laboratory set in one of the shops. Other items are displayed along the pedestrian walkway**

**Source: Author**

#### **8.4 Dwelling systems of settings and activities**

The basic settings of Mthare IV A as in Mathare IVB, is the ‘single room’ dwelling. Prior to upgrading intervention by the Amani Housing Trust, the area shared similarities with Mathare IV B in terms of land ownership, structure ownership, and dwelling configurations. The upgrading programme is in its final stages and the area still presents two types of housing configurations namely – upgraded housing of permanent nature and original housing of temporary nature. The upgrading approach has drawn considerably from the prevailing housing typology with some resentment from the dwellers.

##### **8.4.1 Dwelling configuration**

The overall outcome of the adopted housing typology on the physical setting is the regular gridiron setting devoid of informal and irregular open spaces that existed prior to upgrading. The strict adherence to 3 by 3 Meters room configuration raised concerns amongst some residents as the previous units had slight variations with some rooms being 4 by 4 meters and other having achieved some extensions of smaller rooms attached to the main room. There has been very little improvement on the denseness of the settlement save for area utilized by access roads and footpaths. From the layout of new structures in



**Figure 8. 8: Layout plan of the pilot scheme showing blocks with room size dwellings set back-to-back with passages in-between.**  
**Source: Gitec Consultants**

Figure 8.10, the improved housing environment is more of a reorganization of the informal settlement with re-compaction of the dwellings. Choice of building materials is critical in any housing programme targeting the poor as it determines the cost of the units as well as their standards in terms of quality. The most affordable materials as far as the urban poor are concerned are wattle and daub for walls and corrugated roofing sheets for the roof. Also used for walls are corrugated roofing sheets most of which is reused sheets. Wattle and daub walls are prone to weathering and require frequent repair. Photo 8.18 is a typical wattle and daub wall that existed prior to upgrading. To keep the cost of the units down, stabilized earth blocks were used for the walls and sisal reinforced roofing sheets used on the roofs. Arguably this was an appropriate approach as the building materials were manufactured on site using labour from within the settlement thus improving their income. According to observations by the researcher, these materials have performed dismally. Weathering due to rain water has led to the cement plastering of the lower half of the walls as can be seen in Photo 8.19. The strength of the walls is also questionable as evidenced

by the collapse of the wall is the photo. Sisal cement roofing sheets also performed poorly as residents interviewed indicated that they allow in dust and splashes of rain water.

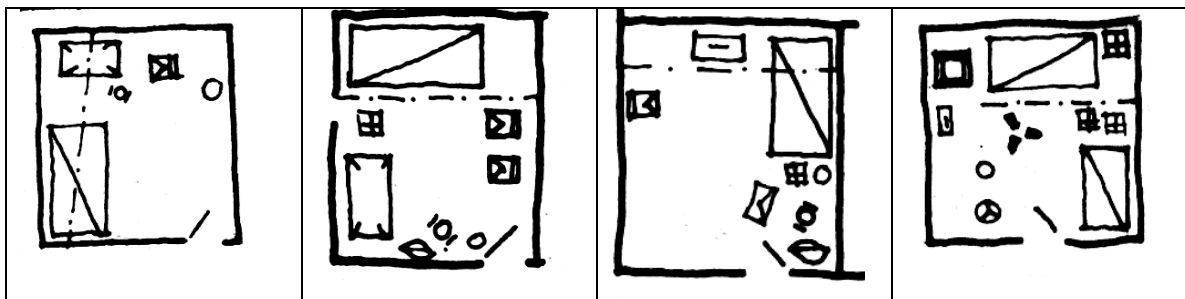


**Photo 8. 18: Wattle and daub structure prior to upgrading.**  
Source: Author

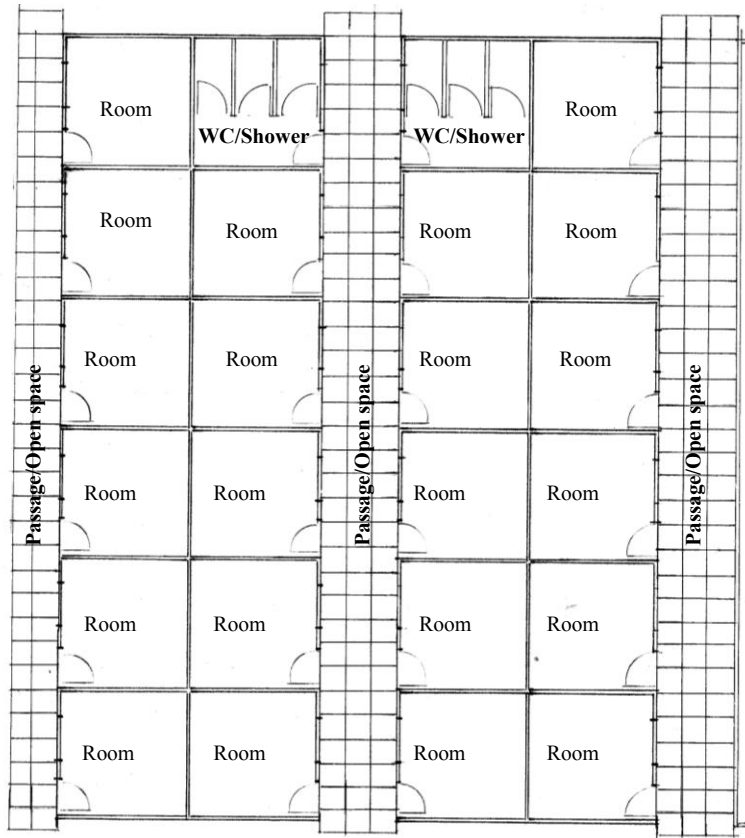


**Photo 8. 19: Failing stabilised earth blocks wall in new structures**  
Source: Author

The housing typology adopted by the programme has raised a lot of concerns amongst the residents. The 3 by 3 Meters interiors of the dwellings offer very minimal flexibility in terms of utility and layout as can be seen in Figure 8.9. The original intention of building formal houses was abandoned citing concerns over affordability and displacement of the target group. Thus, the existing typology of single roomed, row housing dwellings set back-to-back was adopted as shown in Figure 8.10. Room sizes pertaining in the informal settlement were retained whilst head room, finishes, ventilation and natural lighting were improved. Spaces between the blocks were paved and made slightly larger (see Photos 8.20 and 8.21 below). Households displaced by this outlay were relocated to the first phase of the project.



**Figure 8. 9: Samples of interior layout of dwelling units**  
Source: Author



**Figure 8. 10: Back to back rooms layout with multifunctional passages in-between. Cross ventilation is compromised by the layout configuration. Source: Author**

The survey found that the narrow development approach that focused entirely on the provision of improved, formal housing as originally intended did not fully reflect the preferences of the targeted population. The target group's concern centred more on the financial implications of the measures for the current dwellers. The fear for unaffordable rents after implementation of the improvement measures was paramount. This confirmed that the principle of financial affordability that had been declared to be the most important was also a principle concern of the target group. The Survey carried out by the author indicates that 73 per cent of the residents were not satisfied with the size of the houses. On the use of stabilized earth blocks for wall construction and sisal/cement roofing tiles, 74 per cent of the residents were dissatisfied with the materials. It was observed during the survey that the stabilized earth blocks were susceptible to weathering. There were complaints of dust and rain water leakages resulting from the use of the sisal/cement roofing tiles. Shelter improvement however resulted in an improved housing environment for the residents with more and better finished spaces between the rows of houses and wet-core with adequate sanitation.



**Photo 8. 20: Paved space between dwellings after upgrading**  
Source: Author



**Photo 8. 21: Space between buildings used as passage, drainage, clothes washing and drying area, children's play area and recreation**

#### **8.4.2 Settings for sleeping activity**

As explained in Chapters Seven, sleeping as a system of activity dominates the dwelling system and takes prevalence over other activities. Bed space defines sleeping area. There are variations on how the sleeping space is defined in varying households. The simplest form is a mattress on the floor. In others there is the provision of a bed. All the dwellings with beds have single beds only. No double beds were recorded and this can be attributed to the confined size of the rooms. The bed is used by the household couples. In most households, children sleep on mattresses laid on the floor in the space used as lounging facility during the day. Some children sleep on seats.

According to observation by the researcher, the most common and dominant piece of furniture is the bed. Where the bed is absent, the mattress takes its place. The bed space is in most instances screened off with curtain from the space hived off as living room. The bed space is the most private and is also used as storage space for clothes in suitcases or boxes in addition to other valuables. According to respondents, the mattress is for majority of the residents the most important possession and is often the one salvaged first in the

cases of common fires in the slum. Figure 8.11 shows the bed space in relation to other furniture in the room.



**Figure 8. 11: Interior space showing bed, lounging and eating areas**

#### **8.4.3 Setting for lounging activity**

As in the single roomed dwellings in Mathare IVB, lounging as an activity is given prominence in the dwelling. Furniture provision defines the spatial utility for this activity. These range from use of simple stools to more elaborate sofa sets. Photos 8.22 and 8.23 show samples of lounging settings in the dwellings in single room dwellings. Households beautify the interiors of their dwellings in both the old temporary structures and the new structures as can be seen in the photos. Materials used for beautifying the walls include sheets of paper, carton box sheets, linoleum sheets and draping. Lounging in these dwellings takes place mostly in the evenings and over the weekends. Most housewives prefer to sit by their door steps chatting to immediate neighbours who are just a step apart and watching over their children play during the day.



**Photo 8. 22: The interior of unimproved original house with wattle and daub walls lined up in curtain material**



**Photo 8. 23: Polyvinyl material used as wall lining on stabilized earth walls in improved housing**

#### **8.4.4 Setting for cooking activity**

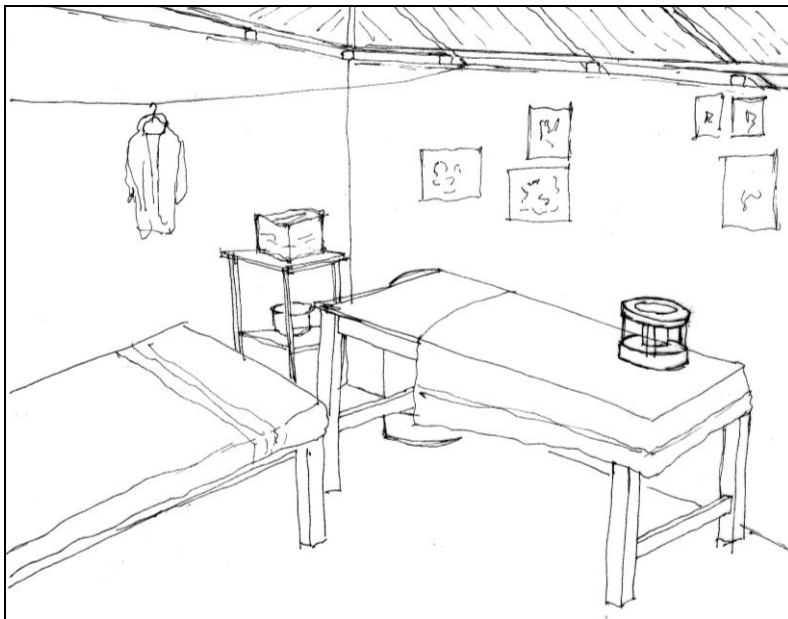
Cooking takes place indoors using paraffin stoves but on a few occasion, some household cook foods requiring long period of cooking outdoor using charcoal stoves. The one meter space left behind the bed doubles up as storage and cooking space. Some households cook on the floor whereas others have the stove on top of a cupboard or table. Photo 8.24 shows a cooking corner with cupboards for utensils in an improved dwelling. There are no flues provided in the dwellings and the rooms et chocked with paraffin fumes when the stoves are on as cross ventilation has not been provided.



**Photo 8. 24: Space behind bed space area used as kitchen.**

Cooking space also treated with lots of flexibility. Some households shift the cooking stove towards spacious area of the room when cooking and stack it away when not in use. Certain foods are even cooked outdoor using charcoal stoves in some households especially when they require prolonged period of cooking as is the case with the mix of maize and beans. Food preparation takes place in the lounging area or outdoor depending on the nature of the food. There were reports that fumes from attached neighbouring

dwellings at times filter into the dwellings. Kitchen utensils are in most instances clustered on the floor in cooking pots but there are few cases where these are kept in cupboards or on table tops. The utensils are very basic and include aluminium cooking pans, enamelled iron dishes and cups, plastic dishes and cups and in some cases glasses. Figure 8.12 shows cooking arrangement in a dwelling.



**Figure 8. 12: Cooking area in a dwelling**  
**Source: Author**

#### **8.4.5 Setting for eating activity**

As is the case in Mathare 4B, eating takes place in the same space as lounging, utilising the same furniture where provided. Younger children are seated on the floor while eating. There are no elaborate settings for meals and where furniture is limited, some members of the household seat on the bed while eating.

#### **8.4.6 Setting for sanitation**

Sanitation which includes the provision water closets and shower cubicles was ranked at the top. Provision of one WC and one shower cubicle for every 10 to 15 rooms or households was considered inadequate by the residents. In the survey by the researcher, 38 percent of the respondents expressed dissatisfaction with the number of toilets provided in the new project with some expressing that the number should have been doubled. Photos 8.25 and 8.26 show the conditions of the water closets and shower cubicles provided. This is a marked improvement when compared to the previous situation where

one city council toilet block was serving up to 5,000 people. In addition to these, clothes washing areas were also provided as shown in photo 8.28. These were however disused by the time of survey by researcher and clothes washing continued to be done in front of the dwellings and clothes hanged across the footpaths.



**Photo 8. 25: Waterborne sanitation**  
**Source: Author**



**Photo 8. 26: Shower cubicle**  
**Source: Author**



**Photo 8. 27: Unused clothes washing areas**  
**Source: Author**

## **8.5 Vulnerability of households**

Conditions at the settlements lead to vulnerabilities that are common among informal settlements. These include poverty, tenure insecurity and evictions, health hazards,

insecurity and natural disasters. In addition, the dwellers are exposed to stresses that arise out of political instigation,

Houses built by the river bank were always prone to flooding. These have since been demolished on the Mathare 4A side. Fires either by accident or arson was a common occurrence. The situation was made worse by the lack of access roads to allow in fire fighting engines. The cut off drain introduced at the foot of the cliff has resolved the problem of flooding that ran off from this edge. However, the river bank is still a disaster area especially during of heavy rains that cause flooding. The improved houses have also not experienced any major fire outbreak although they look congested.

Kenya being a capitalist state, the ravages of capitalism are quite evident. The underclass associated with capitalism constitutes the urban poor which is the main theme in this study. How else can one explain the existence of high density in Mathare 4A next to several large sports grounds belonging to international banks? The enabling environment approach, structural adjustment, and sustainable development have not adequately addressed the plight of the urban poor. As a result, slums and informal settlements continue to grow. Politicians charged with the responsibility of ensuring democratic institutions are ensued are themselves the major culprits as they and their survival antics pit one community against the other. This situation is well summed up by a local newspaper Daily Nation as:

*Gaps in regular policing and inept politics of the land have pushed Mathare dwellers to deeper pits than they were 100 years ago. For that, politicians should hang their heads in shame and forever hold their peace. What has turned this valley of poverty into a valley of death is the emptiness of our politics. Reclaiming the stone quarry will not be possible until politicians reclaim themselves. (Daily Nation, Monday, November 13, 2006)*

Policy constraints in the context of vulnerability can be viewed from the point of view of building standards and development controls. Even without the issue of land ownership which constrains dwellers from erecting permanent structures on land they do not own, building regulations restrain them from erecting structures not authorized. Urbanization trends have brought about rural migration into the city bringing with it a number of challenges.

## 8.6 Conclusion

The objectives of the Mathare 4A housing programme of providing improved and affordable housing has generally been achieved. However, indications are that a wholly rental housing scheme for the urban poor can be exclusionary as much as it attempts to provide affordable housing. The assumption that the urban poor are a homogenous group is wrong as is evidenced in differing demands for ownership by the target group. There are those who strongly feel that communal ownership of shelter should lead to rent free housing. This makes the approach adopted by the Mathare 4A programme of improvement based on rental income unsustainable.

Each household aspires to own a house and rental housing is only preferred as a consequence of households' economic limitations. However, considering the constraints faced by the urban poor and the inability of the Government to meet housing demands, the finding of this study indicates that social capital is a powerful resource in community empowerment. At the wet-core level, participation is effective. There however seem to be a disconnect between the Target Group representatives and the represented. At the same time, AHT has not been wholly accepted as belonging to the community resulting in antagonism between the two bodies. Politicians on the other hand have capitalised on social capital to advance their political agenda which has seen AHT lose millions of shillings in rent boycotts, vandalism, and stoppage of construction work.

The other crucial livelihood asset is human capital as it impacts on all the other assets. Whereas the levels of education in Mathare 4A are reasonable enough for the community to make informed judgement (Over 50 per cent have attained primary education) there is need for capacity building in the areas of community participation and rights.

## CHAPTER NINE

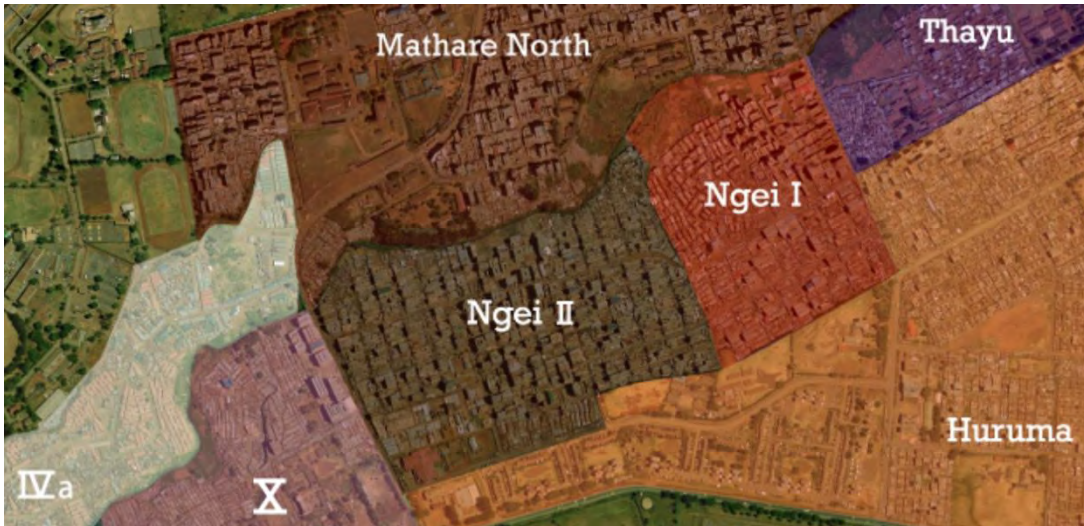
### NGEI II CASE STUDY

#### 9.1 Introduction

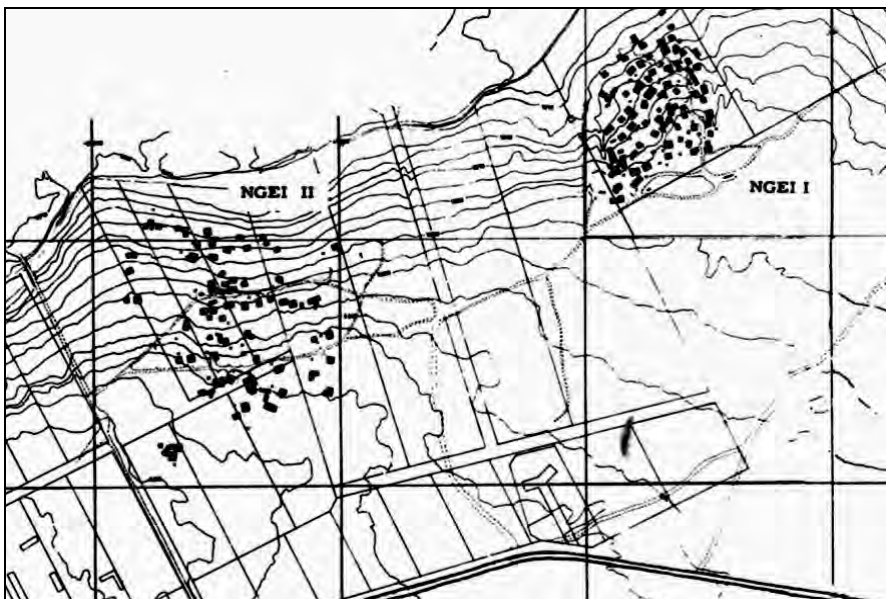
Ngei II is located within the Mathare Valley settlement on approximately 14 hectares of land. In 1971 according to Etherton (1971), majority of the land in Ngei II was state owned. There were two plots one 3.2 hectares and the other 4 hectares that had been purchased by two separate land buying companies. One built 228 houses for its members while the other one built nothing and eventually had the land subdivided and sold to individuals. The two categories of land ownership eventually produced different housing typologies. Figure 9.1 shows the location of Ngei II and the surrounding neighbourhoods. At its inception in the early 1960s, Ngei II neighbourhood had a rural outlook with scattered detached housing units like the rest of the Mathare Valley developments as shown in Figure 9.2. The land had been parcelled out into large plots of between 3 and 5 hectares. It has since undergone considerable transformation spearheaded initially by land buying companies and later by individual private developers intent on maximizing on profit from rent. The companies had submitted development plans for approval to the City Council and the existing configuration of plots in this neighbourhood can be attributed to them. Some of the houses built by these companies still stand but a large number have since been pulled down for construction of high-rise apartment blocks.

During colonial rule, most of Mathare Valley was zoned for Indian residential use. Around 1970, land ownership was in various parcels, under the state, Nairobi City Council, cooperative societies, companies and private individuals. The former village that existed prior to development interventions was called 'Ngei II' and was located closer to the Mathare River. Small-scale landlordism was already present in the villages in the late 1960s, with well over half the adult population recorded as tenants (Etherton, 1971). At independence in 1963, the intention of the new government was to clear Mathare Valley of informal settlements. However, popular and political resistance prevailed leading to further growth of the settlement. (Etherton, 1971). To resist demolition, the squatter households formed cooperative organizations to purchase the land parcels they occupied. In 1969, cooperative companies had started buying private land in the valley, and

company housing was being developed between the various villages. According to Gatabaki-Kamau (2000) these land-buying cooperatives/companies have played an important economic and political role in enabling land access for ordinary Kenyans in the area. However, the cooperative system was too complex, and inflated land prices provided difficulties. As a result, most of these organizations registered as companies, with rich and politically influential partners joining from outside the valley.



**Figure 9. 1: Ngei I and II and surrounding neighbourhoods**  
Source: Author



**Figure 9. 2: Ngei II area in 1972 showing large unoccupied plots with a cluster of single household dwellings along the steeper section**

*While the intention had been to include each head-of-household in the squatter village as a shareholder, this proved to be quite impossible and the original objectives were swept aside in a surge of speculative tenement building’ (Etherton, 1971:10). Due to the apparent profitability of rental development in Mathare Valley, the land-owning companies were adversarial towards non-member squatters on their land (Amis, 1988), requesting in writing to the City Council that they be resettled elsewhere (Etherton, 1971:47.*



**Figure 9. 3: Ngei II aerial photograph showing dense high rise apartment blocks.  
Source: Author, derived from Survey of Kenya 2005 aerial photograph**

It is evident from Figure 9.3 that Ngei II has developed into a predominantly dense high-rise settlement. Background information on the formation of this neighbourhood has been discussed in Chapter Six. This chapter presents the case study of Ngei II which was selected for study on the basis of its informality arising from none adherence to the set development controls as elaborated in Chapter III on Methodology. It is a high density, high-rise settlement originally planned as a low rise site-and-services development. The average household size is 3.2 around this neighbourhood. With 1,638 dwelling units per hectare, the density is approximately 5,200 people per hectare. This indeed is a high

density which was not planned for and which has put considerable strain on the established infrastructure.

The central part of this neighbourhood was developed by a land buying company and it is here that the largest concentrations of high-rise apartment blocks are found. Land on either side of this central part was owned by City Council and was allocated to individuals and typical house plans issued to them. These observations were made during the preliminary survey of the area conducted by the author in January 2005. It is on the basis of this survey that the area was selected for case study. Due to time and resource limitations, it was not possible to cover all the buildings in the neighbourhood. Using the 2004 aerial photograph and on the basis of site survey conducted, the neighbourhood was divided into 40 clusters defined by the road network. The 40 clusters established were based on planning principles applied in the development of Ngei II which comprised of plots in blocks, defined by roads and lanes. Four clusters were selected for detailed study as indicated in Figure 9.4 below constituting 10 per cent of the established clusters.

Cluster 1 comprises of 30 units in the formerly planned area and was selected because of its location on the busy road that links Juja Road to Thika Road and because of its numerous high-rise apartments with commercial activities on the ground floor. The lower part of this cluster comprises of dwellings constructed on what was left out as riparian reserve and has been excluded from the count. Cluster 2 comprising of 32 units is a general representation of dwellings and commercial activities found in most of Ngei II. Part of it is located on the busy spine road that traverses the neighbourhood. Cluster 3 comprises of 21 units and is located at the centre of the neighbourhood. Cluster 4 comprises of 37 units and was selected because of the high number of original single storey dwellings built using the typical design issued to the allottees by the City Council.

Thus a total of 120 plots were sampled in this neighbourhood out of approximately 1,210 plots constituting 10 per cent of the plots in the neighbourhood. In each of these clusters there are blocks of varying storeys ranging from 1 to 8 but there are also a few undeveloped plots. The sample area has approximately 1,810 dwelling rooms and 113 shops. The buildings were categorized according to the number of storeys as indicated in Table 9.1. The case study was conducted on the basis of the objective of the study and as set in the methodology. Thus the systems of settings and systems of activities were

explored to establish factors behind their development and the way they operate for the purpose of establishing appropriate parameters for future informal settlements regularization.

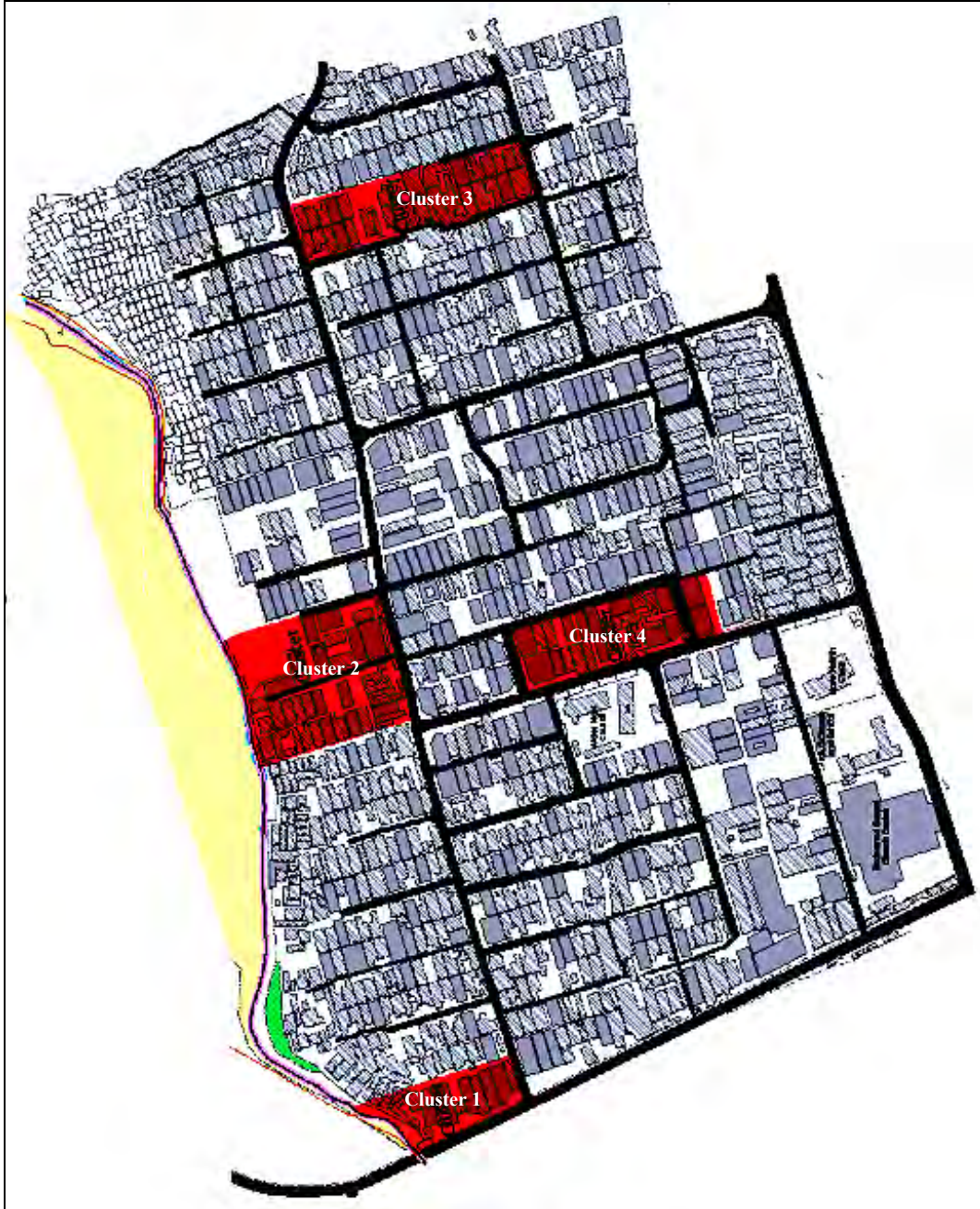


Figure 9. 4: Clusters 1 to 4 selected for detailed study marked in red  
Source: Author

Category	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Total No. of blocks per category	Dwelling rooms	Shops
8 storeys	0	1	1	0	2	126	6
7 storeys	1	3	1	0	5	280	18
6 storeys	6	3	5	0	14	560	48
5 storeys	0	1	0	0	1	32	0
4 storeys	2	2	3	0	7	189	15
3 storeys	0	1	2	1	4	96	4
2 storeys	2	4	3	3	12	192	4
1 storeys	19	15	4	29	67	335	18
undeveloped	0	2	2	4	8		
<b>Total</b>	30	32	21	37	120	1,810	113

**Table 9. 1: Categorization of apartment blocks by number of storeys**  
**Source: Author**

## 9.2 Characteristics of households

As was the case in the analysis of Mathare 4A and 4B it was important that the characteristics of the population residing in this distinctly different neighbourhood be established. This is important in the evaluation of the relationship between the built environment and the type of people it serves. As explained in Chapter Six, intervention strategies generally aim at improving the living conditions of the targeted group. Therefore, it is important that the characteristics of the targeted group be clearly understood and the interventions proposed designed accordingly for ease of adaption. On the basis of the sampling technique adopted, quantitative method was applied and data collected by way of questionnaires for this purpose. Data from the four clusters identified within the neighbourhood were lumped together and analyzed to give indications of the characteristics of the neighbourhood population. A total of 120 blocks (see table 9.1) which forms approximately 10 per cent of the neighbourhood blocks formed the sample population. Questionnaires were administered to households within the sample population. The total number of households or dwelling within this population sample was 1,810. This

proved to be a rather large sample considering the limitations of scope of this study. As a consequence, 10 per cent of the households were selected randomly within each cluster for analysis giving a population sample of 180 households. The survey conducted by the author forms the bulk of data analyzed in this section. Characteristics of households considered here include household structures, level of education, skills, duration of stay in the settlement, and means of livelihoods.

### 9.2.1 Household structure

House hold structure in Ngei II is not significantly different from that of Mathare 4A and 4B. The house hold size ranges from 1 person to 9 persons per household. The dominant household size is 5 person which constitute 18.3 per cent of the households as indicated in Table 10.2 below. Those living alone are very few and only constitute 7.2 per cent of the households. Similarly large households of 9 persons only constitute 6.7 per cent. A dwelling of 3 x 3 Meters is definitely very small to accommodate some of the sizes of households indicated in Table 9.2. However, considering the relationship of the household members which is predominantly nucleus family as indicated in Table 10.3, this number becomes bearable as it constitutes of two parents and their children. Nucleus families constitute 85.6 percent of the households. Single parents only constitute 12 per cent of the households.

Persons per dwelling	Frequency	Cumulative Percent
Valid 1	13	7.2
2	14	15.0
3	24	23.3
4	26	42.8
5	33	61.1
6	26	75.5
7	18	85.5
8	14	93.3
9	12	100.0
10	0	100.0
11	0	100.0
Total	180	

**Table 9. 2: Household Size**

**Source: Author**

Single person households are not easy to define as some of those interviewed indicated that they often stay with friends of relative. Such households are also composed of relatively young persons of between 25 and 30 years of age. The aspect of extended family

is also evident in some households with older brothers mostly staying with younger siblings of school going age. Household size and composition is crucial to dwelling settings and activities as elaborated in section 9.4 below.

Household heads are still predominantly male with 81.7 per cent of the households headed by men as indicated in Table 9.4 below. Socially in the Kenyan context, the man is automatically the head of the household irrespective of his income level in comparison to that of the woman and this contributes to the high number of male household heads. All the households headed by female belong to single mothers. Even the number of young single women living on their own is very small. Households consisting of unrelated members are predominantly single males either living alone or sharing and only constitute 1.7 percent of the households (see Table 9.3).

Relationship		Frequency	Cumulative Percent
Valid	Nucleus Family	154	85.6
	Extended Family	3	87.2
	Relatives	5	90.0
	Single Parent	12	96.7
	No Relation	3	98.4
	Single Male	2	99.5
	Single Female	1	100.0
	Total	180	

**Table 9. 3: Household Relationships**

**Source: Author**

Sex		Frequency	Percent	Cumulative Percent
Valid	Male	147	81.7	81.7
	Female	33	18.3	100.0
	Total	180	100.0	

**Table 9. 4: Household Heads by Sex**

**Source: Author**

Data on the composition of nucleus family revealed that most such families have children ranging between 1 and 6 in number (see Table 9.5). Households with 1 to 4 children dominate the nucleus families and constitute 60 per cent of the households. Married couples with no children only constitute 2.2 per cent of the households whereas households with more than 5 children only constitute 7.8 per cent of the population. This is an important factor in the consideration of spatial requirements for a household and more so when it comes to sleeping arrangements as analyzed in 8.4.1 on settings for

sleeping activity. It is also a factor to be considered in the settings and activities at neighbourhood level as consideration should be given to children's playing areas.

Single mothers constitute 10 per cent of the households as mentioned. Data on whether the single mothers are widow, divorcees or simply unmarried women could not be established. It could also not be established whether the single mothers are mistresses or second or third wives of other men living with their nucleus families.

Family Composition	Frequency	Percent	Cumulative Percent
Husband/wife	4	2.2	2.2
Husband/wife/1child	25	13.9	16.1
Husband/wife/2children	29	16.1	32.2
Husband/wife/3children	32	17.8	50.0
Husband/wife/4children	22	12.2	62.2
Husband/wife/5children	12	6.7	68.9
Husband/wife/6children	2	1.1	70.1
Husband/wife/over 6children	0	0.0	70.1
Mother/2children	8	4.4	74.5
Mother/3children	5	2.8	77.3
Mother/4children	0	0.0	77.3
Mother/6children	0	0.0	77.3
Grandmother/grandchildren	0	0.0	77.3
unspecified	41	22.7	100.0
Total	180	100.0	

**Table 9. 5: Family composition**

**Source: Author**

Data collected indicate that single women living alone tend to be older than single men living alone. Majority of household heads (67.3 per cent) belong to the youthful age bracket of between 20 and 39 years of age as indicated in Table 9.6 below. Only 10.6 per cent belong of the household heads belong to the age group of 40-44 years. With up to 77.9 per cent belonging to the active working age, indications are that those who have attained retirement age generally do not stay in the neighbourhood. Data indicate that only 10.5 per cent of those who are above the official government retirement age of 55 live in the area. This is an important design parameter considering that most of the apartment blocks have more than 5 storeys and have no lifts limiting ease of access for the 10.5 per cent elderly population above the age of 55 years.

Age	Frequency	Percent	Cumulative Percent
Valid 20-24	12	6.7	6.7
25-29	36	20.0	26.7
30-34	43	23.9	50.6
35-39	22	16.7	67.3
40-44	19	10.6	77.9
45-49	12	6.7	84.6
50-54	9	5.0	89.6
55-59	7	3.9	93.5
60-64	8	4.4	97.9
70-74	4	2.2	100.0
Total	180	73.7	

**Table 9. 6: Age of Head of Household.**  
**Source: Author**

### 9.2.2 Education levels

The level of education in Ngei II is slightly higher than that recorded in Mathare IVA and IVB. It is also significantly higher than that recorded by Etherton (1971) in 1971. Only 7.2 per cent of the households have not received any formal education as compared to 24 per cent in 1971. Those who have attained secondary school education now constitute 58.3 per cent as indicated in Table 9.7 below. This is an indication that a lot of emphasis has been put on education by the parents despite the fact that educational facilities in the Mathare Valley settlement in general have been limited.

Education level	Frequency	Percent	Cumulative Percent
Valid None	13	7.2	7.2
Primary	105	58.3	65.5
Secondary	62	34.5	100.0
Total	180	100.0	

**Table 9. 7: Education level**  
**Source: Author**

Education has for a long time been considered to be a way of improving the economic status of individuals. It should therefore be expected that with the improved education levels of the population, there should be a corresponding improvement in income levels. This should also be reflected in employment opportunities. In the early years of independence, those who had successfully completed secondary education would gain meaningful employment enabling them to afford better housing. The fact that people with

secondary education and above are now found in these neighbourhoods is a sign that other factors in the economic set up have since changed and affects housing accessibility.

### **9.2.3 Occupation**

Employment forms the major source of income for majority of the household heads. Respondents were asked to indicate the nature of work they do. The responses are indicated in Table 9.8. These responses were later categorized into skilled, semi skilled, and unskilled labour. A further category divided the respondents into employed and self-employed. Majority of household heads are skilled and semi-skilled labourers. There was no proof of training demanded during the survey and the accuracy of these figures can be contested. Labourers have no job security and are employed on a daily basis on a first come first served basis depending on job availability. The light industrial zone to the east of this settlement offers employment opportunities for residents of Mathare Valley in general.

Self-employed is an ambiguous category and some trade such as hawking border unemployment. For example, it was not certain whether housewives who sell foodstuffs by their doorsteps are self employed or unemployed. However, considering the persistence with which they undertake this activity, there must be reasonable income that supplements the households overall income. A street vendor who cooks and sell pancakes (chapatti) by the roadside indicated that he makes more money than he would earn if employed as a labourer considering his skills as a mason. As a mason he would earn Kshs 300 per day but he is able to make Kshs 700 per day on the average, working seven days a week as opposed to six days in a construction site where some days go without getting a job. Information on incomes in the area is hard to compute as most respondents are not comfortable in giving their actual income. Most households earn less than Kshs. 4,000 per month although up to 38 per cent have attained secondary education that would previously afford them better remunerations.

### **9.2.4 Duration of stay and optional choices**

Unlike Mathare VIA and VIB, Ngei II depicts several variations both in housing typologies and population characteristics. The high-rise blocks now dominating the area are a later development and started in earnest in the 1980s. The oldest tenants are therefore those who moved in around that time but there are a few tenants who had been living in

the company built single storey buildings developed in the 1970s. Survey on duration of stay sort to establish the length of stay in the settlement and the length of stay in the current house.

Data on Table 9.9 indicate that a large percentage of 34.4 per cent of the household heads have lived in the area for between 6 and 10 years. Those who have lived the shortest period constitute 30 per cent whereas those who have lived for up to 15 years constitute 15 percent of the households.

Occupation	Frequency	Percent	Cumulative Percent
Valid Unemployed	4	2.2	2.2
Casual labourer	23	12.8	15.0
Self Employed Mechanic	6	3.3	18.3
Self Employed Carpenter	6	3.3	21.6
Self Employed Welder	12	6.7	28.3
Self Employed Cycle Repairer	3	1.7	30.0
Self Employed Tailor	8	4.4	34.4
Vegetable Vendor	3	1.7	36.1
Roaster Maize Vendor	1	0.6	36.7
Shop Keeper	18	10.0	46.7
Butcher	6	3.3	50.0
Salonist	5	2.8	52.8
Cook	0	0.0	52.8
Charcoal Seller	0	0.0	52.8
Herbalist	3	1.7	54.5
Preacher	4	2.2	56.7
Posho meal Operator	0	0.0	56.7
Mason	18	10.0	66.7
Electrician	12	6.7	73.4
Driver	11	6.1	79.5
Painter	2	1.1	80.6
Pharmacy Attendant	1	0.6	81.2
Security Guard	14	7.8	89.0
Clothes Vendor	4	2.2	91.2
Construction Equipment Operator	2	1.1	92.3
Cobbler	3	1.7	94.0
Traditional Brewing	0	0.0	94.0
General Hawking	9	5.0	99.0
Domestic Worker	0	0.0	99.0
Waiter	2	1.1	100.0
Total	180	100.0	

**Table 9. 8: Occupation of Household Heads**

**Source: Author**

	Frequency	Percent	Cumulative Percent
Valid 1-5	54	30.0	30.0
6-10	62	34.4	64.4
11-15	27	15.0	79.4
16-20	24	13.3	92.7
21-25	5	2.8	95.5
over 26	8	4.4	100.0
Total	180	100.0	

**Table 9. 9: Duration of stay in Settlement**

**Source: Author**

The large number of residents with short duration of between 1 to 5 years can be attributed to the fact that new dwellings are being built and made available in the market on an almost monthly basis as established in the survey. As would be expected, the duration of stay is longest in the original company houses and the single storey site-and-service scheme. Respondents were also asked to state where they stayed prior to settling in the area. As indicated in Table 8.10 below, 35.6 per cent had shifted from other settlements in Nairobi. 20 per cent had shifted from other neighbourhoods in Mathare Valley. A significant 31 per cent of the household heads had come from rural areas whilst 13.3 per cent had come from other towns of Kenya. Indications are that the settlement absorbs more people from Nairobi than from other parts of the country.

Previous settlement	Frequency	Percent	Cumulative Percent
Valid Other neighbourhoods of Mathare Valley	36	20.0	20.0
Other settlements of Nairobi	64	35.6	55.6
Other towns	24	13.3	68.9
Rural areas	56	31.1	100
Total	180	100.0	

**Table 9. 101: Residence prior to present.**

**Source: Author**

Respondents were asked to state why they chose to stay in Ngei II. As indicated in Table 8.11, majority of the respondents (73.6 per cent) chose to stay in this neighbourhood because of affordable rent. It can therefore be deduced that income levels determined the choice of dwelling. Only 15.6 per cent indicated that they chose the neighbourhood

because of its proximity to place of work. This means that a sizeable number commute to other parts of the city in search of employment opportunities.

Reason for stay		Frequency	Percent	Cumulative Percent
Valid	Affordable rent	132	73.3	73.6
	Proximity to place of work	28	15.6	88.9
	Proximity to Self-employment opportunity	20	11.1	100
	Total	180	100	

**Table 9. 11: Reason for Staying in Settlement**

**Source: Author**

### **9.3 Neighbourhood systems of settings and activities**

In Chapter Three on theoretical and conceptual framework a system has been described as an assemblage of interrelated parts that work together by way of some driving process. Within the built environment, the parts or components in this assemblage form blocks, compounds, neighbourhoods, and eventual settlements and as Rapoport (Gitec Consultants 1995) argues, is itself composed of the organization of space, time, meaning and communication; systems of settings within which systems of activities take place; cultural landscape; and composes of fixed, semi-fixed and non-fixed elements. Thus this section analyses Ngei II neighbourhood on the basis of this conceptual framework in terms of the physical settings comprising of clustering of buildings in lots or blocks, zoning of space for facilities such as commercial, educational, social, recreational, religious, infrastructural, etc. In addition the section considers behaviour in relation to settings and activities within the neighbourhood.

#### **9.3.1 Physical settings**

The physical setting of Ngei II differs from that of Mathare VI B analyzed in Chapter Eight above in the sense that the later is unplanned while the former is to a large extent a planned site-and-services development. Ngei II was selected as a case study on the basis of the nature of its informality. The settlement was planned as a high density, single storey development. Whereas the plots remain as configured, high rise apartment blocks of up to seven storeys in some instances have sprung up and now dominate the settlement. These

have been developed without the approval of the City Council and as such make the settlement informal.

The land on which Ngei II (and the neighbouring settlements) stands was up to around 1970 owned in various parcels by the state, Nairobi City Council, cooperative societies, companies and private individuals, mostly Indians. Most of the upper part was vacant but towards the valley there was a village whose name Ngei II is now used to identify the neighbourhood. The name Huruma applies to the City Council housing development but has since been extended to apply to Ngei I and II. According to Etherton (1971) small-scale landlordism was already present in the villages in the late 1960s thus forming the setting for the subsequent rental housing development in the area.

In line with the development paradigm of the 1960s strategizing on slum eradication, the intention of the new independent government in 1963 was to clear Mathare Valley of informal settlements. This was however resisted by the dwellers aided by their politicians (Etherton, 1971). Fearing demolition, the dwellers sought to protect themselves by forming cooperative organizations to purchase the land they were occupying. This action forms the second setting for this neighbourhood. The objective of the land buying companies was to settle each household on a plot through subdivision of land. By 1969, cooperative companies had started buying private land in the area and developing company housing Gatabaki-Kamau (2000). Adherence to cooperative regulations appeared difficult to these land buying cooperatives and most converted to companies much to the detriment of the poor members who were displaced richer members from outside the settlement with their own agenda of enrichment through rental housing development (Amis, 1988). The expansion of the land-owning companies was in a context of rapid population increase for Nairobi. At the same time, workers' incomes were eroding due to inflation (Gatabaki-Kamau, 2000). This created a ready market for basic rooming. In the early 1970s, housing companies built 7,628 'room-units' in Mathare valley, doubling the valley's population. Overcrowding and a lack of 'social amenities and public utilities' were already noted at the time (Etherton, 1971).

Plot sizes of 7m by 21m, 12m by 19m and 12m by 25m are to be found in this neighbourhood. Although ownership varied, indications are that the entire area was

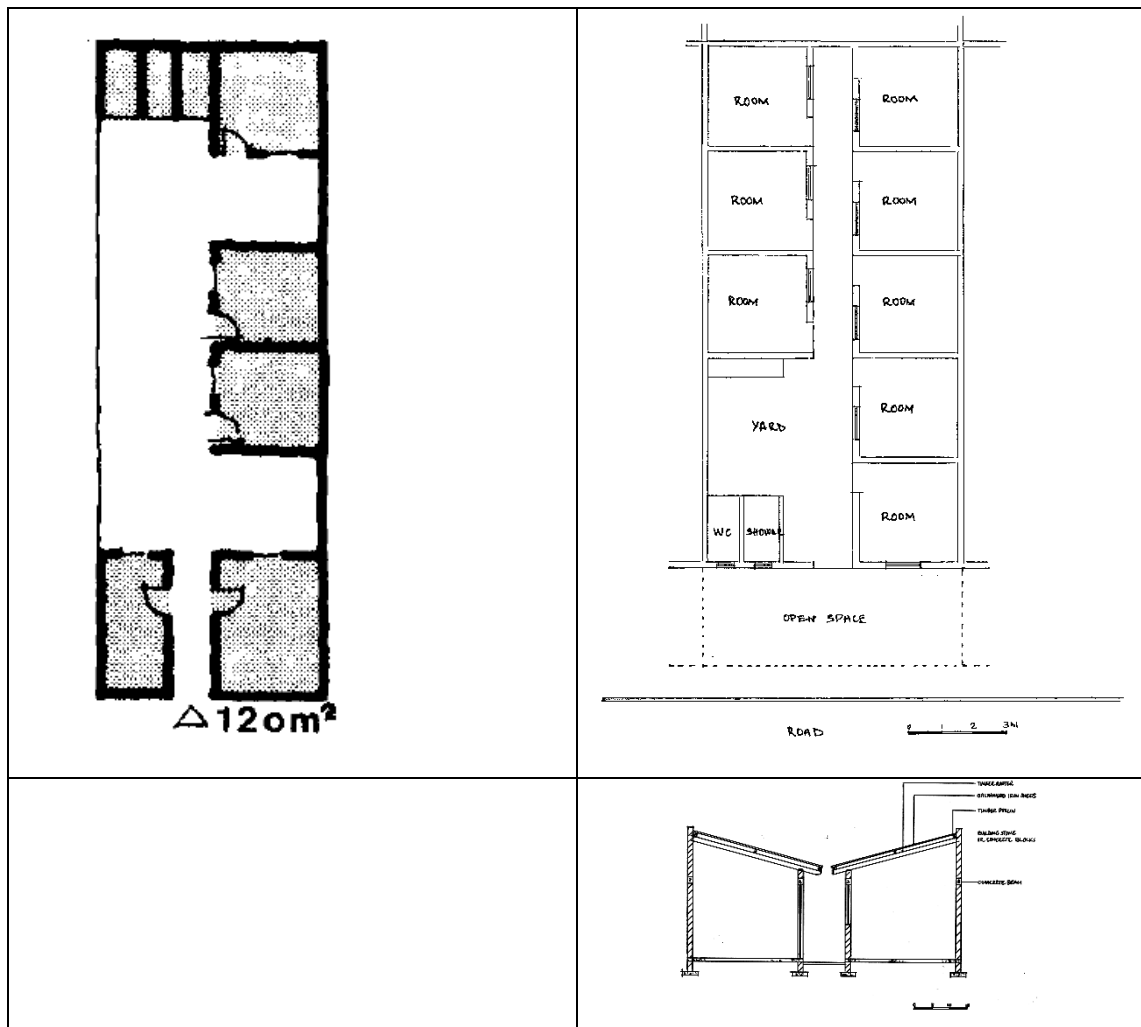
subjected to same planning approach which in a way is similar to that applied to Dandora site-and-service scheme which was the first of its kind in Nairobi.

All weather roads were constructed with some plots accessed by road and others by footpaths. It was envisaged that the beneficiaries belonged to low-income group and that vehicle ownership was not a priority. There were no provisions for parking areas and the roads were mostly for service access such as garbage collection, ambulance access and fire fighting. Provisions were also made for sewers which in most instances became access lanes between the plots. Attempts to get the original site layout plans for this area from City Council have not been fruitful and it is not clear which areas were left as open space. Those interviewed indicated that there were provisions for open spaces but all these have since been grabbed by private developers. A trunk sewer was constructed along the river to serve the area and the houses were connected to it.

The land-buying company in the sample area had developed its first portion of land with timber walls. At the time of development of its second portion of land, the City Council had rejected plans for timber construction; therefore concrete blocks were being used. In this scheme, each household was to occupy two interconnecting rooms. By 1971, the company had submitted plans for the development of its third portion of land, the 4.86 ha located in the case study area (Etherton, 1982). The base plans currently used by the Nairobi Water and Sewerage Company indicate the portion, which in 1971 was being purchased by the land-buying company, as undeveloped. The Director of Planning and Architecture when interviewed indicated that this could be attributed to slow updating of their records.

The inspiration for high-rise development apparently came from Mathare North site and service scheme which is visible from across the valley. Prior to the development of Mathare North there were no high-rise blocks in Ngei II. There are two distinct planning approaches in Ngei II. Part of this neighbourhood was planned with smaller plot sizes of 7 x 21 meters similar to that applied in Dandora which was a World Bank funded project and the first major site-and-service scheme in Nairobi. The central part of this neighbourhood which belonged to the land buying company had larger plots of 12 m by 25 m with the provision of up to two storeys development. To address the aspect of beneficiary displacements, the planning approach applied comprised of compounds with

five to six basic single-room units arranged around a communal courtyard, and each allottee given limited space for horizontal expansion by one additional room (see Figure 9.5). Toilet, washing and cooking facilities were communal. However, most of such units have since changed hands and investors have replaced the earlier housing development with multi-storey rental accommodation.



**Figure 9. 5: Type designs for Dandora and Ngei II site-and-service schemes**  
**Source: Author**

The inability of the City Council's Development Control Section to regulate and contain the mushrooming of the unapproved high-rise apartment blocks has seen the area develop into a very high density neighbour and the infrastructural facilities provided are no longer able to sustain the growing population. This is evident by the number of burst sewers in the area and shortage of water from the City Council mains. The endemic corruption

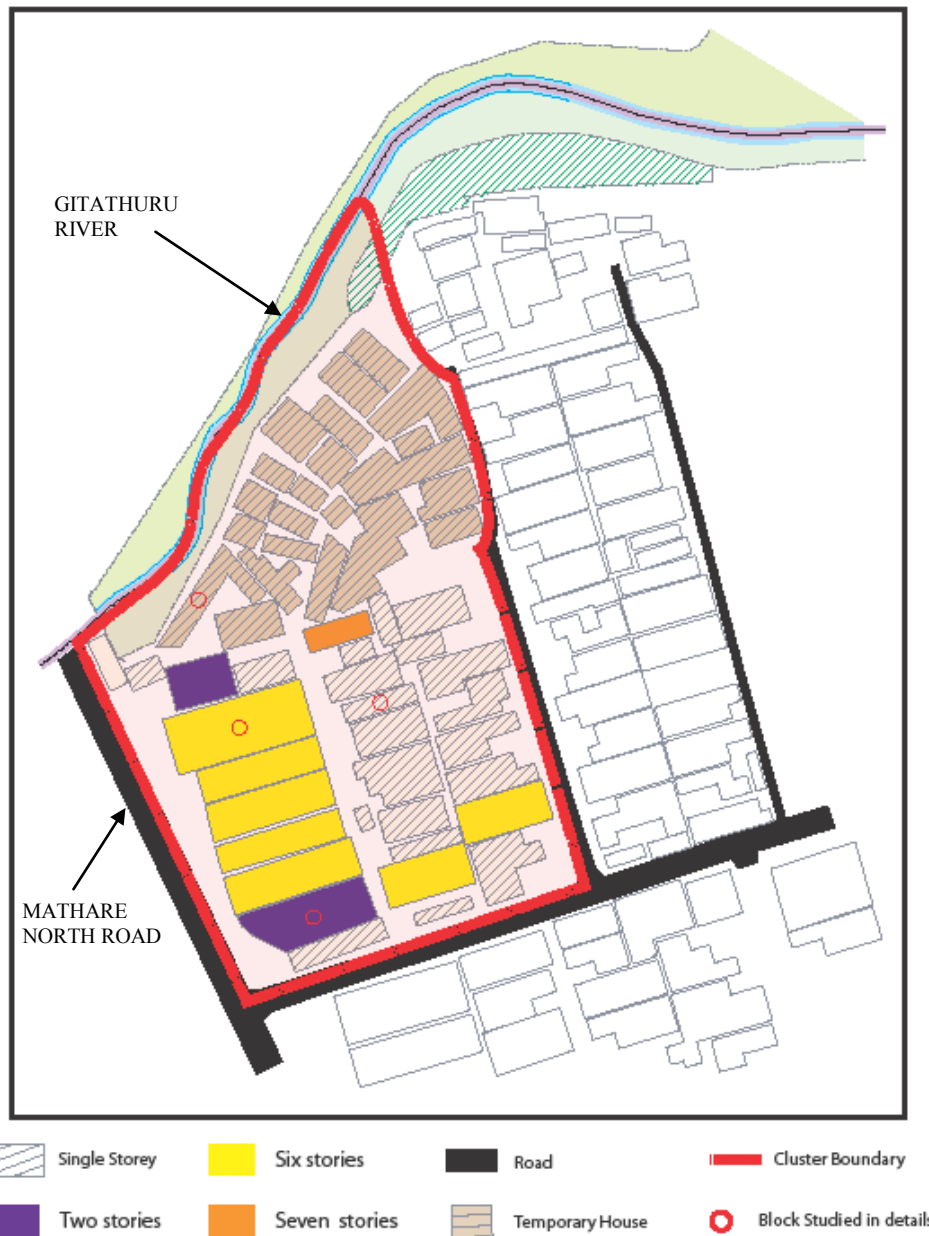
problem of the country has also contributed to this development with official assigned the duties of regulating physical developments in the city being highly compromised

### **9.3.1.1 Clustering of buildings**

As a site-and-services development, the planning principle applied in the design of the neighbourhood was the dominant economisation of services vis-à-vis the number of plots served. Plots were set back-to-back with roads, water supply, sewer, and storm water drainage in-between. Roads dominate the planning approach applied. The spine road has a width of 12 meters and traverses the neighbourhood with mostly curl-de-sac feeder roads radiating from it. The feeder roads have 9 and 6 meters widths with the 6 meters wide roads were developed mostly as pedestrian walkways. Open spaces are none existent save for vacant plots. Original plan of the area indicate that the open spaces in the neighbourhood were provided along the river in areas considered unsuitable for building. Figure 9.4 illustrates the planning principle applied. There was no conscious effort made in the planning stages to create distinct neighbourhood clusters and street frontages provide the only meaningful and common identity for the dwellers. However, in a large section of the neighbourhood, the encroachment of commercial activities at the street level has compromised the feeling of belonging at the street level with commercial activities dominating the space. The four clusters identified in the neighbourhood for detailed analysis are discussed in this section.

#### **Cluster 1**

Three distinct characteristics were observed in this cluster. Plots abutting the Mathare North Road that links Juja Road to Thika Road as shown on Figure 9.6 are characterised by blocks developed up to 6 storeys. These blocks have been developed with commercial facilities on the ground floor and residential facilities on upper floors in what is termed mixed-use development. Immediately behind these blocks are single storey residential units of the courtyard typology built in the formative years of the neighbourhood. Towards the Mathare River, all the dwellings are characterised by make shift iron sheet walls and roofs depicting a poor slum situation. From discussions with the village elders it was established that the section with temporary units is subject to flooding and was left aside as open space. The section was never serviced and plots were never hived off from it. Figure 9.6 shows the layout of buildings and roads in this cluster. Six blocks in the cluster have been developed to six storeys and are marked accordingly on the map.



**Figure 9. 6: Cluster 1 showing building types, roads and buildings studied in detail**  
 Source: Author

The section abutting the main road booms with commercial activities which cover the entire area including what was intended for pedestrians. Encroachment onto the pedestrian walkway has created a pedestrian/vehicle conflict. Vehicular parking also takes place along the road adding to the confusion. Photo 9.1 shows busy section of this cluster.



**Photo 9. 1: The section of Cluster 1 abutting the busy main road**  
**Source: Author**

Commercial activities taking place on the ground floors of this section was planned for according to City Council and these front row plots were not set back-to-back as is the case with the rows immediately behind it. This street is very busy and plot sizes are bigger. The plots have been developed with apartment blocks of up to seven storeys. The second zone is located immediately behind this and comprises of plots of sizes that constitute the majority of plots in Ngei II. Low-rise buildings dominate this section with a number of them still retaining the originally planned housing typology indicated in Figure 9.5.

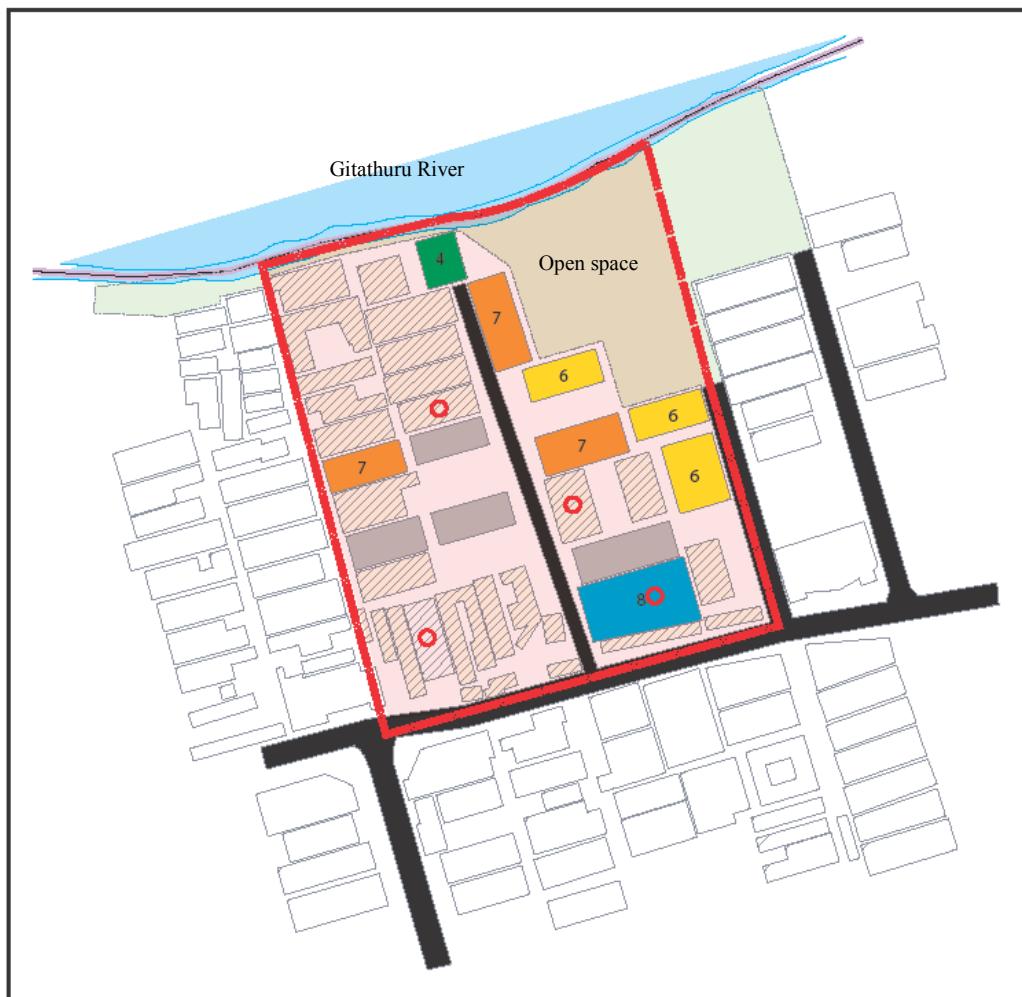
The originally paved road serving the housing units has since worn out and surface rain water run off has washed trenches on the now earth road. Sewer blockages are a common occurrence. There are no open spaces and children are hardly seen playing in the area. Even space for drying clothes is nonexistent and the facades of the apartment blocks are cluttered with clothes hanged for drying. Often as one walks on the street, droplets from

the wet clothes can be felt. Typical design issued to the allottees had central courtyards which in a way offered an element of open space especially for young children to play and clothes to be dried among other activities.

## **Cluster 2**

Located between the main spine road and Mathare River as indicated in Figure 9.4, this cluster has a relatively steep slope to the river. All the eight plots fronting the spine road have busy commercial activities on the ground floors. Illegal extensions of temporary nature have been added to the shops taking much of the pedestrian walkways as can be seen in Photo 9.2. The rest of the plots have no such activities on the ground floor save for a few outdoor vegetable and fruit stands. The road to the left of this cluster is a cul-de-sac and vehicular movement is very limited. As a result, the street is used more like an open space as is evident in Photo 9.3. Children play on the roads, clothes are dried even across the road, people even sit and relax outside their doors as the ground floors are residential and public ingress is limited although not hindered. It is therefore clear that some level of privacy at the neighbourhood level can be achieved through proper planning.

The area next to the river had been set aside as riparian reserve and open space according to City Council officials and village elders. However, recent land grabbing has seen this land ending up in the hands of private developers. This is perhaps a better alternative considering the fact that the entire open space has been used for dumping garbage for many years. One resident reported that garbage in this open space had piled up to three storeys height. It is only in recent years that attempts have been made to cart away the garbage. Even then, the open space is still filthy as can be seen in Photo 9.4. A resident has even decided to rear pigs in this area adding to foul smell that lingers in the air. Plots created in this space do not conform to the gridiron approach applied to the rest of Ngei II and two plots measure 15 x 30 meters. Massing of buildings has been taking place without any coordination or adherence to council regulations. According to City Council regulations, windows facing adjoining plots must be setback by 2 meters. This however has not been observed in this cluster as indeed in many other parts of this neighbourhood. Consequently, spaces between these high-rise blocks become too narrow to allow any meaningful natural lighting and ventilation. Clothes drying along the balconies are of similar nature to that found Cluster 1.



**Figure 9. 7: Cluster 2 showing building types, roads and buildings studied in detail.**  
**Source: Author**



**Photo 9. 2: Section of the spine road with commercial activities extended on to pedestrian walk way**  
Source: Author



**Photo 9. 3: Cluster 2 feeder road showing children playing on the road, clothes hanging from an electric post and access the road and trenches dug by surface drains**  
Source: Author



**Photo 9. 4: Single storey block with single rooms facing the street. Windows have wooden shutters. Curtain on the door is for privacy. Vegetable stand is against window**  
**Source: Author**



**Photo 9. 5: View of the open space marked green in Figure 9.7**  
**Source: Author**

Cluster 2 is still at a transformation stage with a number of buildings at various levels of vertical expansion. For example, all the building marked 2 storeys in Figure 9.7 above have provision for vertical expansion and concrete flat roofs have been provided to facilitate this intention. The single storey block shown in Photo 9.4 is the only surviving block of its kind in the cluster and comprises of back-to-back configuration similar to those found in Mathare 4A and 4B. Open spaces are poorly maintained and end up as

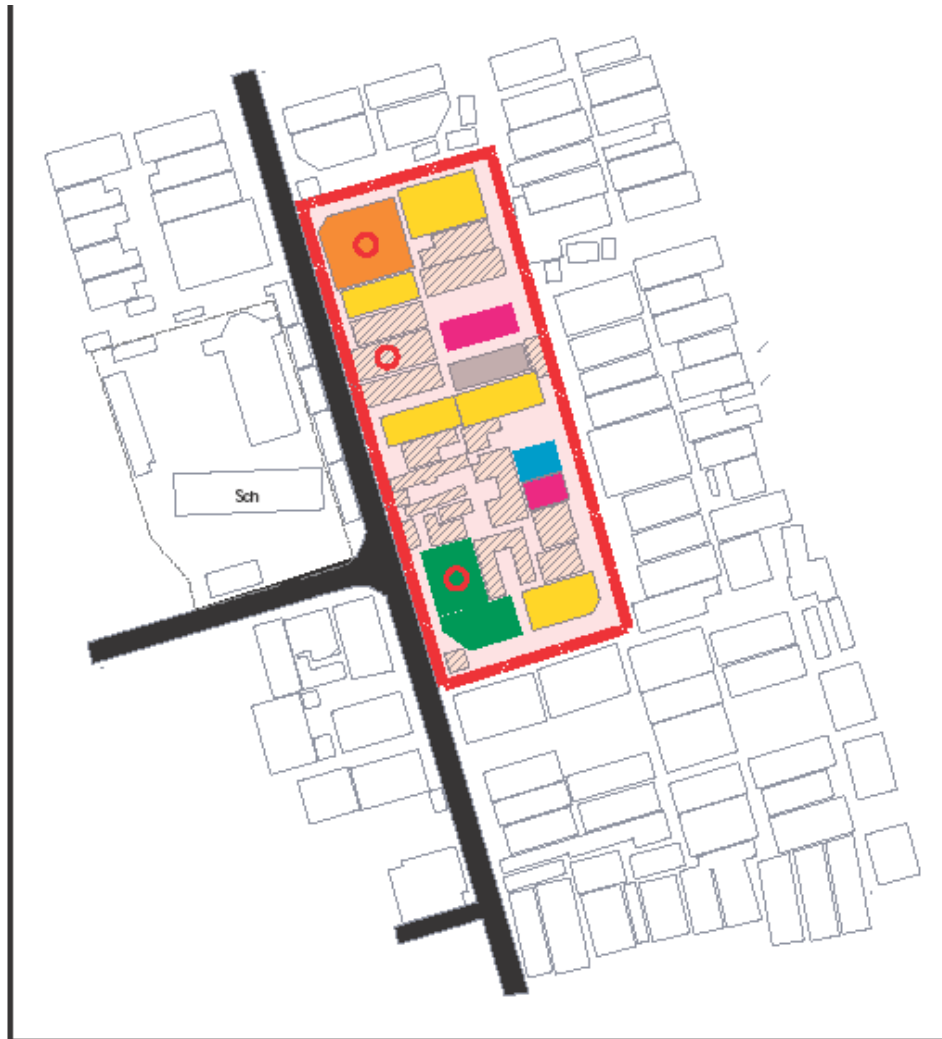
garbage dumps. The open space shown in Figure 9.7 is appears well defined on plan but Photo 9.5 shows its poor state.

### **Cluster 3**

This cluster located on land originally owned by a land buying company portrays a uniquely mixed use development comprising of commercial facilities on the ground floor and a mix of commercial and residential units on upper floors. It is located on the busy road that connects the spine road to the road serving Hurama City Council housing. Commercial activities overshadow residential element which is only evident on upper floors with its characteristic balconies and drying clothes. An interesting observation is that street vending hardly takes place along this street. This can be attributed to the limited pedestrian circulation space and the well established shops.

This cluster has a high concentration of high-rise blocks with 1 block rising to 7 storeys, 5 blocks rising to 6 storeys, and another six blocks rising between 3 and 4 storeys. The road to the West of this cluster has been repaved with tarmac whereas the one to the East is in poor state of disrepair. This condition has affected the standards of businesses with businesses along the road to the West appearing to be of higher standards than those on the poor road to the East. Here too, pedestrian walkways are interrupted by business activities located on the pavements. Vehicular traffic is thin and pedestrian walk on the roads.

The undeveloped plots have commercial activities in temporary structures built with corrugated iron sheets. Indications are that these plots together with 11 other plots with single storey structures will be replaced with high-rise buildings in a few years. As in Cluster 1 and 2, there is no provision for open spaces and children play areas. The commercial activities are so dominant at the ground level to the extent that residential element within the cluster is not evident at the ground level. Clothes on drying lines along the balconies are what reflect the residential element within the cluster (see photo 9.6).



**Figure 9. 8:Cluster 3 showing building types, roads and buildings studied in detail**  
**Source: Author**



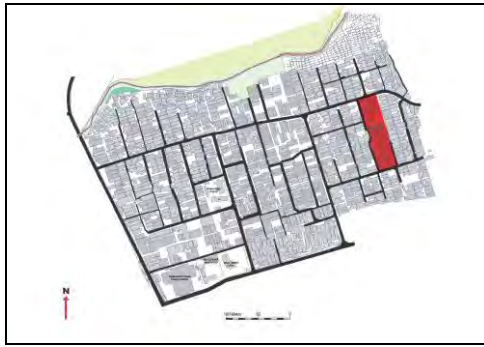
**Photo 9. 6: A section of the busy spine road with shops on all the ground floors and dwellings above.**

**Source: Author**

#### **Cluster 4**

Cluster four has maintained a larger proportion of its original housing typology of single storey courtyard dwellings on 7 M by 21 M. The site layout plan adopted here allowed for limited vehicular access and some sections are only accessible on foot. It is this restrictive layout that has led to fewer plots being developed with multi-storey blocks. As can be seen in Figure 9.9 shows only two blocks have been developed to 6 storeys and one to four storeys. The multi-storey blocks developed here have serious ventilation and natural lighting problems due to the narrowness of the plots. Figure 9.10 is a clear illustration of the layout of rooms on these plots.

There are six undeveloped plots within cluster 4. Two serve as open spaces with no commercial activities. Three have temporary structures while one is used as a timber yard. Limited pedestrian circulation has resulted in few kiosks or shops and those developed were closed at the time of this survey. Photo 9.7 shows a street scene along this cluster with very minimal pedestrian activity with women and children sitting along door steps. In the middle of this street are garbage sacks awaiting collection by city council trucks. Youth groups coordinate the collection of the garbage.



**Figure 9. 9: Cluster 4 showing building types, roads and buildings studied in detail**  
 Source: Author



**Photo 9. 7: A cul-de-sac road with closed down shops and garbage pileup.**  
**Source: Author**



**Photo 9. 8: Steel windows fabrication by the roadside.**  
**Source: Author**

Photo 9.8 shows metal furniture workshop located along pedestrian walkway. This also acts as a display area for finished products for sale. The adjacent undeveloped open space also acts as clothes drying area

### **9.3.1.2 Open spaces between buildings**

The planning approach applied to Ngei II is gridiron in character giving no irregular spaces as is evidenced in the unplanned Mathare 4A and 4B. Circulation and access was given prominence over open spaces for activities such as children's play areas, households' outdoor activities such as clothes drying areas, outdoor chores and relaxation. The original single storey dwellings constructed on some of the plots and the few that still

exist, indicate that they were set back by 3 to 4 meters from the plot boundary abutting the access roads. This formed the transitional space between the dwelling and the more public access roads. However, subsequent developments have not respected this building line and the structures have been built right on the boundary. The layout of the dwelling units also had an element of open space in the form of a small courtyard as discussed under systems of settings and activities at the dwelling level. Thus the units had a well defined privacy gradient from public, semi public to semi private open spaces. What is not evident is the existence of open public spaces either at the development plan level or in existence within the neighbourhood today. Discussions with residents who have lived in the area since the 1970s simply indicate that the area was an open grassland before plots and infrastructure were created. Even when these were created, it was not possible to tell whether a space was vacant because the owner had not developed it or that it was meant to be an open space. Several undeveloped spaces still exist to date. Economic principles on maximization of the land to create maximum number of plots on the parcel of land took precedence over social needs and community participation. The open spaces analysed here have been identified and marked within each cluster. Table 9.12 is a summary of open spaces characteristics as identified in the survey of the area.

<b>Open Spaces</b>	<b>Vacant plots</b>	<b>River banks</b>	<b>Road shoulders</b>	<b>Service way leaves</b>
<b>Activities associated with the open spaces</b>	Dumping of garbage, Metal and carpentry workshops, Clothes drying area Circulation space	Dumping	Hawking of foods, clothes, shoes,	Footpaths, Overflowing sewage, dumping of garbage.

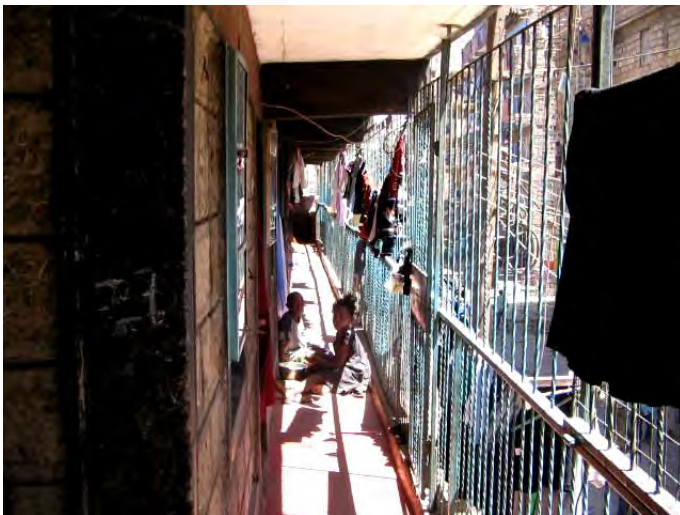
**Table 9. 12: Identified activities in neighbourhood open spaces. Source: Author**

Undeveloped plots are used for four things; garbage dumping sites, Metal and carpentry workshops, clothes drying areas, and pedestrian circulation spaces. The Gitathuru River bank is used for dumping of solid wastes. Road shoulders meant for pedestrian circulation on the major spine road and other feeder roads with intense commercial activities are dominated by commercial activities. The lack of open spaces for recreation has led to young men using areas set for pedestrian as recreational areas as can be seen in Photo 9.9.



**Photo 9. 9: Two young men sitting on a bench by the roadside in cluster 2 playing „ajwa’ an indigenous board game.**

Young children in this neighbourhood are seldom seen playing on the streets as they are too busy and unsafe for children. Children playing along the balconies in the high-rise tenements are a common site as shown in Photo 10.



**Photo 9. 10: Two children playing along a balcony with metal grilles to protect people from falling over.**  
Source: Author

### **9.3.1.3 Town planning considerations**

The setting for infrastructure as already explained was based on the 1970s planning principles for greenfields low-cost housing as applied to developing countries. City Council standards were applied in the construction of roads, sewerage system and water supply. The roads are however in appalling condition due to lack of maintenance. Like in Mathare IVA infrastructure

As mentioned above, Ngei II was a planned site-and-service development with type plans issued to the allottees. Some of these allottees were able to build single and even double storey dwellings. However a large number were not able to develop their plots and sold them to people with higher incomes. It is this change of ownership that led to spiralling of high-rise development as the new owners moved in to maximize on profit from rent without much regard to the set city council development controls and bye-laws. The City Council development controls include 50 per cent plot coverage and 75 per cent plot ratio. On the ground these apartments cover 100 per cent and the plot ratio is well above 600 per cent. In addition to this, the dwellings are cantilevered above the ground floor either as balconies or additional room space.

### **9.3.2 Social settings**

Social setting in the context of this study has been defined in terms of both space and time, which provides the contexts in which social interactions can occur. It is extended to incorporate social and communal organizations and their related activities undertaken in the interest of the neighbourhood. These include groups that address issues of evictions and tenancy, landlords and tenants, welfare, water and sanitation. According to the survey, one aspect that bonds this community is eviction threats. The others include rent payment, provision of social amenities and hazards arising from fires and flooding.

Ngei II presents a significantly different social setting from that of Mathare IVA and IVB. Here, landlords are secure investors with appropriate instruments to both land and the buildings. Tenants too are people with no claim to the dwellings they rent from the landlords. Thus the roles of landlord/tenant are clearly defined. The only roles tenants play jointly are rent protests against the landlords, garbage collection, and cleaning of toilets on each floor which are shared by 8 to 10 households per floor.



**Photo 9. 10: Typical upper floor corridor with activities related to water provision littering it. Curtains on the doors provide privacy.**  
**Source: Author**

### **9.3.3 Economic settings**

Economic setting incorporates all the means undertaken by dwellers to meet their economic needs and includes activities undertaken either within the neighbourhood or elsewhere in the city. Informal economy is the most prevalent economic sector in the neighbourhood as is the case with most informal settlements in Nairobi. Majority of the dwellers earn their livelihoods through employment outside the neighbourhood. However, there are a number of informal economic activities that take place within the neighbourhood. There are two categories of business activities that go on in the neighbourhood – formal and informal. Those operating businesses in premises especially along the main streets are generally formally licensed by the City Council. Stringent regulations by Kenya Revenue Authority responsible for tax collection have seen a number of these formal businesses register for Value Added Tax (VAT). Formal businesses recorded during the survey are predominantly service oriented and include restaurants, bars, grocery shops, butcheries, hardware stores.

Informal sector is itself very diverse and heterogeneous. It is divided into two sectors namely the production and manufacturing sector and the service sector. During case study, activities related to production and manufacturing could easily be observed and recorded.

Construction work for example is an informal undertaking in the neighbourhood and is complemented by several other production related activities such as metal and wood works where windows, doors, grilles, and furniture are produced. Production activities related to metal work, carpentry and joinery take place in open undeveloped plots, road sides, and rented shops.

The service oriented informal sector is generally undertaken by hawkers who display their wares by the roadside pavements or peddle them around on their feet (see photos 9.11 and 9.12). This form of trading is the dominant feature in the neighbourhood and all major thoroughfares in the neighbourhood are characterized by this activity. This sector thrives here with more ease as compared to the Nairobi CBD where they are chased away by the council inspectors. Attempts by the researcher to document the entire informal sector activities failed due to its diverse nature and its occurrences in almost all the parts of the neighbourhood including individual dwellings. Some of such activities for example occur by the windows of the single roomed dwellings and may be undertaken as a full time or part-time undertaking.

In general the pavement businesses caters for the following:

- Vegetables/Fruit
- Hardware/Toys/Assorted Goods
- Electronics
- Clothes, Bags
- Shoes
- Utensils
- Books
- Cooked Food
- Water vending
- Barbers
- Hair dressers

Vegetable and fruit selling was noted as one of the contributors to garbage pile ups. Rotting vegetables are discarded by the road sides contributing to the pollution of the area.

Water shortage has created another sector of water vending in 20 litres containers pushed in handcarts.



**Photo 9. 11: Kiosks built along the pedestrian walkway forcing them onto the road.**  
Source: Author



**Photo 9. 12: Roadside food preparation and selling using charcoal as fuel**  
Source: Author

#### **9.4 Dwelling systems of settings and activities**

The basic system of settings in Ngei II as in Mthare IV A and IVB, is the ‘single room’ dwelling. The major difference however is the massing up of these rooms into ‘high-rise’ blocks. These multi-storey blocks of apartments rise up to eight storeys in some instances.

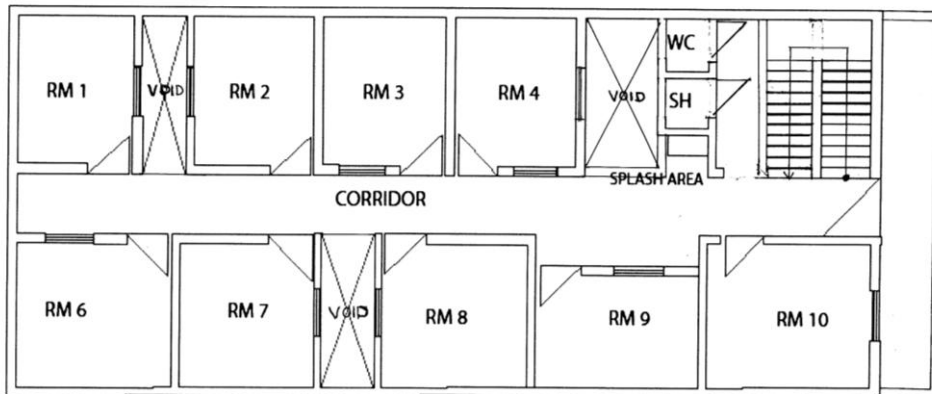
It is evident that the predominant single room dwelling typology found in the single storey barrack type housing in the slums has found a place in the high-rise blocks. The genesis of these high-blocks has already been discussed in the introduction to this chapter. In this section, the focus is on the systems of settings and embodied activities within the internal spaces of the blocks of which the dwelling unit is the dominant setting. Auxiliary settings include toilets, bathing rooms, stairs, and balconies. A dwelling is a habitable space and as such, factors affecting human comfort within this space such as lighting, ventilation, noise, and privacy are also considered here.

#### **9.4.1 Dwelling configuration**

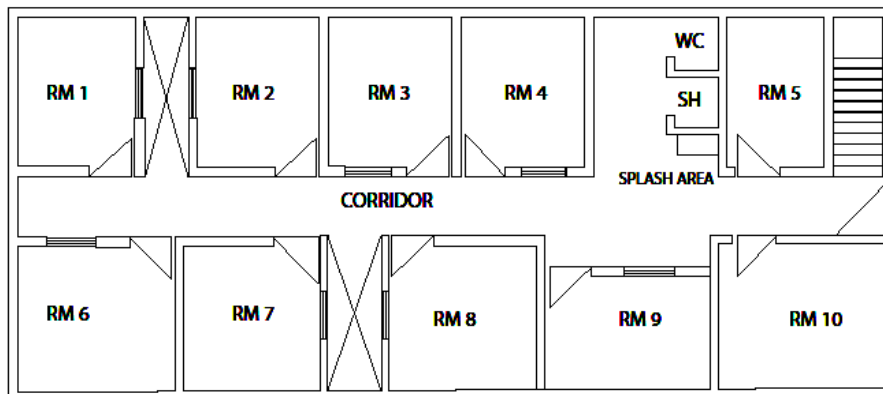
High-rise tenements present some level of transformation in the neighbourhood systems of settings. In Mathare 4A and 4B, it was observed that communal facilities end at the entrances to dwellings as all structures are single storeyed. This however is not the case as regards Ngei II with its dominant high-rise blocks. These blocks accommodate as many as 90 households on plots that ordinarily accommodate 8 households in single storey structures. Communal facilities in such cases go beyond what is found on ground level. Privacy gradient also changes with corridors in the high-rise blocks becoming more private than is the case with the single storey blocks. In the high-rise blocks the responsibility of providing services such as water and electricity lies with the landlord whereas at the neighbourhood level some of the communal facilities such as roads, and drainage systems still remain the responsibility of the City Council.

The configuration of these blocks is greatly determined by the plot configuration and development control regulations. For example, the provision allowing 100 per cent plot coverage has enabled developers to build on all the plot boundaries. As a result, two typologies have been formed. Blocks sandwiched between others have only the narrow frontage facing the road for natural lighting and ventilation. To maximize on number of rooms per floor, developers have adopted the use of light wells which source light from the roof and having a central corridor with rooms on either side. Figure 9.10 is an example of such a development on a 7 by 21 meters plot. Sandwiched between other plots, such plots only have their 7 meters frontages open to natural light and ventilation and were meant to have single storey dwellings with internal courtyards from where rooms are naturally lit and ventilated (see Figure 9.5). Light wells also meant to serve as ventilation shafts are created within the space. These are marked as voids on Figures 9.10. The natural

lighting and ventilation provided for these sandwiched plots are grossly inadequate and all the dwellings visited use artificial lighting during the day. The situation on ventilation is worsened by the fact that households use paraffin stoves the fumes from which linger on in the dwellings. Photo 9.13 shows one of the poorly lit corridors. (the camera flash light has brightened the rather dark corridor).



**TYPICAL UPPER FLOOR PLAN**



**GROUND FLOOR PLAN**

**Figure 9. 10: Typical floor layout of a block sandwiched between**  
**Source: Author**

Another factor affecting the setting of dwellings in this neighbourhood is the corner position of plots. Such plots take advantage of having two boundaries fronting the roads. Balconies are located on these two boundaries serving rows of rooms. On 12 by 25 meters plots have three rows of rooms with two rows served with a central corridor similar to the case illustrated in Figure 9.10. Figure 9.11 is an example of such a corner development. Photo 9.15 shows the block illustrated in Figure 9.11. Where a household requires more

accommodation there are possibilities in some apartments of using a link door to the adjacent room. A significant variations to the single roomed dwellings of



**Photo 9. 13: A dark and narrow corridor within the above building with wet clothes hanging for drying.**  
**Source: Author**



**Photo 9. 14: View of the sandwiched plot illustrated in Figure 8.11 above**  
**Source: Author**

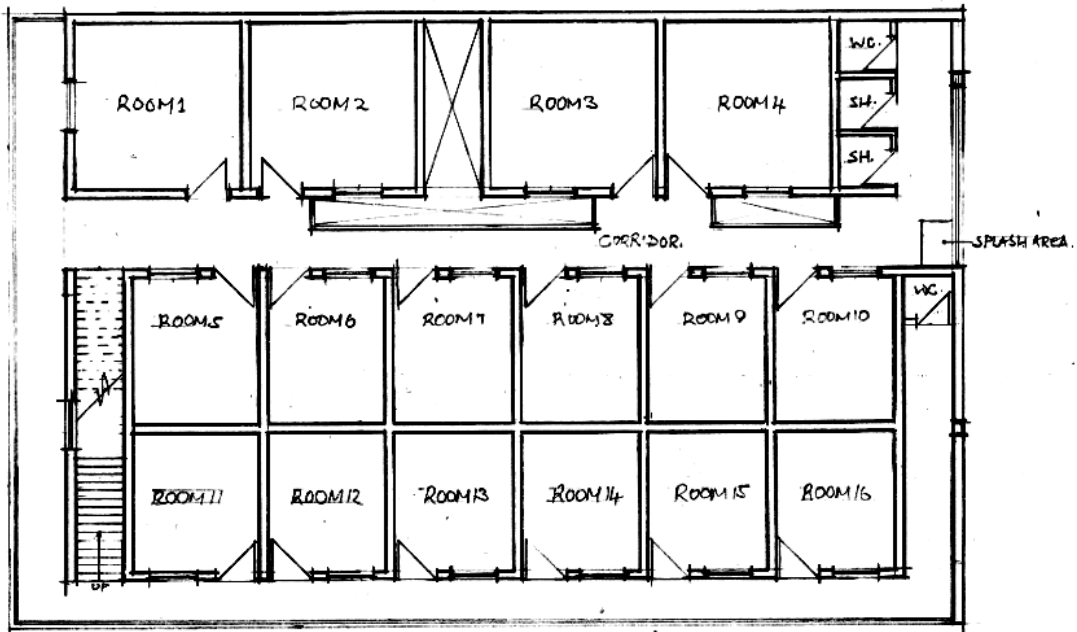
slums is the provision of toilets and shower cubicles on every floor. Balconies and corridors replace the passages in the slum row housing. It was observed that the systems of activities in each dwelling had the following basic systems of activities: sleeping, cooking, eating, and lounging. The setting for these dwellings in high-rise blocks has not influenced

the manner in which activities take place within the dwellings when compared to the single storey blocks of Mathare IVA and IVB.

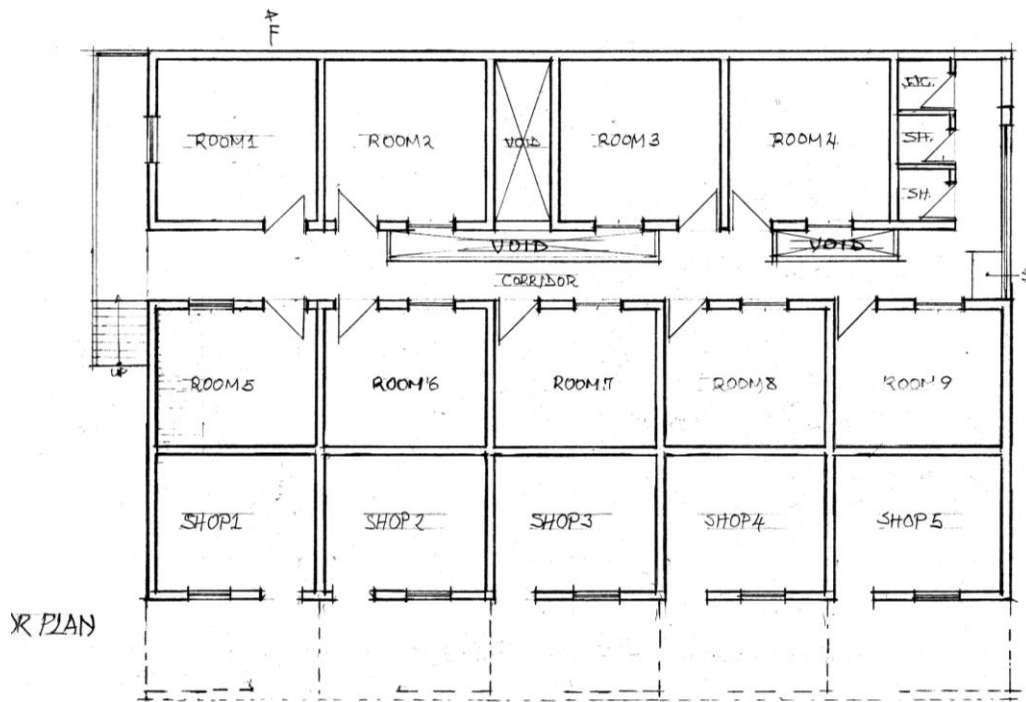
The other configuration arises from the corner plots position. Such plots take advantage of having two boundaries fronting the roads. Balconies are located on these two boundaries serving a row of rooms. On 12 by 25 meters plots, such plots have three rows of rooms with two rows served with a central corridor similar to the case illustrated in Figure 9.11 above. Where a household requires more accommodation there are possibilities in some apartments of using a link door to the adjacent room. The significant variations to the single roomed dwellings of the slums is the provision of stairs and toilets on every floor. Balconies and corridors replace the passages in the slum row housing. It was observed that the systems of activities in each dwelling had the following basic systems of activities: sleeping, cooking, eating, and lounging. The setting of these dwellings in a high-rise block has not influenced the manner in which activities take place when compared to the single storey blocks in Mathare IVA and IVB.



**Photo 9. 15: Nine storeys tenement block on spine road illustrated in Figure 9.11**  
**Source: Author**



UPPER FLOOR PLAN



GROUND FLOOR PLAN

Figure 9. 11: Floor plans of a tenement in Cluster 2 fronting the spine road  
Source: Author

#### 9.4.2 Settings for sleeping activity

As explained in Chapters Seven and Eight. Sleeping as a system of activity dominates the dwelling system and takes prevalence over other activities. Similarly in Ngei II, bed space

defines sleeping area. Unlike Mathare IVA and IVB where there is so much consistency on room sizes, in Ngei there are variations with a few blocks having a bedroom, living room, kitchen and toilet/shower. In such apartments, activities are designated to specific rooms. Communicating doors between every two rooms is a common provision to give flexibility for households that may require two rooms.

The use of double-decker beds is more common in the one bedroom units as opposed to the single roomed units. 52 per cent of household heads interviewed in the one-bedroomed units indicated that they do not share one room with their older children. 62 percent of households with children under the age of ten share the bedroom with their children. 72 per cent of households with children over ten years old prefer to have these older children sleeping in what is designated as living room. Sleeping area for the adults is considered to be the most private space within the dwelling. The sleeping space is also used for storage of personal effects including clothing, shoes, medicine, documents, etc. Photo 9.16 is an example of a sleeping space in the single room dwelling.



**Photo 9. 16: Sleeping space for a couple with a two year old child in a single roomed dwelling in an apartment block**

**Source: Author**

#### **9.4.3 Setting for lounging activity**

As in the single roomed dwellings in Mathare IVA and IVB, lounging as an activity is given prominence in the dwelling. Furniture provision defines the spatial utility for this activity. Furniture provisions range from use of simple stools to more elaborate sofa sets.

Photo 9.17 shows a section of a lounge within a single room dwelling with a large settee. In several occasions, the bed is partly used as a seat and thus incorporated into the lounging space.

Lounging in these dwellings takes place mostly in the evenings and over the weekends. As opposed to the single storey dwellings of Mathare 4A and 4B, in the apartment blocks, outdoor seating is not available and once in the dwelling, the occupants have to stay indoors. The corridors are too narrow to allow seating and the balconies which are also narrow have too many activities such as drying of clothes to offer any meaningful resting place. Younger children can be found in the passages but their number is smaller than that found in the single storey neighbourhoods.



**Photo 9. 17: Lounging space in a single-roomed dwelling. The door connects this room to the adjacent one for use by those preferring two roomed dwelling**  
**Source: Author**

#### **9.4.4 Setting for cooking activity**

Cooking is generally confined to a much smaller space as compared to other activities such as sleeping and lounging in the dwellings. Cooking space also treated with lots of flexibility. Some households shift the cooking stove towards spacious area of the room when cooking and stack it away when not in use. Certain foods are even cooked outdoor using charcoal stoves in some households especially when they require prolonged period of cooking as is the case with the mix of maize and beans. Cooking is a process that begins with food preparation before the actual cooking begins. It also entails the storage of some

of the foods such as maize or wheat flour and other ingredients such as spices, salt, cooking oil etc. There is also storage of fuel used for cooking such as paraffin and charcoal. There are no flues over the stove location and fumes from these stoves exit from the window, door, or in some cases, the space between the walls and the roof. There were reports that fumes from attached neighbouring dwellings at times filter into the dwellings. There are no elaborate fixtures and fittings in the cooking areas such as worktops, cupboards, sinks etc (see Photo 9.18). Food preparations such as the cutting of vegetables, meat, and mixing of dough is done either on the floor, any available top such as coffee table, stool or even of a tray placed on the laps.



**Photo 9. 18: Cooking space next to sleeping space showing stoves, utensils and water containers**

**Author: Source**

Those interviewed indicated that they were aware of kitchen fittings as found in other settings but such were beyond their reach. Cooked foods are generally left in the cooking pot for the next meal and there are no elaborate storage spaces. Such pots are either left on the cooking stove after it has been put off or on tables used as general storage area for utensils. On four cases exhibited some form of cupboard storage space for foodstuff. Long term preservation of food by refrigerating is none existent as dwellings have no electricity.

Kitchen utensils are in most instances clustered on the floor in cooking pots but there are few cases where these are kept in cupboards or on table tops. The utensils are very basic and include aluminium cooking pans, enamelled iron dishes and cups, plastic dishes and cups and in some cases glasses.

#### **9.4.5 Setting for eating activity**

As is the case in Mathare 4A and B, eating takes place in the same space as lounging, utilising the same furniture. However considering the fact that the financial standing of the Ngei Tenants is slightly higher than that of the other two case study areas, most dwellings have furniture so people are able to eat from a table. In most households according to the interview, food is served directly from the pot to plates. In some households members seat around the table to share the maize meal from a common plate. Where there is no common dish to be shared, people seat wherever they prefer.

#### **9.4.6 Setting for sanitation**

Sanitation in the apartment blocks is a marked improvement to that found in Mathare IVA and IVB. One water closet is provided on each floor serving between eight and ten rooms. The provision of shower cubicles is more generous with most blocks having two cubicles. There were no complaints of congestion even though morning hours see more traffic to the facilities. 56 per cent of the dwellers interviewed expressed congestion in the morning hours when people are preparing to go to work.

A major problem expressed by all interviewed is lack of water. Even when water is available, the pressure is normally too low for the water to reach floors that are above the ground level. Residents are forced to fetch water in containers and carry it all the way to the top floor. Virtually all the cisterns in the toilets do not function first because of lack of water and secondly because of poor maintenance and vandalism. Each resident has to carry water to the toilet and pour it in the squatting pan to wash away the solids. 32 % of the apartments have attendants employed by the landlords to clean the toilets and passages. In the rest of the apartments, the tenants do the cleaning on a voluntary basis and in some cases the toilets are in a mess.

Garbage collection is a major problem and this has been compounded by the high density of the area. According to the residents, there has been a marked improvement in garbage disposal since the year 2003 when a new government came to power. Prior to this, every open space in the neighbourhood was filled with mounds of garbage some going as high as three storeys in height. This has since been cleared although piles of garbage awaiting collection are still witnessed. There are no designated garbage collection points and garbage is simply piled along the roadsides. An interesting development since the year

2000 is the formation of youth groups to tackle the garbage nuisance. There are over twenty such groups formed through the initiative of the youths. They collect garbage from each floor in the apartments at a monthly fee of Kshs 80 per dwelling. They provide bags for this purpose and dump the garbage at collection points where tracks hired by the city council are expected to collect them twice a week. The problem however is that the collection is not as regular as should be thus resulting in garbage pile-up. The garbage collection youth groups share the cost of hiring the garbage collection tracks with the City Council. In the apartment blocks, the garbage bags are placed near the stairs of the toilets. A common practice is to hang them by the balcony railings as can be seen in Photo 9.19 below. Ventilation and natural lighting is a major problem. In 48 % of the apartment blocks, artificial lighting is used on a twenty four hours basis.



**Photo 9. 19: Gunny sacks used for garbage collection hanging from the balcony railing**

**Source: Author**

Unlike Mathare IVA and IVB where personal hygiene involving activities such as brushing of teeth, washing of face in the morning, washing of feet, etc take place in front of the dwellings, while in the apartment blocks this has to be confined to the wash area. One or two splash areas are provided on each floor. However, 64 per cent of the women and 55 percent of the men interviewed stated that they do not like to use the splash area for personal hygiene such as brushing of teeth and washing of the face.

## **9.5 Vulnerability of households**

Vulnerability has been defined in this study as factors that contribute to the insecurity of individuals, households or communities. In the case of Mathare IVB, the threat of eviction was at the top of vulnerability standing arising from squatting on state land. In the case of Ngei II, does not arise form land but from tenancy. Failure to pay rent may lead to forceful eviction. A common practice of forceful eviction is the removal of the doors to the dwellings. This is an eviction that only affects the individual household. It was pointed out in the focus group discussion that tenants used to vacate their dwellings to evade paying rent and seek alternative accommodation within the neighbourhood. However, demand for housing in the neighbourhood now outstrips supply and it takes months to get a room.

The risk of fires is high judging from the crowding. Two cases of fires were reported to have taken place within the neighbourhood in the past five years but these only affected the rooms and did not spread. Roads within the neighbourhood provide adequate access for fire engines.

A notable risk is that related to the stability of the structures. Following the increase in the number of buildings collapsing while under construction in the City of Nairobi, a task force was established to look into the problem. Their findings indicate that a large number of the high-rise blocks that have come up in neighbourhoods such as Ngei II have not complied with construction standards and are at risk of collapsing especially in the cases of earthquakes. In some cases, buildings that were originally constructed as two or three storeys have since been extended to five or six storeys.

## **9.6 Conclusion**

It is evident from this case study that tenure security encourages private investment in housing. The first form of tenure security came with the purchase of two plots in the area by two housing companies to settle its members. The varying plot sizes in this section of the neighbourhood have seen the area develop bigger tenement blocks than the section that was planned by the City Council with relatively smaller plots. The case study also shows that investment in low income housing by individuals with high income is feasible as all the high-rise tenement blocks are owned by people with reasonably high incomes. Security of tenure and provision of infrastructure attract private developers.

In terms of housing provision, the high-rise development in the area has increased housing stock. Majority of the residents (62 per cent as shown in Table: 8.13 below) responded that they were satisfied with the accommodation provided despite the overcrowding. From the planning point of view however, this high-rise development has strained the services provided especially sewerage and water supply. The incorporation of commercial facilities on ground floors is an appropriate introduction considering that in most of the earlier developments, ground floor dwellings facing streets have tended to end up as commercial facilities.

## CHAPTER TEN

### CONCLUSIONS AND RECOMMENDATIONS

#### 10.1 Introduction

The objective of this study was to identify, account and document systems of settings and their embedded systems of activities in informal settlements with the aim of establishing appropriate settings for adaption in the regularization of informal settlements for sustainable housing development for the urban poor in Nairobi. The theoretical and conceptual framework adopted for the research was set to explore aspects of informal settlements' built environment, characteristics of dwellers, development trends, and intervention strategies. For this purpose, the study reviewed the Nairobi city system and its informal settlements elements focusing on aspects of their origins, growth and perpetuation. This was followed by detailed analysis of selected informal settlements neighbourhoods and their corresponding dwellings.

Informal settlements do not conform to the overall planning of a city and have never been considered in any city development strategy. Interventions often aim at eradicating them. Since it has been established that they contribute positively to the urban economy, it is prudent that they be considered as important elements of the city. It is part of the process of urbanization which for the time being is inevitable. They offer much needed accommodation for the urban poor and fresh immigrants to the city presumably in the short run and should be planned with the potential of evolving into desirable neighbourhoods. This being the case, they should be incorporated in the planning strategies for the growth of the city albeit in a more organized manner. The nature and characteristics of informal settlements vary from settlement to settlement and each case has to be considered on its own merit.

Systems of settings and embedded systems of activities formed the basis of the analyses of settlement, neighbourhood and dwelling levels. The findings of the study are summarised here in four parts. In the first part, findings related to settlement systems of settings and embedded systems of activities are presented. The second and third part presents findings at the

neighbourhood and dwelling levels respectively. The fourth part gives recommendations for adaption in the regularization of informal settlements.

## **10.2 Systems of settings and embedded activities at settlement level**

A city is a settlement and has been described as a complex system with complex systems of activities. Large cities embody numerous sub-systems each with embedded systems of activities. Four major elements namely: social, economic, physical, and cultural dominate the city characteristics and functioning. Each of these elements embodies varied systems of settings and embedded systems of activities. Social element for example embraces residential, educational, religious, health, recreational, governance, and security systems of settings. Economic element embraces production, consumption and services systems of settings. These in turn embody numerous systems of settings and embedded activities such as commercial, industrial, transportation, communication, legal, medical, engineering, architectural, entertainment, banking, security etc. Physical element embraces both the built environment and the natural environment. Finally cultural element embraces rules, norms, tradition, values, meaning, and lifestyle.

The city of Nairobi exhibits the varied systems of settings the embedded systems of activities associated with large cities. As a primate city it shoulders a greater proportion of rural/urban migration resulting in the overstretching of the available facilities. It is also the hub of commercial and industrial activities in the country and the Eastern Africa region at large. This study could not go into in-depth analysis of the city system of Nairobi as doing so would go beyond the scope of the study. However, relevant aspects of the city system that impact on informal settlements have been considered. The study established that the social, economic, and physical elements of the city system and the historical background have contributed more significantly to the establishment and perpetuation of informal settlements than culture.

### **10.2.1 Physical setting**

The physical system comprises of buildings, roads, footpaths, bridges, open spaces, water reticulation, and sewerage. However, within the physical system, the built environment is the dominant element. Realization of the built environment as envisaged by the government is

through the government's physical planning policies which address a multiplicity of social issues such as housing, education, health communication and security amongst others. Anomalies triggered by various factors discussed in this thesis however results in the form of built environment that does not conform to the set policies and are described as informal settlements. The historical background to the development of the city of Nairobi has outlined the physical planning policies imposed by the colonial settlers and post-independence ones. There are varied disparities inherited from the colonial government and perpetuated by the post-independence government. Thus informal settlements accommodate the poor and lack basic amenities just as much as the original African settlements did in the colonial era.

Infrastructure is an important element of the city system as it is shared by all the neighbourhoods. This includes the network of roads, water reticulation, sewerage, and electricity supply. The prevailing economic and social settings have for a long time considered informal settlements as undesirable and it is only in the recent past that authorities in Nairobi accepted them as integral part of the city system and started more elaborate upgrading programmes as opposed to the eradication approaches of the yester years.

Upgrading of informal settlements with infrastructure is made more complicated by land ownership. It is easier to apply it to informal settlements on government land than those on private land due to the inherent displacement of dwellers and the consequential compensation claims. This is evident in Mathare valley where informal settlements on government land are receiving some attention whereas those on private land are totally neglected. Buildings in general are part of the physical elements of the city systems. However these are more appropriately addressed at the neighbourhood level.

### **10.2.2 Social setting**

When people congregate to live closely together they form a settlement and with it a society. For mutual co-existence, the society establishes rules, norms, values and traditions to direct its activities and relationships. This evolves into a social system. A social system at the lowest ebb basically consists of two or more individuals interacting directly or indirectly in a bounded situation. As the size of the society increases, the social system becomes quite

complex and leads to establishment of political systems for its governance. It is at the political level that important decisions on resource allocations are made. Health, education, security and recreation are important elements within the social system.

The provision of health facilities in Nairobi is in three tiers namely, the central government, the local government and the private sector. The central government plays a major role in the provision of health amenities through the two major hospitals namely Kenyatta Nation Hospital which is a referral hospital for the whole nation and the Bagathi District Hospital which specifically serves the residents of the city. Although not located within the informal settlements, these two institutions serve critical cases from all parts of the city including the informal settlements. The City Council of Nairobi is mandated to provide health care facilities through numerous dispensaries in the city. Most of these are run down with poor supply of drugs yet they are supposed to provide primary health care at the most affordable cost to the urban poor. Government's physical planning policy acknowledges the importance of health facilities and comprehensive developments are required to set aside land for such facilities. However in practice, very little of this surrendered to the authority by private developers through corrupt approval of plans. In Mathare Valley developments by land buying companies and other private developers have no provisions for health facilities. Huruma City Council dispensary built within the council's housing project serves majority of the dwellers. Private health facilities like Baraka Health Centre is an NGO funded facility and the crowding experienced here is an indication of the shortage of such facilities.

Education is still considered by majority of parents as a gateway to better living for the future their children. As would be expected, no council school are located in the Mathare informal settlement and the council schools accessed by children from the informal settlement are located within the council's housing development the settlement. Free primary education offered by the government has led to congestion in the council schools as no new schools have been built in the area since it was introduced. Private schools have mushroomed and most have very poor physical facilities and on parcels of land that do not allow adequate outdoor activities.

Recreation is one social element that is seriously lacking in Mathare Valley. The irony is that to the North of this settlement are large well established sports facilities for corporate institutions and private clubs. Some of the schools in the area offer the only playfields albeit for children. There are no parks in this part of the city and residents have to cross the city to Uhuru Park and City Park. This is a serious anomaly as these two major parks in the city located in higher income group neighbourhoods are mostly patronised by the poor from the informal settlements and not the rich.

Governance as a social element guides the society's affairs in general. Kenya which owes its origin to the partitioning of the African continent by Western and its subsequent colonization by the British adopted the British system of governance at independence. This brought about the conglomeration of diverse ethnic groups into one nation. The resultant ethnic tensions persist to date as was evidenced in the post-election violence of 2008 which resulted in more than 1,000 deaths and over 600,000 of internally displaced persons. Ethnic tensions are evident in the informal settlements of Nairobi. The capitalistic system brought by the British still dominates the Kenyan society despite declaration by the state in 1964 that it had adopted an African socialist approach to development. In Nairobi, the racial stratification of neighbourhoods has given way to economic stratification with the poor mostly found in informal settlements. Whereas democratic systems have been set and the whole population participates in elective representation through parliament, the political elite determine resource and power distribution. It can be argued that this has contributed somehow to the persistence of informal settlements and their appalling conditions as lack of political will has seen resources being allocated to less deserving cases in some instances.

Regularization for integration has to start with the acknowledgement that informal settlements in Nairobi cannot be eradicated over a short period of time. Their eradication has to be a long term process. It has to be acknowledged that these settlements are an integral part of the city system and contribute positively to the city's social and economic affairs. As such, the settlements are entitled to benefits accorded to the rest of the city. How this is done becomes the subject of regularization. The setting of informal settlements in terms of location within the city system tends to relate to livelihood opportunities. Thus areas offering employment

opportunities such as industrial areas and Central Business Districts attract more informal settlements.

Other informal settlements arise out of city boundary extensions on the periphery of the city where hitherto rural settlements undergo densification without adequate planning and provision of infrastructure and services. Responsive and sustainable regularization is necessary to ensure the transformation of these settlements into settlements offering improved well-being for their inhabitants. The integration of informal settlements is a matter that has to be considered at the city level and linked to the elements within the city system namely the social, economic, and physical. Thereafter the focus turns to neighbourhood and dwelling settings.

### **10.2.3 Economic setting**

Like infrastructure, economic element of the city system involves the entire city population. Inhabitants of informal settlements offer the city the much needed low cost labour. Majority of informal settlement dwellers are themselves engaged in informal economic activities within the informal settlements. A sizeable number of informal businesses take place at the doorsteps of the dwellings. Although these offer irregular incomes with most bringing less than a dollar a day in earnings, they nevertheless supplement household incomes. Regularization has to address this fact if livelihoods have to be sustained after regularization. Complaints like those received in Mathare 4A following regularization where dwellers have been relocated to areas where they cannot sell their goods from their doorsteps attest to the importance of this factor. This aspect is addressed further at the neighbourhood level.

### **10.3 Systems of settings and embedded activities at neighbourhood level**

The first task before embarking on establishing systems of settings within a neighbourhood required an understanding of what a neighbourhood entails. It was observed that there was a general agreement that a neighbourhood stands for divisions within a city. However, how these divisions come about is still a subject of debate. There are those who argue that neighbourhoods are typically generated by social interaction among people living near each

other. In this sense, they are local social units larger than households but not directly under the control of city or state officials. There are those who argue that neighbourhoods are administrative divisions set by authorities. In this respect, they are larger than the socially established neighbourhoods and their boundaries may cut across social neighbourhood divisions. In some cases, however, administrative districts coincided with social neighbourhoods.

According to this study, the space immediately beyond ones dwelling belongs to a neighbourhood. A cluster of dwellings and the spaces surrounding them forms the immediate neighbourhood. A group of clusters of houses with common binding elements form the main social neighbourhood unit. Beyond this, the scale of neighbourhood shifts from local level to city level. In this respect, Mathare Valley settlement which falls within Nairobi's Central Division is a neighbourhood at the city level. The entire stretch of 6.8 kilometres presents a settlement with common characteristics at physical, social, and economic levels. It therefore qualifies to be referred to as a neighbourhood at the city level just like other surrounding neighbourhoods such as Pangani, Eastleigh or Kariobangi. At the local level, it comprises of at least ten neighbourhoods. These are neighbourhoods with historical roots stretching back to the colonial era in the form of villages. These villages or neighbourhoods have been analyzed in Chapter Five and three of them presented as case studies in Chapters Six, Seven and Eight.

All built developments, from the small to the large, make an impact on their surroundings. In housing in particular, the quality of these developments have long-term impacts, both on the communities they house and on the surrounding neighbourhoods. New developments are far more than simply bricks and mortar. Where they are, how well designed and built they are and how well they knit into the fabric of existing or new communities, are factors which can, in a very real way, colour the lives of people on a daily basis and for future generations. These are factors, if well considered by planners, designers and developers can translate ideals of sustainable living into a practical reality and should be the goal for sustainable housing development.

Neighbourhoods are often associated with communities. The term community also has varied meaning. In this study community has been defined as a group of people who live and work in close proximity and form a self-conscious unit just as is the case with a neighbourhood. However, the difference is that neighbourhood refers to a geographical location whereas a community refers to people within their respective neighbourhood. It is with this understanding of neighbourhood and community that the elements and components that sustain a neighbourhood system have been analyzed. Analyses in Chapters Five to Eight indicate that neighbourhood systems of settings comprise of the physical, social, economic and cultural settings.

### **10.3.1 Physical settings**

This study established that the physical settings of informal settlements' neighbourhoods comprise of natural features, buildings, open spaces and infrastructure elements just as is the case with the city system of settings.

The Mathare River Valley provides a topography that has encouraged invasion by squatters over several decades. Disused quarries and steep river banks initially provided concealment from the authorities who in turn turned a blind eye to the settlement even as they evicted squatters in other parts of the city. Land around this valley is characterized by two features namely: the relatively flat section next to Juja Road and the steep section sloping into the river. Pressure on the land has responded to the physical features. Land speculators and developers have concentrated more on the flatter sections. Squatters on the other hand have concentrated on the steeper sections and strongly entrenched themselves not only on state owned land but on privately owned land too. The aspect of riparian reserve has to a large extent encouraged the sustenance of the settlements along the river valleys as developers are barred from putting up structures on such reserves. The system of natural features with its components of relief, vegetation, and rivers have played a major role in the setting of Mathare Valley informal settlement and its struggle for change in the form of modernization. This feature is not unique to Mathare Valley and it is evident in most informal settlements in Nairobi. Kibera, Mukuru informal settlements for example have similar characteristics.

Pressure on land is what leads to this occurrence. It is therefore important that regularization strategies take this factor into consideration.

Land ownership plays a crucial role in the perpetuation of informal settlements. Informal settlements are found in both public and private land. Similarly dwellings are either owned or rented. Tenure as the right of use of a property comes in various forms. The housing typologies in the Valley cater specifically for a particular social group – the low-income group. The single roomed dwelling unit is the dominant typology. Originating from single roomed detached dwelling unit of the rural setting and developing into attached row-housing characteristic of Nairobi slums, it has permeated the high-rise development mushrooming in the area. The resultant effect of this trend is densities that are higher than those found in the very dense slums with single storey dwellings. At the neighbourhood level, it is the layout of these buildings on the site that are important. The spaces between them become crucial elements in the form of open spaces, footpaths and even roads discussed below. The most common system is corridors between blocks with rooms opening onto them. This appears to be the norm in the informal settlements. Where such spaces are wider to accommodate at least a bed length then the space is annexed for extension a dwellings unless pressure to have it as an open space is greater.

In the slum situations, all available land is used mainly for residential and commercial purposes. It is what the residents have to grapple with that expresses the gravity of absence of open spaces for household use in such settlements. To begin with, the single roomed dwellings are too small for all the occupants to spend much time indoors and more so children. The narrow passages between the buildings are predominantly for circulation and offer very little relaxation spaces. The scenario is worse in the high-rise tenement blocks where the high population has to contend with the circulation spaces as the only open spaces. The study established that the informally planned settlement offers incidental spaces that offer the residents much needed open spaces and in most instances, quite effectively utilised as is evident is the cases of Mathare IVB and Ngei II. Mathare IVA which is an intervention scheme failed to address this aspect adequately by implementing a close to rigid grid layout pattern as opposed to a free flowing layout associated with informal planning.

Informal settlements generate their own hierarchy of circulation networks. Motor vehicles are given lesser attention and the network is predominantly footpaths. The system of footpaths can be categorized into public, semi-public and private. The major thoroughfares are public and dominated by commercial activities. This is very clear in the case of Mathare IVB where the spine road is the centre of commercial activities. This concept was adopted in the case of Mathare IVA albeit at the scale of road network. From the major thoroughfares radiate footpaths serving dwellings whilst also leading to more private and often gated groups of dwellings. Generally there is no footpath without activities. The footpaths are also the open spaces between buildings and embody various activities such as washing and drying of clothes, dish washing, relaxation for adults, children's play area, selling of foods and vegetables. However, the lack of roads renders the informal settlements inaccessible even at times of disasters such as fires.

In the case of Ngei II, the elaborate road network has encouraged commercial activities to the extent that almost every ground floor has some form of commercial activity. The end result is that the roads are public leaving the residents with no personalized spaces. There is critical shortage of open spaces for children to play and adults to relax in this neighbourhood. Roads and drainage go hand in hand. In the case of informally planned settlements like Mathare IVB, the spaces between building which are also foot paths and open spaces for varied activities are also open drainage systems. Such drainage systems serve both storm and foul drainage creating unbearable filth. Mathare IVA upgrading scheme has addressed this issue by paving the spaces between buildings. With an attitude change moving away from careless discharge of waste fluids and with collaboration among residents, the passages between buildings in Mathare IVB are relatively clean. However, the roadside drainage systems still gets clogged with waste as a result of poor maintenance.

Clean water is available to all residents of Mathare. The only problem is how it is delivered. In Mathare IVA and Ngei, II each plot is served with piped water. However, the supply is irregular and in the case of Ngei II, the pressure is too low to reach the upper floors. Residents have learnt to live with the inconvenience of having to carry water all the way to the top floor. Water shortage has created job opportunity for youth in the form of water vending. As a

service, electricity is an element that influences many activities in the informal settlement. Street lighting has encouraged late night commercial activities. It also opens up other employment opportunities for people such as welders, electricians, barbers, and carpenters.

Building regulations are tools aimed at controlling building development to achieve the desired standards. Whereas they are desirable, they are not in tandem with the emerging trends in both planned and unplanned or informal settlements. For example, the Government's Housing Policy still insist on a minimum of two rooms per dwelling whereas the reality on the ground is that most households in informal settlements live in single roomed dwellings.

Location influences choice of dwelling at city and local levels. At city level, proximity to employment opportunities takes top preference. This is the decision made regarding the preference of one neighbourhood to the other. At the local level several factors come into play but availability takes the centre stage. Due to scarcity of dwellings for rental, most households settle for what is readily available especially if they are moving into the neighbourhood for the first time. Subsequent movements are more out of preference for a location.

### **10.3.2 Economic settings**

Economic setting is quite complex as it is not just confined to the activities within the neighbourhood. The residents of a neighbourhood rely mostly on economic activities involving the entire city for their livelihoods. Wage earning, for example, which is the dominant source of income for the poor inhabitants of these settlements, is sourced from industrial, commercial, and richer neighbourhoods. On the average, 40 per cent of the dwellers in the surveyed neighbourhoods of Mathare Valley source their income from economic activities within the neighbourhoods. This is a significant proportion which cannot be taken for granted in the regularization of these settlements. Elements making up economic systems of settings include wage employment, self employment, land ownership and transaction, rent, service oriented undertakings such as education, childcare, food preparation, construction of buildings, fabrication of building components, furniture making, and hawking.

The location of Mathare Valley makes it ideal for workers seeking employment in the city's commercial and industrial areas. The vast population of the Valley is itself an economic setting offering numerous opportunities for self-employment. Unlike the early squatters in the Valley who supplemented their wage income with neighbourhood farming, some of the current residents supplement their income by engaging in small business activities such as selling vegetables, fruits, fish, used clothes, and shoes. There are those who undertake such businesses on a full time capacity whereas others only undertake them during their spare time. The original settlers in Mathare Valley migrated to the city in search for employment but also embarked on farming the open spaces. It is not clear whether this was linked to their rural background or was necessitated by a need to supplement income from employment. Currently, rural urban migration still persists but there is no longer free land to settle on and cultivate. Everything has been monetarized and migrants have to contend with rent payment from the onset. Employment opportunities were the driving force at the inception of the settlement. Currently vibrant self-employment opportunities sustain a large population of the settlement. Virtually every street is dominated by commercial activities.

Land as an economic element has played a significant role in the perpetuation of informal settlements. This has been exacerbated by its absence in the formal open land market due to its ownership status. First, there is land that is owned by the government and as such is not for exchange in the open market unless allocated by the government to individuals or companies. Secondly, there is squatting on private land which hinders such land from exchanging freely in the open market as a result of pressure exerted by the squatters against eviction. Lack of clear ownership of land deters prospective investors and as a result no improvements on houses and infrastructure take place.

Rent as an economic element is quite controversial in informal settlements. To majority of the residents who also happen to be tenants, it is a source of exploitation by landlords. To the landlords, it is a source of proportionately higher returns from minimal investment. The fact that the landlords have no security of tenure over the land has been a deterrent to reasonable investment on the structures they own.

### **10.3.3 Social settings**

Social setting is the most complex of the neighbourhood systems of settings. This is more so because it deals with people. Elements established in this study in relation to neighbourhoods are administrative setup, and social organizations. Mathare Valley presents an efficient social administrative set up which started in the pre-independence period. Each village has a village council of elders headed by a village elder. Although not formally recognized by the government, the council works very closely with the government's administrative setup comprising of chiefs and district officers. It is however the combination of village elders, chiefs and district officers that has played a major role in the allocation of spaces for construction of dwellings and the eventual overcrowding of the informal settlements. This is more evident in the case of Mathare IVB located on state land.

Social organizations are numerous and play important roles both at humanitarian level and development partnership level. These groups include churches, NGOs, CMOs, self-help groups, etc. Their greatest influences have been in education, health and sanitation. Mathare IVA upgrading attempted to use the social factor in its upgrading approach by having the land and the entire project owned by the community through a community trust known as Amani Housing Trust. Although a noble project, the programme has been faced with numerous problems as politics and ethnicity create divisions amongst the community members. The researcher argues that social setting which embodies social capital offers considerable potential for the urban poor to pull up resources to uplift their living environment but its management is complex and commitment by those involved dismal.

### **10.4 Systems of settings and embedded activities at the dwelling level**

The systems of settings and related activities at the dwelling level are micro in scale and complex in nature. Their implications at the household level range from being objective to being subjective in nature and touch on all the day to day activities of the households. Two categories of systems were established in the study namely: Systems that influence choice of dwelling and Systems that relate to the use of the dwelling.

#### **10.4.1 Choice of dwelling**

Systems of settings that influence choice of dwelling include means of earning a living, level of income, level of education, social networks, and rent levels. All these elements are however interrelated. Education for instance is a determinant of employment opportunities which in turn determines the level of income and means of livelihoods. Income levels determine what a household can spend on rent. Rent levels relate to house types and their locations. Within Mathare Valley these range from crude structures made from recycled materials such as metal sheets, cardboards, plastic sheets, earth to permanent structures of masonry walls and even multi-storeyed. The lowest rent of Kshs 1,000 is offered by the crude structures whereas the highest rent of Kshs 2,500 is offered by the multi-storey permanent structures. The range between the highest and lowest rent is not as high as the difference in environmental quality between the two settings. It can therefore be argued that with improved incomes and increased supply of the multi-storey dwellings, many households can afford to live in better environment.

Social network is an important factor to consider. Most ethnic groups live in clusters within the informal settlements. Studies indicate that this is as a result of rural/urban linkages with those in the city offering boarding facilities for newcomers. Eventually the new comers find their own dwellings within the area they were received.

All households aspire to live in well serviced localities. However, whenever services are provided the trend is for the rent to go up keeping them out of reach for the poor. Mathare IVA attempted to address this aspect by making the dwellings community owned and rental in tenure. However, a secondary market has cropped up within the upgraded settlement with allottees subletting their houses for rents higher than that charged by the Trust. It is evident that for allottees who sublet their dwellings, the need to make money from the dwelling is greater than the need to stay in it. This is one of the aspects that this study attempted to address by incorporating livelihoods in the analysis of informal settlements.

#### **10.4.2 Use of dwelling**

The dwelling has been described as a system of setting with embedded systems of activities. The focus here is on the interior use of the dwelling as the external aspects have been discussed at the neighbourhood level.

Single roomed dwelling offers considerable challenge to households especially those with older children. As a rule, such dwellings only have one bed for parents use. In the rural setting, older children generally go looking for places in the neighbourhood to sleep either in grand parents dwelling or older siblings' dwellings. This practice occurs in some households with relatives nearby. Other households are forced to rent additional rooms. Sleeping is considered a private activity and all dwellings screen off this area with a curtain. All single roomed dwellings set the remaining space after the sleeping space as a lounging space. This is a semi-private space and visitors are welcomed here. However, lounging as an activity often extends to the outdoor whenever space permits.

This element is associated with the cooking stove, utensils and food containers tacked in corners of the single roomed dwellings and take the smallest space in the rooms. Reference is made to cooking space as opposed to kitchen giving the impression that households are aware that the dwellings have no kitchens. The activity often extends to the lounge area and even outdoor.

There has been marked improvement in the level of sanitation. The involvement of youth in the maintenance of this element has improved the level of cleanliness and good habits are being adopted by residents.

#### **10.5 Recommendations**

The findings of this study suggests that there is need for regularization of informal settlements to take into consideration the three levels of settings namely the city, the neighbourhood and the dwelling if sustainable interventions are to be achieved. This includes the systems and elements within these settings. The study has established that these systems of settings and their embedded systems of activities are complementary and play a determinant role in the

physical, social and economic development trends of informal settlements. Recommendations for consideration in the regularization of informal settlements and future research areas are considered here at the city, the neighbourhood and the dwelling levels as a model for regularization. The recommendations address specific strategies, policies and design guidelines for each of the three levels.

### **10.5.1 The city level**

The Government's policy on housing as spelt out in Sessional Paper No.3 of 2004 on National Housing Policy for Kenya stipulates that there is need for the minimization of the number of citizens living in shelter that are below the habitable living conditions. This refers to citizens living in informal settlements both on government and private land and in urban and rural areas. Since urban areas present a more critical housing and environmental challenge as compared to rural areas, it is desirable that more attention be given to urban areas.

As a starting point, this study recommends that a strategy for adoption and regularization of existing informal settlements has to be established. A planning policy has to be established that incorporates informal settlements with a view to accepting them in the short run and eradicating them in the long run. This policy has to address all forms of informal settlements whether on public or private land, freehold or leasehold land at the city level. The strategy should aim at gradual evolution of these settlements into the government's desired standards. As part of urban growth strategy, the policy has to be embodied in growth strategies such as the current "Vision 2030". The strategy should pick specific informal settlements for development intervention and earmark those that must be eradicated to give way for other forms of city elements. This should be undertaken at the city level and on parameters that take into consideration the city's systems of settings and activities. The intervention strategy should be on the basis of a comprehensive urban development plan that envisages the city's growth pattern and sustainability.

Public/private partnership must be encouraged as housing delivery by the private sector now surpasses the public sector. In addition, the government must encourage the private sector to invest in low-income housing. Mathare Valley informal settlement for instance having been in

existence for almost 80 years warrants recognition as a permanent settlement and should be recognised and legalised. It is upon this formalization that intervention strategies should be designed. Such strategies must address the present scenario and envisaged future development in line with overall city development. Not all informal settlements qualify for legalization and the criteria used in the evaluation have to justify the decisions made. At this level, decisions have to be made as to whether the legalised settlements have to offer rental or owner occupied housing or both. Decisions also have to be made on whether additional elements should be introduced to supplement the livelihoods of the dwellers and the housing element. This entails a combination of urban planning regulations and participatory city management mechanisms. It is only through such planning approaches that these informal settlements can be integrated with the rest of the city and enjoy all the services offered by the city.

Density plays a major role in planning for housing development. Whereas single storey residential developments similar to Mathare 4A offer short term low-cost solutions, they offer limited open spaces for outdoor activities and increase the lengths of roads, footpaths, and other services per dwelling. The role of determining appropriate densities should be left to the local authorities who should apply urban design principles to ensure that the city acquires the desired physical and social characteristics. Each regularised informal settlement should be given distinct characteristics to avoid monotony at the city level.

Infrastructure development must remain the preserve of local authority possibly complemented by the central government. The failure by local authorities to develop infrastructure has been the major drawback for private initiative in housing development in Nairobi. With the sprawling growth of the city, it is recommended that the city be divided into wards giving diverse agencies that compete amongst themselves creating efficiency and competence. The interconnectivity of settlements within the city is a priority and the policy should aim at ferrying people with ease across the city to ease access to employment opportunities. A policy should be established for location investments offering employment opportunities with the aim of addressing population concentrations. This would reduce the criss-crossing of the city by the residents in search of job opportunities.

### **10.5.2 The Neighbourhood level**

Neighbourhood systems of settings and the embedded systems of activities offer an appropriate framework of analysis for the understanding of settings and activities that prevail in any given informal settlement. The study has shown that planned interventions are often transformed by the users as soon as they are completed as they respond to economic and social pressures. By understanding these transformations, designers and planners can arrive at improved strategies that adequately respond to the arising needs.

Informal settlements are themselves neighbourhoods if not clusters of neighbourhoods as is the case with large informal settlements such as Kibera and Mathare Valley. Having recommended a structured and selective legalization of existing informal settlements and their integration into the city system, the next level of intervention is the design of the intervention strategy. Crucial at this level are the targeted beneficiaries that is, the residents of these informal settlements. The intervention approaches adopted must ensure that the residents remain the beneficiaries of the improved housing conditions. This means that their livelihoods which include livelihood constraints and capabilities must be taken into consideration while designing the intervention strategies. Similarly land ownership must be handled with utmost care to avoid market forces that tend to push out the targeted beneficiaries.

Neighbourhoods cannot be considered in isolation as dwellings they host are part and parcel of them. Indeed it is the clustering of dwellings that create neighbourhoods. However, there are elements within neighbourhoods that need consideration. These are social amenities which include health, educational, and recreational facilities. Also in this category is infrastructure which includes roads, foul drainage, storm water drainage, water reticulation, and electricity supply. These amenities must be considered and coordinated at both city and neighbourhood levels.

To address the issue of crowding as experienced in the informal settlements, the researcher recommends that single storey dwellings be done away with and multi-storey housing developed in such a manner that open spaces are realised for use by other amenities. This will address the current trend where housing estates designed for single storey dwellings get

illegally transformed as the houses give way to multi-storey dwellings. Multi-storey dwellings also have the advantage of retaining the entire population in a settlement whilst releasing much desired land for other amenities.

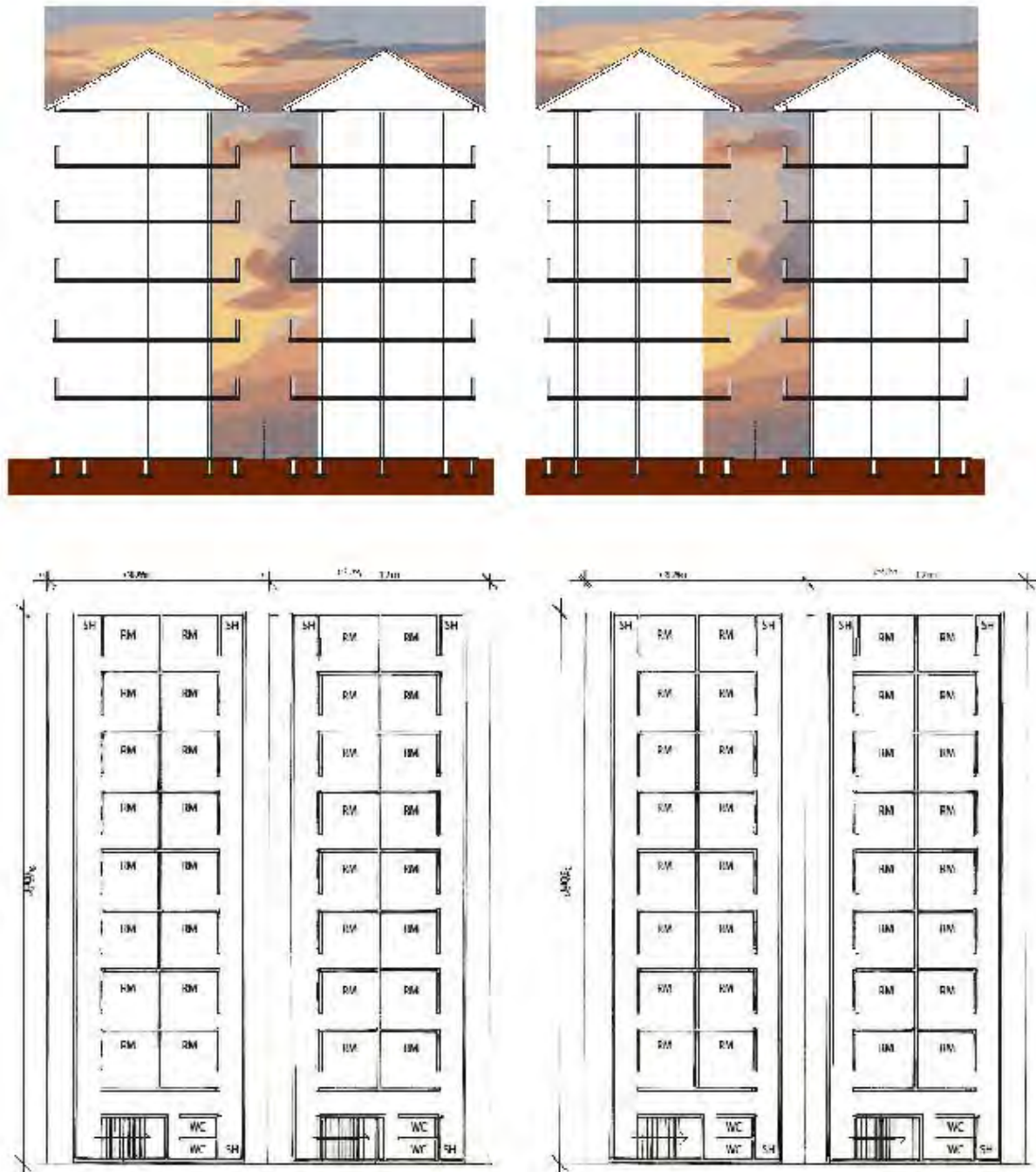
Self-build housing entails individual land ownership and is in most instances beyond the reach of majority of informal settlements dwellers. This study recommends that rental housing be the dominant form of tenure in the upgraded settlements. This will also ease wrangles that emanate from allocations to individuals. The issue of who becomes landlord is paramount to the success of a rental approach. Mathare IVA as a community owned rental scheme has clearly shown that enforcement of landlord authority upon tenants and respect of this authority by tenants is not practical. Private developers this authority over tenants to the extent of exploiting them in some instances. It is this abuse that has to be addressed through appropriate legislation and institutions to safeguard tenants. Local authorities have in the past successfully offered rental housing and this should be encouraged. Private developers on the other hand have surpassed the local authorities in housing delivery and they should be encouraged to maintain this lead but within structured development controls and lease practices.

The characteristics of neighbourhoods must address the dominant social group in the settlement. However, some level of social integration must be maintained and this entails a mix of rental and owner-occupied housing. The advantage of rental tenure is that housing transformation is limited. Rent levels should be left to the free market as this is bound to stabilize as supply matches demand in the long run. Rent restriction or controls distort rental markets and should be discouraged.

### **10.5.3 The dwelling level**

The findings of this study indicate that the single roomed dwelling is deeply entrenched in housing for the low-income social group and that its adoption in the high-rise blocks on plots that were meant for low-rise blocks have contributed to environmental degradation. Overcrowding, poor natural lighting and ventilation are some of the environmental

degradation. The study recommends minimum plot width of 12 meters and lengths of 30 meters. Buildings on such plots should be set in such a manner as to have a minimum 1.2



**Figure 10. 1: Recommended layout for high rise tenement blocks**  
 Source: Author

meters space which is open to the sky on each of the longer boundaries as illustrated in Figure 10.1. When this is adopted, there would be an open space of not less than 2.4 meters between the blocks with an additional 2 metres for the balconies facing each other. This enables residents to receive reasonable amount of natural lighting and ventilation. One staircase would suffice for dwellings not exceeding three storeys otherwise a stair on either ends of the blocks is recommended. This typology has been developed simply for policy formulation and does not include other neighbourhood amenities such as roads, footpaths, opens spaces, shops, schools and health centres all which form the totality of a neighbourhood.

Policies are strategies and guidelines drafted with the aim of achieving desired goals. They have to be implemented if these goals have to be achieved. To achieve sustainable regularization of informal settlements intervention strategies have to address social, economic, and physical aspects as they relate to targeted ground and the quality of the built environment. The researcher recommends the establishment of an oversight body with the responsibility of overseeing and coordinating an effective implementation strategy. It should be an independent body with legislated responsibility of monitoring and evaluating development control mechanisms as established and implemented by local authorities. This includes planning regulations, building regulations, approval of plans, infrastructure provision and maintenance, building maintenance, and all other built environment related matters. This is the only effective way to combat abuse of authority by local government officials. It is only through such measures that the desired goals can be achieved and sustained. With the establishment of counties in the new constitution of Kenya, such oversight bodies should be established at the county level for a more effective service delivery. This will encourage competitiveness amongst our cities and towns for service delivery and investment attraction and thus better wellbeing for the residents. They should not be charged with the responsibility of direct approval of development plans as this remains the preserve of local authorities. Lastly, more research should be undertaken in the area of regularization of informal settlements to establish which of the existing settlements should be maintained and upgraded and which to relocate. Professions concerned with the built environment such as architecture, landscape architecture, civil and structural engineering must all take keen interest in informal

settlement development interventions and city growth patterns to realise sustainable development of our cities.

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**APPENDICES**

**APPENDIX 1: HOUSEHOLD QUESTIONNAIRE**

**RESEARCH TOPIC:           REGULARIZING INFORMAL SETTLEMENTS FOR SUSTAINABLE HOUSING DEVELOPMENT FOR THE URBAN POOR – A CASE STUDY OF NAIROBI**

**CASE STUDY:                MATHARE 4A DEVELOPMENT PROGRAMME**

**HOUSEHOLD QUESTIONNAIRE**

House No.....Temporary structure.....Permanent structure.....

**A.     HOUSEHOLD CHARACTERISTICS**

1. How many people live in the house and what is their relationship?

Number of Males.....	Number of females .....
<input type="checkbox"/> Family	<input type="checkbox"/> Friends
<input type="checkbox"/> Relatives	<input type="checkbox"/> No relation

2. If a family, what is the size and structure of family?

<input type="checkbox"/> Husband-wife-children	Number of Children – Girls.....Boys.....
<input type="checkbox"/> Single parent-children	Others.....

3. What are the ages of the occupants?

		Others
Head .....	2 <sup>nd</sup> Child .....	.....
Spouse .....	3 <sup>rd</sup> Child .....	.....
1st Child .....	4 <sup>th</sup> Child .....	.....

4. What is the occupation of each occupant?

Head .....
Spouse.....
Others .....

**B.     RESSIDENTIAL OCCUPANCY**

5. How long have you lived in Mathare?

<input type="checkbox"/> 1 – 5 Years	<input type="checkbox"/> 11 – 15 Years	<input type="checkbox"/> 21 – 25 Years
<input type="checkbox"/> 6 – 10 Years	<input type="checkbox"/> 16 – 20 Years	<input type="checkbox"/> Over 30 Years

6. Why have you chosen to live in Mathare

<input type="checkbox"/> Affordable rent	<input type="checkbox"/> Influence of kinsmen
<input type="checkbox"/> Proximity to place of work	<input type="checkbox"/> Housing quality
<input type="checkbox"/> Self-employment opportunity	<input type="checkbox"/> Environment quality

Others.....  
.....

7. Which other choices were open to you other than Mathare

.....  
.....

8. Where else have you lived in Nairobi?

1) ....., .....Yrs	3) ....., .....Yrs
2) ....., .....Yrs	4) ....., .....Yrs

**C. RESIDENTIAL QUALITY**

9. Does this accommodation meet your needs?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

Comments

10. If not what needs are not met?

.....  
.....  
.....

11. What do you dislike about the accommodation?

.....  
.....

12. What do you like about the accommodation?

.....  
.....  
.....

13. Would you be in a position to pay more rent if improvements result in higher rent?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

**D. TENURE SYSTEM**

14. Are you comfortable with the existing rental system?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

15. If not then what is your preference?

.....

16. Can you afford to purchase the house if offered?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

**E. EDUCATION LEVEL**

17. What levels of formal education have you attained?

Head of household:

<input type="checkbox"/> None	<input type="checkbox"/> Village Polytechnic	<input type="checkbox"/> Polytechnic
<input type="checkbox"/> Primary level	<input type="checkbox"/> Secondary level	<input type="checkbox"/> University

Spouse:

<input type="checkbox"/> None	<input type="checkbox"/> Village Polytechnic	<input type="checkbox"/> Polytechnic
<input type="checkbox"/> Primary level	<input type="checkbox"/> Secondary level	<input type="checkbox"/> University

**F. OCCUPATIONAL SKILLS**

18. What skills do you possess?

Head of household household.....

.....

Spouse.....

**G. ENVIRONMENTAL QUALITY**

19. How do you rate the quality of the immediate outdoor space provided?

<input type="checkbox"/> Excellent	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Very poor
<input type="checkbox"/> Good	<input type="checkbox"/> Poor	

20. How do you rate the privacy level immediately in front of the house?

<input type="checkbox"/> Too public	<input type="checkbox"/> Private enough
<input type="checkbox"/> Public but appropriate	

Others.....

21. Are you satisfied with the arrangement and levels of keeping the outdoor spaces clean?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If not what do you suggest?.....

22. How do you use the outdoor space?

<input type="checkbox"/> Relaxation	<input type="checkbox"/> Drying of clothes	<input type="checkbox"/> Commercial activity
<input type="checkbox"/> Clothes/dish washing	<input type="checkbox"/> Children's play area	<input type="checkbox"/> Don't use the space

23. Are the waste disposal facilities provided adequate and do you make use of them?

.....  
 .....

24. What should be done to reduce the solid waste (e.g. plastics, foul water) pollution of the environment?

.....  
 .....

**H. SANITATION**

25. How do you rate the number of people using the toilets and bathing facilities provided?

<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Crowded and unbearable
<input type="checkbox"/> Crowded but bearable	Others.....

26. What is your opinion on the use, cleanliness and method adopted for keeping the toilet and shower clean

**I. WAYS OF DOING THINGGS**

27. Has the improved housing environment changed your way of doing the following?

1. Cooking

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If yes, how?.....

2. Washing clothes & dishes

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If yes, how?.....

3. House cleaning?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If yes, how?.....

4. Furnishing

If yes, how?.....

5. Disposal of waste

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If yes, how?.....

6. Use of toilet

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If yes, how?.....

7. Bathing

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If yes, how?.....

8. Way of living

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

If yes, how?.....

**J. HOUSEHOLD INCOME**

28. What do you do for a living?

.....  
.....

29. What is the total household's monthly income?

Head.....Spouse.....

30. Do you obtain credit or loans from any source if so which one?

.....

**K. COMMUNITY PARTICIPATION, SOCIAL AND WELFARE ORGANIZATIONS**

31. Do you feel that you belong to a community referred to as Mathare 4A?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

32. What makes you feel that you belong to the Mathare 4A community

.....  
.....  
.....

33. What makes you feel not to belong to Mathare 4A Community

.....  
.....  
.....

34. Which welfare or social organizations do you belong to and for what purpose?

.....  
.....

35. Do you maintain links with rural home?

.....

36. Have you at any time been a member of any of the following groups?

<input type="checkbox"/> Wet-core groups	<input type="checkbox"/> Assembly of group leaders
<input type="checkbox"/> Neighbourhood groups	<input type="checkbox"/> Target group representatives

37. If yes, what constraints have you experienced in the group?

.....  
.....

What role have you played in the development and management of Mathare 4A?

**APPENDIX 2: INTERVIEW SCHEDULE INTERVIEW WITH DIRECTOR,  
DEPARTMENT OF ARCHITECTURE AND PLANNING, NAIROBI CITY COUNCIL**

**RESEARCH TOPIC:** Regularizing informal settlements for sustainable housing development for the urban poor – A case study of Nairobi

**OBJECTIVE:** Explore the implications of behaviour and livelihood constraints and opportunities on the realization of adequate housing for the urban poor.

**INTERVIEW SCHEDULE**  
**INTERVIEW WITH DIRECTOR, DEPARTMENT OF ARCHITECTURE AND PLANNING, NAIROBI CITY COUNCIL**

1. What planning principles have been applied in the development of housing around and including Mathare North in terms of:
  - a) Density
  - b) Roads and footpaths standards
  - c) Sewerage and storm water drainage
  - d) Shopping facilities and markets
  - e) Educational facilities
  - f) Health facilities
  - g) Social facilities
2. Have the high rise developments in this area been approved by the council and do they conform to the planning regulations?
3. What planning principles had to be overlooked or amended in considering the development of Mathare 4A slum upgrading project?
4. What is the council's policy on slum upgrading?
5. Does the council have capacity to enforce planning regulations? if not then what is being done to improve the situation?
6. What is the city council's long term policy in dealing with housing for the urban poor?
7. What is the city council's policy on rental housing for the urban poor?

## **APPENDIX 3: INTERVIEW WITH PROJECT MANAGER, MATHARE 4A**

**RESEARCH:           REGULARIZING INFORMAL SETTLEMENTS FOR  
SUSTAINABLE HOUSING DEVELOPMENT FOR THE URBAN  
POOR: A CASE STUDY OF NAIROBI**

### **INTERVIEW SCHEDULE**

#### **INTERVIEW WITH PROJECT MANAGER, MATHARE 4A**

##### **A.     PROJECT CONCEPTION AND IMPLEMENTATION**

1. How was the project conceived and why was Mathare slums selected for the project?
2. What were the objectives and scope of the project and have these been achieved?
3. Who are the players in the implementation of the project and what roles have each played?
4. What was the outcome of feasibility study conducted prior to the implementation of the project and to what extent did the findings influence the design and implementation of the project?
5. The project boasts of addressing the failures experienced in the previous low cost housing programmes. Which previous failures were identified and how have they been addressed in the project.
6. What is the origin of the project name - Mathare 4A.
7. How has the project implementation been undertaken?
8. Was displacement of dwellers envisaged in the implementation of the project and if so, how has it been addressed?
9. How were the project beneficiaries determined?

##### **B.     PROJECT FINANCE AND COSTS**

10. How was the project financed?
11. What is the cost of the project to date?
12. What is the unit cost per house?

13. What is the proportion of cost of shelter to cost of infrastructure?
14. How was the issue of affordability addressed?
15. Was cost recovery considered in the implementation of the project and if so, what were the plans for cost recovery and what has been the success so far?
16. What proportion of the rent collected is ploughed back into the project?
17. What is the level of community participation in the financing of the project?
18. How much was spent on compensating structure owners?
19. Is the project subsidized? If so, by who and to what extent?
20. How affordable are the rents in terms of proportion of the tenant's income?

**C. PROJECT MANAGEMENT**

21. What is the management structure of the project?
22. How is the project management funded?
23. Amani Housing Trust as the implementing agency runs the project in terms of implementation and management of the project. How is the trust funded?
24. What is the mandate of the Trust in running the project and on what time frame is this mandate?
25. What is the role of the community in managing the project?

**D. TENURE SECURITY**

26. Literature indicates that 75 % of the slum dwellers in Nairobi are tenants paying rent. To what extent has the project addressed this aspect?
27. Literature indicates that the project was conceived as a rental scheme. Has this been realised and what structures have been set for its implementation?
28. How has security of tenure been addressed and to what extent is the project owned by the community?
29. To what extent does the tenure system adopted comply with the existing land and tenancy policies and if there are conflicts, what policy changes are necessary?

30. How is rent collection undertaken?
31. Under rental tenure, there is the perceived dynamism in the movement and temporary nature of tenancy. How is this issue addressed and what is its impact on the project?
32. What advantages were realised from adopting rental tenancy as opposed to owner occupied tenancy.
33. What are the advantages of the adopted rental system over social housing provided by the city council?
34. What form of agreement is entered into between the tenants and the landlord (Amani Housing Trust)
35. How has the form agreement performed?
36. What is the level of default on rent payment?
37. How is rent default handled?
38. What are the methods put in place for recovery of outstanding rent?
39. Is eviction practiced and if so, how is it implemented?
40. What are the conditions for vacating the premises?
41. Are new tenants accepted and if so, on what terms?
42. Is there an association of tenants and if so, what is its role in tenancy?
43. Is tenancy transferable and if so under what terms?
44. Is there any form of discrimination or preference in the allocation of houses?

#### **E. COMMUNITY PARTICIPATION**

45. What is the extent of community participation in the project
46. What community organizations exist in the settlement either formally or informally?
47. What has been the community's response to the realised housing environment in terms of: the size and quality of the dwelling unit, the spatial organisation of the settlement (open spaces, size and quality of access roads and foot paths, sanitation, water supply, electricity, etc)?

48. Does the large population of tenants affect the level of community participation?

**F. PLANNING AND DESIGN**

49. What planning concepts have been adopted in the design of the project?

50. What aspects of planning have been considered in integrating the project into the city's urban fabric?

51. What population density has been adopted in the design of the project?

52. How has the residential, commercial, economic and social characteristics of the settlement been addressed?

53. What informed the sizing, clustering, and location of the houses, sanitary blocks, shops/kiosks, kindergartens and health facility.

54. What planning and design considerations were taken into account in designing the roads and foot paths network and what standards have been achieved?

55. Has variation in type of house been considered in the project?

**G. LIVELIHOODS**

56. What is the impact of the project on the livelihoods of the beneficiaries?

57. How has the project addressed the issues of commercial and economic activities within the development?

58. Has the community adhered to what was planned in terms of commercial activities?

59. If not then what has been the community's response?

60. What livelihood activities are undertaken within the settlement both formally and informally as opposed to the previous unimproved slum?

61. What trends are noticeable in the improved environment?

62. What factors external to the dwellers affect their livelihoods e.g., transport cost, flooding, commodity prices, unemployment, location, etc.

**H. ATTITUDE AND BEHAVIOUR**

63. Has the conflict of attitude and behaviour been experienced in the implementation of the project?
64. Are activities such as washing of clothes, cooking, disposal of garbage, etc undertaken by households as was envisaged in the design of the project?
65. Are the households keeping their houses in better standards compared to previous unimproved slum structures?
66. Is there a feeling of ownership and need to take more care of the environment?
67. Has there been a change of attitude in the payment of rent as a result of the improved environment?
68. Has security in the area improved

#### **I. ENVIRONMENTAL QUALITY**

69. What environmental qualities were perceived for the project in terms of:
  - Organisation of space.
  - Cultural landscape
  - Fixed, semi-fixed and non-fixed elements
  - Location – from neighbourhood to city levels
  - Economic (means of livelihoods and other economic activities)
  - Physical (topography, trees, access roads, paths)
  - Social (homogeneity or status)
  - Cultural (kinship, family structure, roles, identity)
  - Symbolic/meaning,
  - Pollution
  - Noise
  - Perceptual
  - Associational

- psychological

70. What machinery has been put in place for garbage collection and street cleaning?
71. How is the storm drainage system cleaned and maintained?
72. If not then what has been the community's response?
73. Have open spaces been considered in the planning of the project? If so, at what levels and for what purposes and how are they maintained?
74. Does the City Council of Nairobi play any role in the maintenance of the environment?

**J. SHELTER, BUILDING MATERIALS AND CONSTRUCTION TECHNOLOGY**

75. What does the project consider to be adequate housing and how has the project addressed this issue?
76. To what extent do the houses constructed comply with the building regulations?
77. Stabilised earth blocks and sisal cent roofing sheets have been used in the project. Why were these materials chosen and what has been the implication of this choice of materials and construction technology on the quality and affordability of the housed?
78. What maintenance structures have been put in place?
79. How is maintenance financed?
80. What has been the community's response to the choice of materials?
81. Has all the earth for making of stabilised earth blocks been sourced at the site?
82. How does the adopted material compare with conventional building materials in terms of cost and performance?

**K. SETTLEMENT CHARACTERISTICS**

83. What have been the advantages and disadvantages of the location of site i.e. Mathare valley, Mathare River, former quarry activities, etc.
84. What is the proportion of structure owners to tenants in the settlement?

- 85. What proportion of structure owners stay in their structures?
- 86. What are the age and gender characteristics of the settlement?

**L. VULNERABILITY CONTEXT**

- 87. What shocks exist within the settlement?
- 88. Are there seasonal shifts

**M. PROJECT SUSTAINABILITY**

- 89. To what extent is development approach adopted sustainable

## **APPENDIX 4: FOCUS GROUPS DISCUSSION SCHEDULE**

### **RESEARCH:           REGULARIZING INFORMAL SETTLEMENTS FOR SUSTAINABLE HOUSING DEVELOPMENT FOR THE URBAN POOR: A CASE STUDY OF NAIROBI**

#### **Objective of the discussion**

The objective of the focus group discussions is to get insight into various issues affecting residents of informal settlements in the case study area.

#### **Guidelines for discussions**

##### **1. Introduction**

- A. Welcome participants and carryout introductions
- B. Explain the general purpose of the discussion and why the participants were chosen.
- C. Discuss the purpose and process of focus groups.
- D. Outline general ground rules and discussion guidelines such as the importance of everyone speaking up, talking one at a time, and being prepared for the moderator to interrupt to assure that all the topics can be covered.
- E. Address the issue of confidentiality.
- F. Inform the group that information discussed is going to be analyzed as a whole and that participants' names will not be used in any analysis of the discussion.
- G. Read a protocol summary to the participants.

##### **10 Issues for focus group exploration:**

- A. Historical background of the neighbourhood
  - Settlement origins
  - Pre-independence era
  - Post-independence era
  - Any major occurrence influencing the course of the neighbourhood settlement
- B. Land
  - Land ownership
  - Access to land
  - Land buying companies
  - Community ownership of land
- C. Dwellings
  - Dwelling typologies
  - Size
  - Quality
  - Ownership
  - Rent

- D. Infrastructure, services and sanitation
  - Roads and footpaths
  - Sewage
  - Water supply
  - Garbage disposal
  
- E. Poverty
  - Income levels
  - Cost of living
  - Employment and unemployment
  
- F. Role of Government
  - Policies
  - Administration
  - Services and amenities
  - Security
  - Others
  
- G. Role of City Council of Nairobi
  - Services and amenities
  - Licenses
  - Others
  
- H. Role of NGOs and charitable organizations
  - Community organization
  - Health
  - Education
  - Others
  
- I. Community organization
  - Youth groups
  - Women groups
  - Church groups
  - Cultural groups
  
- J. Politics
  - Parliamentary representation
  - Local authority representation
  - Community representation
  
- K. Environment
  - Open spaces
  - Garbage dumping

L. Vulnerability

- Fire hazards
- Flooding
- Diseases
- Social disturbances

M. Attitude and behaviour

- Behaviour in general
- Attitude towards neighbourhood affairs

**11 Conclusion**

A. Closing remarks

B. Thank the participants

**APPENDIX 5: INTERVIEW WITH THE MANAGER, AMANI HOUSING TRUST ON COMMUNITY AND SOCIAL ASPECTS**

**RESEARCH TOPIC:** Regularizing informal settlements for sustainable housing development for the urban poor – A case study of Nairobi

**OBJECTIVE:** Explore the implications of behaviour, livelihood, and contextual constraints and opportunities on the realization of adequate housing for the urban poor.

**INTERVIEW SCHEDULE**  
**INTERVIEW WITH THE MANAGER, AMANI HOUSING TRUST ON**  
**COMMUNITY AND SOCIAL ASPECTS**

1. How can the Mathare Valley community be described?

<input type="checkbox"/> Homogenous	<input type="checkbox"/> Heterogeneous
<input type="checkbox"/> Cohesive	<input type="checkbox"/>

Comments.....  
 .....  
 .....  
 .....

2. What community development practices have been applied to this community and what have been the effects?

.....  
 .....  
 .....  
 .....  
 .....

3. What are the levels of community participation within the project?

.....  
 .....  
 .....  
 .....

.....  
.....

4. Out of the 10 community organizations listed in the Socio-economic survey, only the wet-core management committees are popular. Why have the rest failed?

.....  
.....  
.....  
.....  
.....  
.....

5. Are there behavioural attributes that can be traced to the previous harsh slum environment that have been carried over to the improved environment? If so, what are their effects on the community, the environment and the project at large?

.....  
.....  
.....  
.....  
.....

6. Is kinship networking prevalent within the community?

.....  
.....  
.....  
.....

7. What constitutes a neighbourhood within the project and what are the components of a neighbourhood?

.....  
.....  
.....  
.....

8. How are the various community organizations leaders elected?

.....  
.....

.....  
.....  
.....  
.....

9. What is the community's attitude towards commodification of the houses?

.....  
.....  
.....  
.....

10. Are there values, norms and standards that can be identified with the community? If so, list them.

.....  
.....  
.....  
.....

11. How are the various community organizations leaders elected?

.....  
.....  
.....  
.....  
.....

12. Are ethnic tensions evident within the community?

.....  
.....  
.....  
.....  
.....

1. List of tenants
2. Rent collection statistics 2004 and 2005
3. Statistics on tenancy changes in the past 5 years

## **APPENDIX 6: DWELLING SPACE-USE AND ACTIVITY OBSERVATION SCHEDULE**

**RESEARCH:           REGULARIZING INFORMAL SETTLEMENTS FOR SUSTAINABLE HOUSING DEVELOPMENT FOR THE URBAN POOR: A CASE STUDY OF NAIROBI**

### 1. Dwelling configuration

- a. Dimensioned sketch of floor plan
- b. Type of wall, roof and floor construction
- c. Location of doors and windows
- d. Internal finishes
- e. External finishes

### 2. Spatial utility

- a. Layout of furniture and other objects in the room
- b. Activities undertaken in the room and where located

### 3. Maintenance

- a. State of building elements and components
- b. Cleaning
- c. Repairs

## **APPENDIX 7: OPEN-SPACE SETTING AND UTILITY OBSERVATION SCHEDULE**

### **RESEARCH:           REGULARIZING INFORMAL SETTLEMENTS FOR SUSTAINABLE HOUSING DEVELOPMENT FOR THE URBAN POOR: A CASE STUDY OF NAIROBI**

1. Location of open spaces
  - a. Identification of open spaces identified on neighbourhood plans
  - b. Layout sketch of the open space
  
2. Spatial utility
  - a. Activities undertaken within the open space
  - b. List people using space in terms of sex and age
  - c. Times of the day when space is used by the varying groups of people
  
3. Items found in open spaces
  - a. Grass
  - b. Paving
  - c. Unpaved
  - d. Trees
  - e. Seats
  - f. Children's play items
  - g. Garbage
  - h. Animals
  - i. Chicken
  - j. Open drains
  - k. Pit latrines
  - l. Sewage
  - m. Others
  
4. Maintenance
  - a. State of the open space
  - b. Cleaning and maintenance

APPENDIX 8: TENANT LEASE AGREEMENT



**Amani Housing Trust**  
**MATHARE 4A DEVELOPMENT PROGRAMME**

Mathare 4A Development Programme  
P.O. Box 84392 - Nairobi - Kenya

Tel: (254-2) 889148 / 8700-8088  
Fax: (254-2) 881 01 04  
E-mail: amanitrust@amantrust.com

**Makubaliano ya Mpingaji wa Nyumba**  
(Nyumba ya Malazi Nambari..... Chumba/Vyumba Nambari.....)

Makubaliano haya yamefanywa Tarehe ..... 200... kati ya Amani Housing Trust - Mathare 4A Development Programme "Mwenge Nyumba" na

Dk./Dk. ....  
Nambari ya kutambulisho..... "Mpingaji"

1. Mwenge Nyumba amakubali kuangaji na Mpingaji amakubali kupanga Nyumba Nambari..... Chumba/Vyumba Nambari..... iliyo kwenye eneo la mradi wa "Mathare 4A Development Programme" L.R No. 209/2011-209/2009- 209/12467 na iliyomo ya Mwenge Nyumba.
2. Kodi ya nyumba itakuwa ni shillingi ..... itakapoliwa na Mpingaji kutangaza kita mwazi. Mpingaji wapotea kodi atapewa rika kama Kazi ili utangazwa kita mwazi.
3. Balesa juuama la Mpingaji italiga kwa mstapari wa Mji wa Nairobi (Nairobi City Council) au kanzuni zingine gharuma singine zoteote zote ambazo zitakubaliwa kwa mstapari wa Mji, au kwa kufalika.
4. Balesa juuama la Mpingaji hurekobi ku chuma wazi ambalo pepete ambalo kitaharibika kutawabika na kutatambua vyema. Mareketocho ya kwanza yatakuwa yatakuwa la Mji wa Nyumba.
5. Mpingaji atazama chumba/vyumba kwa njia ya W. Hesa, takataka zote zitapewa na mpingaji pwali yaliyotengwa na takataka.
6. Mpingaji atazama nyumba kwa mshahidi pamoja na Mpingaji hana rufaa yeyote kubwajisha utazami wa nyumba, kufanyia biashara au kwa mwelezi mwingine yote.
7. Iwapo kwa sababu ya ugonzi au ugonzi chumba/vyumba hiki abomolewavyi abomolewavyi Mwenge Nyumba atakuwa na haki ya kutaminiha mpingaji kwa nyumba yoyote yeyote au yote zote ili kuroki baada ya kupata ibara ya mshahidi. Iwapo hali ya Kodi ya nyumba hipo mpya au mpya Mpingaji - a mpya - kama tofauti hali. Mpingaji walipotea kodi mpya.
8. Mpingaji hana rufaa yeyote ya kuongachana au kuacha chuma ya nyumba.
9. Mwenge Nyumba au Mpingaji yote na haki ya kuapilambali makubaliano haya baada ya kupata ibara ya mwelezi mmoja.
10. Mwenge Nyumba atakuwa na haki ya kutaminiha mpingaji kutoa kwa nyumba zote:
  - i) Mpingaji atakuwa kati ya kodi haki ya mshahidi haki ya haki, na kodi iliyotea bila kulipwa kwa muda wa mwazi mmoja.
  - ii) Mpingaji atakuwa nyumba kwa njia ya haki.
  - iii) Mpingaji atakuwa nyumba au haki ya nyumba.
  - iv) Taha ya mpingaji inayotambua mpingaji anepotea kutambua chumba hicho hicho kwa njia ya haki.

**Makubaliano haya yamawekwa sahihi na**

Mrs. G. W. Karbo  
Kwa njia ya Amani Housing Trust  
ID No ..... Mpingaji  
Mathare 4A Development Programme

Yam.....

(Makubaliano haya ni sahihi kutoka hufu ya kingoreza, na iwipo kuan hufu yeyote kutokana na tafiri, makubaliano kutika na hufu yeyote kutokana na hufu yeyote)