Housing Policy and Supply in Khartoum: The Role of the Public Sector in the Supply Process

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This thesis is dedicated to my father, the soul of my late mother, my wife, family and Sudan

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Abstract

The public sector plays a significant role in the housing supply process in Khartoum. This role primarily focuses on the process of land subdivision and providing housing plots through sites-and-services housing plans. The thesis investigates this role within the arena of the international human settlement development policy frames, theories and literature and the presumed enabling role.

After the initial introduction, the thesis covers a literature review on the housing policies and their evolution, settlement development policies and housing supply approaches in the developing countries, which form a theoretical base and provide an analytical framework for understanding the housing supply context of Khartoum.

The second section collates the housing policy data on Khartoum and analyses it to give a clear understanding of the housing supply context and the basic factors that influenced it and the role played by the public sector. The second section, accordingly, analyses housing within the urban planning context and highlights basic issues in the housing policy in Khartoum. In this context this part analyses the urban structure aspects, viz., land use, housing supply within the master plans, location of low-income housing areas, housing densities, urban infrastructure, land policy, tenure and supply issues and the subdivision process and sustainable development issues. This part also describes and analyses some salient housing policy issues viz., urbanization, poverty and housing demand in Khartoum, the housing classification system, low-income urban housing types, a review of the housing policy in historical perspective and the housing development process. This part also analyses the role of the public sector in housing supply and its basic role in the allocation of the sites-and-services plots.

The third part focuses on the government housing plan and the sites-and-services allocation as a major role of the public sector. This part basically uses data collected from the surveys and fieldwork to investigate two aspects of the housing supply; the housing characteristics and standards in terms of what is being allocated and the beneficiary characteristics in terms of to whom housing plots are allocated.

The last section of the thesis outlines the results and conclusions of the thesis and puts forward recommendations. This first discusses the major housing supply backdrop issues and their influence on the supply process. Then, in the light of the thesis results, it highlights what the public sector can do to increase housing supply. In this context the thesis argues that, through a grounded research in the context of Khartoum, settlement consolidation could be achieved in four ways viz.; rationalizing the housing land use; plot subdivision; optimising the housing standards, housing extensions and transformations; enhancing incremental development and settlement upgrading, and the housing allocation process are salient approaches that can achieve a considerable increase in the housing supply. Under the constraint of the lack of literature and basic information on housing policy in Khartoum, the results form a contextual frame to help policy makers to enhance the housing supply process for Khartoum.

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List of acronyms and abbreviations in the thesis

BOO	Build-Operate-Own (a method for privatisation)
BOOT	Build-Own-Operate-Transfer (a method for privatisation)
BOT	Build-Operate-Transfer (a method for privatisation)
BRE	Building Research Establishment (UK)
CARDO	Centre for Architectural Research Development Overseas
CBD	Central Business District
CBO	Community-Based Organization
CEC	Commission of European Communities
CNS	The Comprehensive National Strategy (Sudan)
COHRE	Centre on Housing Rights and Evictions
DNF	Date not found
EAA-NC	Engineering Affairs Authority of the National Capital
EHP	(Al-) Engaz Housing Plan
GDP	Growth Domestic Product
GOS	Government of Sudan
GSS	Global Shelter Strategy
HBE	Home-based Enterprise
HH	Household
HUD	Department of Housing and Urban Development USA
IBRD	International Bank for Reconstruction and Development (former World Bank)
IDA	International Development Association
ILO	International Labour Organization
IMF	International Monetary Fund
IQR	Inter-quartile Range (of a sample)
KSMEAH	Khartoum State's Ministry of Engineering Affairs and Housing
MDGs	Millennium Development Goals
MHPU	Ministry of Housing and Public Utilities
ND	Not dated
NFHA	National Federation of Housing Associations
NGOs	Non-governmental Organizations

NHC	National Housing Committee (Sudan)
NHP	National Housing Plan
NRC	National Research Council (Sudan)
OHCHR	United Nations High Commission for Human Rights
PPP	Purchasing Power Parity
ROSCAs	Rotating Savings and Credit Associations
SCSPPA	Steering Committee of the Strategic Programme of Poverty Alleviation
SDD	Sudanese Dinars (currency) equivalent to £S10 (see £S below)
SGAHS	Sudanese Group for the Assessment of Human Settlements
SSEs	Small Scale Enterprises
S&S	Sites-and-services
UMP	Urban Management Programme
UN	United Nations
UNCED	United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil 1992, known as Earth Summit.
UNCHS (Habitat)	United Nations Centre for Human Settlements (now UN-UN-HABITAT)
UNDP	United Nations Development Programme
UN-HABITAT	United Nations Human Settlement Programme (formerly UNCHS (Habitat)
UNHRP	United Nations Human Rights Programme
UNICEF	United Nations International Children's Emergency Fund
USSR	United of Soviet Socialist Republics
WB	World Bank
£S	Sudanese Pounds

Glossary of Arabic and non-English terms

Al-Amarat	A first class housing district in Khartoum, literally means multi-storey concrete frame buildings.
Al-Balad	Country or area of origin
Al-edara al-ahleiyah	A native or traditional government system, usually with hereditary tribal-based leadership.
Al-Engaz al-watani government	The National Salvation Government.
Al-Engaz government	The shortened version of the National Salvation Government.
Al-estrateegeiyah al-gowmeiya ash-shamillah	The National Comprehensive Strategy that was adopted by the government between 1992 and 2002.
Al-faki	From Sudanese culture; a religious scholar who has an ability to interpret Islamic teachings. Usually, *al-faki* has adherents who follow his instructions.
Alfasl althani	Government expenditure to meet the routine requirements of the government institutions.
Al-kashf Al-aam	Applying for a plot in the government housing plan by listing all the applicants in a single record, without any sort of distinction, then sorting according to specific criteria. The alternative to this is applying through lists prepared by labour unions.
Al-Khartoum talata	Literally means 'Khartoum number three' but here it stands for a district in the old part of Khartoum, south of the CBD.
Al-khutta el-eskaneiyah	The government housing plan.
Al-khuttah al-eskaneiyah lel-Engaz	The housing plan of the Salvation Government.
Al-Mahalleiyah	A local government authority.
Al-majlis Al-Shaabi	The local people's council.

Al-tagdeem alfi'awi	Applying for a plot in the housing plan through the professional and trade unions.
Al-tanmeiya	Government expenditure for development.
Al- wohdat assasiya	The lowest 'basic' administrative units in local government composed of elected members forming a committee.
As-Suk almarkazi	A 'central market'. A site designated by the government south of Khartoum as a core for an alternative CBD for the city.
Awgaf	The plural of *waqf* (see *waqf*) i.e. endowment.
Bait shaabi	The traditional house, or popular houses.
Baladi	A type of roof with bamboo, reeds and thatch covered with mud and supported by main palm tree trunk and secondary wood joists.
Dar-es-Salaam villages	Residential districts allocated specially for the displaced southerners in Khartoum.
Diwan or *saloon*	An independent sitting room in a traditional house, kept mainly for guests.
Fatwa	Legal opinion based on Islamic jurisprudence.
Feddan	An acre.
Ganoon almoaamalat almadaneiya	The Law of Civil Transactions.
Gishra	Adding half brick facing to an adobe built wall at a later stage for improvement; or walls built of mud bricks from inside and burnt red bricks from outside.
Housh	A local name for the courtyard where outdoor activities are undertaken, and used also to sleep therein at night.
Jalouse	Adobe (mud) walls.
Kashasha	Sloped thatched veranda, stands also for *rakooba* (see next page), common in rural areas in the central parts of Sudan.

Lajnat al-farz	Applications sorting committee to the government housing plan for allotment of residential plots.
Maheiya	Monthly salary.
Mihila Milan	Meaning "women together".
Masakin shaabeiya	Low-income public houses, built on a limited scale in Khartoum in the 1970s.
Masha	Shared ownership of land.
Mazhab	School of Islamic thought.
Miri	Government owned land.
Moatamadeiya	An alternative name of a local council for each of the three cities of Greater Khartoum, the head authority of which is a commissioner.
Morabbaa	A cluster of residential plots that often range between 200 and 300 plots, used as a sub-district or a neighbourhood within the housing land subdivision in Khartoum.
Muhafaza	Province.
Muhafiz	The caretaker of the province.
Mulk	Privately owned land.
Murabaha	Also written as '*morabaha*', an Islamic mode of finance that involves a purchase transaction between a client and a bank. The client specifies the items required, the bank buys the item required by the client and adds a profit margin to the original price. If agreed, a contract may be entered into. The client has the right to withdraw before signing the contract without any obligations.
Nafeer	A traditional cultural norm of self-help based in rural areas adopted in harvesting and constructing houses in Sudan.
Nemrah etnain	Literally 'number two'; stands for a district in old part of Khartoum, south of the CBD.

Rakooba	A veranda-like shaded space supported by wood posts. The roof is often thatch or made of palm leaves, usually built in front of rooms in traditional houses and rural areas.
Raksha	A motorcycle with three wheels for the driver and two other passengers.
Rebat	A charitable foundation (a building) usually devoted to aged, poor, indigent and homeless people.
Shariah	The body of the Islamic law.
Suq	Market place.
Tassruf	Disposal of land for specific purposes.
Tawzeea al-aradhi	Land allocation.
Wali	Governor of a state.
Waqf	Endowment.
Welaya	State.
Zakaa	Legal obligatory Islamic charity.
Zawi ad-dakhl al-mahdood	Limited income households receiving regular salaries.
Zawi ad-dakhl al-monkhafedh	People on low-income.

Chapter 1

Introduction

Chapter 1 Introduction

This chapter is an introduction to some key issues to enable easy and clear understanding of the whole thesis. Within this context, the chapter gives a description of the research context, its significance, the basic research problem, research objectives, research questions and the research mechanics.

1.1 The context of the research

Shelter provision in developing countries depicts an alarming situation. It is estimated that at least one billion human beings throughout the world still lack adequate shelter and are living in unacceptable conditions of poverty; the majority are in developing countries (UNCHS, 1997b: Paragraph 53). Amongst Third World countries, the sub-Saharan countries are the poorest. Tipple (1994a) points out that:

> "As countries in the sub-Saharan Africa are counted within the poorest, the proportion of income likely to be spent on housing will tend to be lower than developing countries in the world as a whole. It is likely to be too low, for example, for each urban household to afford a self-contained dwelling." (Tipple, 1994a: 593).

According to the World Bank, the number of the poor in Sub-Saharan Africa is expected to rise from 300 million in 1999 to 345 million people by 2015, and the continent is dependent on exporting commodities. Sub-Saharan Africa is also experiencing political and economic instability. Its economy is required to grow at an annual rate of 7 percent in order to halve poverty by 2015, which is more than twice as fast as the 3.1 percent growth that was achieved in 1999-2000[1].

Adebayo (2002:351) paints a gloomy picture of African cities and the problems they are experiencing:

> "Spatially cities continue to expand without proper forward planning for the carrying capacity of the existing housing, infrastructure and services. This has resulted in poor housing, rundown of infrastructure and decay of the environment. The lack of effective management, governance and accountability to civil society is also a dimension of urbanization in Africa that few cities in the continent are exempt from. The argument for integrated development that monitors and evaluates the performance of the city is called for".

According to Adebayo (2002), African cities are facing many problems that constrict their role and achievement of sustainable development and contribute to the housing problem.

[1] http://www.developmentgoals.org accessed 1.3.2003.

Sudan is not far away from these problems. The following is a brief summary of these problems:

1. Governments are sectoral in operation and lack sufficient coordinating mechanisms within their management structures and institutions at central and local levels.
2. Existence of sharp differentials in urban and rural incomes and growing social and territorial inequalities.
3. Unprecedented pressure on cities' resources and infrastructure.
4. Transportation and environment straining them to a breaking point owing to the migration of the poor rural people to urban areas.
5. Political conflicts and power struggles that act against sustainable development.
6. Unrealistic policies and planning programmes.
7. Design, implementation and development of urban areas and their failure to capture and to predict the economies and population growth.
8. Lack of information for disaster management.
9. Drought and flood that frequently occur in many African cities (Adebayo, 2002).

1.2 The significance of the thesis

The thesis represents a basic, recent and up-to-date text about housing policy and supply in Khartoum. The thesis presents the housing in Sudan in view of the salient theoretical backgrounds and issues in housing that are based in literature. The thesis is primarily a grounded research on housing in Khartoum. Focusing on the role of the public sector as an important actor in the housing process, the thesis brings up the housing provision levels and standards within the arena of the international human settlement development policy frames. The thesis gives some comparisons of housing provision levels in Khartoum with examples of housing levels and practices from other developing countries or internationally adopted standards where possible, to enable researchers to assess the housing situation in Khartoum.

The thesis revealed a clear lack of literature on housing policy in Sudan in the salient information sources in UK, such as the periodicals and books. The thesis compiled this scarce literature and many of the valuable unpublished materials, reports and conferences that have relevance to housing policy and supply, through an intensive archival search, and put them together in a single text. The thesis also uses data in the research theme from the fieldwork in forms of quantitative and descriptive data, such as tables and graphs to portray the level of housing provision. In this way, the thesis sets a background for other researchers to work against using the tables, data and the other materials. The thesis forms a foundation for other people to carry out further research in housing about Sudan. It therefore enables researchers to easily gain access to materials about housing in Khartoum.

Generally, the housing problem in developing countries is a focus of interest to many academics and governments and has been an international concern of many organizations, who are trying to develop a knowledge base and conceptual approaches that can help alleviate the housing supply problem. For example the United Nations Conference on Human Settlements (Habitat II), in its Habitat Agenda chapter I addressed two themes of equal global importance; "Adequate shelter for all" and "Sustainable human settlements development in an urbanizing world" (UNCHS, 1997b[2]). To quote item 3 in chapter 1 in the Habitat Agenda, which addresses the first theme:

> "A large segment of the world's population lacks shelter and sanitation, particularly in the developing countries. We *(the nations signed the Agenda)* recognize that access to safe and healthy shelter and basic services is essential to a person's physical, psychological, social, and economic well-being and should be a fundamental part of our urgent actions for the more than one billion people without decent living conditions. Our objective is to achieve adequate shelter for all, especially the deprived urban and rural poor, through an enabling approach to the development and improvement of shelter that is environmentally sound"

Similarly item four addresses the second theme, but the previously quoted item 3 is a focus of the thesis. Accordingly, the research would be considered as a contribution in that respect.

The research findings might help in locating the housing problem in Sudan within the context of all low-income countries, therefore highlighting the magnitude and the nature of the problem and allowing further comparisons to be made.

Locally the research highlights some essential housing policy and supply issues in Sudan in general, and in Khartoum in particular, that could be utilized to further develop the current housing supply process.

The research gives an overall assessment of the government housing plans and the housing supply process with a view to highlighting its merits, inefficiencies, ineffectiveness, and its influence on the urban housing land resource utilization and the urban context.

Discussion of the government housing plots allocation processes might be sensitive and critical in the case of Sudan because it deals with issues such as resource allocation, income

[2] http://www.unhabitat.org/unchs/english/hagenda/ch-1a.htm accessed March 1999

distribution, economic efficiency, social justice, and the juxtaposition of the fulfilment of urban planning objectives and the public and private objectives. The subject could also be sensitive to public opinion if any negative aspects against policies adopted by the officials become evident.

The housing plots allocation is closely connected to corruption, and illegal acquisition, or to unfair distribution of a hidden valuable resource and, therefore, it may have a political influence if not controlled or if no actions are taken to combat the phenomenon of corruption. Also the allocation process directly affects the capitalization and wealth generation and accumulation, besides its original role in housing provision.

1.3 Research problem and background

The world's total population in 1995 was estimated as 5.7 billion (UNCHS, 1996a: 11) According to the United Nations it reached six billion on 12th of October 1999[3]. The population increase is greater in low-income countries than in developed countries. In Africa, which is a low populated continent, taking into account only the natural increase of population, the consequences may not be as serious as the other highly populated continents, such as Asia. But the most serious problem is the high rate of urbanization resulting from the high rates of rural-urban migration and the high urban birth rates. African countries are mostly poor countries. The resources to meet the demand for shelter, public services, and infrastructure are highly limited. Currently there are 281 million-cities in the world (UNCHS, 1996a: 11), and there are about 198 million-cities in third world countries constituting about 70 percent of the whole. The million-cities are taken as indicators to denote the concept of urban concentration (Darin-Drabkin, 1977), which also denotes the complexity of dealing with urban planning problems, including shelter provision. Most cities and urban centres in Sudan have experienced an unprecedented population increase during the last decade for many reasons. These reasons include, but are not limited to, lack of appropriate urbanization policies at both national and regional levels that have resulted in an unbalanced growth of urban settlements; drought; and instability due to the civil war in the southern part of the country.

[3] http://www.census.gov/cgi-bin/ipc/popclockw a website that includes world population clock, accessed November 1999.

Poverty is further exacerbated by the current urbanization trend. As an increasing proportion of the world's population live in urban areas, the pressure on already overloaded infrastructure and services becomes even more severe (UN-HABITAT, 2001). Housing problems in Sub-Saharan countries could be described as follows:

> UNCHS (Habitat) has estimated that some 21 million new housing units are required annually in developing countries to accommodate the growth in number of households during the 2000-2010 period. Moreover, some 14 million additional units are required each year for the next 20 years if the current housing deficit is to be replaced by 2020 Current trends, however, indicate that existing shelter delivery systems are unable to meet such a demand (UN-HABITAT, 2001)[4].

Being a capital, Khartoum City is the largest urban centre in Sudan. It is witnessing the highest rate of increase of all centres. The population of Khartoum is approximately 5.5 million. According to the Khartoum State Ministry of Housing for example, one thousand new migrants arrived daily at the capital in September 1999. Haywood (1985a) described the urban planning problem of Khartoum in terms of, firstly; the lack of effective mechanisms for planning and control of the city's growth, which has resulted in a pattern of sprawling low-density land uses with inadequate services and deteriorating environmental standards. Second, planning control, land-use zoning and building byelaws are often applied arbitrarily. Third, planning problems are exacerbated by high population growth rates and national economic problems (Haywood, 1985a).

Such high urbanization and population increase has imposed a further pressure on the need for shelter, services, infrastructure, and job opportunities. Moreover the existing services and infrastructure are deteriorating owing to over-use and the inability of the government to provide for those additional needs.

Generally, governments in the developing countries have to play a leading role in the housing supply. It is argued that governments and even the international agencies have been reluctant to encourage investment in housing, which has often been seen as an item of consumption (Jones and Datta, 1999). The response of the government in the early stages was very slow, this has resulted in the emergence of squatter areas around the city. According to the Khartoum State Ministry of Housing there are about 116 variously sized squatter settlements in Greater Khartoum. During the early 1990s the government initiated a programme of a site

[4] http://www.habitat.org/how/intlstats.html last accessed February 2003.

and services scheme as a reaction to solve the problem. This programme subdivided vast areas around the city for these site and services schemes that have resulted in urban sprawl and inappropriate utilization of the urban housing land.

Two types of housing areas occurred as a result of the population increase, squatter areas and the formal housing areas. These two types have consumed a large part of the available urban housing areas, because they developed in a low-density urban form. Obviously, there is a real need to rationalize the housing supply process and the urban housing land resource consumption to meet the public and private objectives. The public sector has a principal role in the whole process, particularly in the allocation system, which can be the most effective tool of the housing supply process.

1.4 Research objectives

The research will try to fulfil the following three main objectives:

1. Through a grounded research method, the research evaluates the low-income housing supply system in Khartoum in relation to the salient conceptual approaches in the theoretical review of the literature.

2. The research will assess the role of the public sector within the overall housing policy and the low-income housing supply system in general, and in the government sites-and-services plots housing allocation in particular, with a view to exploring avenues of increasing the housing supply for those on low-income.

3. The research evaluates the effectiveness of the housing plots allocation system as a housing supply tool and its influence on the housing supply process. The research analyses the housing standards outcome and the plan beneficiary characteristics.

1.5 Research questions

Given that the 'government housing plan' concentrates on sites-and-services plots allocation, the research tries to answer a main question; what can be done by the public sector to increase the housing supply in Khartoum, based on the analysis of existing housing standards, characteristics and the socio-economic and cultural characteristics of the beneficiaries of government housing plans. Answering this question necessitates answering other important and relevant questions:

1. What is the nature and extent of the housing problem in Khartoum that justifies the need for efficient housing supply? What could be the origins, reasons and causes and what policies would be required to increase the housing supply?

2. What is the role played by the public sector in Khartoum within the country's housing policy in Sudan in the process of housing supply currently and in the past, and what role should it play in the future to increase the housing supply?

3. Do the sites-and-services housing plans that are adopted by the public sector in Khartoum, as a major type of housing supply, and self-help; provide effective housing supply approaches for low-income households?

4. In what way does the housing provision system affect the urban structure and how it responds to the affordability of the low-income groups, utilization of urban housing land resource, and respond to the housing demand?

1.6 Structure and mechanics of the research

The three sectors that share the burden of housing supply and the process of the development of the housing sector are the public sector, private sector, and the civil society including NGO's and CBO's (UNCHS, 2001a). This research focuses on the public sector's role. Also with the housing supply processes; two markets could be pointed out, formal housing and informal housing. This research focuses on the formal housing but also deals to a lesser extent with informal housing. Emphasis has been given to the site-and-services plots allocation, particularly *Al-Engaz* housing plan.

The research is divided into three main sections. The first section includes three chapters. Chapter 1 is an introduction to the thesis, including a description of the research context, significance, questions, and structure. Chapter 2 is a theoretical review including the body of literature that has relevance to the research theme and feeds into understanding the thesis arguments. The theoretical review has been done through a thorough search in the thesis on the research theme, researches and articles in the different periodicals covering the most important issues that have relevance with housing in Khartoum in different libraries in Newcastle, Khartoum, Jeddah and Durham. Chapter 3 includes the research methodology.

The chapter first discusses the different research methods and then explains how the research method has been selected.

The second section includes the empirical work of the thesis contributing to knowledge. In this section, the thesis brings up new housing data and makes it available for other researchers to make use of for further research, besides the data use in policy formulation, general assessment and comparative evaluation. It is composed of two parts. The first part of the section includes three chapters, 4, 5 and 6. This deals with the urban context, housing policy and the housing supply aspects in Sudan with a focus on the role of the government. The purpose is to clearly portray the aspects of the housing policy and supply in Khartoum. This part of the research included intensive and extensive archival search about housing in Khartoum. This part attempts to contribute to bridging the gap of information on housing policy and supply about Khartoum. The literature review revealed an inadequate coverage and a lack of information on housing and housing policy in Khartoum. This is likely to be a result of different factors summarized as follows:

1. *History*: The relatively short history of urbanization in Sudan is accompanied by a limited number of publications on housing. Following the Second World War, urban settlements in Sudan were small in size and most parts of Sudan were rural. The population of Greater Khartoum (composed of three towns), which was the largest urban centre, was 253,111 in 1955/1956 census (Mahmood and Ali, 1999:3). The population of Khartoum city alone was only 93,000. In such conditions urban planning and housing problems were not as elaborate and complex as today. Architects and planners were not adequately attracted to housing issues. Most urban projects that dominated that period were infrastructure projects such the railways, tram, and the Blue Nile and White Nile bridges and the industrial area. Salient housing projects during this period included the redevelopment of Ad-Deim and the government built housing. However, the publications of Saad Ed-din Fawzi, who was the Head of Economics in the University of Khartoum, formed a distinctive housing research during that period. Fawzi published a number of articles about the redevelopment and the planning of Ad-Deim district (Fawzi, 1954; 1953).
2. *Housing interdisciplinary research*: most writings about housing in Sudan were sparse and originated in different disciplines such as history, geography, sociology and economics. This part of the thesis, therefore, attempted to compile this data within the arena of housing policy specialization. Housing research for example in

Britain has developed quickly, and has extended to cover issues that deal with very minor fields of housing specialization; while housing research in Sudan is currently in the early stages and has not satisfactorily covered most major issues such as supply and demand, finance, construction etc.

3. *Education and training:* Until early 1990s there was only one department of architecture in Sudan, graduating few qualified architects for such a large country. The focus of the curriculum was primarily the basics of architecture. Physical planning as a discipline was introduced as a Masters degree in 1979. Urban and regional planning for example has not yet been introduced at the undergraduate education level. The availability of such specializations could have furnished the ground for more intensive housing research. Later, additional private sector colleges of architecture were introduced as part of the government policy to expand higher education. However many of these new colleges are run with incomplete educational and research resources, and they are still in their early stages of development. Most of these colleges and departments are not adequately involved in housing research.
4. *Inadequate expenditure on research:* Observation shows that government expenditure on scientific research, postgraduate studies and scholarships to Europe and USA have gradually declined, which clearly affected the housing research and the publications. The situation was influenced by the declining economic conditions in the last two decades. The scientific, educational and training links between Sudan and other countries have also continuously declined and discontinued. Search in the UN-HABITAT publications for example has shown scarcity of data on housing policy and the experience of Khartoum. Basic data on housing conditions about Sudan are rare in the different research periodicals. Government reports and most housing statistics are also very rare, incomplete, and sometimes inconsistent and mostly classified as confidential to avoid political and public repercussions about housing allocation.

The second part of the second section is composed of two chapters, chapter 7 and 8. This part focuses on the fieldwork data analysis and results. The central issue of this part is the government housing plans and the allocation of sites-and-services plots, where it highlights what plots are being allocated and to whom. Each of these questions is dealt with in one chapter. The third and last section includes one chapter (chapter 9) covering discussions, conclusions and recommendations. It puts forward some policy guidelines.

1.7 Country profile

Sudan is an African- Arab country with some unique geographic, cultural and economic characteristics. Sudan occupies an area of 2.506 million square kilometres in the east-central part of Africa; (see *Figure 1.1*) extending from latitude 22 degrees north at the northern borders with Egypt and the 5 degrees north at the southern borders with Kenya. It is surrounded by Egypt and Libya to the North, Chad and Central African Republic to the west, Democratic Republic of Congo, Uganda, Kenya to the South, Ethiopia, Eritrea and the Red Sea to the east. The total population of Sudan in 2000 was 29.8 million and it is expected to reach 33.2 million by 2005. The urban population constitutes 36.1 percent of the total population; approximately half of them live in the capital city of Greater Khartoum. The average annual population growth rate of Sudan is 2.1 percent and the average annual growth of the urban population is 4 percent for the period between 2000 and 2015 (UNCHS, 2001a).

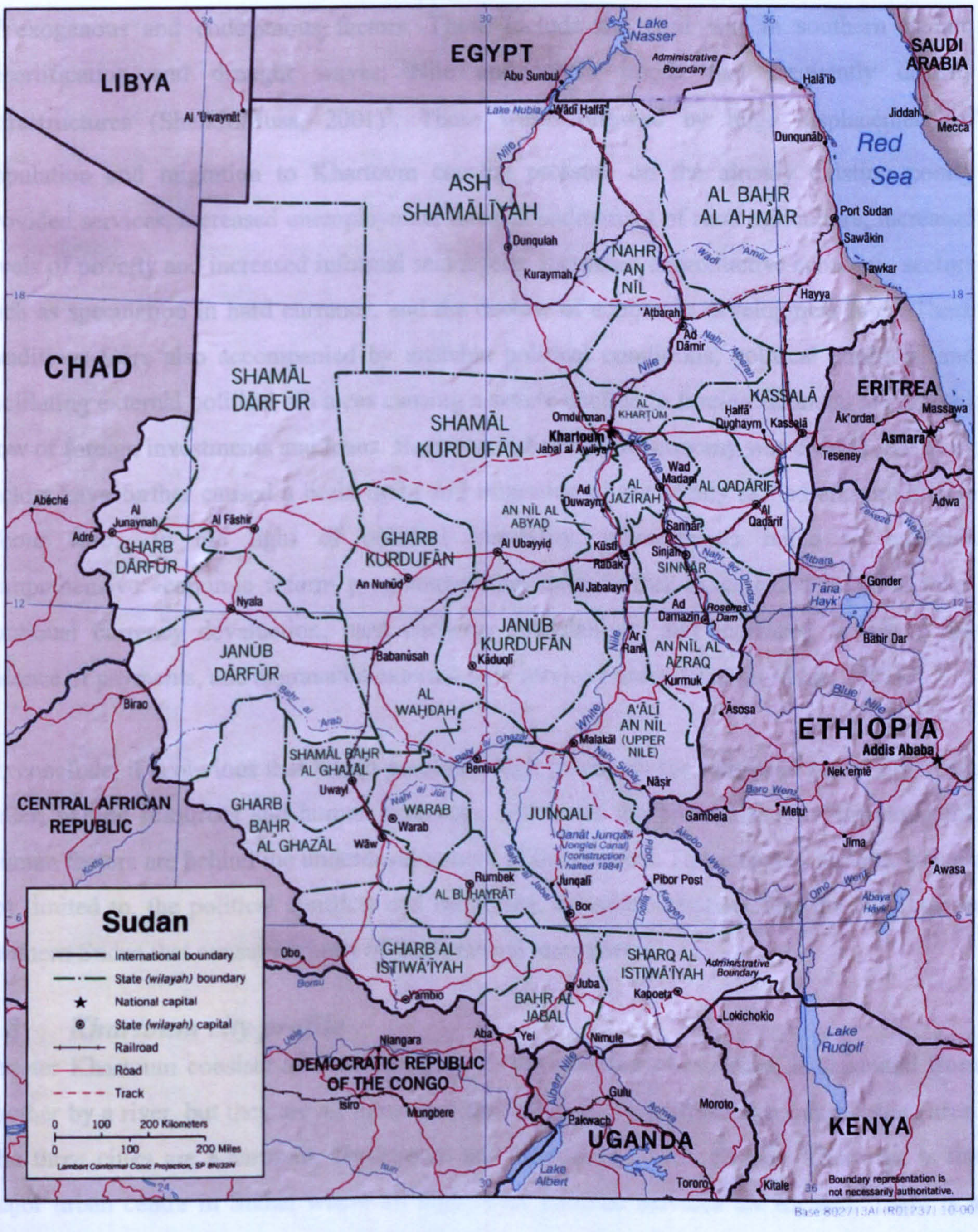
The population of Sudan is a mixture of various ethnicities and tribal origins; Arabs who occupy central and part of western Sudan, Nubian tribes in the north, Beja tribes in the east, *Nilotic* or *Nilo-Hamitic* tribes in the south and African tribes in the west. The official language is Arabic but most non-Arab tribes have their local languages, although their use is in decline.

The River Nile crosses the country with its various tributaries, mainly Bahr Al-Arab Soabat, and Bahr Al-Jabal in the south and the Blue and White Niles, joining at Khartoum to form the River Nile crossing Egypt to the Mediterranean Sea. The country is rich with cultivable land, livestock, minerals, and oil resources, which are currently being exported.

Sudan enjoys abundant rainfall in the South but the rain declines gradually as you go north, where there is almost no rainfall. The northern part of Sudan is an arid desert land except the Nile course where human settlements and agricultural activities are found. The central part is a savannah zone with low-density vegetation cover suitable for animal rearing. The rainfall helped production of sorghum in large parts of the eastern provinces. Jezira Agricultural project between the Blue Nile and the White Nile is the largest irrigated scheme in Africa and the Middle East under a unified administrative body; mainly producing cotton. But also other cash crops are being produced.

Figure 1.1 Map of Sudan

After: http://www.lib.utexas.edu/maps/africa/sudan_rel00.jpg (July 2003)



Economically the country is classified as a low-income country with a GDP at purchasing power parity of $55.1 billion per annum and the GDP per capita at purchasing power parity is $1,797 per annum (UNCHS, estimates of 2000), with an estimated GDP per capita growth rate of 5.6 percent for the period 1990-2000. Some other figures indicate that the real GDP

growth rate is 7 percent[5]. The country under various governments has failed to efficiently exploit these huge natural resources and improve the social and economic conditions because of exogenous and endogenous factors. These include the civil war in southern Sudan; desertification and drought waves; Nile and storm floods that frequently destroy infrastructures (Sheikh-Musa, 2001)[6]. These were followed by huge displacement of population and migration to Khartoum causing pressure on the already existing poorly provided services, increased unemployment rates, abandonment of rural agriculture, increased levels of poverty and increased informal sector jobs, increased unproductive economic sectors such as speculation in hard currency, and the decline of economic development rates. These conditions were also accompanied by unstable political conditions, political conflicts, and oscillating external political alliances causing a severe decline in foreign financial aid and the flow of foreign investments and loans. Hence an imbalance of economy was created. All these factors have further caused a brain drain and migration of the highly skilled and productive labour force. In the light of political instability, governments failed to establish comprehensive economic reform programmes that have further exacerbated inflation rates, continual currency devaluation, hard currency speculations, and increased deficit of the balance of payments, and aggravated external debt service burden (Sheikh-Musa, 2001).

To conclude, it is obvious that Sudan possesses high potentials for economic prosperity, land, water, natural resources and human resources, which are the prerequisites of development. Human factors are behind the underdevelopment of the country. These factors include, but are not limited to, the political conflicts and instability, misadministration, and the civil war in southern Sudan that consumes most of the financial resources.

1.8 Khartoum city profile

Greater Khartoum consists of a conurbation of three smaller cities. Each is separated from another by a river, but they are all integrated and functionally perform as a metropolitan area. The three cities are Khartoum, Omdurman and Khartoum North. Greater Khartoum is the major urban centre in Sudan where all high order national services are located. There is a wide hierarchical gap between Greater Khartoum and the subsequent urban centres of the country, which makes it the primate city in Sudan.

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[5] http://businessafrica.hispeed.com/africabiz/countries/sudan.htm for the year 2000. Site accessed 17.5.2003.

[6] Dr. Abdulwahhab O. Sheikh-Musa is the former Federal minister of Finance of Sudan.

Njoh (1999) argued that the colonial development strategies were suspiciously biased in favour of urban centres to the detriment of rural ones. Development projects were concentrated in urban centres. Cities were designed to mirror European patterns. He classified Khartoum within the spectrum of the Sub-Saharan cities as hybrid city with visible native and European sectors. Within the overall urban centres in Sudan's British colonial urban development projects were concentrated in Khartoum city. From this point Khartoum continued to remain as a primate city. After political independence of the African cities in 1960s, there was a dramatic population growth and dominance of urban primacy (O'Conner, 1983: 248; Bromley, 1991).

Urban primacy is a type of spatial disparity, recognizing a scale of the regional inequalities that occur in developing countries. Early papers dealing with this issue were published by Mark Jefferson in 1939[7] (Bromley, R., 1991) and Brian Berry in 1961. Urban primacy denotes a condition where the largest city in a country is super-ordinate in both size and national influence. Potter and Lloyd-Evans (1998) argue that it is customary to assert that developing countries typically show such a condition. The work of Berry (1961) concludes that there was no clear statistical relationship between a country's city size distribution and its level of urbanisation. He argues that the smaller the country, the shorter its history of urbanization, the simpler its economic and political life, and the lower its overall degree of development. In reverse conditions where countries are large, it is likely that cities perform a variety of functions and rank-size distribution (Potter and Lloyd-Evans, 1998:57).

A latest estimate of the population of Khartoum is 5.95 million, ranked as the 43rd city in the world in terms of population.[8] Other estimates indicate that the population of Khartoum is 5.86 million, ranking it the 45th city in the world[9]. However, the population of Khartoum accounts for about 20 percent of the total population of Sudan. MEFIT consultants (1974), who prepared a regional plan and a beautification programme for the city, pointed out that the three cities collectively are a poly-nucleated conurbation and could be classified as a constellation in the process of forming a ring (MEFIT, 1974).

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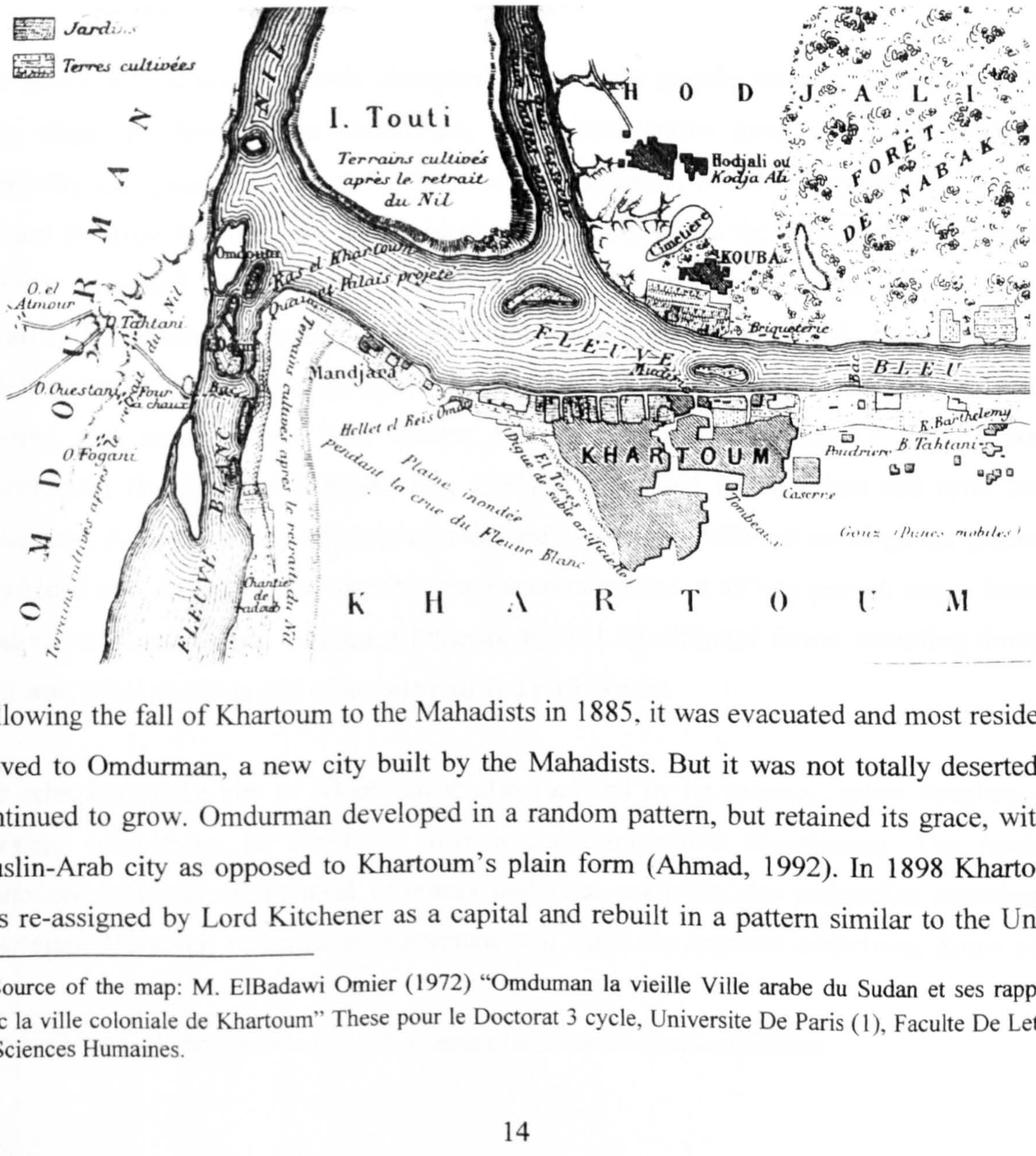
[7] Published in: Mark Jefferson (1939). "The Law of the Primate City" *Geographical Review*. 29: 226-232.

[8] http://www.citypopulation.de/Country.html?E+World: a site including the principal human agglomerations in the world and the world cities with a population exceeding one million, 12.6.2002.

[9] http://www.world-gazetteer.com/home.htm 20.4.2002

The history of Khartoum, the modern capital of Sudan, dates back to the sixteenth century, when it was forests and farmland for inhabitants of Tooti Island, which was the headquarters of the Al-Mahas tribe, and was also a camp for hunters and fishermen. During this stage in the history of Khartoum it was settled about 1691, by *Al-faki* Arbab El-Agayed, from Tooti Island, who was a religious teacher attracting large numbers of both Mahas and Ja'aliyin tribes, forming a small settlement (Abu-Saleem, 1991; Sarsfield-Hall, 1933; Walkley, 1936; Hamdan, 1960; Babiker, 1997; Mirghani, 1999). In 1822 for the first time in history, Khartoum was selected by Mohammad Osman Pasha, the first Governor General of Turk-Egyptian rule, as headquarters of his administration and military point. During the ruling period of Khurshid Pasha (1826-1838), the city increased in size (*Figure 1.2*), and burnt bricks were used in public buildings instead of mud bricks and thatch (Abu Saleem, 1991; Sarsfield-Hall, 1933; Walkley, 1936; Hamdan, 1960; Mirghani, 1999; Stevenson, 1966).

Figure 1.2 Khartoum in 1840[10]



Following the fall of Khartoum to the Mahadists in 1885, it was evacuated and most residents moved to Omdurman, a new city built by the Mahadists. But it was not totally deserted, it continued to grow. Omdurman developed in a random pattern, but retained its grace, with a Muslin-Arab city as opposed to Khartoum's plain form (Ahmad, 1992). In 1898 Khartoum was re-assigned by Lord Kitchener as a capital and rebuilt in a pattern similar to the Union

[10] Source of the map: M. ElBadawi Omier (1972) "Omduman la vieille Ville arabe du Sudan et ses rapports avec la ville coloniale de Khartoum" These pour le Doctorat 3 cycle, Universite De Paris (1), Faculte De Lettres Et Sciences Humaines.

Jack elaborated by Dr. MacLean, who pointed out that Omdurman was built by the building materials obtained from the ruins of Khartoum (MacLean, 1910; Ahmad, 1992). The city zone which wad previously laid out as a Union Jack is currently the CBD. The rest of the city developed as gridiron.

Khartoum and Khartoum North are predominantly gridiron settlements. On the other hand, Omdurman developed in a random physical pattern in its early stages, but the subsequent new extensions developed as a grid pattern in the later stages. However, since the early 1950^{s} all the new city extensions developed in Greater Khartoum were a simple gridiron, of similar type and characteristics. Surprisingly the Union Jack orientation coincided with the Muslim's *Gibla* direction in Khartoum at 45 degrees (Ahmad, 1992)[11] and the roads are directed towards the Grand Mosque at the city centre of Khartoum making the city Islamic with some characteristics of the British urbanism.

The socio-cultural and economic characteristics are not greatly varying. Although in their early stages of development Omdurman was a real native town while Khartoum was nominally European (MacLean, 1910), after independence in 1956 a process of a socio-cultural diffusion followed, forming a new urban society where the variety of ethnicities and cultures coexisted. Two clear distinctions could be made. The first is the housing classification system (Doxiadis, 1959: 94; Hardoy and Satterthwaite, 1981; Hafazalla, 1983), which classifies the land into different plot sizes, standards of construction, and the level of services and infrastructure. This system has been criticized because it implies social stratification (Hardoy and Satterthwaite, 1981). The second is the urban and rural social dichotomy. Although newly arriving migrants are distinctly a different social group, gradually they blend into the whole society. This phenomenon existed at all city growth stages because rural-urban migration has continued hitherto, fuelled by different forces including drought, civil war, tribal conflicts and economic pull and push forces.

The selection of the city of Khartoum is also justified by its primacy, urban structure and planning complexity, its functional role and administrative significance. The research limitations in terms of financial resources and time available also rationalize selection of Khartoum. However, selection of Khartoum will fulfil the research objectives. Some other

[11] Also referred in Norberg-Schulz, C., (1980), *Genius Loci*, London, Academy Editions.

research aspects necessitate dealing with Greater Khartoum as a whole at some research parts and focusing on Khartoum city in other parts. The research will therefore deal with some relevant broad issues at the national, regional and Greater Khartoum levels then focus on the selected study area within Khartoum city.

Chapter 2

Theoretical Background

Chapter 2 Theoretical review

2.1 Introduction

This chapter provides a literature review of the research theme. The chapter tries to fulfil three main purposes. First, to compile a theoretical and literary base of the research themes in general and the minor fields of the thesis in particular, with a special emphasis on the conceptual aspects, salient and relevant issues in the research theme, policies, and approaches. Second, to attempt to explore the prevailing trends, techniques, approaches and the latest developments in the housing supply research area. Third, to highlight the analytical and evolutionary development stages of housing supply policies and approaches.

A house is a form of shelter that can be viewed as a permanent structure or a shell that provides safety and protection against environmental hazards. It is a place where everyday activities are performed in privacy. Socially and psychologically, it represents an intimate place and refuge for all the household members. It is a place where they meet, socialize and bring-up their children.

Housing or shelter should be viewed as more than a structure where people live. It should be viewed within its multi-dimensional environment, which includes the physical, socio-cultural and economic dimensions. It involves a welfare value through the provision of services, utility infrastructure, and an acceptably laid out and furnished external environment, that can be referred to as settlement condition. UNCHS (1987) prefers the "settlement condition" because it extends –

> "... to all those components of the physical environment with which an individual or community comes into contact and which are used on a regular basis for the whole range of human activities – the individual dwelling and its related services, the dwelling's immediate surroundings, community facilities, transportation and communication network, and so on" (UNCHS, 1987:5).

The previous definition implies that housing does not mean only the development of a single plot, but also implies the development of a whole housing area. This is an important point as it draws attention to the interconnectivity, interaction and complementarities between the dwelling space, the immediate surrounding external space, and the built up area as a whole.

In the economic discipline the complexities of housing have been expressed as follows:

> 'Housing is a difficult thing to theorise about. An inherently complex commodity, with spatial fixity a defining characteristics, and asset, investment and consumption dimensions to account for, the economics of housing remains a challenge to those who seek equity and efficiency improvements for society to this day.' (Sullivan and Gibb, 2003:1).

Previously, the complexity of housing was expressed as follows:

> The study of housing and housing policy is one of the most complex areas of social analysis. This is partly because housing is such a complex good. Questions of housing policy require a consideration of issues beyond the confines of the dwelling unit itself. Its analysis raises important issues in finance, legislation, political, social and philosophical attitudes, resource allocation, intergovernmental relations, professional and administrative practices, and planning. Virtually all its parts are influenced by the government through such factors as social housing, subsidy payment to voluntary organizations, tax policies, welfare assistance, and immigration.' (Pugh, 1980:1)

The Habitat Agenda defines adequate shelter in the following manner:

> "Adequate shelter means more than a roof over one's head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost. Adequacy should be determined together with the people concerned, bearing in mind the prospect for gradual development. Adequacy often varies from country to country, since it depends on specific cultural, social, environmental and economic factors. Gender-specific and age-specific factors, such as the exposure of children and women to toxic substances, should be considered in this context" (UNCHS, 1997b: paragraph 60).

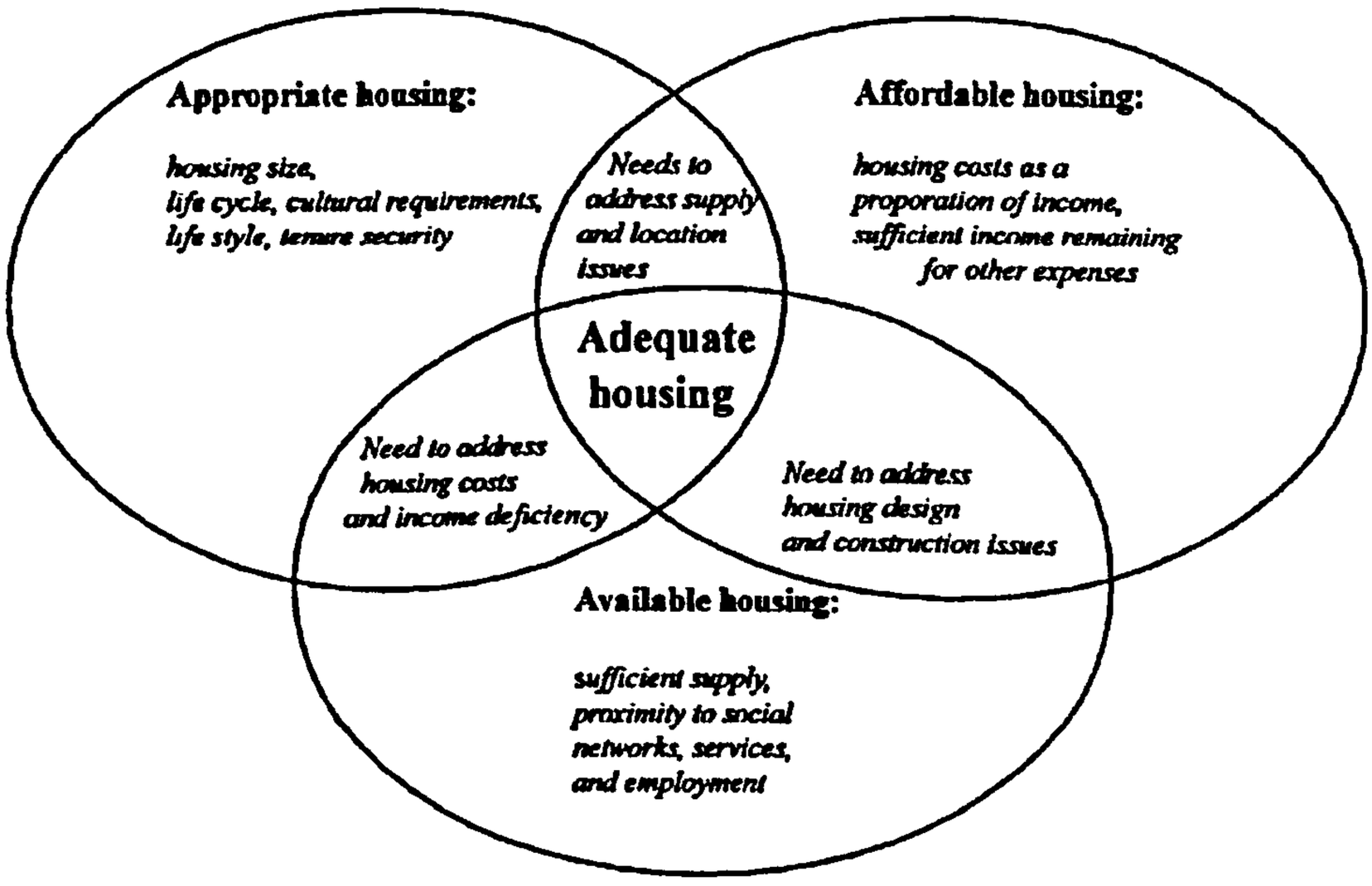
To clarify, the United Nations Committee on Economic, Social and Cultural Rights has drawn up the following seven principles to elaborate on housing adequacy. The following are the principles and key issues. (UNCHS, 2000), for details see appendix 1:

1. ***Legal security of tenure***: "Notwithstanding the type of tenure, all households and individuals should possess a degree of security of tenure which guarantees legal protection against forced eviction, harassment and other threats"
2. ***Availability of services, materials, facilities and infrastructures***: "An adequate house must contain specific essential community facilities for education, health, security, comfort, nutrition etc., and water supply, sanitation, energy, drainage, etc."
3. ***Affordability***: "Steps should be taken by States, and all parties to ensure that the percentage of housing-related costs is, in general, commensurate with income levels. They should establish housing subsidies for those unable to obtain affordable housing, as well as forms and levels of housing finance, which adequately reflect housing needs".
4. ***Habitability***: "Adequate housing must be habitable, in terms of providing the inhabitants with adequate space and protecting them from cold, damp, heat, rain, wind or other threats to health, structural hazards, and disease vectors, the physical safety of occupants must be guaranteed as well".

5. ***Accessibility***: "Adequate housing must be accessible to those entitled to it. Disadvantaged groups must be accorded full and sustainable access to adequate housing resources, including elderly, children, the physically disabled, the terminally ill, persons with persistent medical problems, etc., and victims of natural disasters, people living in disaster-prone areas and other groups should be ensured some degree of priority consideration in the housing sphere."
6. ***Location***: "Adequate housing must be in a location which allows access to employment options, health care services, schools, child care centres and other social facilities".
7. ***Culturally adequate***: "Activities geared towards development or modernization in the housing sphere should ensure that the cultural dimensions of housing are not sacrificed and that they should ensure, *inter alia*, modern technological facilities, as appropriate" (UNCHS, 2000: annex2).

In the Australian model housing need has been viewed as a multi-dimensional model, comprising of three essential components: appropriateness, affordability and availability (*Figure 2.1*). The model addresses selected issues, different from the generalized seven aspects above, which seem to be universal. The model implies that the term 'affordable housing' has different meanings to different people, each perceives the term differently. These are buyers, builders, bankers, and politicians. For example for buyers, it could mean cheap or desirable, and for builders it may be regarded when there are more sales and so on[12].

Figure 2.1Adequate housing model - Australian
Source: http://www.lgsa.org.au/docs/Policy/Community/May98.PDF. Accessed 14 May 2004



[12] http://www.lgsa.org.au/docs/Policy/Community/May98.PDF. Accessed 14 May 2004 page 7.

Owing to the complex nature of housing and its deep rooted origins in the various disciplines of social sciences such as sociology, economics, geography, and politics, the concept of housing theory was regarded as important. Theory in essence involves existence of a rational basis, origins, logical explanations, principles, methods of doing things, and mechanics, which would lead to the development of solutions and interpreting specific phenomena or reality. To quote Pugh (1990):

> "Housing theory is important, because policy can have coherence and direction only if it is built upon a clear theoretical basis. Without a rational basis of theory, policy would tend to experience some faults such as fragmentation, ad hoc crisis management, and inappropriate practice" (Pugh, 1990:45).

According to Pugh (1990), theory is partly an abstraction from reality, but with the intent to illuminate and improve the reality. Within the previous perspective of housing, some questions were raised. Is the theory logically sound? What is the scope of explanation? What is the relationship to fact-finding and to reality itself? He then argued that these matters of the nature of the theory are relevant to housing, and tried to find out whether theory matches intelligent conceptualisations of housing. Pugh tried to conceptualise housing within the discipline of the political economy in the sense that politics is about power and authority, and economics is about the means of resource allocation and resource generation. Solutions to urban housing problems require simultaneous solutions to many other issues in – for example – shelter, social justice, finance, economic efficiency, provision of services, and utility infrastructure, recreation and welfare issues, employment, spatial form, and so on. The aggregation of the previous housing aspects will go into fields of economics, sociology, political administration and so on.

The review of the literature on the research theme revealed that three major participants have clearly influenced the shaping of global housing policies; the conceptual contribution of the classic theorists and the subsequent research outcomes; World Bank housing policies; international policy frameworks developed by the various United Nations agencies. Amongst the contributions of the United Nations agencies and UN-HABITAT, the enforcement of the Habitat Agenda and the Sustainable Development is the most influential one. The next section discusses and highlights the roles played by the three participants in the development of housing policy worldwide.

2.2 Self-help housing paradigm

This section deals with the self-help housing paradigm, a principal approach that evolved in literature as a housing delivery for the urban poor in the developing world. The section discusses self-help housing nature, emergence, types, contributions of key theorists, and major critiques.

2.2.1. The nature of self-help housing

2.2.1.1. Varying viewpoints on self-help

The self-help approach has taken a number of definitions that focused on the utilization of the unpaid labour of those on low-income in constructing their own houses as a response to the social need for a shelter. Self-help also has political, economic and ideological dimensions and, like any process of construction, technical dimensions (Harms, 1982). Pugh (1997a) argues that the self-help idea rests upon the genuine political economy and elements of social idealism. It has been regarded as a controversial issue amongst the various groups of specialists who deal with it. Self-help housing, therefore, accounts for most of the housing in the world, and has become – at least in certain countries – quite a significant, and frequently the only, existing policy for the majority of the working population. It has become a predominant if not the only form of low-cost housing provision in many countries, and still operates with great uncertainty and controversy (Rodell and Skinner, 1983; Fiori and Ramirez, 1992; Pugh, 1997a). Harms pointed out that to make any judgement about self-help, we need to know who practises self-help, what motivates them, who interprets this practise, what their motives are; who proposes policies, and what are the ends (Harms, 1982).

It is argued that self-help originated in traditional societies, where dwellings were either built by the family or jointly by the village, maybe with the help of some local craftsmen, using local building materials and local technology (Harms, 1982; Burgess: 1982). The users are the builders and organizers of the labour process. The motivation for construction was the direct fulfilment of the needs; therefore, buildings were produced for their 'use-value' rather than their 'exchange-value'. The prevailing mode of production was dependent upon local subsistence where no or little money was involved. Therefore, it could be argued that all activities to sustain life could be called self-help (Harms, 1982; Burgess: 1982).

It is also argued that the self-help approach stems from the way low-income households look for alternative options by which they can avoid paying a large proportion of their income as

rent, which does not realise equality and security of tenure. Increasingly rising rents, high construction costs, and high interest rates imposed a high financial burden on the poor (Nientied and Van der Linden, 1988). The principal economy achieved from self-help housing is the reduction of the labour costs. It is argued that squatters suffering from periodic or sporadic unemployment are able to use productive time at their weekends or in the evenings (Ward, 1982b). Self-help therefore is a replacement of labour costs spent as part of the overall cost of construction that constitutes between 20 to 40 percent of the house cost (Nientied and van der Linden, 1988). Some others believe that the unpaid family in this formula can replace wage labour amounting to between 15 to 30 percent of the conventionally constructed project, depending largely on project-to-project variations of land costs and wage rates relative to building materials costs (Nientied and van der Linden, 1988).

The self-help approach, based on the assumption that poor people have spare time with little value, was meant to convert the households' spare time into productive time, and to provide an alternative to the high-cost and high-tech housing which was common at that time. From another point of view, self-help housing has been defined as getting something for nothing or, more formally, to gain access to the use-value of a house, yet, in absolute terms, with extremely modest cash sums spent from any single month income (Merrett and Russell, 1994). Self-help also extended to other sectors such as social and community facilities. Another aspect of self-help was the involvement of the family members and the rise of the woman's role in development (Palmer and Patton, 1988).

Self-help is cantered about reducing the cost of dwelling for the poor often built them for their use-value. Merrett (1984: 320-321) identified four predicates of the use-value: the physical character of the dwelling, dwelling control, environmental locus and relative locus. The first two relate to the house as an activity, the second two relate to the relationship between the house and the outer world. Gough (1999) devised some strategies to reduce the cost of self-help housing through:

1. Obtaining a plot of land.
2. System of construction.
3. Labour strategies.
4. Construction materials.
5. Community strategies.
6. Communal labour.
7. Community finance initiatives.
8. Institutional strategies.

9. Education.
10. Production of construction materials.
11. Construction materials centre.

2.2.1.2. Self-help and the concept of sweat equity

Sweat equity refers to the use of low-income peoples' labour, which is valued as a share in the project investment. Accordingly, self-help has been seen as a mode of sweat equity. 'Sweat equity' definition also involves carrying out small works in the process of building houses through self-help and mutual aid, if the people who build them and live in them as owner-occupiers share in the project with a share equal to the value of their labour inputs. These include small works such as local rainwater drainage, small-scale paving of access roads and footpaths, on-site sanitation, community buildings, and locally based waste-disposal systems (UNCHS/ILO, 1995). Discussing the articulation theory, Burgess (1992) argued that self-help housing no longer meant capitalizing on one's own 'sweat equity', but rather on some one else's.

The Global Shelter Strategy to the year 2000 (UNCHS, 1990b: paragraph 65 p. 23) identified "sweat equity" as one of three models of the application of community participation, with which it confines community participation to individual or group contributions of labour towards construction of houses, installation of infrastructure or carrying out of some services, such as garbage collection or cleaning of drains. "Sweat equity" was applied also in reducing costs in the social housing in Canadian Cities (UNCHS, 1993). These included cost reduction through leasing land, providing technical assistance, advice to housing cooperatives, leveraging private-sector funds from pension funds, "community bond schemes", and legislating more resources for social housing (UNCHS, 1993).

UNCHS/ILO (1995) argues that the concept of sites-and-services is based on two suppositions; first, that it is cheaper to build houses progressively, or at least funding could be more easily managed; and secondly, that the house-owners will invest their own labour in the construction by the share of their "sweat equity" into the value of the house. The practice of self-help, for example in Uganda, has shown that most housing co-operatives purchase building materials in bulk or produce them for the members for either cash purchase or "sweat equity" exchange (UNCHS, 2001c).

2.2.2. The emergence of self-help

A review of the literature on the self-help housing approach revealed a number of viewpoints regarding its historical evolution worldwide. Generally, it occurred during the period between 1950s and 1960s as a universal formula for housing policy (Rodell and Skinner, 1983; Burgess, 1987). However, Harris (2003b) pointed out that evidence of self-help practice dates back to 1939 when The Commonwealth of Puerto Rico began to develop a variety of types of aided self-help housing programmes in both rural and urban areas. By the 1950s, it had become the first jurisdiction in the world to make self-help a central element in its overall housing policy (Harris, 1998b, 2003b).

Harris (1998b) also believes there was evidence of the concept around the world in India during 1939 and 1940; and in Kenya and Indonesia in 1950s, where it was encouraged by the government as a social manifestation of the social consciousness of the villagers themselves (Harris, 1998b). Harris (1998b) pointed out that some other researchers have argued that it was adopted in Europe a little earlier, specifically in Sweden in 1904 and in the Soviet Union in 1920s up to the world depression in 1930 (Harris, 1998b). In the United States, Harris claims that Jacob Crane adopted it as a policy under the name of 'aided self-help', approximately in 1945. Crane worked hard to promote the concept and to bring it to international significance as a housing policy (Harris, 1998b). It has also been argued that the idea was brought up by the people themselves as a way to build their houses (Harris, 1998b), and it originated much earlier in human history in the rural areas as a mode of production in agriculture and housing (Burgess, 1982). Harris (2003a) noted that the United Nations survey report carried out by the Economic and Social Council, Bureau of Social affairs in 1959 identified aided self-help as 'one of the most hopeful means of stretching the limited public resources'.

The works of John Turner, an architect, and Charles Abrams, the key theorists of self-help, are most often quoted. They recognized that governments alone could not undertake the full responsibility of housing provision. They believed that the homeless and low-income households could be encouraged to build their own homes. Abrams argued that official self-help programmes simply tried to incorporate as policy what already existed, but the aim was to adapt the formula to the urban areas (Abrams, 1964). The gap between the housing stock provided by governments as public housing and the arising demand for housing the poor in urban areas began to widen. In Africa, the poorest continent, after the restoration of peace

following the end of the Second World War, accompanied by independence of many African countries in 1950s and 1960s, urbanization gained further momentum, while governments failed to cope with the increasing demand for housing in urban areas and the capital cities in particular grew at higher rates.

The evolution of the self-help approach and its alternative notions of 'aided self-help', 'progressive development', the 'incremental approach' (Pugh, 1997a), 'mutual aid', 'evolutionary development' and 'gradual construction' followed the enormous growth of squatter housing and slums due to the inability of Third World governments to provide appropriate units of the conventional complete housing, and the inability of the people themselves to pay for it (Rodell and Skinner, 1983; Peattie, 1982; Palmer and Patton, 1988). The supply of conventional housing failed to reach those on low-income who began to constitute the largest portion of the urban population in Third World countries. Therefore, governments viewed the self-help that was embodied in the upgrading and the sites-and-services scheme as an appealing alternative to provide housing for those on low-income (Rodell and Skinner, 1983). Self-help came at a time when conditions in the Third World were witnessing a deepening crisis that is ascribed to the increased debts, increased inflation, and unemployment that resulted in lowering of wages and deteriorating living conditions (Harms, 1992). Governments did not have enough funds to house the increasing number of poor (Rodell and Skinner, 1983).

The practice of self-help housing as a policy emerged in the mid 1960s roughly when Charles Abrams' publication *"Man's Struggle for Shelter in an Urbanizing World"* was published. It was then crystallized when John Turner's book "Housing by People" was published in 1976. Abrams proposal was an attempt to move from financing the whole construction towards a partial government support, not only to provide the land and utilities, but also to provide some roof loans, core houses and small construction loans for building materials, through aided self-help in the forms of core housing, and finance by instalments. Mangin and Turner laid the groundwork for a progressive change in the international housing policy. The concept of self-help attracted the attention of many intellectual researchers who started to edit and publish sets of readings that formed an important body of the literature that has a central significance in the field of housing (Pugh, 1997a; Mathey, 1992; Rodwin and Sanyal, 1987; Rodell and Skinner, 1983).

Self-help housing policy played a significant role in housing policy since it first emerged. The historical tracing of self-help housing might help in understanding the circumstances under which it flourished, the main causes, the forces shaping it as a distinguished and most preferred policy of housing supply in the Third World, and the scale of its significance and experience.

2.2.3. Types of self-help housing

2.2.3.1. Conventional self-help types

The various definitions discussed earlier entailed different types or modes of self-help. According to Harms, self-help has two definitions, as they have different ideological roots and they might entail different future implications. The two definitions are a narrower and a wider one. The first relates to the individual household, or a group of people, and concentrates on technical aspects of house construction, and the second relates to the collective actions undertaken in an organized form to improve the living conditions beyond the housing scope (Harms, 1992:34). Such areas go far to cover the infrastructure and the community facilities. The ideological roots of both forms of self-help go back to the beginnings of capitalism based on works and ideas on personal responsibilities (Harms, 1992). The two types have been alternatively categorized by the neo-Marxist Burgess as family-based 'aided 'self-help, and community-based mutual aid (Burgess, 1987). The meaning of self-help has evolved from an exclusive emphasis on the state-organized self-built housing to the state's provision of infrastructure and services. This has been viewed as a retreat by the state from direct involvement in the process. Fiori and Ramirez (1992) pointed out that:

> 'Beyond interpretations, though, is the fact that self-help housing policy, in moving away from the narrow meaning of state-organized self-building, has increasingly acquired the wider connotation of an open-ended process of improvement by the stages of housing and the habitat – a process of 'progressive development' – which presupposes, either explicitly or implicitly, the participation of the users, individually or collectively, at some level or combination of levels, in construction, administration or even planning. In this way self-help, housing policies become synonymous with the non-conventional solutions and embrace the two main kinds of non-conventional programmes: sites-and-services, and upgrading. The variations between and within these programmes are considerable: from almost conventional housing with unpaid user's labour – exceptional but still existent – to the provision of basic infrastructure and services without any kind of state involvement in the production of housing itself, by way of programmes of core houses, embryo units, etc. There are variations in terms of land solutions, finance, infrastructure provision, private sector involvement, technical assistance, levels of subsidy, labour process, forms of user participation, criteria for selection, etc. All these variations presuppose differences in articulation between the project and the policy levels – both in housing and urban policies (Fiori and Ramirez, 1992:25).'

By adding the scale of the government involvement or intervention in the process, Harms argued that distinction should be made between the self-help that is initiated and controlled by the workers, including the marginal potential workers, and those self-help schemes that are initiated by the state, or by other international agencies (Harms, 1982). Accordingly, the two forms were classified earlier into three types, vis-à-vis:

1. Independent self-help.
2. Organized self- and mutual-help.
3. Employed self-help (Harms, 1982).

Later they have been further expanded into four forms:

1. *Unpaid self-help*, which is connected with user-initiated squatting and often occurs in the urban fringes.
2. *State-supported self-help*, which is initiated by users but later supported by the state and the municipal authorities. Such later assistance may be in upgrading schemes.
3. *State-initiated self-help*, which includes programs pioneered by the state at different planning levels. Such types include sites-and-services, core housing, and minimum or extendable housing. They could be supported either by the governments or the World Bank in Third World countries.
1. *Conventional housing policies* for finished housing projects that are produced by building agencies but supported by the government through subsidies without direct participation of the users (Harms, 1992:35).

The increasing significance of self-help in Third World countries arises from the inability of the governments to finance conventional housing and provide a satisfactory level of infrastructures and services. Governments and international agencies have been unenthusiastic to encourage investments in housing, which have often been seen as an item of consumption and a burden on the budgets and the balances of payments (Jones and Datta, 1999). Pugh (1997a: 92) pointed out that self-help became the focus in the international debate because of five points:

1. It is prevalent in many developing countries and comprises over 50 percent of the housing.

2. Governments provide only land and infrastructure services, which is less costly than building public housing or complete units housing.
3. The idea had an intellectual appeal and has social potential in community development.
4. It is advocated by the World Bank as affordable.
5. It represents a route to creation of property rights and assets. (Pugh, 1997a:92).

Early assessments show that Abram's assessment of experience with self-help and mutual aid is that they were mixed with success and failures. He noted that it succeeded among those with common aims or motivations and when group members have sufficient levels of skill. Abrams noted that the mutual aid programmes proved costly and cumbersome. With expectation of its abandonment, the sites-and-services projects, which he named land and utilities, were working. He also noted that they were attractive with the plot, availability of utilities, loans and finance and other means of support (Abrams, 1964). Abrams impartial assessment of self-help and mutual aid were summarized in the following points (Abrams, 1964:173-174):

1. The self-help and mutual aid projects will likely succeed if the environment tends to be more rural, and that aids and materials are prerequisites for speeding up the process.
2. For self-help projects it is favourable to stimulate provision of infrastructure and community facilities through government provision of equipment, consultancy service and funds.
3. Organized and aided self-help can play a limited role in re-housing people in urban sections in underdeveloped areas, but self-help works best in small communities where such building traditions still prevail, life is less turbulent, relationships are more intimate, and there are no question of land and urban problems.
4. There is always room for the skills of the artisans, who gained experience in the self-help work, to be utilized in building construction in other urban areas, if some form of financial aid is utilized as a stimulus factor.
5. Training the industrial workers to learn building crafts and devote part of their time and energy for that proves disappointing. The 40-hour a week is common in many places, which makes the selection of those with common objectives and free time essential for every project. This tends to make every project a special case and therefore the benefits may not extend to the bulk of the working population.

6. Partial self-help and mutual aid have limitations in urban areas but are not devoid of values. Self-help trains people in building construction, after which some of them may enter the field of construction employment. Accordingly, Abrams argued that self-help and mutual aid techniques are more suitable in areas where unemployment exists. They carry a promise of prefabrication of essential parts.
7. Self-help is not the only solution for the housing problem in urban areas. It is claimed that money and time consumed could be spent elsewhere. It is claimed that self-help produce savings that equal from 20 to 25 per cent but losses of time efficiency, loss of supplemental earnings, initial capital costs, supervisory and administrative costs, and the deficiency in the products are not calculated.
8. In case the aim is not training the people in building construction, the government should preferably provide plots and utilities (sites-and-services) and let the beneficiaries decide whether to build by themselves or hire contractors

2.2.3.2. The concept of "Modern self-help"

Pugh (1997a) argued that self-help policies have transformed into what he called 'modern self-help' that takes in a wider spectrum of activities covering both family-based and community-based types. The following is a summary of the main features and problems brought up by Pugh (1997a: 101-106) on the concept of 'modern self-help':

1. The self-help move to improvement of neighbourhood infrastructure has exhibited some complexities related to the presence of institutional and organizational constraints.
2. The dictates of affordability among the poor, and in the context of very limited budgets of the public sector, suggest that low technology solutions would be selected. Nevertheless, that requires local cooperation among government agencies, firms, NGOs, CBOs and households.
3. Competing authorities in allocation costs between government agencies provides possibilities of conflict.
4. Misusing the idea of "public" goods and the economic externality of social costs and benefits, which can be under-allocated.
5. Community-based self-help highlights the significance of the role of the household and how this role is central in the success or failure of the agenda. Households have social, economic, and political functions, which include, first; division of labour among its members (men, women and children) and second; determining allocations

to consumption, saving, and outlays and so on. Households need to generate income and pursue some home-based-enterprises to produce some at-home goods and services.

6. 'Self-help in developing countries can be enhanced by public policies in health, education housing and environmental spheres.'
7. The ideas of Turner on creation of assets and the acceptance of the property for the poor drives some rental income through letting rooms and initiation of home-based economic activities.
8. The great areas of squatter settlements begin to have their own norms for protection against crime, for political organisation, social structuring, and way of life, in a context of wider structural inequalities and changes in the broader society.
9. Enhancing household economics through policies to improve the economic conditions of households. Innovations in subsidies can be achieved through the application of cross-subsidization in home-based economic activities.
10. Time spent on building has a value in terms of the time that might otherwise be allocated to earning an income, to creation or to activities such as child rearing. Some attention in the literature has been given to the real cost and value of the self-help[13]. It is clear that the cost-benefits of the self-help housing and community development activity has often been poorly specified and understood.
11. Large cities in developing countries started to portray some similarities to the housing economics sub-markets of the industrialised countries, such as the 'filtering' process, which will include the existing self-help housing stock. Filtering will add a new dimension to housing supply but it should not be regarded as a solution to the housing problem in itself.
12. Self-help has been broadly shown to be more varied and complex than has been assumed in the literature. It has many potentially positive features, but may not be successful in particular applications and contexts.

2.2.4. Classic theorists of self-help housing

Amongst many researchers in the housing policies in he developing world, the literature reveals that, Charles Abrams, Jacob Crane, John F. C. Turner and Rod Burgess are the four

[13] For example, Jiminez studies in Philippines indicated self-help housing is valuable and valued at 190% of the annual earnings of the low-income households (Jiminez, 1982).

most cited classic thinkers in the development of housing policy and self-help. Following is a summary of the contributions and basic thoughts of each.

2.2.4.1. Charles Abrams

Charles Abrams is one of the key theorists in housing policy. He published one of the most significant books, *"Man's Struggle for Shelter in an Urbanizing World"* in 1964. It summarizes much of his knowledge and ideas in housing and was well acknowledged by scholars and reviewers, in addition to being praised for being "comprehensive" and the author for his refusal to offer "simple", "spectacular", or "package" solutions (Harris, 2003a). Charles Abrams gave manifestations of the dramatic and alarming situations of urban living and housing conditions in developing countries during the early 1960's. He vividly conceptualised the housing conditions through his missions as UN consultant to India, Philippines, Jamaica, Singapore, Japan, Ghana, Turkey, Pakistan, Nigeria, Bolivia, amongst other countries. He pointed out some major issues and problems in housing such as squatter settlements, urban land problems, land tenure issues, government power in relation to development and housing policies, shelter cost and income and housing finance, the relationship between housing and economic development etc.

Pugh (1990) pointed out that Abrams was aware that housing should be linked with investments. He argued that Abrams did not set out any policy programme solutions but he rather had given theoretical explanations to the key factors of migration and squatter settlements. Nevertheless, Abrams has actually suggested that the core housing is suitable for developing countries housing programmes. He believed that complete reliance on self-help or mutual-aid as well as public housing is not a very effective solution to the housing problem in urban areas in the developing countries, but core housing, which he believed as better than organized self-help, should be considered as part of the housing programme in the developing countries (Abrams, 1964). To quote:

"Complete reliance on self-help in cities is apt to bring disillusionment, and failure has occurred even where outside aid was given" (Abrams, 1964:170).

"Though core housing is no more a universal recipe for housing shortage than self-help, it should be considered in almost every under-developed country as one part of the programme. It requires no crusading spirit. It is no substitute for the traditional self-help or mutual aid techniques in the rural areas, though it should be employed as a supplement there when possible. Often it is more efficient than the organized self-help operations now being laboriously launched in cities. Where land is available at reasonable cost, core housing is more likely

> to produce shelter is organized self-help. In the long run, if programmes are planned properly, it will produce better housing as well " (Abrams, 1964:181).

Abrams (1964) alternatively recommended the development of core housing schemes to be planned and designed so that beneficiaries can improve their house and build it in a way that suits their preferences (Abrams, 1964:171; Napier, 2002). According to Abrams (1964:177), core housing is a major variant of the self-help that was introduced by the United Nations mission in late 1950s, and it has become part of the housing vocabulary since that time. It aims at provision of organized, reasonably cheap, and practical solutions to housing problems in the urbanizing parts of poor countries. It solves one of the major deficiencies of the self-help approach, where self-helpers have no place to live during the construction. The core housing allows the household to move in immediately and then expand as time and funds allow. Core housing can be mass-produced. It requires a plot of land and the essential utilities. Abrams (1964:177) described the types of core housing as follows:

> "No single type of core can be uniformly applied to all countries and all climates. Each country, and in fact each region, may call for particular design. These include: the one-room core for small families in very poor countries; the two-room core to be expanded horizontally for the growing family; the core that can be added to vertically; the row-house core, the front or rear of which is expandable; and the core built as part of the compound. There are also a core composed of room that can be subdivided and the core in warm climates that composed of a roof, supports, and a floor to be walled by the occupant" (Abrams, 1964:177).

Abrams (1964) introduced the incremental building construction under 'Instalment construction'. After the household buys the plot, they wait until they save money to buy some building components, and then construct with the help of the household members or hire a professional worker or an artisan. He found that the roof is most expensive part of the building and accordingly he suggested what are called roof loans.

Many professionals acknowledged the significance of Abrams contributions, such as Ward, Taper, and Turner (Koenigsberger, et al., 1980) as a remarkable contribution to housing not only in developed countries but also in developing countries. For example, Ward[14] (1980) puts forward:

> "Indeed, he was already moving towards the emphasis placed on poor city-dwellers building and improving their own houses, under conditions of secure tenure and communally-provided sites-and-services. Indeed, the central fact in Charles Abram's thinking was its combination of vision and realism. His vision was the achievement of dignified and

[14] Barbara Ward: Bibliographical notes on Charles Abrams – *A Tribute to Charles Abrams* in (Koenigsberger, 1980)

> happy shelter for the millions. His realism was constantly at work inventing ways, both for developed and developing countries, of turning dream into fact" (Koenigsberger, et al., 1980: 8-9)

Generally, it could be concluded that Abrams viewpoints were one of the earliest that brought international attention to the housing problems of low-income people in the developing countries, and gave way to the development of the international housing policy.

2.2.4.2. Jacob Crane

In a series of publications Harris (Harris, 1998a; 1998b; 2003a; 2003b; Harris and Giles, 2003) tried to have Turner's contributions viewed differently. He argues that his influential ideas of self-help which developed and articulated from the Peruvian case were greatly specific to Peru but Bromley (2001: 289) argued Turner and Fichter publications intended to span the world rather than to focus on Peru. Harris focused on Jacob Crane, an American Planner, as the original initiator of 'aided self-help' and argued that Turner was not the first to praise self-help or to recognize of its value, and that he followed others in arguing that governments should support it. He also argued that Turner acknowledged the endorsement of Patrick Geddes to 'aided self-help' but he did add something to the debates about self-help housing. Again, Harris (2003b) admitted that Turner gave a qualified endorsement of self-help and his extensive writings made his name become synonymous with self-help housing, to a degree that he came to regret since it sometimes masked his other concerns.

According to Harris (2003a), the concept of 'aided self-help' originates with Jacob Crane in early 1950s. Crane pressed on Earnest Wiessman, who was in charge of the housing, building and planning branch of the United Nations since 1951, to promote the idea of 'aided self-help' and was being supported in quite a number of countries scattered around the world. By the late 1950s, aided self-help became a standard version of housing. Harris added that Crane viewed self-help as part of a process of community development requiring and encouraging co-operation. He argued that Turner was not the first to pioneer aided self-help (Harris, 2003a).

Harris (1998b; 2003a) argues that Jacob Crane is the one who actually coined the phrase 'aided self-help' (Harris, 1998b; 2003a). Jacob Crane, an American planner, was in charge of the international housing office of the United States Housing and Home Finance Agency in the late 1940s and early 1950s. Harris (2003a) pointed out that Crane wrote a number of publications in which he argued that, in the developing world, most households could acquire

shelter only by building their own homes, and that the most cost-effective way for governments and aid agencies to improve the housing conditions was to assist this process (Harris, 2003a).

2.2.4.3. John Turner

During the 1960s, John F. C. Turner has been the best known and the most influential writer on housing in the developing world (Harris, 2003a). His interest in community development began in the late 1940s, while his more specific views on housing evolved after 1957, when he moved to Peru where he carried out extensive experimentation on self-help. Most writers agree that he changed the way researchers thought about housing. In the 1970s, his ideas influenced the World Bank to initiate an 'aided self-help' approach in major sites-and-services projects through out the developing world (Harris, 2003a).

Turner was described by Mathey (1992: 380) as the best known and the most quoted proponent of self-help. His first paper was published in 1963, and the first published citation to his work appeared in 1965. He was also described as the most cited writer on self-help receiving 682 citations, compared with 416 citations for Abrams for the period between 1965 and 1998 (Harris, 2003a: 246-247).

In spite of the popularity of Turner as a prominent thinker and a pioneer in housing policy, Harris (2003a) has a different viewpoint. He argued that Turner has been seen within the housing field as an original and a revolutionary (Harris, 2003a), but he himself believed that 'Turner's ideas were less original and influential than has commonly been supposed, and that in certain respects they have been misunderstood or at least been misplaced' (Harris, 2003a: 164). However, Harris (2003a) acknowledged that many writers have attributed the emergence and interest in self-help to the influence of John Turner, the most prominent thinker in the international housing field in the post-war era. Within these viewpoints the reputation of Turner's work was described by Harris (2003a: 249) as follows:

> "The usual view of Turners work is that it was revolutionary not only in challenging, and changing, established ways of thinking, but also in the effects on housing policy. He is seen as an original, if not the founder of a new intellectual movement then at least the first among equals" (Harris, 2003a: 249).

Turner's viewpoints focused on the ability of the people to shape their own living environment and achieve ownership at low-prices which governments could not provide them with (UNCHS/ILO, 1995). Mathey (1992) described Turner as particularly known for

emphasising the positive aspects of self-help. Ward[15] described Turner as 'something much more than a housing expert, he was a "philosopher of housing", seeking answers to questions which are so fundamental that they seldom get asked.' (Turner, 1976b: 4). Ward goes on to filter out three laws; he believes they express Turner's views. Stating the second law first: "the important thing about housing is not what it is, but rather what it does to people's lives, in other words the dwellers satisfaction is not necessary related to the imposition of standards". The third law says, "Deficiencies and imperfections in your housing are infinitely more tolerable if they are your responsibility than if they are somebody else's." The third law is quoted from his book "Freedom to build" (Turner, 1976b: 5-6):

> "When dwellers control the major decisions and are free to make their own contribution to the design, construction or management of their housing, both the process and the environment produced stimulate individual and social well-being. When people have no control over, not responsibility for key decisions in the housing process, on the other hand, dwelling environments may instead become a barrier to personal fulfilment and a burden on the economy." (Turner, 1976b: 5-6)

Besides viewing self-help as an investment of 'sweat equity', Turner also viewed it as a process of owner-design and management. In other words as an element of 'autonomy', that is defined as the fundamental issue of 'who decides' (Harris, 2003a). Autonomy has been viewed with an broad meaning that includes:

> "Autonomy, therefore, entails the ability to enter into reciprocal relationships, to exercise both control over essential life needs and discretion in the trade-offs which establish priorities. Autonomy means the power to bargain, the ability to get what one needs, the capacity to pay, in one way or another, for what one gets. In sum, it is synonymous with substantial freedom of action." (Fichter et al., 1972:247)

To Turner, dweller's control on house development and 'autonomy' is obtaining 'best results', which means houses that are best adapted and suit the changing needs and circumstances of their occupants (Turner, 1972a; 1976b; Burgess, 1982:72, Harris, 2003a), including income and household size. Autonomous systems provide self-governing housing with varied standards but generally low-cost and of a high use-value (Turner, 1976b; Burgess, 1982). Turner wanted housing to be seen as a verb not as a noun, as when it is used as a noun it describes a commodity or a product, but when used as a verb it describes the activity of housing (Turner, 1972a: 151). Turner ascribed the failure of the conventional housing actions to the mismatch between the peoples needs and the housing supplied by the institutions, and he showed the impossibility of governments with small budgets to meet the demand for the

[15] The preface of Turners book "Housing by people: Towards autonomy in building environments" the edition of 1991.

growing urban population, and accordingly he argued that the people – as main actors in the housing supply - must have the freedom to make the decisions which most concern their housing. He pointed out that people who do not have this freedom are generally unable to use housing as a vehicle for their extended needs (Turner, 1972a: 174). Turner assumed that housing, far from being "social overhead cost," can be highly a productive activity whether measured in economic terms or evaluated by criteria of broad social benefit (Turner, 1972a: 244).

From his experience, Turner concluded that urban squatters in the developing world are the best judges of their own needs, and they are better able than anyone else, including governments, of addressing them. Squatter areas created are better fitted to their actual and immediate needs and circumstances than those that any government could do. Turner gave the label 'progressive development' to this process of improvement contrasting it with the 'instant development' of public housing schemes (Turner, 1976b; Napier, 2002; Harris, 2003a). Harris also argued that self-help, which became a strongly associated approach to John Turner, was also advocated consistently by many other experts and by international agencies, since the late 1940s. Turner argues that housing should be viewed as a verb. He puts forward (Turner, 1976b: 62):

> 'Questions about the consequences of housing in people's lives can only be asked in words that describe processes and relationships. Housing must therefore, be viewed as a verb rather than a noun - a process that subsumes products. Real values are those that lie in the relationships between the elements of housing action – between the actors, their activities and their achievements.' (Turner, 1976b: 62).

Turner's earliest position on the conventional housing systems is that they are bureaucratic and heteronymous, based on large-scale technology that does not match the needs of its users. The ability of matching the housing supply and demand was seen by Turner to be inversely proportional to the degree of heteronomy in the system. Turner accordingly called for autonomy in housing to resolve these mismatches (Turner, 1972a; 1976b). Fichter, et al. (1972: 245) endorses 'autonomy as pragmatic answer to the shelter deficit and to the frequent mismatch of shelter and essential life needs'.

Turner's recommendations are summarised by his antagonist Burgess (1982:74) as follows:

1. "Legislative controls limiting the concentration of resources and facilitating the supply of land, technology and credit to low-income groups.
2. The modification of existing legislation on minimum standards and building procedures.

3. The introduction (if legislation and planning practice that set limits rather than procedural lines for housing activity.
4. The legalisation of tenure of land and dwellings now illegally occupied by squatters.
5. The clear separation of various levels of authority ill housing activities and the restriction of central government and municipal influence to certain well-defined basic functions.
6. The encouragement if possible of informal sector activities through proscriptive legislation that gives decentralized technologies and local systems of labour, finance and materials, greater access to resources." (Burgess, 1982:74).

2.2.4.4. John Turner and Rod Burgess debate

Rod Burgess is known to be John Turner's antagonist, leading the Marxist school of thought against Turner whom he believed a liberal. They led a famous debate that was primarily ideologically based (Turner, 1982; Burgess, 1982).

Burgess admits that the housing policies recommendations of Turner and Abrams, which he assumes are capitalist-based, formed the backbone of the World Bank's policies. These concepts, he argues, were operationalized and accepted as dominant housing strategies in the 1970s and 1980s. Burgess (1992) examined the relationship between development strategies and the housing policies in the context of the articulation of the modes of production, in what he named 'articulation theory', which he believes to have proceeded through the process of modification and reproduction of the pre-capitalist structures rather than their eradication. The state was identified as having a key role in the process of articulation. Burgess (1992) argues that the articulation processes involved increased use of the non-capitalist forms of tools, purchase of raw materials as commodities, division of labour, use of wage labour, and increased commodity markets for land, labour and capital. A key argument of Burgess' on the articulation theory is that state intervention to accelerate the housing productivity through 'artisanal' modes has acted rather as a limiting factor in the access of the low-income to housing (Burgess, 1992). The misuse of the opportunity cost of self-help labour and the contracting below the minimum wage were key factors behind what he stated as "the poor have been assisted in exploiting the poorest" or "helping some to help themselves" (Burgess, 1992:87). A key issue in the debate was that self-help housing processes were seen as the exploitation of the poor.

Burgess, leading the Marxist analysis of housing, criticized John Turner's ideas that emerged from his work in Latin America and self-help policies. He holds that central errors of Turner's ideas were isolated in two areas; in the misunderstanding of the relationship between the 'use–value' and the 'market-value' or 'exchange-value', and in the denial of the commodity status of self-help. He also argues that: 'as the 'market-value' of a house cannot be an

adequate measure of the 'use-value' it follows that self-help (popular) construction will produce better houses than the market because the users are the best to judge' (Burgess, 1982:59).

Burgess (1982) holds that Turner's concept of housing does not consider the transformation of the self-help house into a commodity by the users, i.e. from the use-value to the exchange-value, and that one man's use-value can be another man's exchange-value and vice versa. In addition, various interest groups that operate in the urban housing market can view the self-help house as a very different commodity. Burgess (1982) argued that Turner's recommendations must be understood as an attempt to stimulate the growth and expansion of petty-commodity housing, as a consequence of the failure of the industrial housing to meet the growing demand for the growing urban population.

Burgess (1982; 1985) argued that the introduction of 'state-assisted self-help' would be a reasonable alternative that responds to the up-market movement characteristic of private and state housing. Under these movements the middle and lower working classes, who were previously housed, were left with no alternative other than to squat.

2.2.5. Viewpoints of the critiques of self-help housing

Criticism on self-help housing could be put into two categories. The first area of criticism is based on ideological presumptions that antagonized the ideas of the early advocates of the self-help housing, mainly John Turner. The writings of the intellectuals of the neo-Marxist stream, led by Rod Burgess, form the core of those critiques and were intensive during the late 1970s and the 1980s. The second area of criticism is raised by the neo-liberal school of thought. This group supports the idea of self-help housing but their viewpoints fall positively in favour of reinforcing the idea within the same neo-liberal school. Before the Perestroika in USSR, the first area had considerable significance in the literature, but after the collapse of USSR in 1989-1990, the second was more prevalent.

2.2.5.1. Ideological-based criticism of self-help housing

These criticisms on self-help are mainly raised by neo-Marxist school intellectuals, who have focused on two basic issues; the burdens placed on the poor in providing housing, and the issue of commercialisation or privatisation and the role of the state. In spite of the decline of Marxist school thought, it might be useful to highlight some key issues regarding self-help

housing. However, some other researchers might share the same points of criticism with the neo-Marxist school intellectuals.

1. *Burdens on poor people.* Self-help housing is a form of exploiting the labour of the poor, because it asks them to work for long hours in either the construction of their house or to earn money to purchase the building materials; therefore it might be feared that it might fall within the notion of over-exploitation (Burgess, 1982; Rodell and Skinner, 1983; Marcuse, 1992; Fiori and Ramirez, 1992). In upgrading squatter areas where poor people are given a limited time span to complete the house construction, the burdens on poor people become even greater, particularly if it is bound to officially granting the title deeds. As this point has been rationalized by Turner's viewpoints of 'autonomy of housing' and 'freedom to build', it was again criticised with the argument that the interpretation of the desirability of one's own home building did not necessarily coincide with the view and experience of those who are having to do with self-building (Harms, 1982). It was also argued that the ideological slogan of John Turner, 'freedom to build', has conflicted with the necessity to survive and that it implies a freedom of choice when in fact there is little or no choice. People in need of housing have to manage the provision of their own housing in different ways (Harms, 1982). In countries where the majority of the urban population fall below the poverty line, good results seem to be hardly attainable. It is clear that food and survival comes first. It was also argued that self-help housing makes sense only if self-helpers' wages are lower than construction workers' wages (Harms, 1982).
2. *Commercialisation or privatisation of housing and the role of the state* According to Pugh (1997b), Burgess criticised self-help housing as being transformed from creating personal basic assets to a commercial phenomenon with the penetration to markets, and that it promoted the articulation of inequality capitalism. This viewpoint also conforms to the argument that the production of housing for its use-value has changed with the emergence of capitalism, and that production was turned into commodities (exchange-value). These commodities are sold according to their effective demand, which means the ability to pay rather than the urgency of need, which also means emphasis on privatising the housing issue under the ideological banner of greater user control that increases the freedom of the government and the bureaucratic control (Harms' 1982).

Earlier, it was pointed out that in the modernization theory, which was based on the assumption that housing is a consumption expenditure, the housing loans were mainly geared towards slum and squatter eradication and new housing stock (Burgess, 1987). In the context of his criticism of self-help, Harms (1992) argued that in Third World countries where there is increased population growth, absence of affordable housing through the market mechanism for the majority of the people, little effect of state intervention to improve the housing conditions, and the housing programs missing the target population, poor people continued to provide their own housing through different means, including self-help (Harms, 1992).

Fiori and Ramirez (1992), pointed out that in some Third World countries, self-help housing was often not actually expressed within the context of the urban housing problem, but rather expressed within the context of the response of the limited resources of political regimes towards the political or social pressures for the search and great need of wide social legitimacy.

2.2.5.2. Non-ideological-based criticism

The ten points concisely illustrated by Marcuse (1992) represent a full range of issues that summarize why the conventional self-help policies are unlikely to work (Marcuse, 1992). The following is a summary of the ten points[16]:

1. *'It cannot be a substitute for resources indispensable for housing provision'*. The self-help substitutes marginally the cost of labour. If high building standards are required, high labour skills must be involved. Furthermore, other elements of land, building materials, expertise, and infrastructures must still be provided.
2. 'Self-help cannot deal with the host of problems that require centralized decision-making; it violates sound and necessary planning principles'. The adoption of national planning criteria that deals with resource allocation in a sphere where self-helpers have no say in it will inevitably produce conflicts and disillusionments. Some self-help issues, such as allocation of land, infrastructure, and services, require to be incorporated within a national policy that might not conform with those policies. Not doing so may have negative impacts such as inconformity of land uses, pollution, soil erosion, and congestion.

[16] The points represent a comprehensive coverage of the criticism raised by Marcuse (1992) that fits within the context of the criticism found by the author in the literature review. The points between brackets are quoted by the author with key arguments of the explanation.

3. *'It is to produce only temporary solutions to immediate housing problems'*. Compared with the social housing programmes, self-help provides incomplete help for the beneficiaries of the self-help programmes. Therefore, it rather represents a temporary solution and only alleviates the housing problem.
4. *'It provides no evaluative mechanism, no way of building in the future on the accomplishments and lessons of the past'*. Lessons learned by the self-helpers often die by the end of the construction processes and are not passed on to others.
5. *'It results in lowering housing standards'*. The use of local building materials, the unskilled labour and the limited external financial and technical assistance often results in lowering the housing standards.
6. *'It is economically regressive; it does nothing to redistribute social resources in accordance with need'*. Those with better skills, more income, and more education are likely to be able to accomplish more for themselves and the worst off the least. Therefore, limited chances of redistribution are available.
7. *'Self-help is inefficient'*. The non-experienced households, working on their own, lack expertise in buying building materials and using the technical assistance. Varied skills of household members and informal organization of work lead to inefficiency.
8. *'Self-help can be politically reactionary'*. The misdistribution of resources that may result through the self-help projects in turn may cause frustration against government actions.
9. *'Self-help can be socially divisive'*. Competition for the limited provided resources within the neighbourhood may rise. Moreover, the door may be opened for uncontrolled free market operations, landlordism, renting out and subdivisions beyond the original design; and speculations may occur, although such issues are often of low concern for the project initiators who will be interested mainly in outcomes.
10. *'It exploits the labour of its participants'*. This issue has widely has been prevalent in the literature. However, in situations where unemployment prevails, it might be justifiable as an opportunity cost. Also self-help as self-exploitation in some circumstances might be justifiable, but it is almost never the optimal use of labour involved. Exploitation may take a political dimension, hence resisted (Marcuse, 1992).

2.3 The World Bank policies

By the end of the Second World War, following a conference held at Bretton Woods in 1944, two international institutions, known as Bretton Woods institutions, were created. The International Bank for Reconstruction and Development (IBRD) later transformed to the World Bank and the International Monetary Fund (IMF). The Bretton Woods agreement also included plans to establish the General Agreement on Tariffs and Trade (GATT), which later evolved into the World Trade Organization (WTO)[17] in the 1990s. The World Bank is made up of a number of institutions; but the unique IBRD and the International Development Association (IDA) are the principal ones concerned with development and finance in the third world. The IBRD was primarily established to facilitate reconstruction in European and some Asian countries after the Second World War. Later, in the 1960s, the bank shifted focus to providing assistance to Third World countries. The International Development Association (IDA) helps the world's poorest countries to combat poverty, boost their economic growth and improve their living conditions. The two institutions play different but integrated and supportive roles to achieve the mission of reducing poverty, improving living conditions in the developing countries and promoting international economic cooperation. IBRD focuses on middle income and creditworthy poor countries while IDA focuses on low-income countries.

Both institutions provide low-interest loans, interest-free credit and grants in the fields of education, health, infrastructure, power plants, roads, communications, agriculture amongst others including housing for the developing countries. The World Bank is therefore an important source of finance for developing countries around the world to improve their own economic performance and restructure their economic systems. It also provides technical assistance, advice and training to improve the economy of these countries. The IMF and World Bank have been empowered by the seven affluent countries which control them by holding around 40 percent of the votes of the executive board which are weighted according to the initial contributions to the bank's capital. Based on this the United States have the dominant voice in the bank's decisions. However, the bank is actually owned by its 184 member countries. The seven countries are the United States, United Kingdom, Japan, Germany, France, Canada, and Italy. Developing countries with large debt problems, which

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[17] http://www.worldbank.org/knowledge/chiefecon/articles/ej61/index.htm accessed 26 April 2006. In December 1945 the World Bank came into formal existence and was formed of five agencies; IBRD, International Finance Corporation (IFC), IDA, Multilateral Investment Guarantee Agency (MIGA) and International Centre for Settlement of Investment Disputes (ICSID).

most developing countries have, are often forced to follow economic austerity policies imposed by the IMF and World Bank and accept whatever conditions are imposed on them.

The World Bank has been criticized in a number of areas; for the conditions imposed within the structural adjustment packages for the borrowers; failure to solve the problems in developing countries; structural adjustment programmes which have exacerbated poverty in developing countries[18]; environmental degradation and the social consequences caused by infrastructure projects funded by the World Bank; publications of the World Bank undermining other viewpoints on development, World Bank working in partnership with the private sector may undermine the role of the state[19]. However, the World Bank clearly contributed to housing provision and finance in many developing countries throughout the world.

The role of the World Bank became significant after its involvement in lending programmes for self-help squatter upgrading and sites-and-services schemes since its involvement in those programmes in the early 1970's. The World Bank has passed through two distinct phases. The first part was the project-by-project finance and the second dealt with the whole-sector development through the enabling strategies. This part discusses these two forms of housing finance in detail in addition to highlighting the role of state.

2.3.1. Project-based policy

The World Bank provides low-interest loans, interest-free credit, and grants to fund projects in developing countries. In the early stages, the World Bank adopted aided self-help in its two basic forms, sites-and-services and the upgrading projects. The adoption of those approaches followed the relative stability after the Second World War. That period after the Second World War was accompanied by increasing urbanization in Third World African cities, particularly capital cities, after most countries obtained independence. There was an increasing need to find solutions to the problems of demand for housing, services and infrastructures, and the upgrading of squatter areas. The World Bank started to lead debates on housing and the means to boost the supply of housing in the member states. The role of the World Bank became more pronounced following its direct involvement in giving loans to low-income countries to enable them to improve the housing supply and housing conditions

[18] http://www.globalexchange.org/campaigns/wbimf/faq.html
[19] http://www.utenvironment.org/sustainabilitycourse/03/bank.doc

in different ways. The World Bank started to support and finance housing schemes in the 1970s, but giving it a low priority; viewing it as a social service and non-productive sector (Harris, 1998a; Nientied and van der Linden, 1988).

Projects supported by the World Bank varied in their degree of success, but generally, the sites-and-services schemes portrayed problems that they were out of the reach of the target population (Harris, 1998b). Further problems were pointed out by Pugh (1997a: 95) holds that there are no valid generalizations in the World Bank projects for either success or failure, but rather mixed results. He identified low cost recovery, excessively high standards, delays, and gaps in housing finance systems as key problems of the sites-and-services funded by the World Bank.

According to Harms (1992), the sites-and-services schemes promoted by the World Bank in Third World countries have been very limited and did not reach the lowest 20 percent of the target groups (Harms, 1992:37). However, Rodell has pointed out that World Bank projects were planned at high cost recovery rates that the institutions could not afford (Rodell, 1983:40). Review studies found that although cost recovery in the Lusaka upgrading project were affordable by most participants, its rate was not effective because it did not fulfil four principles viz., the participants did not know the nature of their obligations; there was an inefficient collection system; carelessly planned and implemented sanctions and incentives and the cost recovery lacked government support (Sanyal, 1987; Bamberger et al., 1982). For better systems of cost recovery, Sanyal (1987) suggested that, from the experience of Lusaka, with affordability, the default bottom 20 or 25 percentiles of the low-income households might be avoided by further reduction in the total cost of the project (Sanyal, 1987).

2.3.2. Enabling strategies

Enabling strategies (World Bank, 1993), which were also implicit in the Global Shelter Strategy (GSS) adopted by the United Nations General Assembly, supports the modes of support-based strategies. It calls for strong and coherent government action, including intervention in land, housing and financial markets when they fail to respond to the needs and latent demands of the low-income majority. Malpezzi (1990) and Mayo et al. (1986) identified five major market inputs and the regulatory framework involved in the housing process. These are land; finance; the skills of the labour force; infrastructure, and building

materials. The housing supply components are therefore; land, finance, building materials, labour, construction industry, infrastructure, and the regulatory framework. It has been argued by many academics that the effectiveness of the housing supply is closely tied up with these previously mentioned components (Tipple, 1999). The enabling strategies seek to improve the functioning of the markets, which supply those five elements, and to provide a regulatory framework (Malpezzi, 1990; World Bank, 1993). The factors that are assumed to influence the housing supply are detailed as; price and availability of land; price and availability of skilled labour; the efficiency of official framework; official standards; extent to which illegal or informal housing and land developments are tolerated; building materials and components costs and availability and price of infrastructure and services for housing (*Figure 2.2*).

Figure 2.2 Factors affecting housing supply and demand
Source: (UNCHS, 1996a)

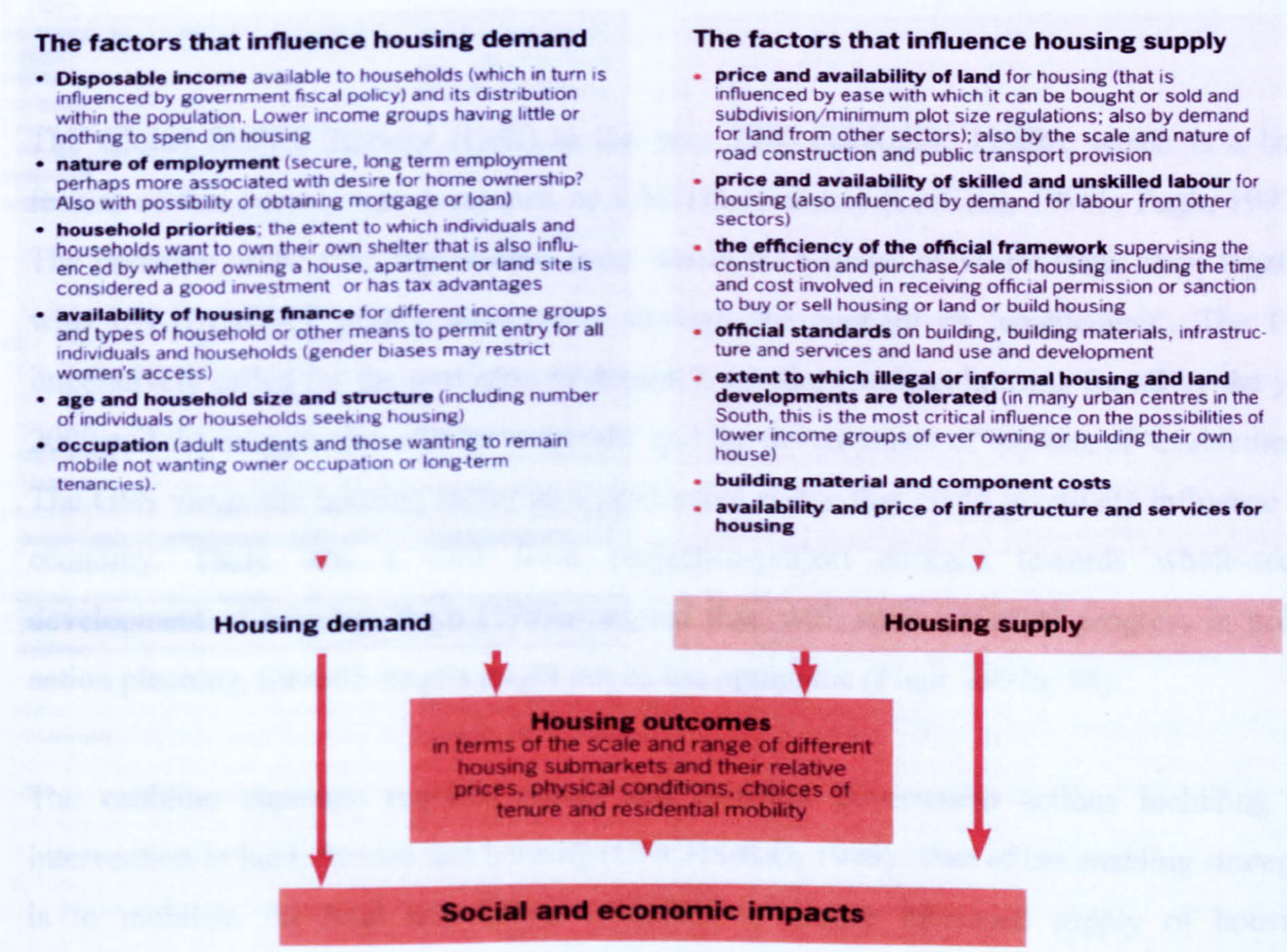
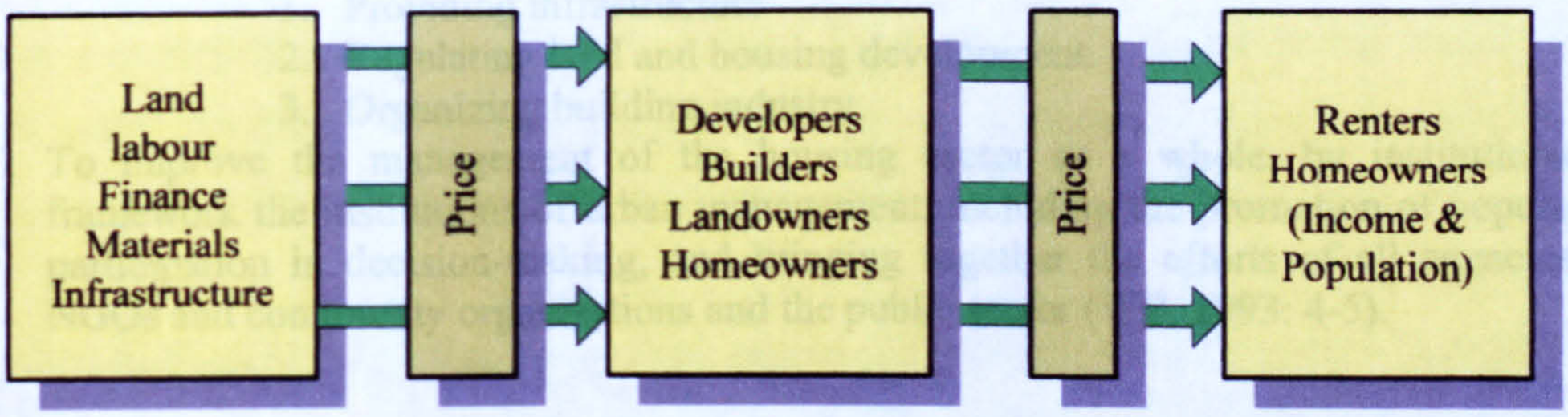


Figure 2.3, based on (Malpezzi, 1990), schematically illustrates how the housing markets work. The five inputs identified above, viz., land, labour, finance, building materials, and infrastructure are combined by supply-side agents viz., developers, builders, landlords, and

homeowners to produce housing. Again, homeowners and renters are also housing producers. Relative prices affect the decision of the housing producers as to whether to increase or decrease and the input suppliers whether to provide more or less inputs.

Figure 2.3 How housing markets work
Source: (Mayo, et al., 1986; Malpezzi, 1990)



The Global Shelter Strategy (GSS) to the year 2000 (UNCHS, 1990b), which is a basic feature of this period, was developed by UNCHS (Habitat) (UNCHS, 1990b; Pugh, 1997a). The initiation of the GSS represents a point where the policies of World Bank came together with UN-HABITAT policy frameworks through the concept of 'enablement'. The GSS imperatively called for the provision of decent, hygienic, spacious housing for all by the year 2000 and the introduction of a 'new agenda' and the development of the idea of 'enablement'. The GSS views the housing sector as a productive sector that could positively influence the economy. There was a shift from project-to-project concern towards whole-sector development of housing. Pugh (1997a) argued that, with some practical progress in policy action planning, the GSS targets might not be too optimistic (Pugh, 1997a: 98).

The enabling approach requires strong and coherent government actions including the intervention in land, finance and housing (UNCHS/ILO, 1995). Part of the enabling strategies is to mobilize the land and labour resources to ensure increased supply of housing, infrastructure and services by realising efficient building industry, and legislative, institutional, and financial frameworks that would enable the formal and the informal sectors in addition to the NGOs and CBOs to make optimal contribution to development (UNCHS, 1990b; 1989).

The World Bank (1993:4-5) identified seven "enabling instruments" in housing policy oriented towards helping markets to work efficiently. Three on the demand side and three in the supply side, and one general rule as follows:

A. Demand-side instruments:
    i. Developing property rights
    ii. Developing mortgage finance
    iii. Rationalizing subsidies.
B. Supply-side instruments:
    1. Providing infrastructure
    2. Regulating land and housing development.
    3. Organizing building industry.
C. To improve the management of the housing sector as a whole, by institutional framework the institutions of urban management, including the promotion of popular participation in decision-making, and bringing together the efforts of all agencies, NGOs and community organizations and the public sector (WB, 1993: 4-5).

Through the enabling approach, the World Bank moved towards new directions in the international housing policy. The World Bank emphasis was to bring down costs in the public sector and shift them to the private sector (Pugh, 1997c). Bringing down the standards came as a consequence of this, but the user's autonomy concept raised by Turner, amongst other things, resulted in realistic standards (Nientied and van der Linden, 1988).

The idea may have been based on the reality of the failure of the Third World governments to increase their supply of finished housing. With the increased rural-urban migration, increased population growth, and limited resources in most Third World countries, the enabling strategies seem inevitable (Pugh, 1997c).

Baken and van der Linden (1993) argued that the World Bank policies did not give enough considerations to the imperfections inherent in the urban land markets of the developing countries where substantial operations take place outside the formal frameworks, and it did not address the question of how improving market efficiency relates to the functioning of different submarkets. They hold that the World Bank policies did not consider the weak information systems, the contextual factor of land politics inherent in speculations, and regulatory audits and the informality of urban land and housing (Baken and van der Linden, 1993). In reply to Baken and van der Linden, Malpezzi (1994: 462) holds that his conviction is that, 'while politics always play a role, the more market-oriented the system the wider the range of choices open to most consumers, at all income levels'.

2.3.3. The World Bank and the role of state

Pugh (1997c) made a point about the role of state in the World Bank policies. From the late 1980s, the aim of the World Bank focused on improving the development performance as being instrumental for growth and welfare focusing on the role of the state. That is to say good states, good institutional arrangements, and good policies raise socio-economic performance in development. It is argued that "goodness" depends on bringing the state closer to the people, reducing corruption to insignificant levels, developing the range and depth of the state's capability of achieving some reasoned distributive welfare and having regard for context variations (Pugh, 1997c:iv). The public sector is an important arm of the state that plays a leading role in its housing policy implementation.

According to Pugh (1997c), the World Bank argues for state roles and that states have to be assessed in terms of whether they the have the *capability, effectiveness* and *creditability* and useful *partnership*. Hence the 'World Bank's theory of state' roles, is based upon the notion that welfare originates in broad economic and social development, in self-help, in human capital formation, in access to public goods, in private and social property rights and in the quality of governance rather than dominantly or exclusively in tax-transfer systems. Such conceptualisations of welfare are well established in the literature on social security in developing countries (Pugh, 1997c;vii).

The new state's role is evident in creating state-society *co-productive* in such spheres of irrigation, neighbourhood health centres, improving schools, and improving the environment in low-income housing areas. The World Bank is now more deeply drawn into the opportunities and risks of co-production for social capital formation. Pugh (1997c) argues surprisingly that the World Bank has become more overtly political with the publication of *The State in a Changing World* (Pugh, 1997c).

The new approach requires subtle and varied state role in slum upgrading, in the regularization of property rights in land, social planning, in the coordination of government agencies and encouraging participation and self-help (Pugh, 1997c). From one central perspective, the millennial theory of the state is about elaborating new and more effective relations between state and the market. For example, voters' apathy would lead to under-allocation of resources. Different sorts of cross-sectional interests must be accommodated, hence the "new political economy" which has been advocated by many writers (Pugh, 1997c).

The following is a summary of the key points of Pugh's criticism on the implications of the World Bank's millennial theory (Pugh, 1997c):

2. The World Bank economy is incomplete. Policies are revised under continuous lobbying. The World Bank was slow to perceive the significance of land reform, housing finance and appropriate governance of infrastructures. Effective theories and practices in macro-economic planning related to economic development policies are largely ignored.
3. Both the World Bank and the urbanists largely ignore urban governance and politics. The WB has related its new approach to decentralization, partnership, and such like, but without revealing much about the risks of contested authority, dominance by some sections and so forth.
4. It was not easy for the urbanists to keep in track with the revisions and redirections of the WB. The WB is an international capitalist organization, which draws upon diverse elements of economics and political science, and its selections of elements vary in time and specific application. The Bank's performance is variably mixed with successes and failures, often depending on local institutional, cultural and political conditions.

2.4 UN-HABITAT and the United Nations agencies policy frameworks

The United Nations represented by its various agencies played a principal role in outlining policy frames for the development of human settlements around the world through firm and progressive steps and a series of conferences, declarations, key documents to improve the living environments of the people. The outcome and the actions of all these agencies have a direct influence in shaping the housing policy in the developing countries.

The United Nations Human Settlements Programme (UN-HABITAT, shortened to Habitat) is a principal United Nations agency for human settlements. Its mission is to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all. It was established in 1978 in Vancouver, Canada when the first meeting on human settlements was held resulting in the 'Vancouver Declaration on Human Settlements'. The establishment of Habitat is mandated by the United Nations General Assembly. UN-HABITAT plays an important role through its activities, meetings, conferences, and its wide range of publications in extending the experience of different countries to others in a view to

explore the best practices in shelter provision and improvement of living conditions around the world.

2.4.1. Salient housing-related conferences and key documents

Historically UN-HABITAT led a designed of steps to assist nations to realize its ultimate objective of global adequate shelter for all and sustainable development and to implement the Habitat Agenda which have evolved as a key document in the development of human settlements. The following section highlights the key conferences and documents of the Habitat and other relevant United Nations agencies.

2.4.1.1. The first United Nations conference on human settlements (Habitat I)

This conference was held in 1978 in Vancouver Canada. The key document of this conference was the *Vancouver Declaration on Human Settlements*. This conference was significant because for the first time the topic of human settlements was recognized as an important social and economic development issue. It reflected a call for the need for national and international action, more intense co-operation, and more effective institutional arrangements in the field of human settlements. It was also the first time that adequate shelter and services were recognized as a human right, which places an obligation on governments to ensure their attainment, by all people. It recommended guided programmes of self-help and community actions to realise the goals (COHRE: 2000).

2.4.1.2. The Global Shelter Strategy to the Year 2000 (GSS)

The Global Shelter Strategy to the Year 2000, which was adopted in 1988 by the United National General Assembly, marked a major shift in housing-related policies. It recognized that the simple replication of model projects of the 1970's did not work and that new ways of increasing the housing supply should be found through the combined efforts of public and private sectors (UNCHS, 2001a). The GSS called upon governments to scale-up the housing programmes by surpassing the traditional project approach model and replacing sites-and-services and upgrading projects with the "enabling approach". It also recognized that high priority in development should be given to the shelter and the needs of the poorer groups with employment and income problems. It further noted that investments in the housing sector are important contributors to the economic growth of the country in question (ILO/UNCHS, 1995; UNCHS, 2001a).

The sites-and-services and squatter upgrading policies were replaced in the GSS with a totally new policy of the 'enabling approach', focussing on reforms to raise the efficiency and effectiveness of housing markets. The GSS was meant to eliminate restrictive policies and regulations that impede housing provision (UNCHS, 2001a, UNCHS, 1991b).

2.4.1.3. Agenda 21

Agenda 21 was an outcome of the UNCED World Summit at Rio de Janeiro in 1992. It represented a shift for housing policies to be incorporated within a comprehensive plan of action to be taken globally, at all levels in every area where human activity impacts on the environment.[20] Chapter seven of the Agenda particularly focussed on promoting sustainable human settlement development and called for the introduction and strengthening of the enabling shelter strategies, including improved human settlements management and a sustainable construction industry. It emphasised the link between employment opportunities to alleviate poverty and housing provision to improve living conditions; therefore contributing to the economic development. Agenda 21 has increased the emphasis on two important issues that are required for the formulation of shelter strategies. It encourages a greater concern for environmental issues and recognition of the need to develop strategies which are sustainable (UNCED, 1992; UNCHS, 2000; UNCHS/ILO, 1995). Agenda 21 has been produced in a large text of four sections and 351 pages including actions, objectives, means and mechanics of implementation of all the aspects of development. The following is a quotation (UNCHS: 1996b), which gives a good summary of Agenda 21 regarding the development of the human settlements:

- "improve the quality of human settlements management in order to ameliorate living conditions, improve natural resources, support rural development and accelerate national growth;
- adopt national shelter strategies which support the efforts of poor and vulnerable groups; facilitate access to land, finance and building materials; reform codes and regulations; and promote the regularization and upgrading of informal settlements;
- pursue integrated urban development programmes which encourage employment generation measures for the poor through the provision, improvement and maintenance of infrastructure and services and support informal sector activities;
- promote sustainable land use planning and management policies and in particular urban land resource management plans;
- promote integrated provision of environmental infrastructure and give particular attention to water-resources management, solid-waste disposal, and the reduction of health risks from environmental pollution;
- develop sustainable construction industries which utilize local materials and labour-intensive construction methods; seek to render materials affordable and develop credit schemes to assist small builders;

[20] http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter7.htm last accessed 2003.

- increase public awareness of the need for sustainable development, promote training and human resource development; and
- seek to develop guidelines and strategies to increase equality in society, to advance the role of women and to develop partnerships in achieving sustainable development" (UNCHS: 1996b)

2.4.1.4. Habitat Agenda and the Istanbul Declaration on Human Settlements

In 1996, Habitat II was held in Istanbul Turkey in the 20th anniversary of Habitat I. This conference was also called the 'City Summit'. The principal objective of Habitat II was to arrest the continuous deterioration of global human settlements conditions and to create appropriate circumstances for achieving improvements in the living environment of all people on a sustainable basis. The conference objective was also to adopt a general statement of principles and commitments for a global plan of action on human settlements capable of guiding national and international efforts through the first two decades of the twenty first century. The key documents came out of this conference is the Habitat Agenda and the Istanbul Declaration on Human Settlements. The latter is a reaffirmation of the Habitat Agenda agreed separately at the Habitat II conference. This declaration particularly reaffirms the commitment of world governments to better standards of living in larger freedom for all humankind.

2.4.1.5. Declaration on Cities and Other Human Settlements in the New Millennium

The declaration was created in (2001) based on a United Nations General Assembly Resolution. In this meeting a decision was taken to transform the UNCHS into the secretariat of the United Nations Human Settlement Programme to be known as UN-Habitat. The declaration reaffirms that the Istanbul Declaration and the Habitat Agenda will remain the basic framework for sustainable human settlements development in the years to come.

2.4.2. The proposed UN Housing Rights Programme

The UN Housing Rights Programme intends to present a holistic content of the right to housing that moves from the narrow concept of a house as walls and roofs by viewing it within the different aspects of the "right to live" in security and dignity (UNCHR, 1996). It represents a new trend in the international housing policy where there is a move towards legalizing housing as a human right through adopting a new international convention on housing rights. The concept of housing as a human right was declared to be embedded in The Universal Declaration of Human Rights, which is considered to be an international standard, and the most important resolution ever adopted by the United Nations that clarifies the content of human rights. However, these rights were only vaguely referred to in the Charter

(Hulchanski and Leckie, 2000; UN-HABITAT/OHCHR, 2003). UN-HABITAT and the Office of the United Nations High Commission for Human Rights (OHCHR) launched the United Nations Housing Rights Programme (UNHRP) in the year 2000 to promote further understanding of housing rights and to assist States and all partners to develop practical steps towards progressive realization of housing rights. It is regarded as a move from promotion to protection of housing rights (UN-HABITAT/OHCHR, 2003). COHRE compiled a number of publications that show detailed basis of the proposed United Nations Housing Rights Programme (UNHRP), highlighting the legal basis embedded in all the United Nations Declarations (UN-HABITAT/OHCHR, 2002a; 2002b; UN-HABITAT, 2003a; 2003b; 2003c; 2004). It was important to avoid the misinterpretation of the programme that governments may be duty-bound to provide free housing to all citizens, but in fact governments are required to take necessary measures to act as enablers to provide access to adequate, affordable and safe dwellings (UN- HABITAT, 2001).

By approving the United Nations Housing Rights Programme (UNHRP), a new 'rights-based approach' to the development of the housing sector was launched, based on the idea that the activities of housing production and improvement of the housing stock, must run parallel with actions that particularly address and focus on the human rights aspects. The programme's primary objective is to 'assist States and other stakeholders with the implementation of their commitments in the Habitat Agenda to ensure the full and progressive realization of the right to adequate housing as provided for in international instruments' (UNHRP, 2002[21]). It is assumed by the UNHRP that this 'rights-based approach' would (UNHRP, 2002):

1. 'Empower the poor and the homeless;
2. Promote security of tenure, particularly for women and vulnerable groups in inadequate housing conditions;
3. Strengthen protection against forced evictions and discrimination in the housing sectors; and
4. Promote equal access to housing resources and remedies in cases of violations of housing rights' (UNHRP, 2002[22]).

It is assumed that the programme provides clear and consistent measures against which states' actions; policies, practices, and legislations could be judged. It also provides citizens with the legal grounds, procedures and mechanisms to ensure their rights will be met and compensation will be paid in the case of violations (UNCHS, 2001). However, the

[21] http://www.unhabitat.org/programmes/housingpolicy/hpu/UNHRP-Info.PDF, accessed 13.3.2004.
[22] http://www.unhabitat.org/programmes/housingpolicy/hpu/UNHRP-Info.PDF , accessed 13.3.2004.

programme stated five objectives not only for the first phase but also for future phases as follows (UN-HABITAT/OHCHR, 2004:24):

- 'To promote awareness, information and experience exchange on housing rights, learning among partners;
- To support the United Nations human rights mechanisms relevant to housing rights (particularly the Special *Rapporteur* on adequate housing and works of the treaty bodies) and to promote co-ordination among the relevant organizations/agencies of the United Nations system;
- To establish a global monitoring and evaluation system on housing rights practices (good practices, violations and lessons learned);
- To promote development of relevant norms, standards, guidelines and thematic research on housing rights;
- To assist States and other stakeholders in building and improving technical capacities for implementation and monitoring of housing rights' (UN-HABITAT/OHCHR, 2004:24)

The Special *Rapporteur* on promoting the realization of the right to adequate housing clarified that the obligations of States did not imply that the State is required to build housing for the entire population, housing is not to be provided free of charge to all who apply for it, and that the State must necessarily fulfil all aspects of this right immediately upon assuming tasks to do so. It also clarified that the State should exclusively entrust either itself or the unregulated market with the task of ensuring this right to all and that this right will manifest itself in precisely the same manner in all circumstances or locations (UN- HABITAT, 2001).

Governments' obligations to realize fully the rights to adequate shelter are indicated in three phrases that show some flexibility. These phrases are "undertakes to take steps ... by all appropriate means", "to the maximum of its available resources" and "to achieve progressively". *Table 2.1* shows that the conceptual framework of the housing rights focused on specific actions on four areas, which have been assumed to have direct and effective impact on the process; equal access to housing, security of tenure and forced evictions, combating homelessness and protecting the rights of the homeless people and access to legal and other remedies (UN- HABITAT, 2001). From the table we notice the first stage includes some basic actions in areas that represent the most critical issues in housing commonly observed in developing countries today; such as eradication of discrimination, access to land, credit particularly for the poor and the vulnerable groups, property rights and upgrading and informal settlements. Other steps represent a gradual move towards more advanced issues in the realization of the housing rights. *Table 2.1* includes a chronology of all the significant ten United Nations events – activities, resolutions, declarations, committee activities, reports – relating to the right to adequate housing (COHRE, 2000).

Table 2.1 National and local level actions required for realization of housing rights
After (UN- HABITAT, 2001: 11-12)

1. Equal access to housing resources
Eradication of all forms of discrimination in the housing sector.
Promotion of access to land, credit and other housing resources, particularly for the poor and other vulnerable groups.
Promotion of property and inheritance rights particularly for women.
Upgrading and regularization of informal settlements.
2. Security of tenure and forced evictions
Promotion of measures to increase security in different forms of tenure.
Prevention of forced and illegal evictions.
Development of alternatives to evictions (legal), including development-based evictions and establishment of procedures/mechanisms to minimize impacts.
Safeguarding residential stability by institutionalisation/improvement of existing systems for tenant/landlord relations.
3. Combating homelessness and protecting the rights of homeless people
Development of better data on homelessness.
Organization of emergency shelters.
Formulation and coordination of measures to increase inclusiveness in society, community development and outreach.
Promotion of specific measures to prevent homelessness including increased affordability.
4. Access to legal and other remedies
Initiation of awareness campaigns, public education, training and capacity building activities.
Establishment of specific governmental offices for housing rights.
Development of a system for remedies in cases of housing rights violations.
Promotion of access to legal aid and information.

Table 2.2 Chronology of the United Nations key events on housing as a human right
After (COHRE, 2000:6)

Date	***Event***
Dec. 10, 1948	Universal Declaration of Human Rights proclaimed
Dec. 16, 1966	International Covenant on Economic, Social and Cultural Rights adopted
Aug. 29, 1991	Special Rapporteur on the Right to Adequate Housing appointed
Dec. 12, 1991	General Comment No. 4 on the Right to Adequate Housing issued
Aug. 1994	Draft International Convention on Housing Rights published (The full text of this draft convention is in the Appendix of this report)
Feb. 16, 1995	Towards A Housing Rights Strategy published
Aug. 1995	Final Report of the Special Rapporteur on the Right to Adequate Housing
June 3-14, 1996	UN Conference on Human Settlements (Habitat II), Istanbul
1997	The Human Right to Housing, UN Fact Sheet No. 21 published
May 16, 1997	General Comment No. 7 on Forced Evictions issued

The United Nations Housing Rights Programme is intended to adopt a number of housing rights indicators, which are still under discussion. It is argued that these indicators are probably the most sparse and unreliable and that few governments collect the relevant data that measures the attainment of housing rights. The indices covered ten areas as follows (UNCHS, 2001a: 206):

1. 'Public expenditure on housing as a percentage of national budgets;
2. Percentage of population with access to potable indoor running water and electricity;
3. Percentage of population legally protected with security of tenure rights;
4. Average household expenditure on housing as a percentage of income;
5. Percentage of population residing in informal irregular housing and the total number of homeless people;
6. Legal status of housing rights;
7. Access to affordable and impartial judicial and other remedies;
8. Number of persons forcibly evicted per year;
9. Access to remedies for housing rights violations;
10. Protection against discrimination for women' (UNCHS, 2001a: 206).

The personal viewpoint of the author on the housing rights is that it represents an advanced step in shelter provision policies that must be carefully implemented. It should not only be a matter of enforcing the covenant, but it should also consider the varying economic levels of all nations and their institutional and financial capabilities to deal with housing supply policies. Experience has shown that most governments lack the resources to meet the housing needs of low-income households (UNCHS, 2001a: 201). Some of those poor countries may not be able to meet these obligations. This would better be taken into consideration by means of directing some international support to those countries to enable them to realise the objectives of the programme. However, the housing rights programme reflects a detailed legal context of most United Nations declarations and could be used to act as a stimulus not only in increasing shelter provision but also eliminating distortions in the supply process and the housing policies output. Generally, the developed countries may have resources and executive abilities, but for poor countries, these are greatly questionable.

2.5 The evolution of housing policy

Housing policy has taken different forms over the past fifty years; following the changing global and regional events and conditions and remarkable shifts in technology, urbanization, capital. The housing policies and the adopted approaches were much influenced by those shifts (UNCHS, 1997a). This section outlines the various evolutionary phases and stages of housing policies and strategies. Generally, the evolutionary phases discussed here involve how the early intellectual content of housing research was gradually passed into the international housing and settlement policies.

2.5.1. Phases of evolution of the housing policies

The literature revealed a number of trials to historically analyse the evolutionary stages of shelter policy and self-help (Stren, 1990; Pugh, 1995; 1997a; Palmer and Patton, 1988; Harris, 2003b). Pugh (1997a) identified three phases of the evolution of self-help and Palmer and Patton (1988) identified four phases with great similarities between the two methods. By the end of those phases, it was pointed out that the World Bank played a substantial role in housing policy through 'the theory of state'. Also Stren (1990) and Harris (2003b: 168), identified three phases in the evolution of housing policies after 1945, when the role of the international agencies evolved. These are greatly consistent with the previous classifications of (Pugh, 1997a) and (Palmer and Patton, 1988) but there are different areas of emphasis and viewpoints. The following is a discussion of the main three phases.

2.5.1.1. The first phase

The first phase is the period before the 1970s was dominated by public housing policies, undertaken by governments mostly without international assistance (Stren, 1990; Harris, 2003a). This period witnessed the start of rapid urbanisation following the relative stability after the Second World War. The major actions of the first period was directed to discouraging migration from the rural to urban areas, preventing squatter settlements, removing spontaneous settlements, and providing high rise buildings in some developing countries. Removal of squatter settlements and the clearance programmes, and the replacement of dilapidated and low-quality housing with high-rise buildings was common practice or, at least, an intention at that time (Palmer and Patton, 1988; Skinner and Rodell, 1983).

Following the publication of works of a number of studies of some scholars such as John Turner (1963) who published his first paper "*Dwelling resources in South America*", William Mangin (1967a; 1967b) *"Squatter Settlements"*, and *"Latin Americas Squatter Settlements; A Problem and a Solution*" and Anthony Leeds and Elizabeth Leeds (1970) *"Brazil and the Myth of Urban Rurality: Urban Experience, Work and Values in 'Squatenents' of Rio de Janeiro and Lima*" and other publications on their research into Latin America shantytowns, the published ideas became attractive and were virtually viewed as panacea for the housing problems of people on low-income. They publicized the notion that shantytowns should not be viewed as a 'problem' (Lloyd, 1971; Pugh, 1997a; Peattie, 1982; Materu, 1994). The ideas, mainly advocated by Turner, became even more attractive following their experience and

practise through the sites-and-services projects, which represented a move towards incremental and progressive development that started to replace the conventional housing supply in the Third World.

The main trend in that period was that the need of the users should be at the heart of housing policy and the main argument was that the user-built shelter is economically better than state-built housing, calling for government support to self-help housing. Squatter settlements were not seen as housing in deterioration but as housing in the process of improvement. In addition, the poor should become homeowners and be provided with finance sources and security of tenure. Such ideas were based on the thoughts of Turner and Mangin (Peattie, 1982; Pugh, 1997a; 1990; Nientied and Van der Linden, 1988; Palmer and Patton, 1988).

The ideas were controversially countered by neo-Marxist intellectuals led by Rod Burgess who viewed the self-help approach as a capitalist exploitation of poor people from the point of view that the poor households were forced to provide their own shelter while the rich were not, and that they deepened the social division of labour (Burgess, 1982; Palmer and Patton, 1988).

2.5.1.2. The second phase

However, in the early 1970s up to the late 1980s, which is the second phase, public housing policies were displaced by the self-help forms of sites-and-services, aided self-help (Harris, 2003a), and upgrading (World Bank, 1993: 52), and to some extent, inner city rehabilitation (Stren: 1990). The focus of the policies was to implement projects to provide affordable land and housing for the urban poor through the support of the international agencies where the World Bank played a leading role. Besides providing affordable housing, the objective was to achieve cost recovery, and to create conditions for large-scale replicability of the projects funded by the World Bank (World Bank, 1993). During this period, self-help emerged as the most attractive approach, because governments were strapped for housing finance and it seemed suitable as a low-cost and low-tech approach. Research to develop alternative housing systems to cut down the housing costs began to gain remarkable attention in Third World countries. Third world governments failed to provide shelter for the people but the process of building houses continued by the people themselves as a response to the arising need. At that time, some believed that the desire of the homeless to build their own shelter could be considered as the basis for resolving the housing problem. Actions during this period

witnessed an extensive practice of the self-help idea through state-aided self-help and the upgrading schemes. The World Bank was involved in supporting and financing various projects in some Third World countries (Harris, 1998b; Pugh, 1997a; Palmer and Patton, 1988). Intensive evaluations were made to the various projects that revealed mixed results of successes and failures in the implementation of the sites-and-services projects in developing countries. During this stage, problems of self-help housing intrinsically associated with the sites-and-services projects were highlighted, focusing on the issues of allocation, reaching the lowest income groups, affordability, cost recovery and replicability. Problems of lack of coordination between the government institutions involved in the implementation of the projects were also highlighted. In this stage, there was a widening role of the self-help approach, and its movement towards community-based organization for social development. Its role also extended from shelter provision to the provision of services and infrastructures within neighbourhoods (Pugh, 1997a).

This period also witnessed the start of the global concern about the housing problem and solutions through the first UN-HABITAT conference, which was held in 1976 in Vancouver, Canada. The most important outcome of the conference was the recognition of the topic of human settlements as an important social, economic and development issue. The conference recommended national and international actions in the field of human settlements and called for intense cooperation and effective institutional arrangements. This period was characterised by the shortage of funds for governments to provide housing and the inability of the largest sector of the inhabitants to obtain the cheapest standards of housing units. The rising land values generated individual wealth, but it found its way to the land speculators. The inflation had a direct influence on the housing market performance and the devaluation of the repayments of the loans and building materials (Palmer and Patton, 1988).

2.5.1.3. The third phase

The third phase is the period after 1980s. During this phase the international agencies led a new market-oriented 'enabling approach'. This phase represented a shift from direct involvement by government in the construction of 'low-cost' housing through aided self-help policies that proved to be inadequate and largely had an ineffective response to the shelter needs of the urban poor (Stren, 1990). Harris (2003a) argued that in each phase of these policies, it was assumed that policies adopted by the national governments in the developing

world matched the recommendations of international agencies, and he gave evidence that these assumptions were based on 'meagre' grounds.

This period represented a move from the project-by-project approach to broad policy packages. The emphasis on self-help became less significant and remained in some areas as a bottom-up community policy but with a shift of emphasis on the issues of environment and poverty self-help. There was more involvement of the relevant United Nations agencies represented by the World Bank and the UNCHS, who addressed a 'new agenda' for urban and housing policy, which was published in 1989 in response to its mandate. Since then a regular five-year review of human settlements was undertaken. The emphasis was placed on the productive contributions of the human settlements to economic growth; the increasingly internationalised economy; the role of cities; and the linking of roles of the governments, markets, NGOs, and the community-based organizations (CBOs). The way these links were forged led to the emergence of the political economy of 'enablement' that tended towards liberalisation of market economics and specific state roles in reforming institutions for accountability and the creation and protection of property rights (Pugh, 1997a: 97). The roles of the different institutional actors under 'enablement' involved wider roles that covered human welfare aspects of public policies of housing, finance, land management, and alleviation of poverty. Those issues were addressed in and incorporated into the Global Shelter Strategy (GSS) under seven issues, viz.,

1. Developing property rights,
2. Developing housing finance,
3. Rationalizing subsidies,
4. Providing infrastructures for residential land development,
5. Regulating land and housing development
6. Organizing the building industry, and
7. Development of institutional capacities for managing the housing sector (Pugh, 1997a; World Bank, 1993).

2.5.2. Detailed stages of housing and settlement development policies

Table 2.3 illustrates the stages of the development of the housing policy as indicated by UNCHS (1997a) and Erguden (2001). The table includes a detailed categorization of stages of housing and settlement development policies. This section gives a detailed discussion of these stages with special emphasis on the contributions of the World Bank and the international

agencies who historically influenced the shaping of the international policies through the intensive researches, agendas, conferences and declarations and various policy documents. A new approach that follows Habitat II phase is currently evolving, ending the "needs-based strategy" (UNCHS, 2000). A new 'housing rights-based approach' could be regarded as a new phase and a new trend that has different characteristics and might entail varied repercussions in shelter policy. The following is a discussion of the features of each phase.

Table 2.3 The evolution of housing policy
Source: After (UNCHS, 1997a: 22-23 and Erguden, 2001:11)

Phase	***Focus of attention***	***Major instruments used***	***Key documents***
Redistribution with growth and 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 Evaluation of Sites-and-services (1981-83) UINCEF Urban Basic Services
Modernization and urban growth *1960s - early 1970s*	Physical planning and production of shelter	Blueprint planning: direct construction (apartment, blocks, core houses) eradication of informal settlements	
The enabling approach and urban management *Late 1980s – early 1990*	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 Strategy 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, MDGs & housing as a human right *1996 onwards*	"Adequate shelter for all" and "sustainable human settlement development"	Culmination and integration of the previous policy improvements	The Habitat Agenda (UNCHS, 1996), Global Report on Human Settlements (UNCHS, 1996)

2.5.2.1. Conventional housing policies

Table 2.3 begins with the 'redistribution with growth and basic needs phase' which began in mid 1970s. Before this phase, there was a distinct phase of conventional housing policies. Conventional housing is also synonymously used for public housing (Harms, 1992: 36;

Drakakis-Smith, 1981; Rodell and Skinner, 1983: 2). Conventional housing policies were dominant in 1945, in many developing countries (Harris, 2003a), and they were a main feature in the industrialized centrally planned countries. Conventional housing are known as finished housing projects produced by the building industry with some sort of state support, but without any direct participation of the users through self-help. The conventional housing policies are to produce "social housing", "council housing" or "public housing", which is designed by architects, planned and built by state agencies, and commercial or limited profit firms, or public and private sector partnership, and financed by a combination of public subsidies, private bank investments and savings by the users (Harms, 1992:36-38). Types include tenement blocks, high-rise apartments with flats, and two-storey individual terraced housing (Harms, 1992). Although this phase is the earliest phase of shelter policy and it ended long ago in most third-world countries, it was not completely abolished, but it was extended to the modernisation phase. For example in Nigeria it was going on until 1983, when the government decided to review its basic emphasis on direct construction of housing, when it became clear that the results of conventional housing policy were severely disappointing (UNCHS, 1991b).

Turner (1976b) described public housing as being 'authoritarian' from this point of view, that it was designed, built by architects and rented to those in need for governmental agencies. He also condemned public housing for being hopelessly expensive (Turner, 1976b). He noted that public housing differs from user-controlled housing in the authority and control (1976a: 5). Several studies were undertaken in the early 1960s and found that public housing was disliked by its occupants, not only for being too expensive but also for the regimentation and loss of control (Harris, 2003a). Conventional housing policies failed to reach low-income households, which justified changing over of the governments to self-help project forms, upgrading and sites-and-services (Rodell and Skinner, 1983: 3). Burgess (1982:63) holds that 'official housing product is high cost, economically unviable, heavily subsidised, socially undesirable and often mismatched to low-income housing needs'.

2.5.2.2. Redistribution with growth and basic needs strategies

Around the mid 1960s, despite the high levels of economic growth in the manufacturing GDP the modernization policies were failing. The industrial sector failed to generate sufficient levels of employment or cope with the increased growth of labour force derived by the

massive rural-urban migration. There was also a limited growth of agriculture, high dependency rates, widening income inequalities, and increased poverty (Burgess, 1992). The housing sector during this phase experienced the same difficulties in terms of eradication of slums, housing the displaced in high Western standard housing types, and that housing became expensive for the vast majority.

This phase gave rise to two new development strategies, 'redistribution with growth' and 'basic needs'. These two strategies appeared to be radical because their principal proposition was that growth could be achieved by focusing attention on the problems of poverty; unemployment and inequality. The two strategies were viewed in terms of two types of economies; supply-side and demand-side economies, relying on the Keynesian basis of modernization policies, which had argued that development problems were a result of insufficient, aggregate demand. The demand-side constraints could be solved by policies to expand public investment, reduce taxation, and stimulate private investments through incentives. The supply-siders argue that stimulating demand could lead to high prices, chronic inflation, higher unemployment, and that the biggest constraints were derived from the absence of integrated and efficient land, labour, commodity and capital markets which were a result of social and physical infrastructure, intermediate inputs and skilled and managerial labour (Burgess, 1992:79).

This phase was characterized by the application of support-based strategies and the different forms of self-help and government official support for upgrading, sites-and-services and to a lesser extent the rehabilitation inner-city housing problems. Most of the efforts were directed at specific housing projects rather than at applying broad strategies and processes, that covers a wider context of the problem. During this phase the World Bank's focus was on sponsoring project-by-project based sites-and-services and upgrading projects undertaken in many developing countries including, but not limited to, Zambia, Senegal, Tanzania, Kenya and Philippines. Evaluations of these have shown that their impact on low-income groups were limited (UNCHS, 1991b).

The redistribution with growth stage involved policies that encouraged replacing capital by labour-intensive technologies and reorientation of demand towards labour-intensive necessary goods, improving access of small-scale enterprises to finance, markets, technical and managerial assistance, and the promotion of appropriate technologies, improving efficiency

and productivity, modifying traditional techniques, labour processes and building materials (Burgess, 1992). Burgess (1992) concludes that this phase, commencing in the early 1970s, has emerged with a new microeconomic development strategy with a number of distinct policy goals as follows:

> "Policies to increase output, productivity and income, and alleviating poverty, inequality and unemployment; the redistribution of income and investment increments derived from growth; the search for labour intensive and 'appropriate' technologies; the deregulation of the informal sector; improvements in the access of small-scale enterprises to finance, markets, technical and managerial assistance; the elimination of factor price distortions in labour and capital markets; the introduction of transfer strategies in favour of the poor in public service expenditures (water, sewerage, electricity, health, education, transport, etc.); and the encouragement of self-help housing policies" (Burgess, 1992: 80-81).

2.5.2.3. Modernization and urban growth

The modernization theory, the first evolutionary stage in the housing policy, was concerned with increasing production and giving favour to urban economic growth. Projects were conceived and valued within their economic output. In this stage, dominance was on the growth theory. Housing was also viewed within its potential contribution to the economy that it can generate income and employment and hence encourage modernization. The principal constraint to housing supply was identified as a financial problem, specifically the lack of mortgage system and external aids (Burgess, 1992: 77; UNCHS, 1996).

The main characteristic of this phase was public housing and conventional housing approaches. This phase consisted of large-scale public sector investment in housing production, concentrating on the construction of standardized dwelling units by the government. The focus of this phase was mainly on physical planning. The housing was undertaken primarily by public sector agencies (UNCHS, 1991b).

Burgess (1992) pointed out that the modernization theory has presented itself in a wide range of economic, social, cultural, and political versions; all sharing the argument of transition from agricultural and peasant societies to modern urban industrial societies. He also points out that the modernization theory was about maximizing the mobility of the factors of production, land, labour and capital (Burgess, 1992: 76; Majale, 1998: 329). Modernization theory tended to assert that urbanization was an effect of industrialization and economic growth and that policy makers encouraged rural urban migration by establishing a gap of urban/rural wage that was suggested as 30 percent (Burgess, 1992:77).

Within the modernization stage, *Harrod* and *Domar* contributions were cited (Pugh, 1990). Their approach, which was applicable in both the developed and developing countries, emphasised ensured availability of high levels of savings and investment and placed key significance upon capital-output ratios. The concept was to utilize these investments and savings to achieve a specific target rate of growth on the housing sector, but this was criticised with the argument that housing is not the only item that attracts investment (Pugh, 1990).

2.5.2.4. The enabling approach and urban management phase

This phase of the enabling approach focuses on that governments should withdraw from its role as direct producers of housing and instead adopt an enabling role in managing the housing sector (UNCHS, 1991b). The enabling approach was succinctly articulated in the Global Shelter Strategy adopted by the United Nations Assembly in 1988. The new enabling approach followed the failure of the traditional public housing and the inefficiency of early practises of slum upgrading and sites-and-services of the 1970s. Cities were experiencing massive rural-urban migration. Under these massive rural-urban migration circumstances, which characterised the 1960s, the modernization policies failed to cope with the increasing population of the urban areas giving way to the emergence of the enabling approach and replacing the modernization policies. In this section, the enabling approach is introduced as a stage in the evolution of housing policy. The enabling approach provided tools to vigorously deal with stiff four key constraints to realise the appropriate housing needs of the poor: "lack of secure tenure"; "speculative land markets"; "inflexible housing finance systems"; "inappropriate planning and building regulations"; and "the inability of institutional frameworks to involve people in the development process"[23]. Section 2.3.3 gives a detailed discussion of the enabling strategies.

The enabling approach calls for directing shelter policy towards management and infrastructure and focuses on managing the framework within which people are able to build or find their own accommodation. It also calls for directing scarce public and private resources to areas such as infrastructure, which the poor cannot finance for themselves. The new shelter policies, primarily led by the World Bank and the United Nations, emphasised moving away from specific residential projects to the strengthening of institutions in the fields

[23] http://www.unhabitat.org/hd/hdv7n3/intro.htm accessed February 2006.

of municipal government and housing finance (UNCHS, 1991a). The enabling approach focuses on maximizing the contributions of all the actors in housing production within a supportive legal and regulatory framework (UNCHS, 1997b). Based on the enabling strategies, governments should undertake a new role as facilitators of actions of all the participants in the supply and production of housing (UNCHS, 1991a). In the "enabling strategies" governments should play a new role withdrawing from direct housing production and management, except of particular target groups (UNCHS, 1991b), and to take appropriate actions to protect, promote and ensure the full and progressive realization of the right to adequate housing (UNCHS, 1997a). The GSS, calls for fundamental policy change to the enabling approach as follows (UNCHS, 1990: 8):

> "The adoption of an 'enabling' approach whereby the full potential and resources of all the actors in the shelter production and improvement process are mobilized; but the final decision on how to house themselves is left to the people concerned. Ultimately, an 'enabling concept' implies that the people concerned will be given the opportunity to improve their housing conditions according to the needs and priorities that they themselves will define" (UNCHS, 1990: 8).

The enabling shelter strategies acknowledge the importance of housing as a factor in the urban economy and development, and the need to mobilize the whole resources of the economy for the benefit of the community. The enabling approach accordingly redefines the role of the public sector as a key actor in housing supply and production. The problem of the "enabling approach" lies in the conflict between the need for liberalization and the need for the market and housing supply regulation through policy frameworks such as correcting their imperfections, curb speculation, and ensuring an adequate supply of housing to low-income groups (UNCHS, 1997b). This conflict has also been expressed as a tension between liberalization and intervention (UNCHS, 1991b). Early attempts to initiate the "enabling approach" to housing have come up against the problem of markets not being successful enough in promoting equal access, especially where incomes are unequally distributed, but generally these markets have been good at allocating scarce resources (UNCHS, 1997b). The enabling shelter strategies are also meant to have the potential of improving the housing conditions of the poor not only in the developing countries but also in the high-income industrialized countries for the homeless and those people who are not adequately housed. It is suggested that the enabling policies should enhance the housing supply through mobilizing the roles of all the actors and involving them in the process, based on the supply is a more market concern (UNCHS, 2000). In a more detailed manner the enabling approach requires that different actors are free to exploit their energies, talents and resources to the maximum

through actions such as granting security of tenure to the poor, eliminating restrictive legal and bureaucratic controls on housing production, and providing greater incentives to private and household-sector investment. These measures will add more value to housing and land and therefore increase their market value; hence their market exchange will be stimulated. This process is called 'commercialisation', which is a worldwide phenomenon that makes investment in land and housing more attractive to large-scale capital, but it often excludes the very poor from access to housing inputs and programmes (UNCHS, 1991b). Regularizing tenure in the upgrading processes is regarded as a commercialisation process by which poor reap the gains of rising property values (UNCHS, 1991b). Further discussion of commercialisation of land will follow in section 2.4.4.1 and section 4.3.3.

2.5.2.5. Sustainable urban development

The sustainable urban development phase represents a move towards a holistic planning of human settlements with emphasis on environmental management and poverty alleviation (Erguden, 2001). In this phase there was a growing importance involved in the "enabling approach" to achieve a sustainable development in the shelter-delivery process. Sustainability would imply the positive contribution that shelter and slum upgrading can have on urban development by which environmental degradation can be reduced (UNCHS, 1994e). There is a need inherent in sustainable development to facilitate shelter development processes to carry on effectively for longer periods without significant continuous inputs of resources from outside the community, municipality or society in question (UNCHS, 1991b).

The Urban Management Programme (UMP) which was initiated with a joint effort of the UNCHS (Habitat), World Bank and UNDP, has recognized the need for a multi-sectoral approach to urban development and for encouraging sustainable development in improved urban conditions (UNCHS/ILO, 1995). It advises local and national governments to improve the management of urban development in their countries, through assistance in organizing 'City Consultation'[24], promoting participatory efforts of all the stakeholders to implement the new approaches and introducing new urban managements and techniques (UN-HABITAT, 2003).

[24] The City Consultation Methodology was initiated within the Urban Management Programme, following the Habitat II conference in Istanbul in 1996. It is primarily intended to improve city policies, management and administration on poverty, environment and governance. "City consultations bring together local authorities, the private sector, community representatives and other stakeholders within a city to discuss specific issues and solutions to key urban problems. They are a continuous process of dialogue among stakeholders and the city government". See http://www.unhabitat.org/programmes/ump/cityconsultation.asp last accessed February 2006.

Sustainability is associated with the quality of life in the community. It deals with the economic, societal or environmental systems. The three constitutes are promoting healthy, productive, meaningful lives for all community members in the present and for the future. Instead of viewing these segments as three separate parts, they should rather be viewed in a way that shows the link between them[25]. The Habitat Agenda (UNCHS, 1997b: paragraph 105) recognizes the importance of sustainable urban development in that it 'requires consideration of the carrying capacity of the entire ecosystem supporting such development, including the prevention and mitigation of adverse environmental impacts occurring outside urban areas' (UNCHS, 1997b)

2.5.2.6. Habitat II and housing rights phase

The Istanbul Declaration and the Habitat Agenda together, named as Habitat II (The Second United Nations Conference on Human Settlements), which was held in Istanbul in 1996, also called 'The City Summit', constitutes a new social contract towards improving human settlements conditions in the world. This conference culminated in the incorporation of the previous policies of the Agenda 21 and asserted adoption of the enabling strategies, the GSS and other related conferences. This conference represented a move towards a new global development agenda, for the first time the NGO's were represented and a wide range of partners and actors in development were participating, including local authorities, foundations, the private sector, trade unions, academies of science, parliamentarians and professional organizations (UNCHS, 1997a).

Two main themes formed the focus of the conference. The first is "adequate shelter for all", constituting reaffirmation of the commitment to realise better standards of living, and making human settlements safer, healthier and more liveable, equitable, sustainable and productive. It also constitutes a commitment towards increased freedom, improved quality of life within the settlements and progressive realisation of the human right to adequate housing. The second is "sustainable human settlements development in an urbanizing world" (UNCHS, 1997a). The Habitat Agenda involved broader scopes, not only offering a roadmap and a clear vision for sustainable human settlements, but also taking into account the linkages with the natural environment, human rights, social development, demographic trends and population groups at

[25] Source: http://www.sustainablemeasures.com/Sustainability/index.html last accessed 14.8.2003

risk (UNCHS, 2001a). This phase also involves the housing rights programme which has been fully discussed in section (2.4.2) in this chapter representing a new trend in housing policy.

2.6 Housing supply modes in the developing countries

Two alternative strategies of housing supply dominated the history of housing policy in developing countries, provider-based strategies and support-based strategies (UNCHS/ILO, 1995). The provider-based approach implies the direct action by the government or other large and relevant institutions to build houses as part of a policy to overcome the housing shortage. This involved specifically complete units provided by the government such as public housing. However, most governments in the developing countries abandoned these strategies after the advent of the support-based policies in 1960s.

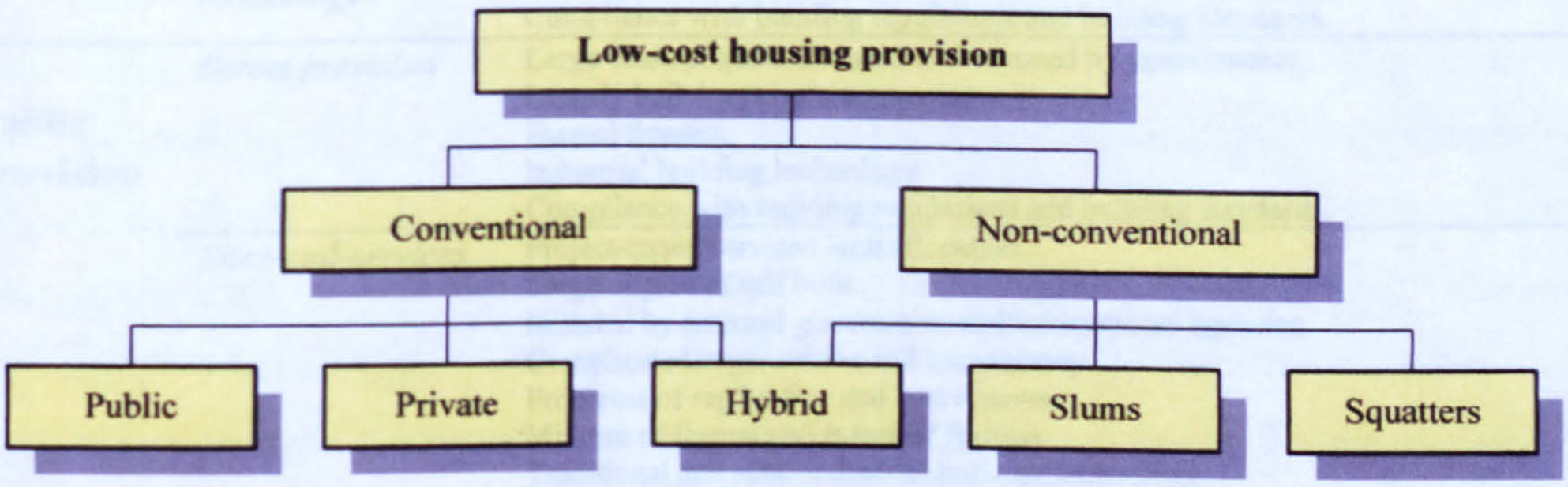
A provider-based approach is the action taken by the government and large employers to build houses (UNCHS/ILO, 1995). Rodell and Skinner (1983) argued that provider-based strategies are not an answer to the housing supply question. The expenditure of a large number of third world countries on housing is very limited and does not effectively contribute to solving the housing problem and shortage. The budget expenditure priorities of those countries are mostly directed to meet the demand for nutrition, public services, defence and other important items. The portion of the budget expenditure can provide a very limited number of complete housing units. Large semi-public and private sector institutions have very limited financial capabilities that do not allow them to finance large-scale housing projects.

The support-based approach involved a shift from building a complete house, with all infrastructure provided, to building less and less. Different forms of the support-based strategies include provision of the outer shell of a house on a serviced plot or a core of a house, which could be extendable (UNCHS/ILO, 1995). A support-based approach alternative to the provider-based approach involved a movement from the provision of a complete house, with its entire infrastructure, provided by the government to supplying a partially developed house. In that way, a larger number of households will be served. The aim is to harness the efforts of low-income people to gradually complete their houses through the self-help and site-and-services schemes. Such an approach has been widely accepted by most third world countries as an efficient alternative strategy for housing provision, particularly those countries with no acute shortage of urban housing land. In the cases where there is shortage of urban housing land, part of the household's income will be devoted to acquiring a piece of land;

therefore the system will not operate effectively because the cost of land will constitute an additional burden. In the support-based phase, the government is the major actor in the supply of land, services, some materials, some easy term finance and some technical assistance.

Provider-based and support-based modes are interchangeably used for conventional housing and non-conventional housing respectively (Drakakis-Smith, 1981) (*Figure 2.4*). The former relates to the complete housing units produced by the building industry, public or private sector, without involvement of the users except in the down payment. The latter refers to the self-help schemes, mainly the sites-and-services and upgrading schemes and any other projects combining self-help with state help (Drakakis-Smith, 1981; Harms, 1992). Conventional housing is often undertaken in a varying scale in Third World countries but it is the main alternative type in developed countries, while the non-conventional housing is widely practiced in the Third World. The sites-and-services and squatter upgrading represent the main arm of self-help housing. According to Drakakis-Smith, upgrading and sites-and-services schemes are complementary to each other in housing provision for those on low-income (Drakakis-Smith, 1981).

Figure 2.4 Low-income housing types
Source: After: Drakakis-Smith (1979,1981)



The following section discusses the alternative modes of housing supply in the developing counties with emphasis on the sites-and-services and settlement upgrading.

2.6.1. Housing supply alternatives

The review of housing supply strategies reveals a wide range of alternatives by which public and private agencies and individuals use for housing provision. Two main types classically represent the housing provision modes in the developing countries, conventional and non-

conventional housing, alternatively known as formal and informal respectively as previously shown in (*Figure 2.4*) (Drakakis-Smith, 1981). The first refers to the housing provided within the official channels and recognized public and private institutions including the planning system authorities, finance institutions, developers. They also abide by formal regulatory rules, building standards and legal processes. The second refers to those housing units which are produced outside the official channels, without official development permits and do not conform to the official regulations, and the planning and land subdivision systems (Drakakis-Smith, 1981; Majale, 1998; Keivani and Werna, 2001). Keivani and Werna (2001: 195-197) developed an inventory of modes of housing provision in the developing countries through a wide review about the subject. The inventory included three main modes.

Table 2.4 illustrates a list of the three modes and their secondary types.

Table 2.4 The main modes of housing provision in developing countries and their respective characteristics.

Source: After (Keivani and Werna, 2001: 195-197)

Mode	Secondary type	Main characteristics
1 Formal private	***Speculative***	Domination by informal large and small developers. Formal finance. Industrial building technology. Compliance with planning regulations and building standards.
	Developer-landlord	Mainly small scale joint ventures between developers and landlords. Mixed formal and informal finance. Semi-industrial building technology. Compliance with building regulations and building standards.
	Individual owner-occupier technology	Landowner commissioning building for his own use. Mixed formal and informal finance. Semi-industrial building technology. Compliance with building regulations and building standards.
2 Public provision	***Direct provision***	Large-scale projects financed and initiated by governments. Largely built by private contractors. Formal finance. Industrial building technology. Compliance with building regulations and building standards.
	Sites-and-services	Project-based serviced land allocation. Large degree of self built. Initiated by national government and international agencies. Complicated organization and bureaucracy. Problems of replication and cost recovery. Mixture of formal and informal finance. Traditional and semi-industrial building technology. Overall compliance with building regulations and building standards.
	Settlement upgrading	Extending services and regularizing existing low-income settlements. Initiated by national government and international agencies. Complicated organization and bureaucracy. Problems of replication and cost recovery.
	Co-operatives	Formal organizations of workers, trades people and low-income households for the purpose of housing provision. Co-operation and negotiation with public authorities, banks and contractors. Initiated by governments, political parties or more organic. Mixture of formal and informal finance. Semi-industrial building technology. Overall compliance with building regulations and building standards.

	Public/non-public partnership	Existing cheap public land or other financial incentives for expansion of low-cost housing. Can involve large-scale private developers, private individuals and the co-operatives. Mixture of formal and informal finance. Industrial or semi-industrial building technology. Compliance with building regulations and building standards.
3 Informal housing	***Squatter housing***	Land invasions. Largely self-built particularly at the initial stages. Incremental construction over several years. Lacking or inadequate services in most countries. Precarious locations. Manipulation of political parties and governments. Large degree of involvement of NGOs and CBOs informal finance. Largely traditional and semi-industrial building technology. Low quality of housing in most countries. Largely lacking planning layout. Lack of compliance with building regulations and building standards.
	Informal subdivision	Domination of private developers particularly at the initial stages. Defacto security of tenure. Illegal subdivision of land. Planning layout but not in compliance with official regulations. Illegal and some times precarious locations. Large degree of involvement of NGOs and CBOs informal finance. Largely traditional and semi-industrial building technology. Incremental improvement in the quality of housing. Some self-built but large degree of wage labour and contracting than squatter settlements.
	Informal rental housing	Large small-scale subsistence letting in low-income settlements or dilapidated central city tenements. In some cases there are large special rental areas developed by wealthy landlords or developers such as bustees and Calcutta. Very low quality of housing.

The classification of the housing provision types as indicated in the above table are largely influenced by the World Bank's activities and its involvement in developing an international housing policy, which followed two distinct approaches, project-based strategies and support-based strategies. After the 1980s, the World Bank's policy was dominated by developing the housing sector by enabling markets to work, but on the whole the three main types represent quite a comprehensive list. As far as this research concentrates on the role of the public sector in the provision of low-income housing, a particular reference has been made to the sites and services and upgrading alternatives, through which almost all the low-income housing is supplied in Khartoum. Other types in the previous list have minor significance in housing supply, though some types could be adopted in Sudan within the policies of low-income housing such as co-operative housing and public non-public partnership. The classification of Keivani and Werna (2001) included the appropriate target group of each type. These are sites-and-services, settlement upgrading, co-operatives, and public and non-public partnership; all are forms that are related to public provision. The next section discusses sites-and-services type, one of the two main arms of self-help housing and one of the main housing options in Sudan.

2.6.2. Sites-and-services

Evidence shows that the earliest sites-and-services projects were undertaken in Chile, Kenya and the Union of South Africa in the 1940s and 1950s largely without external assistance (Mayo and Gross, 1987).

Rodell and Skinner (1983: 7) suggested that Abrams and Otto Koenigsberger formulated the broad outlines of the idea of what was called "land-and-utilities" scheme when they prepared a series of reports for the United Nations between 1955 and 1963, which later became known as sites-and-services (Rodell and Skinner, 1983; Harris, 2003b). This idea emphasized the provision of basic services by the government and housing plots; while the main role for households was to reduce costs by investing in "sweat equity" (Rodell and Skinner 1983, Harris, 2003a).

Upgrading and sites-and-services might improve the chances of poor families benefiting from governmental housing investments in four ways:

5. *Gradual construction*: Family members participation in decision making and increased participation on self-help are meant to make more plots available (Rodell, 1983). Government expenditure needed to house one household conventionally can provide several households – approximately two to five - with serviced plots or with basic infrastructure in old neighbourhoods, hence, in theory, increasing the housing stock and reducing the need of the poor to resort to squatting (Rodell and Skinner, 1983; Rodell, 1983; Nientied and van der Linden, 1988). Upgrading and sites-and-services provide "evolutionary", "progressive", or gradual construction" housing projects, which suit the financing capabilities of low-income households. In simple terms, they provide access to thousands of households where conventional housing could reach only hundreds (Rodell and Skinner, 1983).
6. *Relatively low subsidy rates*. Governments will have the chance of giving minimum subsidies. Also the housing conditions might be improved because the inhabitants will be motivated in sharing the finance of the community facilities and infrastructures, such as water supply, drainage, sewage and electricity supply, therefore reducing investments on those infrastructures and services (Rodell and Skinner, 1983; Nientied and van der Linden, 1988). Early work of Jimenez (1982a: 224; 1982b) on self-housing and subsidies concluded that "policies providing subsidized loans to buy materials may not lead to a desired increase in production if the supply of the

concomitant labour factors remain constrained due to the fixed supply of unpaid labour and availability of funds to hire labour". In another aspect of housing, he also argued that the expectations of stimulating self-help housing by increasing wage income might be lower than desired results. Gilbert (1997a) believes that "a better case can be made for subsidizing the provision of infrastructure and services than for subsidizing housing units".

7. *Increasing access by cutting standards and costs.* Lowering the plot sizes, and the roofed areas make more plots available (Rodell and Skinner, 1983; Rodell, 1983).
8. *The security of tenure.* The inhabitants will also be motivated to develop their plots because upgrading projects legalize the housing by allowing them to own housing, therefore realizing the security of tenure (Nientied and van der Linden, 1988).

2.6.2.1. Characteristics of the sites-and-services

Site-and-services became a popular housing supply option in the early 1970s as a solution to the housing problem (van der Linden, 1992:341). At that time the African capital cities and the urban centres with high order services started to attract migrants from the rural areas in high rates causing an acute need for housing. Although the economies of those countries were to some extent stable and government's financial resources were much better than the current conditions, the contribution of most governments to housing supply was limited. In such conditions and under the failure of the public housing, the site-and-services began to be a principal alternative.

The sites-and-services approach represents a major housing supply alternative in Third World countries and accounts for over 50 percent of the formally organized new housing. Despite the previously highlighted shortcomings of the self-help housing, it was believed that, in most of the low-income countries, the sites-and-services approach was an appropriate strategy then and, in many of those countries, it remains an appropriate strategy (Buckley, 1999). However, it could be argued that the appropriateness comes from the lack of access to more appropriate alternatives under the existing conditions of those countries. Africa, Tanzania and Sudan all incorporate sites-and-service as part of their national housing policy. Choguill (1995) argues that sites-and-services may offer certain advantages in terms of incomes and target groups, but it is still an expensive approach to the solution of the shelter problem (Choguill, 1995).

In Jordan, Al-Adhami and Mahadin (1994) suggest that housing supply through the sites-and-services could provide appropriate housing for low-income households at a cost of about three to five times less than conventional public housing, and they can allow low-income households to regularize their monthly repayments, which would be kept to a minimum, allowing them to gradually improve their houses at their convenience.

The central concept of site-and-services is to shift from providing complete housing units to providing serviced lots to meet the needs of low-income households. In reference to housing supply at national level planning, Rodell (1983) argued that countries having a small housing stock or a greatest deficit in the housing stock and a great need to build new housing units build around two to four units per thousand population per year, but this relates to large housing stock. He also argued:

> "The size of the housing stock itself partly determines the savings available for conventional construction. In a country with a large stock, mortgage and rent payments usually provide the bulk savings that pay for new units. Governmental subsidies supplement this, and the subsidies come from taxes, which, like mortgage and rent payments, are paid mainly by families who already have housing. Such countries typically build five to ten houses per year per thousand population" (Rodell, 1983:1).

Although advocates of self-help were careful not to claim that it was synonymous with 'cheap' housing, it was argued that the incremental building process allowed costs to be kept as low as possible (Jones and Datta, 1999:12). It was also argued that the high costs of the contracted house were caused by unrealistic standards and bureaucracy, compared with the non-remunerative self-help (Turner, 1967; Ward and Macoloo, 1992; Jones and Datta, 1999). According to Burgess (1992) the reduced costs of self-help are partly attributed to households not having to pay the interests on finance (Burgess, 1992; Jones and Datta, 1999). Turner argued that building the house by mortgage may reduce the household's security of tenure as debt payment could undermine the ability of the households to reduce their outgoing at the times of crisis, an important principle of self-help (Jones and Datta, 1999).

The concept of sites-and-services is based on the assumption that the surplus labour that is resulting from the free time of those on low-income could be utilised in the construction of houses. Mutual-aid was synonymously used for the early sites-and-services projects to indicate participation in the construction operations by the beneficiaries of those projects (UNCHS/ILO, 1995). Earlier, Rybcznyski, et al, (1981) used the term 'sites, services by support' with the sites-and-services based on the concept of 'core house' and the 'progressive

servicing'. Rodell examined how effectively sites-and-services add to the housing stock and how it was successful in improving housing conditions for low-income households in Third World countries (Rodell, 1983).

The site-and-services take different forms, ranging from an open plot plus communal services to plots with core housing and individual connection to the services. Keivani and Werna (2001) target low to middle-income groups and they are particularly suited to countries with large public land resources, which is the case in Sudan. They pointed out that they are more limited but still applicable in other countries. They summarize its main characteristics as follows (Keivani and Werna, 2001: 196):

- 'Project-based services land allocation'
- Large degree of self –build'
- Initiated by national governments as well as international agencies,
- Complicated organization and bureaucracy,
- Problems with replicability and cost recovery,
- Mixture of formal and informal finance,
- Traditional /semi traditional building technology,
- Overall compliance with planning regulations and building standards'.

Sites-and-services differ from the conventional housing in two ways; (1) households who move in receive an incomplete house and (2), the households of the sites and services invest their income directly in their own house. Self-help is the direct investment that takes different forms, including labour of family members and friends, hiring labour, purchase of materials or both (Rodell, 1983).

2.6.2.2. Delivery processes and problems of sites-and-services

UNCHS (1991c) best conceptualised settlement development process in terms of the sequence of the four elements comprising the housing delivery processes; LAND, PEOPLE, HOUSING and INFRASTRUCTURE *(Table 2.5)*. The traditional housing is based on early John Turners ideas. This was the historical sequence in the settlement development, which was the practice in rural villages and urban neighbourhoods. In the traditional mode, authorities first allocate LAND to the PEOPLE; then people organize themselves and construct their HOUSES followed by INFRASTRUCTURE. Similarly, sequences in the other modes could be understood. For example, in the conventional sites-and-services the housing agencies or the government first acquires the land then provide some basic infrastructure before people occupy the plot, then people start constructing their houses by themselves.

According to the table, the traditional sequence conforms to the incremental-development scheme sequence. Fitting these modes within the housing supply context in Khartoum, we realise that they conform to the traditional sequence rather the conventional sites-and-services. The housing authority first allocates land to people; then people build their houses at their own convenience and in later stages of the development, infrastructure is provided.

Table 2.5 Processes of housing delivery
After: (UNCHS, 1991c)

1	***Traditional sequence***			
	LAND	→ PEOPLE	→ HOUSING	→ INFRASTRUCTURE
2	***Modern sequence***			
	LAND	→ INFRASTRUCTURE	→ HOUSING	→ PEOPLE
3	***Sites-and-services sequence***			
	LAND	→ INFRASTRUCTURE	→ PEOPLE	→ HOUSING
4	***Incremental development sequence***			
	LAND	→ PEOPLE	→ HOUSING	→ INFRASTRUCTURE
5	***Organized squatting***			
	PEOPLE	→ LAND	→ HOUSING	→ INFRASTRUCTURE

Rodell (1983) argued that there is an impression that sites-and-services reduce the overall cost, but it is likely the same whether investment is spread over a period of time or whether it is completed before completion (Rodell, 1983). Echoing Turner's viewpoint (1976b) Rodell (1983) argues that gradual construction of dwellings on the sites-and-services plot have the advantage of exploiting the spare labour of the occupants through the self-help processes and the direct investment of their savings in the construction processes therefore avoiding the interests additional values if financed through the credit. In addition, it reduces the production costs because households tend to reduce building standards specified by the authorities (Rodell, 1983). Nientied and van der Linden, (1988) concluded:

> 'Self-help housing increases objectively at the social level, the rate of exploitation by extending the working time without pay. It lowers the value of labour power and, subjectively, it gives at the same time a sense of ownership and achievement to self-helpers thereby strengthening their integration into the capitalist and financing system.'

Nientied and van der Linden (1988) pointed out that it could be an ideal tool for pacification of the work force at times of crisis. Nientied and van der Linden (1988) mentioned six reasons for self-building through the sites-and-services schemes:

11. It is the only way to own a house.
12. It provides an undisturbed life, without paying rents.
13. It is justified by the need for more space.

14. It provides something for their children.
15. It provides security for old age.
16. It provides living in a country with good quality house.

Rodell and Skinner (1983) argued that Abrams had rather modest expectations of sites-and-services, and that sites-and-services projects achieved their aims by substantial reduction of unit costs and minimum standards relative to those in the conventional and aided self-help projects.

Researchers pointed out some shortcomings of self-help housing, particularly the sites-and-services schemes as follows (Pugh, 1997a: 94-95):

1. Badly selected locations.
2. Allocations bypassing the poor.
3. Lack of coordination among the government service agencies.
4. Gaps in land policies.
5. Unwieldy institutions retarding implementation.
6. Market compromise in socialist countries.

According to van der Linden (1992), very often the site-and-services projects have failed to reach the intended target groups. The affordability or cost recovery seems to be the major problem. In turn, these problems are caused by a multitude of factors, which can be classified under three headings: poor administration, high standards, and problem of availability of land (van der Linden, 1992:341).

In order to make the site-and-services model work a number of assumptions were built in regarding the effective demand for housing. The lack of data on willingness to pay forced the project planners to apply the rule of thumb, as a basis for setting standards of affordability on the physical design. Three quarters of the World Bank financed site-and-services projects between 1972 and 1984 were planned on the assumption that households could spend 20 to 25 percent of their income for the housing provided in the projects (Mayo, 1987:61). Mayo argued that only by providing truly affordable housing to low-income families, which is provided at little subsidy and with costs fully recovered, can there be any hope of replicating on a broad scale the limited but genuine success of the site-and-services projects. The site-

and-services projects, which were undertaken in developing countries, were done by lowering the standards in order to meet the affordability criteria.

Rakodi (1991) argued that the sites-and-services and upgrading projects sponsored by the World Bank in Kenya, Zambia and Tanzania, which were directed to meet the needs of low-income people by means of replicable solutions, were not concerned with addressing wider inequalities and constraints in the housing system. She also argued that subsidies to housing tended to be regressive, while supply constraints leading to a shortage of middle income housing resulted in the serviced plots for the 20th and the 40th income percentiles being partly or wholly hijacked by the higher income groups. Rakodi (1991) concluded that:

1. Projects operated under a variety of interventions to fit the needs of the funding agencies and to defeat the lethargic administrative structures.

2. Projects were developed in isolation from a wider urban planning and management process. The sustainability of the projects has been impaired and problems of operation, maintenance and cost recovery persist.

3. "Replicability, especially of upgrading schemes, has been limited by the lack of political support from outside the areas themselves, as well as inadequate financial and administrative capacity at city level. The institutional capacity in both public and private sectors to supply the components of the housing delivery system was only developed to a limited extent during the planning and implementation of those projects" (Rakodi, 1991:13).

4. Projects should be placed within the wider context of urban planning and management, and more care should be given to issues of financial viability, citywide management, private sector initiatives, working with low-income people at local level and the positive contributions to meet the needs of the poor.

UNCHS (1991c) viewed problems of sites-and-services schemes under the following summarized issues:

a. ***Remote 'location'***: projects are often located in the urban fringe away from employment markets and services, because land is available at cheap prices. This

causes delay in scheme construction. Zetter (1984:226) also argued that this creates a high propensity of the beneficiaries to return to their original areas.

b. ***'Bureaucratic procedures for the selection of the beneficiaries'***: these include designing the selection criteria, targeting income groups, and the selection of the beneficiaries and allocation process; which are often accompanied by bureaucratic pitfalls and corruption.

c. ***'Delay in the provision of infrastructure and services'***: sectoral-based provision of infrastructure and community facilities such as education and health is often accompanied by delays due to the lack of coordination.

d. ***'Standards'***: many sites and-services projects have higher housing standards set by the officials that are not affordable by the target beneficiaries. In some projects income generating activities including rental rooms are prohibited.

e. ***'Filtering'***: sizeable portion of allottees in the sites and services projects, for one reason or another, belong to other income groups above the target groups.

f. ***'Cost recovery'***: a review of the World Bank funded projects showed that almost all have experienced problems of cost recovery (Keare and Parris, 1982), as these costs were expensive to the beneficiaries. Households become frustrated because of the lack of maintenance and the provision of services, hence they become disillusioned and reluctant to pay. Further problems of inadequate collection, absence of sanctions for non-payment, seeking protection of the politicians exacerbates the problem.

2.7 Conclusions

The chapter has highlighted the contributions of the three main participants; housing theorists and their subsequent compiled housing research, and the roles played by the World Bank and the different United Nations agencies led by UN-HABITAT in shaping worldwide housing policies. The theorists and their compiled housing research formed the intellectual basis for housing supply and settlement development. The World Bank, through its lending policies for sites-and-services and upgrading and its distinct researches and publications, brought attention to the significance of these two modes of shelter provision in the developing

countries. The United Nations agencies and UN-HABITAT laid foundations for international housing and settlement development policies and established an "Agenda" that forms an important and comprehensive policy framework for governments to adhere to for a better living environment and to achieve satisfactory levels of housing supply and sustainable development.

The chapter concludes that, historically, housing provision in developing countries passed through distinct stages after the Second World War. Basic thoughts of the pioneers came up from their experiences with the practice of housing. Then these thoughts were extended to take an ideological dimension represented in Turner-Burgess debate. The stages passed from the early practice of the public sector taking full responsibility for providing finished housing units in urban areas such as public housing, to a gradual changing role of the State under the jurisdictions of the international development policy frames, to primarily playing the enabler's role. Changes include that governments began to abandon their old role as direct providers of housing to a new role, in which they need to be well aware in terms of the duties that should be undertaken and the different extents of the problem to be dealt with. Governments as enablers involve sharing the responsibility of the housing provision with people and all other sectors. The subsequent sustainable development stage incorporates gauging the global sustainability standards against local standards, which adopts specific criteria in every aspect of the sustainable human settlement development. Governments' role will therefore be to steer the development to meet those criteria. The new role under way is the rights-based approach. With this new trend in housing policy, a new planning level will be created in addition to the conventional three planning levels; local, regional and national. This new level is the global level. Violating the housing rights might entail some sort of retribution, or attracting international technical and financial assistance.

The main themes of the housing policy in developing countries were initiated by Western intellectuals who were able to conceptualise the housing problems in most developing countries, which were under their colonial rule. The international housing policy was crystallized through the experiences of practices gained from all over the world documented in a wide range of publications and literature. As this research is a grounded research about housing in Khartoum, clearly the acquaintance with this literature will certainly enhance development of the real picture of housing in Khartoum and will certainly help developing policies and solutions to the supply problem.

Self-help housing policy played a significant role in housing policy since it first emerged and became the most favoured policy for governments in developing countries. Self-help housing and its different forms were advocated by many theorists as one of the solutions of shelter for the urban poor at the early stages of the evolution of the housing policy, where it became a central element (Turner, 1976b; Ward, 1982a; Rodell and Skinner, 1983; Rodwin and Sanyal, 1987). However, self-help housing accounts for the bulk of housing in developing countries and is sometimes the only existing policy, which is the case of Khartoum. Self-help policies must not completely leave it to people to build their houses. The literature suggests a number of ways by which government could intervene to support the self-help policy such as labour strategies, institutional strategies, community strategies and construction material and in addition to leasing land, providing technical assistance, advice to housing cooperatives, leveraging private-sector funds from pension funds, community bond schemes, and legislation. Self-help types included independent self-help, organized self- and mutual-help and employed self-help.

Self-help housing confronted a wide range of critique, partially ideologically based and partially non-ideologically based. The basic ideological-based criticism focused on the burden it imposes on the poor, commercialisation of housing, and the role the state should undertake. The non-ideological criticism focussed on efficiency, lowering standards, exploitation, substitutes a marginal cost of labour, economically regressive and acts as a temporary solution to the housing problem. Regardless of all these criticisms self-help remains a major option for many low-income countries which governments have to work with and develop. Under the current policies of the World Bank, governments should not wait to get project-based finance, as aids are expected to take different forms.

Amongst the different modes of housing supply in developing countries, the sites-and-services and settlement upgrading are most popular ones, and the widely adopted types. They are the two main arms of the housing supply in developing countries. Projects evaluations of World Bank funded projects have shown that the main problems lay in their replicability, cost recovery, affordability and reaching the poorest sectors of the population. Other problems are housing policy-based issues such as bad projects locations, allocation surpassing the poor, gaps in land policies, institutional constraints, and lack of co-ordination between government agencies.

The sites-and-services represent a shift from providing complete units to providing serviced plots, and allow beneficiaries to incrementally build their houses. The focus on the sites and services in this research arises from fact that it is the main subject of the thesis and a major option of housing supply in Khartoum, the capital city of Sudan. Apart from all those evaluations, which include successes and failures, the sites and-services and upgrading modes seem to be inevitable solutions for the case of Khartoum that need improvements, modifications, and eliminate the outstanding shortcomings. They should also be viewed and implemented within the international evaluations and experiences of other countries. They should also be dealt with under the international settlement policies inherent in the Habitat Agenda, and other relevant declarations on human settlement.

Chapter 3

Research Methodology

Chapter 3 Research Methodology

3.1 Introduction

This chapter explains the aspects of the research method adopted in the thesis. The significance of highlighting the research method arises from the need to illustrate the basis of and the techniques used to support the research findings.

3.2 The research design and process

The research process generally involves seven principal types of activities, each of which can be regarded as a stage in the research process, viz., problems, hypotheses, research designs, measurement, data collection, data analysis and empirical generalizations (Nachmias and Nachmias, 1997). The thesis incorporates all these stages and tries to provide a logical sequence and a good conceptual flow of ideas, in a well-structured form.

The research design has been identified by Nachmias and Nachmias (1997) as the structure, programme and strategy upon which the hypotheses are evaluated. In the literature two main types of research methods could be identified, quantitative and qualitative styles. The selection of either of them depends on the nature of the research topic, the research problem, questions that need to be answered, research hypothesis, research objectives, the nature and availability of data, and the researcher's limitations. *Table 3.1* illustrates the features of the qualitative and quantitative styles and it illustrates that most features listed under the quantitative research applies to this research. The literature reveals other methods of categorizing research methods, but generally, they go in some way or another under the previously mentioned two types. These include but are not limited to, experimental research, survey research, non-reactive research, historical comparative research, and field research (Neuman, 1997).

Table 3.1 Qualitative style versus qualitative style
After Cresswell, 1994 and Neuman, 1997

Quantitative style	**Qualitative style**
Measure objective facts	*Construct social reliability, cultural meaning*
Focus on variables	*Focus on interactive processes, events*
Reliability is key	*Authenticity is key*
Value free	*Value are present and explicit*
Independent of context	*Situationally constrained*
Many cases, subjects	*Few cases, subjects*
Statistical analysis	*Thematic analysis*
Researcher is detached	*Researcher is involved*

Quantitative research relies on the assumptions from the positivist approach to science. Its central idea is the use of variables, which are simply defined as concepts that vary. A concept as defined by Nachmias and Nachmias (1997) is an abstract symbol representing an object, a property of an object or a certain phenomenon. Concepts defined by Nachmias and Nachmias (1997) are of two types: The first are those which refer to fixed phenomena, and those varying in quantity, intensity (scale), or amount. The second are the variables that carry two or more values. It is well known that there are three types of variables: (1) *independent* variable, (2) *dependent* variable and (3*) intervening* variable (De Vaus, 1991: 27; Neuman, 1997:107). Quantitative research also involves measurements of a number of these variables, and finding out correlations, variables central tendencies, variation and frequency distribution that helps in understanding and analysing the data (Punch, 1998).

Another key concept in quantitative research is the identification of the causal relationships and the hypothesis, which is a proposition that needs to be tested or a tentative statement of relationships between variables. In other words, they hypothesise how the social world works. Neuman (1997) identified five characteristics of the causal hypothesis. First, it has at least two variables. Second, it expresses causal relationships between variables. Third, it can be expressed in a prediction or an expected future outcome. Fourth, it is logically linked to research questions and theories. Fifth, and final, it is falsifiable or capable of being tested against empirical evidence. Ways of stating causal relationships utilize phrases such as, causes (verb), leads to, influences, is associated with, produces, results, higher or lower than, reduces, etc. (Neuman, 1997:109).

Other aspects of quantitative research include issues of clarity about units and levels of analysis, which involve clarity of thinking and explanations, and the differentiation between micro and macro-levels of analysis that are used to delimit kinds of assumptions, concepts and theories used by the researcher. They also include avoiding potential errors in causal explanation as some statements appear to be causal hypotheses superficially but, in fact, they are not. These include five types of fallacies, which are: ecological fallacy, reductionism, tautology, teleology, and spuriousness (Neuman, 1997:114-119).

Any research does not necessarily apply only one of the two categories, because there is considerable overlap between the type of data and the style of research, and most qualitative-style researchers examine quantitative data and vice versa. The thesis primarily adopts a

quantitative research style, but it also adopts a qualitative style as a complementary method. However, qualitative research style has been applied through interview techniques. These included interviews with some officials in the State Ministry of Housing in Khartoum, interviews with some selected residents of the study areas, some of which were tape-recorded.

3.3 The survey strategy

Based on the research's conceptual frame, it is evidently significant to establish a clear survey strategy as a prerequisite to the research method. The survey strategy involves defining the levels of the study; identifying the actors involved; identifying the key variables; identifying and choosing the study districts, survey type and objectives; questionnaire design; and selecting the sampling method and estimating the appropriate sample size. Such aspects are discussed in the next section.

3.3.1. The survey objectives

It is important in any research to identify the research objectives as a first step. The survey objectives should conform to the objectives of the research. The main objective of the survey is to obtain primary data that would be complementary to other available data in order to overcome the problem of the lack of relevant data, which is a typical problem in developing countries. The second objective is to have a complete set of data that could support a full analysis and application of the different statistical analytical techniques. The third objective is to provide a possibility of running a comparative analysis of the different actors in the housing supply.

3.3.2. The literature review

As a primary step in the research method, an extensive literature review in the research theme has been carried out. It included doctoral theses related to the research theme, scholarly journals and periodicals, books, documents, and government policy reports, presented papers and publications on the related topics. The literature review tried to cover most aspects of the research subject through compiling a wide bibliography, assisted by extensive university library resources. Chapter 2 included the main body of the compiled theoretical background of the research theme issues. The survey formed the basic primary data source for the thesis, while a number of interviews have been conducted with some officials and residents.

3.3.3. The selected survey types

Generally three types of surveys have been adopted in the fieldwork, with a high focus on the last type; (1) Architectural measurement survey (2) Physical survey of selected districts and

(3) Sample survey that focuses on the socio-cultural and economic characteristics of the population of interest and involves questions about their relevant housing characteristics. The following is a brief discussion on their nature and content.

3.3.3.1. Architectural measured drawings

These sets of data generally require an architectural survey method and they deal with aspects such as plot size, rooms layout, built up area, building materials, building condition, environmental performance, liveability, response to social habits, etc. This survey included measurements of selected houses. Plans and sketches of those selected houses that would be used in the analysis of issues relevant to the research theme were produced and analysed.

3.3.3.2. Physical survey of selected districts

This data needs an area-based survey by adopting a hundred per cent sampling, i.e. all the residential units and housing plots. Some residential areas have been assigned for that purpose. The survey of the physical characteristics does not usually involve social and economic data. It focuses on variables such as net and gross housing areas, density, building heights, building construction status, floor area ratios, and utility infrastructures.

3.3.3.3. Sample survey focusing on the household characteristics and living conditions

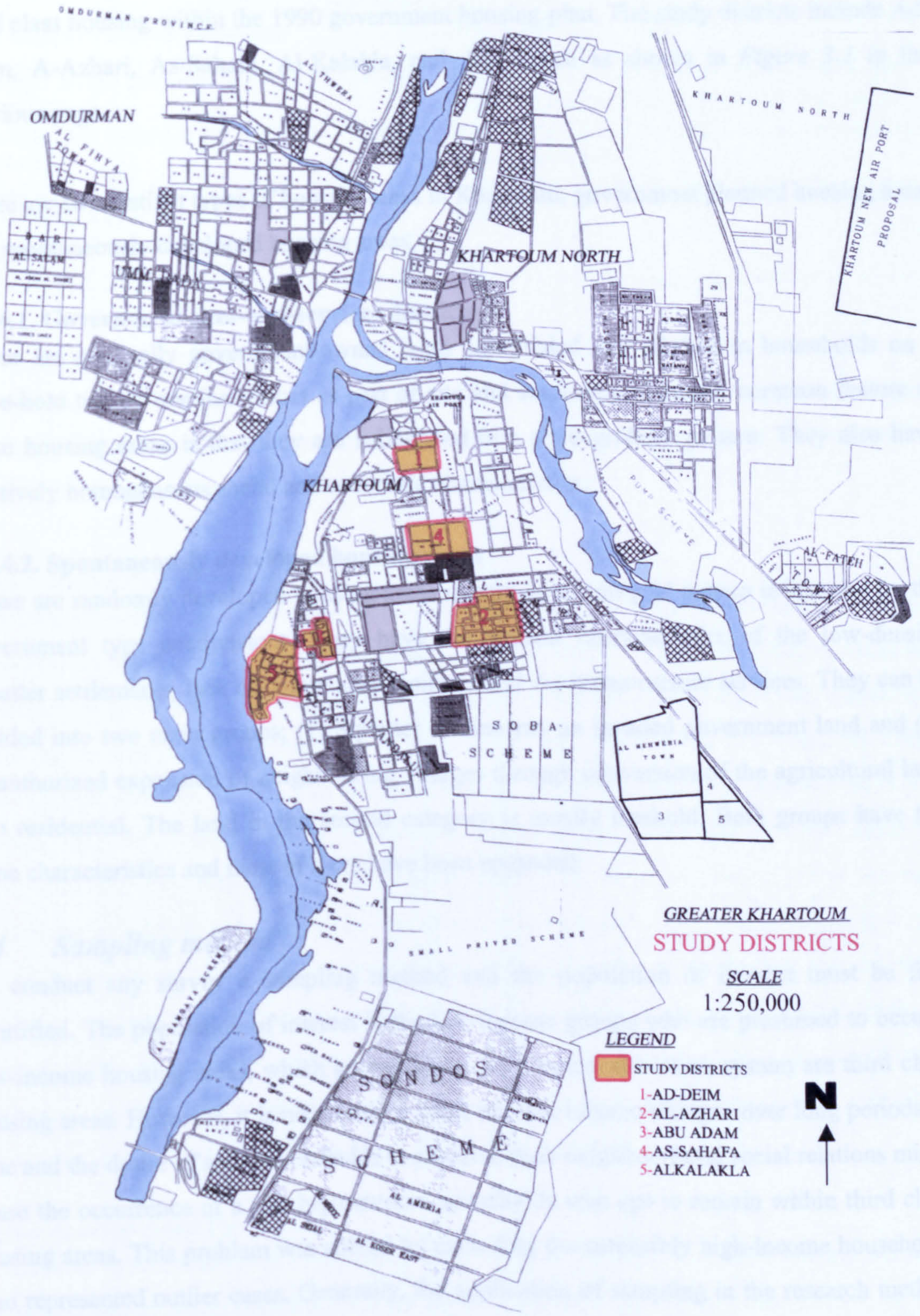
This group of information deals with data such as household attitudes and characteristics, sizes, ages, employment, income, preferences etc. Sampling surveys for such data usually gives satisfactory and reliable results, and are commonly practiced, as it is very expensive and time consuming to undertake a hundred percent sampling for the whole population. This survey does not completely ignore the housing unit characteristics and the physical characteristics of the study area for the sample. Variables related to these characteristics are included to facilitate analysis of the factors related to the links between the socio-economic data and physical and spatial data. A full discussion of this adopted survey will follow in this chapter.

3.3.4. The choice of study districts

Figure 3.1 illustrates the selected low-income study districts. The bulk of the housing stock in Khartoum has been provided by the public sector as site and services schemes with little intervention in the construction and provision of services. The system of housing classification in Khartoum classifies housing areas into first, second, third and fourth class. This method of classification involves housing standards and household income ability to build according to their respective standard. Third and fourth-class housing is allocated for the

low-income groups. Since the research emphasis will be on the low-income groups, third class housing areas have been selected for the fieldwork.

Figure 3.1 Khartoum - Selected study districts



Fourth-class housing are no longer adopted in the government housing schemes, probably because they were socially associated with urban deprivation and poor living conditions and therefore people were outcast. Moreover, the only fourth class area in Khartoum was *Fallata* district that was completely demolished in 1993 and the inhabitants were resettled in a new third class housing within the 1990 government housing plan. The study districts include Ad-Deim, A-Azhari, As-Sahafa, Al-Kalakla, and Abu-Adam as shown in *Figure 3.1* in the previous page.

There are two distinct types of housing areas in Khartoum; government planned housing areas and spontaneously developed housing areas.

3.3.4.1. Government sites-and-services districts

These are originally government-owned lands subdivided and allotted to households on a lease-hold title at nominal prices as part of site and services projects. A common feature of these housing areas is that they are subdivided in a rigid gridiron pattern. They also have relatively homogeneous social and economic characteristics.

3.3.4.2. Spontaneously developed housing areas

These are randomly developed housing areas mostly in a semi-grid pattern influenced by the government type subdivisions. They have the general characteristics of the low-density squatter settlements, lack of community facilities and the infrastructure services. They can be divided into two main groups; (1) Squatter settlements on invaded government land and (2) Unauthorized expansion of neighbouring villages through conversion of the agricultural land into residential. The land in the second category is mostly freehold. Both groups have the same characteristics and most of them have been upgraded.

3.4 Sampling method

To conduct any survey a sampling method and the population of interest must be first identified. The population of interest is the low-income groups who are presumed to occupy low-income housing areas, which according to the housing allocation system are third class housing areas. However, it is necessary to point out that income changes over long periods of time and the desire of some households to preserve their neighbourhood social relations might cause the occurrence of a few high-income households who opt to remain within third class housing areas. This problem was solved by excluding the ostensibly high-income households who represented outlier cases. Generally, the application of sampling in the research method

is justified by the time and resource limitations. In literature, two types of sampling techniques could be pointed out, viz., *probability sampling* and *non-probability sampling*. See *Table 3.2*.

Table 3.2 Types of Sampling
After (Neuman, 1997:205)

Probability random sampling	***Non-probability sampling***
Simple: Select people bases on a true random procedure. ***Systematic***: Select every *k*th person (quasi random). ***Stratified***: Randomly select people in predetermined groups. ***Cluster***: Take multistage random samples in each several levels.	***Haphazard***: Select any one who is convenient. ***Quota***: Select anyone in predetermined groups ***Purposive***: Select anyone in a hard-to-find target population. ***Snowball***: Select people connected to one another.

3.4.1. Alternative sampling techniques

The following section gives short descriptions of the two alternative sampling techniques used in social science; probability sampling and non-probability sampling types as illustrated in *Table 3.2* above.

3.4.1.1. Probability sampling

This method realizes equal chances of all the population to be represented or selected. The researcher in this type must adhere to a procedure that clearly identifies a sampling frame and a simple or systematic non-biased random selection method. In practice, the probability sampling is very rare and tends to be expensive and relies on a full sampling frame (McCormack and Hill, 1997). The rate of refusal or responses may vary from one society to another. Therefore it must be carefully assessed and taken into account before undertaking the survey, as this may bias the sample because there is no way to judge whether the non-responding population is typical of the rest of the sample or not. Accordingly, the sample size should be increased by an amount that compensates the refusal rates. Refusal could also be partial in that some particular personal or sensitive questions in the questionnaire might be skipped. Such non-response decreases the validity of the whole sample. In our survey, questionnaires with high rates of skipped questions were excluded to ensure high reliability. Three main probability-sampling techniques could be identified:

Simple random sampling

In this technique, a number is allocated to each person in the population then random numbers are drawn out of the population until the required sample is reached. This method is very

simple and follows the laws of probability, if the population is already kept as computer databases or lists, which ensures accurate representation of samples. Otherwise, it will be difficult to prepare a complete list, which is a prerequisite for the application of the technique.

Systematic random sampling

This technique is similar to the previous type except that sample size is selected as percentage from the whole population in a series from the population list, starting with one random sample then moving up and down the list according to a calculated interval.

Stratified random sampling

This technique is usually applied in cases where the population could be classified into distinct sub groups with similar traits, based for example on gender, age groups, ethnicity, etc. The sample size in this technique, therefore, tends to represent the subsets proportionally to their sizes within the whole population.

Cluster sampling

In this technique an entire one or more groups are selected from the population of interest. Groups are identified as a cluster that is chosen randomly as a sample. The benefit of this technique is that the researcher does not necessarily have to have access to the sampling frame, which lists the whole population. He rather conducts the survey among the selected cluster. The technique is therefore highly valid where clusters represent geographic regions, but it entails a problem of assuming that individuals within any cluster are identical to the whole population and this is unlikely to be the case all the time.

3.4.1.2. Non-probability sampling

This type occurs whenever the selection of samples is not entirely random. It therefore tends to reduce the time, financial and logistic constraints by selecting the easiest and most accessible samples from the population of interest. The technique entails existence of an error resulting of a misrepresentation of the entire population, known as systematic or non-sampling error. Possibilities of over or under representation of views often exist. Despite those disadvantages, the non-probability sampling remains popular in situations where utmost accuracy is not critical. Four types of the non-probability sampling could be identified:

Haphazard sampling

Alternative names for this technique are convenience and accidental sampling. This technique tends to make life easy to the researcher by choosing the most convenient place and respondents. Only those who wish to respond are selected. It could be conducted among

specific groups. It is therefore inexpensive and easy to administer. In cases where accuracy is not required, the convenience sampling will be the most appropriate.

Purposive or judgmental sampling

In this technique the researcher makes a judgement based on personal experience as to which respondent are most likely to be representative in the population of interest by choosing the appropriate people with a specific purpose in mind. This technique is often used to construct viewpoints of the respondents rather than building on one's own views. It should not be used to select the average person. It is used in exploratory research or in field research (Neuman, 1997). It is also appropriate in three situations. First, if it is required to select unique cases that would be considered as informative. Second, selecting samples that are difficult to reach by using a subjective judgement about their possible locations. For example low-income households or owners who rent part of their houses. Third, it is used in situations where it is required to identify particular types of cases for in-depth investigation. The researcher uses various methods to identify the required cases, because the goal is to locate as many cases as possible (Neuman, 1997). It has been argued that the rationale of such an approach is very different from the statistical generalization from sample to population and that it is an approach that is commonly used in case studies, similar to this research (Robson, 1993:142).

Quota sampling

Steps are required to be taken by the researcher to obtain a sample that is demographically similar to the population of interest. The sample is first constructed by identifying the categories of respondents that reflect the relative size of the groupings and then deciding how many to obtain in each category to ensure an appropriate percentage of the total sample falls in each category, for example the percentages of male and female, the population below 20 years; 20 to 60 and above sixty, and the educated and the non-educated people. The quota sampling is therefore an improvement of the convenience sampling but it has been identified as a weak type of sampling (Neuman, 1997).

Snowball sampling

This technique is also alternatively called network, chain referral or perpetual sampling. Researchers might be interested in the relationships or the interconnected network of people or organizations. The crucial feature is that each person in the network is connected though a direct or indirect linkage to another person in the network. It is therefore a method of

identifying cases in networks that begins with a few people or cases and spreads out on the basis of the linkage to the initial cases. An example is members of a minority group.

Other than the previously mentioned sampling techniques there are some other special ones used for special purposes. (1) *Time sample*, where it is required to study particular personal characteristics at different times (2) *homogenous samples*; covering a single value within a specific variable (3) *Heterogeneous samples*; where there is a deliberate strategy to select individuals varying widely in characteristics (4) *extreme case samples*; concentrating on extreme variables if it is thought it is of particular significance to the phenomenon of interest (5) *rare element samples*; where values with low frequencies represents particular importance, similar to the previous technique (Robson, 1993:142).

3.4.2. Sample size

Two techniques are used to assess the sample size. First, to identify or make assumptions about the total population then apply statistical calculations about the random sampling process. Second, which is the most frequently used, is non-statistical method, or the rule of thumb of identifying a conventional or commonly accepted amount on an ad hoc basis (Neuman, 1997; McCormack and Hill, 1997). The decision of the researcher about the sample size is often determined by the degree of accuracy required, the degree of diversity of the population and the number of different variables needed to be examined simultaneously in data analysis and the representation of subgroups (Neuman, 1997).

The sample size determination could either be done statistically or non-statistically. In the early stages of this research it was decided that the sampling technique should be non-statistical, to allow a satisfactory representation of the sub-groups. The researcher's limitations in terms of time, staffing, local regulatory limitations, lack of suitable maps, and financial constraints in addition to the high level of applicability and convenience of the technique justifies the selection of such types. However, it was possible to test the selected sample size against statistical method, which will be discussed in this chapter.

The research applied the purposive sampling method, as there was a necessity to represent a number of subgroups as shown in *Table 3.3*, which illustrates the sample size and its breakdown in subgroups. The selection of the samples first started randomly by identifying a block in the selected low-income third class housing area, and then samples were selected

randomly within the block[26]. This method includes merits of other sampling techniques to realise further accuracy, an unbiased representation. For example, rather than randomly selecting any sample anywhere, a block within each government-housing scheme was selected also randomly from which individual samples were selected. The next step, the representation of the subgroups, was examined. Sub-groups with unsatisfactory occurrence were then increased by searching the appropriate type within the same district. Samples completing the subgroups were selected from other blocks in the same district in case the required number was not found in the selected block. The survey included 202 cases of the population of interest, which are the low-income households, and two sets of subgroups, the residential districts subgroups and the tenure-based subgroups, which are classified as owners and renters. These subgroups represent the groups that will be analysed according to the research methodology. The sizes of the sub-groups were based on a rule of thumb, that each subgroup should not be less than 30 samples. Exceptionally, the cases from As-Sahafa district reached 69 samples because all other tenure-based subgroups except the households who own plots and have recently built them are extensively based in it.

Table 3.3 The sample size and representation of subgroups

	Owners not extending	*Owners extending*	*Owners renting*	*Owners recently built*	*Renters plot owners*	*Renters non-plot owners*	*Total*
Ad-Deim	9	10	6	-	7	-	**32**
As-Sahafa	14	8	7	-	20	20	**69**
Al-Kalakla	-	4	13	-	5	13	**35**
Abu-Adam	8	10	2	5	2	5	**32**
Al-Azhari	-	-	2	32	-	-	**34**
Total	**31**	**32**	**30**	**37**	**34**	**38**	**202**

3.4.3. Factors affecting sample size

To test the selected sample size against the statistical method of determining it, it is important to consider the factors influencing it. A principal fact about it is that the larger the sample size the lower is the likely error. Therefore, if there is a need to have a limited acceptable error, then the sample size should be defined accordingly. Some computer-based software packages have been developed by some researches to determine the sample size. The selected sample size has been tested against some of these methods. Applying such software and formulae requires a satisfactory level of confidence in these methods. However, generally there are a

[26] A block (an English translation of the Arabic *morabbaa*) as used in Khartoum is a sub-district, which consists of plots that often exceed 200. Generally, it could be considered as a residential area with a size of 2000-3000 population.

number of underlying principles behind statistical sample size determination. They include that (1) there is a tendency for "diminishing returns" as the sample size is increased (2) the more variability the population has, the larger the sample is required, and (3) the number of the categories of the population required by the analysis (Robson, 1993).

Three basic factors influence the sample size, viz., the sampling error, the acceptable confidence level, and the standard deviation. The research will try to set out some postulates and assumptions based on rational grounds for each, in order to judge the minimum sample size required in the research. The following section discusses each factor and gives an estimate.

3.4.3.1. Sampling error

The total sampling error is a hypotenuse of the sampling and non-sampling errors. The first could be identified as the degree of divergence of the selected sample characteristics from the actual population characteristics. It is alternatively identified as the random error (McCormack and Hill, 1997). This type is often uncontrollable and it could be reduced by enlarging the sample size. To give an example, if it was chosen that the sampling error is 0.25 for the household size variable, and it was known that the actual household size (mean or median) is 6.48, then if the sample survey yields household size between 6.23 and 6.73 the researcher will be satisfied. Non-sampling error relates to the survey's operational and non-response difficulties. This type is somewhat controllable and it increases as the sample size increases (McCormack and Hill, 1997). The non-sampling error has also been defined as the mean square difference between the survey estimate and the actual population value (Ward, 1983). The reduction of either the sampling and non-sampling error alone is not sufficient to significantly reduce the overall sampling error. Both of them should be reduced to obtain a substantial reduction in the overall sampling error. Algebraically, if the sampling error is ***a***, and the non-sampling error is ***b*** then the total error is equal to ($\sqrt{b^2 + a^2}$) (Ward, 1983).

In this research, the non-sampling error was controlled through avoiding incompleteness, non-response control, sufficient representation of sub-groups, avoiding measurement errors, staff training and testing, and avoiding biases. These will be explained in detail in a following part. Non-sampling error could also occur as a result of poorly built questions. In order to avoid the effect of this, questions were revised and translated into Arabic. Double interpretations of questions were avoided.

3.4.3.2. Acceptable confidence level

The level of confidence denotes the deviation from the real value if the same survey is repeated for the same sample, given in percentages, for example 95 percent. These percentages are expressed as ***Z*** value, a notation that is related to statistical theories underpinning the formula (McCormack and Hill, 1997).

3.4.3.3. Standard deviation

Standard deviation is a widely used statistical measure that denotes the deviations of the individual measurements from the mean.

3.4.4. Sample size testing

The following is the formula used to calculate the sample size (McCormack and Hill, 1997) based on the acceptable random error, confidence level and the standard deviation:

$$n = \frac{z^2 \sigma^2}{E^2}$$

Where:
- n: The minimum sample size
- Z: Acceptable confidence level
- σ: Estimate of the standard deviation
- E: Acceptable level of random sampling error

The variables chosen to rely on in calculating the sample size are those which have numerical values such as income, age, household size, etc. Categorical variables were avoided because they represent choices. The confidence level is presumably 95 percent with the ***Z*** value of 1.960. The standard deviation for each variable will be calculated from the SPSS data file. The standard error value is the most critical because of the sensitivity of the respondents towards giving the real data about expenditure and income and most selected variables; therefore they were assumed by the researcher for each variable with reference to the median and the mean values of each. The sampling error was not assumed as a constant percentage from the mean or the median because of this sensitivity of the respondents to certain issues. It could be noticed that these percentages are relatively high regarding the variables related to income, which reached to 20 percent, while other values were 10 percent or less. When these figures are compensated in the formula the minimum sample size per each variable is counted. The table showed the highest sample size as 202.

3.5 Questionnaire design and administration

3.5.1. Questionnaire design

After identifying the sample size it was important to set guidelines for the questionnaire design. It was important to represent two sets of subgroups identified in *Table 3.3*. Column subgroups represent the tenure types in the housing supply process who are owners and renters. Owners are classified as extending, not extending, and renting. Owners-recently-building in the new government housing schemes were added as special subgroup. Rows represent the selected government housing schemes, based on historical occurrence within Khartoum city. It is important to acknowledge that these subgroups are adapted from the housing supply research carried out by Tipple et al. (1999) in three Ghanaian cities; Accra, Kumasi, and Berekum. This study represented a good example for similar studies of housing.

Rather than designing a single questionnaire for each column subgroup it was preferred that one questionnaire should be designed with parts concerning all groups together (low-income group), and other parts designed for the subgroups. A matrix was designed on the first page of the questionnaire illustrating what parts were to be completed for each subgroup. To avoid complexities the questionnaires were filled by the survey team. Discussions with the supervisor have revealed some questionnaires on housing supply studies that had been previously used by a team in CARDO for a similar subject study that focused on housing supply actors (column subgroups), but it was designed as four separate questionnaires each for a subgroup. This questionnaire was helpful because the concept and questions were adapted to the research. Many other questionnaires of similar studies were also reviewed. The particular questionnaire for this research included the following issues and sets of variables:

3.5.1.1. Reference and response

This part includes a set of questions that concentrates on the addresses, plot and block numbers, interviewers' and the respondent's statuses and characteristics, for reference and questionnaire administration.

3.5.1.2. Housing unit characteristics

Includes particular questions related to the dwelling unit characteristics, such as housing type, area, height, materials, accommodation spaces, room types, courtyards, services, satisfaction, and tenure status.

3.5.1.3. Socio-economic status

This part includes three parts, the first is to be answered by all subgroups and the questionnaire unit is the household head, the second is assigned specifically for renters, and the third part is designed in the form of a table that uses the household member as the unit. Therefore, it includes variables related to each of them, such as age, sex, relationship to head of household, social status, education, qualification, employment and salary. Some of these variables will be converted to relate to the sample unit, such as the number of income earners within the household and the overall income of the household, while the rest will be required as variables that relate to the whole population characteristics for both the low-income group and the subgroups.

3.5.1.4. Housing preferences

These have been made in two groups, the first for owners extending the building and not extending in old housing districts, and the second is devoted to renters and owner households planning to build a new house. It was necessary to design this part for the group because there are a remarkable number of households who obtained plots in the government housing schemes but have not yet started construction.

3.5.1.5. Housing process

This part includes a few questions that try to explore the reasons behind building a house and the future house size and characteristics.

3.5.1.6. The residential district services and infrastructure

This part deals with variables that would give a picture about the level of services in the district as judged by the residents, and their availability. However, these variables were later discovered to be of low significance and relevance to the research issues of focus.

The questionnaire included behavioural, attitudinal, and classification questions. They were carefully designed in terms of the clarity of wording, meaning, sequence, and flow of the questions because it may influence the nature of response of the interviewee. First, it was finalised in the English language and then translated into the Arabic language. Meanings were set out clearly to avoid misunderstanding and ambiguity as much as possible. Answers were designed to be closed-ended to make it easy for the respondent, who only ticks the right option in a highlighted rectangle with a clear layout form. Open-ended questions were

avoided. Dichotomous questions that bear the "yes/no" answers were used to delimit and identify the subgroups and reduce answers. In addition, it included choice and multiple-choice questions, semantic differential scaled questions, and ranking questions.

The questions were designed in conformity with the SPSS software requirements. Questions and answers were both numbered. The questionnaire was also designed to be as concise as possible, without missing the significant variables and at the same time, avoid very lengthy and time-consuming forms. However, in Sudan the friendly attitude, hospitality, and the slow lifestyle of the people has helped administer a reasonably lengthy questionnaire. A relatively high non-response rate in some variables was partially due to the failure of some survey staff to deal with some questions because they were not sufficiently self-confident and a little shy, and partially due to sensitivity towards privacy issues that are relevant to the income and children. The latter is rooted in the cultural values of the society. According to the experience of the researcher, if the same questionnaire was conducted in Jeddah for example the response rate would be much lower. Repetition of the questions was also avoided.

McCormack and Hill (1997) pointed out that the wording of the questionnaire should be relevant, answerable, impartial, unbiased, simple, short, unambiguous, specific, precise, positive, and inoffensive. In addition, Neuman (1997) pointed out that the questionnaire design should avoid jargon, abbreviations, confusion and vagueness, emotional language and prestige bias, double-barrelled questions, leading questions, overlapping and unbalanced response categories. The questionnaire tried as much as possible to take these into account.

An important step in the questionnaire was to clearly identify the unit on which the questionnaire is based on the 'household' and the 'house', which the household occupies. In addition, other relevant terms were clearly defined to avoid ambiguity. All the terms were set in conformity with the definitions provided in a paper written by Graham Tipple (Tipple, et al., 1994d), in addition to other references. Particular reference was given to the definition used by US bureau of Census for the definition of the household. To quote:

> *The household* is: all persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is a direct access from the outside through a common hall. A household includes the related family members and other unrelated persons, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person

> living alone in a housing unit, or a group of persons sharing a house unit as partners, is also counted as a household. (Tipple, 1994d:439).

Considering the household and the house conforms to the twin arguments of Varley (1994: 132) that we need to look at the house when thinking about the household and consider the household when examining the house. Although this definition seems to be universal, it also suits the Muslim communities in Sudan where polygamous households exist. Where such types of households are found, wives can live together in one house or live separately, depending on their personal choice. The man is assumed to split his time equally between his wives. Usually each wife should have at least a separate room when they live in a single house.

3.5.2. Questionnaire testing

The questionnaire design passed through some stages. First in the light of the predetermined research objectives, the literature review and personal experience of the researcher a set of key variables were determined. Review of similar studies, projects and theses were greatly helpful in setting the questionnaire outlines. The questionnaire was then written in a preliminary form, discussed with the supervisors and finalised reflecting the comments and remarks received. The questionnaire was also shown to some colleagues in the Faculty of Environmental Design in Jeddah and in the Department of Architecture in the University of Khartoum. Their viewpoints were taken into consideration. A few cases were tested beforehand against the response of interviewees and the participant interviewers to detect any problems if they exist, and to test the time requirements, difficulties, reactions to specific questions, and interpretation of terms. Remarks were again taken into account and the necessary modifications were made and the questionnaire was accordingly retyped in both English and Arabic languages.

3.5.3. Questionnaire administration

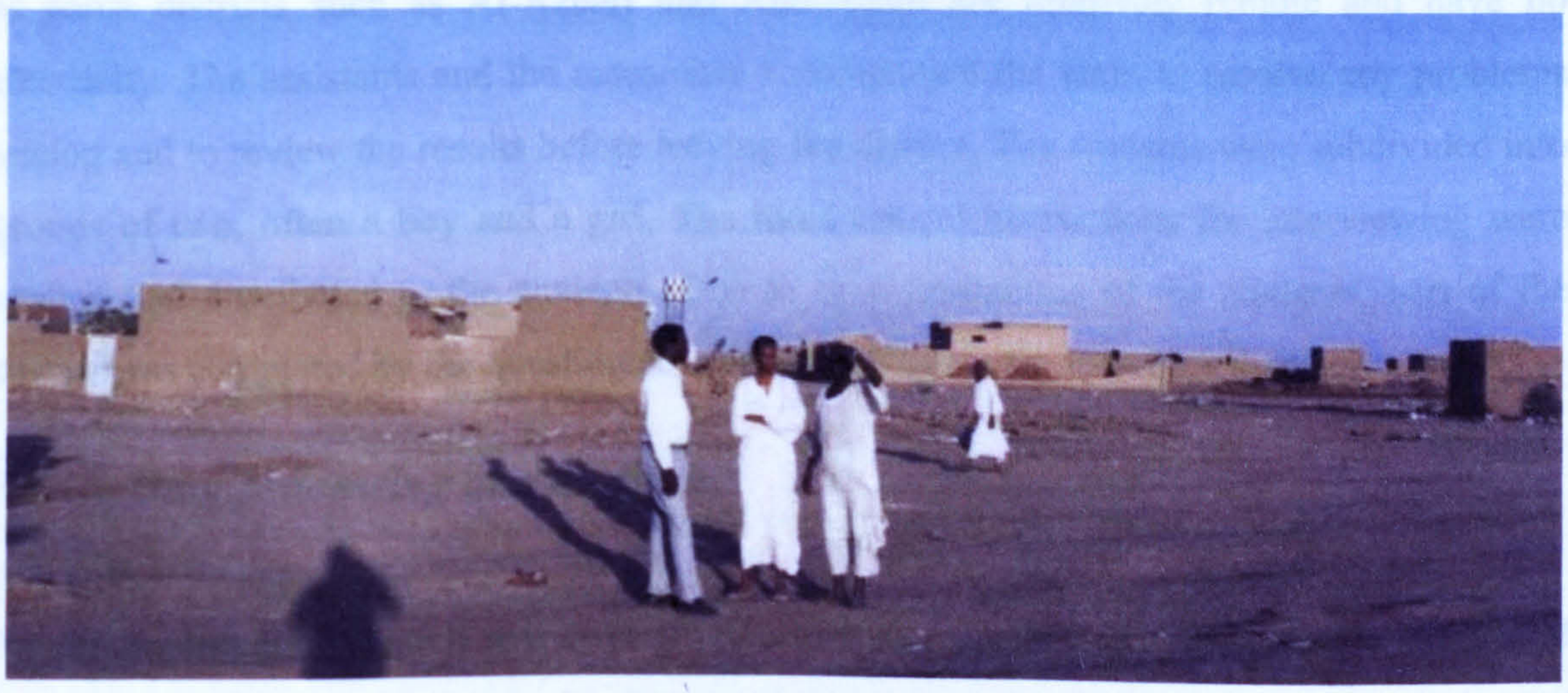
The amount of work required to complete the questionnaire fieldwork was too much to be accomplished by the researcher alone. It was necessary to form a supervisory team of three staff members for the questionnaire administration[27]. The tasks of the team were mainly to lead other groups of interviewers, to assign tasks and samples to them, to distribute, collect and revise the questionnaire forms, to resolve difficulties, and to answer the inquiries of both

[27] The team included Mr. Salah Abdulziz Ajban, a civil engineer who works for the Engineering Department at the University of Khartoum, Mr. Abdulraheem A. Hafazalla an agricultural engineer who widely practiced conducting questionnaire surveys at his work and Mr. Khater Abdu Faraj a new graduate of the Faculty of Law.

the interviewers and respondents. Before that, the questionnaire was well explained to the supervisory team. Tasks and responsibilities were clearly assigned and designated among the team members, who had a satisfactory level of experience in fieldwork.

Teams were formed from the first year Architecture students in the Department of Architecture at the University of Khartoum to conduct the questionnaire survey fieldwork under the supervision of the researcher and the supervisory team (*Figure 3.2* and *Figure 3.3*) and this team was trained within their class sessions. Questions in the questionnaire were explained one by one; difficulties expected were shown to them. Techniques to attain better response were also explained including how to introduce themselves and the purpose of the questionnaire. Techniques to assist the respondents answer questions dealing with money and particular questions about female household members were also explained. The team members used to inquire about the questions which they do not understand. Using architecture students was beneficial, as they understand fieldwork and its related problems. They were also familiar with most of the terms used in the questionnaire and their correct definitions, which made the task much easier and well understood.[28]

Figure 3.2 People of Al-Azhari



[28] It may be noted that the University of Khartoum is the most prestigious university in Sudan and accepts the best overall students in the country.

Figure 3.3 The survey team



Logistics, including the transport facilities and an agreed upon programme, were prepared to cover the study areas. The best time to visit the areas was in the afternoon and before sunset, as some districts such as Al-Azhari and Abu-Adam are relatively remote and have no electricity. The assistants and the researcher accompanied the team to resolve any problems arising and to review the results before leaving the district. The students were subdivided into groups of two, often a boy and a girl. The most critical instructions for interviewing were written and distributed to the students. Due to time limitations of the students, part of the survey was completed by the questionnaire administrative team members themselves.

3.6 Data processing and analysis

3.6.1. Data processing

To accomplish the research it was very important to become acquainted with a number of software that could be employed. It was also important to learn and be trained in and familiarized with the functions, capacities, and potentials inherent in the selected software. SPSS software was chosen in the data analysis besides some others. However, personal experience of the researcher with the use of computers and much of the software was very helpful in undertaking the analytical work and editing.

The data processing started first by further checking the questionnaire forms for their validity, response to the variables and missing variables. Invalid forms were accordingly excluded beforehand but these were few. Next, questions were assigned as variables in the program, and then case-by-case data input followed. Because the target group are in the low-income group, remarkably high-income cases were excluded beforehand. Data feeding was a long process because it was also accompanied by further data revision and because of the relatively large number of cases and variables.

Once data feeding was finished, analysis became very easy, and result tables, charts and diagrams printouts were easily obtained. Quick case-by-case frequencies reporting was essential at the beginning to explore errors resulting from wrong cell data input, which were again compared with the original questionnaire data.

3.6.2. Data analysis

A large number of tables and diagrams can be obtained, but the challenge lies in what the most appropriate and useful forms of results are that serve the purpose of the research. It was also significant to review similar research to see examples of result data formatting[29], and the most appropriate statistical tools, because it provides an opportunity for comparison. Large and complicated tables were avoided, except where they were necessitated by the research. Tipple (1991) brought together in a single volume a number of methods of analysis that are used by researchers aiming to improve the efficacy and equity in housing projects and policies designed for local circumstances. Tipple (1991) and Willis and Tipple (1991a: 258) pointed out that these methods are applied techniques that can be adopted to help policy makers to improve their judgement on housing issues, to improve the satisfaction of the consumers, and to promote economic efficiency, to improve the operation of housing markets and make the housing policies more technically objective, informed, and less subjective. Of these techniques, Gilbert (1991a) introduced comparative analysis as an important method used in housing research. The cases may be countries, cultures or cities. However, the research is a case study that focuses on the city of Khartoum. In this research, it is difficult to establish comparative analysis between Khartoum and other cities in the developing world. However, as this is a grounded research about Khartoum, some figures are brought from the

[29] Research undertaken by Dr. Graham Tipple the supervisor of this thesis are the most cited examples particularly his book "Extending Themselves, User-initiated transformations of government-built housing in developing countries" and his research "Housing supply in Ghana: a study of Accra, Kumasi and Berekum". Also his instructions regarding result formats were taken into account.

international context at a limited scale to add more value. Comparisons are established at a limited scale between study districts and tenure types.

As a conclusion, the main objective of the survey strategy adopted in the thesis was to increase the liability of the data and accordingly the expected results. The sample and the selected sampling techniques are all cited in literature as reliable techniques. The process involved and the whole method and the steps followed aimed to avoid all the factors that would reduce the creditability of the data and the results. The effect of time and resource limitations and the human factor in the process were minimised. Research working within constraints of time and money is a common feature of social research (De Vaus, 1991: 44). The process was carefully and tightly designed to avoid the factors that reduce the reliability of the data in terms of the selected survey team, process, programming and administration, helped by the good response of the interviewees who were welcoming and cordially answered the questions. The data processing adopted computerised techniques of analysis using SPSS, Statistica, and Microsoft Excel. Some simple statistical methods and indicators such as mean, median, IQR, standard deviation and crosstabulation were the most commonly used to analyse the results. Clegg (1999) described the characteristics of these simple statistical indicators as reliable indicators used in the social research. Other data based in the government reports and Sudanese articles were carefully selected. Most authors of these articles included in the bibliography are ministers, senior government officials or competent researchers and academics. It is obviously assumed that such officials use and bring-up genuine data from the relevant departments. All these materials and data were put together to support the arguments brought by the thesis and results, giving a unique text that compiles a large bibliography in housing policy in Khartoum.

Chapter 4

The Urban Planning Context of Housing

Chapter 4 The urban planning context of housing

4.1 Introduction

This section views the housing supply process within the urban context from the point of view that the housing problem is interrelated with different urban planning issues. The housing supply process is inseparable from those issues, for example it was discussed earlier that the definition of housing does not mean only provision of shelter, but also the provision of infrastructures, and community facilities. Also the enabling strategies and some of the Habitat Agenda include many city-scale issues that have strong relationships with the housing supply issues. The chapter accordingly discusses issues such as urban planning and some issues related to the master directive plans and city development issues, urban housing land, infrastructures, the urban pattern and housing densities, the housing development processes, sustainable development issues and the land subdivision processes.

4.1.1. Khartoum land use pattern

With reference to the land use pattern of the Greater Khartoum (See *Figure 4.1*) we notice that it shows that the nucleus of the three cities has expanded in its historic location close to each other, and close to the Nile confluence which is physically obstructed by the central intact island of Tooti. Also, industrial areas, military barracks, railway stations other land-uses occupy their original locations close to the city centre. Some studies were carried out to look for alternative solutions to the problem of the poorly located land uses (Sadik, 1999). Residential districts expanded outwards from the city centre where the city employment is concentrated resulting in unidirectional long travel distances.

The increased transport cost caused by the remotely located low-income areas may justify the availability of the large numbers of undeveloped plots that has been discussed before. Unlike the case of developed countries, where people and their economic activities began to move outwards from the city centre owing to the developed transport system, employment locations in the case of Greater Khartoum still tend to concentrate in the CBD because of the inefficient transports systems. The government relocated some of the land uses to decentralize trip generation and to reduce traffic congestions in the city centre. These trials included relocating some major land uses from the city centre, such as the vegetable and the Arabic market, and bus end-terminals. These seem to have no substantial influence in mitigating the problem of congestion and the traffic bottlenecks at the CBD.

Figure 4.1 Greater Khartoum



In Khartoum city, these land uses mentioned before were moved to the south in *As-Suk almarkazi,* which is a centre that is designed to act as an auxiliary CBD to the old Khartoum CBD. It has created some interruption in the functional performance of the CBD, which depends on the concept of the economy of agglomeration. Relocating such activities indicates the lack of awareness of the functioning of urban economics. On the other hand, the aim of relocating the land uses was seemingly adopted to create new competing centres to reduce the pressure on the original centres. The auxiliary CBD started with the central wholesale vegetable and fish market located at the south end of the city.

4.1.2. The location of low-income housing areas

The poor location of the projects has a clear effect on increasing the transportation costs. Firms are often unwilling to move to the new sites-and-services locations (Rodell, 1983), particularly at the early stages, because of the low services' thresholds and the high risks associated with their relocation. The new sites-and-services projects in Greater Khartoum are located in remote areas. It is imposing a remarkable increase in the transportation costs and the travelling distance. The poor location of these projects is one of main causes of the slowing development of the sites-and-services projects in Khartoum.

4.1.3. The urban pattern

The primary road pattern of Khartoum is linear roads radiating from the city centres of the three towns outwards, while the rest of the roads are overwhelmingly solid gridiron pattern. The public transport routes follow these main roads attracting through-traffic. They cause bottlenecks and traffic congestion at the city centres, particularly when crossing the bridges. These bridges are closely located to the CBD, where the city employment is concentrated. The bridges linking the three cities are not strong enough to carry the traffic generated. More bridges need to be built to absorb the increasing traffic. Other factors that make the situation more complex include the poor transport systems and the poor road paving and patterns that culminates at the nucleus causing congestion. The transport pattern lacks sufficient routes to divert traffic away from the city centre, and also lacks cross transport. Travelling from the east side of the city to the west side has to be made by two public transport trips. Alternatively, tri-wheel motorcycles, locally named *raksha,* are used but they are more expensive than regular public transport.

Khartoum city lacks multi-lane, high standard high-speed primary and secondary road systems, as well as bypasses and ring roads, which would reduce the travelling time between

the different functional zones of the three cities. Bridges crossing the three rivers and linking the three cities are operating beyond their design traffic capacities. The poor road system clearly imposes a negative effect on the city's growth, and the inhabitants of the low-income districts at the peripheries of the city, in terms of traffic delays.

4.1.4. Densities of the sites-and-services districts

The residential density is of paramount importance in urban planning and an effective tool in land use planning for the control of development. It is a quantitative measure that expresses the intensity of physical development or population. It is expressed numerically in different ways viz., persons per hectare, dwelling units per hectare, built-up/area ratio, floor/area ratio, bed spaces per hectare, habitable rooms per hectare, and room occupancy (Goodchild, 1984; Evans, 1978). The density impact on planning and urban design is extended to development costs, resident's satisfaction, environmental perception, and development control (Goodchild, 1984).

In the development of the residential districts certain density policies can be established and adopted. The planning authorities in some countries clearly identified specific objectives for the residential density. An example is Hong Kong Planning Standards and Guidelines (HKPSG). The objectives stated seem to be greatly generalized and suitable for most countries, including developing countries. The following are quoted objectives[30]:

- To promote an acceptable standard of environment and amenity for the occupants of residential areas;
- To ensure an appropriate balance between the residential population of an area and the capacity of the existing or planned facilities and infrastructure required to service it;
- To maintain an efficient intensity of land use in the context of competing demands on a limited supply of developable land;
- To maintain safe levels of development and population in areas where there may be potential risks due to adverse geotechnical conditions, neighbouring hazardous installations, etc.;
- To provide for a variety of urban form for urban design reasons and to satisfy the demands of different market sectors; and
- Particularly in rural areas, to ensure development is of an appropriate scale in relation to its landscape setting. (HKPSG: http://www.info.gov.hk/planning/tech_doc/).

The objectives represent a comprehensive coverage of all aspects of the density that are required to be maintained in the city development as well as the residential districts. However the last one relates to the rural areas but also could be applied in essence to the urban areas.

[30] Source: http://www.info.gov.hk/planning/tech_doc/ accessed April 2001.

The planning authorities did not only specify the objectives but also specified some general principles for residential densities. These principles mainly state that the density hierarchy at the city level should meet the market needs, and should be commensurate with what the planned infrastructure and environmental capacities can cope with. (HKPSG).

The residential subdivision process of the sites-and-services projects of Khartoum has obviously been done on an ad hoc basis or intuition, but generally, plots were large. Fiscal impact analysis[31] and the studies of the spatial dimension of costs could have been carried out before undertaking the development process. Such techniques can help the planner review and criticise the spatial arrangement of the sub-division plan, and establish general spatial policies at the level of comprehensive planning and zoning. Application of optimal densities can also help the planner to control parts of the costs of development (Dekel, 1995:936). Dekel (1995) concluded that the municipal costs can be allocated between costs affected by the land area served and all other costs. Two major variables affect those costs. The first is the density of the development and the second is the assessed values of housing and any other development in the area. The two variables together determine the assessed value per hectare, hence the revenues derived (Dekel, 1995:947). The relationship of the density with the development costs has also been previously elaborated by Goodchild (1984), who concluded that three major factors affect the cost of development, site development, land acquisition, and construction, and that the two first factors tended always to fall as densities increased and the costs of site development tended to decline proportionately with increased density and the land acquisition costs tended to decline at a decreasing rate.

A view of the physical conditions and the development status of Khartoum is similar to the view and the concept of the fragmented city of the third world given by Balbo (1993), who described these cities as cities of fragments, where urbanization takes place in leaps and bounds creating a continuously discontinuous pattern. The physical environment, services, income, cultural values, and institutional systems can vary markedly from neighbourhood to

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[31] http://www.lic.wisc.edu/shapingdane/facilitation/all_resources/impacts/analysis_fiscal.htm identifies Fiscal Impact Analysis as follows: "The purpose of fiscal impact analysis is to estimate the impact of a development or a land use change on the costs and revenues of governmental units serving the development. The analysis is generally based on the fiscal characteristics of the community— e.g., revenues, expenditures, land values—and characteristics of the development or land use change—e.g., type of land use, distance from central facilities. The analysis enables local governments to estimate the difference between the costs of providing services to a new development and the revenues—taxes and user fees, for example—that will be generated by the development". Accessed 1st Dec 2005.

neighbourhood. He goes on to describe its spatial structure as being made of different pieces that are drawn together and those at the peripheries are incomplete and fragile, while the older districts are well established and have clearly defined boundaries.

The residential land planning and their densities in Khartoum were rather based on the trial and error approach. Very limited attempts were undertaken to optimise the utilization of urban residential land. Densities of the residential areas are considerably low causing sprawl. Ahmad, et al. (2002) pointed out that low density has contributed to the efficiency of the city in terms of increased travel costs, increased infrastructure costs, depletion of the hinterland and fragmentation. Chakrabarty, (1987) argued that substantial cost per square metres difference in infrastructures could be achieved through optimisation of the layout design and physical planning of the residential districts in Third World countries, which are subject to shortage of capital, land and other resources.

The low density is associated with the phenomenon of urban sprawl, which has been defined as the disproportional expansion of urban areas, but generally, the definition is controversial. Many researchers have argued that the local government and its jurisdictions, public policy, land use and zoning have clear impact on the occurrence of urban sprawl (Zhang, 2000). This is likely to be the case in Khartoum, where the housing policy heavily relies on subdividing land as sites-and-services plots.

4.2 Housing within the master plans of Khartoum

The physical planning processes and the structural plans for cities involve appropriate utilization of the land resource. The increasing demand of urban land and its growing importance in the planning of cities require ensuring that it should be wisely utilised through applying urban land use planning techniques (Chapin and Kaiser, 1979). The land use planning involves appropriate assessment of the present and future requirements for land for the difference forms of human activities under specified community goals and objectives (Chapin and Kaiser, 1979; Franklin, 1981). Classical studies of urban structures indicate that the preponderance of the urban land is held as residential land, while transportation accounts for about 25 percent, and 16 percent is industrial and commercial. However, these ratios are not strict. They vary from city to city depending on their prime functions (Aziz AlRahman, 1988). Post-colonial urban planning practices and master planning of Khartoum fall into what has been expressed by Payne (1999a) in his description of these practices in Africa:

> 'It is perhaps ironic that urban planning and land management methods imported from Europe are still being applied in Africa, even though they have been abandoned as inappropriate in the UK and other European countries. Master plans and development control have given way to more market sensitive and socially responsive methods of guiding development, yet planning policies, legislation and practice in many African countries still reflect outmoded approaches, often with negative consequences' (Payne, 1999a: 2)

Similarly, Okpala (1987) maintains that concepts and theories applied today in Africa are imported and have been applied without enough attention to the socio-cultural differences. He argued that effective policies can only be derived from a more realistic evaluation and analysis of African urban problems. Observation shows that solutions to urban planning problems do not indicate learning from the European and the Western analytical perspectives of urban problems nor reflect reliance on effective analysis of the local problems and socio-cultural and economic conditions. There are often wide gaps between what are drawn in the master plans of Khartoum and what has really been achieved. The experience of Khartoum portrays a failure in the urban development control, in spite of adopting approved master directive plans. El-Sammani et al., (1989) argued that development control stems from the lack of effective administrative system and forward planning backed with inappropriate planning legislation. This led to inappropriate planning and changes of land use, resulting in considerable diseconomies. Plans have shown failure in predicting the future needs of the sites and services plots. Reasons for the failure include lack of resources, lack of skilled administrative skills, and failure to consult professional staff and show that most decisions are politically based (el-Sammani et al., 1989). Choguill (1995) holds that planners involved in low-income housing projects in developing countries need to be equipped with satisfactory skills and knowledge of the general principles of land use planning and knowledge of the national laws and regulations that constrain and govern the planning system in their particular countries.

Since it was first built, Khartoum was a planned city that adopted three master plans and one structural plan. The following is a brief discussion of the development of the housing sector in each of those plans:

4.2.1. MacLean's Plan (1910).

This was a comprehensive plan that was prepared by Dr. MacLean[32]. The plan was a development of the original layout of Colonel E. A. Stanton for the city. The plan was designed to accommodate a population of 50,000. (MacLean, 1910; Sarsfield-Hall, 1933). The plan (*Figure 4.2*) focused on Khartoum and did not cover the two other cities Omdurman and Khartoum North. The plans mainly focused on improving the sanitary conditions and creating a hygienic environment for the inhabitants who were Europeans, and create beautiful and good living conditions. It was the first plan that adopted the housing classification system, which classifies the housing into four class zones each with specific building regulations. The regulations stated that first class houses should be built of burnt bricks and stones and concrete roofs and the total cost should not be less than 500 pounds. The second-class houses were to be built of burnt bricks or stone boundary walls but rooms could be built of mud and the total cost should not be less than 300 pounds. The third class could be built of mud only without a limited budget (MacLean, 1910; Sarsfield-Hall, 1933; Abu Saleem, 1970). The fourth class plots were smaller than the third class and could be built of any materials. It could be noticed that the housing standards were based upon the house cost factor, apparently because of the price and labour cost, and land cost were stable because they were enforced by the colonial authority.

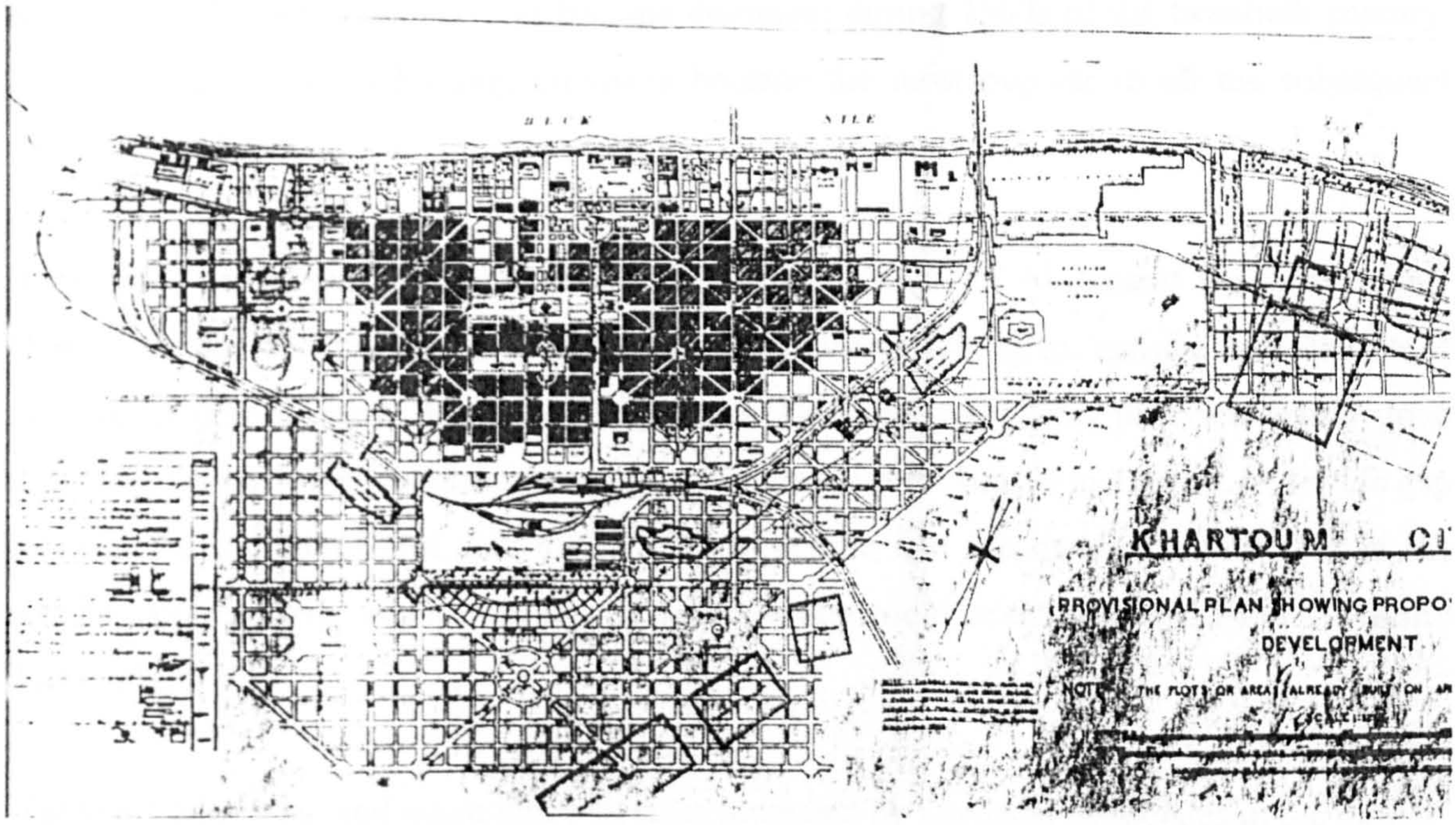
Residential districts locations were quite clear under the land classification system. The eastern part was occupied by large residential plots with a density of four plots per acre for the high government officials (Hamdan, 1960). Other lower class districts were located in the western part and the southern parts with smaller plots.

Most of the regulations inherent and developed in MacLean's plan formed the major body of the town planning regulations that continued to exist hitherto mostly without substantial or any drastic changes. These have mainly included the housing classification system, the housing standards in terms of room types, the building types and materials. It was also the first development plan in the modern history of Sudan. Verandas and the open traditional mud houses could be assumed to have originated in Khartoum during this period.

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[32] MacLean was a lecturer at Gordon Memorial College in Khartoum for the city of Khartoum under the directions of Lord Kitchener the late British governor of Sudan after it was assigned as centre for the British dependency of Sudan.

Figure 4.2 Dr. W. H. MacLean plan for the expansion of Khartoum (1912)



4.2.2. Doxiadis Plan (1959)

Constantinos Doxiadis, a Greek planner, was invited to prepare a master plan for Greater Khartoum three years after independence in 1956. The three cities, which formed the greater Khartoum at this age, shaped a clear multi-nuclei and a multi-directional model of city expansion each city with its own centre but the centre of Khartoum city was a major centre because it consisted of most of the government departments and the presidential headquarters (Doxiadis, 1968). Doxiadis (1968) argued that the city of Khartoum had become the first major metropolitan area to adopt an approved plan based on what he called *Dynametropolis* conception of the unidirectional growth. The plan encouraged expansion of Khartoum city to the south and created the attraction of the main functions to Khartoum and adoption of policies that would slow the growth of the other two cities of Omdurman and Khartoum North, hence creating one dynamic centre and two static centres.

The housing issues were not highly emphasised in the Doxiadis plan but the main emphasis was drawn upon the city structure and its mode of expansion and the distribution of the main functions. The plan (*Figure 4.3*) took a solid geometric pattern and a gridiron shape. The plan was greatly ambitious owing to the relatively prosperous economic conditions during that period but unfortunately the plan became outdated quickly, mainly because of the huge rural-urban migration that took place following the independence in 1956.

In this plan the native government widely introduced sites-and-services as a key mode of housing supply. Sites-and-services became dominant during 1960s of the twentieth century. Since then this type of housing provision became the most popular in all the subsequent government plans.

During this period new first and second class housing areas of Al-Amarat were developed. These were characterised by large plot areas that reached 900 sq. m. and the introduction of massive modern concrete frame building types. Doxiadis Associates plan was based upon allocating the plot sizes according to the income group as illustrated in *Table 4.1*. A wide gap between the minimum plot size in the lowest income and the maximum plot size in the highest income groups and the range within each group could be observed (135 and 595sq.m.) (Hafazalla, 1984).

Table 4.1 Minimum and maximum plot sizes proposed by Doxiadis Associates in the master plan of Khartoum

After Hafazalla (1984)

Income group	***Corresponding minimum and maximum plot sizes in square meters***
Lowest income group	108 – 135
Lower income group	135 – 252
Higher middle income	315 – 592
Highest income group	595 – 840

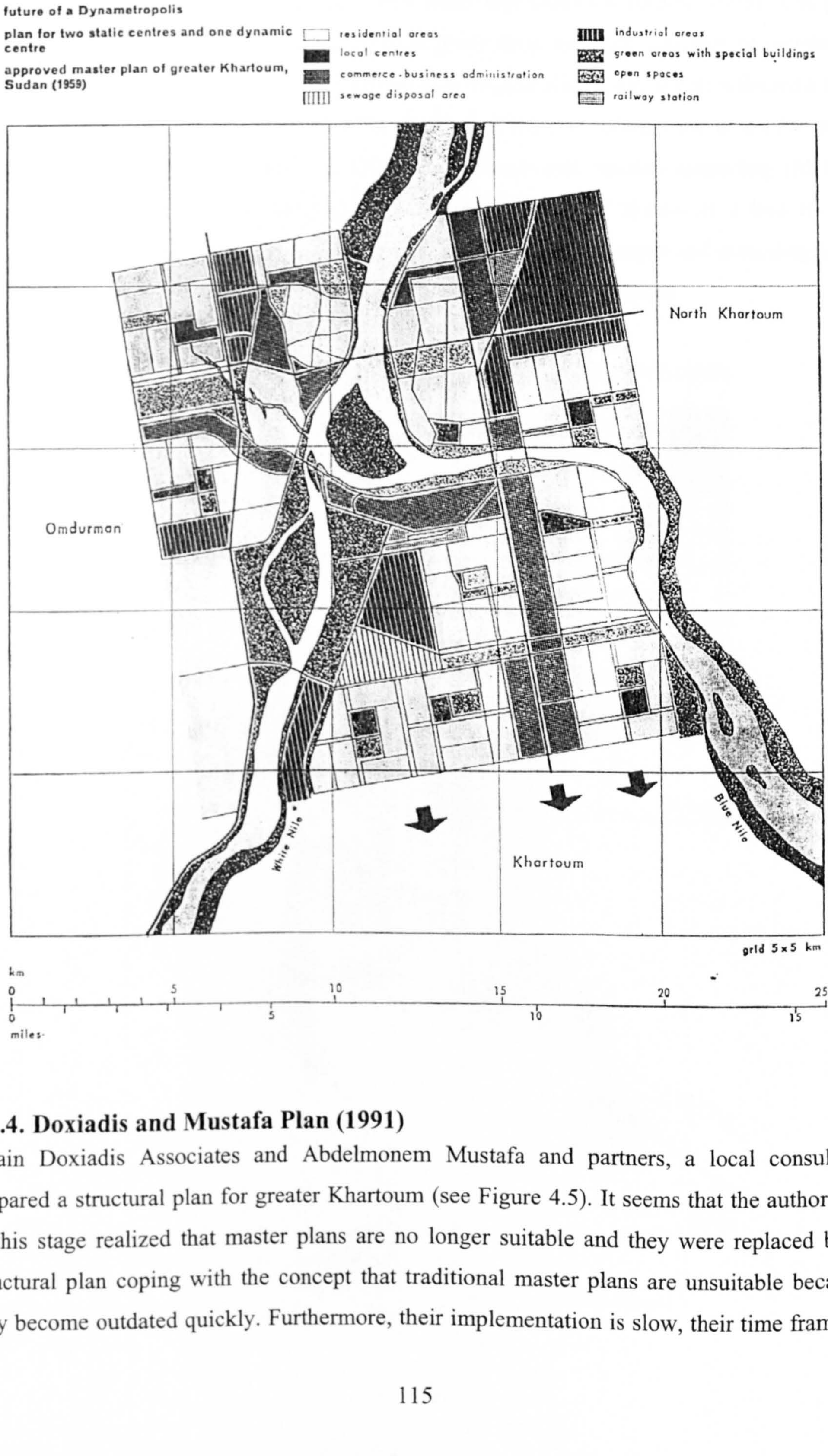
4.2.3. MEFIT plan (1974)

The master plan was prepared by MEFIT; an Italian consultant based in Rome. The plan (*Figure 4.4*) included an analysis of the built form of the different housing class zones through physical, socio-cultural, and visual surveys with a special focus on beautification and urban design (MEFIT, 1974). No remarkable alterations were introduced in the housing policies, standards and regulations.

MEFIT plan was not officially approved by the higher planning authorities but it was particularly adopted in the development of agricultural land around the city. The population of the whole Greater Khartoum was less than million, which indicates that the urban planning problems were not complex and were generally controllable. The plan included three levels; the regional level, the urban level and a beautification programme, but almost all of these studies were not implemented.

Figure 4.3 Doxiadis master plan of Khartoum (1959)

Source: Doxiadis (1968)

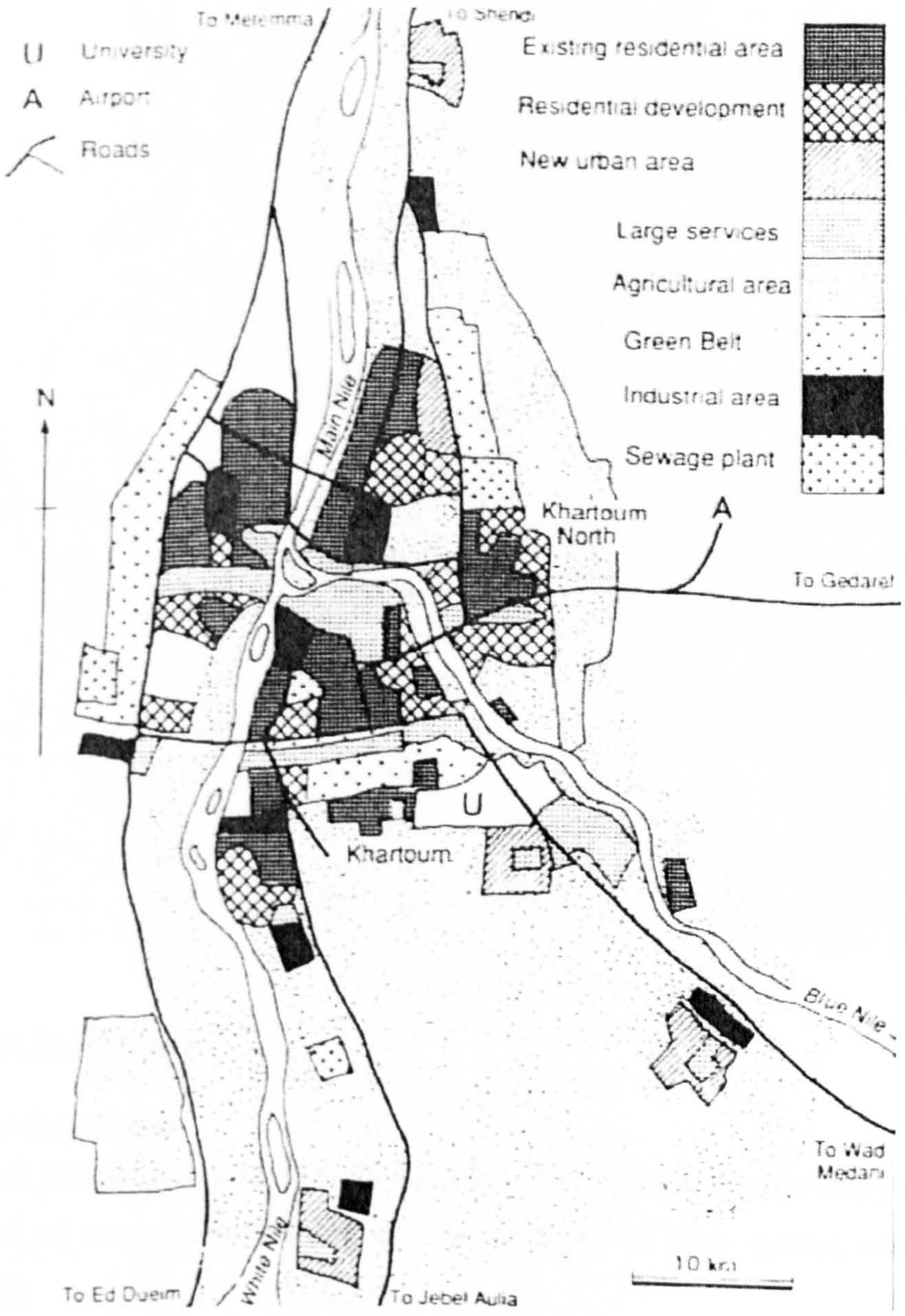


4.2.4. Doxiadis and Mustafa Plan (1991)

Again Doxiadis Associates and Abdelmonem Mustafa and partners, a local consultant prepared a structural plan for greater Khartoum (see Figure 4.5). It seems that the authorities at this stage realized that master plans are no longer suitable and they were replaced by a structural plan coping with the concept that traditional master plans are unsuitable because they become outdated quickly. Furthermore, their implementation is slow, their time frame is

incompatible with the city growth rates, they require technical and administrative skills that are rare, and they are seldom concerned with costs and decisions (Balbo, 1993). The plan adopted a simplified method for structural plans based upon different scenarios of population growth. It reflected the huge predicted expansion of Greater Khartoum. It also reflected a high consumption of urban land by stressing the adoption of the site-and-services as a sole option for housing supply together with the self-help approach and squatter upgrading (MHPU, 1991). The plan dependably admitted the housing classification system as a tool for the subdivision of housing land linked with the income level of the people and accordingly the structural plan was developed depending on the resulting forecast of them.

Figure 4.4 MEFIT Khartoum development proposal (1975-1990)



The plan suggested reductions in the plot sizes of the sites-and-services to mitigate the problems of land coverage requirements and urban sprawl. The current housing plans tend to be a result of the implementation of this structural plan as far as the housing land coverage is concerned. Other aspects of the plan such as the infrastructure and transport networks were not satisfactorily implemented.

Figure 4.5 Doxiadis and A. Mustafa Plan



4.3 Urban land issues

4.3.1. Land policy issues

Land tenure and allocation are intimately linked to the political framework in every country but, at the risk of over-simplification, two basic types of land system can be identified (UNCHS, 1989):

1. The State owns all the land. The State then allocates the land through different agencies or households for the different uses on leasehold. The main feature is that the land is transferred to market at nominal cost, which is the case in Sudan.
2. A private land market exists and the land market transactions depend on the desires of the buyers and sellers.

Out of these two types, subsidiary types exist. For example, in some African countries land is allocated by tribal chiefs. However, such models exist in rural areas in Sudan. UNCHS (1989) argues that few countries have exclusively private systems, as a state, either at national or local level, usually owns land, such as the case of Sudan, and that "Mixed systems" are prevalent in most countries. It is also argued that it could be noticed in many countries that the supply of public land is dwindling. Households, NGOs, CBOs and co-operatives involved in housing supply will turn to the private market to obtain land and pay for it at the market price.

The central issue in the urban housing land policies has been elaborated on by McAuslan (1982), that the urban and environmental design protagonists concerned with land policy issues focus on the role of the governments in terms of ensuring that land is planned and supplied in the right time, in the right location, at the right price (McAuslan, 1982). However, the right households could be added to this. The sites-and-services projects, therefore, should address three conditions; in addition, to identify the right beneficiary households, i.e. which households should be given plots of land. Right time should entail meeting the supply of the appropriate number of plots for the effective demand that must be assessed through the right methods of predictions. It also necessitates the appropriate assessment of the plot size depending on the projected need.

Gilbert (1984: 228) maintains that from the politics of land in Venezuela and Latin America that the state adopts a mixture of roles that sometimes supports accumulation and sometimes legitimacy. In this context he pointed out five ways summarized as follows:

1. The state can act to accelerate economic growth and capital accumulation through its use of land and may influence land prices to enhance the rate of construction in the economy to accelerate the economic growth and provide more jobs. Building companies may be subsidised, land may be cheaply offered for reduced housing costs.

2. The state may use land to favour particular individuals (or firms) within the society through land grants, public contracting, and planning controls. These are effective ways of benefiting allies and harm enemies.
3. The state sometimes requires a more rational, less politically partisan approach to deal with issues of land allocation. It can act against vested groups who irrationally benefit from the processes of land allocation.
4. The state can act to favour the poor through land allocation. Sometimes intentionally allowing land invasions for political patronage.
5. Land policy can contribute to maintaining the inequality in income and wealth. Price mechanism could distribute land in a way that causes residential segregation of income groups (Gilbert, 1984: 228).

From the above five roles, obviously, the state in Khartoum is not acting effectively to adopt land policies that could enhance the economy. The land allocation is done without clear objectives and forward planning. No clear declared land policies and objectives exist in Khartoum and no clear land use planning techniques are adopted. The policy adopted by the planning authorities in Khartoum, of selling the open urban land pockets in Khartoum for financing the urban projects as investment projects seems to be pursued on an ad hoc basis. However, it requires a specific marketing policy that might incorporate fulfilment of different housing and urban planning objectives. The random sale of those pockets clearly causes a misuse of this valuable urban land resource. Regularising and controlling such operations can lead to a better utilization of resources from the economic point of view. However, from the planning perspective, it is necessary to allocate these plots in a way that would fulfil the urban planning objectives. To summarise, it is important to compromise between the economic objectives and planning objectives that also incorporates social and physical planning objectives.

In many developing countries, availability of land for the housing projects is a main problem of housing. Some governments tend to purchase land to provide feasible sites for those projects. In some countries where insufficient supply of designated housing land exists, squatting significantly prevails. Ward (1981) identified three mechanisms whereby land alienation takes place in the developing countries, each of which undercuts the price of land offered by the governments mainly in the sites-and-services schemes. First, land invasions as a sort of residential lots acquirement are a wide spread phenomenon that are often carried out

rapidly overnight and on weekends when authorities are off duty. Second, subdividing the land where land parcels are sold without services. Such an example exists in Khartoum urban rural fringe where some freehold agricultural land was converted to residential; subdivided and sold un-serviced by the landlords, such as in Kalakla, and Droashab, in Khartoum north. Third, land concessions with or without charge, which also includes illegal selling of plots by the squatters. All three methods of land acquisition reduce the abilities of the planning authorities to regulate urban development (Ward, 1981).

Gilbert (1984) summarised the role of the state as far as land is concerned as follows:

> 'The advantage of examining land allocation is that it is normally very clear whom the state is or is not representing, what kind of policy the state is following. But, the role of state will vary in time and place. The balance between these different goals, between legitimisation and the favouring of a particular group, between trying to produce a rational city design and allowing building firms to make speculative profits, between trying to accelerate capital accumulation and reducing residential segregation, can only be answered in empirical terms. It can only be answered in a particular time by looking at a particular situation' (Gilbert, 1984: 229).

The Global Shelter Strategy (UNCHS, 1990b: Paragraph 93) states that in countries where land is owned or controlled by the government, like the city of Khartoum, the distribution of serviced land could be carried out through administrative and judicial procedures. Land should be allocated on the basis of technical criteria, with the quality and value of land being taken into account (UNCHS, 1990b).

Any appropriate land policy should involve the availability of a land cadastre, registration system, land inventory and land information systems. These are essential in any urban land management programs (UNCHS, 1997b). The cadastre and land registration system could be designed for different objectives, but not necessarily a full land cadastre, as these could be unattainable for poor countries like Sudan. Their function is to provide safe and certain foundations for land acquisition, enjoyment and disposal of the rights of land (Dale, 1997). However, in Khartoum the land registration system falls under the judicial authorities. Also the objectives seems to involve the collection of revenues and taxation, and does not effectively serve the land management objective and land market assessment purpose, because the availability of the cadastre helps providing accurate estimates of the expected revenues from taxation, based on plot details and characteristics. Simpson (1976) described land registration in Sudan as successful. Although it has long been applied (since the colonial

period) it still operates with its inherited characteristics. Although it is now around fifty years since independence, the system kept its main procedural and legal attributes with no drastic change. A computerised registry records replaced the old manual system to simplify the process of producing title deeds.

Availability of land is a key issue in the housing supply. Franklin (1981: 9) argued that "Land is the most essential and precious of all physical possessions". In most cases, there is no absolute shortage of land to meet the urbanization demand. In physical planning land is not only the source of the natural resources, but it is also a platform on which most forms of human activity take place, and on which all human activities depend. All activities undertaken on land, sea or air and even in space require the use of land and it therefore must be expressed in terms of land-use (Franklin, 1981). There is always a problem of providing infrastructure and services to the land in its natural form in order to be used by man and his activities.

4.3.2. Land tenure issues

Payne (1997) argues that the central issue around the urban land tenure policy is to realize an equitable balance between the interests of the landowners, developers, residents, and the state, whilst recognizing the need to increase the efficiency of utilization and increased productivity. He maintains that such issues are clearly difficult to achieve, as they are often conflicting. Issues addressed include the extent of the public sectors intervention and the national land ownership, and ownership modes (Payne, 1997).

Payne (1997) classified the land ownership policy in Sudan within the African policy practises as having a tendency to improve the efficiency of land allocation for both public and private use (Payne, 1997:11). Generally, he identified three main types of national tenure policies, freehold, conditional freehold, leasehold, and other options, which include condominium ownership and co-operative ownership. In Sudan, nearly 99 percent[33] of land is government owned and allocated on a leasehold basis (Ahmad, 1989). But the other one percent is mostly freehold land along the inhabited parts of the rivers sides, including cities. So, the land shortage is more accentuated in the urban concentrations that are located at the riversides and large inland urban centres, while in rural areas no shortage exists. An advantage of the public land ownership is that it could be allocated equitably to all social

[33] No official figures on this ratio were found but this figure is an assessment of some officials and academics. Most of the freehold lands are located along the river coasts.

groups including the low-income households. Not only this, it also could be easily allocated for different land uses and urban functions. However, the adopted practices do not fully reflect realizing these measures. The case exists in Iran (Ganbari Parsa and Madani Pour, 1988), where land allocation and urban growth during the pre-revolution period was determined by the State, unlike in many other countries where fewer landowners have control and a monopoly over the urban land. Ganbari Parsa and Madani Pour (1988) argued that such a case has not done much to enhance a more equitable distribution of the resources between low-income groups. Madani Pour (1989: 119), based on the Iranian experience, argued that 'the most important defect of the post-revolutionary land allocation programme was the change of hands of the allocated land by the originally targeted people to upper strata due to the absence of a supportive financial system'.

Amongst the different systems of land tenure and property rights is the Islamic concept. The basic concept around Islamic land ownership is that land belongs to the person who 'vivifies' it. Payne (1997) classified land ownership in the Islamic land tenure system into four main categories:

1. *Mulk*: full ownership right by the individual.
2. *Miri*: state ownership of land, which carries *Tassruf* use rights, which can be sold by the owner or inherited, but over which state control remains.
3. *Waqf*: land stopped for God and religious foundations, and
4. *Masha*: land owned collectively, originally by the tribe.

The advent of Islam modified the indigenous tenure system which was prevalent in Sudan during the pre-colonial period (Rakodi, 1997). The Islamic tenure system is incorporated into the laws in Sudan as a reference for settling land disputes, but it is not used by people in urban areas to acquire land through vivification. Instead, the leasehold is used by the government to dispose plots to the people as sites-and-services. However, special laws were enacted under the policy of the government to encourage and attract foreign and local investments in real estate during the last decade.

Traditional and locally controlled land systems that are generally available in some African countries realize potentially equitable allocation practices, and are less expensive to operate, contribute to the social security, welfare and the available loyalty systems (Tipple, 1999). Tribal land ownership that is disposed of by the tribal leaders out of the one percent freehold

portion still exist in some parts of the urban areas and in Khartoum, namely in older parts of the peripheral villages that have become part of the city region. However, such land represents an important housing land resource and it is expected to play an important role in the land supply in future. Most of this land is currently agricultural but it is expected to be converted to residential while government-owned land dwindles.

4.3.3. Speculation and commercialisation of land

In many third world countries, speculation on land becomes an alternative to the monetary value of the savings. It is considered as a vehicle for storage of capital (Franklin, 1981), and there is evidence that urban land prices increase more rapidly than the general consumer price index (Doebele, 1987: 120). It is assumed that governments should make all possible efforts to curb the land speculation activities. Land-tenure system and the supply of land should be improved. In the current situation, large urban areas remain unutilised or under-utilized due to speculation or inefficient land management (UNCHS, 1994c).

A new trend of housing policy in Khartoum is the commercialisation of land in the sites-and-services projects. The government role is changing from a primary land disposer to a land seller. Commercialisation of land adds more fuel to the land price increase (UNCHS, 1991b). In Sudan the government tends to sell land for quick revenues or to convert the land tenure from illegal to legal, as is the case in many upgrading and rehabilitation programmes (Ahmad, 1989). In recent years the sold lands covered the most valuable vacant lands that fall within the urban growth boundaries, where they can be easily serviced by extending the infrastructure networks from the surrounding old serviced areas. Obviously such processes did not consider the appropriate land use planning techniques, which determines that land should be allocated for specific use and controlled according to specific planning control measures. It could also be viewed in a different way that these pockets of lands were left over because the official planners were uncertain about the actual use for which they should have been designated. They were then left for whatever land use need arose. It has been argued that the sold lands often ignored the low-income housing groups (UNCHS, 1991b).

It has been pointed out by Baross and Van der Linden (1990) that the urban poor suffer higher land prices in the private land market than those they would have to pay if government had supplied land directly to consumers (UNCHS, 1991: 18). Experience from India, for example,

shows that the government has failed to deliver adequate land to the poor in an efficient and equitable manner, except perhaps in Delhi (UNCHS, 1991:18).

It is recommended by UNCHS that strong government action is necessary to reverse the trend towards declining access to land among the low-income groups caused by the process of commercialisation. Solutions included the following options (UNCHS, 1984, 1991):

1. To include the utilization of the vacant public land (with some restrictions on tenure to prevent its use for speculation).
2. Compulsory purchase and expropriation of private land.
3. Purchase on the land market, and land exchanges of different kinds.

In spite of he unclear results of many attempts by the government to intervene in the land market, there have been more successful and interesting experiments. Of these nine types could be cited (UNCHS, 1991):

2. Land sharing.
3. Land adjustment.
4. Resettlement and transfer of titles.
5. Land banks.
6. Un- serviced land.
7. Cross subsidies.
8. Land bartering (UNCHS, 1987:4).
9. Land gifts and donations (UNCHS, 1987:4) through the *awgaf* and *rebat* which are common in many Muslim communities.
10. Adoption or enforcement of appropriate land-use regulations and controls to ensure adequate land for infrastructure and services in areas in the city where the poor live (UNCHS, 1987:4). This may include enforcement of the leasehold law in Sudan where government can re-hold the land by the end of the lease period that varies according to the housing class area (see section 4.6).

The land betterment levy paid by the landlords on resale of their land in Khartoum could be regarded as a sort of land adjustment cost. Between 25 and 40 percent of the resale cost is levied as a betterment tax, justified by that this additional cost is a result of the district improvement and the provision of services and that higher living quality has been obtained from the overall development process of the residential area.

4.3.4. The land supply

The Global Shelter Strategy to the year 2000 notes that the greatest failure in developing countries in the housing sector is the inability to stimulate an adequate supply of affordable and serviced urban land (UNCHS, 1990b).

Siembieda (1994) argues the need to appropriately assess the land market performance for the policy makers. He emphasised the need to establish long-term data about the land-market, and the need to furnish techniques of dealing with the available sources of data that are often found in different forms and the documentary sources in the developing countries including government files, *catastro publico*, subdivision records, regularisation, newspapers, and private appraisers. Such data is said to be helpful in examination of the impact of exogenous events such as the external debt crises on the sectors and housing markets. The method described is similar to the typical step in the establishment of a structural plan where is it required in the first step to estimate the available urban land resource with the city growth boundary in their different forms, which cannot be achieved without availability of satisfactory data.

It is obvious that Greater Khartoum has not yet reached the stage where acute shortage of land exists. It is also clear that if no measures are taken to best utilize the currently available housing land resources it will definitely suffer that problem shortly. Not only that, but the government might very soon revert from a land disposer to land compensator, or even a land buyer, in urban areas when a shortage of land for other uses such as services and infrastructures occurs. Under the Land Disposal Act the government grants land on a leasehold basis and it has the right of appropriation when the lease expires. In this case, the leaseholder should be compensated. Originally this Act is inherited from the colonial system without any critical changes. But this practice does not seem to have been applied, because of the legal and practical difficulties inherent in the processes of the appropriation and compensation.

The public ownership of land in Sudan provides a great opportunity for the government to deal with the land supply issue. In cases where land is privately held, land supply will depend on the willingness of the private sector to dispose of it. Zetter (1984) pointed out that experience suggests that private landowners invariably fail to supply the quantities required even with incentives. He pointed out that the national ownership of public land has increased

the supply of residential plots in Sudan, but at the same time accentuated procedural problems elsewhere in the housing process, particularly access to finance and shortage of building materials. He argued that national ownership of public land puts considerable pressure on the administrative capability. He also argues that extensive public ownership will generally only bring advantages if there is a clear relationship between ideological objectives and the detailed operational needs of housing policies. Otherwise it is unlikely that property wealth will be redistributed or that land will become more readily available for housing needs (Zetter, 1984: 223).

Doebele (1987) argues that defective urban land policies are associated with defects in the urban economic productivity, and that access to ownership of a plot of land is a critical element in providing upward mobility. People who acquire a piece of land would be able to establish themselves in the urban economy and will be exposed to gradual capitalization of the assets. He points out that:

> 'A secure parcel and house can be the basis for a small commercial and industrial enterprise, in which the whole family may become economically productive. The same parcel and house provide a financial cushion against loss of outside employment through illness or economic downturns. They also provide security for obtaining credit, often essential to small enterprises and individual efforts to become productive members in the society.

Effective action to ensure access to parcels of land in cities is therefore not only necessary for social justice, it is fundamental to ensure that all members in the society are as economically productive as their talents and energies permit them to be' (Doebele, 1987: 111).

Government attitudes towards illegal invasion of public land vary. While some fight encroachments some others for political reasons do not defend the public land permitting the poor to illegally acquire the land through invasion and squatting. Doebele (1987) further concludes that the access of the poor to the capital depends on their availability of access to land. He puts forward:

> 'The ability of the poor to solve their own problems has been, to a large degree, based on the possibility of their obtaining access to a plot of land. If, as suggested above, such access is becoming more and more difficult, the possibilities of self-help shelter are correspondingly reduced. Studies have shown that a sense of security of possession in a parcel of land will release surprisingly large amounts of capital. If, however, the best that most migrants are able to expect is rented quarters, this capital will not be forthcoming. Those who create the rental quarters will, of course, be adding to capital stock in the process of constructing such units. However, the number of families

> participating in this form of wealth creation will be greatly reduced (Doebele, 1987: 118)'.

Evidence has shown that in some countries housing land has been allocated not only to low-income groups but also to high and middle-income groups as well. For example in Bamako - Mali, Mexico, and Karachi - Pakistan, urban public land was allocated to the high and middle-income groups rather than the poor (Baross and Van der Linden, 1990). It should be noted that in Khartoum *Al-Engaz* housing plan allocated over 85 percent of the plots as third class housing which is assumed to be for low-income households (MHPU, 1992). However, the allocation system does not seem to be strict enough to ensure that all these plots have reached the targeted low-income households.

In Greater Khartoum, the unplanned large-scale subdivision of land as sites-and-services represents an extensive exploitation of the publicly owned land that caused an urban sprawl. The lack of efficient transport system makes the situation more complex. Doebele (1987) summarizes that increasing urban housing land supply could be achieved through three approaches as illustrated in *Table 4.2*.

Table 4.2 Approaches for increased housing supply and proposed actions
After Doebele (1987)

Approach	***Actions***
Increased supply through direct public action	Accelerated construction of service systems and improvement of transportation systems.
	Improved methods of cost recovery
	Recapture of all increments arising from public investment to construction costs.
	Reducing the attractiveness of the urban land as a vehicle for the storage of capital through taxation, land-use controls, credit controls and price freezing.
	Prevention of unnecessary destruction of existing low-income settlements.
	Better legislation for compulsory acquisition of land.
	Establish inventories for publicly owned land.
Increased supply through public/ private interaction	Supporting informal systems.
	Joint public-private development.
Making existing supply more efficient	Re-examining the question of appropriate standards for plot sizes, building codes and infrastructure.
	Community participation that leads to mobilizing the energies and ideas of local organizations.
	Initiation of co-operative ownership.

Baross (1983) identified three forms of articulation of urban land supply, non-commercial, commercial and administrative. The first refers to builders who do not pay for the right of holding the land according to social custom. The second refers to the land market where land bears a monetary transfer price. The third refers to the capacity of the state to acquire, dispose of and allocate land, or change its form of tenure to regulate its utilization and development. Baross (1983) argued that while state intervention in developing countries rarely ignores the commercial articulation, either in the process of acquiring land or of allocating building plots in terms of the distance to the sites-and-services projects and plot charges, administrative power plays an important role in government participation in the management of urban land. In the case of Khartoum, an example where land is controlled by the state (Baross, 1983:185), the government's administrative role has a distinctive influence on the allocation of the land resource. Hence it influences wealth distribution to the people.

4.4 Urban infrastructure

Infrastructure development is associated with levels of human welfare, economic efficiency and health conditions. The provision of water supply, sanitary systems, surface water drainage, and safe waste disposal are central issues to good housing and living conditions and to health (Choguill, 1999; UNCHS, 1995). Other forms of infrastructure such as roads, railways, ports, telecommunications and electric power supply are also central to prosperous economies. It was found that investments on infrastructures in a sample of low and middle-income countries accounts for about 20 percent of the total investment and about 40 to 60 percent of the public investment (UNCHS, 1995; Choguill, 1999). Problems related to infrastructure in general and in poor countries in particular are that they require high initial capital input, which governments cannot afford to finance. Traditionally, infrastructure has been public sector provided and funded by large-scale borrowing and finance. It is a capital intensive and highly centralized operation both in terms of the networks needed to technologically operate most infrastructure systems and in terms of accepted approaches to management (Choguill, 1999). It also requires long-term planning and longer periods of implementation and maintenance and operation costs. Choguill (1999) argues that, although the public utilities[34] are limited, usually the poor are excluded. It is the upper income people who can afford to pay for it, and it is the upper income people who are able to wield the necessary political pressure to ensure that they are not excluded from the service and to exert

[34] Public utilities are alternatively used to denote infrastructure.

pressure on the public authorities to obtain the service. The importance of infrastructure has been highlighted in the Habitat Agenda (UNCHS, 1997b: paragraph 129), to quote:

> 'Health problems related to adverse environmental conditions, including a lack of access to safe water and sanitation, inadequate waste management, poor drainage, air pollution, and exposure to excessive noise levels, as well as ineffective and inadequate health services, exact a heavy toll on the quality of life and the overall contribution to society of millions of people. They may also aggravate social tension and inequity and increase the vulnerability of people to the effects of disasters. An integrated approach to the provision of environmentally sound infrastructure in human settlements, particularly for people living in poverty in rural and urban areas, is an investment in sustainable human settlements development that can enhance the quality of life, reduce negative impacts on the environment, improve the overall health of a population, and reduce the burden of investment in curative health and poverty alleviation' (UNCHS, 1997b: Paragraph 129).

The infrastructure provision in the Third World is constrained by lack of financial resources. It is the responsibility of the government agencies to provide those services, or at least they should be provided under their supervision where they are provided by the private sector. The per capita capital cost of the infrastructure, i.e. water supply, surface water drainage, sanitation, and roads, are relatively high compared to the ability of the low-income people to pay for them. The UNCHS/ILO (1995) called for governments not only to support the role of small scale enterprises in the construction sector, but also in the provision of utility infrastructure by splitting them into small scale projects that could be undertaken by small contractors (UNCHS/ILO, 1995).

Salient problems related to infrastructure in Khartoum involve:

1. Inadequate and low standard supply of infrastructure including water supply, sanitary services, drainage and solid wastes disposal. For example, the shortage of water supply has been estimated at 49 percent for the year 2000 (Sulaiman, et. al., 1999). Sites-and-services projects at the city peripheries lack sufficient water supply and the problem of insufficient water pressure. These districts experience sporadic cuts of water supply and electricity as well. Users of substandard systems such as water vendor, rivers, canals, water points and wells have been estimated at 24 percent of the population of Greater Khartoum. People served with piped water are only 68 percent (Mahmood and Ali, 1999). However, the field survey shows different figures relating to sanitary and water supply service levels. The survey also shows that low-income housing districts are not provided by municipal public sewage service (see *Table 4.3* and *Table 4.4*). Other figures depict that only 5 percent of Khartoum is served by the

municipal sewerage system (Choguill, 1999). Almost the entire low-income housing areas are not provided with asphalted roads and paved sidewalks for the tertiary and access roads, while other housing class areas and old Khartoum have been served to a limited extent.

2. The lack of finance for large infrastructure projects, for the CBD in general, and for Greater Khartoum in particular. Such projects include but are not limited to electric power stations, major road networks, river bridges, and traffic flyover bridges (Sulaiman, et. al., 1999).

3. Pressure on the existing infrastructure networks. Most of which operate with capacities exceeding their design capacities, and the design age, such as the old sewage network and the treatment plants, and some major roads and water treatment plants (Sulaiman, et. al., 1999).

4. The lack of efficient and regular maintenance negatively influenced the operation and deterioration of the services and imposed additional costs.

5. Increased cost burden upon the consumers due to the privatisation of some infrastructures viz., telecommunication where those on low-incomes were the most affected. However, the telecommunication projects laid a good foundation for the success of privatised projects. The politicians' idea was seemingly in the case of this project that making the service attainable to the public, no matter the cost, is much better than scarcity. Cost also is high in the squatter areas where alternative systems are used. Evidence has shown that water supply costs in those areas constituted between 16.5 to 55.6 percent of the household income (Cairncross & Kinnear, 1992). Additional burden was also imposed on low-income households after introducing the pre-paid electricity charges about two years ago instead of the monthly paid bills, which were consistent with wage pay timing. Generally, it can be concluded that such alterations have attracted the expenditure of the poor people.

Choguill (1999) argued that a self-help approach to housing could be applied in the provision of residential infrastructure in developing countries viz., water supply and sanitation, through the concept of progressive infrastructure development approach or improvement approach

(Choguill, 1994; 1996; 1999). Three factors form the basis for the concept of progressive infrastructure: First, infrastructure can be built by the owners themselves or by commissioning another. Second, as houses are developed by building one room then adding another and another, infrastructure could also be developed in the same way. Third and finally, the security of tenure for land should be ensured. Choguill (1999) argues that the last issue of the lack of security of tenure is a fatal constraint to the self-help-based progressive improvement of infrastructure. Similarly, Abbot (2002) included the progressive development of physical infrastructure as an essential approach required in settlement upgrading.

Table 4.3 Sanitary system by district in percentage

	District					
	Ad-Deim	***As-Sahafa***	***Al-Kalakla***	***Abu-Adam***	***Al-Azhari***	***All districts***
Pit Latrine	34.4	62.3	54.3	53.1	64.7	55.4
Temporary pit latrine	6.3	1.4	28.6	21.9	29.4	14.9
Septic tank and soak away well	59.4	36.2	17.1	21.9	2.9	28.7
None				3.1	2.9	1.0
Total	100	100	100	100	100	100

Table 4.4 Water supply type by district in percentage

	District					
	Ad-Deim	***As-Sahafa***	***Al-Kalakla***	***Abu-Adam***	***Al-Azhari***	***Al districts***
Water Vendor	6.3		2.9		55.9	10.9
Well			2.9		11.8	2.5
Communal water point		1.4		9.4	20.6	5.4
Single tap connection	43.8	78.3	82.9	62.5	8.8	59.4
Multi-tap connection	50.0	20.3	8.6	18.8	2.9	19.8
Extended from the neighbour			2.9	9.4		2.0
Total	100	100	100	100	100	100

Similar approaches that can yield high cost reductions reaching up to 50 percent were identified by Cotton and Franceys (1994). They hold that, based on the case of Sri Lanka, the incremental improvement and community participation has created savings of 77 percent of the services costs per plot (Cotton and Franceys, 1994). The idea suggests that primary[35] levels of infrastructure service can be upgraded in an incremental approach (Franceys and Cotton, 1988). Householders and community groups can have the opportunity to upgrade their infrastructure at their own pace (Cotton and Franceys, 1994). They also pointed out that the community could be involved in infrastructure development, but there are very few practical

[35] The primary level as defined by Cotton and Franceys (1994) is the service that produces the first and lowest stage of improving the physical infrastructure to satisfy the basic needs in each sector.

experiences. Infrastructure provision (water supply, sanitation, electricity, surface drainage), and levels in Khartoum have shown a clear gap between the current levels and the desired levels (Hafazalla, 2004). The gap is even more pronounced when compared with the provision levels in the Arab countries, where Sudan falls at the bottom levels (Hafazalla, 2004).

Johnstone (1997) studied the relationship between economic inequality and urban environmental quality in developing countries, with specific reference to the provision of water and sanitation services. He tried to explore the consequences of "dual" systems, in which a proportion of a city's residents are serviced by subsidized "town" water and sanitation facilities, whilst another section of the city has been forced to develop a variety of "on-site" strategies through their own efforts. He concluded the result as firstly, that the poor are adversely affected by the low standard levels of the provision that perpetuates the bias. Secondly, a standardized provision of the service is more efficient than the differentiated levels of access and treatment, which prevail. Thirdly, the means of finance can be considered as one of the most significant and effective means of distributing resources in the urban context. One basis is that if some neighbourhoods are not affected by any sort of pollution, other neighbourhoods are likely to be affected by the degradation in other areas.

Water supply, sanitation, and surface drainage in Khartoum according to previous points fall far behind the desirable levels that would satisfy the minimum requirement of healthy living conditions. The high order types of sanitation such as municipal sewerage and multi-tap water connection are affordable to a limited portion of the low-income households. They are usually provided at later stages of the building process through windfall finance. Alternatively sewage water is splashed on streets to dry under the shining sun. During the rainy season, pools created by un-drained water become a threat with the spread of Malaria, typhoid, dysentery, hepatitis and diarrhoea diseases and other infectious diseases that cause high death tolls and create troubles for the local government authorities. Reports indicated that 70,000 persons affected with malaria visited hospitals in six provinces of Sudan in August 2002[36]. It was also reported that infection rates amongst the people in Sudan dropped from 20.5 percent in the

[36] http://www.arabicnews.com/ansub/Daily/Day/010905/2001090510.html. Accessed on 23.10.2002.

previous year to 17.2 percent this year 2002. Half of those infected by malaria were staying in Khartoum State[37].

The situation regarding infrastructure in Africa is alarming and it is far below the rates of other developing countries. Reports point out that approximately two thirds of the households in urban populations live in informal settlements, with no sanitation, electricity, water, transportation or adequate healthcare services. In 1996, indicators for sub-Saharan Africa show that only 37.2 percent of households have access to water supply, compared to an average of 60.2 percent in other developing countries. Out of these, 12.9 percent are serviced by sewage system, against 42.7 percent for other developing countries.[38]

4.5 Sustainable urban development

As discussed earlier in Chapter 2, it is an important part of the 'enabling approach' to achieving 'sustainability' in shelter provision. Sustainability is a positive contribution of the societal sector actors to reduce degradation of the urban living environment (UNCHS, 1994b; Davoudi and Layard, 2001). It is 'the need to facilitate shelter development processes which carry on effectively into the longer term without continuous inputs of resources from outside the community, municipality or society in question' (UNCHS, 1991b). Choguill (1996) defined sustainability as meeting 'the needs of the present without compromising the ability of future generations to meet their own needs[39]'. Alberti (1996) argues that there is no consensus on how to define sustainability, nor consensus on what city character best facilitates rational allocation of resources and minimises environmental impacts of resources utilization.

Sustainability is about maintaining economically buoyant, socially vibrant and environmentally sound human settlements with full respect for cultural, religious and natural heritage and diversity, utilization of the natural resources while maintaining the natural environment, preventing harmful growth patterns of production and consumption, coping with the population growth and migration, mitigating environmental degradation and resource depletion (UNCHS, 1997b: Paragraph 101). It is about 'the full participation of all interested parties in spatial planning, design and practices that contribute to sustainability, efficiency,

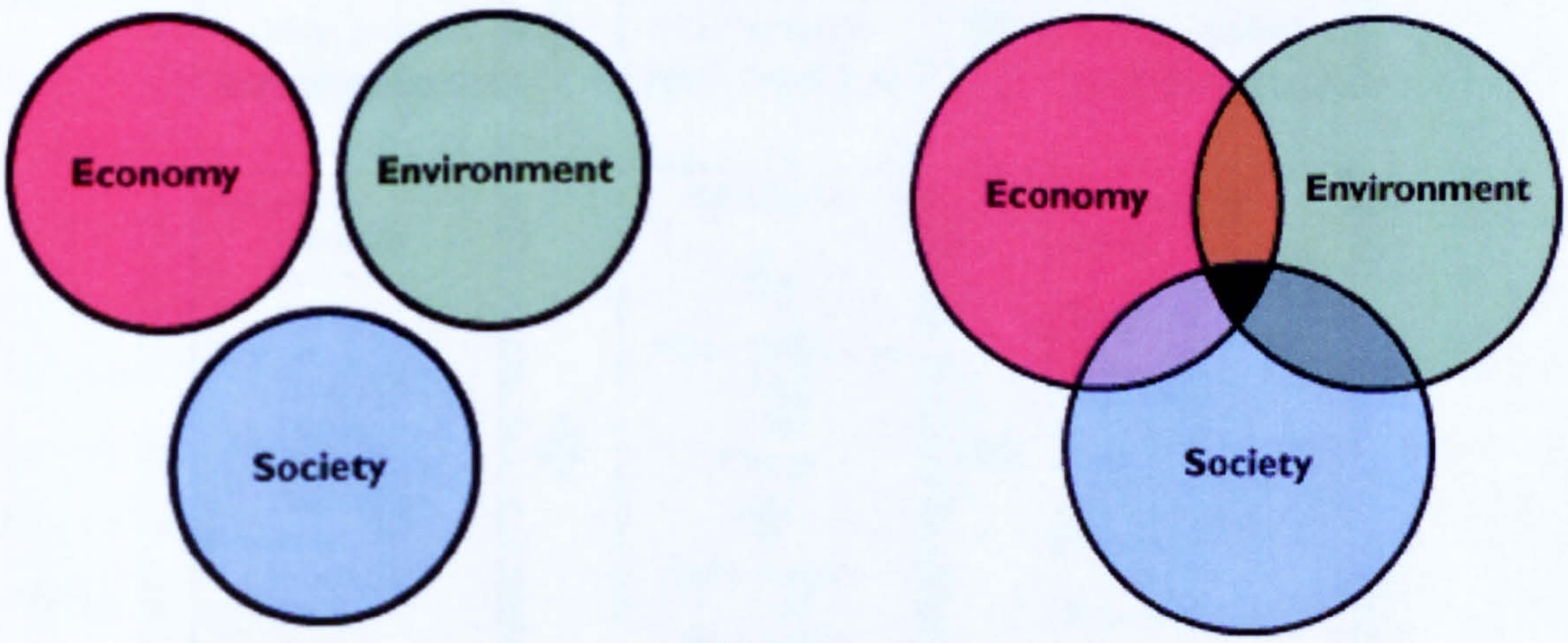
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[37] http://www.emro.who.int/rbm/CountriesActivities-Sudan-MortalityRates.htm. Accessed on 23.10.2002.
[38] http://umproa.undp.org/English/Frames1.htm. Urban Management Program – Regional Office for Africa. Accessed on 24.10.2002.
[39] This definition has been suggested by the World Commission of Environment and Development.

convenience, accessibility, safety, security, aesthetics, diversity and social integration in human settlements' (UNCHS, 1997b: Paragraph 141).

Sustainability is associated with the quality of life in the community. It deals with the economic, societal or environmental systems (*Figure 4.6*). Drakakis-Smith (1996: V) views these as five elements by adding the demographic and political elements. The three constitutes are providing healthy, productive, meaningful lives for all community members in the present and future. Piecemeal approach solutions to one problem can make another problem worse, and these piecemeal solutions tend to create opposing groups and focus on short-term benefits.

Figure 4.6 Segments of the society and a view of the community as unrelated and linked parts
Source: http://www.sustainablemeasures.com/Sustainability/index.html accessed 14.8.2003



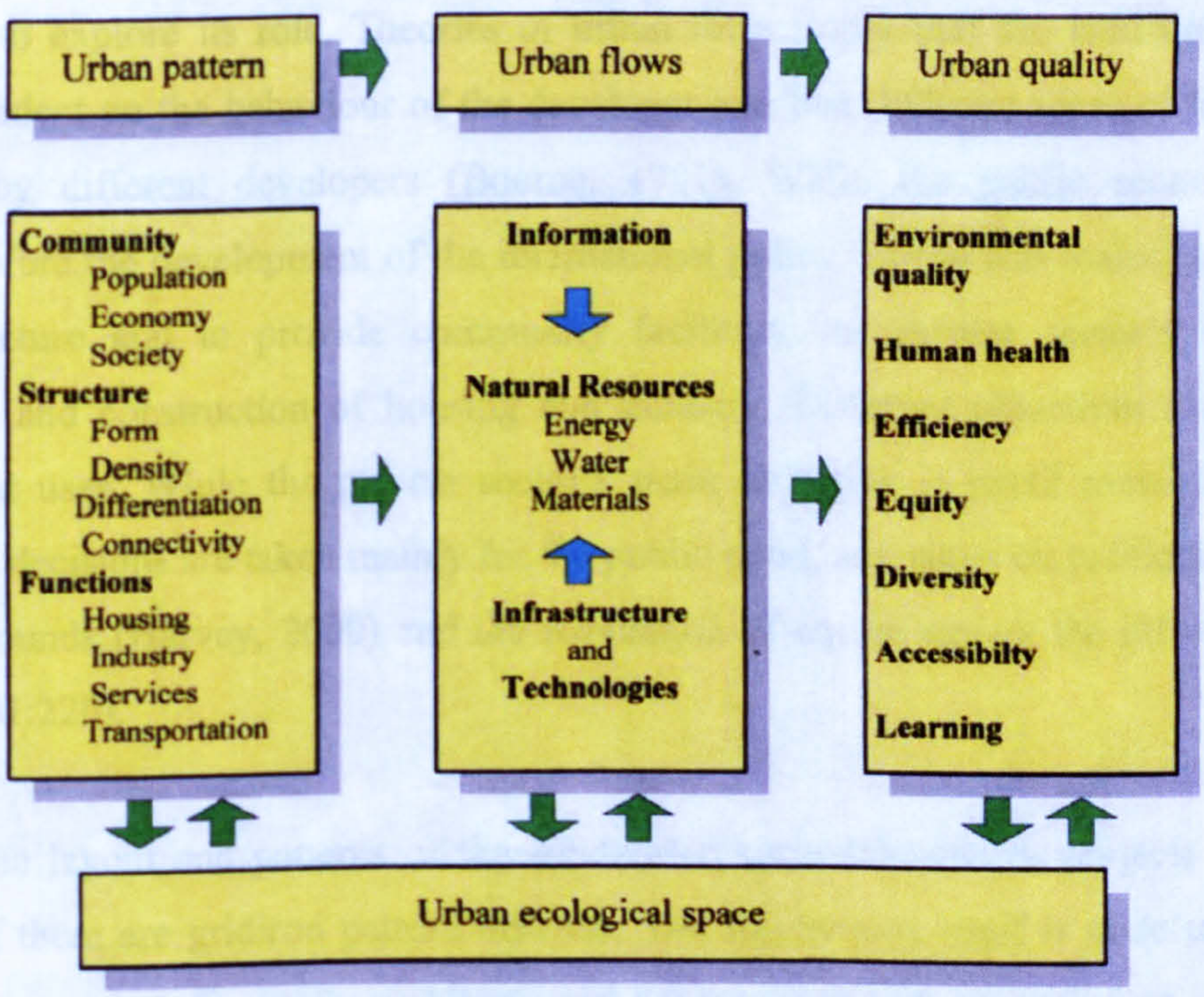
Another view of sustainable development shows that essential components of sustainable cities include environmental integrity, quality of life, economic security and democratic participation. Indices have developed in every aspect of these constituents to measure sustainability. Alberti (1996) viewed urban sustainability within three dimensions, urban patterns, urban flows and urban quality; from each he provided sets of indices to help policy-makers and the public to obtain the right signals and chart city efforts to achieve sustainability. The objective is to provide cities around the globe, urban planners and managers and other government officials with the essential information necessary to preserve the Earth's natural capital resources. In more detail, the urban pattern indicators are shown in *Figure 4.7*. Within the Islamic *shariah* context Anis-ur-Rahmaan and Anis (1996), expressed

preservation of the sustainable development under the Islamic ideological rule "prevention" is better than "cure". They suggest (Anis-ur-Rahmaan and Anis, 1996:82):

> "It advocates the utilization rather than wastage of consumable resources; conservation rather than depletion of the natural resources; and improvement rather than demolition of the built environment. It sets high standards or cleanliness and calls for noise-abatement measures that lead to a very hygienic, serene and calm environment rather than unsanitary, noisy and morbid environment" (Anis-ur-Rahmaan and Anis, 1996:82).

The last theme also addresses what planners should do for the squatters, slums and the dilapidated urban areas, calling for upgrading for better living and environmental conditions, and coping with urban theorists who oppose eradication of slums and bulldozing squatters.

Figure 4.7 Urban sustainability dimensions
After Alberti (1996)



At the international level, the efforts to achieve sustainable development were reflected in the adoption of the Urban Management Programme (UMP), which was initiated jointly by UNCHS, WORLD BANK and UNDP, recognizing the need for a multi-sectoral approach to urban development and encouraging sustainability for improved urban living conditions, strengthening the contribution of the urban areas on economic growth, social development, and the alleviation of poverty (UNCHS/ILO, 1995).

Viewing the urban environmental conditions in Khartoum, observation shows an existence of continuously deteriorating living environments at least over the last thirty years or so. The inability of the government to meet the demands of the increasing population is a main reason for the deterioration of the environmental conditions. Symptoms include uncontrollable squatter settlements that lack basic water supply, sanitary, drainage and electricity. The lack of these services has also extended to old and central areas of the city. The deterioration of the urban environment has been visualized by Ahmad (2000), who ascribes it to the dismantling of the planning machine following the colonial period, the poor governance, the political ethos, and the wrong planning attitude of the governing regime.

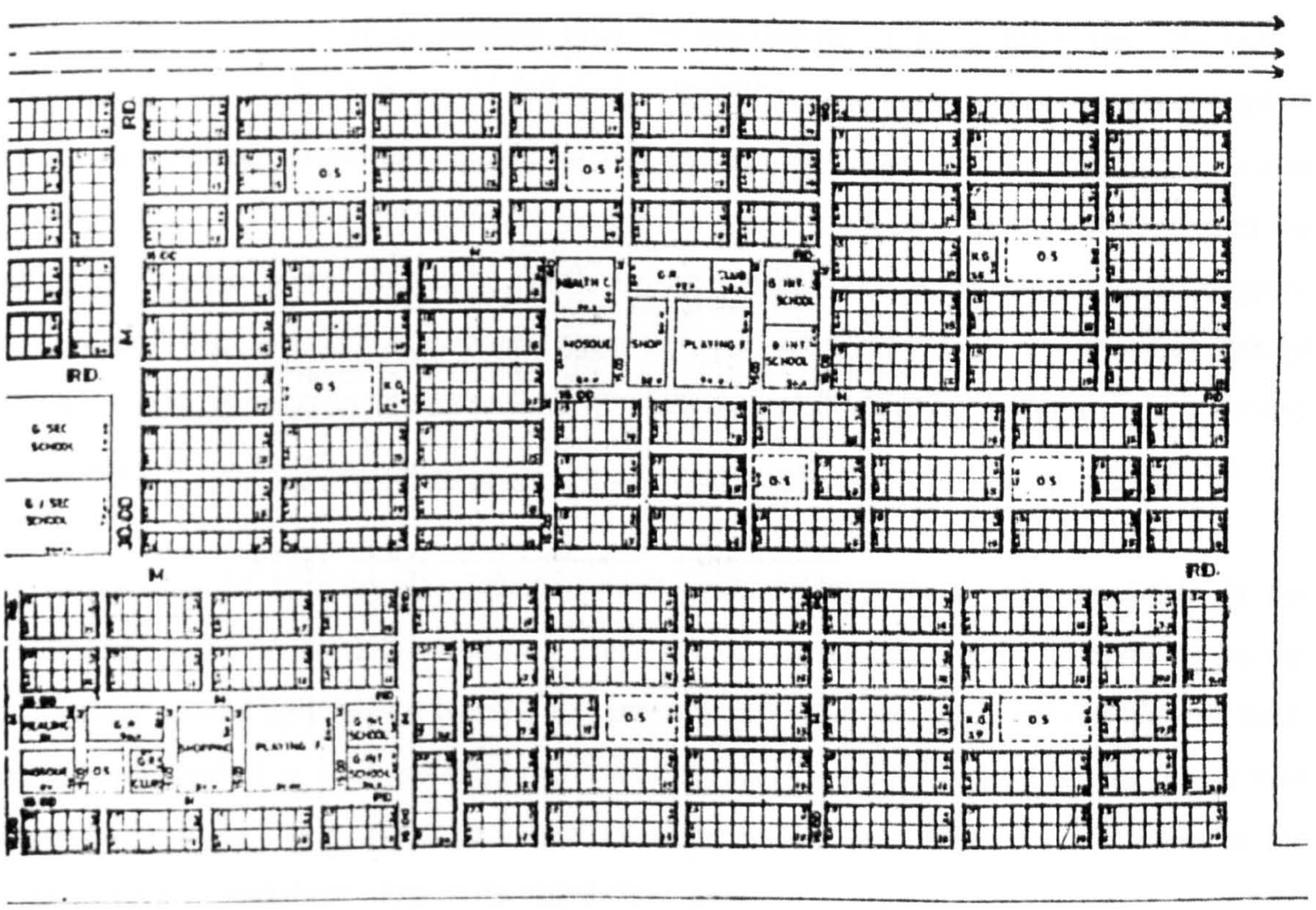
4.6 The land subdivision process

The main public sector's task in the sites-and-services projects in Khartoum is selecting large parcels of land mostly located at the outskirts of the city region and subdividing it into residential plots. It is important to look into the subdivision process undertaken by the government to explore its role. Theories of urban form imply that the land use pattern is largely dependent on the behaviour of the developer and that different types of land use are formulated by different developers (Bourne, 1981). While the public sector's role in Khartoum before the development of the international policy frames was mainly to lay down the infrastructure and to provide community facilities, the private sector's role is the development and construction of housing and industry. Different objectives also result in different land uses. While the private sector's main objective is profit maximization, the public sector decisions are taken mainly for the public good, and taken on political, social and economic grounds (Harvey, 2000) and the realization of equity among the different groups (Bourne, 1981:220).

A view of the layout and patterns of the subdivided sites-and-services projects shows that almost all of them are gridiron pattern districts. The subdivision itself is undertaken by the housing department staff, mostly architects and geographers with no sufficient training and urban planning skills and experience. Even the upgraded areas are adjusted to the gridiron pattern system. The plans are block-based row subdivisions with a clear dominance of the X-junctions and very limited T-junctions (see *Figure 4.8*). However, Rybczynski, et al. (1983) pointed out that grid plans are chiefly characteristic of the sites-and-services as they are a result of expediency. It has a number of advantages viz., it rationalises the circulation of infrastructure, and it could be easily and quickly subdivided and laid down. The planner has

to choose between a limited number of design decisions. The gridiron plans can also be applied to extremely large sites with roads that could be indefinitely extended and easily numbered and named (Rybczynski, et al., 1983; DeChiara and Koppleman, 1982), and the plot sizes could be easily determined, surveyed and laid down (Hafazalla, 2003). Anis-ur-Rahmaan (1993) argues that in the context of Saudi Arabia the grid patterns are energy efficient at the metropolitan level, and they have been institutionalised in the planning of the Saudi cities. Road hierarchies in the sites-and-services in Khartoum are not strictly maintained, and most open spaces are kept as large government reserve plots with unidentified use, which might raise scepticism about the real purpose. However, it creates some flexibility to adapt to future changes, but no clear regulations and zoning identify their land uses. Also the residential plots have no clear zoning regulations that should involve building heights and densities.

Figure 4.8 Typical third class area subdivision of the Al-Engaz housing plan
Source: (MHPU, 1992)



Building permission for the development of the plots is granted under The Local Act of Building Regulations for the National Capital of 1991, which includes some generalised rules

with no sufficient specification of the zoning regulations of various districts (EAA-NC, 1991). The lack of future density control is advantageous in housing extensions, self-help and incremental housing for the low-income households if the households are willing to add more space, but they might impose pressure on the infrastructure networks such as water supply, and electricity. The value of any site is affected by restrictions of planning and building density controls and limits the amount of capital investment that can be applied to given sites (Harvey, 2000). Economists argue that an effective area of any site and its economic efficiency can be increased by vertical expansion, (Balchin et al., 1995). Planning and building regulations in Khartoum are not strictly applied because of a lack of administrative capacities. Poverty and low capacities of spending on construction have clearly constrained the poor households in developing their plots to the maximum permissible roofed space. In the context of Jeddah Saudi Arabia, comparatively, where zoning regulations are strictly applied, plot owners tend to develop the maximum permissible built-up area.

The land policy seemingly does not involve allocating large pieces of land that can be subdivided to smaller plots as planned units by developers or firms other than the public sector authorities. Such ideas would fall under the policies of privatisation of urban land or land reform policies. Developers could then be asked to provide some level of services and infrastructures. This could be justifiable because in any case the land will be shifted from the holding of public sector to the private sector through the sites-and-services projects. Advantages would also include better ways of land subdivision and better urban design solutions. Shortcomings include the lack of sufficient and effective building and planning regulations.

The subdivision of land by the private sector on a wide scale is only available in the unauthorized settlements by the squatters. The case of Abu-Adam district involved acquiring the privately owned agricultural land by the government and changing it into residential land; then was subdivided as sites-and-services. According to the officials land in such cases was compensated for as one plot per each acre *(feddan)* in the first class area, two plots in the second-class area and three plots in the third class area.

Chapter 5

Housing Policy Context in Khartoum

Chapter 5 Housing policy context in Khartoum

5.1 Introduction

To discuss the housing supply issue it is important to view the problem within the housing policy framework. Housing policy is the series of measures and actions enacted by the government through legislation and other means to realize an actual supply of housing in terms of quantity and quality. The development of housing policy does not only include the mere supply of housing but also intervention to improve the deteriorated housing areas through improvement plans, housing action area plans, upgrading schemes, investment programs, slum clearance, rent controls, and support lending needs (Goodall, 1987:216).

This chapter describes the housing policy with specific reference to the supply of housing in Sudan in general and in Khartoum in particular. The purpose of this chapter is to introduce the general features of the housing policy and the housing supply. The chapter introduces the basic housing issues influencing housing supply, vis-à-vis urbanization, poverty and affordability, and then discusses some salient characteristics of the housing supply and the different housing supply alternatives in a historical perspective. Finally, the chapter discusses the supply policies through the housing parameters, land, labour, finance, the construction industry, the regulatory system and the building materials, and then gives a brief conclusion.

The discussion utilizes data from various sources including the survey results and data from the literature. Some analytical parts were essential to elaborate and rationalize specific aspects through empirical calculations.

5.2 Underlying issues influencing the housing policy

5.2.1. Urbanization

Urbanization is a social process whereby cities grow and societies become more urban in contrast to rural communities. Urbanization increases the sizes of cities, and accordingly influences the demand for housing, services and infrastructure. As the rate of urbanization increases, the demand for housing increases. Urbanization causes changes in the family structure in terms of the household size, increase in the proportion of nuclear families, and changes in the way of life, job types, increases the number of single person households, and increases female-headed households (UNCHS, 1995:11). Such changes must be taken into

account when dealing with urban planning issues and the housing policy. The influences are more pronounced in developing countries than industrialized countries.

Urbanization in the developing countries is associated with the problems of infrastructure and essential public services and land. Okpala (1991) argues that in spite the 'heroic efforts' of African economies to provide infrastructure and public services, the situation has continued to manifest gross inadequacies. He holds that African countries develop at two houses per 1000 population per annum, while the UN recommends ten houses per 1000 population per annum. Worldwide, the process of urbanization has led to the increase of million-cities in the developing countries. The million-city was used formerly as an index for urban concentration by which the percentage of population living in million cities over the total population was taken as a measure (Hay, 1977:75). A new index of cities over five million is now alternatively used with the previous index. According to The United Nations Centre for Human Settlements (Habitat), (UNCHS, 2000), it was found that the number of cities with more than five million inhabitants has increased from two to 35 in developing countries, and from six to 10 in industrial countries during the last half of the twentieth century. By the year 2015 it has been estimated that 53 cities in developing countries and 11 cities in industrialized countries will have populations of more than five million inhabitants (UNCHS, 2000). The problem behind urbanization lies in the urban concentration of the population, congestion and deterioration of the living environment. High rates of urbanization have affected the economy of low-income countries, where most of them are unable to cope with the expansion of the cities and the high demand for housing and the increased demand for services and facilities. They also lack the legal, institutional, financial, technological, and human resources to adequately respond to rapid urbanization consequences.

At the international level, it is evident that levels of urbanisation are directly correlated with levels of social and economic development. Doebele (1994: 49) argues that urbanization is a wealth generating process and cause increase in the land prices. He also points out that it is not uncommon for property values to increase though scholars failed to trace and quantify the process. Dynamic cities and towns with healthy living environments are essential components in the country's development process and are vital sources of revenues not only for the cities themselves but also for rural development programmes (Payne, 1999a). Bombay as an example contains 1.5 percent of India's total population, yet it generates over 30 percent of all central government revenues. Therefore, investing in urban areas is a sound basis for

generating benefits for all and should be encouraged. Old approaches of combating urbanization are therefore not the solution. City managers at central and local governments and all other stakeholders are accordingly challenged by how to manage this process of growth and change (Payne, 1999a).

The urbanization conditions in Khartoum are consistent with what has been described by Prakash and Brusi (1993: 222). They argue that many developing countries have been undergoing rapid urbanization, and the provision of urban community services and facilities has not kept up with urban population growth, and these countries are faced with enormous backlogs. In addition, they need to build infrastructure and provide urban services for future. Prakash and Brusi (1993: 222) believe that urbanization and urban development issues have received inadequate attention in national planning. During the 1950s and early 1960s, considerable concern was given to methods of controlling rapid urbanization and the impact of urban growth on the provision of the appropriate housing units required to meet the demand and the replacement of substandard units, provision of employment and services (Ward, 1982a). Similarly, UN-HABITAT (2003d) describes the problem of urbanization in many developing countries as not being accompanied by adequate economic growth, unlike the developed countries (UN-HABITAT, 2003d: 25). The main features of contemporary urbanization have been determined by political factors such as civil war, like the case of Sudan, and repression and economic, environmental and economic factors. The last group are rural area push and urban pull factors. The first include environmental degradation, declining productivity, low-income levels, a shift from subsistence farming to export, shortage of land, and limited off-farm employment. The second include relatively high incomes, greater employment opportunities, economic security, availability of a wide range of services and infrastructure (UN-HABITAT, 2003: 25).

While the industrialised countries have mostly become urban, the developing countries are witnessing a large increase in the urban population and most population in those countries are undergoing rapid urbanization. Currently, approximately 40 percent of the world population live in urban areas and that is expected to increase up to 52 percent by 2020 (UNCHS, 2001). The scale of this urbanization is bound to cause many problems such as increased demand for housing, infrastructure (water supply, energy, and solid wastes disposal), schools, hospital beds and health centres, job opportunities, and transports, most of which poor countries cannot cope with. Potter and Lloyd-Evans (1998) concluded that urbanization as a global

process can no longer be seen as a direct correlation between development and modernization and that population in developing countries are facing such pressing problems of structural poverty, and inequality.

From another viewpoint, cities are viewed as driving forces for the national economy of different countries where most activities are concentrated. It has been stressed that urbanization is intimately associated with the generation and spatial concentration of the social surplus product (Potter and Lloyd-Evans, 1999). They are locations of industrial economic and other urban productive centres.

The growth of Greater Khartoum is influenced by the high rates of rural-urban migration. The latest census of 1993 depicted that the annual population growth rate of greater Khartoum is 2.4 percent while the annual rate of migration is 4.6 percent, giving a total growth rate of 7 percent. The census also has shown that, generally, the rural-urban migration rate exceeds 2 percent for the large cities in Sudan (Awad-alkareem, et. al., 1998). The growth was even higher during the last decade. It was stated by Khartoum State Minister of Housing and Public Services that the capital receives 100 households as new migrants every day[40], but this figure is far below previous rate of increase. The Southerners were displaced to various urban centres of Sudan owing to the civil war and others moved to Khartoum because of the drought waves, which hit the region. In 1988 Khartoum received about 45 percent of the displaced population, estimated at 1.35 million. A survey carried out among a group of them showed that the reasons are 49 percent related to war, 23 percent tribal disputes and 22 percent for employment (El-Bushra and Hijazi, 1991). Government trials to control land use under the rapidly growing city of Khartoum have failed. The official housing supply process could not cope with migration rates to Khartoum, which created increased squatter areas (Abdallah and Abu Sin, 1991). The following *Table 5.1* shows the cities over 100 thousand population in Sudan and their population and growth rates.

A wide gap of the population size between Greater Khartoum and the other urban centres could be observed. The gap between Greater Khartoum and the subsequent centre Port Sudan

[40] This was announced in a press conference that was held by Dr. Sharf-Ed-din Bannaga the State Minister of Housing and Public Services in Khartoum.

is approximately 2.6 million. Based on *Table 5.2*, the population of Khartoum constitutes of about 63 percent of the total urban population of cities over 100 thousand population.

Table 5.1 Cities over 100 thousand population and their growth rates during the 1973-1993 period.

Source: After Awad-ElKareem, et. al., (1998)

The city	***Population in thousands***			***Growth rates (percent)***		
Year (census)	***1973***	***1983***	***1993***	***1964-1973***	***1973-1983***	***1983-1993***
Greater Khartoum	808.8	1343.3	2919.8	7.02	8.3	8
Port Sudan	153.1	205	308.2	6.2	4.2	4.1
Wadi Madani	118.0	144.8	211.4	7.1	2.1	3.9
Kasala	100.5	140.5	234.6	4.4	3.4	5.2
Al-Obeyidh	92.2	138	229.4	4.4	4.1	5.2
Al-Gadarif	66.2	115.8	191.2	4.4	5.8	5.1
Neyala	62.8	112.4	227.2	9.5	5.9	7.3
Koasti	60.6	89.6	173.3	5.6	3.9	6.8
Juba[41]	56.7	81.9	-	12.4	3.7	-
Al-Fasher	54.5	84.3	141.9	3.7	4.5	6.3

Table 5.2 Population projections of the cities over 100 thousands (in thousands)

After (Awad-ElKareem, et. al., 1998)

The city	***Population 1993***	***Annual rate of growth***	***Population Projection***			
			1997	***2002***	***2007***	***2012***
Greater Khartoum	2919.8	8%	3973	5405	7942	11670
Port Sudan	308.2	4.1%	362	442.5	540.9	661.3
Wadi Madani	211.4	3.9%	246.4	298.3	361.1	437.3
Kasala	234.6	5.2%	287.3	360.2	464.1	598
Al-Obeyidh	229.4	5.2%	295.6	480.8	619.6	798.3
Al-Gadarif	191.2	5.1%	233.3	299.2	383.6	492
Neyala	227.2	7.3%	301.2	428.4	609.3	866.6
Koasti	173.3	6.8%	225.9	313.8	436.1	605.9
Juba[42]	-	-	-	-	-	-
Al-Fasher	141.9	5.3%	174.5	225.9	292.4	378.5

A number of conclusions could be drawn from the tables 4.1 and 4.2. The population growth of Greater Khartoum is the highest of all urban centres in Sudan, which indicates the high demand for housing and high pressure on the existing services and infrastructure and the need for more services and provision for infrastructure. Furthermore, Greater Khartoum will remain the sole million-city beyond the year 2012 and population will increase four-fold.

[41] No data is available for Juba in 1993 census but generally, its population estimate exceeds 100,000.

[42] No data for Juba is available for 1993 census therefore no projections are included.

Misra and El-Agraa (1983) pointed out that the government in Khartoum failed to maintain the development of both backward rural areas and urban areas due to the absence of effective plans. Misra (1983) noted that the primacy of Khartoum proliferated after the Second World War and became more excessive when the industrial policy ended up with concentrating 66 percent of the industrial establishments in Khartoum province. He also noted that at the small settlement scale of Gezira in Sudan, the distortion of the settlement hierarchy was caused by the following factors representing typical planning problems:

1. Government policy
2. Political pressure.
3. Absence of definite policy.
4. Duplication of services caused by unplanned pattern of settlements.
5. Tribal pressures.

5.2.2. Poverty and housing poverty

Housing provision in Khartoum cannot be discussed without looking at the issue of poverty because they are linked. The issue of poverty has been the focus of researchers and scholars who used to look at it from the point of view of an absolute socio-cultural and economic problem. Later, more concern was given to poverty as a major cause of the inability to secure safe, decent and hygienic housing. More concern to this issue was given by United Nations agencies, particularly the World Bank and the United Nations Development Program (UNDP) who are leading the efforts to explore the magnitude of the problem and to encourage development of policies to alleviate poverty.

Urban poverty levels are steadily increasing. Between a fifth and a quarter of the world population live in absolute poverty, without adequate food, clothing and shelter, though there is a considerable debate on the exact number (UNCHS, 1996a). It has been estimated that at least 600 million in Africa, Asia, and Latin America live in health-threatening homes and neighbourhoods (Satterthwaite, 1997; UNCHS, 1996:114). Alternatively, poverty could generally be understood as the inability to meet the basic human needs, such as inadequacy of food and nutrition and inability to secure adequate quality housing, or the lack of income and assets.

Gilbert (1992a) argued that housing could be considered a visible dimension of poverty. Indices measuring the levels of poverty could be categorized as spatial and 'aspatial' contexts.

The latter refers to the levels of income, employment types and other social factors such as mortality rates, life expectancy and so forth. The former relates to housing densities, overcrowding, and room occupancy rates, and the services provided within the dwelling unit such as bathrooms, toilets and their level of service.

Debate on the definition of poverty and urban poverty arises from the increasing rates of poverty in third world countries, and within the efforts led by the World Bank to alleviate poverty. Some tend to essentially focus on the causes of poverty and revolve around focusing on measurement of poverty. Some others think it is necessary for the poor to define poverty by themselves (Jones, 1999). The main indices used refer to calories of food per person and the income per person. Nevertheless, the index of one dollar a day is ambiguous because the amount of food one can buy for one dollar varies from one country to another. Recent trend is the use of the Purchasing Power Parity (PPP) in the assessment of poverty levels. Therefore, the alternative would be to identify the cost of the appropriate amount of food per person. The term 'poverty' is associated with deprivation and vulnerability and the three terms could be defined as quoted (UNCHS, 1996:108):

> **"Poverty** is more than low or inadequate income. It refers to lack of physical necessities, assets and income. A loss of assets is often what precipitates poverty. Assets include tangible assets (savings, stores, resources) and intangible assets (for instance claims that can be made for help or resource when in need).
>
> **Deprivation** encompasses more than poverty as it includes other dimensions such as isolation, vulnerability, and powerlessness. In physical terms, people can be considered deprived if they lack the goods and services that are ordinarily available in their society, for instance the diet, clothing, housing, household facilities and working and living conditions. In this sense physical deprivation centres on living conditions experienced; poverty on the lack of income or other resources available that so often underpins deprivation. Powerlessness is important in that it weakens people's capacity to bargain for political and legal rights, access to services and goods allocated by governments.
>
> **Vulnerability** means defencelessness, insecurity and exposure to risk, shocks and stress. Many low-income households have sufficient income to avoid deprivation until they have to cope with sudden shock, for instance a sudden increase in the price of stable foods or in the school fees or a serious injury or illness for an income-earner. Poor housing and living conditions and the lack of basic needs make people particularly vulnerable to illness and injury". (UNCHS, 1996:108):

In Islamic thought, eight categories of people deserve to be paid the Islamic benefit *Zakat,* which is the legal charity that is taken from the rich and paid to the poor. Two of them are *Fogaraa* and *Masakeen.* Both are poor people. The latter are the poor who cannot procure the cost of food for the period of year and the former are the needy people who cannot procure the cost of food for one day which means that the first are in acute poverty. However, the international definition of poverty does not greatly conflict with the Islamic definitions.

The indices used to measure urban poverty are aspatial and spatial, or physical. The first category refers to the previously mentioned indices such as income and the food calorie consumption. The second category of indices refers to room occupancy rate; plot area per person, level of services available in the house and the house quality. The factors in the first category are rather indicators of absolute poverty. However, they are adopted by those who tend to focus on development of poor housing areas and upgrading squatter areas but are not basically focusing on the causes of poverty, in contrast to those who adopt the first category who look to poverty as a stimulus for some problems including the unsatisfactory housing quality and inability to secure a house. The housing conditions in the cities of developing countries, which could be measured by both categories, are a function of the per capita income of the household, wealth distribution and the rate of urban growth (Gilbert, 1992a: 117).

Analysis of urban poverty has focused on defining the poverty line by which people are classified as being below or above. Then accordingly the implications and causes could be derived and policies and solutions could be set. However, the definition of a poverty line faces a methodological problem of oversimplified conceptualisations of poverty and their limited contribution to explaining its continuation, reduction or deepening. The assessment of poverty has relied on quantitative measurements of poverty indicators based on income. Rakodi (1995a) argued that this method implicitly assumes the existence of wage labour. She pointed out some methodological problems such as variations in the household size, difficulty of estimating income levels as some households consume their income, the selection of appropriate deflators, the composition of consumption differing between income groups, costs of different goods change at different rates and calorie requirements variations between different groups of people. She concluded that such complexities could be accommodated by increased methodological sophistication (Rakodi, 1995a). Merrett and Russell (1994) pointed out that the disparity between the costs of supply of housing of good quality in one side of the

equation, and the net household income allocable to housing expenditure on the other side of the equation, is a fundamental cause of housing poverty.

The poverty line has been used to develop general strategies that focus on alleviation of poverty and to develop strategies that would enable households to build houses. One of the World Bank's methods of measuring income poverty is that it is the people whose income is less than US$1 per day measured in dollars[43]. The national poverty rate is the population living below the poverty line based on the population-weighed subgroups estimate from household surveys. It is counted as the population below US$1 a day and population below US$2 a day, equivalent to US$1.08 a day and US$2.15 a day at the 1993 international prices (UN-HABITAT, 2003d). A main problem of this measurement is derived from the underlying adjustments of international price differences. It assumes that $1 a day is the correct average price of the subsistence consumption. In order to adjust this measure there was a need to convert it into national currencies. Therefore the World Bank used the purchasing power parity (PPP) rates, which are price indices that compare the price of a bundle of goods in one country with the price in another (UNDP, 2003; UN-HABITAT, 2003d).

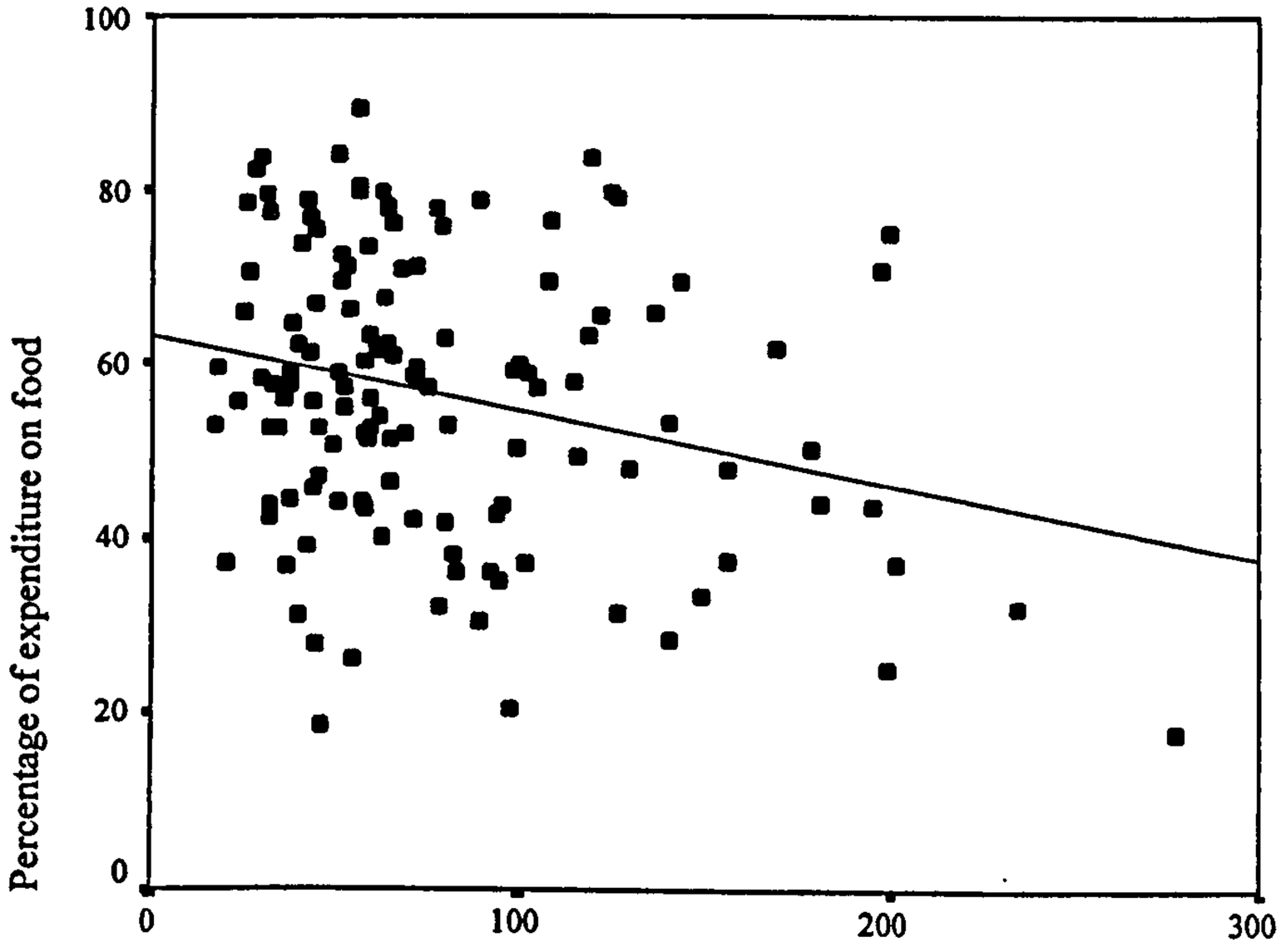
In Sudan the Steering Committee of the Strategic Programme of Poverty Alleviation (SCSPPA) estimated the population under the poverty line as half of the total population of Sudan in 1996, i.e. about 15 million. Five million of them are in acute poverty. The strategy of the committee is to reduce population in poverty to not more than 10 percent by 2020. The estimate of people in poverty made by the committee was based on the limit of US$ 1.0 per day and that the expenditure on food constitutes about 65 percent of the income and an average family size of 6 people. According to those assumptions, it was pointed out that households with a monthly income of SDD27000 or less are below the poverty line. It should be noted that the minimum monthly wage in Sudan is officially defined as SDD3000.[44] Other figures of poverty in Sudan depicts that in 1995, around 90 percent of the population are below the poverty line, and it was reported as 75 percent in 1990, which indicates an annual growth of 2.5 percent of the population poverty.

Analysis of the sample data of the fieldwork in this research depicts a correlation between the expenditure on food and the income per person. It has shown significance at 0.190 by

[43] http://millenniumindicators.un.org/unsd/mi/mi_dict_xrxx.asp?def_code=413 accessed 11.3.2004
[44] Al-Sharq Al-Awsat newspaper, 2000.

Pearson's method, which indicates an inverse relationship. Accordingly, it could be concluded that the percentage of expenditure on food decreases as income per person increases, but the curve could be to some extent described as flat. See *Figure 5.1*.

Figure 5.1 Expenditure on food and income per person scatterplot[45]



The analysis of the questionnaire data shows that expenditure on food represents approximately 57 percent of the household income and, assuming US$ 1.0 to be the poverty line, the percentage of people in the sample in poverty is 67 percent[46]. However, according to the SCSPPA, Sudan's population of those with a monthly income below SDD27000, which has been defined as the poverty line, is 58 percent. This large gap between the poverty line and the minimum wage has a direct influence on the affordability of building a house and gives opportunity for corruption and other methods to compensate the deficit. However, part of the methodological problems brought up by Rakodi (1995a), which controverts the quantitative measure of poverty, are clearly applicable in the context of low-income

[45] The outliers were excluded from the calculations, which were six cases. They include households whose income is extraordinarily high namely those above SD100,000 and income per person above SD 30,000.
[46] This figure has been calculated by dividing the total family income by the equivalent US dollar value and again dividing it by 30 days and again by the family size.

households in Khartoum. She pointed out that poverty assessments have relied on quantitative methods. These quantitative methods were accompanied by some methodological problems, such as 'variations in size and composition of the household, difficulties of estimating income levels in economies which are only partly *monetised* and in which households consume their own production, how to deal with the fact that consumption generally exceeds income and the selection of appropriate deflators' (Rakodi, 1995a: 408).

Poverty issues were addressed in item 28, principle II of the Habitat Agenda. The significance of poverty eradication for sustainable development, meeting the basic needs of people in poverty, has been clearly addressed, to quote:

> The eradication of poverty is essential for sustainable human settlements. The principle of poverty eradication is based on the framework adopted by the World Summit for Social Development and on the relevant outcomes of other major United Nations conferences, including the objective of meeting the basic needs of all people, especially those living in poverty and disadvantaged and vulnerable groups, particularly in the developing countries where poverty is acute, as well as the objective of enabling all women and men to attain secure and sustainable livelihoods through freely chosen and productive employment and work.

Reaction of governments in Africa to the poverty issue has been expressed by Mattingly (1999), who maintains that there is ample evidence that poverty is caused by the failure of the distributional biases of the governments in the African city, and that many migrants from rural areas are poor. Most governments are challenged to alleviate poverty.

5.3 Housing demand in Khartoum

The demand for housing in Khartoum is linked with the sites-and-services housing option. It seems that the sites-and-service housing option will continue to be the major option in future because no remarkable changes could be observed in its prerequisites. The supply of land is not a simple task. It should be carried out in a systematically planned approach. Dowall (1994) pointed out that estimating the current and future developable land supply depends on, firstly, identifying the land has access to transport and infrastructure such as electricity and water supply that are not constrained by physical constraints such as slopes, government future plans and any structural plan guidelines. Accordingly, redevelopment potential can be measured by determining the past redevelopment activity extrapolation into the near future. The cost required could be assessed by classifying the parcels of land according to the level of services and infrastructure availability. Finally, by putting this information together with the

land-use data on vacant parcels, the future potential supply of serviced land can be estimated. The land market, therefore, can be estimated by comparing the land supply with the future demand.

The release of urban housing land in Khartoum as sites-and-services schemes was obviously not based on an extrapolation of the future demand for land, which has to be based on estimation of the current demand not on ad hoc basis as practised in Khartoum. Generally for estimating the total housing need, three components should be included (Struyk, 1988; Tipple, 1994a):

1. 'The construction of new dwellings to supply new households.
2. Replacement of units already in stock that requires demolition or major renovation.
3. Construction of new dwellings units required to relieve current overcrowding' (Tipple, 1994a: 590).

Factors affecting demand for housing have been illustrated in *Figure 2.2* chapter two. They include disposable income, nature of employment, household priorities, availability of housing finance, age and structure of the household and occupation. This section will try to synthesize their effect on the overall demand for housing and to a give a rough estimate of the future demand.

The housing need assessment could be carried out by first establishing a future population trend through the cohort survival method, identifying the household sizes and then converting the figures to the future housing need. The housing need will then be obtained by subtracting the current housing stock from that figure (BRE, 1978). Struyk (1988) identified five factors that have been advanced by various analysts as having potentially strong impacts in deriving the housing needs, viz., population growth rates, the rate of growth of urban areas, share of the household income devoted to housing investment, mortgage interest rates, and the minimum building standards selected by a country (Struyk, 1988). Housing need is a social concept defining what the society regards about adequacy, assessed regardless of the resources. Demand is about what households are prepared to demand, given income, relative price of the house etc.

In order to reach an appropriate estimate of the future demand it is important to differentiate between the number of the allocated plots in the sites-and-service projects and the number of

actual future housing units required. Multiple units could be built in a single plot, which could be traditional, apartments, or modern villas. The traditional mud housing type could be ranked as low order housing and the other two types as high order. In between, hybrid types could be located. The ranking could be scaled out on cost, occupancy or modernity factors.

The demand calculated by Doxiadis Associates and Abdulmonem Mustafa structural plan is likely to be the one which is followed so far by the housing authorities. Not only because it is the only official and professional document available amongst other outdated documents, but also because of the inability of the authorities to compile a reliable experimental measure, data basis, surveys, studies, or research that would help in developing practical solutions to the housing problem. The plan seems to have not been based on recent physical and socio-economic surveys by which dilapidated houses could be appropriately assessed. It alternatively relied on available information from different sources.

Estimating the existing housing stock for such a large and dynamically growing city as Khartoum is difficult to achieve, as most methods are expensive and constrained by limitations of time, non-availability of skilled staff, lack of appropriate maps and transport and logistics. Boapeah and Tipple (1983) founded a cheap method to estimate the housing stock for Kumasi in Ghana, but generally, adopting such techniques in this research is bound by the previously mentioned limitations. The review of the structural plan report of Khartoum revealed that it did not cover in detail an estimate of the existing housing stock in Khartoum (MHPU, 1991). It rather made a crude estimate of the future demand for housing, with no consideration of the additional housing needed for the appropriate replacement of the dilapidated units.

Table 5.3 illustrates the residential development profile for the starting year of the plan, 1990, and *Table 5.4* illustrates the housing demand calculation for the Doxiadis Associates and Mustafa structural plan for the period between 1990 and 2000. Parameters governing the demand for housing as shown by the report are population, household size and its change over time, and the income distribution that determines the composition of the demand by plot size, type of housing, and the level of infrastructure servicing (MHPU, 1991). Apparently, the plan did not give enough consideration to the rental and owner-occupied residents' ratios and construction costs as these greatly influence the demand for new sites-and services projects. The plan oversimplified the assessment of demand. The planning for housing on the basis of

the effective demand requires carefully analysing the factors inherent in the definition of the effective demand, such as income levels, availability of land and finance, subsidies, taxes and the household characteristics. According to Strassmann (1982):

> 'Effective demand does not indicate the kind of housing that families ought to have, but the kind that they are actually renting, buying, or building at given prices *(market or current price levels[47])*. It is a function of income, wealth, access to land and credit, government subsidies or taxes, and the need to competing goods and services. This need varies with the size of the family, its history, and its life cycle from marriage to retirement. What matters for planning, is the expected proportion between income and rent, mortgage payment, or housing value' (Strassmann, 1982:38).

It is also important to differentiate between calculations of the housing need and the housing demand. The housing need is expressed in the statement of Strassmann, as the housing households ought to have. The housing need is an assessment of the deficiencies in the existing housing stock compared to a housing stock which would provide socially acceptable standards of accommodation. The factors to be considered are the internal space standards and the level of domestic equipment, the suitability of the house plan for the variety of household activities, the quality of the design of the housing and its surrounding environment[48] (Goodall, 1987). It is therefore related to individuals or household basic needs for shelter. Calculations of the need involves demographic data, population growth rates and household characteristics together with the assessment of the current dwelling units in terms of their number, conditions, sizes and facilities (Drakakis-Smith, 1981).

Drakakis-Smith (1981) argues that the disadvantage of calculating housing needs by whatever method is that the estimates produced are daunting in relation to the physical and fiscal capacities of most developing countries, that housing investment is discouraged rather than encouraged. He argued that there has been an increasing tendency towards calculations based on demand instead of the need-oriented calculation. He pointed out that the effective housing demand is related primarily to the ability to pay for the commodities offered and is determined by factors such as household income, expenditure patterns, housing prices and construction rates, and that the effective demand is often used to justify redirecting

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[47] Addition from the definition of the effective housing demand in "*The Penguin Dictionary of Human Geography*"

[48] Ibid p. 216

government housing investments to certain income groups to avoid rental deficits (Drakakis-Smith, 1981).

Reference to *Table 5.3* and *Table 5.4*, the Doxiadis and Mustafa plan did not clearly rationalize the assumptions behind the change in household size and the factors that cause it, as illustrated in the table. While data in the base year of the plan has shown the ratios of the three income groups, the demand calculation by the end of the plan period ignored the population income structure, which is essential to its link to the affordability of the population and the demand-based assessment of housing as illustrated in the definition earlier. Household income is generally a function of the fiscal policies of the authorities and the national income forecast that should be carefully assessed and extrapolated. Population growth, which is a main indicator of the housing demand, was also not given satisfactory consideration. Population growth includes both the natural population increase and the population increase caused by rural-urban migration and the in and out trade-off of the international migration if there is any. Based on the natural population increase, which is 2 percent for the population, the annual housing demand will increase accordingly and around 1500 housing plots will have to be developed as conventional sites-and-services. However, migration estimates reach up to 6 percent, giving additional 4500 plots if the migrants are to be formally accommodated, giving an approximate net residential area of 210 hectares. This is in case the plot size is 350 sq. m. This simple estimate is just to give an indication of the housing demand for the sites-and-services option. It is quite clear that other housing options would yield different estimates of land coverage, which is a key issue in the housing supply process. Accordingly, it would be worthwhile if the public sector looks into other housing alternative that reduces the emphasis on land in the housing supply process, but not focus only on the sites-and-services option.

To have a clear picture of the magnitude of the housing problem it is necessary to assess housing need for Khartoum. The housing supply in Khartoum consists of mainly two types of housing, the government site-and-services housing schemes and the upgrading of squatter areas. The whole plots allocated for the whole period before *Al-Engaz* Housing Plan (EHP), which was commenced in 1991 were nearly 100 thousand sites-and-services plots and another 120 thousand plots of upgraded plots. These upgraded plots were at the peripheral villages and squatter areas around the city (MHPU, 1992).

Table 5.3 Residential development profile for the year 1990
Estimates of Doxiadis Associates and A. Mustafa partners
After (MHPU – Republic of Sudan, 1991)

	Income groups			
	Low-income	***Middle-income***	***High-income***	***Total***
Number of households	316,000	44,000	28,000	388,000
Average household size	8.9	7.5	5.8	8.5
Percentage of households in each income group	81.5%	11.3%	7.2%	100%
Number of plots (multi-occupancy rate reduced) [49]	268,600	39,600	28,000	336,000
Average plot size [50]	350	400	600	390
Net residential area (plot areas)	9,400 ha	1,580 ha	1,680 ha	1,2660 ha
Gross residential area	208.9 sq. km.	35.1 sq. km.	37.3 sq. km.	281.3 sq. km.
Population accommodated	2,805,000	330,000	165,000	3,300,000
Gross residential density p/ha	134	94	44	117

Table 5.4 The need for housing in Greater Khartoum 1990 – 2000
Estimates of Doxiadis Associates and A. Mustafa partners
After (MHPU – Republic of Sudan, 1991)

	1990	***1995***	***2000***
Number of households	388,000	525,000	736,000
Household per dwelling	1.15	1.1	1.0
Total housing demand	337,400	477,300	736,000
Available houses (1990 is starting year)	337,400	202,400	135,000
Demand for replacement	135,000	202,400	
New housing Demand	139,900	398,600	
Average plot sizes in the new areas	300 sq. m.	250 sq. m.	
New residential land required (gross area)	84 sq. km.	200 sq. m.	

It was proposed in the master plan of Doxiadis and A. Mustafa that an area of 47,000 hectares should be developed as housing to accommodate the population increase of Greater Khartoum up to the year 2000. According to the master plan, the population of Khartoum was 3.3 million in 1990, the starting date of the master plan, which means an increase of 2 million in population up to the year 2000. That gives a gross residential density of 43 persons per hectare. It was also proposed by *Al-Engaz* Housing Plan, which was adopted as part of the implementation of the master plan, that 116,800 plots should be allocated to people through the sites-and-services and upgrading (see *Table 5.5*).

[49] The number of dwelling units is 15% less than the number of households for the low-income groups and 10% for the middle-income groups as consideration for the multi-family occupancy.
[50] Plot area has been estimated as 45% of the total urban area by the national housing committee in 1985 and this rate has been adopted in this table.

Al-Aagib (1996)[51] gave different estimates. He assumed that there is a need for additional 350 thousand plots, of which 150 thousand were to be site-and-services and 200 thousand upgraded squatter housing plots up to the year 1996. If these figures are assumed correct, and assuming site-and-services system will continue to be adopted, there will be an additional need to accommodate approximately 758,000 people above the 150,000 and 200,000 plots estimated previously by Al-Aagib, i.e. 105,000 households.

Table 5.5 The proposed number of site-and-services units in *Al-Engaz* Housing Plan – 1991
After MHPU (1991)[52]

	Class area Category	*Site-and-services*	*Site-and-services for expatriates*	*Upgraded squatter plots*	*Complete housing units*	*Total*
Khartoum	***First class***	5,700	4,600	10,000	4,000	41,400
	Second class	3,000	-			
	Third Class	13,100	1,000			
Omdurman	***First class***	5,000	1,600	30,000	2,000	54,300
	Second class	2,400	500			
	Third Class	10,700	2,100			
Khartoum North	***First class***	3,100	2,000	10,000	None	21,100
	Second class	2,100	-			
	Third Class	2,900	1,000			
Total		48,000	12,800	50,000	6,000	116,800

The master plan estimate of the demand was rather crude and based on assumptions, possibly due to the lack of information. The estimate of the master plan for the year 2000 was based on an average household size of 7.2, a plot per single household and average plot size of 250 square metres. Accordingly, the demand was estimated as 398,600 new plots, regardless of the demand for replacement of the obsolete and the dilapidated housing, which was estimated as 202,400 units. Taking into account that 150,000 plots were provided in *Al-Engaz* housing plan until 1996, there is a shortage of approximately 150,000 plots, if the site-and-services continues to be applied.

5.4 Salient characteristics of urban housing

5.4.1. Housing classification system

A salient feature in housing policy in Sudan is the housing classification system (Ahmad, 1990). The housing policy in Sudan classifies housing into different types, which are based on income level of the household. In the past, there were four classes of housing; first, second,

[51] Al-Aagib estimation regarding the site-and-services plots is approximately three times of the planned number of units stated in *Table 5.5*, which are only 48,000.
[52] It was proposed that further number of plots to be supplied depending on any additional demand.

third and fourth housing class areas; but during the latest site-and-services schemes only the first three were adopted. The classification therefore implies the income groups. The first class is for high income, the second class is for middle income and the third class is for low-income households. Households who apply for a piece of land in a government housing scheme, are classified according to their income level after an interview. That classification is then reflected in the plot size and building materials. High-income groups obtain large plots while low-income groups obtain small plots. The standard of the building materials to be used are categorized as durable building materials for the first and second housing class areas, semi-durable for the third class area and the semi-durable and perishable building materials for the fourth class areas. The spontaneous settlements used to be classified as fourth-class area before they were upgraded. Table 5.6 shows the classification system and their corresponding income groups, leasehold durations, building standards, and the plot sizes according to the different master plans.

The application of the regulations of the housing classification system in Khartoum dates back to 1912 (Herbert and Hijazi, 1984), the year when MacLean's Master plan of Khartoum *(Figure 4.2)* was adopted. The application of the housing classification system dates back to the colonial period. Old districts of Khartoum still carry names with the housing class rank, such as Khartoum number one, located in the city centre, Khartoum 2 (*nemrah etnain*) and Khartoum 3 (*al-Khartoum talata*). The whole city in its early stages of evolution during the colonial period was clearly influenced by this classification, which clearly reflected the income levels as well as employment status, as the western part of Old Khartoum was allocated for high government staff, while Khartoum 3 for the natives. Myers (2003) argues that the initial impetus of urban planning in Britain's Africa possessions was explicitly race and hygiene-related and that what he called colonialism's 'enframing' strategy was very much dependent on the socio-spatial order idealized in the colonialists' built villages or neighbourhoods models, which later transformed through time and space. In addition, Alexander (1983) argued that 'segregation according to race was a central fact which was associated with colonial planning'. The housing classification in Khartoum appears to be a building standard-based, but also clearly reflects social segregation. Hamdan (1960) pointed out that residential zoning was avowedly on 'class-and-race' basis; and that the report on the town planning committee in 1933 openly spoke about first class zones as European.

Hardoy and Satterthwaite (1981; 1993:144) pointed out that classifying the housing land into different classes with different plot sizes, building materials and construction and the quality of services with different plot sizes, standards construction and the level of infrastructures in Sudan was criticized as implying social stratification and segregation of income groups and denying the poorest groups from basic infrastructure and services. Plot sizes are very large in the first class areas therefore encouraging urban sprawl (Hardoy and Satterthwaite, 1981:37).

Another criticism is raised by Post (1994:396) that "it is astonishing to see that the obsolete, British-inspired classification of residential areas according to wealth – as laid down in 1957 Town and Building Regulations[53] – still dominates the planning action". While the previous viewpoints criticise the housing classification system, it could be praised for allowing low-income households to build cheaply at their convenience, not defining an upper ceiling.

There are some problems that are related to the classification system. The household size is taken as a critical determinant to qualify the household for a plot, but it is not considered as a determinant factor in the plot size. Another problem is that in an unstable economy of a developing country like Sudan, income levels are not very stable due to the fluctuating economic policies that were adopted after 1982, when a severe shortage of hard currency and high inflation rates emerged. These in turn created fluctuations in the income levels of the different sectors and unbalanced distribution of wealth. Therefore relying on the changing income factor creates a variety of housing qualities, as no ceiling restrictions are imposed. Residents are allowed to build the highest standards they can afford. This makes no grounds that justify adoption of the classification system as far as building standards are concerned. Because such conditions continued to exist over fifty years since it was first adopted, higher standard housing has been developed within the low-income housing areas, hence creating a heterogeneous urban fabric where environmental and social problems often occur. Some negative consequences include difficulties in planning and provision for services as densities increase.

[53] Evidence show that in fact the classification system was applied in the housing areas before independence in 1956, as Khartoum districts were even named after the class rank, for example '*Khartoum etnain*' and '*Khartoum talata*' which indicate Khartoum the second and Khartoum the third respectively, and still these districts carry the same names. It may imply here that 1957 is the date when this classification was officially adopted by the native authorities.

Figure 5.2 Housing class areas locations in Khartoum

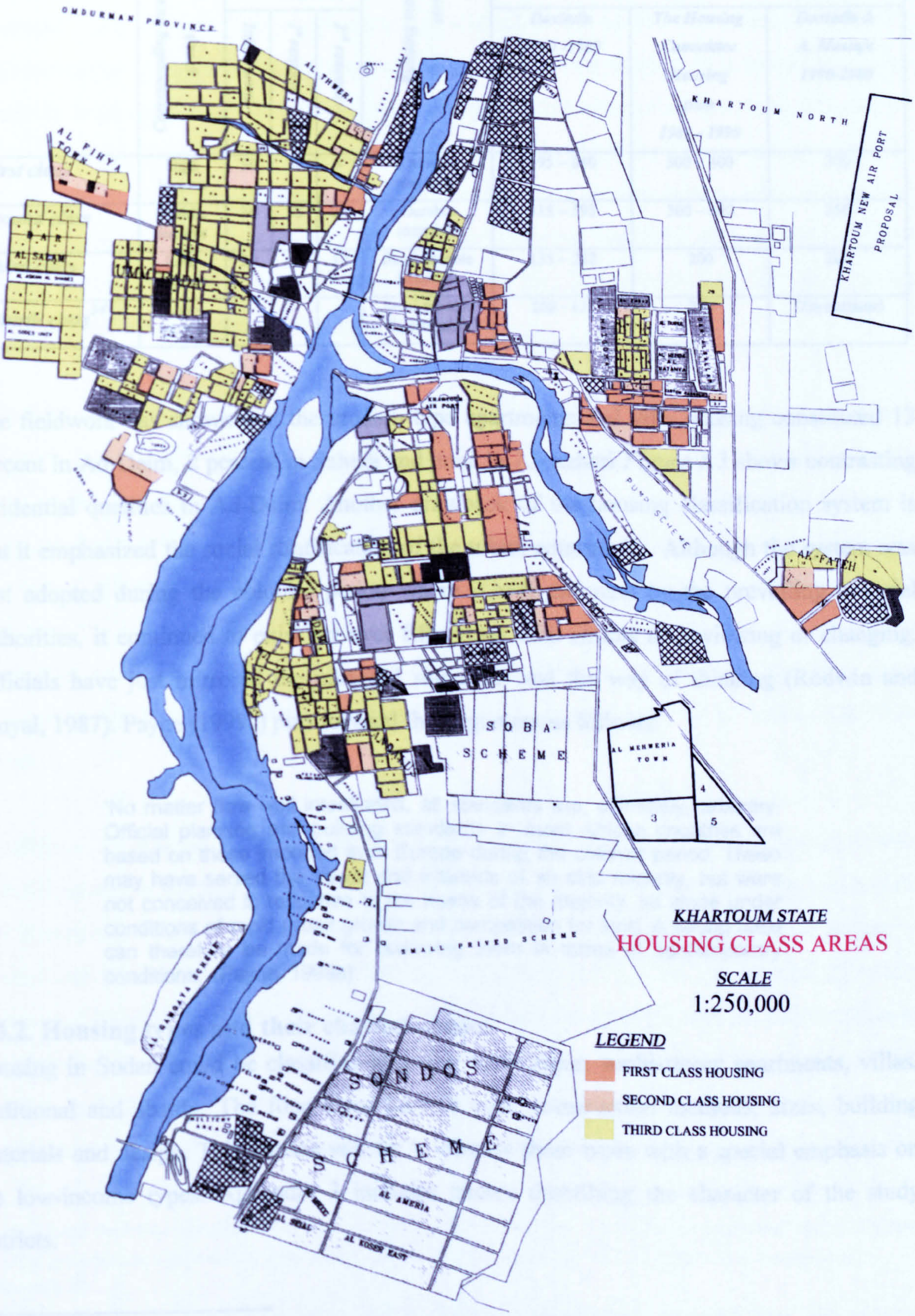


Table 5.6 The Housing classification System in Sudan

Housing class area	*Corresponding Income group*	*(Leasehold duration, years)*			*Building material standard*	*Plot sizes In square metres*		
		Initial term	*1st renewal*	*2nd renewal*		*Doxiadis 1960 -1980*	*The Housing Committee Housing plan 1981 - 1990*	*Doxiadis & A. Mustafa 1990-2000*
First class	High income	50	30	-	Durable materials	595 – 840	300 – 400	300
Second class	Middle income	30	20	20	Durable materials	315 – 595	300 – 400	250
Third class	Low-income	20	10	10	Semi-durable Materials	135 – 252	200	200
Fourth class[54]	Low-income	-	-	-	Semi-durable &perishable	108 - 135	200	Discontinued

The fieldwork has shown that the modern type apartments and villa housing constituted 13 percent in Ad-Deim, 2 percent in Sahafa and none in Al-Azhari *Figure 5.3* shows contrasting residential qualities in Ad-Deim. Another drawback of the housing classification system is that it emphasized the social stratification of the urban community. Although the system was first adopted during the colonial period where it was enforced by the prevailing colonial authorities, it continued to exist for over fifty years with almost no reviewing or changing. Officials have just mirrored the inherited standards and the way of thinking (Rodwin and Sanyal, 1987). Payne (1999a) puts forward this argument as follows:

> 'No matter how well intentioned, all standards are, ultimately, arbitrary. Official planning and building standards in most African countries are based on those imported from Europe during the colonial period. These may have served the needs and interests of an elite minority, but were not conceived in response to the needs of the majority, let alone under conditions of rapid urban growth and competition for land. A strong case can therefore be made for reviewing them in terms of contemporary conditions.' (Payne, 1999a)

5.4.2. Housing types and their characteristics

Housing in Sudan could be classified into four basic types; multi-storey apartments, villas, traditional and shanty. The four types vary in cost, construction methods, sizes, building materials and design. This section will try to discuss these types with a special emphasis on the low-income types. Appendix 3 includes photos describing the character of the study districts.

[54] The fourth class housing was relinquished during the post-colonial period and it was adopted on special cases. All low-income households were classified as third class.

Multi-storey residential apartments: The multi-storey residential apartments, which are usually built of reinforced concrete frame and burnt brick partitions, constitute not more than 5 percent[55] (*Figure 5.3*). This small amount is a result of the modest investments in housing construction by both public and private sectors, as investments in apartment buildings require relatively large capital investments and result in higher rent values that cannot be afforded by the low-income households. Furthermore, investments in apartments are constrained by the lack of sufficient tenure legislations, rent controls, the poor construction industry, the lack of skilled labour, and the high cost of the imported building materials such as concrete and cement. In the low-income housing areas apartments mainly occurred along the main streets which connect the city centre with city outskirts.

Villas: These are the multi-storey housing units that are built of concrete frames; red bricks and more sophisticated finishing materials, and are limited in number. Western style villas are found in the first and second high-income areas. Plot sizes in some of villas in the first class areas reached up to 1,000 sq. m., such as Al-Amarat district. In addition, a considerable number of villas occurred within low-income areas because some households were able to redevelop the old traditional town house into villas. According to the survey, 3.5 percent of the houses were converted to multi-storey concrete frame housing that resemble villas; most of them in Ad-Deim, the oldest area. However there are also some in As-Sahafa and Abu-Adam.

Traditional houses: these are the most common types in Khartoum. They constitute more than 85 percent of the total housing types.[56] The traditional town houses are highly convenient and compatible with the economic, social, cultural and climatic conditions of Sudan in general and Khartoum in particular. They are often built through the incremental approach. Rooms and improvements are made when sufficient funds become available for the household through savings or windfall funds, and they are often done on self-help basis. Mostly people move in to the houses before they are completed. The building materials used are mud, mud blocks, mud bricks (*Figure 5.3*), red bricks and *gishra*[57], which is in done in two ways. The

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[55] No figures could be obtained from the literature. The 5% has been estimated through observation. Figures from the questionnaire give only the percentage of the apartments that developed only in low-income areas.

[56] See note 27.

[57] *Gishra* walls (an Arabic word that means external shell) are built as one and half brick thick walls with red (burnt) bricks from the external side of the room and mud bricks from the internal side of the room. It is also an originally built mud wall room with half brick (burnt) skin added at a later stage to improve the housing quality.

first is to build a wall of red bricks on the external half and mud bricks from the internal half, and the second way is to add an external half red brick skin to already built mud walls. This method is used to reduce the cost because red bricks are relatively expensive and the mud blocks and bricks could be manufactured at home on a self-help basis by the family members.

Figure 5.3 Traditional mud and apartment housing types in Ad-Deim





Traditional houses are usually built of load bearing single floor detached rooms that are sometimes linked together with verandas and pathways. Kitchens and toilets are often placed apart from the rooms cluster (*Figure 5.3*). Roofs are timber, corrugated metal sheets, jack-arch roof or *Baladi*, which is a traditional roof built of bamboo, timber logs and thatch with mud on top. The average room size is four metres by four metres with one door and a window on one side and two windows on the opposite side, north south oriented. Verandas used to be an important component in the past, but they are recently being transformed into enclosed spaces, often done by adding a glazed panel in front of the veranda. In the traditional houses rooms are often used as multi purpose except one larger sized room, usually 7x4 metres, that is usually reserved to receive the guests. In Ad-Deim, those rooms are rare because plots are smaller. Rooms are used for sleeping during the day while at night most people sleep in the courtyards in summer. New types of roofs that are either built of concrete or blocks and pre-cast concrete panels, which are newly adopted, allowed the households to use the roof to build one or two rooms.

Other types of housing such as compounds are negligible. Compounds are often found in the peripheral villages and remote squatter areas where squatters could get hold of large plots. A

limited number of shack dwellings could be observed in the squatter areas and the vacant plots that are found within the high-income areas temporarily built by the plot guards. However, they last for a long time because most concrete frame buildings of the high-income areas take years to complete and the majority of the owners are Sudanese expatriates who live abroad for long periods. Furthermore, some of the plots are kept for protracted periods for land speculation or till enough funds could be saved to start construction.

5.5 A review of the housing policy in a historical perspective

This section gives a brief description and discussion of the alternative housing supply systems that took place in Khartoum since it was designated as a capital. Discussing these alternatives through a historical perspective helps understand the supply system within the prevailing circumstances that influenced the supply in the different historical stages. It also gives a picture of how it has changed over time and a picture of the magnitude of the problem.

Generally, the housing policy in Sudan is mainly based on the supply of housing land in the urban areas by the government, which is not involved directly in the real housing delivery system in terms of the construction processes. The site-and-services approach, which was first initiated during the last years of the colonial period, is the most widely adopted option that contributed to solving the housing problem in Sudan. Three basic types could be identified, the public housing projects, the site-and-services, and the spontaneous housing.

5.5.1. Colonial period housing

The main features of the housing policy in Khartoum before independence in 1956 consisted of the provision of residential units by the government for the civil service officials and site-and-services schemes. Public housing was mainly for the government officials, workers, the Sudan railway employees and workers, and the police forces and the military. They were often grouped in housing estates or compounds.

The housing characteristics of the three towns constituting Greater Khartoum, which are Khartoum, Omdurman and Khartoum North, were different from each other. The city of Omdurman developed from a small agricultural and trade village with a population less than 10,000 after 1885. It grew abruptly following the evacuation of Khartoum and encouragement of the Mahadists Caliph to his supporters from the various tribes to move to the city. It reached up to about 400,000 inhabitants (MEFIT, 1974). Omdurman was chosen as a capital city of the Mahadists, replacing Khartoum the colonial capital. It was built in a random

pattern resembling old Islamic towns. The city is characterized by a main mosque and the governor's quarters, a large open space and the *suq*[58] (market) in the city centre, surrounded by different and well-defined neighbourhoods that developed spontaneously. The housing types are mostly traditional single storey varying in size and shape. Roads were mostly narrow and irregular and areas were greatly congested. The housing areas were compact and the plot sizes varied.

Khartoum North developed around the small settlements of Hillat-Hamad and Hillat-Khojali. It was mainly composed of low-income housing areas for the workers in the industrial area of Khartoum North, which is the largest industrial area in Khartoum. The area is similar to Ad-Deim of Khartoum town. Plot sizes are smaller and the housing units are developed in clusters of about 28 plots grouped around an open space.

In 1830, during the Turko-Egyptian rule (between 1821 and 1885) Khartoum town was selected as a capital in 1830. Accordingly, it developed at a remarkable rate very shortly after it was selected as a capital. The governor at that time, Ali Khurshid Pasha, encouraged people to build with mud instead of skins and reeds. He also encouraged burning of bricks to build the government buildings (El-Bushra, 1975). Khartoum town developed in an Egyptian style plan but was evacuated after it was captured by the Mahadists in 1885. It was again re-designated as a capital in 1898. Its plan followed the peculiar grid pattern of Lord Kitchener with diagonal roads that resembles the Union Jack, which was elaborated by Dr. MacLean who was the municipality engineer. (MEFIT, 1974; Abu-Saleem, 1991). Khartoum, which was chosen by the colonials as a capital that contained all the government buildings, was distinctively built into a European town. The government official housing areas were built as garden cities with large plot areas that exceed 1000 sq. m. Most services were provided including sewerage and irrigation of the green areas within the city and streets were paved.

In the early 1950's the government subdivided some publicly owned land and distributed residential plots to income groups, including low-income groups. These areas were developed outside the city proper, which was bounded by the railway and the old fortification. At that time, migration to Khartoum started to increase, mainly because of the demand for labour in the recently built industrial establishments in Khartoum North and Khartoum and in the

[58] The *Suq* is the name in Arabic literature for the traditional market place.

military and the civil service. These areas were in Ad-Deum south of the city centre and in Khartoum North. In those areas plot sizes were relatively small, approximately 200 sq. m. It could be regarded as site-and-services schemes but actually, services were modestly provided and at the beginning no services were provided. There was a big contrast in the provision of services and the housing qualities between these low-income housing areas and high-income areas as stressed by the housing classification system.

The population mobility caused by changes in income levels, social statuses and human affiliations have influenced the physical form of the low-income residential areas. The push factor caused by the decline in economic conditions during the early eighties of the last century, accompanied by the pull factor caused by the oil boom in the Gulf countries, resulted in the emigration of labour. The money transfer of the Sudanese expatriates, mainly based in the oil producing countries in the Middle East, has improved the living conditions of many families and allowed housing extensions and new house construction and the flourishing of the housing land market. This status has, in turn, resulted in the occurrence of good quality houses inside the low-income housing areas, therefore disturbing the housing classification. The building regulations have no strong restrictions on the housing quality. The survey showed that 26.4 percent of the households in the low-income household have worked abroad with an average period of 22 years, and 52.4 percent have a close relative[59] who is working abroad.

5.5.2. Sites-and-services projects

The sites-and-service projects in Sudan dates back to late 1940s, extended through the last few years of the British Colonial rule which was ended in 1956. During the first half of the twentieth century squatter housing developed around the city in the south, comprising "Old Deim" which developed as 'gigantic slum', (Fawzi[60], 1953). Ad-Deim housing scheme was adopted in 1947 and aimed to move old Khartoum Deims to south of the city (Herbert and Hijazi, 1984). Old Deim was described as a huge unsanitary slum that developed beyond the railway that formed the southern boundary of the capital. The area was occupied by labourers working in the construction of the capital city accommodating a population of seventeen

[59] The close relatives include sons and daughters, one of the parents and brothers. These relatives in the Sudanese culture usually financially assist their needy relatives and give them support specially the vulnerable ones.

[60] Sa'ad ed-Din Fawzi was the Head of the Economics Department, in the University College of Khartoum during the 1940s. He conducted a survey on housing problems in the new Deim, which replaced old Deim in 1937.

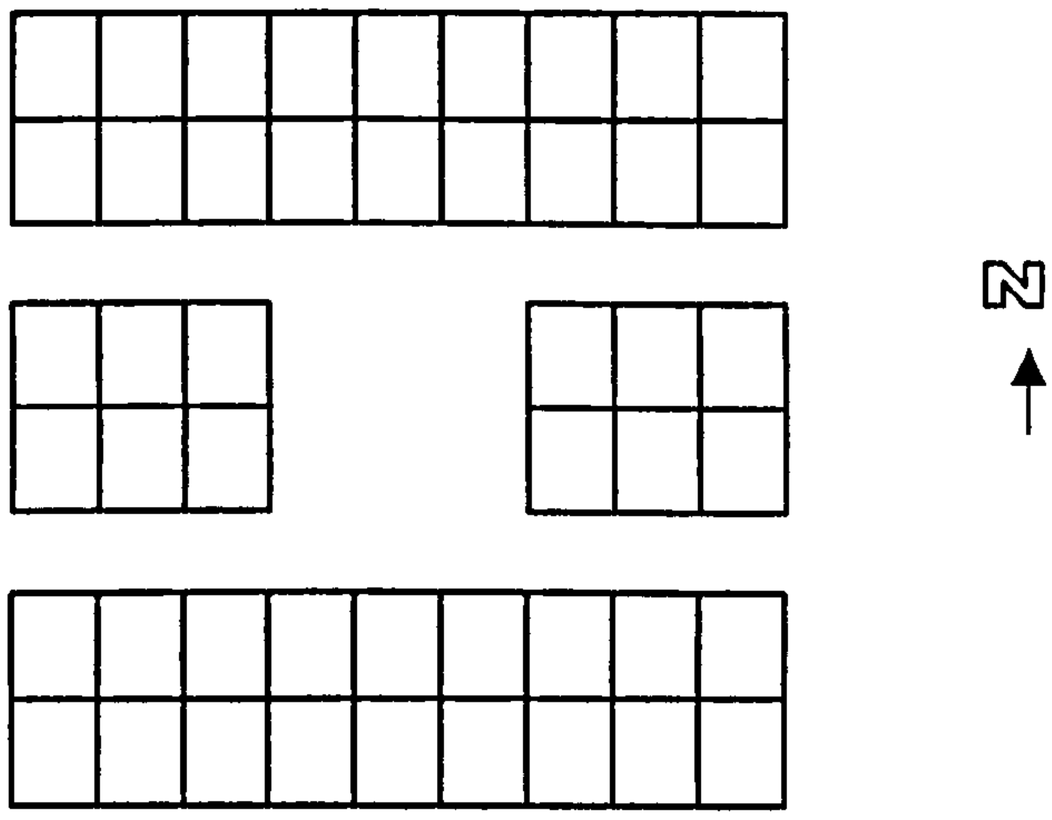
thousand, living in five thousand houses that were built of mud or mud blocks. The people were living in twelve small neighbouring settlements each called "Deim". People were living in 'squalor and unhygienic conditions' and 'terrible overcrowding', 'plots were terribly under-sized, the lanes were twisty and dirty and the area lacked latrine facilities (Fawzi, 1953:5).

The solution to these seemingly unresolved problems by the authorities in 1949 was complete demolishing of the area which was replaced by the planned "New Deims", forming the first precedent of slum clearance (Fawzi, 1953; Hamdan 1960; Arthur, 1954). The slum clearance included 5,855 houses and shops. These were replaced by 3,721 houses in the New Deim (Arthur, 1960). According to Hamdan (1960:35) New Deims were not much better than the notorious Old Deims, the exchange was less slum clearance than slum transplant. The population census has shown that in 1954 there were about eight thousand houses accommodating about forty thousand people. The area was still overcrowded with an occupancy rate of three or more persons per room. Before 1956, the city planning was undertaken by the colonial authorities. Harris (2003a) pointed out that Oram had served as an administrator in East Africa from 1948–1960, where he became familiar with many of the self-help housing programmes that were being developed under British rule at that time (Oram, 1965: 65–66). Oram published a report on a project he carried out in New Guinea where he cited a number of self-help projects precedents, including a project in Khartoum in the early 1950s (Harris, 2003a: 260). Probably this project was the New Deims project, which was in progress at that time. The New Deim could therefore be regarded as the first aided self-help project in Sudan. The layout plan of New Deim is distinctively a solid grid pattern with a repeated cluster (*Figure 5.4*) applied to the entire district. According to Arthur (1960), Sa'ad Ed Din Fawzi criticized the planning of the New Deim in three aspects:

1. It represented an appearance of monotonous uniformity of repetitive similar plots, while Arthur (1960) argued that simplicity and cheapness were the underlying factors behind the planning of the area, and the large number of open spaces was meant to reduce the monotony, when shades are provided.
2. No organised subsidies or loans were provided for the plan beneficiaries. A main feature of the whole project is that the actual construction of the house had to be carried out by the people themselves with scarcely any financial help from the authorities. The project did not include subsidies, hence representing the first urban self-help housing.

3. A number of prototype housing plans were prepared by the Municipal Engineer which the allottees had to choose from. These standard designs served the immediate object of providing maximum simplicity and cheapness, but allowing a room for future improvements.

Figure 5.4 Ad-Deim housing cluster
Note: all plots are 12.78 by 15.83 metres



At the beginning site-and-services housing projects emerged as the most suitable option after independence. Up to the early sixties of the twentieth century, the economy was stable, the urbanization rate of Khartoum was not very high, and its encumbrances were not very notable. Infrastructure could have been provided in the different housing class areas at a satisfactory level but high-income class areas, particularly *Al-Amarat* (which locally means multi-storey concrete buildings), was clearly favoured. Those areas were provided with paved roads, public sewers, drainage, electricity and telephone services whereas low-income housing areas in Ad-Deim have no sewerage or paved roads except the main roads. Generally, the site-and-services schemes, which were developed in the late sixties and early seventies, were low-density areas that consumed vast amounts of land and the high-income areas were provided with high standards of infrastructures. It has been noted by the National Housing Committee that if the expenditure on those projects were better utilized and the densities of the projects and plot sizes were reduced it would have been enough to accommodate Khartoum's population up to 1986 (NHC, 1985:8).

Since the site-and-services were first initiated, they have continued to be the most convenient option of the housing supply under the government resource conditions to provide other more

expensive alternatives such as public housing. Site-and-services have substantial contribution in the housing supply in Sudan, (Osman, 1992). The release of the housing plots generated construction by those on low-income through the self-help processes. Osman (1992), assessing the impact of sites-and-services in the urban housing market, argued that the sites-and-services projects formed an inherent sort of subsidy, giving land at nominal prices, and that the government housing plans aimed to increase low-income household's affordability through subsidization of land. However, he holds that sites-and-services in Sudan evolved as a primary housing option, the cheapest and the most convenient method of housing provision from the point of view of the individual and government. Osman (1992) asserts that the low level of real housing production in relation to the high supply of urban housing land portrays the magnitude of the housing crises in Sudan, a misallocation of resources and a failure of the government to formulate appropriate housing consumption models.

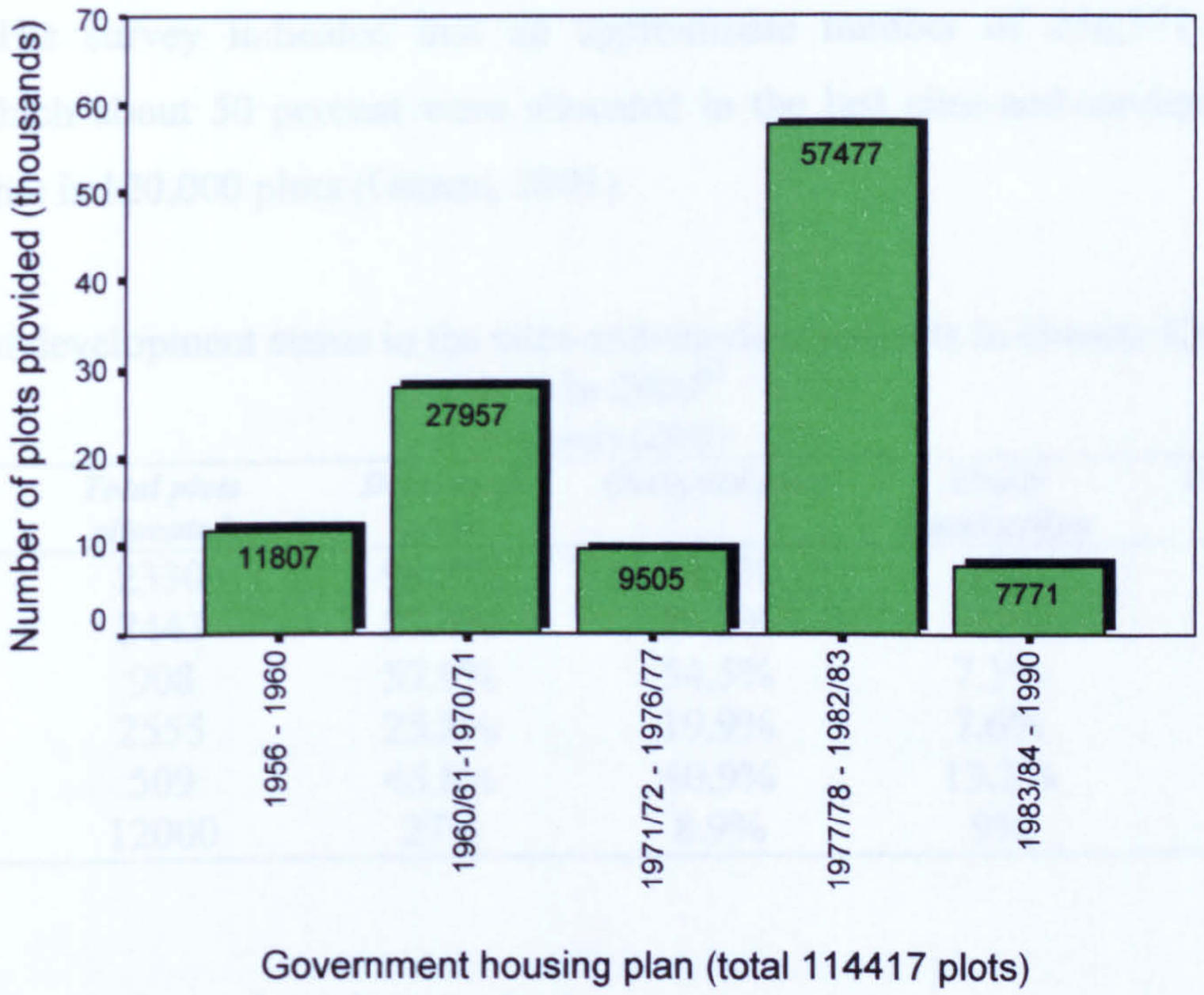
The processes adopted in the site-and-services schemes have not remarkably changed over time since they started. Plot sizes tended to be small during the mid fifties and increased gradually until they reached the largest in the late sixties, and then decreased again in the last housing schemes in 1991.

The point system for the applicants changed very little, and the criteria are almost the same. However, if anyone who did not qualify for a plot in any scheme applies in the next scheme, his score will be reassessed taking into account any new modifications introduced. That means those who failed to qualify in any housing scheme will not be prioritised in the next scheme. Although figures from MHPU have shown that the total number of plots provided by the government plans is 105,909 (*Table 5.7*), Osman (1992) believed that 114,417 plots were allocated by the government from 1956 to 1990, in five housing plans (see *Figure 5.5*).

Table 5.7 Total plots in the housing site and services schemes in Greater Khartoum.
Source: Khartoum State Ministry of Housing and Public Services (MHPU) 1992

	First class		***Second class***		***Third class***		***Total***	
Khartoum	3077	4%	1904	2.5%	18066	23.5%	23047	30%
Omdurman	1134	1.5%	1309	1.7%	23410	30.5%	54918	33.6%
Khartoum North	2170	2.8%	1125	1.5%	24649	32.1%	27944	36.4%
Total	6381	8.3%	4338	5.6%	95190	86.1	105909	100%

Figure 5.5 Housing plots in the government housing plans
After Osman (1992)



Osman (1992; 2001) summarized the objectives of the sites-and-services in Sudan as follows:

1. To realize security of tenure by enabling the beneficiaries to own a plot, to provide social stability and social and community development.
2. To improve the housing qualities and the level of public services to obtain a high quality living environment, and to quantitatively increase the housing stock.
3. To improve and develop the urban structure, urban physical conditions and enable urban development.
4. To realize improved living standards.
5. To enable planners to control the spatial development of the city and mitigate land speculation operations, hence restructuring the land and real state markets.

Osman (2001) carried a survey and produced chronological vacancy rates of development of plots in the various stages of the housing projects in Khartoum for the period between 1956 and 2000 (*Table 5.8*). Regardless of the methodology, which was adopted to produce the table where periods are not regular because it was a project-based classification, it clearly illustrates increasing plots vacancy, from .03 percent in the first projects up to 64 percent in the last project. According to Osman (2001), only 25 percent of the plots are actually turned into habitable residential units; he argued the sites-and-services projects in Khartoum did not fulfil

the objective of increasing the housing stock. He concluded that the sites-and-services in Sudan have failed to provide real housing, but it only enabled plot ownership for the beneficiaries. His survey indicated that an approximate number of 236,371 plots were allocated of which about 50 percent were allocated in the last sites-and-services project of 1990 – 2000, that is 120,000 plots (Osman, 2001).

Table 5.8 Plot development status in the sites-and-services projects in Greater Khartoum in periods in 2000[61]

After Osman (2001)

Housing projects groups	*Total plots allocated*	*Developed plots*	*Occupied plots*	*Under construction*	*Vacant plots*
1959 - 1960	2330	98.7%	98.7%	1%	0.3%
1961 – 1970	2443	87.4%	85.2%	5.8%	6.8%
1971 – 1976	908	57.9%	54.5%	7.1%	35%
1977 – 1982	2555	25.8%	19.9%	7.6%	56.5
1989 – 1983	509	45.8%	40.9%	13.2%	41%
1990 – 2000	12000	27%	8.9%	9%	64%

5.5.3. Post independence housing projects

The public housing projects were provided at a very limited scale during the post-colonial period due to the relatively high cost of the residential units and the inability of the government to build large scale housing projects compatible with the high demand for housing caused by the high rates of urbanization. The total number of housing units built in Greater Khartoum up to the year 2000 is 1,502 units (*Table 5.9*).

Table 5.9 Public housing units provided by the government[62]

City	*District*	*Year*	*Number of units*[63]	*Total*
Khartoum North	Shaabia (public housing)	1961-1963	1048	**1187**
	Haj Yousuf	1975	107	
	Haj Yousuf	1998	32	
Khartoum	Hai-AlHajar (Ad-Deim)	1971-1977	32	**163**
	Jabra	1975	131	
Omdurman	Hai-Al-Omdah	1974	17	**161**
	Hai-Al-Omdah	1998	12	
	Al-Thawrah	1975	132	
Total				**1502**

[61] The number of the plots include all the housing class areas, first second and third housing class areas. The number does not include the upgraded squatter settlements.

[62] Further public projects were in progress at some parts of Greater Khartoum, at the time of thesis writing, for example in Al-Andalus in Khartoum city. Figures are not available.

[63] The 12 built units in Hai Al-Omdah and the 32 units of Haj Yousif were at the time of the source report under construction. They are assumed to have finished by 1998.

The public housing types are actually single storey houses with a courtyard and a number of bedrooms and verandas similar to the traditional urban housing types of Khartoum. *Figure 5.6* shows a typical plan of public houses of Hai-AlHajar (Ad-Deim) and *Figure 5.7* a typical plan of Jabra public houses. Apartment housing types are not used as a public housing type in Sudan but are available in the high-income areas.

Figure 5.6 Public housing of Hai-AlHajar (Ad-Deim) Khartoum
Source: (El-Agraa and Ahmad, 1980)

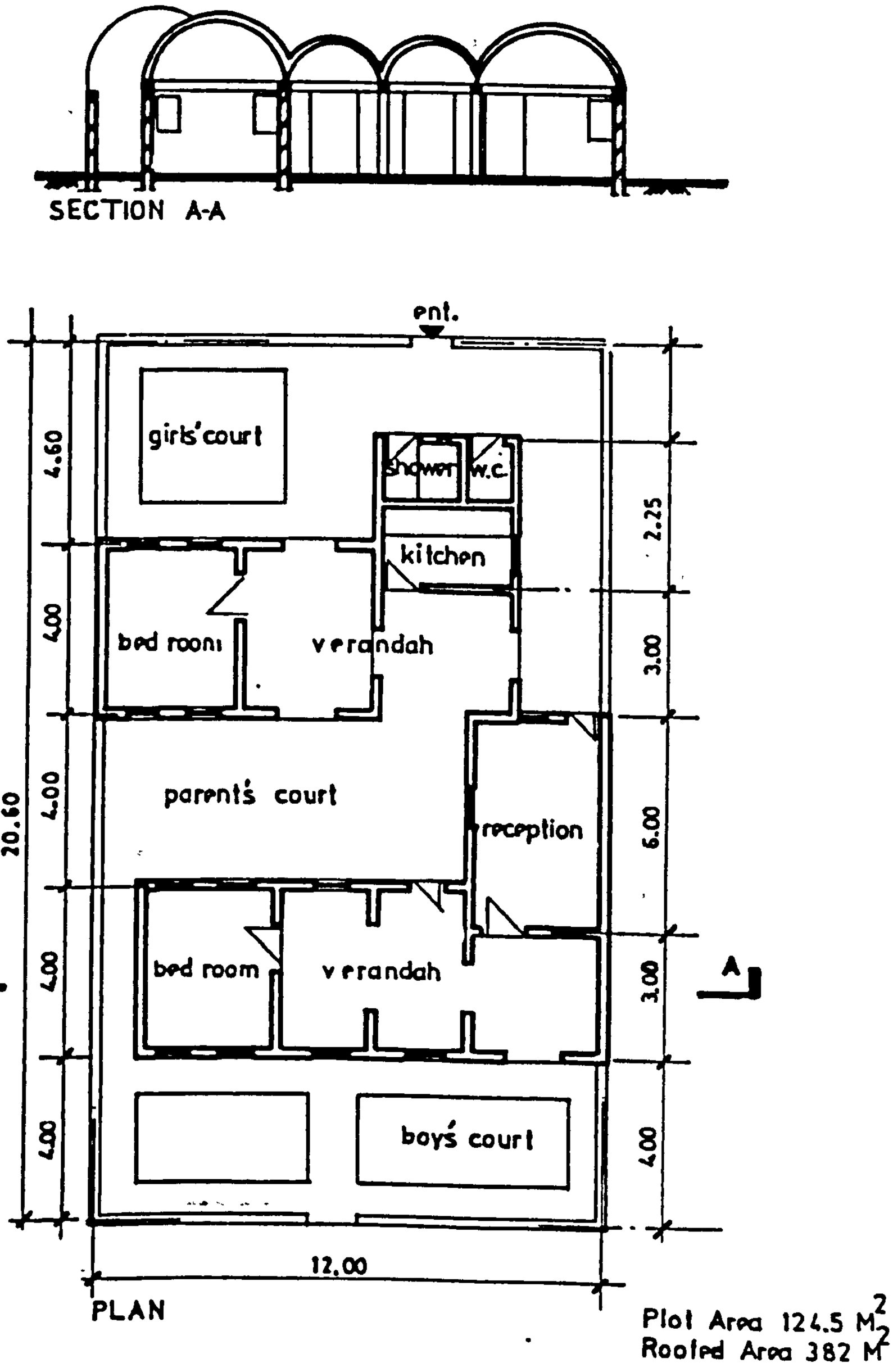
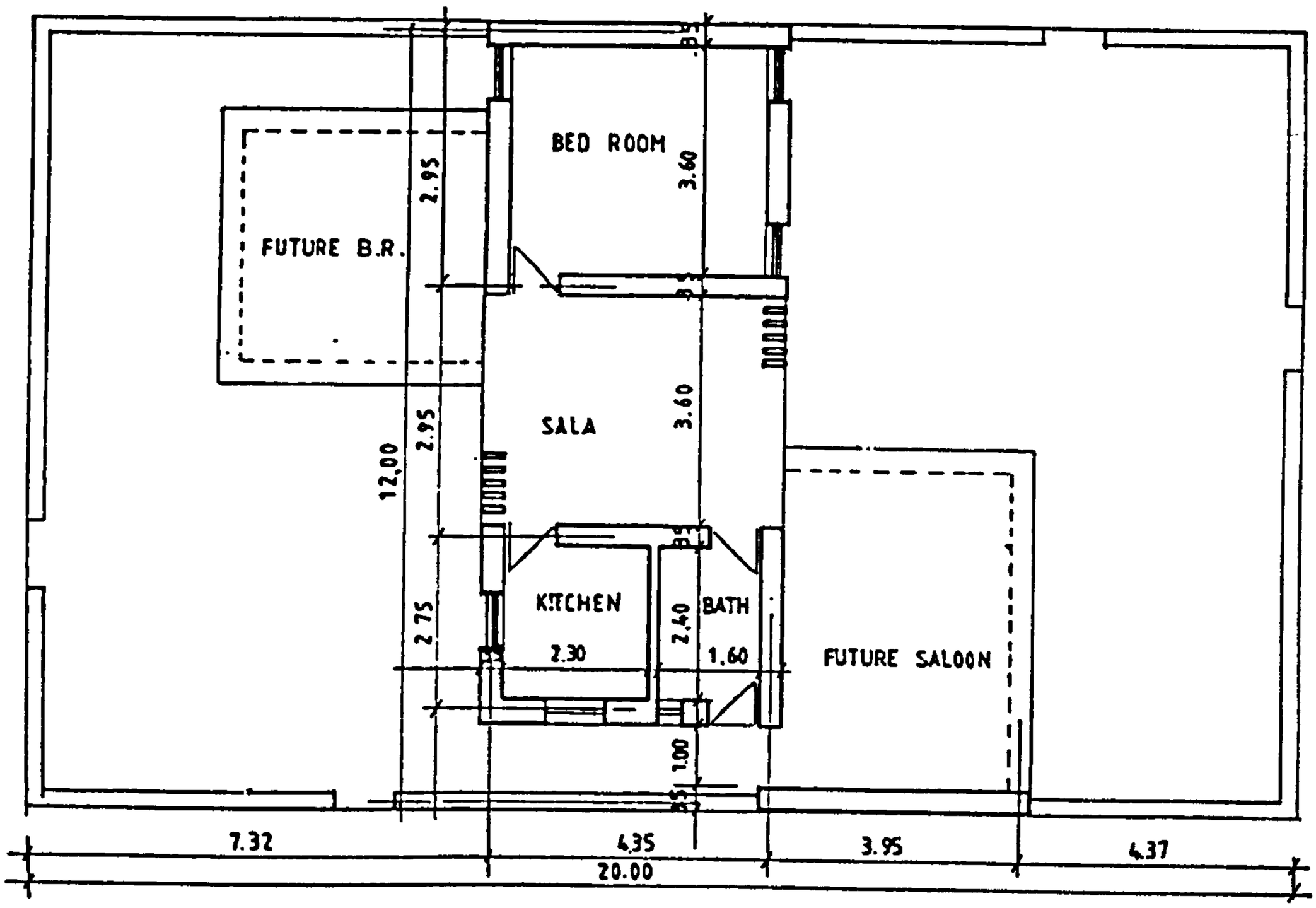


Figure 5.7 Public housing of Jabra – Khartoum
Source: (El-Agraa et al., 1985)



The figures show that the proportion of public housing in Khartoum is insignificant. The government provided only 1502 units as complete traditional housing units after independence in 1956 (MHPU, 1992). Recent figures show that 6182 low-cost houses were planned to be built during the 1990s in Greater Khartoum, but only 1606 houses were built in three phases in three locations, Abu Ayoub Al-Ansari, Dar-es-Salaam, and Hai-Al-Mustafa (Edris, 1998). The project failed because of the steady increase in the construction and building materials costs (Edris, 1998). House payment was made in two forms; the first 15 percent down payment and 12 years period of repayment, and second 20 to 30 percent down payment and three to five years repayment period (Edris, 1998).

The period after 1992 witnessed the continuation of the same programmes at a very limited scale, but no figures were found. These housing types are more or less core houses. They cannot be classified as finished houses. They are given to the beneficiaries on a 'hire

purchase' or 'rent-to-buy' (Abrams, 1964), or alternatively shared equity/ownership[64] basis (Payne, 1997). Hire purchase is synonymously used with 'rent-to-buy' or conditional freehold tenure (UNCHS, 1991b). This type of housing is the only type that has been sold on instalment basis for the low-income households. There is, therefore, a competition to obtain a house among the low-income groups. The very small scale of this housing type also raises a question of its validity and its rationale as an alternative housing option and its contribution in housing supply, because it requires a huge capital that neither the government nor the public sector can afford and secure. It has been discussed in chapter two that governments under the enabling approach should abandon building public housing and move towards enabling markets to work.

Problems related with public housing in Sub-Saharan Africa were pointed out by Tipple (1994a: 593). He argued that the public housing or the provider-based supply in sub-Saharan countries tended to be built on unrealistic and high standards and that several shortcomings have accompanied the public housing supply, causing an inefficient distribution of housing supply. First, they are characterized by expense per unit cost. Second, because few units are built by the government only a fortunate few households benefit and the majority of equally qualified people receive no benefit at all, representing horizontal inequity of considerable scale, resulting in 'raiding' which is an active sort of filtering where high-income households take over dwellings intended for poor households. Third, upward filtering represented in those target groups tended to consume more housing than they would choose in the absence of programmes.

This 'raiding' phenomenon described by Tipple (1994a) does not only happen in public housing, but also in the recently allocated low-income housing areas in Khartoum. This is discussed in section 7.6, where some allottees sold their houses because they could not afford to build them. They sell their land to high-income groups at low prices. *Figure 5.8* illustrates two contrasting types of houses; the first is built by the original allottee, while the second is a still uninhabited house obviously built by a 'raider'.

[64] According to Payne (1997:53) Shared equity/ownership is a type of formal tenure where the occupant buys part of the equity (30:70, 50:50, 64:40, etc) from the freeholder and rents the remaining value. The proportion of mortgage repayment/rent can be amended at a later date, enabling the occupants eventually to acquire the freehold.

Figure 5.8 Two contrasting housing standards in block 13 Al-Azhari



5.5.4. Auctioned housing plots and plot exchange policy

Two types of auctioned plots are found in Khartoum; both of them site-and-services schemes. The first is the closed auction, which took place in 1962 in Al-Amarat high and middle housing areas in Khartoum city. Part of this auction was restricted to the government civil service officials and high military officers. 170 plots were sold as first class and 207 plots as second class. Another 496 and 317 plots in the first and second class respectively in Al-Amarat were also sold in an open auction. As mentioned earlier, the Al-Amarat area was well subdivided and serviced by infrastructure. The price of houses in this area is currently one of the highest prices in Greater Khartoum and it is a favoured area that attracts high-income groups. The closed auction was not repeated anymore in the housing allocation in Khartoum.

Later, the government started to sell some selected plots of land in open auctions on a very limited scale. The auctioned plots included commercial and industrial as well. The scale of the auctions implies that they were not actually a housing policy-based option but they were

adopted to cover part of the administrative expense. Later, distinctively located plots of lands in high-quality sites within Greater Khartoum were sold at a larger scale to finance some large urban projects such as the new White Nile Bridge, which was opened in the year 2000.

A housing plot exchange policy was introduced in 1993 by which, if someone has a plot in a new remote un-serviced housing project, he can exchange it with another plot in a serviced area and pay the difference in cost. In this system the Ministry keeps a record that includes a list of all the plots and their corresponding plot values in all the government-planned housing areas, classified as either normal single side frontage, double side frontage plots and distinguished plots, which are double-side frontage plots on a main street. The plot price estimations are done through a committee formed by the ministry and updated approximately every six months. However, the prices are often below the real market value. Therefore, high demand for those plots has been created. In 1998, when the government stopped giving plots to the applicants in *Al-Engaz*[65] 1990 housing plan, the exchange system was modified. Those who wished to buy a plot through the exchange system had to pay the cost of the desired plot minus the presumed value of the plot he is qualified for.

The exchange system, as described before, is a reasonable system that responds to the population mobility, mainly caused by the change of household income and the social affiliations. Nevertheless, it reduces the construction development rate of the new housing areas. The government re-designates the remaining plots to another beneficiary who is often a low-income household. On the other hand, it increases land speculation because most of the capital is transferred to acquire land rather than use it in construction. Also, because the prices of the plots for sale through the exchange system are below the real market price it opens the door for corruption, particularly because there are no clear rules or criteria by which those limited number of plots should be allocated to a large number of those who wish to buy a plot. Whoever comes first and can afford to pay is the one who has the chance to obtain the plot. It could have been used to target specific groups of applicants, by which some of the goals could be achieved or some purposes be attained.

A general assessment of the auction-sold plots and plot exchange system shows that they do not directly contribute to the low-income households housing supply. They are not practical

[65] *Al-Engaz* is the given name for the ruling regime, which means the salvation revolution.

tools that would quantitatively increase the housing supply. They are, therefore serving the high-income groups.

5.5.5. Informal housing

The presence of squatter settlements and slums is a clear indicator of the failure of the governments to provide adequate housing for the urban population (Aldrich and Sandhu, 1995). These squatter areas are mostly classified as inadequate[66] housing that does not contribute to human development. It is argued that in Africa from a minimum of 33 percent to the maximum 90 percent of the housing is inadequate (Aldrich and Sandhu, 1995). In Tanzania, Dar es-Salaam, 70 percent of the city residents live in squatter settlements (UNCHS, 2001b). Aldrich and Sandhu (1995) further argue the term 'overurbanization' was used in the past to describe communities with more urban workers than required, hence trying to rationalize the bulldozing of squatters and slum clearance. They argue that recent viewpoints on this consider their contribution to the economic growth of the society through providing cheap labour, hence subsidizing the labour market in an indirect fashion. Early viewpoints on this issue highlighted the need for more appropriate approaches to gradually improve the slum and squatter areas. These require the acceptance of their existence as legitimate forms of urban housing that must be improved rather than destroyed (Angel, 1983). Slum clearance must be abandoned and replaced by improvement and 'consolidation' (Angel, 1983; Napier, 2002).

Two main types that constitute the bulk of informal housing areas in Khartoum can be identified. Squatter housing that developed on the public land and squatter housing that developed around the agricultural villages at the peripheries of the capital through converting the freehold agricultural land into residential. *Figure 5.9* illustrates the location of informal housing settlements in Greater Khartoum. Bannaga (1996) provided a detailed classification of the informal settlements in Khartoum into eight types. However, some similarities between the types could be noticed. Following are the eight types[67]:

1. ***Old consolidated squatter areas:*** These are old settlements that exhibited progressive consolidation. In such areas shanty buildings built of perishable materials are replaced

[66] The housing adequacy has been discussed in chapter two

[67] Types have been adapted by the author.

with somewhat permanently built mudrooms. At later stages, boundary walls appear because of stability, and productive activities develop.

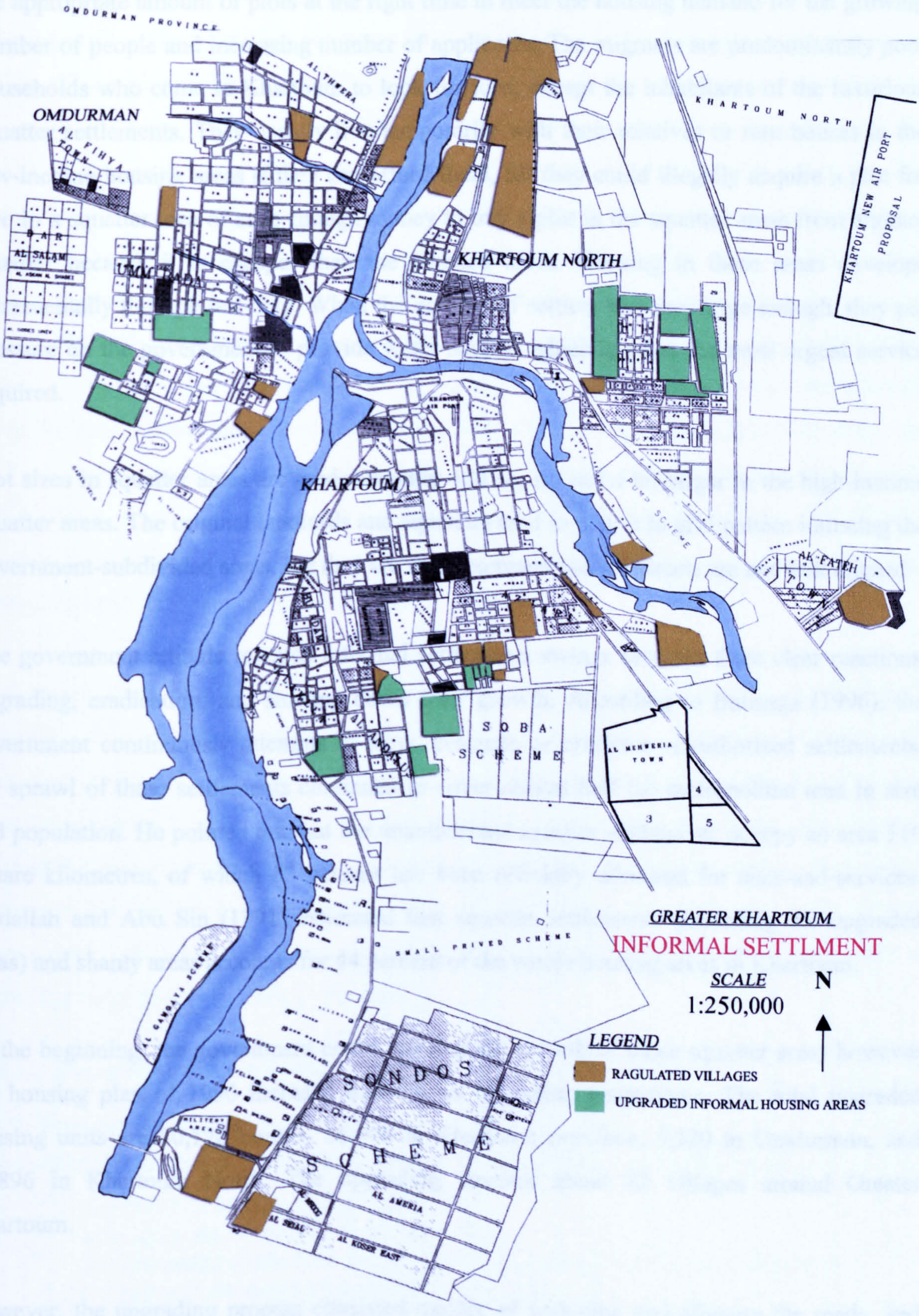
2. ***Upgraded (organised) squatter housing areas:*** These are rather old settlements that have been officially upgraded or organized, in terms of road widening and alignment to improve accessibility. Houses in these areas are rather well built. There are fourteen districts of such type in Greater Khartoum.
3. ***Squatters surrounding old villages*:** These are squatter settlements that developed around the old villages at the peripheries of Greater Khartoum. These were remote villages in the past but currently they are part of the city region. Land in these villages is predominantly freehold agricultural that has been converted to residential, subdivided and sold by the villagers themselves. These areas, accordingly, enjoy better levels of security of tenure. Reasons behind the development of these areas are mainly the lack of administrative control, availability of official title deeds by the original owners and the possibility of registration were encouraging factors. A reasonable level of infrastructure and services is provided in most of these areas.
4. ***Subdivided sites-and-services areas encroached by squatters*:** These subdivided residential areas officially allocated to the housing plan beneficiaries and are occupied by other invaders or old migrants.
5. ***Un-upgraded squatter areas:*** These are very poor squatter areas, mostly light structure and perishable buildings constructed from packing materials and recycled solid wastes materials. Most of these are displaced households who come from drought and war-hit areas in Sudan and a few foreign nationals who are mostly refugees. Generally, the social structure is composed of tribal groups who reside in almost secluded groups with clear systems of organization. The living conditions in these areas are extremely poor and there is a severe lack of services. Such groups are exposed to the danger of frequent evictions. Residents of these areas are generally very poor who suffer not only shelter problems, but also nutrition and health as well.
6. ***Luxurious squatter housing areas:*** These are relatively high quality housing areas that developed as extensions of the first and second class housing areas, though invading the surrounding government and freehold agricultural land. An example is Al-Jeraif extension of Al-Taif in Khartoum. Such areas were subdivided and sold by both the original owners and squatters. Most buildings in these areas are multi-storey concrete buildings. However, these areas developed due to the reluctance of the

government to supply adequate housing plots to meet the increasing demand at the right time.

7. ***Displaced people settlements*:** These are very poor areas formed as pockets within the city. These are mostly occupied by tribal groups of southerners who were displaced by the civil war and tribal conflicts. Such areas were viewed as hazardous because of the frequent fight between the groups that result in death tolls, mainly because of the intoxication. However, most inhabitants of these areas were relocated in Dar-es-salaam camp in Jabal Awlia south of Khartoum and Omdurman, where some level of services were provided by the government (Bannaga, 1996; MHPU, 1992).
8. ***Fourth-class housing areas*:** According to Bannaga (1996), this was the former *Fallata* the only fourth-class residential area in Khartoum. When *Fallata* was first built in 1950's it was in a very remote area and very poorly serviced. Plot sizes were about 100 square metres. After the city expansion *Fallata* district became centrally located, and yet poorly serviced and overcrowded. The area is mostly inhabited by people originally from West Africa and western Sudan. As part of the housing plan of *Al-Engaz*, the government took a decision to relocate the residents of this area to a new *Al-Engaz* third class district south Sahafa district in Khartoum. The new area was better serviced and its plot sizes tripled. The old location of *Fallata* was again subdivided as first and second-class housing and was auctioned. According to Bannaga (1996), this was regarded as a squatter area. However, it was originally subdivided by the government as a regular housing area in conformity with the housing classification system. A big controversy accompanied the relocation of *Fallata* district. Although the government provided only plots and extended electricity to the new location, people were somehow satisfied as there was no electricity and piped water in old *Fallata*. In addition, old *Fallata* was serviced by communal toilets. Roof materials, doors and windows were reused in the new areas.

Abu-Sin and Awadalla (1984) used the term 'community-planned' areas for the unauthorized randomly developed or informal areas around Khartoum, which they described these areas as being full of hygiene problems, overcrowding, lacking services and infrastructure, although these areas were not as complex as it is the case today.

Figure 5.9 Informal housing locations in Greater Khartoum



The informal housing types mainly occurred because the government was reluctant to supply the appropriate amount of plots at the right time to meet the housing demand for the growing number of people and increasing number of applicants. The migrants are predominantly poor households who come to Khartoum to look for jobs, except the inhabitants of the luxurious squatter settlements. They usually live temporarily with their relatives or rent houses in the low-income housing areas if they can afford them, till they could illegally acquire a plot for free in a squatter area or save enough money to buy a plot in the squatter areas from another squatter because it is cheaper than the planned areas. Housing in these areas develops incrementally through self-help. When the number of settlers becomes large enough, they put pressure on the government to provide water supply, which is often the most urgent service required.

Plot sizes in squatter areas are predominantly 400 sq. m. and a bit larger in the high-income squatter areas. The original landlords and squatters tend to plan it in grid pattern imitating the government-subdivided areas, but they are more compact and the streets are not well aligned.

The government attitude towards informal settlements swings between three clear reactions, upgrading, eradication, and slowing down their growth. According to Bannaga (1996), the government continuously attempts to slow, evacuate or eradicate unauthorised settlements, the sprawl of these settlements continued to cover almost half the metropolitan area in size and population. He pointed out that the unauthorized squatter settlements occupy an area 110 square kilometres, of which 53 percent has been officially allocated for sites-and-services. Abdallah and Abu Sin (1991) estimated that squatter settlements (including the upgraded areas) and shanty areas accounts for 44 percent of the whole housing areas in Khartoum.

At the beginning, the government could not stop the growth of those squatter areas however the housing plan of 1990 included them in an upgrading programme. The total upgraded housing units are 80,120 houses, 36,900 in Khartoum province, 5,320 in Omdurman, and 37,896 in Khartoum North. The upgrading covered about 22 villages around Greater Khartoum.

However, the upgrading process consisted mainly of widening and aligning the roads, and improving accessibility to all houses. The upgrading realized the security of tenure for the squatter households. Although the alignment of roads has led to cutting part of most plots and

the demolition of some rooms, which are built along the external boundary walls, most people were happy because that was implicitly an official recognition of ownership and realization of tenure security. The upgrading processes have not satisfactorily taken into consideration the ability of the households to rebuild the boundary walls of the plot frontage and whatever rooms are built along the boundary walls. Some low-income households build rooms in the corner of the boundary walls, in order to reduce the cost of two sides of the room. The boundary walls are usually built first for privacy and security and to ensure property rights. A remarkable number of those rooms are used as corner shops or service shops, and that in turn influences the local economy of the area and disrupts the income of those poor households, as well as the flow of commodities and services provided by those activities (Hafazalla, 2000). Turner (1967) observed that households who enjoy secured tenure would invest substantially more in their house than those who are unsure of their property rights. Generally, the realization of tenure security was offered at a low expense. More requirements, which would substantially improve the housing qualities, could have been imposed on the squatter upgrading beneficiaries, such as meeting the building standards and provision of the appropriate spaces for toilets, kitchens, animal pens, etc.

In the government upgrading schemes no attempts were initiated by government to benefit from the procedures of giving the security of tenure to inhabitants. For example, with large plots squatters could have been asked to willingly alienate part of the land back for public use in order to obtain a legal title to the rest of the plot. These plots could have been used to provide the missing services or to accommodate more low-income households. The general practice is that the first squatters to arrive take the initiative and occupy large parcels of land. They quickly subdivide them to smaller plots and sell them to other squatters at low prices to encourage more people to settle in the area.

5.6 Housing planning and development process

5.6.1. Plot development and self-help

The dwelling construction in Khartoum generally takes place in four distinct forms:

1. Finished housing unit production.
2. Complete demolish and replacement.
3. Incremental developments in the new housing areas for those who have recently allocated plots and self-help.
4. Housing transformation and extensions in the old areas.

The first two types are more concerned with high-income households. Therefore, they are not within the scope of the thesis as they are only affordable by high-income groups. The second two types are more concerned with those on low-income and they take place in their low-income housing areas, they will therefore be discussed in detail in the next part. Both involve self-help development, the inevitable option for housing construction in Khartoum.

5.6.2. Housing transformation and extensions in old districts

Intensive research has been carried out over the last two decades or so on self-help housing transformations and extensions as an effective element in increasing the housing supply (Strassmann, 1982; Tipple, 1992; 1996; 2000; Tipple and Salim, 1999). These researches generally argue that housing policies should be encouraged rather that suppressing them by the local authorities.

Tipple argues that extensions are efficient in both realizing availability of rooms for renting out an increasing the roof space, in already serviced housing areas. Extensions are discouraged by the planning regulations on the maximum use of their plots or estate owners. Accordingly, these occupants are discouraged from supplying more rooms for rent while they can afford to build (Tipple, 1992; Tipple, 1996). Tipple and Salim (1999) found out that the ability to transform is highly dependent on the plot size, i.e. the larger the plot the larger in area and more costly the transformation tends to be. They suggested that smaller plots are constricting the household's ability and willingness to improve their housing conditions and therefore limiting the supply of housing. Conversely, the provision of larger plots is likely to enable householders to respond fully to their need for extra space.

Tipple (1996) argues that official attitudes to transformations in Bangladesh, Egypt, Ghana, and Zimbabwe were mostly hostile and that housing extensions have great potential for increasing the housing stock in a city and doing so in a manner which is largely congruent with sustainable development. He holds that transformation could be congruent with the aims of sustainable development and the global shelter strategy, and they can contribute to them. He pointed out that:

> "On balance, transformations appear to contribute more than they take away the balance of advantage is positive in their favour. There is a need for authorities to accept this, recognise that transformations improve housing conditions, and embrace transformations as valid housing supply. In this way, the way would be open for official encouragement of best practice and for proscription of extensions in places where they would be harmful, for example over drains or across essential access routes" (Tipple, 1996:375).

Tipple and Salim (1999) in their research on housing transformation in Malaysia suggested that smaller plots constrict the household's ability and willingness to improve their housing conditions and therefore limit the supply of housing. They also suggested that the provision of larger plots is likely to enable householders to respond fully to their need for extra space. Tipple et al., (1997) also found out that the plot size is more influential than the financial circumstances of the occupants in determining the transformation occurrence and scale.

Tipple (1992; 2000:134-135), in his researches on user-initiated transformation of government-built housing in developing countries, argues that these transformations provide varieties in house size, accommodation for the main household, house values and cost, use, tenure, and types of occupants. He also argues that in the context of Sustainable Development and the Global Shelter Strategy, housing transformations can contribute to the environment in several ways. Although these are concerned with government-built houses, they also apply to other types. These are summarized as follows (Tipple, 2000):

6. Housing consumers become producers.
7. Efficient use of the existing finite resources, particularly serviced land, infrastructure and construction materials.
8. Improving the social economic and environmental quality of the living and working environment.
4. Increasing housing productivity.
5. Efficient use of social resources.
6. Requiring realism in regulations and standards.
7. Promoting balanced approach between shelter upgrading and new shelter construction.
8. Promoting a balanced approach between shelter upgrading and new shelter construction.
9. Involving efforts of citizens in planning and implementing improvements.
10. Adding value to the area and increasing the potential property tax base.
11. Promoting rental housing.
12. Changing emphasis of physical planning and residential area design.

As most low-income houses in Khartoum are single storey traditional houses that are mostly built with mud, mud bricks and a mix of red and mud bricks *(gishra)*, transformation and extensions are carried out under the limitations of the structure, where vertical extension is difficult to achieve. The construction type of these houses is classified as load-bearing walls. Alterations by adding rooms or making major changes in the space layout in such houses may result in cracks in the main structural elements. However, most transformations include the addition of rooms and ancillary space, transformation of the verandas into closed spaces will be described in section 7.2.2, and sometimes adding vertically extendable separated structures

or rooms. The survey of this thesis did not cover in detail this issue but observations and interviews gave a general picture of the issue. Generally, city managers are not fully aware of the significance of these extensions and transformation and their role in increasing the housing supply. No clear intervention by officials could be observed. They just happen due to the arising need of the occupants.

5.6.3. Construction industry, building technology and materials

Spence (1992) noted the significance of the appropriate use of building materials to meet the housing requirements for the growing world urban population under the declining or static available resources. He puts forward:

> "The essential task is to find ways to provide more with fewer materials inputs, but making greater use of people's own energies and skills. Peoples' expectations of space, privacy, convenience and energy availability will continue to increase" (Spence, 1992:153).

Spence (1992) argued that different and effective technological innovations in utilizing the resources are available to people to make use of them in an efficient way, such as reducing energy wastage, improved durability, improved qualities and performance and using household own skills, which he termed 'technologies of enablement', with six distinctive feature; to quote:

1. 'They respond to pressing individual or family needs rather than broader concerns such as 'the environment'.
2. They utilize and build on existing local skills and traditions.
3. They are small enough in scale to be designed, made and managed with local resources.
4. They are relatively simple in technical concept, but complex in their fit with the local Context.
5. Local small manufacturing enterprises and artisans are the deriving force for innovation and diffusion, but they receive strong backing from concerned NGOs and government agencies.
6. They create savings for individual households for a low initial cash cost" (Spence, 1992: 154)

The construction industry is important for absorbing urban unskilled labour, and providing employment for the lowest income groups in the economy in developing countries. The provision of these job opportunities is important in constructing large numbers of dwellings. Increasing the construction activity is, therefore, one sure way of increasing employment (Tipple, 1994b; Spence et. al, 1993). Tipple (1994a) argues that affordable urban housing is more likely to be achieved if local building materials are increasingly used. As part of attempts to achieve the Global Shelter Strategy and Agenda 21, Tipple (1994b) also argues that once a self-build house is complete there will be a waste of experience and skills lie

dormant, instead, he calls for a shift from the householder/house to two other alternative shifts. First, the inputs of the contractor/house interface would enable householders to build more efficiently. Second, householders should be empowered to deal with the contractors by assistance of householder/contractor interface.

The building material industry in Khartoum is still far behind the actual demand for the building materials required to develop the housing sector and increase the housing supply. The production of burnt bricks is carried out through the traditional labour-intensive methods using wood for burning, which is desirable in the case of Khartoum. However, the production lacks quality control. Burnt red brick was known for centuries in Sudan but Salim (1984) assumes that intensive use of red bricks in building came with the British rule and that few government buildings were built by the Egyptian after the invasion in 1821. At the beginning it was only affordable by the rich and foreigners after the Mahadists capture of Khartoum in 1885, which began using it in building houses. While bricks used in the colonial government built building were British standard size, these sizes under the lack of quality control were gradually reduced to less than 18X8X5 cm., irregularly shaped and unevenly burnt, hence affecting building quality. The local production of cement reinforcing steel, corrugated iron sheets, which are the key building material in the housing sector in Khartoum, do not cover the demand, and the largest part is imported. The production of building materials reduces the cost. *Table 5.10* shows the percentages of construction types in low-income areas in Khartoum. The use of cob and adobe in traditional houses in urban areas is common in Sudan. Cobs and adobe built houses constitute nearly 70 percent in urban areas and 90 percent in rural areas. Such building materials are easily obtainable and do not need advanced skills, have good thermal performance, are cheap and affordable by the poor (Osman et al., 2003) but at the same time they do not resist rain, and construction depends on soil type and geology.

Problems related to building materials in low-income areas in Khartoum are:

1. It could be noticed that there is no application of clear quantitative approaches to estimate the requirements of various building materials in the housing plans. At least assessing how much imported materials is required would certainly help in assessing the need of hard currency throughout the plan period, so that the governments would try to allocate funds or seek any other sources of finance. Extensive use of local building materials in construction would reduce the burden of importing other

materials. Some policies could be adopted by the government to encourage the use of local building materials. These include, but are not limited to, adjustment of building standards, pricing, taxing system, and incentives.

2. Transportation imposes a remarkable increase of both the imported and local building materials. A poor road system further accentuates the problem.

3. Fluctuations in the prices of both local and imported materials impose other problems. These fluctuations are mainly caused by supply and demand in addition to other factors such as costs of transport and seasonal price variations. For example, during the flood seasons brick prices increase because silt, from which bricks are made, cannot be obtained from the riversides. Construction programmes are sometimes intensified and sometimes slow down, hence affecting prices (NHC, 1985). An example is when sites-and-services projects are first launched. Imported materials are affected by government finance policies, which are generally unstable.

4. Scarcity of the building materials, which frequently occurs, affects most the low-income people, who are in the process of constructing their homes. Some might halt whilst waiting for the prices to drop therefore prolonging the period of construction. High prices also may force the people in need of shelter to use substandard building materials, such as packing materials and tins.

The Global Shelter Strategy (UNCHS, 1990b) reinforces the government's role as enablers encouraging all the actors in the housing process to increase their efficiency in the supply and recognizing the important role housing should play in the economy (Tipple, 1994a: 596).

Table 5.10 Low-income housing construction types by study districts
as percentages within the area of the study (district)

	Ad-Deim	*As-Sahafa*	*Abu-Adam*	*Al-Kalakla*	*Al-Azhari*	*All Districts*
Traditional load-bearing walls	87.5	89.9	84.4	94.3	100	91
Load-bearing walls with concrete roof	6.3	7.2	9.4	2.9		5.5
Concrete frame with slab	6.3	2.9	6.3	2.9		3.5

Chapter 6

Housing Supply and the Public Sector

Chapter 6 Housing supply and the public sector

6.1 Introduction

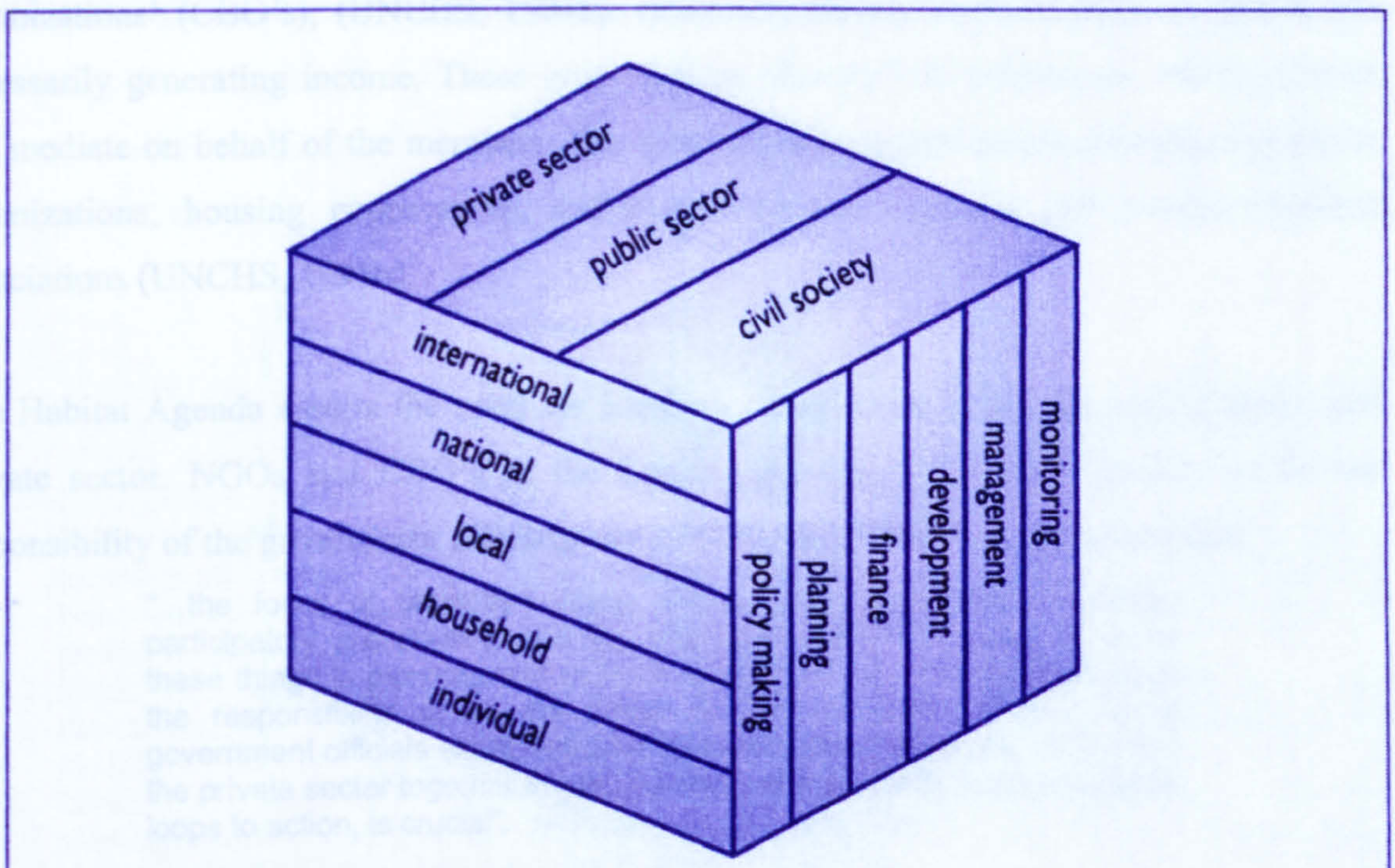
The purpose of this chapter is to evaluate the housing supply system in Khartoum and discusses its relative aspects. Emphasis is given to the role of the public sector in general and in Khartoum in particular. This chapter accordingly forms a link between the previous chapter and the following parts, which include the empirical part of the thesis.

This chapter is composed of five main parts, focussing on the housing supply process and the role of the public sector in Sudan in general and in Khartoum in particular. The first part discusses the roles of different societal sectors (public, private, and NGO's) in the housing supply process in the provision of housing in general and in Khartoum in particular. The potential roles of each of these sectors are discussed briefly by highlighting their responsibilities; functions, and performance. The second part discusses the role of the public sector in Khartoum in particular. Generally, the discussion will be confined within the scope of the housing supply parameters. However, it is difficult to make sharp boundaries between the functions of these sectors and their respective roles under the housing supply parameters. It has been discussed in chapter two that the housing supply parameters are land, labour, building materials and construction technology, finance, infrastructure and the regulatory framework. The third part deals with sites-and-services and upgrading projects as the primary projects adopted by the public sector to provide low-income housing. This part focuses on detailed aspects of these projects and discusses their potential efficiency in housing supply in Khartoum. It also focuses on the procedural aspects of the allocation and the adopted criteria of the sites-and-services projects through what is called government housing plans. The fourth part deals with the development processes of the project and plots.

As an initial step for the discussion, it would be useful to introduce the concept of interfaces of the societal sectors illustrated in *Figure 6.1*, (UNCHS, 2001a). It indicates how the public and private sectors, as well as civil society represented by non-governmental organizations, at the international, national, local, household and individual levels, may play different roles in relevant approaches to those human settlement concerns that urgently demand attention. The aspects of human settlement development approaches are: policy-making, planning, finance, development, management and monitoring. It indicates the need for forming partnerships between the three sectors, to develop solutions to the problems they experience. This then

concludes that cooperative governing and appropriate capacity building are regarded as vital elements in strategies to improve urban liveability for people (UNCHS, 2001a).

Figure 6.1 Interfaces of societal sectors
After UNCHS (2001a)



6.2 Societal sectors and their role in the housing supply

The societal sectors are composed of three sectors, public, private and civil society (UNCHS, 2001a). The civil society was also known as the third sector (Turner, B., 1988). The public sector refers to the institutions and responsibilities of government at local, regional and national levels. The local and national levels are distinguished as 'municipal government' and 'central government' respectively (UNCHS, 1991b).

The private sector, alternatively known as commercial sector, refers to institutions, firms and individuals active in different aspects of the housing process and shelter delivery system, but their actions are targeted to generate profits on the investment of their resources. The private sector includes varying types of actors, ranging from large housing developers and finance institutions, to developers operating on a very small scale in building a few houses or services

provision to a limited number of households (UNCHS, 1991b). Such types include small and large contractors.

The civil society refers to organized groups of people with an objective to promote their members and to work for the good of themselves. These mainly include two types of organizations, 'non-governmental organizations' (NGOs) and 'community-based organizations' (CBO's), (UNCHS, 1991b). However, the objective of these groups is not necessarily generating income. These organizations also include institutions, which support and mediate on behalf of the members. The types of these organizations include community organizations, housing cooperatives, collectives, women's groups and common-interest associations (UNCHS, 1991b).

The Habitat Agenda asserts the need for a collaborative effort of all the actors, public and private sector, NGOs and CBO's in the housing process, stressing it should not be the responsibility of the government officials alone. UNCHS (1997a: VI-d) suggests that:

> "...the focus of capacity-building should be on innovative methods, participatory procedures, and the attitudes required to make room for these things in planning and policy-making. Learning and monitoring are the responsibility of all the actors in the housing process, not of government officials alone. Bringing governments at all levels, NGOs and the private sector together in joint learning exercises with strong feedback loops to action, is crucial".

It is also suggested that the public sector, NGOs and the international donors have an important role as enablers in developing countries. They can play an encouraging role in the process of maximising employment opportunities in the provision of housing and infrastructure in the coming decades. Public sector, NGOs and CBO's can play an important role in increasing housing production and meeting the basic needs through gradual improvements (UNCHS/ILO, 1995).

6.2.1. The public sector

To understand the effects of the public sector on the development process it is important to understand what is meant by 'the public sector'. Adams (1994) holds that the public sector is not a monolithic organization that speaks a single voice. Different levels of government may often find themselves in conflict because of the conflicting functions and authorities, like 'tribes' or groupings in an ancient army, but generally the public sector agencies are composed of two main groupings each pursuing a specific authority in the development of the

urban sector, these are central government and the local government (Adams, 1994). The public sector refers to the institutions and responsibilities of government at local, regional and national levels. The local level government authorities are alternatively identified as municipal, while regional and national level authorities are identified as central (UNCHS, 1993). In the past, the role that public sector assumes in the housing sector is the dominant aspect of a national housing policy. This role is still extending to the recent situations with slight shifts. Generally, the public sector or the government may take an active role, intervening directly, or indirectly, deferring to private market forces and individual consumer demand, to establish an appropriate level of production and economic optimisation including pricing. UNCHS (1993) assumes that the public sector's role should be concentrated on the following:

- "Ensuring an adequate supply of land for low-income housing via reducing land-use standards, simplifying procedures for obtaining secure tenure, ensuring that laws do not reward speculation, utilizing its own land holdings efficiently, and establishing land development agencies with sufficient authority and accountability;
- Coordinating the provision of infrastructure and services, seeking the maximum degree of cost recovery compatible with the preservation of access among the very poor, ensuring that networks are developed on a rational basis throughout the city, and regulating standards of quality and maintenance;
- Establishing a sound financial environment to encourage private investment in shelter, maintaining market interest rates to avoid undue subsidies, and ensuring access to sufficient housing finance for low-income groups on terms they can afford;
- Liberalizing standards to permit the use of a wider range of building materials, avoiding standardized and industrialized technologies and materials, and promoting small enterprises in the shelter field." (UNCHS, 1993)

McGuire (1981) points out that worldwide a multiplicity of national housing policies exist, as revealed by the ways in which governments have either intervened or refrained from intervention in the housing sector. McGuire also pointed out that despite the enormous range of cultural and economic differences among nations in actual practice the ways that governments intervene in housing are not as diverse as might be assumed at first glance. Reasons for intervention by the government could be to alleviate housing shortage, to aid the poor, to improve the general housing conditions, to ease the affordability burden and to stabilize production (McGuire, 1981). Woodfield (1989: 33-35) assumes then, in a proposed housing strategy, the public sector should intervene where there are external economies such as infrastructure, and leave the rest to the informal developers. He identified a number of aspects which public agencies should consider, studies, funding, building materials, owner-built credit, and legislation.

The expenditure on building materials, for example in developing countries as a whole, amounts to between 3 to 8 percent of the GDP per annum, and they account for 5 to 8 percent of the total value of the imports. (Tipple, 1995; Moavenzadeh, 1987). Sudan being one of the low-income countries the government expenditure was less than 2 percent of the gross domestic product (NHC, 1985; Ahmad, 1989); hence, the contribution of the public sector in solving the housing problem is expected to be highly ineffective.

Based on the low 2 percent expenditure on housing, obviously housing has a low priority in central government expenditures. Priority of expenditure goes to food, security and the expenditure on services. The politicians in Sudan do not view housing shortage and its supply as an urgent need to the people that must be resolved.

6.2.2. The private sector

The contribution of the commercial private sector in shelter provision can be summarized by UNCHS (1993) in the following aspects:

- "Production and marketing of land and housing units for those who can afford them (usually down to lower-middle-income households);
- Provision of infrastructure at full cost recovery in middle- and higher-income settlements, and (if conditions are right) involvement in the provision of some services (such as water and electricity) to lower-income areas;
- Creation of a private housing-finance market via the mobilization of domestic savings, including secondary mortgages for middle- and higher-income consumers;
- Production of standardized building materials for use in housing construction;
- Development of an efficient and competitive private construction industry using industrial methods." (UNCHS, 1993)

In the economies of developing countries, there is a growing importance of the role of the private sector and its involvement in the provision of shelter, infrastructure, community services, and most aspects of human settlement development, as part of the privatisation policies. The call to increase the role of the private sector and privatisation are inherent in all the international declarations of human settlements. Paragraph 202, item (e) of the Istanbul Declaration of the Habitat Agenda (UNCHS, 1997b) asserts:

"Encourage the adoption of policies for the creation and development of the private sector and promote strategies for substantial and well-directed public and private investment in the construction and development of shelter, infrastructure, health, education and other basic services through, *inter alia,* the provision of appropriate technical and financial assistance; in addition, encourage Governments to promote strategies to ensure that the private sector, including trans-national corporations, complies with national laws and codes, social security regulations, applicable international agreements, instruments and conventions, including those related to the environment, and other relevant laws, and to adopt policies and establish mechanisms to grant

> contracts on a non-discriminatory basis; recruit women for leadership, decision-making and management and provide training programmes, all on an equal basis with men; and observe national labour, environment, consumer, health and safety laws, particularly those that affect women and children." (UNCHS, 1997b: Paragraph 202e)

Many other items in the Istanbul declaration have also focused on encouraging and promoting the role of the private sector to participate in efficient and competitive management and provision of services, and enhancing its role in sustainable development, and participation in the provision of shelter.

The Human Development Report (UNDP, 2003) also revealed that there is a growing private sector's role in the developing countries in the provision of health and education services, and that the push to privatise water supply and health services has been driven by three factors: lack of government resources, low-quality public provision and pressure to liberalize the economy.

The call to promote the role of the private sector to participate in the human settlement development in the fields of housing and infrastructure is justified by its ability to provide better entrepreneur skills, efficiency in management, its ability to perceive; assess and capitalize, ability to adopt creative business solutions, and to adopt innovative financial packages (UNCHS, 2001a). The on-going privatisation processes worldwide have given more significance to the private sector in urban governance and development. Also the economic argument claims that the market mechanism where private sector operates is a more efficient and equitable provider of housing than the public sector, which tends to be based on rationing. Furthermore, privatisation is likely to result in efficiency gains and better services for those who already have or who cannot afford to be connected to the existing services (UNCHS, 2001a).

Some writers were in fact sceptical about the role of the private sector. Post (1997:354) noted that it is far from being accepted that the private sector will rise to the challenge and he believed that the private sector in Africa is underdeveloped. He continued to argue that States in Africa have prevented the vibrant private sector from emerging. It is argued that in developing countries privatisation has often been pursued with a view towards obtaining revenues (UNCHS, 2001a). The biggest returns to government come from eliminating subsidies. The challenges of privatisation include that privatisation of social services needs building effective regulatory capacity for the involved institutions. Shortcomings of

privatisation include that, in the absence of effective regulations, the urban poor will be ignored, and further marginalized (UNCHS, 2001a).

Privatisation in Sudan has been progressed slowly under the constraints of a lack of a clear policy vision towards the benefits and losses. Ahmad (2000) was sceptical about the aims of the on-going privatisation programmes, whether they could really be named 'privatisation', calling for a comprehensive reform in city management and effective governance to stop the continuous deterioration and the 'deplaning' process of urban built environment. The conflicts of interests between the public and the private sectors on one hand and the private sector investors on the other, the lack of regulatory capacities that would preserve the rights of all participants in the process, where each have his own agenda and objectives, vis-à-vis the government, the public, the labour associations, foreign and local private sector investors. However, examples of the privatisation in the telecommunication sector in 1993 have shown a remarkable success in the promotion of the telecommunication services and better service delivery system adopting up-to-date technology. This success is taken as an encouraging factor to privatise other services. Shortcomings include high service delivery costs. However, the policy declared earlier by the authorities is that to make a service available at any cost is much better than the scarcity and the lack of service itself, which indicates the benefits and gains of privatisation.

6.2.3. Civil society

There is a growing support for greater involvement of the civil society and non-governmental organizations (NGO's)[68] in development and policy making in developing countries. Reasons

[68] The World Bank defines NGO's as those groups and institutions that are entirely or largely independent of government and that have primarily humanitarian or cooperative nature rather than commercial objectives. Or they could be defined as voluntary, service-oriented organizations. Some define them as organizations of private individuals who believe in certain basic social principles and who infrastructure their activities to bring about development to communities that they are servicing. They are those organizations, which are not affiliated to practical parties, and they are engaged in working for aid, development and welfare of the community. The discussion paper of the European Commission (CEC, 2000) used the term "NGO" to refer to a range of organisations that normally share the following characteristics1: "(1) NGOs are not created to generate personal profit. Although they may have paid employees and engage in revenue-generating activities they do not distribute profits or surpluses to members or management; (2) NGOs are voluntary. This means that they are formed voluntarily and that there is usually an element of voluntary participation in the organisation; (3) NGOs are distinguished from informal or ad hoc groups by having some degree of formal or institutional existence. Usually, NGOs have formal statutes or other governing document setting out their mission, objectives and scope. They are accountable to their members and donors; (4) NGOs are independent, in particular of government and other public authorities and of political parties or commercial organisations; (5) NGOs are not self-serving in aims and related values. Their aim is to act in the public arena at large, on concerns and issues related to the well being of people, specific groups of people or society as a whole. They are not pursuing the commercial or professional interests of their members".

include the need to fill in some gaps of failure of the government at both the national and local levels in the case of decentralization. Reasons also include the need for people's participation in establishing and implementing policies in ways that are responsive to local needs (UNCHS, 2001a).

The contribution of the NGOs as significant actors in the shelter process have increased significantly during the last two decades and this role has been supported and institutionalised by the GSS (UNCHS/ILO, 1995). NGOs and CBO's both have advantages in facilitating community action and mediating between people and government but like government, they are not efficient in shelter provision and infrastructure provision (UNCHS, 1991b; UNCHS/ILO, 1995; UNCHS, 1997b). However, exceptionally CBO's can be effective in enabling, encouraging and organizing supply efforts in housing and related services (UNCHS/ILO, 1995).

UNCHS (1993) summarizes the most effective roles for the NGOs and the CBO's (third sector) in the shelter process as the following:

- "Producing shelter at the lowest cost possible, tailored to the individual requirements and circumstances of people of varying income levels and family circumstances. In particular, the contribution and creative potential of women must be recognized and supported;
- Developing certain kinds of infrastructure (particularly sanitation and refuse-disposal) on a collective basis;
- Mobilizing people for collective action;
- Mediating between people, government and the commercial private sector; representing the interests of the community in negotiations; achieving leverage over official policy so that government decisions are informed by grassroots opinion." (UNCHS, 1993)

According to John Clark[69] (2003), NGO's are becoming important actors in the development of civil societies, firstly, because of the huge scale of their contribution of assistance funds to communities, secondly, because of their style of work that NGO's have proven abilities to get to poor people, work in out of reach areas, innovate, or in other way brings to effect things that are difficult for public institutions and finally, because many of them represent poorer people and they have close connections with poor communities. In addition, their resources are largely considered as additional resources and they are complementing the development effort of the others.

[69]"The relationship between the state and the voluntary sector" @ www.gdrc.org/ngo/state-ngo.html 2003

The aid spent by international NGOs is steadily increasing. It was revealed by the World Bank in 1992 that international NGOs channelled over $7.6 billion of aid to developing countries. It is also now estimated that over 15 percent of total overseas development aid is channelled through NGOs. Although the global numbers of NGOs are not accurate, it is estimated that they range between 6,000 and 30,000 in developing countries (World Bank, 2004)[70].

It is clear that NGOs and CBO's can contribute to the development of the housing sector. It is argued that individual men and women, and the households they make up, are, of course, the key actors in low-income housing development in most cities in developing countries. Their contribution is estimated to be between 50 and 75 percent of all new building units (Turner, 1988:8; UNCHS, 1993).

Obviously, NGO's can have a direct role in the housing supply process in Sudan through at least two of the four types classified by William (1991), and they can be involved in different stages of housing projects. NGO's have been classified by William (1991) based on their approach and orientation into four types, where all of them can have a direct or indirect role in supporting the housing supply process. The following is a discussion of the four types and a discussion of the degree of involvement in the housing process in Khartoum:

1. ***Charitable approach***: This type involves activities directed towards meeting the needs of the poor such as food, clothing, and shelter. This type of organisation would be very effective in the case of Khartoum particularly in supporting people in poverty, and to resist the effects of seasonal disasters that hit Sudan almost annually viz., the river floods, heavy rainstorms, and sometimes famine that cause displacements of the poor. Floods and heavy rains often cause destruction of large numbers of mud and *gishra* houses.

2. ***Service approach***: This type involves activities of provision of services such as health, and education. It may also include building mosques and digging wells in the case of Sudan. The recently distributed sites-and-services projects lack such services at their

[70] Source: http://docs.lib.duke.edu/igo/guides/ngo/define.htm 6.7.2004

early stages, and these types could effectively participate. However, observations show that these types operate actively in the squatter areas around Khartoum, which are mostly inhabited by the displaced southerners. Most of these organisations are religious oriented.

3. ***Participatory approach***: This type involves participation in self-help projects where local people are involved in implementation of projects by contributing cash, tools, land, materials and/or labour. Although this type can play a very effective and direct role in the housing supply, they do not exist in Khartoum. The reason could be the high capital inputs that can hardly be collected by those organisations, and the lack of donors willing to participate in these activities.

4. ***Empowering approach***: This type is directed to help poor people to develop a clearer understanding of the social, political, economic issues affecting their lives, and to strengthen their awareness of their own potential power to control their lives. This type may have the least influence of all the types in the housing process, and they temporarily or seasonally occur within the political activities. However, generally they do not exist because most of such activities are carried out through political parties.

In response to the failure of different institutions, including the private sector or market and the state to address poverty, it was suggested that partnership would help alleviate the problem and act as an alternative solution. The UNCHS (2001a) suggests that:

> "A partnership between multiple stakeholders, including the state, financial institutions, communities and the NGO's can offer much: state agencies can provide land and the financial institutions provide credit. Communities can repay loans and provide the required local management. NGO's can bridge the gap between the formal world (state and commercial enterprises) and the local neighbourhoods where the poor people operate" (UNCHS, 2001a: 85).

Observations show an ineffective and limited role of all types of these organizations in Khartoum despite the severe need of these organizations. They are necessitated by the wide spread and large scale of housing poverty, and the need for enabling strategies at all levels where NGO's can play an effective role, particularly in the housing sector. Obviously there is a need to encourage forming new organizations to fill the existing gaps, and to activate the roles of the existing ones.

6.2.4. Public private partnership

The "enabling approach" implies that government withdraws from the direct provision of housing to facilitate the efforts of all the sectors (viz., public, private, and the third sector) by means of more appropriate regulatory and financial environment, assuming that this effective partnership is a key factor in the enabling approach to shelter (UNCHS, 1993). Arguments in favour of partnership are selectively quoted as follows (UNCHS, 1993):

1. 'In housing provision often a gap between needs and demand is created. This gap is between what the market can provide and what people can afford. It is assumed that:
   'Partnerships provide a mechanism through which this gap (needs/demand gap) can be filled, by promoting the role of people and third-sector organizations in producing shelter at lower cost, within a framework of the right government support.'
2. 'Partnerships enable different sectors to gain access to the skills and resources (i.e., to the comparative advantages) of each other. The potential of the commercial private sector to generate funds far exceeds that of the public sector, ...and a similar point could be made about the capacity of the third sector to generate "social energy" and initiative among the poor themselves.'
3. 'Partnerships are an excellent way of reducing and spreading the risks associated with investment in low-income housing, particularly in relation to finance, construction, marketing and management.'
4. 'Partnership provides a mechanism for maximizing returns on investment by achieving a better balance between the complementary capacities of different sectors.'
5. 'Partnerships can increase the output of housing by creating economies of scale. Finance, expertise and skills can be pooled and responsibilities shared.'
6. 'Partnerships provide an excellent (and perhaps the only) way to balance equity with efficiency in the shelter process, which must be the overall goal of all shelter strategies.'
7. 'Partnership provides a mechanism to ensure that the comparative advantages of public, commercial private, and third sectors are able to be exploited in a mutually-supportive way, to the ultimate benefit of both equity and efficiency in the shelter process.' (UNCHS, 1993).

The following are the underlying factors affecting success of partnerships (UNCHS, 1993):

1. ***The need for strong government support***: Governments should maintain the right balance between the interests of different sectors in the partnerships (i.e. between intervention and liberalization). The public sector should therefore have the competence to facilitate and regulate the overall legal, administrative and economic framework within which all actors can effectively make their own contributions.

2. ***Popular participation:*** Market, State and people as partners must be able negotiate to avoid exploitation and domination over groups with less political power. Accountability should be ensured among government agencies. Government should promote ownership and sustainability among third-sector initiatives and public/private partnerships.

3. ***Coordination and integration***: Government can ensure that all the relevant partners are integrated into a national strategy and policy framework.

4. ***Benefits to all concerned.*** It is important to ensure that adequate return on its time and investment for all partners, particularly in relation to the commercial private sector.

5. ***The right economic and political environment***: public/private partnership cannot flourish over a long period of time and at a significant scale unless it is supported by the right economic and political environment.

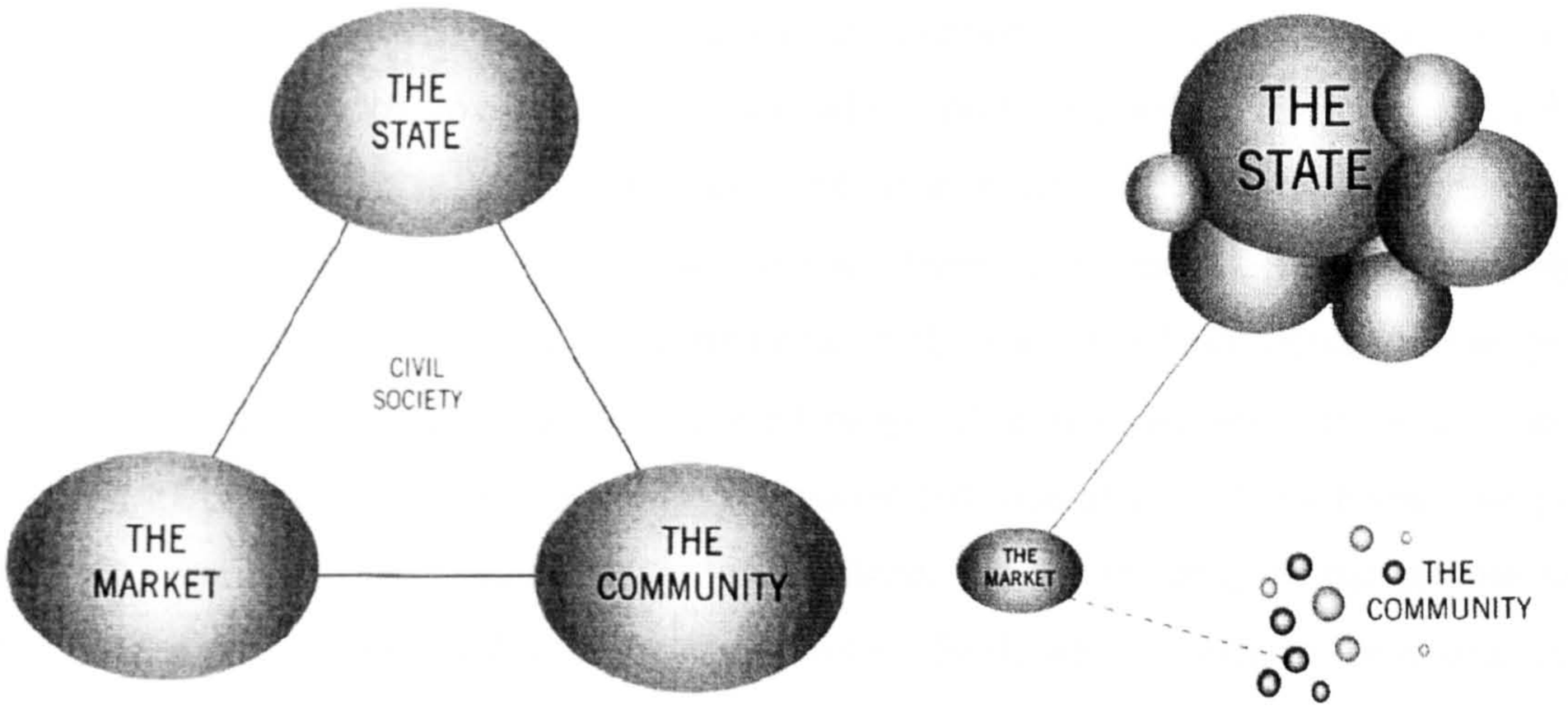
6. ***Sustainability***: Partnerships must last. The benefits of partnership should possibly be carried forward over time and spread across the city.

7. ***Danger of surpassing the poor and emergence of speculative activities***: The impact of the partnership on the lives of the poor will be damaging if commercial interests and speculative activities are not sufficiently withheld and kept in balance. The government is accountable politically and can ensure that the poor retain their access to land, housing and services and that their interests are protected through the role it undertakes as a decision maker.

Hamdi and Majale (2004) gave a full and concise text for partnership as a guide for municipalities. They illustrated governance in an idealized relationship between the state, the market and the community in contrast with governance in reality (*Figure 6.2*). They considered the idealized model, the first figure, to be homogenous, and assumed to be equidistant in terms of communication, equal in size and power with strong and well-established links. The second figure is more representative and better illustrates the case in Sudan, and highlights the need for the capacities of the different partners to be enhanced and links to be established or strengthened. They identified four elements that define and distinguish partnership (Hamdi and Majale, 2004: 25):

- 'Common objectives and goals among partners (objectives may be the impetus of the partnership or they may involve over time;
- Shared risk and mutual benefits (risk and benefits may be different for each partner and may accrue with different frames);
- Contributions from all partners (both monetary and non-monetary):
- Shared authority, responsibility and accountability.'

Figure 6.2 The idealized model of governance and governance in reality
Source: (Hamdi and Majale: 2004: 25)



In a view of the advantages, merits, and factors realizing the success of partnership, the situation Sudan, the three sectors are poorly operating under the shortage of resources, and the reluctance of the government to intervene in applying the appropriate regulatory framework that would furnish a good environment for effective partnership. The objective of decentralization adopted by the federal government system was to mobilize the resources of the states and increase participation. After the adoption of the Investment Act of 1998, a remarkable economic thrift was observed. However, the Investment Act attracted private sector investors to the fields of construction, contracting, marketing and commerce, education and health, service and light industries. Some relatively large projects were carried out by public/ private shared companies such as solid wastes disposal (Al-Sheikh, 2004). The privatisation programme of the government was unsuccessful in large capital projects, such as highway road construction, airports, bridges, because of the limited financial capabilities of the private sector to get involved in such risky projects, although the economic performance in terms of foreign currency exchange rate was stable during the last six years or so. It is believed that the commercial private sector in the African Sub-Saharan countries is very weak (UNCHS, 1993), and Sub-Saharan countries have shown a decline in their economic growth rates (UNCHS, 1991b). Most investments of the relatively large projects were supported by foreign investors.

Within the privatisation programme of the services the government adopted different contracting forms, such as BOT (Build-operate-transfer), BOOT (Build-own-operate-

transfer), BOO (Build-operate-own) etc. Dowall (1996) pointed out that BOT contracts are complex but are widely used to finance infrastructure. Lindfield (1997) pointed out that BOT represents one of two basic ways of infrastructure finance by the private sector. The second type is the financing of government entities, which provide service, on commercial basis, involving operation. It is argued that the Sudanese experience in this respect involved problems of clear legal definitions of the contract terms and contract forms (Abdulmajeed, 2004). It assumed these issues are key elements in the success of privatisation. The private sector in Khartoum is involved in a limited range of municipal services in the field of operation of public parks, livestock markets, municipal animal pins, ferry boats, and public toilets (Al-Sheikh, 2004). Municipal projects offered for contracting by the private sector often have a small capital value in the maintenance field, which confines these projects to small contractors (Al-Sheikh, 2004).

6.3 Basic roles of the public sector in housing supply

This part discusses the basic role of the public sector that has an influence on the housing supply. The roles will be discussed under four headings, institutional and administrative system, fiscal policies, regulatory framework, and urban planning and management.

6.3.1. Institutional and administrative systems

A prerequisite to the development of human settlement and shelter policies is the availability of well-functioning administrative and institutional systems. The World Bank policies advocate a reform of government policies institutions and regulations (World Bank, 1993). Although the enabling strategies requires active and effective participation of actors, including the private sector, NGOs and CBO's, the central government institutions remains an essential actor in the governance of cities. It still holds crucial powers of economic and financial resources and also normative legitimacy (UNCHS, 2001a: 63). The state is assumed to play a new role in the era of Globalisation. This new role is mainly to create frameworks and to facilitate collective action rather than to intervene directly (UNCHS, 2001a).

The evolution of housing and settlement development policies have evolved from centralized planning, top-down blueprints, and emphasis on "filling deficits" in capital, skills and technology to the market and people-based solutions, process approaches. Currently housing policies focus on building capacities and institutions to manage development and change (UNCHS, 1997a). Building capacities involve issues like public/ private partnership, decentralized government and developing finance institutions (UNCHS, 1997a). Many

developing countries do not have efficient institutional structures that enable analysing the markets operations, identifying the need for intervention and establishing policy frameworks for the different sectors (UNCHS, 1996b). Developing the institutional capacities is part of the enabling approach. Particular attention is given to finance institutions. Most developing countries are far from achieving sustainable and viable institutional housing finance systems Okpala (1994). In the African context, Picard, et al. (1994), based on conference proceedings that aimed to strengthen the existing institutions and creating new structures and processes, suggest that there is a need for capacity building of these institutions. The activities of development of institutions should begin with the objective of providing governments with databases, analytical tools and decision making guidelines as part of the sustainable development process.

Sudan has passed through different ruling systems, but generally swung between democratic parliamentary and military totalitarian rules that take power by military coups. Frequent changes in the institutional, constitutional and administrative system usually follow when a new government takes over. The system finally came to rest on a Federal ruling system. However, a detailed discussion on this issue will follow.

Table 6.1 illustrates the planning levels and the dichotomy of housing related functions between the national (central government) level and the local (state) level resulting from the application of federalism in Sudan. The regional planning level was absorbed within the new institutional structure. It could be noticed that, overwhelmingly, housing provision functions are undertaken by the state level authorities. More authority has been delegated from the central government to state governments in the new federal system. The housing authorities were accordingly split between the central government and the state governments. The largest portion of these authorities came in the hands of the state governments. Such authorities deal with the provision of housing land, provision of municipal and public services and local infrastructure, development control, and upgrading of squatter areas. The central ministry of housing undertakes a supervisory role and deals with macro scale housing issues such as outlining the major housing policy and the policy-related issues.

The next section discusses the role of the central governments, and the local government. The discussion relates these roles with the housing supply process and the international settlement development policy frames and the enabling strategies.

Table 6.1 Housing-related functions dichotomy between the public and the private sectors in Sudan.

		Public sector	***Private sector***
National level		Planning legislation Housing policies Macro scale housing issues Primary infrastructure Finance Land policy	Implementing primary infrastructure
Regional level	**States**	Land management Settlement planning Urban land subdivision Master plans/ land use planning Management of urban growth Upgrading of housing areas Financing local infrastructure Allocation of urban housing land Sharing community facilities Finance	Building and site development. Implementing local infrastructure. Sharing community facilities. Finance.
Local level			

6.3.1.1. Central government

Housing policy is influenced by the political environment and the corresponding ruling system and delegation of power. Government in Sudan passed through varied forms of ruling systems. *Table 6.2.* The government system passed from strictly centralized colonial government (before 1956) to a native centralized government (1956 – 1980) then regional decentralized (1980 – 1991). Currently the country is ruled by a federal government system, where it is divided into 26 man-made states. The ruling system and their different forms are reflections of the complexity of ruling a vast country like Sudan. It covers approximately 2.5 million square kilometres, equivalent to ten-folds of the area of Britain, and five-folds of France (At-Tayeb, 1981).

Post (1997) believes that the African State is an artificial construct inherited from colonial times and that most African governments have faced difficulties with territorial jurisdiction, deeply entrenched ethnics, regional rivalry, a lack of common identity and heavy external interference. The changing forms reflect a move towards decentralization but their rationales were questionable. Post (1997) noted that in Sudan, a large and diverse country, people are identified by their family, tribe, region, origin, and religion, but rarely with their country. Post (1997) describes the urban development in the South, with a view to the case of Sudan, perhaps demanding political reform rather than improving the citizens' living conditions. While the government was seeking to sign a peace agreement with the rebels in south Sudan, a new conflict in Darfur west of Sudan is broken out.

The main declared objectives the administrative reform were the mobilization of the resources and public participation. Stren (2002: 22) argues that decentralization from government in itself, while beneficial generally, is no panacea for ineffective government at other levels. Stren (2002) interpreted the associational structures which exist in Khartoum as linking the neighbourhoods to the existing municipal and state level institutions and providing services for the population when formal institutions, in spite of decentralization and their legal responsibility, have no ability to act on their own (Stren, 2002). Hamid (2001; 2002) raised two arguments on the shortcomings of the decentralized system in Sudan. First, the newly created formal government institutional structures were not provided with sufficient financial resources and adequately trained personnel and accordingly they failed to fulfil their predefined mandates. Second, the new structures at different levels have been superimposed on existing popular associations, with overlapping of responsibilities often leading to conflicts and duplication of efforts. More problems were the increased administrative costs and it has been less effective in creating a broad-based democratic process as it purported to achieve (Hamid, 2002). Rayak (Not-dated) in his evaluation of Federalism in Sudan added that the shortcomings included concern about appointing State governors, ministers, commissioners, executive directors in the localities on tribal allegiances, favouritism and nepotism rather than professional competence, experience and unbiased attitude of the candidates. Administrative expenses on all these federal positions reached up to 90 percent of the total fund allocated by the central government in some states, hence affecting expenditure public services (Rayak, (Not-dated): 60).

The central government in Sudan operates under very complicated problems of scarce resource allocation, as it is one of the lowest-income countries (GNP at PPP $1970 and GNP per capita $395 to the year 1995[71]). Resource allocation is constrained by factors of civil war in the southern part of Sudan extending over the last 21 years, which clearly retarded the economic development of the country, and drained off valued resources. Political stability is often threatened by such problems and other tribal conflicts, which frequently take place across the country. Culturally the country is greatly diverse in terms of ethnicities, languages, religions and political alliances. It is described as "Africa in microcosm" (At-Tayeb, 1981). The government is assumed to take the full responsibly not only in the development, political stability and fulfilment of national goals in all aspects of life, but also commitment to the

[71] Source Human Development Report 2003 (pdf page 280)

international declarations in the development of human settlements and other related international agendas. Challenges of the central government are to restore peace all over the country, implementing development projects, and provide the basic services, better living conditions and certainly adequate shelter.

Table 6.2 Government systems in Sudan and salient events
Source: After, (Hamid, 2000; At-Tayeb, 1981; At-Tahirr and Dani, 1999)

Year	***Salient events***	***Government type***
1921	Initiation of the "native administration" *(al-edara al-ahleiyah)* tribal leaders assigned as native governors with limited administrative and judicial powers being delegated by the colonial authorities.	***Central colonial***
1937	Initiation of colonial local government system, municipalities, and local councils.	
1943	Initiation of centralization, the country was divided into nine provinces each governed by a commissioner and the country was centrally ruled	
1951	"The Local Government's Act" was enacted based on the recommendations of a British expert A. R. Marshall.	
1954	Establishment of local councils under the powers of the newly established Ministry of Local Government	
1956	Independence	***Central - Sudanese***
1971	Enacting "People's Local Government Law", dividing the country into 5200 "basic units" *(wohdat assasiya)*.	
1972	Enacting the "Southern Regions Act of Autonomy"	
1980	Enacting the "Regional Government Act" The country was divided into five regions and the southern region which is in autonomy	***Decentralized - Regional***
1991	Enacting the "Federal Government Act'. The country was divided into nine states, each with a State Governor and a federal Ministerial board of four ministers	***Federal government***
1993	Issuance of number of decrees dividing the country into 26 states, each with a State Governor and a federal Ministerial board of four ministers. In 1998, the federal system was reaffirmed by the constitution.	

Development planning is one of the major tasks of the central government. Under the previous complex situations the government failed to adopt regular short-term socio-economic development plans. This might be ascribed to the difficulty of forecasting government incomes and expenditures, the variety of contingent expenditures, and the failure of the government to attract foreign aids. The government was able to attract only 7.6 billion US$ during the period between 1970 and 1983, 62 percent from Western and international agencies including the World Bank which offered US$797 million loan, and 38 percent from Arab and Islamic countries and finance agencies (Sheikh-Musa, 2001). However, international aid progressively declined after 1983 and international debts steadily increased, owing to the failure of the government to repay the loans, until it completely stopped by early

1990s (Elgadi, 2004)[72]. The decline of the international financial flows affected the whole economy and caused deterioration of educational and health services and other basic services, and increased poverty and scarcity of some essential commodities (Sheikh-Musa, 2001: 50).

The only development plan adopted by the government during the last two decades was "The National Comprehensive Strategy" (NCS) for the period from 1992 to 2002 (GOS, 1992). Another declared 25-year long-term plan is in the course of being established. The CNS included six pages devoted to 'The strategy of physical planning and housing', to be implemented in three phases. Personal assessment of the strategy is that it is highly ambitious and most stated objectives represented hopes. The document included unrealistic and unattainable objectives; policies and programmes not reflecting reality, and investments to be spent seem far from being attainable. For example phase one of the strategy (3 years) vaguely stated that the current housing plans of 500,000 plots of sites-and-services should be completed (*Table 6.3*). In phase two (4 years), the document stated that 660,000 plots should be provided to meet the housing demand resulting from natural population increase and migration, in addition to upgrading 450,000 substandard dwellings. Phase three stated that 440,000 plots should be provided to meet the housing demand resulting from natural population increase and migration, in addition to upgrading 450,000 of substandard dwellings. This gives a total of one 1,100,000 plots for the last seven years of plan and upgrading of 900,000 dwellings for the same period (GOS, 1992:92). The document did show the geographic distribution of the plots and how much should be allocated for Khartoum, which most attracts migrants. No published records were found which detail how many of these objectives were attained, but it is evident from interviews with the officials that the housing plan of *Al-Engaz* (1990) was suspended in 1995, three years after commencing the strategy, after a huge rush of applicants that could not be gradually stopped by the authorities.

Table 6.3 Plots planned to be provided within "The National Comprehensive Strategy (1992-2002)"

Source: After GOS (1992: 92)

Phase	***Sites-and-services plots to be provided***	***Upgrading plots***
Phase 1 (Three years)	Completion of the ongoing housing plan of 500,000 plots	---
Phase 2 (Four years)	660,000	450,000
Phase 3 (Three years)	440,000	450,000

[72] Source: http://www.worldbank.org/wbi/attackingpoverty/activities/sudanpropoor.pdf accessed 2004.

At central government level, the "Ministry of Environment Physical Planning" undertakes the responsibility for national shelter and settlement development issues. The executive authorities are limited, as most of these are in fact in the hands of State Ministries. Most authorities tend to be legislative (*Table 6.1*). The ministry undertakes a supervisory role in the planning issues in general. Issues of national housing policies seem to be un-stressing or at least not within the top priorities of the government. Under the new roles of governments to act as enablers, governments should encourage housing production, facilitate the supply process and shelter provision improvements (UNCHS, 1991b). However, in order to carry out these new roles obviously there is a need for restructuring the administrative system for settlement development and improving the capacities of the relevant central government bodies. The central government should furnish a wider policy environment in which the housing sector operates efficiently and it should improve the markets where small-scale entrepreneurs operate (UNCHS/ILO, 1995).

The housing programme in the "National Comprehensive Strategy" (GOS, 1992) (*al-estrateegeiyah al-gowmeiya ash-shamillah*) emphasises self-help as an important tool for implementing not only the housing programme but also provision of services and improving the living environment by mobilizing the efforts of the communities (NGOs and CBO's) and general voluntary work. But it includes a contradicting point in another aspect of the same programme, where it calls for abandonment or minimizing provision of housing through the conventional sites-and-services and replacing it by focusing on providing complete houses or core houses depending on affordability of the households (GOS, 1992: 90). However, sites-and-services projects are often difficult to implement without self-help approach, and it is therefore meaningless to encourage self-help housing and abandon the sites-and-services at the same time. Also, while governments are advised to abandon direct provision of shelter and to act as enablers (WB, 1993), the programme calls to revert back to the provision of complete houses as one of the options. However, the core house option included in the programme is the most realistic approach that most addresses the reality of the resources for all stakeholders.

6.3.1.2. Local government

Local governments are assumed to play a new significant role in the enabling approach in the shelter, infrastructure and community facilities provision. The administrative capacity and the competence of the local governments should be effectively increased in the delivery of public

services within the overall framework of shelter policy (UNCHS, 1996b). According to (UNCHS, 1996b), the new role perceived by the international agencies implies three major areas of responsibility for local authorities:

1. Delivery of specific core services to the community, such as nutritional programmes, health services and education.
2. Providing strategic policy framework for the delivery of urban services.
3. Working with or through the other societal sector participants, NGOs, CBO's and the private sector to ensure the enablement and regulation of service delivery within the strategic policy framework. (UNCHS, 1996b).

According to Goldsmith (1992), local government in normative terms is justified for its virtues as a representative, participatory, responsive, accountable, territorial, and communitarian institution. Goldsmith (1992) identified three models of local governments based on experiences in Western countries, which he believed all are Weberian types. The first is the "*Clientelistic/ Patronage model*", based on the relationship between leaders and the led. The second is the "*Economic-development model*", where the overriding task of the local government is to promote the economic health of its community and provision of services. The third is the "*Welfare-State model*", where the value of efficient service delivery, linked to national norms concerning equity and redistribution, has shaped the growth and working of local government, which has acted as a producer and deliverer of welfare state services such as education, housing and transport. Goldsmith (1992) believed that these models, which developed in the West, mainly (UK, USA and Scandinavia) have led to the emergence of the "*market-enabling model*" during the era of Thatcher – Reagan. The emphasis of the market-enabling model has been on a shift in the role of local government from a producer of services to one in which local government enables others to produce, independently or in partnership, a wider and better range of services at the same or low cost (Goldsmith, 1992:396). He also believes a fourth new and more universal "*Growth-coalition model*" is possibly emerging, as interests are emerging with no spatial ties but rather increasingly multi-national in character and moving towards provision of services, infrastructure and management (Goldsmith, 1992:408). While Western countries have proceeded through these models, local governments in Khartoum would best be described of having most traits of clientelistic/ patronage model described earlier. This is also supported by Post (1996:125), who notes that (after Woodward, 1990) 'the political system in Sudan resembles a patronage system in which traditional systems have been honoured.' Gilbert

(1992b: 454) and El-Sammani, et al. (1989) pointed out that formalized clientelism was a characteristic of Khartoum neighbourhoods and was successful in involving communities in services local projects of services provision and organised political protest.

Local authorities are also assumed to play a greater role in urban management and governance recognizing these as essential in implementing the Habitat Agenda, and therefore there is a strong need for decentralization through democratic local authorities (UNCHS, 1997a; UNCHS, 1997b). There is a need to:

> "...strengthen their financial and institutional capacities and to ensure their accountability, transparency, and responsiveness to the needs of people" (UNCHS, 1997b: Paragraph 12).

The GSS asserted the need to strengthen the efforts of local authorities to collect user charges and property taxes as a means of financing and maintaining infrastructure systems (UNCHS, 1990b: Paragraph 78). For a rapidly urbanizing city such as Khartoum and the steadily increasing population it is important to build strong managerial capacities to cope with the population increase. McGill (1994) argues that what city managers in developing countries need is to establish a 'robust managerial process' for coping not only with the population increase, but also with the consequences of the increasing demand for infrastructure and services, which city managers in Khartoum should do to stop the continuously deteriorating urban environment. McGill (2001) also argues the need for building the city council capacity to become the deriving force in the urban management process, stressing the need for applying structural, process and contextual reforms to integrate all the actors in the city development process.

Based on the assumed roles highlighted above and the previous *Table 6.1*, the local level government in Sudan is represented by State level *(wilaya)*, which is headed by the State Governor *(wali)*. Every state is divided into a number of local councils or locality, it could be urban or rural, and they are locally called (*mahalleiyat*). Another level is the province level (*muhafazah*) headed by *(muhafiz)* whose role and administrative status was peculiar and ambiguous. This was one of the weakest elements of the Federal system (Hamid, 2002). According to the federal system, there were 120 provinces and about 634 localities (Adam, 2001; Hamid, 2002). Later the *(muhafazah)* levels were cancelled and they were merged with (*mahalleiyat*) into a new administrative entity called *(moatamadeiya)*. The localities, which numbered about 37, in the three provinces of Khartoum State, were again recently

restructured into only seven *(moatamadeiyas)*, headed by a new 'commissioner' position. The number of these localities, which covers not only Khartoum, but also all Sudan, was criticized as being irrationally high, imposing high pressure on the public expenditures (Sheikh-Edris: 2004).

Hamid (2002) pointed out that the local councils, which he called localities, have the power, ability and the legal grounds to develop their own sources of finance and increase their income through property taxes, sales taxes, 40 percent of locally-generated income taxes, added-value tax, private investments, rents, licenses, and permits, donations collected occasionally for specific purposes, and from intermittent transfers from the state government to resource-poor localities, in addition to public land sales (Hamid, 2002: 7).

In the light of the abilities of the *(moatamadeiyas)* to legally collect income and the wide authority given to them in the field of services provision, observation shows that their contribution is limited. However, the State authority *(wali)*, i.e. the State governor and his cabinet (five State Ministers), remarkably have the larger range of executive powers, which mean that the mode of authority within the State level is centralization.

A look at the Khartoum municipality budget for the year 2002 reveals a number of imperfections. The approved budget shows that the revenues were about SDD1.6 billions. Only SDD0.35 billions (BP0.73 millions) was spent in 'development'[73] *(al-tanmeiya)*, nearly SDD0.7 billions (BP1.46 millions) for wages, and SDD0.6 billions (BP1.3 millions) is spent on petty cash (*alfasl althani*) for daily work expenses (Al-Sheikh, 2004:387-388). Stated problems include the weakness of the state authorities to efficiently levy the taxes and increase revenues (Al-Sheikh, 2004; Sheikh-Edris, 2004). A large number of government institutions fail to pay the tax. Proposed solutions under consideration by the State included, part of the salaries to be paid by the State Government particularly the salaries of the teachers in the primary education, reducing the labour force, and increasing the tax rates (Al-Sheikh, 2004: 388).

The fiscal relationship between the centres of regions often formed a bottleneck in the performance of the local councils because of the lack of specified principles of allocation (Al-

[73] A broad term that indicates expenditure on municipal services such as building primary schools, fighting Malaria, equipment for road maintenance and surface water drainage, printing primary education textbooks, etc.

Teraifi, 1991). El-Sammani et al., (1989) identified eight sources of finance of the local government councils which does not remarkably differ from what has been identified by Hamid (2002) previously:

1. Assigned tax, which are government taxes based on the 1954 Act. Examples are rental tax of one-twelfth of the annual tax and the entertainment tax.
2. Local rates levied on houses.
3. Licensing fees such as trade licence, health licence and building permits.
4. Government-owned property rents.
5. Grant-in-aid from central government.
6. Revenues from city council development projects.
7. Fees on special services.
8. Loans from banks.

They pointed out that self-help finance constituted an important source of funding urban projects, but these self-help financed projects do not give due consideration to running expenses, personnel provision, equipment, and consistency with other projects and allocated budgets (El-Sammani et al., 1989).

In the year 2002, a joint four-year "Local Government Support Programme" was launched between Khartoum State and United Nations Development Programme (UNDP), by which UNDP funded US$1.05 for the programme, whose total budget was US$1.2 millions. Generally, the programme aimed to restructure and rehabilitate eight localities in addition to the Khartoum Municipality. The following are the specific objectives of the programme (Al-Sheikh, 2004:385):

1. Developing finance capabilities of programme by increasing revenues.
2. Activating and encouraging public participation in decision making in the planning issues.
3. Establishment of information centres in the localities.
4. Developing women participation in local government activities.
5. Revision, development and filling the gaps in the organizational structures and to improve personnel performance and getting rid of the surplus.
6. Revision of the laws and legislations to eliminate any imperfections with an aim to improve the functioning of the localities.

According to (Al-Sheikh, 2004:380), expenditures of the State of Khartoum covers eight fields; education, health, engineering affairs, economic affairs, social affairs, legislative and legal affairs, agriculture and livestock, and security. A look at the expenditure of the State shows that a very marginal budget is allocated for housing activities. It indicates that the involvement of the government in housing is almost negligible. The budget for the year 2002 shows that a marginal amount is allocated for the municipal services mainly in improving infrastructure.

A number of government departments are involved in the housing supply process directly or indirectly, working under the Federal Ministry of Housing and Public Services in the past, currently named Ministry of Housing and Engineering Affairs. However, at the federal level the Ministry of Physical Planning exists with a supervisory role, and mostly national policy issues. The next section discusses the State Government local authorities institutions concerned with housing supply and their role. It is primarily descriptive and briefly highlights the role, functions, authorities, and responsibilities of each department. No references were found that clearly identifies the official duties of each department. Data was collected from interviews with some officials, personal background and observation. E-mail contacts with some officials and professionals to obtain official records were negative. In spite of these constraints, this section is important because it completes the view about how the public sector institutions operate.

Land Registration Department

The major duty of the land registration department is keeping the city's land cadastre and title records. Records of public-owned and private-owned land are kept, with any reserved rights of their holders. The department operates under the judiciary authorities, and operates within the local customary land practices, Islamic modes of land ownership and land exploitation rights, and officially issued Acts. Although the practices are continuations of the colonial practices and operate under a nationalized land, evidence has shown some tendency and intention to improve the efficiency of land allocation by the government for both public and private use (Payne, 1997). However, attempts to introduce new urban modes of tenure such as flats and floors tenure rights, and 'rent-to-buy' tenure, need to be further established and put into action. However, some of these have already been established within the efforts of the local State authorities to mobilise the resources (MHPU, 1992). According to Simpson (1976) the land registration, based on systematic adjudication of land or "systematic ascertainment of

rights of land" which was called "land settlement" in Sudan is the first in Africa, applied by Lord Kitchener, the first Governor-General of the Anglo-Egyptian Sudan after the Reoccupation of Sudan in 1898. The land registration system is a replication of the system applied by Kitchener in Cyprus, which he took as a model.

Land Department

This department is responsible for undertaking all the executive actions in terms of enforcing and implementing government laws, judicial and ministerial decrees and ordinances. The principal task is to allocate land for different purposes and for different beneficiaries and issuance of title deeds and pass it on to the Land Registration Department under the Land Disposal Act modified in 1990. It is also responsible for land acquisitions of the privately owned land for urban uses and tenure clearance.

Directorate of Physical Planning

The directorate of physical planning is primarily responsible for implementing and phasing out the city structure plans, particularly residential land selection, subdivision and planning. It is also responsible for rationalizing land utilization, land use planning activities, settlement of squatter problems, upgrading, and designing urban residential projects (MHPU, 1992).

Squatters Treatment Executive Body

As many of the areas, which were designated for the sites-and-services, were occupied by squatters from all parts of Sudan, a special executive body was established under the planning authorities to deal with squatters called the Squatters Treatment Executive Body. The main task was to clear out squatters from the subdivided land and prevent squatting. Areas occupied were located at both the periphery and within some internal parts of the city. The majority of these squatters were from the southern region. During *Al-Engaz* Housing Plan (1990-1995), period the Squatter Treatment Executive Body cleared and relocated about 30000 households, most of them to *Dar-es-Salaam* and the Jabal Awlia camps for displaced southerners (MHPU, 1992:32).

Survey Department

Within the housing plans the survey department task is the preparation of base maps in the early stages of the housing plans, and implementing the land subdivisions prepared by the planning authorities. Plot maps are also produced by this department with the appropriate locations, site dimensions and addresses.

Sub-Directorates

Sub directorates include: The Central Committee for City Planning, The Research Directorate, which is actually a statistical department, Services Directorate, The Housing Plan Management Office, The Displaced Southerners Camps Directorate *(Dar-es-Salaam villages)*, and the Squatters Police Department (MHPU, 1992).

With reference to the previous description of the different departments and their official tasks and responsibilities, these institutional bodies portray a lack of coherence, lack of clear distribution of authorities, and interference of responsibilities, lack of clear vertical and horizontal linkages. In addition, gaps of functions such as availability of executive bodies for provision of infrastructure and public services, which seem to have no significance in the plan preparation stage, could be observed.

6.3.2. Fiscal policies

Fiscal policies are the ways governments use their expenditure and taxation to manage the economy of the country. Government fiscal policies have an impact on the housing supply process. In addition, macroeconomic policies influencing economic growth and national income levels have clear impact on the quantitative and qualitative housing supply aspects. Furthermore, inflation rates and interest rates influence the decision making of household firms, financial institutions about demand and supply and price of the house, and taxes and subsidies influence the performance of the housing sector as a whole (World Bank, 1993). Fiscal policies can be used to boost the level of economic activity when the economy tends to be in recession. They can also be used to slow down the economy if it is doing too well. Reflationary or deflationary options are adopted as fiscal policy respectively in the previously mentioned cases. The first is done by cutting down the lower or basic higher rates of taxes, increasing the level of personal allowances, and increasing the level of government expenditure and the second is done by doing the reverse. Both are often known as demand side policies, the supply side approaches aim to increase the capacity of the economy to increase production[74].

In the urban planning context planners use the 'Fiscal Impact Analysis' to estimate housing or urban development costs including services and the tax revenues that a proposed development project is likely to produce and to evaluate the consequences for local government budgets

[74] http://www.bized.ac.uk/virtual/economy/policy/advisors/fiscal.htm accessed 12.3.2004.

(Dekel, 1995). UNCHS (1993) argued that a prerequisite for the successful public/private partnerships is the critical availability of a wider policy environment such as the availability of stable fiscal, monetary and pricing policies that should be favourable to private-sector participation. The following macro-economic fiscal factors were considered to be essential for effective partnership (UNCHS, 1993)[75]:

1. "Ensure that macro-economic policies avoid market distortions and promote growth;
2. Encourage domestic savings and promote access to them by the private sector;
3. Support pricing policies which permit markets to function effectively;
4. Emphasize efficiency in urban management (including security of tenure);
5. Restrict the public sector to activities which the private and third sectors cannot undertake effectively (UNCHS, 1993)".

The monetary revenues that are concerned with urban land in Khartoum are primarily from three sources, taxes on real estate sales, direct sale of urban land at the market value, and the nominal cost of land paid by the beneficiaries in the *housing plans*. The first include a betterment levy on resold land ranging from between 25 to 40 percent of the total cost, 10 percent direct income tax, 5 percent registration fee, and 2.5 percent *zakat*. The total mounts up to between 42.5 and 57.5 percent of the resold house. Approximately one or two months before the end of the fiscal year by the end of December discounts are imposed to these taxes to increase the revenues in case the collected revenues are far below the target figure. According to Salama (1989:17), taxation on land originated from the belief that rent or (income from land sales) does not originate from effort or skill of the owner, but it is essentially a result of the expropriation of its natural productivity, location and (urban or physical development of the area), based on liberal Western theories. Such tax is certainly high and unaffordable, which forces poor people to delay their plot registration and seek illegal methods of title exchange. However people seeking discounts go through a long process of appeals in all these departments, by which the betterment levy could be brought down to less than 25 percent, and obtain similar discounts in other taxes. In fact, the government is forced to apply these discounts in order to increase its revenues. Obviously, such process imposes restrictions on the land market transactions. The situation becomes even more complicated as all these departments are located in different parts of the city, and operate on sectoral basis.

The Habitat Agenda (UNCHS, 1997b: Paragraph 189d), asserted the need to: 'enhance national and local tax collection capabilities and expenditure control to contain costs and

75 These points were considered in the Second International Shelter Conference held in Vienna in 1987, after: UNCHS (no date). Shelter for All - The Opportunity for Public/Private Partnerships (Nairobi).

enhance revenues.' Housing policies should be oriented to generate more resources for investment in housing and increase the revenues of the local authorities (UNCHS, 1997a). The tax base in developing countries tends to be lower than high-income countries. The high tax base in high-income countries provides considerably larger welfare services (UNCHS, 2000). Salama (1989:11-12), in his case study on Sudan, pointed out that in developing countries local government taxes are not generally used for fiscal redistribution, and that these taxes could be designed to create a growth inducing effect, which should distort location decisions, mobility of capital as little as possible. He also added that the larger the local authority the easier it might be to expand the tax base and the range of taxes.

Housing land policies and land acquisition issues cannot be separated from the taxation issues that are inherent in the fiscal policies concerning wealth distribution, planning strategies, affordability equations, and the tenure arrangements, which the authorities will subsequently have with housing project beneficiaries (Zetter, 1984). Land value taxation seems to be a desirable strategy for central cities to employ in seeking to encourage development and to attract households (Bourassa, 1990). However this not likely to be the case in Sudan, as the tendency always in such policies is to keep high revenue rates for the government, leaving no room for such mechanism to take place.

The largest part of these financial revenues goes to the central ministry of finance, while the state government utilizes the other part. This tax has been almost steady since it was first adopted before independence in 1956, except the 2.5 percent *zakat*, which has been newly added. Although it seems that there is a great opportunity, no flexibility in the assessment of that amount was applied to intervene in the market to affect the demand and supply, or to increase the revenues. If it intended to mobilize the urban housing land resources, the authorities must intervene to act upon the market forces through an appropriate fiscal policy.

There are two commodities in the housing market, housing units and vacant housing plots. The customers of the developed housing plots can be divided into two categories, high-income people and the Sudanese expatriates who recently entered as effective actors in the housing market. The housing plots market is much bigger than the developed plots market owing to its relatively lower price. Therefore, the poor sector of the population can find their way through in this market. The land speculators are the most effective actors in this market. They buy plots on a commercial basis and sell them for mainly financial profits. The middle

and high-income population are important purchasers for financial or family security purposes. Owing to the high inflation rates, characterizing the economy in Sudan, investment in land seems to be a dominant strategy in fighting inflation instead of depositing money in the banking system. This, in fact, has a negative impact on the overall resource mobilization process. The high taxes imposed on the resold housing units or plots also have a negative impact on the housing supply. Some local selling attitudes also have a negative impact on the housing market, such as the seller having to pay all the tax but traditionally he receives a net agreed-upon value and leaves the tax to be paid by the purchaser at the registration stage. Therefore, in that case if the amount is affordable, it will be paid at the selling date otherwise; the purchaser will delay the registration until he obtains the tax value in future. The survey showed that 20.6 percent of the resold plots have not completed registration, which apparently means that they did not pay the taxes. It could be argued that if the taxes are reduced by the public sector, the prospective revenue will be little affected because sales would increase following the supply and demand rules. Therefore, if the sales increase the housing supply will increase. The government relies on the taxes as an important revenue source for the central government. It often declares reductions during the last two months of the government fiscal year, to encourage people to register their bought plots, therefore generating more revenues.

The housing policy in Sudan depends upon the site-and-services system and self help. The government subdivides the urban public land and allocates it to the people. A distinction must be made to clearly identify whether this policy is really a resource mobilization process, an income distribution process or a real housing supply process. An argument could be made here that the resource mobilization process would eventually lead at the end stage to housing supply. The resources in this context are three, the urban housing land, the surplus labour that could be employed in the self-help processes, and the revenues collected through the tax system. The land is one of many factors in housing supply that has been intensively used by the authorities, but there is no doubt that distribution of housing plots to the people is a starting point in the housing supply process.

If it is assumed that the housing policy in Khartoum is an income distribution policy, many questions come to mind. The first is who is qualified for a piece of land and who is not. The second question is how many plots are available now, and in future, to be allocated. A third question is what is the equivalent monetary value of the plot? The answer to these questions

needs prior assessment of the recent urban land cost and the projected cost. Also, there is a need to subdivide the land in a way that would fulfil an equal or fair distribution of income. This process will finally lead to a real estimate of the anticipated income revenues from the tax system. Looking into the current system it is not clear enough that such methodology is adopted. Therefore, if we are to assume that the system is an income distribution policy, the argument is not strongly supported.

The housing market in Khartoum operates under highly unstable and changeable economic conditions. Market imperfections created by such issues of government interventions such as rent controls and subsidies often cause distortions in shelter policies. They might increase inflation and interest rates. For example, fiscal policies in Turkey have contributed to fuelling inflation, increasing interest rates and the national budget deficit (Buckley and Mayo, 1989; UNCHS, 1991b; UNCHS/ILO, 1995). UNCHS (2000) and UNCHS (1996b) argues that urban poverty is likely to be exacerbated by economic conditions such as high levels of inflation, interest rates, unemployment, and rapid changes in the structure of the economy.

Figure 6.3 illustrates the inflation rates in Khartoum for the period from 1984 to the year 2000. The figure shows that inflation rates were stable below 40 percent before 1988 and increased steadily until they reached about 120 percent in 1992, then followed a period of fluctuation until 1996. They then sharply but steadily dropped from 130 percent down to about 15 percent in 1999 and the following years. Reading these figures in the arena of the prevailing events many conclusions could be drawn. After *Al-Engaz* regime took over power in 1989, the economy was steadily declining. Five main factors could be the reason, the complete stoppage of foreign and international aids, the government decision to forcefully put an end to the rebels in civil war, the government insistence to invest in oil, regarding it as an access to a prosperous economy and insistence in expending in other crucial development projects in spite of all these circumstances, and the abstinence or ascetic economic policy led by the government to achieve these objectives. Another factor also exacerbated the economic conditions. Sudan was forced to repay the international loans whereby the donors rescheduled them with strict threats of being forced to quit the IMF membership. In the mid 1990s, the government led a programme of market liberalization and a strict programme of stabilization of foreign currency and reducing inflation rates, and programme to attract foreign investments. However, these were helped by the oil exports, which started in the year 2000

(Sheikh-Musa, 2001). As a result of market liberalization policy the gap between the official $US currency exchange value and the parallel black market value closed gradually until they equalized in August 1999, and continued hitherto. The values equivalent to the values of official $US currency exchange value and the parallel black market value were SDD150 and SDD182 respectively in 1996 (Sheikh-Musa, 2001:305). *Figure 6.4* shows the annual GDP growth rate as a percentage for the period from 1983 to the year 2000.

Figure 6.3 Inflation rates in percentage (1984 – 2000)
Source: (Sheikh-Musa, 2001)

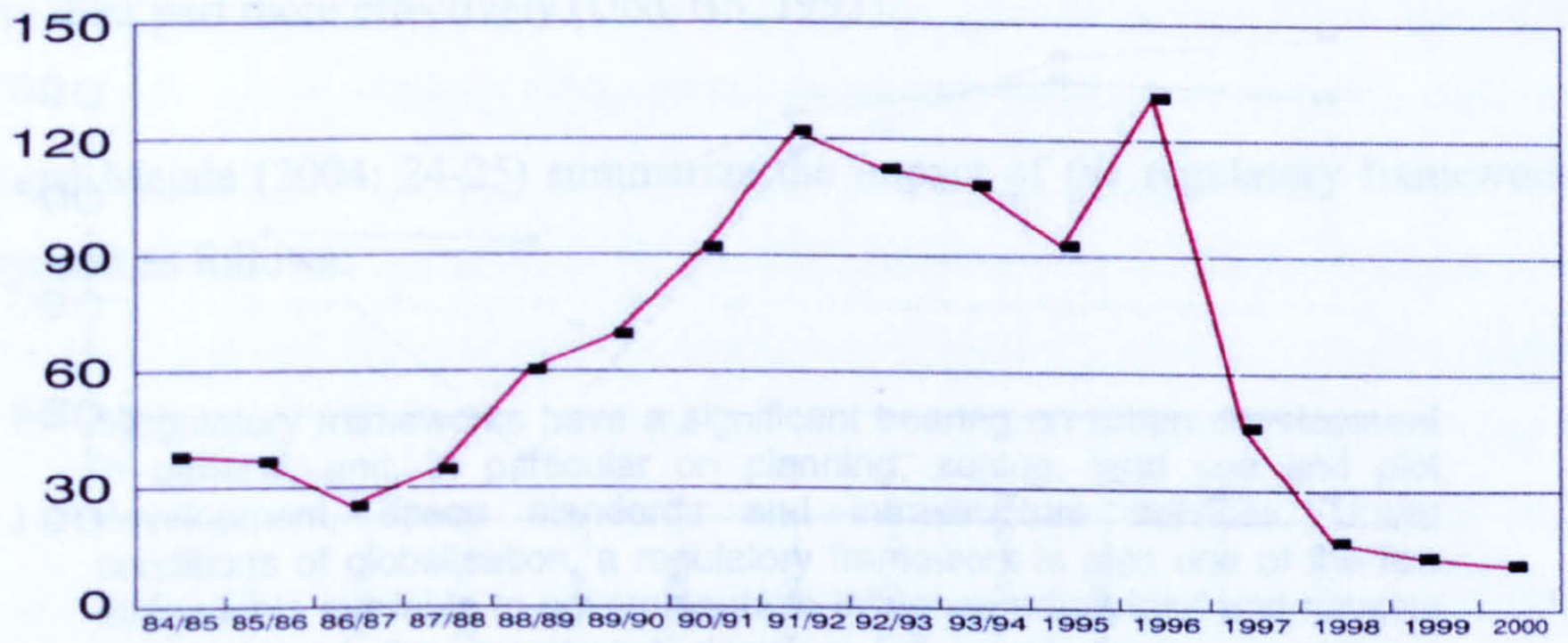
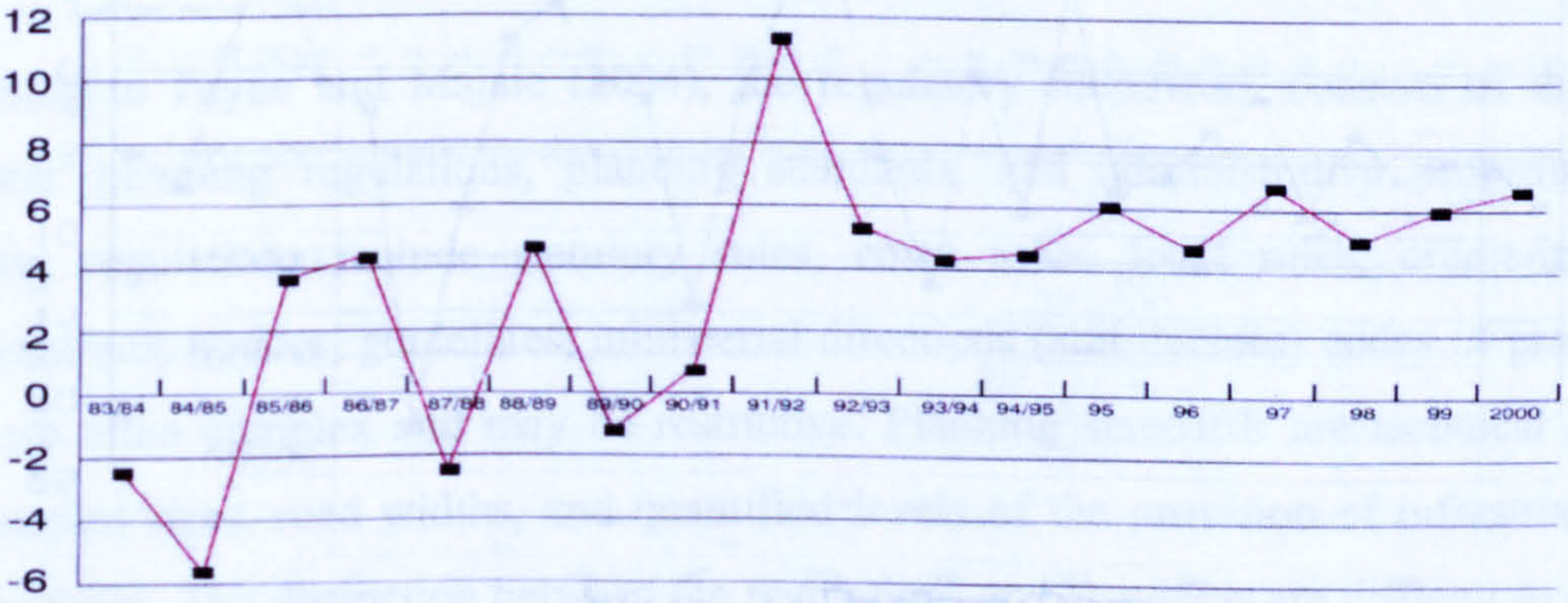


Figure 6.4 Annual GDP growth rate as percentage for the period from 1983 to the year 2000
Source: (Sheikh-Musa, 2001)



6.3.3. Regulatory framework

Regulatory framework is an essential and supportive element for a well functioning supply and its inputs (Malpezzi, 1990; UNCHS/ILO, 1995). The problem with the current regulatory instruments is that they often impose barriers to the delivery of shelter and infrastructure (UNCHS, 1990b). Sound Codes and regulations are important elements in the development of the housing sector. The GSS have called on local authorities to make use of the amply available technical guidelines and criteria based on sound principles and positive experience (UNCHS, 1990).

The regulatory framework is a basic role of government in most cases. Governments are assumed to develop the appropriate regulatory framework within which sectors can flourish (UNCHS, 1991b). Regulatory frameworks are required not only in the field of developing building codes standards and regulations but also in providing efficient mobilization of the financial resources as well as in other urban management aspects. Regulatory role is gaining paramount significance because it is a function that governments are assumed to undertake within their role as enablers. One of the crucial roles of the public sector is setting out the overall legal and regulatory framework within which all other actors in urban development can play their part more effectively (UNCHS, 1993).

Payne and Majale (2004: 24-25) summarize the impact of the regulatory framework in the development as follows:

> 'Regulatory frameworks have a significant bearing on urban development in general, and, in particular on planning, zoning, land use and plot development, space standards and infrastructure services. Under conditions of globalisation, a regulatory framework is also one of the few instruments available to governments to influence urban land and housing markets, and the investment decisions of private-sector developers. Regulatory frameworks therefore have significant implications for the physical, economic, social and technological environments of poor communities, and impact directly or indirectly on their livelihoods.'

According to Payne and Majale (2004), the regulatory framework consists of three main elements: planning regulations, planning standards, and administrative procedures. The planning regulations include statutory rules, court rules, local rules, orders-in-council, proclamations, notices, guidelines, ministerial directions (and decrees) codes of practice etc. They are often complex and may be restrictive. Planning standards are technical measures such as plot sizes, road widths, and quantified levels of the provision of infrastructure and their qualities. The distinction between the regulations and standards are difficult to establish. The administrative procedures are the ways by which planning regulations and standards are applied and enforced such as registration, application for land, title transfer, obtaining building permits and development approvals etc (Payne and Majale, 2004). The regulatory instruments in Khartoum include a number of planning and land laws that date back to the early period of the Anglo-Egyptian colonial rule. *Table 6.4* illustrates a chronology of the planning and land laws in Sudan. There are other laws, but these are the most housing related laws. These laws at their early stages were colonial-based laws, reflecting the power of control and authority over the land and its disposal methods. However there is good news and

bad news regarding these colonial regulations. The good news is that these laws have a great advantage of bringing land ownership in the hands of and at the disposal of the government, which facilitated undertaking government decisions on land use and its planning and allocation until recently. The bad news is that other aspects of these planning laws which have become outdated also continued to exist without substantial modifications to cope with the post-colonial developments in housing policy and the new international developments as well. Similar to some countries such as Nigeria (UNCHS, 1994d) these legal instruments are either obsolete or unrelated to the realities of the present-day shelter situation or deficient in some significant aspect of housing policies. Most other regulations are focusing on the preservation of tenure rights, not stimulating urban development and housing supply. In some cases, they include standards which do seem to be rational, for example a new item (number 551 - 3) in the Civil Dealings Act (translation of *ganoon almoaamalat almadaneiya*), states that no registration is allowed for flats or floor levels less than 120 square metres (At-Tahirr, 2000: 42). The GSS (UNCHS, 1990b) affirms that legal (and institutional) reforms in the housing sector will need to review land legislation in a comparative framework, adopting innovative legislation from other countries where appropriate. Also, it affirms that the economic impact of laws, regulations and codes will need to be studied carefully before their application.

A view of the whole set of planning laws and regulations in Sudan indicates that it needs not only adapting, taking into account other country's experiences, but it needs a radical reform in order to comprehensively cover all aspects of housing. Another problem is that these laws lack enforcement and institutional capacities that are in need of reform as well. Ahmad (1989:59) pointed out that Sudan is plagued with inadequate planning laws building byelaws and rental laws. Since that time, no substantial effort was made to develop the building and planning regulations, so the point made of an urgent need for more responsive and up-to-date legislations is still valid. Also Post in (1994) noted that nothing much has changed since independence with respect both to planning legislations and regulation, as well as the leading views in the profession, and it is mostly still the same today.

The ultimate government objective behind the Land Disposal Act of the Sudan is to realize land development and construction for the benefit of the citizens, on condition that it must be disposed through the application of equality and justice principles and maintain the real land value when they are allocated for the different uses. According to this act, land should not be disposed unless it is verily owned by the government and subdivided by the planning

authorities (At-Tahirr and Dani, 1999). Generally, land should not be disposed for any governmental use unless they are ensuring availability of enough funds for the construction of the site, because this will be conflicting with the objective of land development. Also it should be granted free of charge except for an estimated infrastructure provision cost, but the land for commercial uses must be disposed through open auctions[76] (At-Tahirr and Dani, 1999).

Table 6.4 Chronology of planning and land laws in Sudan[77]

Source: After (NHC, 1985), (Shazali and Ahmed, 1999), (At-Tahirr, 2000), (At-Tahirr and Dani, 1999), (Al-Mahi, 2001)

Year	*Law*
1899	**Titles to Land Act** The colonial administration announced that all land in the northern and central riverain Sudan, which has been continuously, cultivated during the preceding five years would be considered as a private property for cultivators.
1918	**Land Disposal Controls Law** This law imposed conditional approval of the government on all sorts of title transfer transactions for the Sudanese natives, for registered and freehold land.
1923	**Land Law** Before this there were different laws for the different provinces and major cities. This brought together all the laws in one law that superseded other laws. Other 8 laws for certain land uses were derived from this laws, i.e. schools, cinemas, clubs, hospitals, etc.
1930	**Land Appropriations Act**
1948	**Urban Public Land Disposal Act**
1950	**Cities Re-planning Act**
1950	**Slums Act**
1969	**Cities and Villages Planning Act of 1961 modified 1969**
1972	**Unregistered Land Act of 1971 modified 1972**
1982	**Rent Control Law**
1994	**Physical Planning and Land Disposal Act of 1985 modified 1994**
1999	**Investment Act of 1980 modified 1998**

6.3.4. Physical planning and urban management

Urban management serves two objectives. Firstly, the planning and provision of services and infrastructure. Secondly, to make sure that the city's government is in a fit condition, organizationally and financially, to ensure the provision of those infrastructure and services and their maintenance (McGill, 1998). Many definitions were found for urban management but there is still no accepted definition (McGill, 1995). The definition brought by Rakodi (1991: 542) of urban management, which follows, seems to be the most relevant to our paradigm:

[76] Item 1/3 and 11 of the Land Disposal Act of 1947.
[77] Some of these laws originally take an Arabic name translated by the author. They might be translated differently in other sources.

> "Urban management aims to ensure that the components of the system are managed so that they make possible the daily functioning of a city, which will both facilitate and encourage economic activity of all kinds and enable residents to meet their basic needs for shelter, access to utilities and services and income generating opportunities"

Post (1997) argued that is impossible to find a definition of urban management that is more or less commonly shared. On the contrary, a wide range of interpretations exists focusing on different aspects. The previous description of the functions of the local authority departments in Khartoum shows how they operate with a high degree of independence, which makes the impact on the urban development and management less effective. Urban management in Khartoum is therefore undertaken on a highly sectoral basis, as departments lack vertical and horizontal linkages and administrative coherence. Some general problems of urban development in the developing countries have been described by Prakash and Brusi (1993: 222); many developing countries are undergoing serious fiscal resource constraints, extremely uneven income distribution, an increasing poverty, inadequate savings and excessive outstanding debts. An example from Sudan is brought by Post (1994), that the weakness of government financing is manifested at the local level. For a quarter of a million inhabitants in Kassala, a municipality east of Sudan, the budget was only 4.8 million Sudanese Dinars (was equivalent to US$ 350,000 at the project date).

The city physical planning process requires availability of information systems and its management and qualified and trained personnel capable of carrying out the urban development strategies. Urban administrators are to assume responsibility for providing a strategic policy framework for the delivery of urban services (UNCHS, 1996b). Planning is therefore a crucial responsibility of the urban administrators. Observations of the current practices of urban management in Khartoum involve carrying out the activities and projects on a piecemeal approach, which indicates a lack of a clear vision of how the whole city should work. According to Post (1994), the planning authorities in Khartoum follow the 'traditional planning approach' that nothing changed since independence. Town planning in Sudan is characterized as muddling through the state of continuous uncertainty, where there is an impression that decisions are often improvised and taken on ad hoc basis and town planning activity is seen as something of a subordinate field of interest. The planning in Sudan is 'Blue print planning' which had always a strong physical-architectural strain, focusing on fixing physical structures and land uses. Plans for first, second, and third class housing are designed on a drawing board at the Planning Department (Post, 1994: 396). It

could be added that no land use planning process is applied in Khartoum. During the last fifteen years or so the focus was on subdividing whatever vacant land was available within the city region, as residential and commercial, often for investment, not fully complying with a local development plan or the structural plan of the city. Whenever a project is to be done, or a need arises for any purpose, officials often search in the map for whatever available pieces of land that would be suitable. It is usual to find high officials concerned in the daily work with a small problem of allocating a plot of land for a small investment project or a person. Post (1994: 396) asserts that "all authorities are vested in the hands of the minister".

Urban administrators are restlessly and desperately searching for finance for urban projects and the provision of services is often brought from unstable sources. However during the last five years or so, observation shows that under application of market liberalization and a wide range of incentives for investment, the State local authorities were able to attract investments on urban services, viz., education, health, infrastructure and small scale entrepreneur, causing a remarkable improvement.

6.4 Sites and service housing supply in Khartoum

This section discusses the distinct aspects of the housing supply in Khartoum where the focus is on the sites-and-services housing. As discussed before, the so-called sites-and-service is a main option in Khartoum for the provision of housing by the government. The discussion covers three aspects. First, government housing plans, including official land subdivision system, the chronology of the housing supply, and finally the illegal acquisition of plots. Second, a discussion of the allocation system and indices. Third and finally, the method of sorting for the housing plot.

6.4.1. The housing plans

The provision of housing is actually carried out through housing plans (*al-khutta el-eskaneiyah*). These are initiated by the authorities, usually through ministerial decree. Details of the plan in terms of length, number of plots to be provided, and sometimes the ration of each city is identified within the decision. Usually the plans take the name of the year, for example 1977 housing plan, etc. However, the last housing plan was named after the 'National Salvation Revolution' (*Al-Engaz*), which took over power in Sudan in a military coup in 1989 supported by the 'Islamic Front' party. The housing plan of *(Al-Engaz)* was hurriedly launched in 1990 less than one year after the change of power. The following

section discusses the salient aspects of the housing plans being a major policy to provide housing by the government.

6.4.1.1. Land subdivision for sites-and-services

A major step in the housing plans is the land subdivision process. Following the government decision to launch a housing plan, the Department of Survey is usually asked to identify suitable sites within the whole map of the city, in coordination with the Department of Land and other relevant departments and authorities. Other departments carry out their prescribed roles as discussed earlier. Different committees are then formed for the housing plan. The process is usually carried out in the absence of a phased out directive plan for the whole city. In the next step after the selection of the sites the Department of Physical Planning takes the responsibility of subdividing the land, which is done by the department staff. All the subdivision plans done by the department are entirely grid plans.

Based on the previous brief description of the steps of land subdivision it is important to highlight the characteristics and shortcomings of the process.

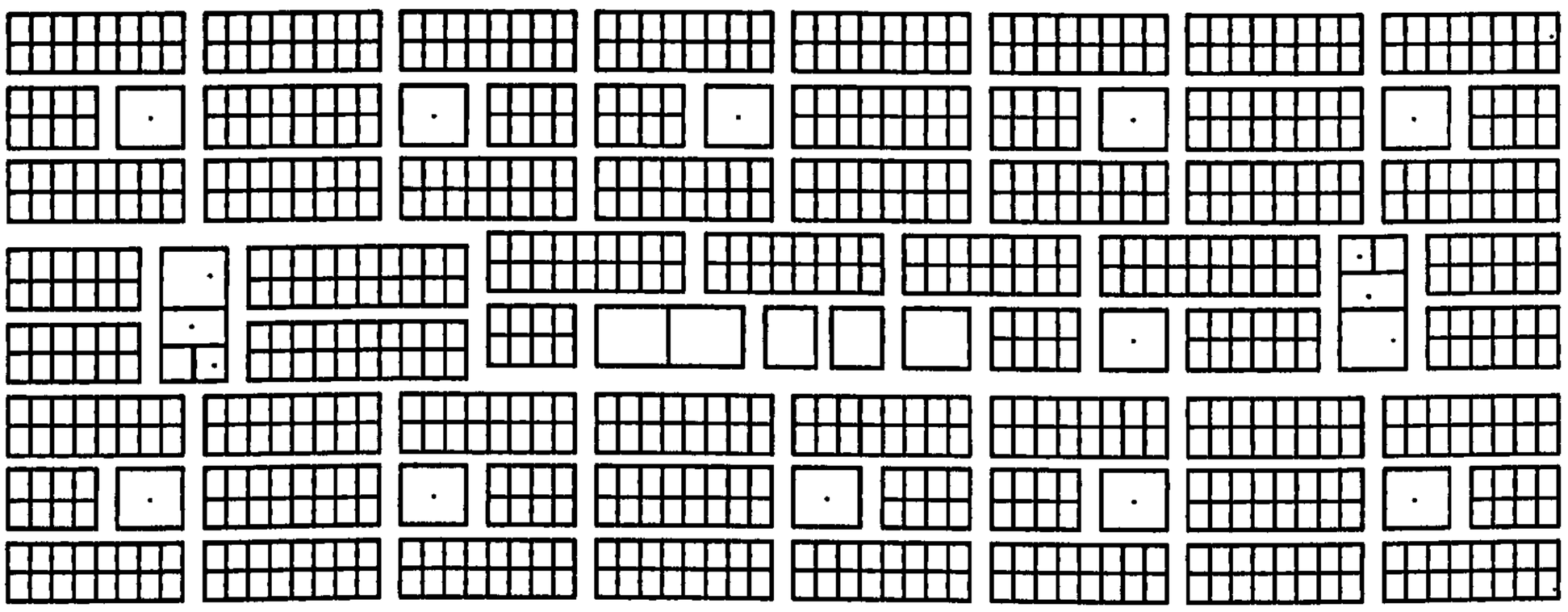
1. *Lack of regulations, planning and design standards and criteria*: The layout designs and the procedural aspects do not reflect reliance on specific regulations, standards and criteria. Nevertheless, allowing lower standards increases access of the poor to housing areas, and the unrealistic standards often increase cost (Turner, 1967; Rodell and Skinner, 1983). These standards could be flexibly designed to remove any restriction on construction and self-help activities, by which those on low-income provide their own shelter. So far, no clear and detailed written standards and planning regulations or building codes (whether low or high) are available and followed by the authorities.
2. *Politicisation of the process:* Guidelines for the subdivision are usually set by the committees who are generally not professionals and in many cases include publicly known selected persons and representatives of relevant government institutions and politicians and sometimes representatives of the labour unions, particularly in the committees formed for national housing issues. This forms some kind of public participation, which is desirable, but in fact such over-participation and the domination of such representatives, most of whom are not professionals, creates distortions in the outcome and the results therefore tend to be unbalanced

appeasements. The domination of non-professionals in the work causes tasks to loose technicality and their professional grounds.

3. *Lack of clear objectives:* It is assumed that such housing issues should involve reliance on clear and declared objectives at both central and local levels. Setting clear objectives implicitly means identifying problems, part of which will be identifying the gaps between the supply and the demand and how many households should be provided with plots and identifying the target groups.
4. *Lack of professionalism:* Layouts of the housing plans extension areas imply one-way solutions. Subdivision plans are carried out almost by drafters, on the drawing board (Post, 1996), by untrained junior staff, most of them young architects. *Figure 6.5* and 4.8 in chapter four, are examples of the subdivisions of the sites-and-services schemes. Most points discussed here could be noticed in these plans. Solutions lack appropriate assessment of all space requirements including services and they often include government-reserved areas implying the degree of uncertainties. Densities and plot sizes are done on the rule of thumb. Solutions do not involve considerations of the basics of land use planning techniques, micro economic issues in terms of job opportunities, maximizing income generation activities, circulation, and public transport, and the lack of clear neighbourhood units and space hierarchy. Providing and maximizing income generating activities is based in many UN-HABITAT publications (UNCHS, 1989; UNCHS/ILO, 1995). Policies have been developed to increase employment through Home-based enterprises. Employment could be increased directly through construction industry, income multipliers, backward and forward linkage, and encouraging suppliers (Tipple, 1994c) No evaluations of the plans are carried out before putting the plan in action, such as cost factors financial impact and environmental impact assessments. The result reveals a clear mix-up and irrational solutions. Often in such designs, a need arises to involve specialists from other disciplines, such as engineers, economists, etc. to deal with matters that are highly technical, and to obtain the maximum benefits of the plan. Specialized consulting firms do not usually participate in any of the plan steps.
5. *Grid pattern:* Haj Ali (1998) pointed out that urgent government need for implementation of the government housing plans and the easiness of applied survey work were key factors in adopting the gridiron system in the housing plans. Almost the entire layout solutions of the sites-and-services projects in Khartoum are grid pattern. These are similar in shape but not in essence to the sites-and-services schemes

implemented by the World Bank in developing countries for low-income, where the grid plans was a chief characteristic (Rybczynski et. al., 1983). The advantages of the grid plan raised, rationalizes its adoption in Khartoum. Grid plans rationalizes circulation and infrastructure. The grid plan can be easily and quickly laid out because it imposes limited decisions on the planner (Rybczynski et. al., 1983). Generally, it is argued that 'grid plans alone are incapable of accommodating the various, and varied, physical, social and cultural patterns as necessary elements of any successful environment'. It is necessary to incorporate non-economic considerations (Rybczynski et. al., 1983:15). The gridiron plan shown in *Figure 6.5*, illustrates a repetition of similar residential blocks, laid in three rows. The central row includes a number of service cores and government-reserved spaces. Straight linear roads cross the whole block in the east west direction. No road hierarchy could be noticed.

Figure 6.5 Plan of Block 13 of Al-Azhari district
Note: all plots are 15 by 20 metres



6.4.1.2. Chronology of the supply of sites-and-services

Figure 6.7 is a graph that illustrates the cumulative number of the sites-and-services plots provided in the three cities of Greater Khartoum, which are Khartoum, Omdurman and Khartoum North. The figures give the total number of plots including the first, second and third class housing areas. However the third class housing constitutes 86 percent, the second class constituted 5.6 percent and the first class constituted 8.4 percent.

The three years following independence in 1956, which was a Democratic Party rule, was generally an era of establishing the native parliamentary ruling system. The city was yet very

small in size and the problem of housing might not have been a matter of urgency to the authorities and the vision to the housing problem was not clear enough, because the housing units evacuated by the colonial authorities housed the government officials. The migration to the city was limited and most migrants during this period were from northern Sudan and were the most educated people.

The next stage, commencing in 1958, carried the same traits of the previous period but under military rule, until the government was overthrown in October 1964 by the people's upheaval. After eight years of independence the plots provided constituted only 9.7 percent of the total number of plots provided by 1987, two years before the government take over by *Al-Engaz*. The growth curve at this stage was almost flat.

The next stage was again a democratic rule that started in October 1964 for less than five years, where the majority of the previous democratic leaders returned. The housing problems began to become more elaborate under increasing demand by the migrants, who were increasing in number. There was a demand for manpower in the industrial and services sector in Khartoum. Although the economy was to some extent stable, the government could not effectively contribute to the housing provision. The government was forced to respond to the demand through the sites-and-services plots, the eminent option and self-help, which were fashionable solutions but there was a clear difficulty of providing infrastructures and community facilities.

In 1969, the democratic government was overthrown by a military rule of Nemairy, which inherited an accumulated demand but it was also in a need of supporters to be established. During the period between 1970 and 1972, nearly 20,000 plots were provided. The curve continued to go up steeply, but it was followed by a relatively long period with a very small rate of supply until 1985 when the military rule was over. This period was followed by democratic rule that lasted for four years. It was politically unstable and characterised by conflicts and changes of coalitions and cabinets between the different parties. During this period, only one plan of 2678 plots was implemented in Khartoum North. Although the ruling period of this government took 16 years, the supply was not enough. Most squatter areas around Khartoum, mainly *Mayo* in South Khartoum, Al-*Kartoun* east of Khartoum North *Droashab*, *Um-Dhrewah* and *Samrab*, north of Khartoum and *Umm-Baddah* in Omdurman, in

addition to some 'luxurious' squatter settlements south Khartoum have developed during this period, which was often combated by the government (Bannaga, 1996; El-Batahani, 1998).

Figure 6.6 The supply of sites-and-services plots in Khartoum (every two years)

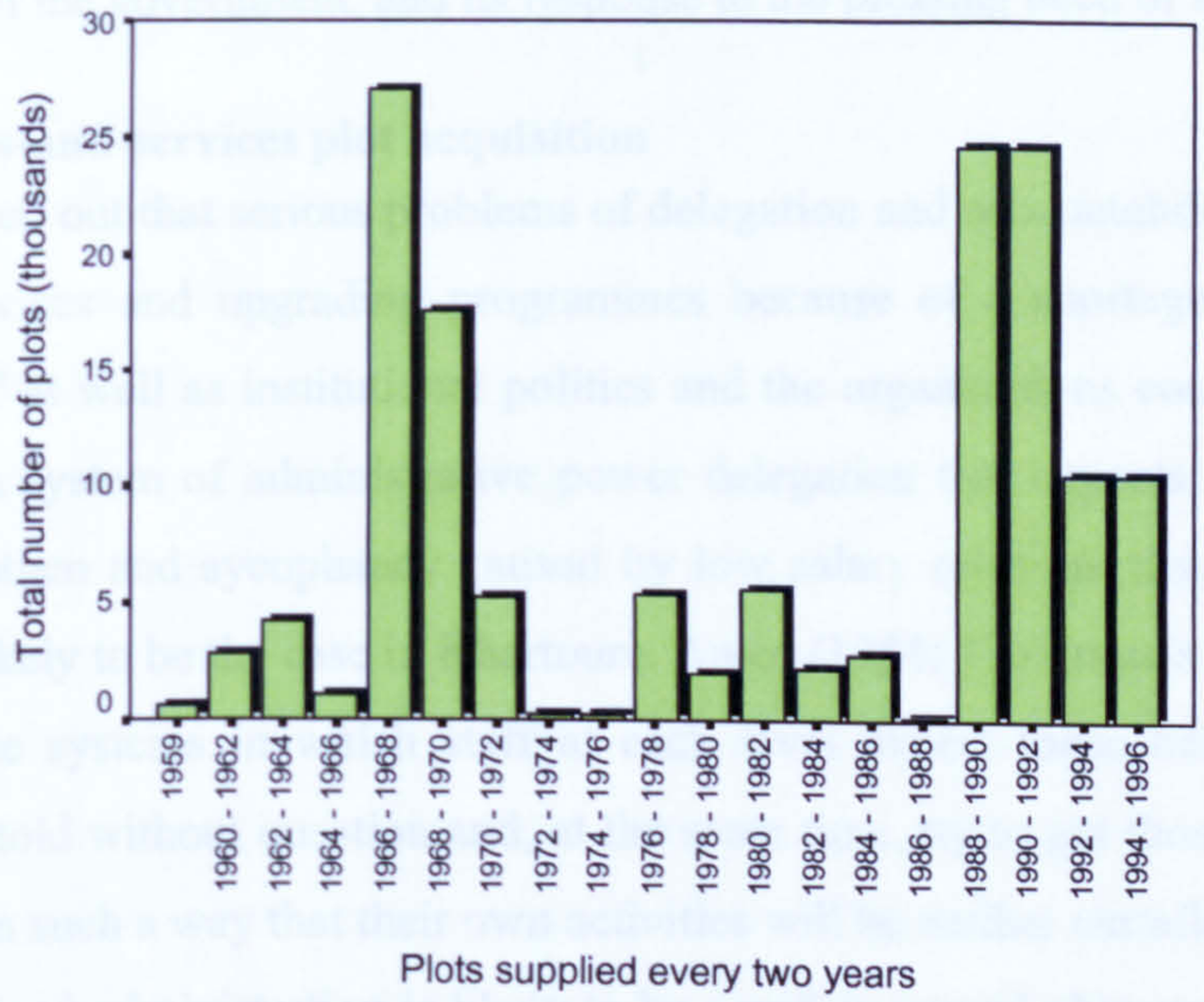
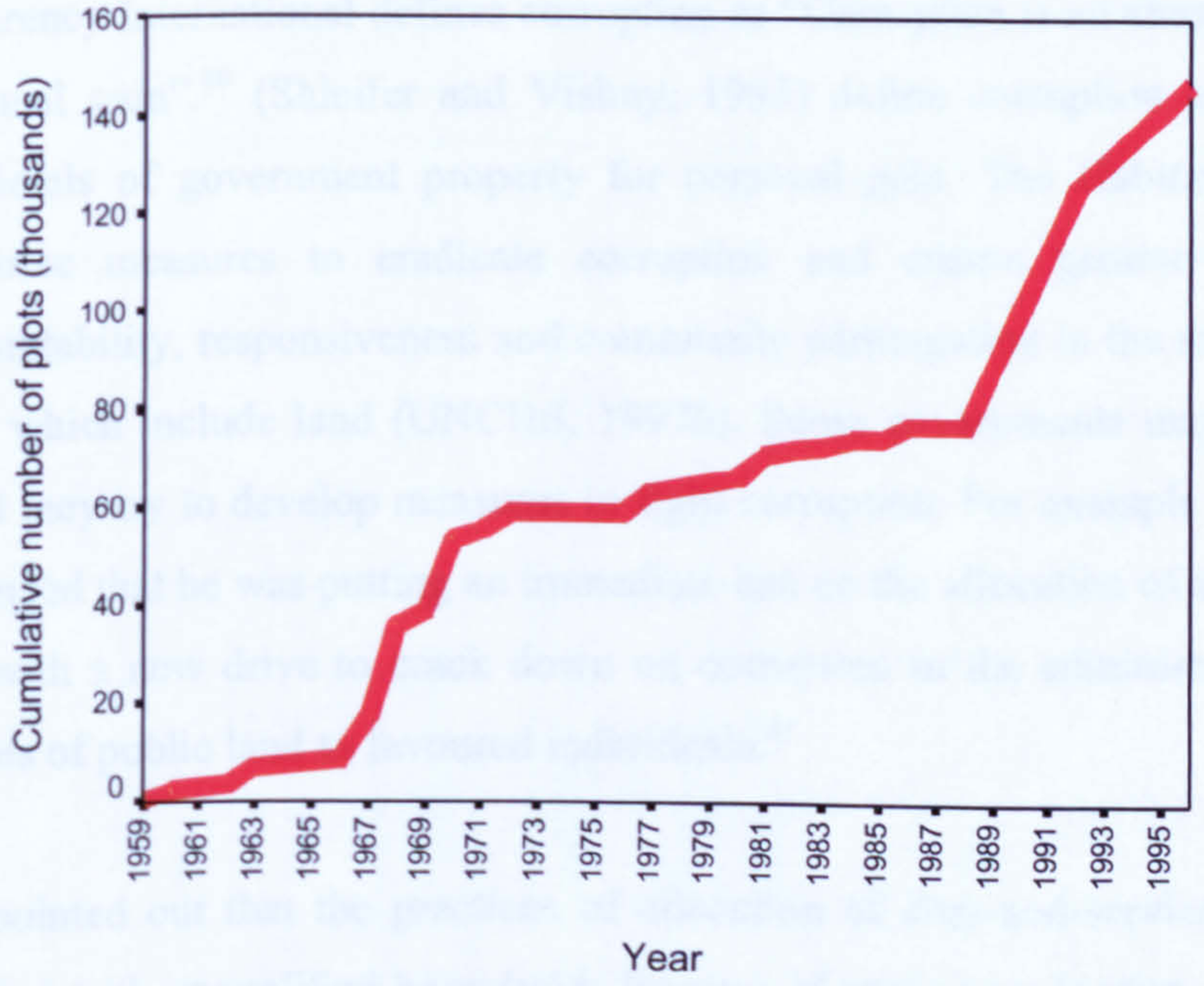


Figure 6.7 The cumulative growth of the government sites-and-services provided from 1959 – 1995 in Triple city of Greater Khartoum[78]



[78] The chart has been developed by the author using data from (MHPU, 1992) in various tables. The number of plots for some housing plans in Omdurman and Khartoum North was provided as a total number for a housing plan that extended over a number of years. In this case, the total number of plots was divided by the number of years of the plan to bring the annual rate of the plots for those specific years. Most housing plans for the three cities were given by years. Finally, the sum was found for the three cities for every year.

To summarize, it could be noticed that governments, whether they are military or civil, have the control over the housing supply by controlling the urban land supply. Generally, the housing supply was not steady through out the historical development of the provision. Reasons vary, but the instable political system could be the over-riding one. Other reasons include the desire of the government, and its response to the pressing need of the people.

6.4.1.3. Illegal sites-and-services plot acquisition

Amos (1984) pointed out that serious problems of delegation and accountability often exist in most sites-and-services and upgrading programmes because of a shortage of skilled and inexperienced staff as well as institutional politics and the organizations concerned. So, it is required to build a system of administrative power delegation that expects the existence of irregularities, nepotism and sycophancy caused by low salary rates and fragile government system, which is likely to be the case in Khartoum. Amos (1984: 170) argues that the solution could be to 'create systems in which staff at each level expect those below them to do whatever they are told without question and, at the same time, try to get those above them to issue instructions in such a way that their own activities will be neither curtailed nor exposed'. The corruption in land administration is likely to be a widely spread phenomenon around the world. The World Bank defines corruption as the "abuse of the public office for the private gain"[79]. Transparency International defines corruption as "Corruption is an abuse of entrusted power for personal gain".[80] (Shleifer and Vishny, 1993) define corruption as the sale by government officials of government property for personal gain. The Habitat Agenda has called to reinforce measures to eradicate corruption and ensure greater transparency, efficiency, accountability, responsiveness and community participation in the management of local resources, which include land (UNCHS, 1997b). Some governments may be aware of the problem and they try to develop measures to fight corruption. For example in Kenya, the president announced that he was putting an immediate ban on the allocation of all public land, in conjunction with a new drive to crack down on corruption in the administration and the allocation of plots of public land to favoured individuals.[81]

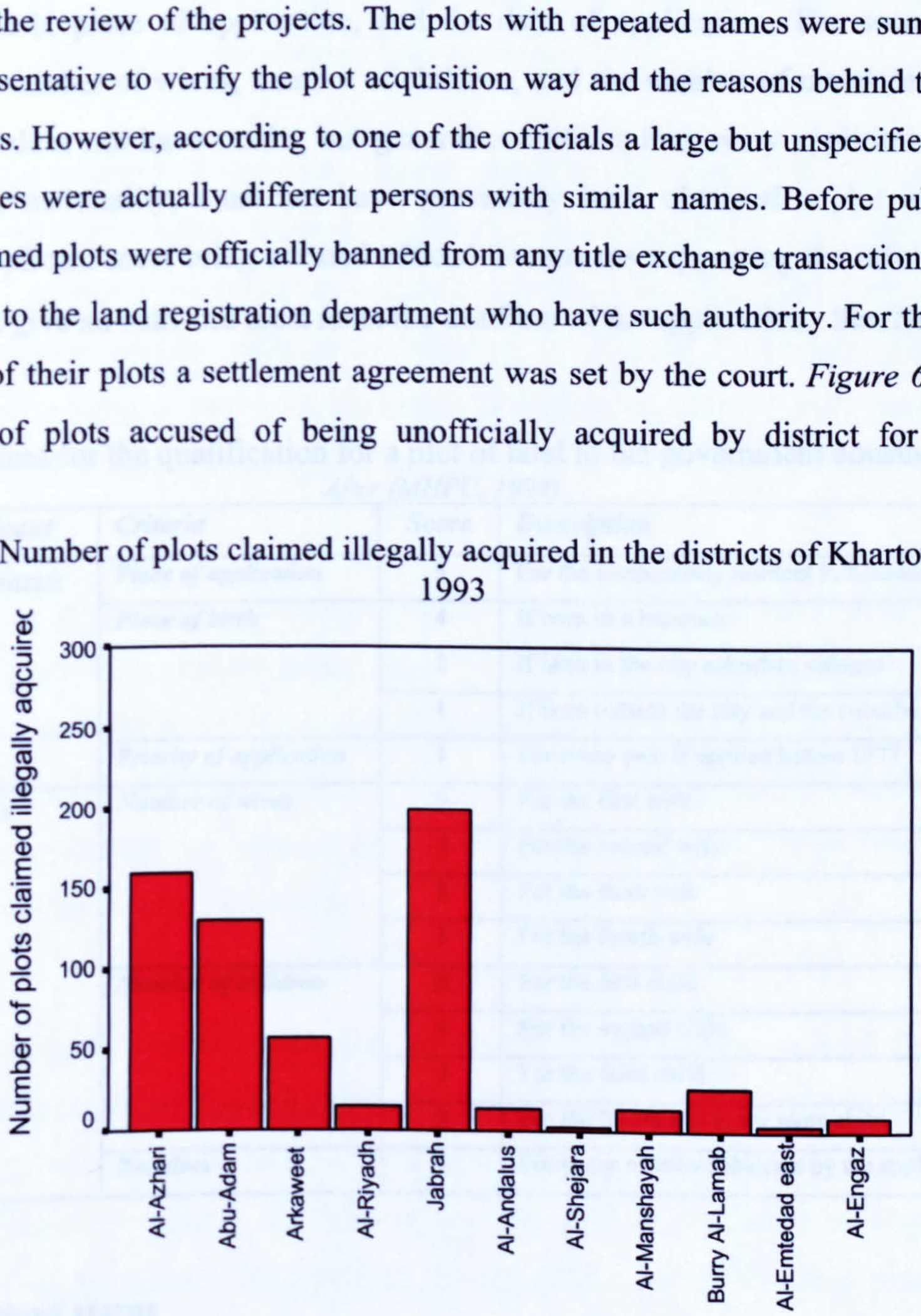
Peattie (1982) pointed out that the practices of allocation of sites-and-services units under pressure was filled with unqualified households because of having connections with officials irrespective of their actual need. The vaguely designed allocation criteria adopted in

[79] http://www.worldbank.org/wbi/governance/pubs/legalcorporatecorruption.html accessed: November 2005.
[80] http://www.ti-bih.org/en-GB/default.aspx?TabID=45 accessed: November 2005.
[81] http://news.bbc.co.uk/1/hi/world/africa/421962.stm access date 29.7.2002

Khartoum in the allocation of the sites-and-services plots have a clear influence on the leakage of some plots to untargeted people. These criteria are not tightly customized to reach the target groups or to avoid unethical attitudes of both the officials and applicants.

The site-and-services allocation in Khartoum was accompanied by some practices of illegal acquiring of plots. In 1993, the initial beneficiary names of approximately 1818 plots were found to be repeated[82]. The initial beneficiary's names in all the sites-and-services projects and some upgraded squatter areas in greater Khartoum were put into the computer to create database for the review of the projects. The plots with repeated names were summoned by a judicial representative to verify the plot acquisition way and the reasons behind the repetition of their names. However, according to one of the officials a large but unspecified percentage of these names were actually different persons with similar names. Before publicizing the lists, the claimed plots were officially banned from any title exchange transactions by handing over the lists to the land registration department who have such authority. For those who did not sell any of their plots a settlement agreement was set by the court. *Figure 6.8* illustrates the number of plots accused of being unofficially acquired by district for the city of Khartoum.

Figure 6.8 Number of plots claimed illegally acquired in the districts of Khartoum city in 1993



[82] This figure was brought from the issues of the *Al-Sudan Al-Hadith* Newspaper where these lists were announced, in the issues of 7,8 Jan; 26 Jun; 6 Sept, 22 Oct; 6, 14, 17, 25, 28 Nov; 12, 15 Dec 1993.

The total number of the claimed plots represents approximately 1.5 percent of the whole number of plots for those districts as a whole. The figures for the highest four districts constituted 1 percent, 3.6 percent, 1.5 percent and 10 percent for the districts of Al-Azhari, Abu-Adam, Arkaweet, and Jabra respectively.

6.4.2. The sites-and-services plots allocation indices

The plots in the government housing schemes are allocated to the applicants through a point scoring system for the different allocation criteria in three groups; (1) migration, (2) the social status of the household and (3) fulfilment of the general conditions. The first includes marks for place of birth, place of application, and the date of application. The second includes marital status, number of wives, number of children, and the number of maintained relatives. The third type does not have marks, but general conditions that every applicant must fulfil. These include; nationality, must not have previously have obtained a plot in a housing scheme, the applicant must bring attested official documents supporting the information, and finally he must give an oath and must meet the deadline of the application. See *Table 6.5*.

Table 6.5 Indices for the qualification for a plot of land in the government housing schemes. *After (MHPU, 1992)*

Status of applicant	*Criteria*	*Score*	*Description*
Migratory status	***Place of application***	**5**	For the permanently resident in Khartoum
	Place of birth	**4**	If born in Khartoum
		2	If born in the city suburban villages
		1	If born outside the city and the suburbs
	Priority of application	**1**	For every year if applied before 1977
Social status	***Number of wives***	**5**	For the first wife
		3	For the second wife
		2	For the third wife
		1	For the fourth wife
	Number of children	**5**	For the first child
		4	For the second child
		3	For the third child
		2	For the fourth and every more child
	Relatives	**1**	For every relative subsisted by the applicant

6.4.2.1. Migratory status

The migratory status has been adopted by the housing authorities as rationing criteria for the allocation of the sites-and-services plots. Although it seemingly maintains satisfaction among

the applicants in the housing plans, it may not necessarily realise the objective of efficiency in the housing supply process.

Generally, the rate of migration to urban areas in Khartoum is relatively high. It has been estimated as over 6 percent per annum (Agraa and Shaddad, 1988). The rates of migration increase during drought seasons, which occasionally hit the surrounding poor rural regions and force people to move to urban areas. Also, the rate of migration has increased due to the civil war in the south after 1983. Familiarity of living in urban areas and the attractive urban living environment cause more migrants to settle in the city. The rate of migration to Khartoum is even higher than Omdurman and Khartoum North.

Dealing with the migration factor in a sites-and-services plots allocation process makes it a less effective tool for allocation because people are supposed to have equal access to shelter, while migration confines the supply to a specific portion of people. The remainder therefore will have no access because plots to be supplied are limited in quantity. The allocation process uses three types of measures: residence in Khartoum, place of birth, and the date of application. The following is a discussion of each.

Residence in Khartoum

The point system gives applicants resident in Khartoum five points, but it does not give any score to applicants from outside Khartoum. The relatively big score make the gap wider between the permanently resident population and the migrants. It could also be considered as a message to the newcomers not to apply. Therefore, every applicant by default will get the five marks, hence making the measure less valid. It would have been more valid if the living period scale were considered in scoring.

Place of birth

Applicants born in Khartoum obtain four points, while those who are born in the villages around Khartoum obtain two points and the rest obtain only one point. The points give further support to those who are born in Khartoum against others. It is almost a duplication of the previous measure of residence and widens the gap between outsiders. A large portion of Khartoum citizens are actually born outside the city. The measure therefore gives preference to applicants born in Khartoum.

Date of application

This index is specific to the group of applicants who were not given a plot of land in the last housing plan *(Al-Khutta al-eskaneiyah)* of 1977, so giving them preference. Thirteen years difference (from 1977 to 1990 when the housing plan of *al-Engaz* was launched) will definitely raise the points of this group, hence qualifying them to compete for a plot. However, to have to wait for that long period is a clear indicator of the magnitude of the problem and the backlog of the housing supply.

6.4.2.2. Social status

This group of indices mainly focuses on household size, particularly the number of wives, children, and dependant relatives. Other social factors such as income levels, employment and poverty are not taken into account. Female-headed households, widowed and divorced households are also taken into consideration under the exceptional cases list. The system makes the availability of a husband and a spouse a core element for application. The general trend of the marks system is that as the family size becomes larger, the grade becomes larger but not exclusively linear relationship.

Number of wives

Generally, urban society in Khartoum is moving towards a monogamous household type. Approximately 92 percent of households in the survey have only one wife, and 7.1 percent are households of two wives, almost all of them live separately in an independent house. The wives points system therefore does not conform to that reality, which indicates whatever the number of wives the applicant has, he will only have a single chance to obtain a plot. All the polygamous households in the survey have one owned house and another rented one. The points system of the wives apparently downgrades the male and female widowed and divorced applicants, because they will be given zero marks for the wife's mark. The system tried to cover this deficiency under the "exceptional cases" (see section 6.4.2.4 in this chapter).

Number of children

Children are given a descending accumulative grade from five points for the first child down to two points for the fourth child. Every further child is given only two points. The logic seems not to consider the number of children as an exclusively decisive factor in the overall grade. Giving high grades to the first three children allows small households to compete.

Relatives supported by the applicant

This group includes the parents, grandmothers, grandfathers, younger brothers, sisters, nephews and cousins who are sustained by the household head. It could be noticed that this measure is highly uncontrollable because of the possibility of duplication of claiming subsistence of the same household member by different applicants from the same family. The system has no efficient mechanism to control such violation of the rules. Documents could easily be produced to support the claims. The system also does not go into detail about the sustained members. Most brothers who are household heads share subsistence of those members, which is a general feature of Sudanese society, therefore shifting residence between them.

6.4.2.3. General conditions

Besides the previous criteria, which have been provided with measured scores, there are other general conditions that every applicant should satisfy. These general conditions are (1) the applicant must be a married Sudanese and permanently resident in Khartoum, (2) The applicant must not have acquired a plot of land in a previous housing scheme, and (3) the applicant must authenticate his statements and swear on oath.

The first condition of the nationality is a normal condition that is generally accepted to confine the right of access to housing to the Sudanese citizens. The marital status condition downgrades the widowed and divorced households. To use permanent residence in Khartoum as a general condition is worthless because it is resolved by the mark given to the residence criteria.

The second condition is mainly to ensure no duplication of acquiring a plot in the sites-and-services projects. At the beginning of the project the condition was not to qualify anyone who holds a title of a piece of land anywhere, later it was restricted to those who obtained a plot in a government project only. This condition gives an impression that the right to have an access to obtain a plot in a government project is maintained for everyone despite owning a house or plot through purchase or any other method. In theory, the condition sounds like it conforms to the equality measures but in practice it is difficult to realize. The condition therefore supports the assumption that the housing projects tend to be income-distribution based more than a real housing supply tool. It also supports the assumption that the project is a politically based plan.

The third condition, which is the authentication and giving oath, is the weakest condition of all because of the high possibility of forgery and corruption. There is a high possibility of bringing in and accepting unreliable and unattested documents by both the applicant and the sorting committee member. The complexity of the procedures of producing the documents and the large number of documents could force the applicants to forge and follow corrupt ways.

The validity of giving oath in religious communities depends on how pious is the applicant and to what extent the ethical and religious rules are rooted in the society. In non-religious and non-pious societies, many people would regard their word as honourable, making it equivalent to swearing an oath in the pious and religious societies. Relying on oath verification means those people willing to lie under oath may be at an advantage compared to those who are not. That portion of applicants can therefore obtain the plot by lying under oath. Also, the acute need for housing, the acute poverty and the desire to make fortunes could cause the applicant to lie under oath in order to obtain the plot at any cost. Depending on oath is therefore utilized as a sorting or a categorizing tool instead of using it to give the right to the appropriate person. Some of the most pious applicants believe they should not even give oath under any circumstances although they are not lying, therefore sacrificing the access to a plot. Generally, there is some controversy in giving oath in Islamic communities depending on the *Mazhab* which is the school of thought a Muslim community follows or depending on the *Fatwa*. The weakness of the third condition could therefore be ascribed to the high input of the human factor instead of relying on the regulatory system.

6.4.2.4. Exceptional cases

Adopting exceptional cases is apparently a result of the incompleteness of the criteria and the inefficiency of the grading system, which could not incorporate all the rightful applicants. The exceptional cases imply also the intent to include some applicants under totally different considerations. Such considerations mostly do not stem from a statuary or legal right, but they are a result of sympathy towards specific groups of applicants, or a result of a strategic viewpoint of the government by giving preference to specific groups of people. The consideration of these exceptional cases therefore causes distortion in the final list of beneficiaries. The exceptional cases, unless publicly accepted by people, leads to the loss of confidence in the system and its ability to abide by equality and justice measures. The

following is a list of exceptional cases that the system will consider qualifying for a piece of land although they do not have the qualifying score (MHPU, 1992).

A single household head who maintains a family on condition that his parents did not apply before for a plot.

1. *A single household head who maintains a family on condition that his parents did not apply before for a plot.*
2. *A widowed woman who supports her children.*
3. *A married woman who lives apart from her husband due to the ill-tempered attitude of the husband.*
4. *A separated woman but not divorced with children whose husband has married and living with the second wife.*
5. *A currently married woman but previously was widowed and has children from the former husband subject to the condition that the children has got no share in the inherited house.*
6. *A Sudanese nationality woman whose spouse is a foreigner and she has children.*
7. *Barren Households.*
8. *The permanently ill or disabled who cannot earn living.*
9. *Households with few children who cannot bear more children.*
10. *The high qualified professionals and rare scientists who are in a leadership position.*

The previous exceptional cases could be categorized into two groups. The first are social status-based cases that focus on filling the gap, which was created by the incomprehensiveness of the criteria and its indices. All the cases of this group deal with the gender issue. The allocation system apparently focuses on married applicants and ignores the widowed, divorced and single applicants by treating them as exceptional cases. Although some of the cases are not permanently adopted in all the housing projects, they are considered as exceptional cases. The second group, which includes only the last case, is inferior to the rest. It is a special government policy-based case. However, it does not clearly specify and identify the case and how somebody could qualify through the case, which opens the door for different interpretations, therefore providing opportunities for corruption and the loss of confidence in the allocation system. Generally, the system did not specify how these cases could be assessed and incorporated in the grading method.

6.4.2.5. Income level classification

The income and affordability factors were not given enough concern in the allocation system of the housing plan *(Al-Khutta al-eskaneiyah)*. The housing policy classifies housing in Sudan in general and in Khartoum in particular into four classes based on the income level of the applicant. Although the classification system portrays some deficiencies in emphasizing social segregation of urban communities, it is still adopted in the sites-and-services plots

allocation system. It also brings up scepticism on its conformity with equality and justice criteria. The system specifies an income ceiling for every housing class. When applying, every applicant specifies the income class he desires. During the sorting stage, application forms of every class are processed separately. The housing classification system in Sudan has been positively viewed by Hardoy and Satterthwaite (1981:132), as an interesting system of zoning urban land that can reduce restrictions in low-income areas. They pointed out that each of the four levels in the classification system has a more complex and restrictive set of planning standards than the one below, and that in the fourth class, which are the poorest areas, there are no standards at all. However, currently no high restrictions are imposed at all levels, and the planning standards are likely to be ignored.

The system was somewhat valid since it was first adopted during the colonial period up to the early nineteen eighties, because the economy and income levels were stable and represented a real response to the costs of living. Later the economy became unstable due to high rates of inflation, continuously changing currency exchange rates, and the unstable fiscal policies. Such environment has caused high eruptions in the income levels and swift shifts in capital between the actors in the economy, hence influencing the prices, which steadily increase while income levels do not increase at the same rate. Therefore, the income levels no longer represent a real response to the living costs. The most affected class is the *limited income groups*[83]. An example has been picked from the application form of the housing plan. The application form for the housing plan of 1990, which is the same one used for the previous housing plan of 1977, states that the first and second class form has to be filled in by those who receive 1000 Sudanese pounds annual salary, or those who pay 1000 Sudanese pounds annual tax. According to the currency exchange rates of the year 2000, it is equal to nearly an annual salary of only four dollars.

A main criticism of this income level classification on the basis of the previously mentioned arguments is therefore relying on the income criterion in classification as being apparently invalid. The highly fluctuating, indeterminate and the unpredictable nature of income makes the classification highly complex and unreliable. The existence of a remarkable variation in the housing qualities, types and standards within the same housing class area supports the

[83] A translation of *(zawi ad-dakhl al-mahdood)* which is a term used in the Arabic economic terminology to imply the employment class that receive regular salaries and have a limited capability to increase their income.

hypothesis that the housing classification tends to be only a rationing criteria, and tends to be of no real feasibility.

Another salient feature of the government policy during the last fifteen years or so is that the levels of income, particularly the levels of salaries in the public sector, increased at a very low rate. It almost remained unchanged, therefore not responding to the living costs. The private sector response to the living expense increase was clear, that the wages increased at higher rates than the wages increase in the public sector. This environment has caused a higher rate in the employment mobility, and shift of the civil service employment to the private sector, reduction of the employment opportunities in the public sector and a remarkable change in its structure, and an increased rate of migration to outside Sudan.

It looks as though the officials themselves are not using the income index because of its irrational basis and its inapplicability as a decisive criterion. The matter is, therefore, left to the choice of applicant and the interview result of the sorting committee *(lajnat al-farz)* with the applicant. The choice of the income class of the applicant is a determinant factor in the plot size. The plot size increases as we move upwards in the housing classification hierarchical order followed by high plot prices. Leaving such situations without clear-cut measures to state the real income of the applicant with reliable evidence leads to corruption. Most of the needy applicants focus on trying to obtain the plot no matter what the class area is. Land prices assigned for each are nominal and are far below the market price, which makes it greatly affordable by all groups.

6.4.3. Applications sorting system

Based on the previous discussion, one of two methods of income-based allocation in the housing schemes could be used. First, to specify a definite quota for every income class in the whole housing plan then let the applicants bid for them. Second, to sort out the application forms then specify the quotas for every class area according to the sorting results. The former has been adopted in the housing scheme of 1990, which was done in a rush. The latter provides a logical response to the real needs of the beneficiaries but the need for intensive managerial work, qualified and trained staff, prior planning and sophisticated sorting work makes it too difficult to apply.

The final score of the applicant is obtained after the interview with the sorting committee, which is responsible for verifying the enclosed documents and approving them. The sorting committee also interrogates the applicant on oath, to ensure the data provided is correct and that he has never obtained a plot previously and he does not own any residential piece of land in the city, even if it was resold or granted to someone else. A final list of the qualified applicants is then approved by the minister and publicized for appeals, and categorized according to the housing income classes. Applicants could appeal in the following cases:

- *If the applicant feels that the total score is not accurately assessed.*
- *If the documents supplied with the statement were not approved by the sorting committee.*
- *If the applicant feels that he should be treated as an exceptional case.*
- *If the applicant was classified in a lower class area.*

Because the number of applicants is larger than the subdivided number of plots, applicants are filtered out through a ballot selection. Special ballot committees are formed by the State Minister to choose the qualified applicants based on the point score results of the sorting committee. The allotment is done, beginning with the highest scoring applicants through to the lowest, until the last plot available.

The system works better where a limited gap between supply and demand exists. There is always a number of qualified applicants who do not obtain plots. There should be no need for ballot qualification if the supplied number of plots is higher than the qualified applicants. In the light of the discussion of previous conditions, it is clear that there is a need to develop further sophisticated sets of criteria, system of points, sorting and procedures. The discussion of the allocation criteria has shown no clear purpose behind their design, except its procedural purpose to facilitate the distribution of the plots among applicants. They do not apparently enhance the real housing supply process in terms of increasing shelter or roofed space. A large number of plots of the housing plan are allotted to the poor people who cannot afford to build them.

The housing scheme subdivided approximately 58,100 open plots up to 1991 including 6182 complete houses, while the total number of qualified applicants up to the same date are 70,170 (MHPU, 1992). These plots are distributed around the whole Greater Khartoum area in districts. They were not subdivided all together at one time but were spread out over more than two years, which mean that the allocation process of the housing scheme finishes in one

district and then starts again in a new district, repeating the process several times within the whole housing scheme. This means that some applicants who were qualified but did not win the ballot at the beginning try again the next time, which usually includes additional applicants who may have higher scores. This means that some applicants have to go through the process more than once; this therefore imposes additional efforts upon both the applicant and the sorting committees.

Post (1996) maintains that, in spite of the availability of clear-cut criteria of the housing plots allocation as described previously, in reality the allocation rules are violated over and over again and the lists of eligible candidates for a housing plot in the sites-and-services projects bear evidence of all sorts unlawful prejudice.

6.5 Settlement upgrading

Squatter settlements upgrading represents a major mode of housing supply for low-income households in the developing countries. It actually forms the second arm of self-help housing policies in the developing countries. Informal housing mostly provided by these settlements constitutes around 50 percent of housing for the poor in developing countries. Informal settlements are interchangeably used for squatter settlements. These settlements often lack basic services and community infrastructure, which often leads to unhealthy living and environmental conditions. Squatter settlements are a result of the failure of the conventional housing policies to provide sufficient housing units to cope with the demand.

John Turner's viewpoint implicitly acknowledged the fundamental importance of providing the security of tenure to improve the living conditions of squatter settlements and increasing the housing supply. His work viewed security of tenure as a central issue in upgrading (Turner, 1969; 1967). This later evolved as "enabling strategies" that formed a key policy of the World Bank (WB, 1993). These strategies in turn involved effective shelter provision and improvement through upgrading of squatter settlements. It is argued that the lack of security and regularization of tenure has a direct influence on the residents' willingness to invest or spend in housing (Malpezzi and Mayo, 1987; UNCHS, 1994c). Security of tenure also gives access to income generation by the low-income and the creation of home-based enterprises (UNCHS, 1989). The definition of housing adequacy involved realizing legal security of tenure as a key principle (UNCHS, 2000). Although recent experience of Mumbai has shown that there was limited demand for slum upgrading through tenure legalization (Mukhija, 2002), the security of tenure remains a vital issue in squatter upgrading.

Matovu (2000) pointed out that some analysts have argued that upgrading is considerably cheaper per unit cost than demolition and construction of new houses. Martin (1983), describing the upgrading work of Lusaka, assumed that it meant to solve the low-income housing problem by transforming illegal houses to legal ones, hence improving the housing statistics. He holds that project objective could be to improve the health and economics of the district. Objectives could also be social or to realize the security of tenure.

Okpala (1999) argued that upgrading is not cost effective; nor does it address the basic problem and that improved advance planning for the settlement development would lead to more sustainable and cost-effective urban development. He assumed that the phenomenon of slum and squatter development in African cities are a result of two underlying factors, the rapid rate of urbanization and the pervasive mass of urban poverty. Recent positive visions of squatting involve considering squatting as still legal, necessary and free, and that squatting is a solution to homelessness, provides shelter for those who cannot afford to rent and converts dead urban spaces to liveable areas. Squatting creates space for much needed community projects. Squatting means taking control rather than being pushed around by bureaucrats and property owners (Chatteron, 2002). The Istanbul declaration of the Habitat Agenda affirmed the need to promote squatter settlements upgrading of existing housing stock through rehabilitation, maintenance and the adequate supply of community facilities, public services and amenities (UNCHS, 1997b).

The practice of clearing squatter areas is not the solution to the housing problem, simply because they will move somewhere else, and because the squatter housing stock is an important capital stock of the poor. (Mayo et al., 1986; Rodwin and Sanyal, 1987) Policies would rather improve the housing qualities through realizing security of tenure based in Turner's work. Studies have shown a correlation between the socio-economic variables and spatial distribution of mortality in squatter settlements (Pugh, 2000: 326). Accordingly, improvements of squatter areas can effectively reduce health risks and considerably improve the urban health transition among the urban poor (Pugh, 2000: 326).

The experience of upgrading in Khartoum, included as part of the government housing plan of 1990's, shows no existence of a clear housing strategy. The government plan it its early stages focused on combating squatter living around the city. The plan included immediate removal

of any newly developing squatter housing in the already subdivided land, reducing the development of new squatter housing in the unplanned government land and agricultural lands, partial treatment of some areas that seem to be necessary, combating squatter landlordism and squatter speculators, and ensuring temporary camps for the refugees and the displaced people (MHPU, 1991). Upgrading also involved regulation of the villages around Khartoum through identifying the village property lines; settling tenure problems; land registry and the development and enacting the Village Regulation Law; and finally planning and upgrading the neighbouring villages in harmony with the urban fabric (MHPU, 1991).

Old practises of slum treatment in Khartoum involved immediate demolition of squatter houses located in areas assigned for the government housing plan, based on official government decisions (see *Table 6.6*)[84] (Bannaga, 1996; 2000). Squatter treatment practises in Khartoum included relocation of old Fallata fourth-class housing area, to a new site south of Khartoum named *Al-Engaz.* According to Bannaga (1996) squatter settlements, which he named unauthorized settlements, treatment in Khartoum consisted of three actions; re-planning, relocation and incorporation. The first is likely an upgrading process for areas with complex land tenure problems and permanent buildings. The second type is for the poor displaced households who need government assistance and often applied to areas designated as industrial and other non-housing uses. The third type is applied to old unplanned areas and villages that exhibit fair acceptable physical character and serviceable district within the old parts of the city. The practice of upgrading in Greater Khartoum seems to have proliferated squatting. Upgrading of the old areas encouraged more people to illegally acquire land. In reference to the practices in Africa, O'Connor (1983) asserted that ways have to be found to accept the existing squatter assets without encouraging further squatting.

Although the upgrading in Khartoum produced mixed results of failure and success, the experience of Port Sudan city has shown a clear success. It included realizing security of tenure through organized upgrading procedures and a designed programme. Observation has shown improvements in building conditions (Oushi, 1994).

[84] Bannaga (2000: 17) noted that in October 1985, the Council of Ministers took a decision number 72 that involved forming and executive body for immediate demolition of incomplete buildings in twenty sites located in assigned for the official government housing plan.

Table 6.6 Official actions of settlement upgrading in Khartoum
Source: After (Bannaga 2000)

Date	***Decision number***	***Administrative body***	***Details***
June *1982*	82/4	Ministerial	A number of committees were formed to remove the squatter settlements of Um-Baddah, Zagalona and Gharb Al harat.
1983	Act	The National Capital	Using the Building Regulations of 1961, modified 1973, a decision was approved to remove the unauthorized settlements within 25 kilometres radius
October *1985*	72	Council of Ministers	Establishment of special executive body to handle the problem of squatter settlements and immediately remove buildings under construction in 20 sites assigned for the government housing plan
July *1987*		Council of Ministers	A committee was formed to including Regional Governors for stemming the flow of migrants to Khartoum and to help the resettlements of those who were evicted from the city and being repatriated
May *1990*	941	Council of Ministers	A decision was taken to treat all the squatter settlements; the displaced and other unauthorized settlements by relocation, clearance and banning tenure settlement for squatters after 1990.
1992		Council of Ministers	The approval of Khartoum Structure Plan prepared by Doxiadis and AbdulMonem Mustafa. Part of the objectives of the structural plan was to deal with the massive urbanization and the problem of unauthorized settlements.

The government upgrading of Greater Khartoum involved two main types. The first is upgrading of the old randomly developed squatter areas that have become an integral part of the city. Estimates show that these are around ten thousand[85]. The second type involved regulation of around 21 villages. This included 80120 plots, giving roughly 90 thousand plots. Reasonably good opportunities of squatter upgrading exist in Khartoum. Firstly, most urban land is government-owned, making the situation easier for tenure conflict settlements and compensations. Secondly, building materials accept recycling and the building construction uses low technology. Finally, no shortage of land exists, at least in the near future, helped by the flat topography and the absence of un-developable land.

[85] Records of the ministry are incomplete. Estimates have been done by the author based on figures of some of these villages.

Chapter 7

Housing Characteristics

Chapter 7 Housing characteristics

7.1 Introduction

This chapter discusses the aspects of housing characteristics and space standards adopted in government site-and-services schemes, which result from the housing supply process and the housing allocation system. The chapter focuses on the empirical analysis of the questionnaire survey that was designed to examine the existing conditions of the site-and-service schemes, the main alternative housing supply system in Sudan in general and in Khartoum in particular. The chapter highlights the variations in the housing space standards in the selected study low-income housing districts, with a view to studying their implications on the low-income housing supply process.

This chapter includes four sections. The first discusses the characteristics of the traditional low-income house in Khartoum and its components. The aim is to give an understanding of the particular aspects of housing to facilitate understanding the next analytical sections by giving a clear picture of this prevailing housing type. The second section analytically discusses particular aspects of the housing space standards that have an influence on the housing supply in Khartoum adopted in the government sites-and-services housing projects. Special consideration is given to analysis of the habitable rooms, plot size, plot area per person, room occupancy and the floor space, as these are the aspects of space standards that can have a direct influence on the whole housing supply system and housing policy. The discussion highlights the rationality of these standards and the relevant problems and issues through analysing survey data and the fieldwork. The third section investigates the applied aspects of these standards, particularly the plot sizes, while trying to explore the avenues by which the currently adopted standards are further rationalized with the objective of increasing the housing supply process, consolidating the low-income district and optimising the utilization of the urban housing land use. This therefore tries to answer one the main research questions by drawing out some implications that would be utilized to enhance the low-income housing supply process in Khartoum. The last section also discusses the same issues by viewing these standards at the sites-and-services project scale, by analysing the survey data of Al-Azhari district (block 13). Based on the analysis this highlights the problem of the slow growth of the built-up area in the district.

The issue of housing standards has remarkable significance as critical factors in decision-making regarding building conditions and whether they provide suitable living conditions or not. According to Rodwin and Sanyal (1987), housing policy throughout the world has been based on the idea of improving the quality of shelter and settlements by condemning and eliminating units or areas that are below the minimum standards. They conclude that the goals make sense if shelter and infrastructures and settlements meeting these standards can either be afforded by occupants or provided by others. In Third World countries, these goals might not be feasible or desirable because they are not attainable. Rodwin and Sanyal (1987) hold that: 'although high standards now are increasingly regarded as a major barrier blocking the provision of shelter for low-income households, the formulation of more appropriate standards remains a difficult task. Perhaps it is no longer a technical problem but an institutional problem' (Rodwin and Sanyal, 1987). A number of actors play different roles in the stalemate of the housing, services and infrastructure standards viz., designers, politicians, government officials, contractors, suppliers of building materials and inputs, the users and, to some extent, international agencies (Gakenheimer and Brando, 1987). Official high standards are supported by professionals, engineers, administrators (Rodwin and Sanyal, 1987) and politicians and the elected people. They tend to keep them high because they consider themselves holders of the 'social contract' with people, including a promise of high infrastructure standards. They may be hesitant to contravene this 'social contract'. In addition, they seek to give themselves an image as indicators in the progressive development by adopting high technologies. So lowering standards in their viewpoint may cause dissatisfaction amongst the public (Gakenheimer and Brando, 1987). Identifying standards, if needed, requires, therefore, collective consideration of the viewpoints and stances of all these standards, which is always a problem for those on low-income.

The relationship between affordability and standards is apparent. Experience has shown that the sites-and-services and upgrading projects that were undertaken in developing countries involved lowering standards in terms of zoning and building codes from pre-existing levels in order to meet the affordability criteria. At the same time, initiatives were developed regarding the relative greater involvement of self-help in construction of shelter and community facilities; and the production and use of low-cost building materials (Mayo, 1987).

Payne (1999a) pointed out that plot sizes in many parts of Africa are among the largest in the world, but he describes them as reflections of cultural factors in land use and commonly

expressed views where people need space to grow crops or keep livestock (Payne, 1999a). Some low-income households still keep goats in Khartoum; however, observation shows that this phenomenon is declining as part of the cultural change which standards should match with. Yahya et al. (2001) pointed out that, in the African context, colonials imposed their existing laws on their overseas territories, ignoring the local conditions.

Schilderman (1994) argues that housing provision in urban areas in developing countries is invariably governed by sets of planning and building codes and standards that govern residential densities, plot sizes, the use of building materials, and so on. Unfortunately, these practices constitute a hindrance rather than a help in shelter provision for the urban poor. These standards are accordingly inappropriate. They are often imposed or imported and therefore not in line with local conditions, culture or building conditions. He outlines nine reasons as follows:

- 'Such standards fail to recognise that housing in the Third World is more often an incremental process, than a one-off exercise of building complete houses.'
- 'These standards are not based on consensus, but set by middle or higher-income policy makers, and fail to take account of the masses.'
- 'Most standards are therefore socially divisive: they only recognise the 'well to do', and categorise the less affluent as substandard or illegal.'
- 'Current standards are not affordable, both at the level of the masses and of countries as a whole: the resources simply do not exist to house entire populations according to the level set by them.'
- 'Housing standards do not necessarily reflect people's priorities: for example they might favour the quality of construction above quantity of space, whereas space is what most people want in the first place.'
- 'Imported standards require the use of scarce and often imported building materials and skills, and thereby retard the development and dissemination of local technologies; this is economically unsound.'
- 'Constructing houses according to the regulations means going through a maze of bureaucracy; even if householders understand this process, it still makes access to standard housing lengthy and costly; it also encourages corruption.'
- 'Imposing high standards by force, including the destruction of substandard housing, has an adverse effect on people's willingness to carry out home improvements, and destroys much of housing resources. It also goes against the traditional processes of incremental housing.'
- 'Finally, imposing high standards will increase rental housing, and result in overcrowding and an overuse of infrastructure installed in standard housing areas. That, in turn, may make these areas substandard, and defeat the purpose of the standards' (Schilderman, 1994; UNCHS, 1996b[86])

With a view to these problems of standards in Khartoum, it has been discussed earlier in chapter three of this thesis that standards in Khartoum are applied through the housing classification system, which specifies standards for every housing class. However, these

[86] Schilderman's points were best summarised by UNCHS (1996b), (HS-391) an electronic version of at: http://www.unhabitat.org/programmes/housingpolicy/pubvul.asp, (chap. 6/I) last accessed April 6, 2006.

standards and regulations are not accompanied by strict official follow-up by the respective local authorities in charge of the development control at the implementation and plot development stages, primarily because of the weakness of the regulatory system itself as well as the lack of resources and trained staff and logistics. Most of the points raised by Schilderman, not deviating much from many other countries, greatly apply to conditions in Khartoum. Particular emphasis would be given to the affordability issue. It has been pointed out in chapter three that the percentage of population in poverty in Khartoum is high, hence affecting the affordability of those on low-income. In light of these two prevailing factors, application of standards will not be practical. Some of these standards are applied in the planning stage such as the land subdivision and the plot sizes. These are often based on the rule of thumb, and most of these subdivision plans reflect a lack of skills and experience. The following discussions in this chapter deal with these issues.

7.2 Components of the traditional low-income house

This section gives a description, discussion and analysis of low-income traditional housing types in the study areas. Figures 7.4, 7.5, 7.6 and 7.7 illustrate typical examples of the traditional houses in the study districts. The purpose of this section is to analyse the room types of the traditional houses and frequencies to derive the general characteristics and standards. *Table 7.1* illustrates room frequencies in the traditional housing types of the study districts from the questionnaire.

Table 7.1 Space types in the housing unit by district

		Bedrooms	*Verandas*	*Living and family rooms*	*Dewan, Sitting rooms or .*	*Dining rooms*	*Bathrooms*	*W.C.*	*Kitchens*	*Courtyards*	*Store*	*Retail or business*
Ad-Deim	***Mean***	2.7	0.9	0.8	0.6	0.2	1.2	1.2	1.1	1.3	.4	0.2
	Median	3	1	0	1	0	1	1	1	1	0	0
As-Sahafa	***Mean***	2.6	1.3	0.3	0.4	0.1	0.9	1	1	1.7	0.3	0.1
	Median	3	1	1	0	0	1	1	1	1	0	0
Al-Kalakla	***Mean***	2.5	1.8	0.2	0.4	0.1	0.5	1.2	0.9	1.8	0.3	0.2
	Median	2	2	0	0	0	0	1	1	2	0	0
Abu-Adam	***Mean***	2.3	1.2	0.4	0.4	.03	0.8	0.8	1	1.4	0	0.2
	Median	2	1	0	0	0	1	1	1	1	0	0
Al-Azhari	***Mean***	2.2	0.8	0.1	0.3	0.1	0.5	0.9	0.9	1.2	.01	.03
	Median	2	1	0	0	0	1	1	1	1	0	0
All Districts	***Mean***	2.5	1.2	0.3	0.4	0.1	0.8	1	1	1.5	0.2	0.1
	Median	2	1	0	0	0	1	1	1	1	0	0

7.2.1. Living rooms

7.2.1.1. Bedrooms

Rooms in traditional housing are often used as multi-purpose rooms, for sleeping, dining and living. All household effects are kept inside the room. In houses where no shower rooms are provided they are also used for washing. The typical room size is usually 16 to 18 square metres, often four metres by four metres or 4.5 metres by four metres. The typical bedroom is provided with a door and a window on one side and two small windows on the opposite side, north-south oriented, for natural ventilation and to avoid direct sunlight on the east and west sides. They are usually furnished with three or four beds. Rooms are used for sleeping during the day and winter nights, while in summer people prefer to sleep in the courtyard.

In all districts, the mean number of rooms per housing unit is 2.48 and the median is 2. In Ad-Deim where the median plot size is 210 and As-Sahafa where the median plot size is 400, the median number of living rooms in both is 3, while the median in other districts is 2. In Ad-Deim in most houses, the numbers of rooms are almost reaching the maximum that could be built in a traditional house, because it is an old area that was built about fifty years ago. Most developable spaces within the plot are used, as people usually tend to maximize the number of rooms if they can afford it. This means that As-Sahafa room spaces might reach double the median size of Ad-Deim in future, because the plot size is approximately double.

7.2.1.2. Sitting rooms

The *diwan* or *saloon* is the sitting room, where male guests are received, especially those who are not close relatives. This room is usually kept tidy and closed, opened only for guests, if there is no problem of shortage of space. It is usually a large and a well-furnished room, often part of it is furnished with a dining table. The typical size of the *diwan* is 4x7 meters. The construction of the *diwan* often comes next to the living room for those who are incrementally developing the plot, when sufficient finance is accumulated. This accounts for why the average number of *diwans* per house unit is as low as (0.41) in all districts, and it is highest in Ad-Deim because it is the oldest district. Sometimes owners tend to transform a veranda and a room into a *diwan*. The house provided with a *diwan* or *saloon* is socially regarded as more prestigious.

7.2.1.3. Halls and dining rooms

Separate dining rooms, family rooms, and halls are rarely provided in the traditional low-income houses, as is shown in table 6.12. Such rooms are found in the traditional houses

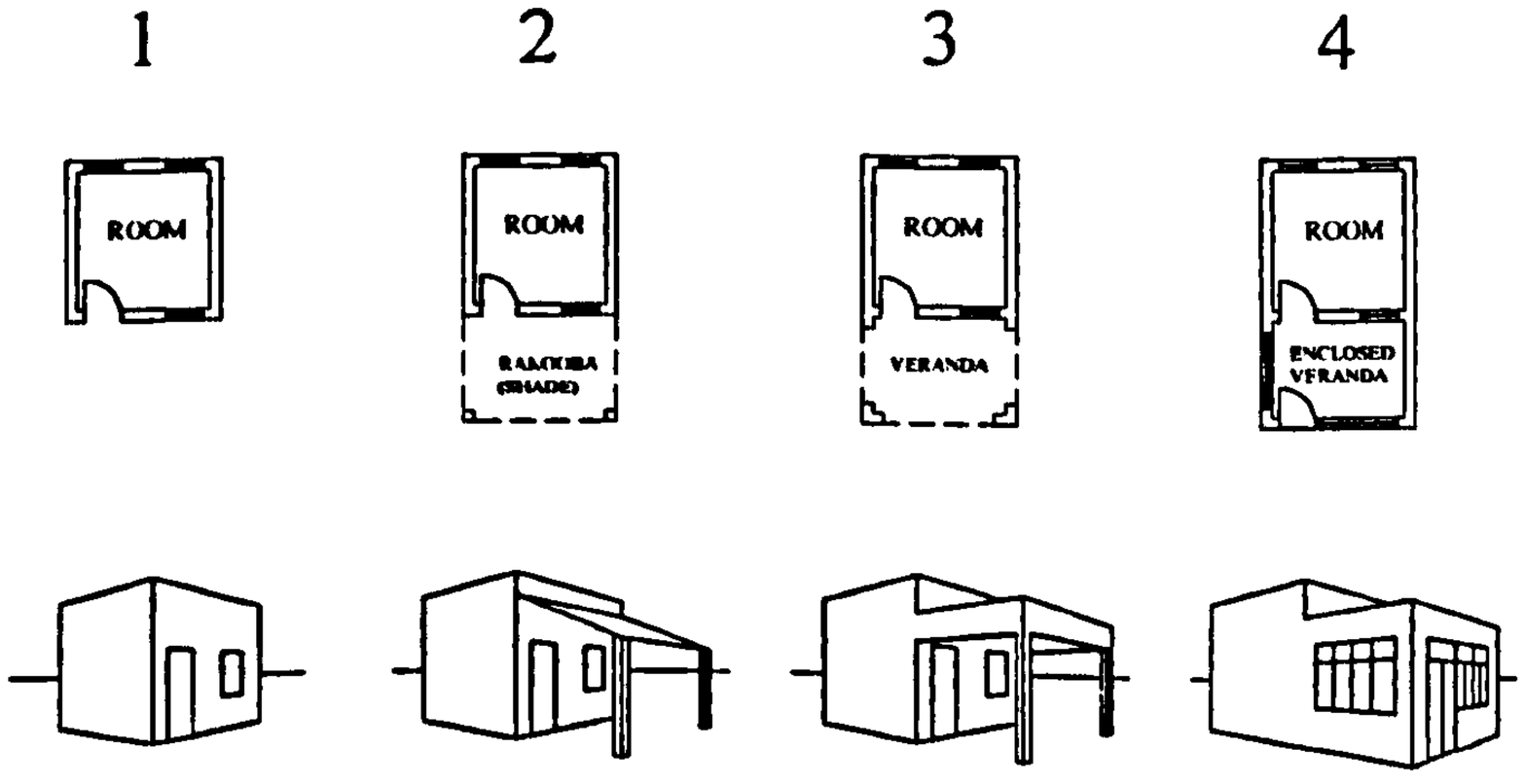
transforming into urban villa housing types, which also represents a prestigious stage in the house development.

7.2.2. Verandas

Almost all houses in all districts are provided with at least one veranda. It is therefore an important component of the traditional house. The function of the veranda is little different from a room because in the veranda at least one of the four sides is open. They are used for daytime sitting, sleeping, family meetings and as a guest reception. They are often furnished with beds and chairs. They are cheaper than the rooms, and the typical size is 2.5 m wide and 5.5 metres long. The concept of the veranda originated in rural areas in central parts of Sudan and was brought to urban areas by migrants. It is called *Rakooba* or *kashasha,* which is a sunshade in front of the room supported by two or more wooden columns and roofed with thatch and bamboo, steeply sloping forwards. The urban type is roofed with timber, thatch or metal sheets and supported with two or three concrete or brick columns. As the need for more rooms arises, verandas are converted into rooms. This is what justifies the low average number in Ad-Deim, the oldest area (0.91). Al-Azhari has the lowest average because the area is new and the people usually start by building rooms followed by a veranda so that they form one basic unit. This unit is the core residential unit that accommodates a household at the early stages after moving in. The adapted *Rakooba* or *kashasha* and the room transformation stages are illustrated in *Figure 7.1*.

The problem with verandas is that they do not sufficiently provide an environmentally protected space. In addition, they are not built with durable materials. They are therefore a complementary structure that could be transformed in future into a habitable room.

Figure 7.1 Transformation stages of the living room /veranda unit



7.2.3. Courtyards

The *housh*, which is the local name given to a courtyard is an important and basic component of the traditional low-income house. All houses are provided with at least one *housh* or more. The *housh* is used for outdoor sitting and sleeping at night. The house layout is usually made in a way that produces courtyards. Large courtyards are often subdivided with partitions into separate smaller ones, usually one for the parents, one for the girls and another for boys. They are also regarded as family meeting places in the evenings and the afternoons, when the temperature drops down in summer. Courtyards become more important where insufficient rooms are provided. The use of courtyards significantly reduces energy consumption, and works as a climatic moderator especially when they are provided with plants.

The courtyards occupy the largest part of the plot area. Courtyards are open spaces within the plot, if partitioned by any structure; more of them could be created in the sense that they could be used privately. In traditional houses often separate courtyards are used by males, females, and the parents. In Al-Azhari district the median built-up area is 16 percent of the plot size, which is 300 sq. m. This means that the area allocated as *housh(es)* is more than 250 sq. m. If any strategy or housing design approach concerning better utilization of housing spaces or residential consolidation is to be established, it is likely to involve optimum utilization of the courtyards.

7.2.4. Services and annexes

7.2.4.1. Kitchens

Although it is expected that every house should include a kitchen, it was found that 11.4 percent of the houses have no built and roofed kitchen. Alternatively, they use a corner or part of the veranda and rooms, or any temporary structure as a kitchen. Houses lacking kitchens are dominant in the recently built housing area of Al-Azhari and some rented parts in other districts. However, the median of one kitchen per house in all districts has been found in the survey. Kitchens are smaller than the living rooms, with a typical size of 3x3 meters, often detached from other rooms, and they are mostly positioned at one of the corners of the plot.

7.2.4.2. Sanitary units

The sanitary systems in the traditional houses are mostly low technology but poorly provided in terms of their condition. No satisfactory attention is given to the sanitary system and water supply in low-income housing areas. Table 7.2, figure 7.2 and figure 7.3 show that 55.4

percent of the surveyed houses' sanitary system is on-plot pit latrine, 28.7 percent is septic tank and a soak away well. The rest of the houses use temporary pit latrine or none. Figures from the 1993 census of Khartoum indicate that only 8 percent of households have a septic tank and a soak away well, 65 percent have pit latrines and 19 percent are without any sanitary system (Osman, 1995). Figures show that about 5 percent of Greater Khartoum urban area is served by the municipal sewage system (UNCHS, 1996a: 269), while the rest use other alternatives.

Pit latrines are cheap, but they are a source of flies, cockroaches, odours, health hazards, and are characterized by risk of accidents (Davidson and Payne, 1999) and they are generally inconvenient. On the other hand, the septic tank and the well are more expensive though they are convenient if no public sewerage system exists. The septic tank system allows for the flow from a multi-tap water supply connection, whereas houses with pit latrines are provided with a single tap water supply. The septic tank and the well are built of concrete and burnt bricks with cement mortar respectively. They are built in a way that allows for high water consumption while the wells in the pit latrines are not built. The slow percolation of the water may lead to the collapse of the well.

In Ad-Deim and other old areas in Khartoum the wells of the pit latrine system, which are actually deep, have been dug many times within plots. New ones are built when the old ones are filled every few years. Therefore, in every plot there are a number of buried wells causing safety hazards and mostly the old spaces are no longer usable as habitable rooms. The problem is most accentuated in Ad-Deim because plots are small.

In house construction for low-income households the pit latrine is usually built first, then, when sufficient savings are accumulated it is replaced by the septic tank. The shortcomings of the septic tank lies in the increase of water consumption and increased input of imported building materials, including cement, steel, and sanitary fittings, which are relatively expensive.

Table 7.2 Kitchen and sanitary system provision in the low-income housing districts

	Kitchen	WC or toilet	Bath or shower room
Private use	85.6%	80.7%	85.1%
Shared use	7.9%	14.9%	10.9%
None	6.4%	4.5%	4%

Figure 7.2 Sanitary systems

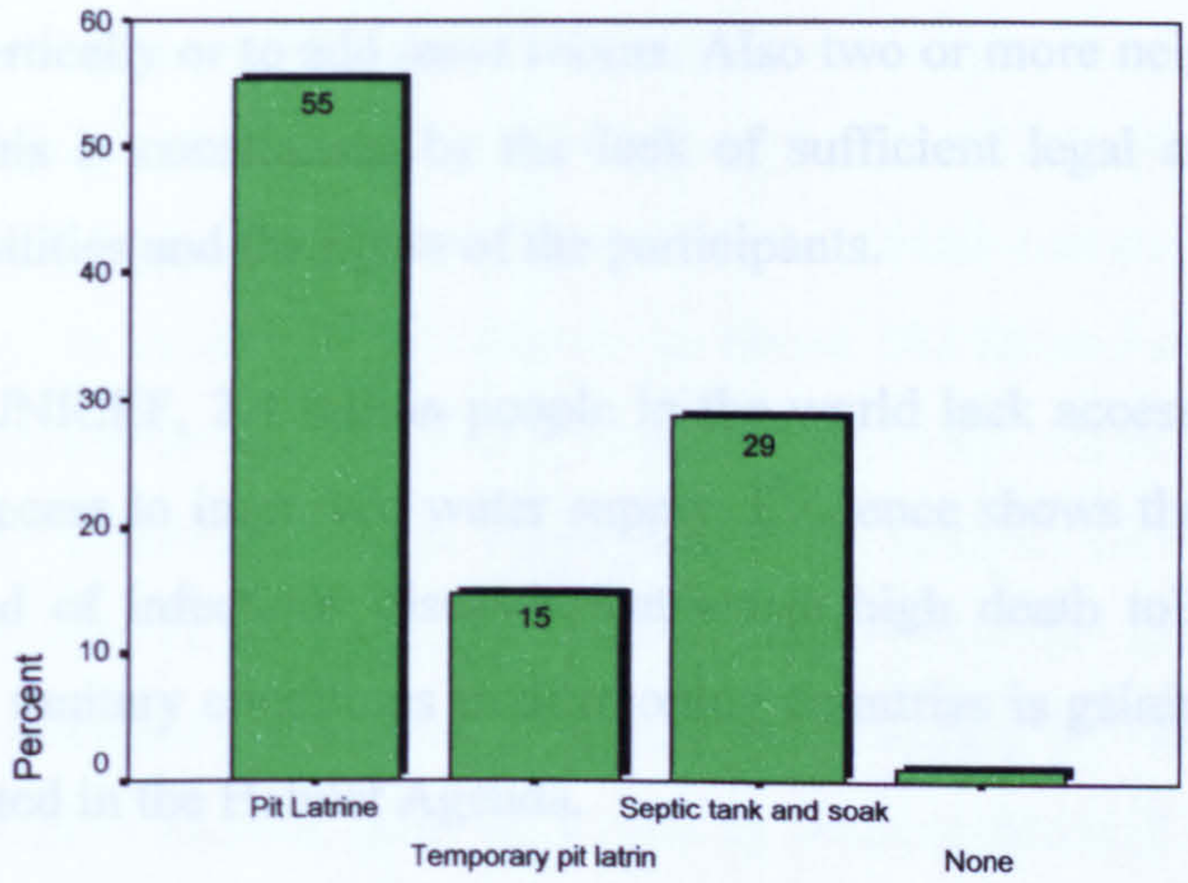
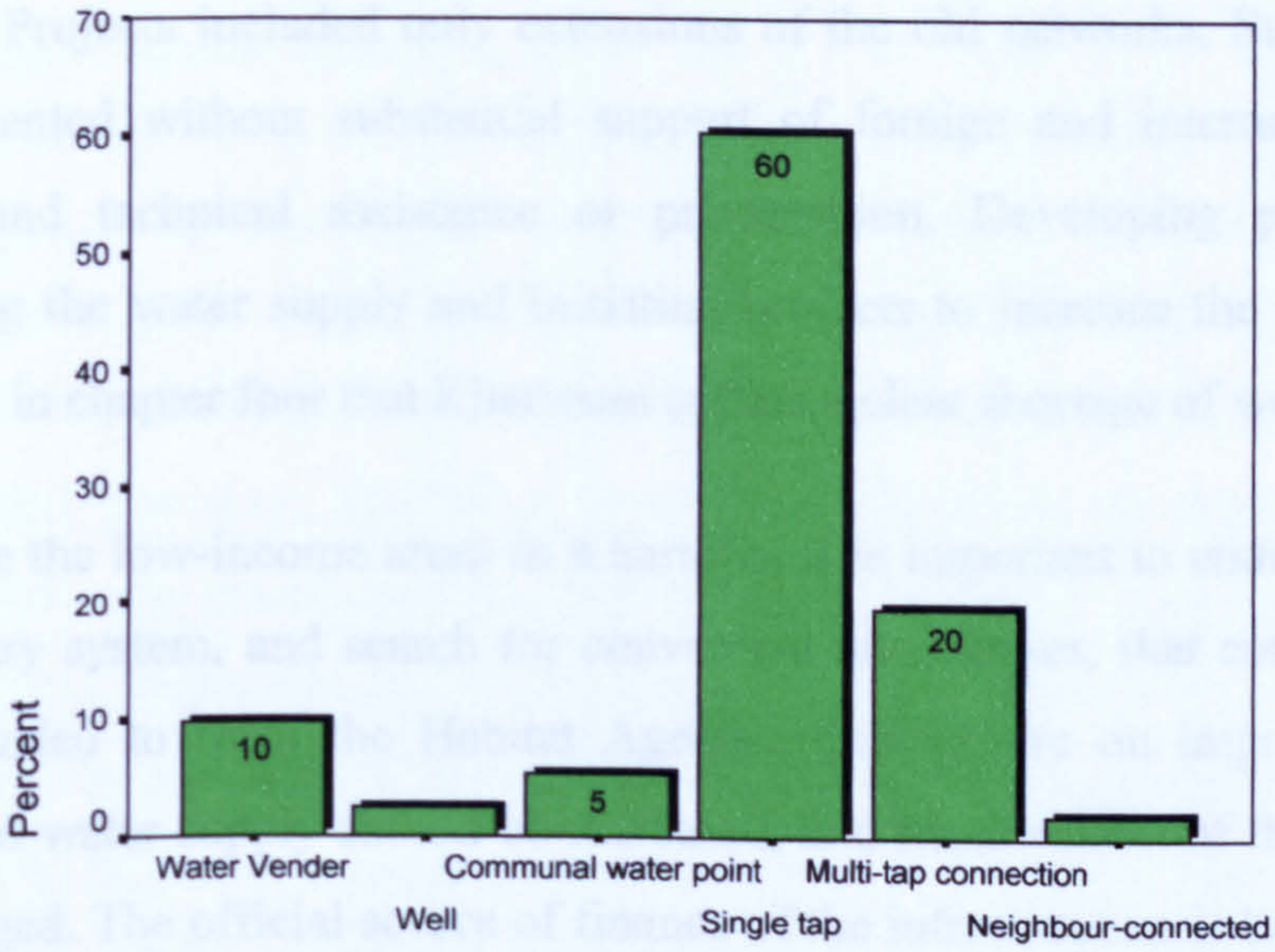


Figure 7.3 Water supply types



Bathrooms are generally provided where there is a multi-tap water supply or a septic tank sanitary system. Shower rooms are provided alternatively, where no bathrooms are available. Separate and small isolated rooms are built for each. In some cases, the poorer households leave the closet unroofed, which further increases the risk of vermin, accidents and damage resulting from rain. The cost of the septic tank and a well exceeds the cost of building three finished rooms of the traditional house; they are built by small-scale contractors because they

require skilled labour. The septic tank can serve a number of residential units. A small increase in its size can allow for additional units. Therefore, it is highly convenient where it is intended to expand vertically or to add more rooms. Also two or more neighbouring plots can share the cost, but this is constrained by the lack of sufficient legal and regulatory basis defining the responsibilities and the rights of the participants.

According to WHO/UNICEF, 2.4 billion people in the world lack access to basic sanitation and 1.1 billion lack access to improved water supply. Evidence shows that poor sanitation is likely to cause spread of infectious diseases that cause high death tolls (WHO/UNICEF, 2000). Improving the sanitary conditions in developing countries is gaining more importance and has been highlighted in the Habitat Agenda.

The public sector's role is confined to the regulatory and administrative roles and managing the existing sewerage networks. The public sewerage covers a very small part of the whole city. No new public sewerage projects were initiated for decades, because of the high capital resource required. Projects included only extensions of the old networks. Such projects can hardly be implemented without substantial support of foreign and international agencies through finance and technical assistance or privatisation. Developing public sewerage requires developing the water supply and initiating projects to increase the water supply. It has been discussed in chapter four that Khartoum suffers a clear shortage of water supply.

In order to upgrade the low-income areas in Khartoum it is important to undertake actions to improve the sanitary system, and search for convenient alternatives, that cut down the high costs, if it is intended to fulfil the Habitat Agenda. Expenditure on improvement of the sanitary system and water supply should be increased, and involvement of the private sector should be encouraged. The official source of finance of the infrastructure is based on the fees, which are supposed to be paid by the beneficiaries as a lump sum payment when the plot is received. However, such approach failed as people refused to pay, (NHC, 1985) simply because they cannot afford it, and the money collected actually constitutes a tiny portion of the required infrastructure, making it unpractical and unrealistic. During the last few years, the government commenced a privatisation programme for some services such as rubbish disposal, where companies collect the rubbish and they directly charge people for the service. The difference in the finance for the provision for septic tanks and the public sewer system is that the first has to be self financed by the household while the public sewers could be undertaken by large private sector firms, where the beneficiaries pay monthly fees.

The new extensions of the housing project are not serviced by piped water supply. Also some of the previous housing schemes are not yet fully supplied with piped water. According to officials, the demand for water supply is 860,000 cubic metres per day, while water actually produced is 320,000 cubic meters from the purification plants, and 220,000 cubic meters from drilled wells, with a shortage of about 40 percent of the actual demand[87]. The gross water consumption according to these figures amounts to about 102 litres / capita / day, and the demand estimation is based on the rate of 162 litres / capita / day. According to 1993 census, only 52.2 percent of the inhabitants of the whole Khartoum State are served with piped water (Osman, 1995). Such level of water supply is working beyond the design capacity of the network, whereas demand continues to rise. Households in the new low-income housing areas and squatter areas pay more because they are served by vendors (UNCHS, 1996a). The water supply cost constitutes about 3 percent of the total expenditure of the household. Households in Al-Azhari new district pay twice as much as households in As-Sahafa old area for water supply.

7.2.4.3. Home-based economic activity spaces

Homes can be used as a working place as well as living and can substantially provide income sources for poor people in developing countries (UNCHS/ILO, 1995; Strassmann, 1986; Gilbert, 1988; 1992a; Tipple, 1993). Homes were also viewed as providing broad economic benefits (Laquian, 1983; MaCallum and Benjamin, 1984; Strassman, 1987) Housing is also important for generating income, alleviating poverty and improving the economy of the low-income countries. To many researchers housing is not only a place to live but also a place to work (Srassmann, 1987; Spence et. al., 1993). Housing can be viewed in two ways in relation to its contribution to the economy of the country, first as a product and second as an income generator. The first role is that housing construction creates direct and indirect employment and a market for the provision of building materials, infrastructure and employment (Klaassen et. al, 1986). The second role involves the home-based enterprises, where a range of productive activities takes place within the home (Strassmann, 1987; Tipple, 1995; Gilbert: 1988). Theoretically Gilbert (1988) summarized the ways of using the home for income generation as (1) homes act as a place for work, (2) homes represent an important form of savings, (3) income generation through renting, and (4) homes as a means for reducing living costs (Gilbert, 1988). A wide range of home-based enterprises takes place in cities in the

[87] Rayaam Newspaper – Khartoum, issue No. 985, 18.5.2000, a report of an interview with the previous director general of Khartoum Water Department.

developing world. Such activities include, but are not limited to, retail, sewing, repairing, animal keeping, cooking, baking, hair cutting, storage, knitting, tailoring, and letting rooms. Strassmann (1986) estimated that between 10 percent and 25 percent of dwellings in cities in developing countries have home-based enterprises. Tipple (2004b), assessing the HBEs with respect to the characteristics of the informal sector, gave estimates of the proportion of the informal jobs from the literature of the HBEs. He pointed out that they represent between 40 to 65 per cent in Asia, 24 percent in Latin America in 1992, 85 percent of the new jobs in Latin America in 1998, and 60 percent in Africa.

Tipple (2004b) found that the HBEs jobs conform to the characteristics of the informal sector jobs, but their presence at home gives them certain constraints and advantages that are different from their counterparts operating within other premises. He argued that the advantages of the HBEs involve their ability to:

- "maintain an enterprise at little overhead cost, except perhaps some disturbance of domestic activity;
- to make use of household resources, especially space and utility connections. Indeed, the home provides the ultimate environment for trading off resources between domestic and productive activities;
- to make effective use of time and money particularly by avoiding travel to work;
- to make effective use of social and human resources, particularly relatives and friends, in the enterprises in exchange for small sums of money or benefits in kind.
- To enable women to have productive work even in societies where their movement and social intercourse are restricted" (Tipple, 2004b: 36).

HBEs have been traditionally viewed as conflicting with and unpopular to the planning and other regulatory systems and the neighbourhood and land use planning norms, often on grounds of the environmental problems they are perceived to cause. Tipple et, al. (2002), examined the effects of HBEs on the home and residential neighbourhood environment to see whether they create crowding, poor environments, and the harmful effects assumed by planning regulations. They argued that:

> "the decision-making process affecting low-income neighbourhoods should always take account of the need for households to make a living and, for many, their dwellings are the only places available to them" (Tipple et, al. 2002: 15).

It has been estimated from the survey that 20.8 percent of the surveyed plots have one or more types of home-based enterprises. The majority of these activities are retail and service shops, animal rearing, breeding poultry, and service and handicraft shops. Few activities of growing

vegetables and fruits and personal services have also been observed (Hafazalla, 2000). No activities of piecework for industrial products were observed.

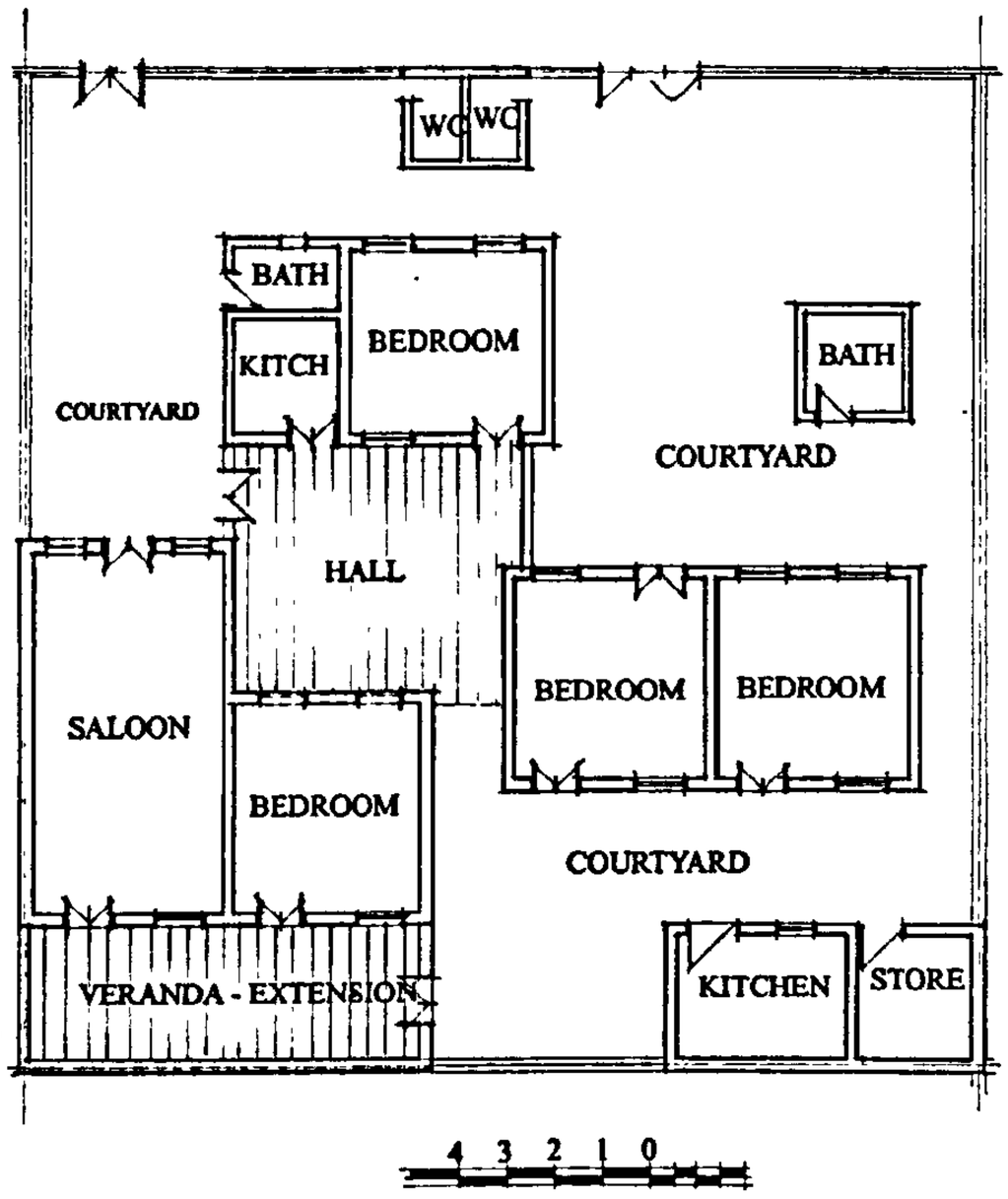
Hafazalla (2000) pointed out that the provision for the home-based enterprises in Khartoum is experiencing some constraints that could be listed as follows:

1. Inability of the tax system in Khartoum to motivate the operation of the home-based activities,
2. Unsatisfactory awareness of the government officials of the role of the home-based enterprises in alleviating poverty and generating additional income to the poor people,
3. Inadequate support of the fiscal policies and the banking system to finance the home-based enterprises. Other constraints are,
4. Slow growth of the site-and-services projects that created scattered low-density residential districts causing poor functioning of the HBEs (Hafazalla, 2000).

On the other hand, opportunities include the increasing number of owner-occupied dwellings that exceeded 85.9 per cent (UN, 1993) in Khartoum. They encourage the establishment of different types of home-based enterprises, and the large plot area per person that amounts to an average of 61.5 square metres per person provides an opportunity of establishing home-based enterprises.

In some countries, the lack of access to loans, title deeds and the lack of space represent a major constraint for initiation of home-based enterprises (UNCHS, 1994e; 2001b), while in Khartoum availability of space constitutes a clear opportunity for the provision for home-based enterprises. Building regulations governing the use of plots can have an effect on land speculation. If plots can be used to generate an income, the low-income earners will be less likely to sell out to higher-income groups as often happens in sites-and-services schemes (UNCHS, 2001b). It is argued that the design of the dwellings to allow for any economic activity has rarely been considered in the official housing projects. However, in the case of Khartoum no restrictions are imposed on economic activities, as low-income houses are built through self-help.

Figure 7.4 Traditional house – As-Sahafa district



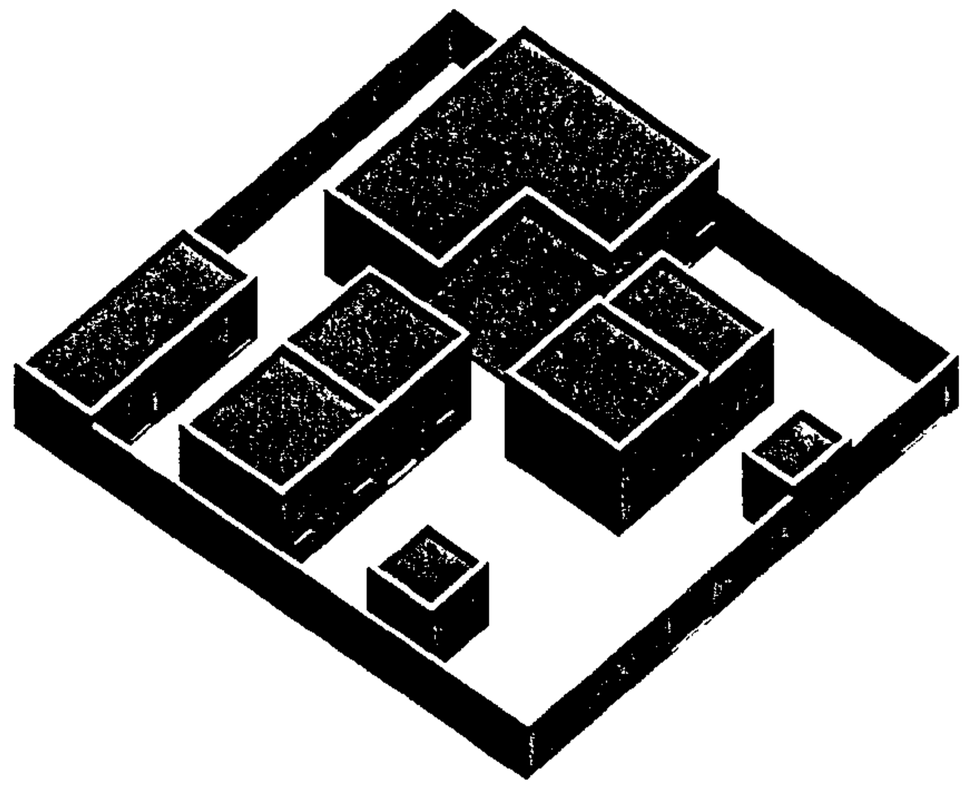
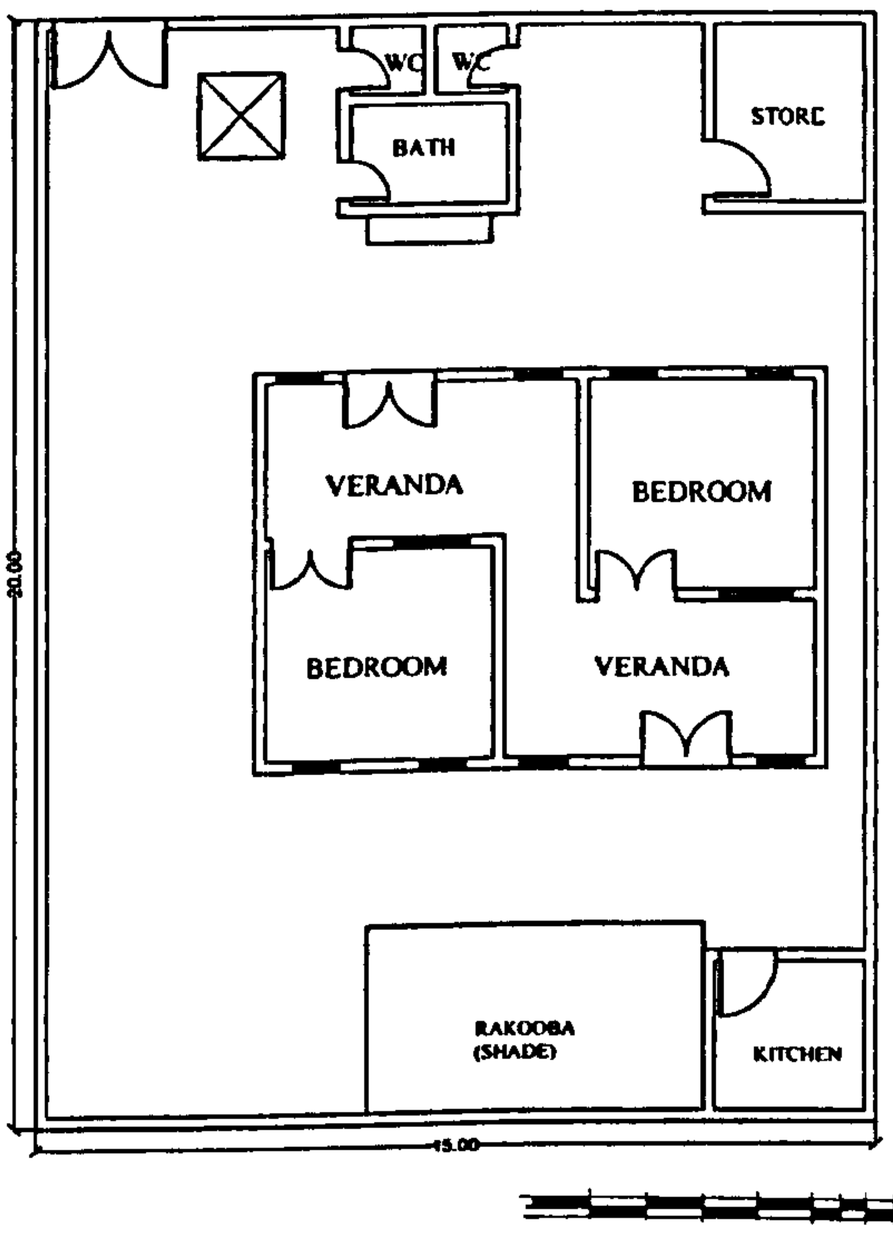


Figure 7.5 Traditional house: Abu-Adam district



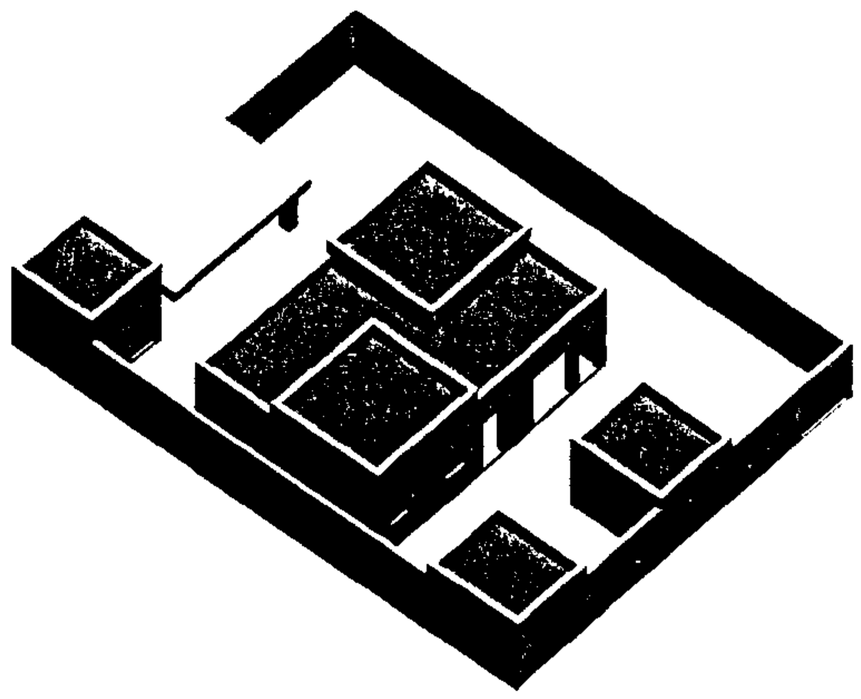
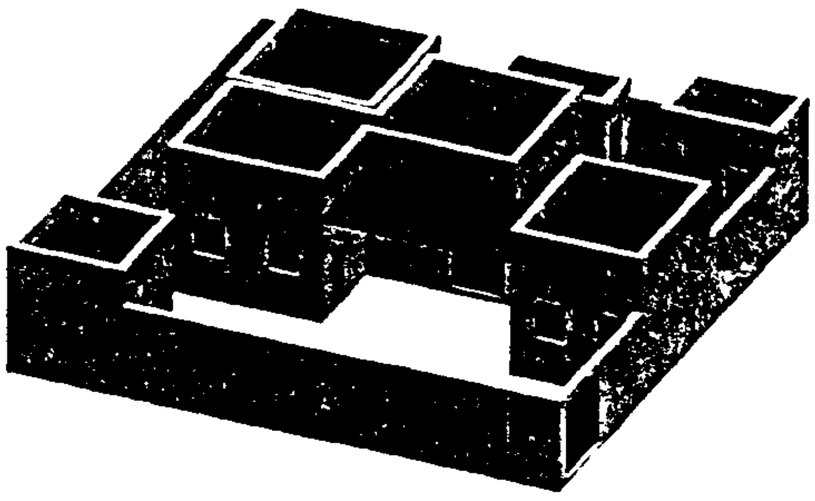


Figure 7.6 Traditional house in Al-Azhari district – stages of incremental development



Year	*Buildings*	*Household status*
1994	5,6,7	The hh moved in
1995	4 added	The same hh, a room added
1999	1 added	One son married & left after 4 month
2001	2 added	The hh became 3, one left
2002	3 added	One hh added
	8	Proposed as next stage

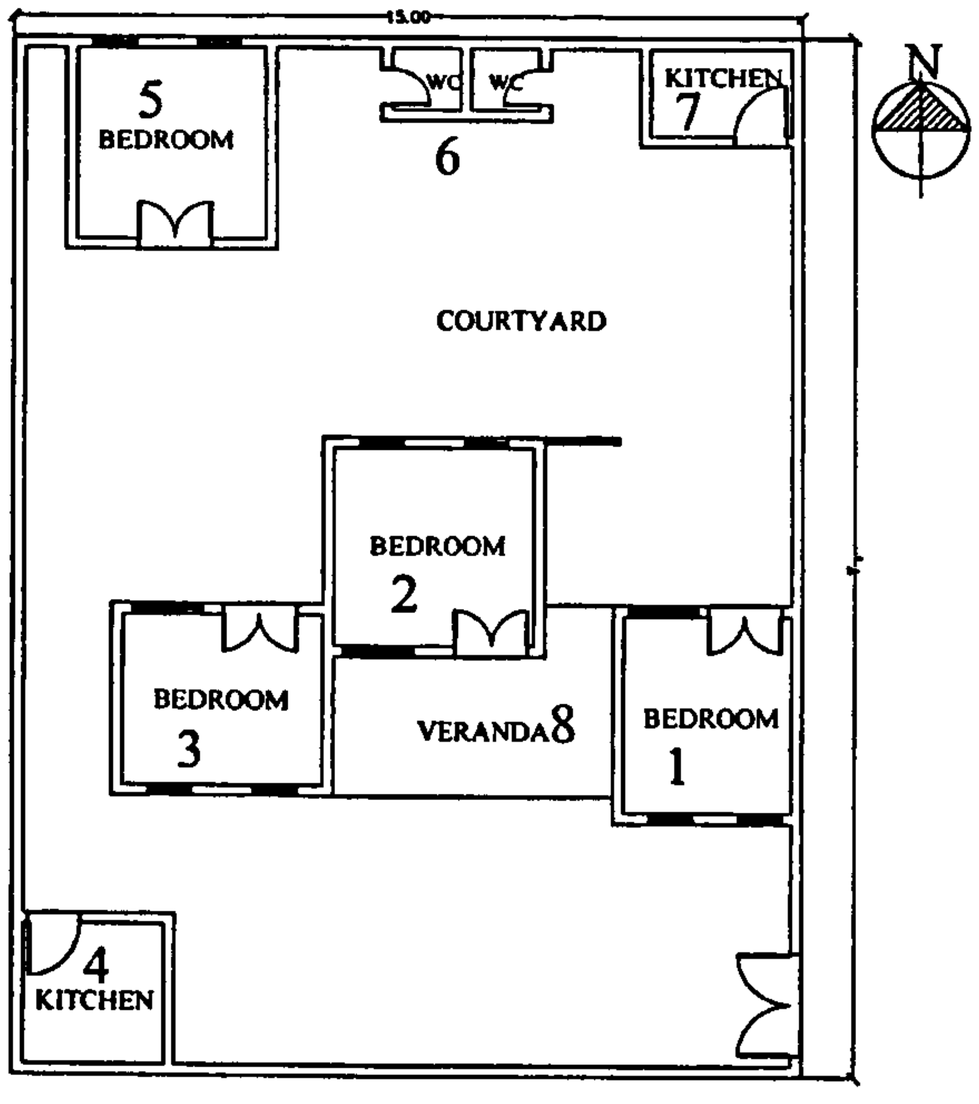
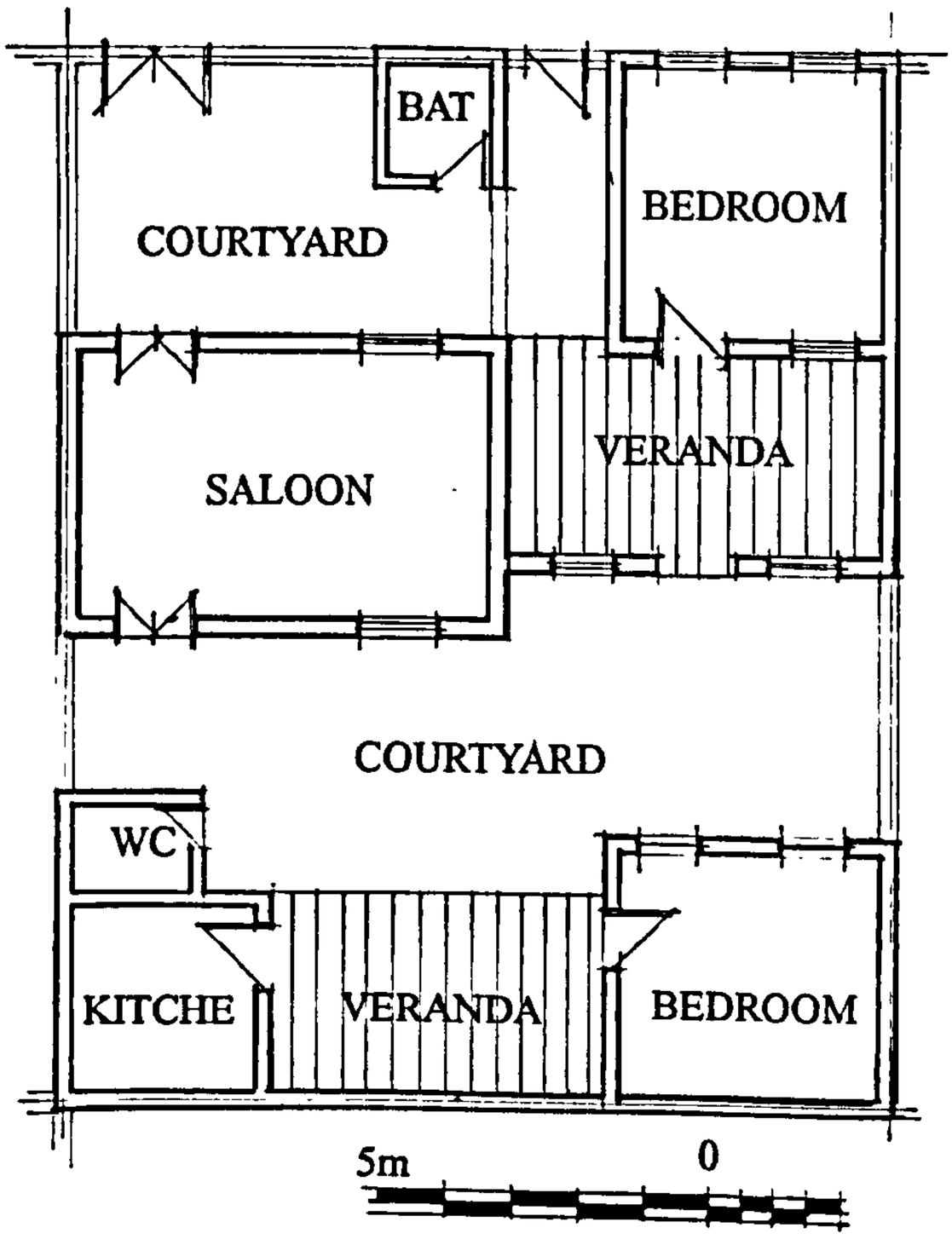


Figure 7.7 Traditional house - Ad-Deim
Note: the house is 12.78 by 15.83 built of Gishra



7.3 Analysis of the housing space standards

This section deals with the housing standards applied in Khartoum in the site-and-services schemes resulting from the application of the specific process of allocation. The analysis focuses on the spatial aspects such as plot areas, habitable rooms, and the built-up area, etc. The relationship of these indices with some relevant household characteristics is also discussed to give further depth.

7.3.1. Low-income housing types

Three types are apparent in low-income areas in Khartoum, traditional single family, traditional multi family and villas. Multi-storey apartments are negligible in number in low-income areas but generally, they are found in the old housing areas along the major asphalted roads that cross the low-income areas. They are usually occupied by middle to high-income households. *Table 7.3* shows the break down of the housing types in the low-income areas from the sample survey.

Table 7.3 Current house type by district in percentage

	Ad-Deim	***As-Sahafa***	***Al-Kalakla***	***Abu-Adam***	***Al-Azhari***	***All Districts***
Traditional single family	8.4	21.3	12.9	10.9	13.9	90.8
Traditional multi-family	5.4	12.4	4.5	4	3	5.6
Villa	2	0.5	3.1	1		3.6

The traditional single-family house type dominates the surveyed low-income housing areas. Generally, houses are built of mud and mud bricks, mixed mud and mud bricks, burnt bricks with sand mortar with traditional and metal sheets. It is a single floor house with a courtyard.

The traditional multi-family house is one where adult singles and married brothers and sisters stay and live as an extended family after one or both parents pass away. Such types exist in the old residential districts as is clear from *Table 7.3* in Ad-Deim and As-Sahafa, where inheritors opt to stay in the old house, often without apportioning or splitting their shares.

The two or more floor single-family housing types in the research have been classified as villas, including single floor houses with usable roof terrace. However, modern building materials used such as concrete, cement plastering, cement bricks, factory-produced red bricks, and aluminium openings etc., makes this type different. Such houses are different from the traditional low-income house type in terms of their design, shape and building materials and finishing quality.

Apartments are rare in Khartoum in general and in the low-income third class housing areas in particular, but observation show that they are increasing. In the low-income housing areas, they are developing along the main asphalted roads. Flat rents are generally expensive and not affordable by those on low-income.

The following is a detailed discussion of the space standards of traditional low-income housing in Khartoum based on the survey results. *Table 7.1* have shown the room frequencies of the traditional houses. However, this section focuses on the plot size and habitable rooms' related indices, and other detailed features.

7.3.2. Habitable rooms

Habitable rooms include sitting rooms, usable halls, dining and living rooms. Verandas are not included, but if partitions are used to fully enclose the open sides, they are then regarded as transformed into habitable rooms. To appropriately analyse the actually used living space, it was suggested we use the *plot habitable rooms area ratio* index, instead of the conventional density indices such as floor area ratio and the percentage of built-up area from the whole plot. From the survey, only the number of rooms was obtained. Rather than using the number of habitable rooms per plot, which can also be considered as a density index, it was suggested to have them by area. To obtain the whole area of the habitable rooms, their number was multiplied by an average sized room of the traditional house, which is 18 sq. m. Taking this figure as a percentage from the whole plot size gives us the *plot habitable rooms area.*

The use of habitable rooms *plot habitable rooms area ratio* is better than using other density indices, in this particular situation, because there are some other ancillary spaces which seem to influence the real portion that is used for living, such as open verandas, sheds *(rakoobas),* the animal pens, shops, incomplete rooms and other similar non-living spaces. If these are included, it may not give a true picture of the actually utilised living space. The use of this index is also justified by the large cost difference between building the habitable rooms and those other spaces. Habitable rooms are also the major component that makes the house liveable. Poor households usually begin with building one room (see *Figure 7.8*) in the plot in order to move in when it is roofed to incrementally construct the house. This means the room is a major element in the house construction.

Figure 7.8 Beginning with one room in Al-Azhari



Table 7.4 shows that the number of habitable rooms per residential unit in the new housing areas (Al-Azhari) is 2 at the median, while it is high in the old residential areas, more than 3 at the median. The figures assume that the process of housing development continues over time, regardless of the plot size, depending on the need for more rooms and the availability of finance. This is explained by the fact the number of rooms in the old area of Ad-Deim is higher than As-Sahafa and Al-Kalakla, although plot sizes in Ad-Deim are approximately half the plot size of As-Sahafa and Al-Kalakla. According to the survey conducted in the selected districts, habitable rooms occupy small portions of the whole plot, expressed by a low *plot habitable room area ratio* of 18.4 percent for all the districts as shown in *Table 7.4*. The table indicates that the number of habitable rooms per residential unit in the new housing schemes of Abu-Adam and Al-Azhari is lower than the old residential areas as a natural consequence of their age. Some other implications could also be drawn from the table. Ad-Deim is expectedly the highest because it is the oldest and the plot sizes are small. Al-Azhari is the lowest because it is a new district, while Abu-Adam is also low because it experienced some problems that constrained its development and reduced its rate of growth. Such problems include, but are not limited to, the reluctance of the authorities to provide a minimum level of

infrastructure and services and that the site is exposed to flooding during the rainy seasons, which sometimes makes the area inaccessible.

Table 7.4 Number of habitable rooms occupied by the household by district and the *habitable rooms area ratio*[88]

	Ad-Deim	*As-Sahafa*	*Al-Kalakla*	*Abu-Adam*	*Al-Azhari*	*All Districts*
Mean	3.81	3.16	3.23	2.84	2.47	**3.11**
Median	3	3	3	3	2	**3**
IQR	(3, 4.8)	(2, 4)	(2, 4)	(2, 3.8)	(2, 3)	**(2, 4)**
Habitable rooms area percentage	28%	18%	15%	16%	15%	**18.4%**

The *habitable rooms area ratio* of the habitable rooms in Ad-Deim, which is an old residential area, is highest of all districts because plot areas are smaller than others (median plot size is 200), while the number of rooms does not significantly differ from other districts. Also the *habitable rooms area ratios* for the rest of the districts are about equal, except plot areas in As-Sahafa are much larger than others. Another reason for Ad-Deim being the highest frequency of all districts is that 9.4 percent of the surveyed plots in Ad-Deim have multi-storey buildings, as the highest of all districts.

The consolidation and rebuilding processes are taking place in older districts more than in newer districts. They take different forms, building more rooms, improving the housing condition and sanitary system, and also increasing the number of floors (see *Table 7.5*). The last type is usually done through rebuilding the traditional houses, because they often cannot structurally bear additional floors. The opportunity of households to rebuild their houses is much greater in the older areas than in the new ones, because they have longer periods to accumulate money for that purpose. Extension through increasing the number of floors is constrained by the large cost difference per square metre between the traditional houses and the multi-storey building (which is built of concrete and/or burnt bricks), in addition to the cost of the demolition and alternative accommodation during the reconstruction period.

Other factors causing the consolidation and the transformation processes through increasing the number of rooms and the number of floors is the increased demand for housing caused by the slow supply of housing plots before the 1990 housing plan, the closeness of the older

[88] The ratios in this table have been calculated by multiplying the total number of habitable rooms by the standard room size of 18sq.m. and divide the result by the plot size.

areas such as Ad-Deim to the city centre, and the availability of most services and community facilities in the older areas.

The low *habitable rooms area ratio* could be taken as an indicator for the high standard estimate of the plot size, which needs to be carefully assessed. The smaller the plot size the larger the number of plots that could be provided. This means that more poor households can have access to a plot in government site-and-service schemes, if plot sizes are reduced.

Table 7.5 Number of floors by district

	District					
	Ad-Deim	***As-Sahafa***	***Al-Kalakla***	***Abu-Adam***	***Al-Azhari***	***All districts***
Single floor	90.6%	97.1%	100%	100%	100%	97.5%
Two-floors	6.3%	2.9%				2%
Three-floors	3.1%					0.5%
Total	100%%	100%	100%	100%	100%	100%

7.3.3. Plot sizes

Plot sizes are important and determinant factors in the housing supply process and the optimum utilization of the urban housing land. Zetter (1984: 227) argues that, in many developing countries, land has been inefficiently used with the plot sizes that exceed the 'acceptable' standard. Sometimes it reaches double what he called an 'acceptable' standard in the low-income residential areas. Zetter (1984) argues that this effectively reduces the land available for housing, increases development costs and creates urban sprawl (Zetter, 1984). He also argues that two objectives determine the project layout:

- The need to achieve economy in the layout to reduce the infrastructure costs per plot depending on the plot dimensions, service thresholds, and the re-evaluation of the technical standards. The infrastructure cost is affected by plot dimensions in terms of the frontage to depth ratio; where he suggests that 1:2 or 1:2.5 as most effective for technical requirements.
- To maximize the amount of site cover, i.e., to minimize the ratio of the publicly owned land and to maximize the ratio of the privately owned land. Generally, he proposed that - in land subdivision – the ratio of 3:1:1 for the private, circulation, and public spaces including facilities is used.

He argues that this reduces the unit cost per household and maximizes the number of beneficiaries who contribute to the recoverable cost of the land (Zetter, 1984). Practices of

adopting inappropriate and inflexible urban planning standards have negatively affected shelter provision (UNCHS, 1991b). In the case of India:

> 'Standards radically transplanted from different contexts tend to emphasize physical rather than economic criteria and fail to recognize that low-income households require flexibility rather than standardization in the shelter supply process' (UNCHS, 1991b: 17).

Plot size standards inherited from the colonial housing practices for high-income groups were extended to the post-colonial housing standards, but gradually reduced over time. While plot sizes in the colonial public houses plot reached up to 1500 sq. m. in old Khartoum city, they were reduced to less than 500 square metres in the first and second class housing areas and less than 320 sq. m for third class areas. Evidence has shown that in India 'norms derived from the planning standards of colonial authorities have contributed to the inefficient allocation of land for different uses' (Sundaram, 1989:36; UNCHS, 1991b), which is likely to be the case in Khartoum. The post-colonial first class housing plot sizes remained high. For example in Al-*Amarat* first class housing districts developed in the early 1960s the minimum plot size was 800 square metres. The chronological analysis of the plot size standard of the low-income third-class housing shows a progressive increase since the colonial period. Evidence has shown that plot sizes in Old Deim "natives" lodging areas were ranging between thirty to sixty square metres, which seem to be reflecting the "natives" need (Fawzi, 1953). Arthur (1954) pointed out that in 1930 plots were allocated as ten by five metres, with no sanitation or pit latrines. Some occupants tended to amalgamate two plots for increased space. Later, in 1937, it was agreed that minimum plot sizes should be 200 sq. m., enough to provide a pit latrine (Arthur, 1954). In the New Deim (1949), which replaced the Old Deim, plots were allocated at 200 sq. m.; almost four-times the old plot sizes. This could be a reflection of improving the living conditions of the people, who were living in poorly designed houses and living conditions. The plot sizes again after independence were allocated between 300 and 360 square metres, such as in Al-Emtidad district (Third Class extension 1964). In the subsequent housing areas such as As-Sahafa (1968), plot sizes range from 380 to 460sqm. The following government projects were again reduced to about 300sq.m.

In all the site-and-services government-housing schemes in Khartoum, the plot size within each housing class area is likely to be equal, perhaps to avoid any competition on the larger plots which may exert more administrative burden on the process of allocation in terms of

appropriate assessing of the plot sizes. The housing plan of Al-Haj Yousef was exceptionally split into two groups, large households and small households. Large households have been given larger plots, and the small households were given small plots.

In Khartoum, plots are large in relation to the overall number of the people living within the plot, mainly because the construction technology and the available building materials and their relatively high costs impede the vertical expansion of the dwellings. As mentioned before, plot sizes have a direct influence on the number of applicants who can initially benefit from the housing programme, because the smaller the size of the plot, the larger the number of the expected beneficiary households. Tipple argued that this is only a temporary advantage where transformation occurs (Tipple, 2000).

One of the main objectives of the housing policy in Khartoum in 1983 was to minimize the plot sizes of the sites-and-services projects to increase the number of the beneficiaries. It was also decided to determine a maximum plot size. It was stated that the plot sizes should range between 200 sq. m. and 240 sq. m. with a contention that large plot sizes cause sprawl (NHC, 1985). Nevertheless, plot sizes in the subsequent housing schemes exceeded 300 sq. m. Daak and El-Mardhi (1995) suggest that, within the national housing policy, the reduction of the plot sizes to a minimum of between 280-320 sq. m. would increase the density, reduce the cost of infrastructure, reduce travelling distances to work and reduce the costs of constructing the boundary walls. They pointed out that the national strategy was based on the plot sizes in the large cities of 300 sq. m. for first and second-class housing and 200 sq. m. for third and fourth class housing, and 300 sq. m. for all housing classes in the small cities. The residential district area break down is 50 percent for the plot areas, 35 percent for roads and open spaces and 15 percent for public services (Daak and El-Mardhi, 1995). Such standards clearly show that they are ad-hoc based. However, Ahmad, et al. (2002) argue that there is evidence that there is no correlation between plot sizes and housing plan dates, which in turn provides evidence that the issue of optimum space requirements has not been treated in a serious way. Plans are merely mechanically readopted layouts of old designs.

In theory, plot sizes could be provided in conformity with the household size frequencies for any community, which could be different from one community to another. This is based on old professional planning practice. For example, Keeble (1976: 258) built a matrix of household sizes and number of habitable rooms in the dwelling for a neighbourhood

populating 10,000. Obviously, the objective is to provide a variety of dwelling unit sizes with varying costs and make them available for people to choose. However, practically this method appears to make large-scale housing allocation and supply processes a complicated task. Plot sizes in the housing plans of Khartoum were generally standardized for each housing class area to reduce the bureaucratic burden on the officials, to avoid appeals against small size plots and accountability by public opinion.

Generally, optimising plot sizes by taking into account the most influential factors is assumed to be a major task of the urban planners and architects involved in subdividing the site-and-services plots in Khartoum to maximize the number of beneficiary households. The larger the plot sizes the lower the residential density. Plot could be brought down to small sizes. Sites-and-service subdivision practices in early 1980s showed preference to small size plots in some parts of the developing world. Examples from India in the Aryana Township, Indore project, which was planned in 1982, plot sizes reached as low as 35 sq. m. or less for the lowest income groups (Arrigone, 1997; Barquin et al., 1988). Rybczynski et al. (1983:11) pointed out that in India plot sizes reached as low as 25 square metres. In 1980 Cameron argued that evidence has shown that the most common plot sizes, which were around 50 square metres, provided in new areas in many developing countries represented a sound choice (Cameron, 1980: 49). Vigier (1992: 96) noted that plot sizes in the informal settlements in Cairo were kept between 70 and 150 sq. m. as result of high land cost and availability of water. The minimum plot sizes Tondo, Manila, Philippines was only 30 Sq. m. and maximum 96 Sq. m (Laquian, 1983). In contrast to these small sizes, in Ghana, traditional compound house plots allocated by tribe chiefs are large (around 30 X 30m), where they reach 1000 sq. m., with ten rooms (Tipple and Willis, 1992; Tipple et al., 1998). However, in the government projects minimum plot sizes 210 Sq. m. and maximum 324 Sq. m. (Laquian, 1983: 73). In view of these figures and by relating it to the Sudanese context, we find that the official subdivision practices shows how the government have over standardized the plot sizes, but giving opportunity to the development of the family house or extended family living.

Barquin et al., (1997) suggested the determining plot sizes in the sites-and-services projects is an important planning decision and that plot sizes vary widely from region to region, from 32 sq. m. in Central America to 300 sq. m. in Africa. Musandu-Nyamayaro (1993), in search of affordable low-income housing in Zimbabwe, demonstrated that alternative smaller plots,

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flexible and smaller building standards and house layout design could achieve cost savings that range from 6 to 45 percent in the infrastructure and the plot built-up area. He argued that the official Zimbabwean minimum plot standard of 312.5 sq. m. is uneconomic in the land use and costly in infrastructure, there exists a potential for achieving more economy by adopting smaller and more cost-effective plot sizes (Musandu-Nyamayaro, 1993). Accordingly it was suggested that plot sizes could reach down to 200 and 180 sq. m. Plot size examples from developing countries show that plots measuring 120-150 sq. m. are common in Kenya, India and Egypt (Payne, 1984; Musandu-Nyamayaro, 1993: 333). In Zimbabwe the policy calls for a minimum dwelling of four-room core housing of at least 50 sq. metres whose construction must be completed within 18 months of obtaining the building permit, is unrealistic and unaffordable (Musandu-Nyamayaro, 1993: 335).

Restrictions on adoption and application of planning and building standards vary from one country to another. For example, in Colombia, which has a well-developed housing market in illegal land subdivision, the system aimed at identifying the minimum standards "*normas minimas*". New regulations that govern plot size, construction norms, spatial layout, servicing and other key areas, were developed. But it was argued that, in a Colombian case study, *minimum standards* have been "more profitable for developers than for the poor" (UNCHS, 1991b). Although experience with different countries varied in results, it was concluded that the goal should be to increase the flexibility of standards while retaining some measure of protection against substandard housing development. It was also equally stressed that it is impossible to standardize this framework from city to city, or even settlement to settlement. It is, therefore, not a question of "lowering" standards, but of identifying standards which reflect what is achievable in a given context (Hardoy and Satterthwaite, 1989; UNCHS, 1991b).

In projects where land costs are involved, and where plots are sold, it would be rational if the plot sizes were reduced. Some projects look to the household income as a critical factor in the plot size, but this must be carefully viewed within economic performance of the country and the stability of income levels. Generally, income levels are not stable throughout the working age of the household. It also largely depends on the life cycle of the household.

Table 7.6 shows that the mean plot sizes in the study districts are not equal or even close except for the last two housing projects of Al-Azhari and Abu-Adam, where the plot area is approximately 300 square metres while in As-Sahafa it exceeds 400 square metres. Although

the size of the households for all the districts does not show significant variation (table 7.1), the plot areas vary remarkably, which implies different strategies of estimating the appropriate plot sizes of the housing plans, or may also be due to the lack of clear strategy. However, as was declared by some officials when first As-Sahafa district was initiated, it was agreed plot sizes should be relatively large so that they could be at later stages transformed into a family house to accommodate sons and daughters who marry and opt to live with their parents.

Table 7.6 Plot size by district in square metres

	Ad-Deim	*As-Sahafa*	*Abu-Adam*	*Al-Kalakla*	*Al-Azhari*	*All Districts*
Mean	251	334	340	392	306	**327**
Median	210	400	300	400	300	**320**
IQR	(200, 302)	(203, 420)	(300, 320)	(340, 400)	(300, 300)	**(289, 400)**

Plot sizes at the median figures represent realistic figures of the districts. Variations at the IQR and the high mean figures mostly reflect subdivisions for rent or other purposes. High figures reflect the availability of a reasonable number of households living in a double plot, particularly in Ad-Deim and Abu-Adam.

Figure 7.9 shows a scatterplot between the plot size and the number of rooms for all the samples. Generally, as the plot size increases, the numbers of rooms expectedly increase but not by much. The relationship between the two factors has shown a positive correlation coefficient of 0.350 by Pearson's method. Nevertheless, the number of rooms has shown a maximum of seven and an outlier of 10, which is a multi storey house. It has been previously discussed that the median number of rooms for all the samples is 3 and the IQR is 2 to 4. Another conclusion of these figures is that it is meaningless to allocate large plots to the people while it is clear that they cannot build more than a limited number of rooms. Also plot sizes do not seem to conform to the number of rooms affordable or actually built by those on low-income. This can also be viewed as an opportunity for those on low-income to maximize the number of rooms if enough resources are available.

Figure 7.10 illustrates an expected negative correlation between the plot size and the room occupancy rate. Room occupancy drops as plot size increases. This supports the argument that plots were not allotted on the basis of the actual need of rooms, but the area allotted rather ignored this aspect.

Figure 7.9 Scatterplot of the plot size and the number of rooms

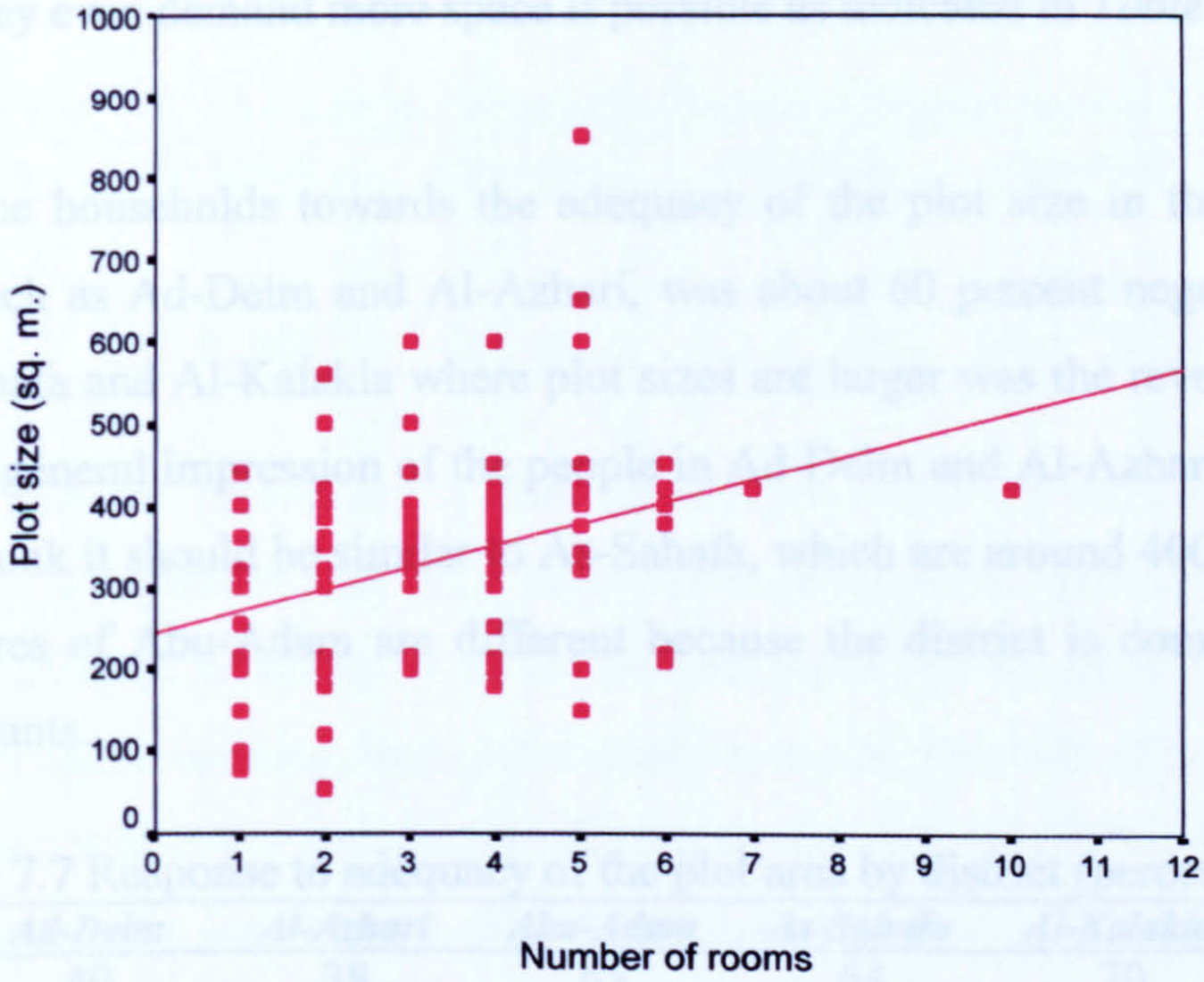


Figure 7.10 Scatterplot of the plot size and room occupancy *(Correlation = –0.243)*

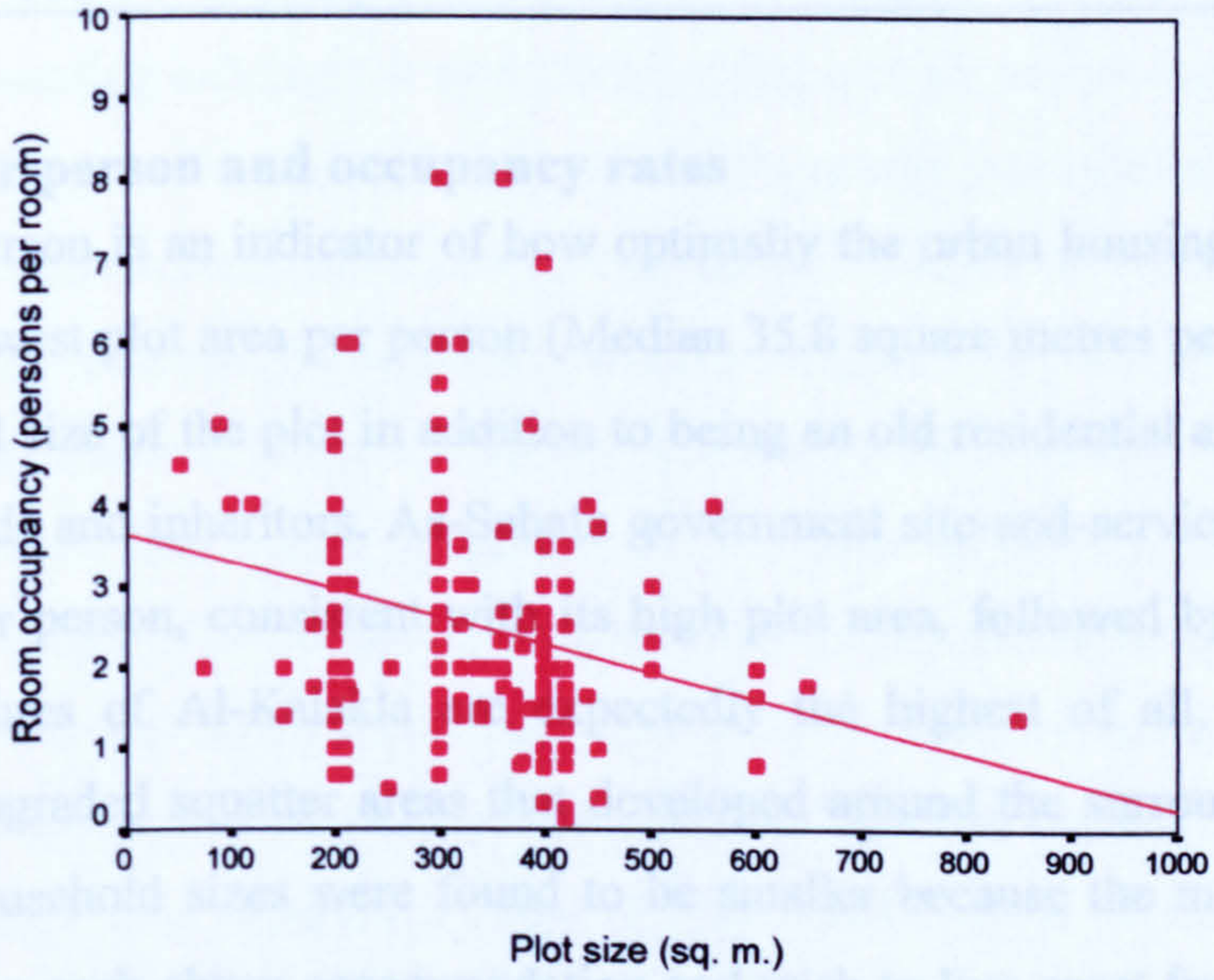


Table 7.8 depicts an extraordinarily high plot area per person in the whole low-income housing areas. Plot area is an important index for the efficiency of utilization of the urban housing land. While in some countries, such as India, plot size in squatter areas goes down to less than 30 square metres; the median plot size per person in Khartoum exceeds five times that figure. Put another way, this average plot size per person is sufficient for a two or three-room flat in Egypt, for instance. It could be concluded that plots were generously subdivided

and allocated. Surprisingly, the response of the households towards the adequacy of the plot sizes reflect that they even demand more space if possible as indicated in *Table 7.7*.

The response of the households towards the adequacy of the plot size in the districts with small plot sizes such as Ad-Deim and Al-Azhari, was about 60 percent negative, while the response in As-Sahafa and Al-Kalakla where plot sizes are larger was the reverse. It could be concluded that the general impression of the people in Ad-Deim and Al-Azhari regarding plot sizes is that they think it should be similar to As-Sahafa, which are around 400 square metres. The response figures of Abu-Adam are different because the district is dominated by short term staying occupants.

Table 7.7 Response to adequacy of the plot area by district (percent)

	Ad-Deim	*Al-Azhari*	*Abu-Adam*	*As-Sahafa*	*Al-Kalakla*	*All districts*
Yes	40	38	65	64	70	52
No	60	62	35	36	30	48
Total	100	100	100	100	100	100

7.3.4. Plot area per person and occupancy rates

The plot area per person is an indicator of how optimally the urban housing land is utilized. Ad-Deim has the lowest plot area per person (Median 35.8 square metres per person). This is ascribed to the small size of the plot in addition to being an old residential area dominated by aged household heads and inheritors. As-Sahafa government site-and-service scheme has the highest plot area per person, consistent with its high plot area, followed by Abu-Adam and Al-Azhari. The figures of Al-Kalakla are expectedly the highest of all, representing the conditions of the upgraded squatter areas that developed around the surrounding villages of the city, and the household sizes were found to be smaller because the majority are young married couples, who seek cheap accommodation and wish to live apart from their extended family, and urban newcomers. The large difference between the mean and the median in Ad-Deim is a natural result of the process of the socio-cultural and physical changes that happened in the district over 45 years since it was first built. Some plots were joined; some plots along Mohammad Najeeb road were increased in size as a result of a decision of the planning authorities to reduce the road width because they thought it is very wide. Other reasons include that a considerable number of households live in as an elderly couples life

cycle, increase of rented parts of the plot, and increase in the number of poor extended families [89].

Table 7.8 Plot size per person by district in square metres

	Ad-Deim	*As-Sahafa*	*Abu-Adam*	*Al-Kalakla*	*Al-Azhari*	*All Districts*
Mean	68.5	59.7	51	83.3	47	**61.5**
Median	35.8	56	45.7	75	42.9	**50**
IQR	(28.7, 5.7)	(38, 80)	(30, 60)	(53.3, 100)	(37.5, 52.5)	**(36.4, 75)**

The varying plot size per person in all districts implies a lack of rules or strategies for assessing the plot size standards. The main objective in government housing plans should be maximizing the number of beneficiaries of the housing plans and to rationalize plot size for better utilization of urban housing land. As the city expands, shortage of housing land and increase in its costs will affect the access of poor households to shelter. Maximizing the number of beneficiaries in the housing plans will obviously lead to increasing the owner-occupiers, which in turn will give way to incremental housing and self-help development.

In the government housing schemes, a plot turns within a short period into a family house. This is because applicants with high point scores are those who are entitled to a plot of land. These applicants, therefore, must have a large number of children or dependants in order to have high point scores. Some of the sons will certainly be grown-ups and adults who may in a short period become married, hence the family convert to an extended family and family house living takes place. The family house absorbs the housing shortage problem to a great extent. The family house accommodates the grown-up family members and newly married sons and daughters who stay in the house until they move to an independent home in the city, or until they can afford to live separately. Relatives and visitors coming from the owners' home country or rural area temporarily stay in the family house while seeking jobs or undertaking business that needs to be done in Khartoum. Similarities could be observed between the family house in Khartoum and the family house in Kumasi – Ghana, pointed out by Willis and Tipple (1991c) and Korboe (1992), where members of lineage have the right to stay free in both, and members share construction, financing and living expenses. However, the family house in Khartoum is originally a site-and-service plot that can only be expanded within their official boundaries.

[89] The minimum plot size per person in Ad-Deim shown as 10.5 square metres, for example, refers to a case of a household of 19 individuals, all living together in a 200 square metres plot, six of them earn a living, one of them works abroad, in addition there is unemployed member.

The extended family household continues to exist in Khartoum's urban areas. They constitute approximately 30 percent of the households. Both the family house and the extended family type play an important role in reducing the magnitude of the housing shortage.

The room occupancy rate[90], in terms of persons per room, is an important measure of residential density and the level of overcrowding. It is therefore connected with the living conditions, poverty and human welfare. It is also an important factor in the development of housing policy, estimating the need for housing, estimation of future housing stock and generation of further housing implications. Sound and effective housing policies should include limits and target occupancy rates. According to the United States Census of Bureau "*Overcrowding*" means the housing unit is not suitable in size for the family in residence; the 1990 Census definition is that overcrowding exists in housing units where there is more than one person per room (Myers, et al. 1996; Simmons, 2002: 3-4). This might be an accessible measure in the West. However, the Millennium Development Goals of the Millennium Declaration set by the United Nations General Assembly in the year 2000, proposed some indicators and thresholds to define slums. It proposes the definition of overcrowding as the proportion of households with more than two persons per room, or alternatively it gives an example of five square metres as a minimum standard based on floor area per person. But these indicators have been set as provisional proposals that are subject to modifications and international field-testing for appropriateness and compliance with the available resources (UN-HABITAT, 2003d). Gilbert (2000) assumes that one of the key aims of the housing policy in the Third World is to reduce the numbers of households where more than 1.5 persons live in each room. Gilbert (1997b: 114) assumes that overcrowding is a key indicator of housing poverty. In depth studies of crowding, based on potential disease transmission, show that the indicators could be divided into three categories. First, area level indicators such as number of persons per area, number of households per area and number of housing units per area; second, housing unit indicators, such as number of persons per room and total room area per person; third, household indicators, such as number of persons per household and number of rooms per household (Clauson-Kaas et al., 1996). Based on this an area could

[90] According the (Goodall, 1987) occupancy rate an index of both urban density and accommodation density which relates the number of people occupying a dwelling to the number of habitable rooms (i.e. a room normally used for sleeping or living in). It is one of the most sensitive measures of housing conditions and is used to gauge the level of overcrowding or under-occupation, one person/habitable room being widely accepted as the threshold above *which overcrowding* exists. Alternative density terms are referred to as *household den*sity, persons per room, room density.

have high building density but low in-house crowding, or low housing unit density but high in-house crowding, and so on. Different results are found when each type is adopted. Barquin et al. (1988) hold that the critical measure is not how big the plot is, but how much living space, in terms of metre square per person, exists in the house. Results indicate that low-income housing areas in Khartoum have low building density but high in-house crowding. The household level indicator shows that Al-Azhari and Abu-Adam districts have higher household density than other districts.

Table 7.9 depicts varying occupancy rates in the study districts. Viewing these figures within the background of their historical and evolutionary stages and the changing policy frames under which they were developed could help explain the reasons behind these variations.

The mean occupancy rate in the new housing area of Al-Azhari is as high as 3.3 persons per room because the majority of the households, who moved in during the first years after they were given the plot, are those on low-income. These households were actually renters in the old residential area and used to pay part of their income as rent. The low household income in Al-Azhari results in low affordability to build sufficient rooms for the household.

Table 7.9 Room occupancy by district (persons per room)

	Ad-Deim	*As-Sahafa*	*Al-Kalakla*	*Abu-Adam*	*Al-Azhari*	*All Districts*
Mean	2	2.46	1.86	3.04	3.3	**2.53**
Median	1.75	2	1.8	3	3	**2.0**
IQR	(1.3, 2.7)	(1.4, 3)	(1.4, 2.3)	(2, 3.9)	(2, 4)	**(1.6, 3)**

7.3.5. Floor area

The use of the floor area ratio was avoided in this particular study of housing in Khartoum due to its specific characteristics that may give confusing indications. There is no big difference between the floor area ratio and the built-up ratio of the plot because the multi-storey houses are very limited. The survey results of Al-Azhari area have shown a maximum floor area ratio of 0.4 (equals to 120 square metres of roofed area), a minimum of 0.05 (equal to one single room of 16 metres) and an average of 0.17. In Ad-Deim, the floor area is higher because it is an old area and the plot sizes are small, while in Al-Azhari the plot areas are

slightly larger. The survey results have shown that 97.1 percent[91] of the samples were single floor houses.

Alternatively, floor area per person is a better indicator of housing space efficiency. The mean floor area per person in Al-Azhari is approximately 6.9 sq. m. per person. Global shelter conditions have shown that the average floor area per person for low-income countries is 6.1 sq. m. per person and 15.1 sq. m. for low middle-income countries (UNCHS, 1997a). Comparing the average plot area per person in low-income areas in Khartoum, which is approximately sixty square metres with the low floor area per person of only 6.9, depicts a dilemma; a high level of under-utilization of housing land and housing land allocation of sites-and-services.

7.4 Plot shapes and plot subdivision process

This part of the thesis tries to explore the potentials inherent in housing land subdivision systems carried out by the public sector that would have an effect on rationalizing the plot sizes and can be dealt with as factors that increase housing supply.

Observation has shown that plot subdivision into smaller plots for different purposes is not widely practiced in the sites-and-services projects. It has been discussed earlier that plot sizes are 'extraordinarily' large, at least in comparison with examples provided in this research. Analysis has shown that the mean plot area per person in all districts was 61.5 square metres, which might indicate under-utilization of the housing land. Although no clear- cut standards that could be used as a yardstick were found by which we can judge how high or low this figure is, experience shows that such an area, at least for low-income households, can be adequately developed as a residential unit. This figure for a low-income country and for a city with a population of approximately six million is certainly a waste of land. Small plots do not prohibit developing adequate floor space for the household within the plot, but may form a resolvable constraint. Alternative design strategies can optimise the use of the floor space for the household. Prerequisites would include availability of skilled and trained architects and planners capable of producing alternative solutions, availability of technical assistance to the contractors and self-help housing producers, and responsive and flexible regulatory systems that would create an encouraging environment for design and construction.

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[91] This figure does not include the housing units with roof terrace that is usually provided to the houses with concrete, jack-arch roofs or the brick and concrete ribs roof.

Clearly, the public sector, which holds the key roles in the housing supply process, holds the responsibility for the under-utilization of housing land through the irrational system of subdivision and unwise use of plot sizes and urban densities. However, it also holds the opportunity and the tools for improving the current situation by re-optimising the housing land. Plot subdivision and plot sizes that were done on a rule of thumb, is a direct cause of the problem. No empirical assessment was followed by the officials to define appropriate plot sizes. This practice was followed for over four decades without serious review and represented a chronic problem and a complex stalemate in the housing supply and the misuse of the valuable urban land resource.

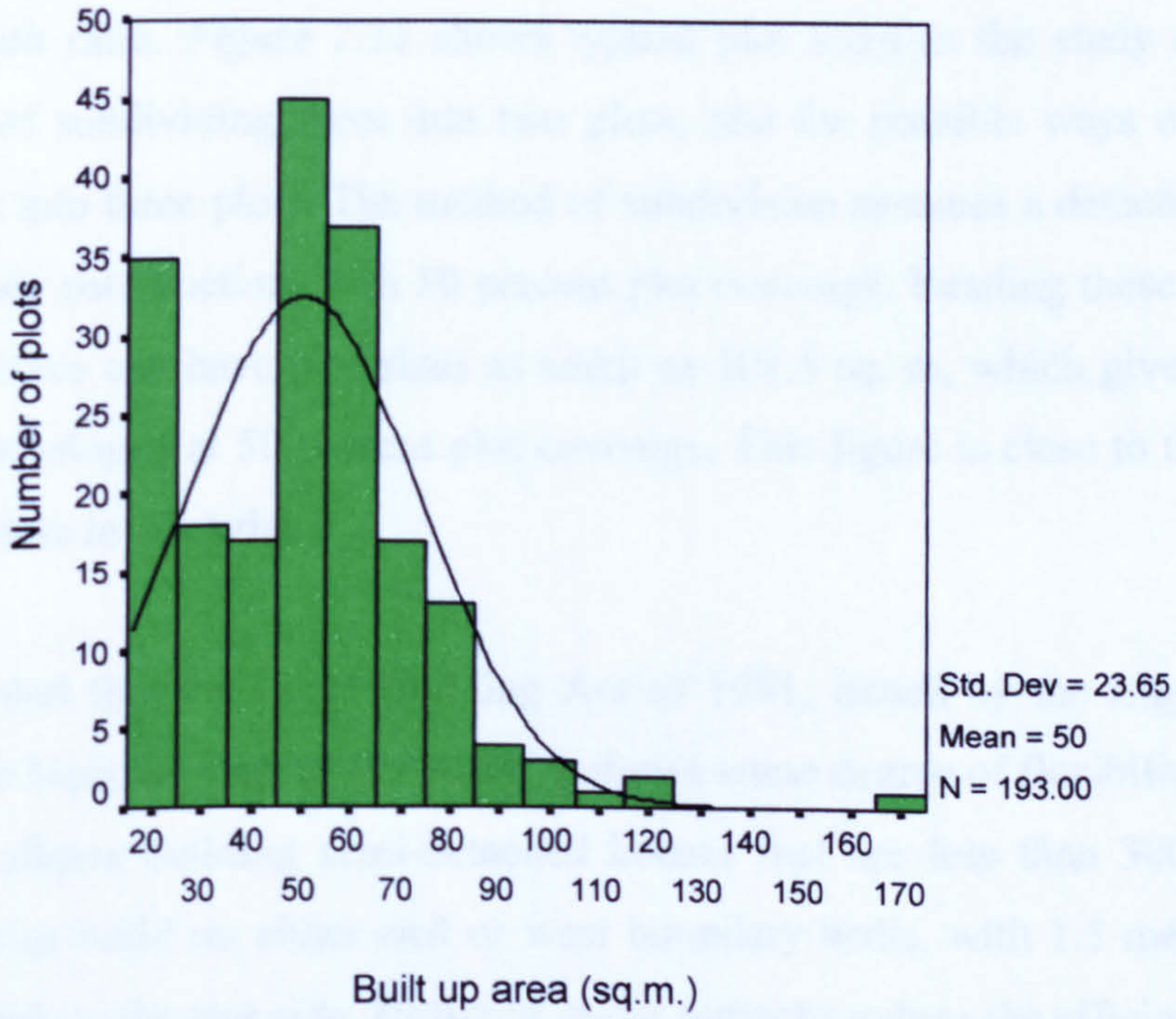
The wide spread of urban poverty that reduced affordability of the households to improve their living conditions and roofed space, particularly in low-income areas, together with the increasing land values geared up by rapid urbanization, and the regulatory system constraints creating a housing development vacuum, that urban administrators should deal with it as an opportunity. Urban poverty reduction cannot be significantly achieved in poorly operating economies that undergo high unemployment rates (Hentschel and Seshagiri, 2000), therefore, officials would have to work with in any short term strategy but it should not be completely ignored. Also officials would have to work with the steadily increasing land values in Khartoum. Gilbert (1988) holds that land prices depend not only upon its inherent qualities but also on externalities, neighbourhood uses, government decisions about zoning, and so on. Where private or public investment occurs land values increase, and vice versa, hence increasing land invasion. The development potential lies in the third factor of the regulatory system, by which officials can monitor the development and fill the housing development vacuum. Enabling strategies form a clear way for the urban administrators to resolve the regulatory system constraints.

In most low-income housing areas in Khartoum, a clear gap has developed between the land values, which are steadily escalating, and the cost of buildings erected on them. The roofed area and the overall construction cost do not match with the plot value, making the house economically under-utilised. Current mean cost of a vacant 300 sq. m. plot for example in Al-Azhari third class district is SDD4.75 million[92] (equivalent to approximately £10,000), while the construction cost of a median size house is around SDD0.44 million. This means the

[92] This figure has been brought from a website on real estate sales in Sudan. The average was brought from plots sale prices in Al-Azhari and Abu-Adam. The site is www.rrsudan.com

buildings cost around 9 percent of the land cost. *Figure 7.11* shows a histogram of households began construction in Al-Azhari, where over 50 percent of the households were only able to build less than 30 sq. m., equal to about two rooms. Other figures from the Al-Azhari survey show that only one household was able to build an area more than half of the plot size (150 sq. m.), and 23 households built more than 25 percent of the plot area (only 10 percent of households who began construction). Obviously, if these households were given half the size of the current plot it would still have been adequate for them to build the current built-up area, and still around 90 percent of them are not covering 50 percent of the plot size. We can conclude that plot sizes of Al-Azhari could have been reduced without affecting the building process of the area. Put another way, if these households were given half size the current plot an equal number of households would have obtained plots in the same area.

Figure 7.11 A histogram illustrating the built-up area of plots whose households began construction of their houses in Al-Azhari district



The traditional housing types in Khartoum could easily be subdivided. Construction costs are relatively cheap and the building materials are mostly reusable. Plots with concrete frame construction, which are rare in low-income housing areas, are difficult to subdivide and any modifications would remarkably affect costs. The subdivision of the traditional house can take place through subdividing the whole plot easily.

Reasons for subdivision could be resale, renting, or inheritance purposes. Subdivision for resale is rare, but observation shows that it has started to significantly take place in the housing market recently. Renting does not necessarily require subdividing the plot. Inheritance is a major reason for subdivision in the site-and-services projects if conflicts between the family members are not resolved. For inheritance reasons, occupants might subdivide the plot but not necessarily split the built-up area, if the family is socially cohesive in terms of relationships between the members, and if they prefer to live in the same house. Its purpose would be in that case to preserve the right of ownership. Resold old traditional houses are often demolished and rebuilt in a more sophisticated type of construction, and the demolished part of the property is usually valued at zero.

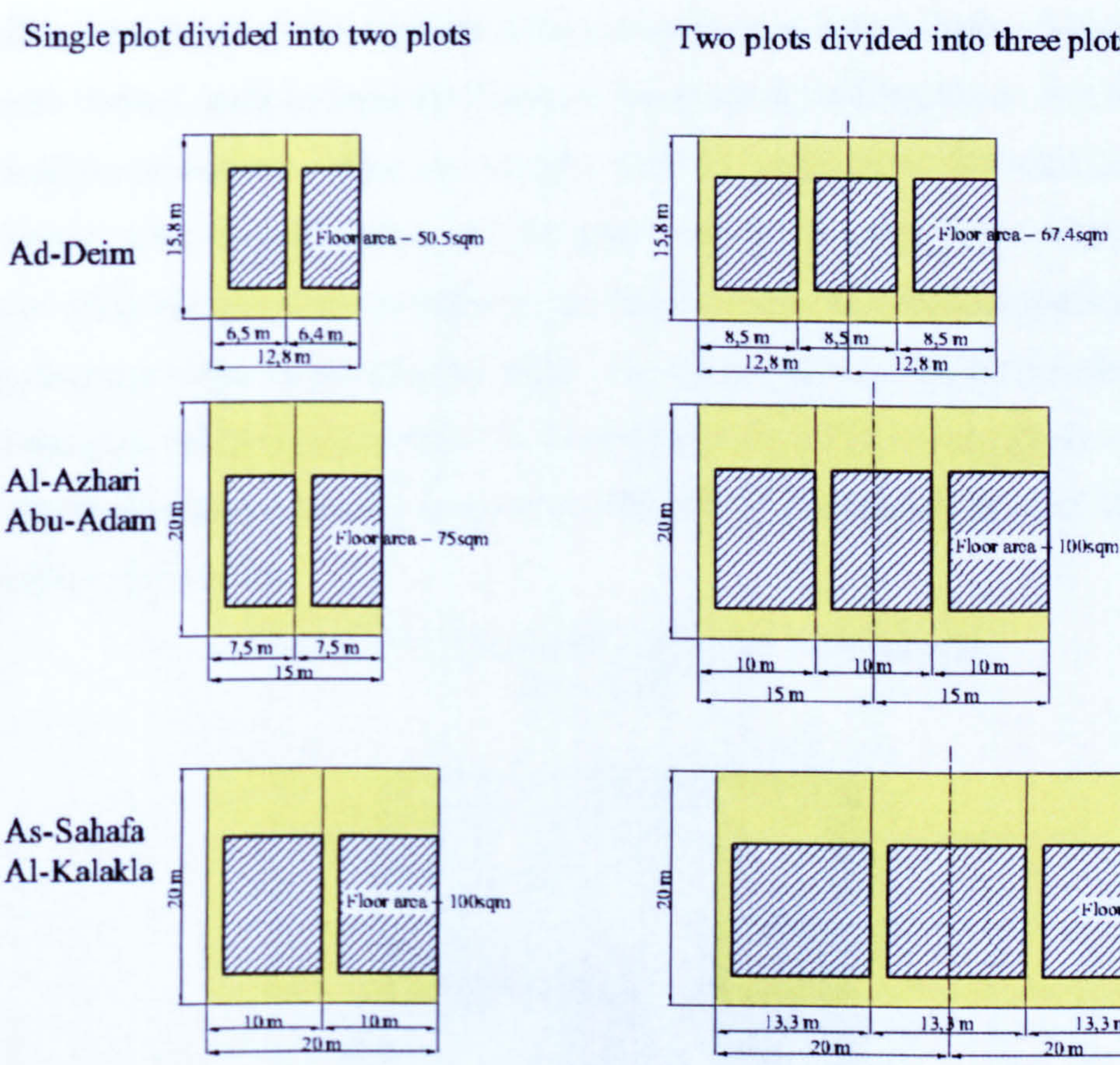
Plot shapes in the site-and-services projects tend to be square in As-Sahafa and Ad-Deim study areas and most other districts in Khartoum such as the third-class extension, Burry, and Arkaweet, while in Al-Azhari and Abu-Adam plot shapes are rectangular with a 3 to 4 frontage to depth ratio. *Figure 7.12* shows typical plot sizes in the study districts and the possible ways of subdividing them into two plots, and the possible ways of re-subdividing every two plots into three plots. The method of subdivision assumes a detached building type and a single floor construction, with 50 percent plot coverage. Reading these figures together with *Table 7.10* we can have plot sizes as small as 101.5 sq. m, which gives a built area of 50.5sq. m., if developed at 50 percent plot coverage. This figure is close to the median built-up area of the plots in Al-Azhari.

It should be noted that the Local Building Act of 1991, issued by the Engineering Affairs Authority of the National Capital (EAA–NC), shows some degree of flexibility in the building regulations. It allows building semi-detached houses that are less than 300 square metres, where owners can build on either east or west boundary walls, with 1.5 metres setback and 2.5 metres setback at the rear side. However, these setbacks reduce the efficient use of the plot and possibility for increasing the floor space, particularly for the traditional houses. It also shows that plot coverage should not exceed 70 percent (EAA-NC, 1991:25).

Wheaton (1982) maintained that planning codes and building regulations such as setbacks and open spaces can be useful when the 'social benefits' of such controls exceed the additional 'private costs'. He also argued that most often developing countries adopt these controls without enough thought to their justification and consequences. In the case of low-income

areas in Khartoum, adopting these controls is likely to be a hindrance to the provision of more floor space and the densification process.

Figure 7.12 Subdivision alternatives of the site-and –services plots

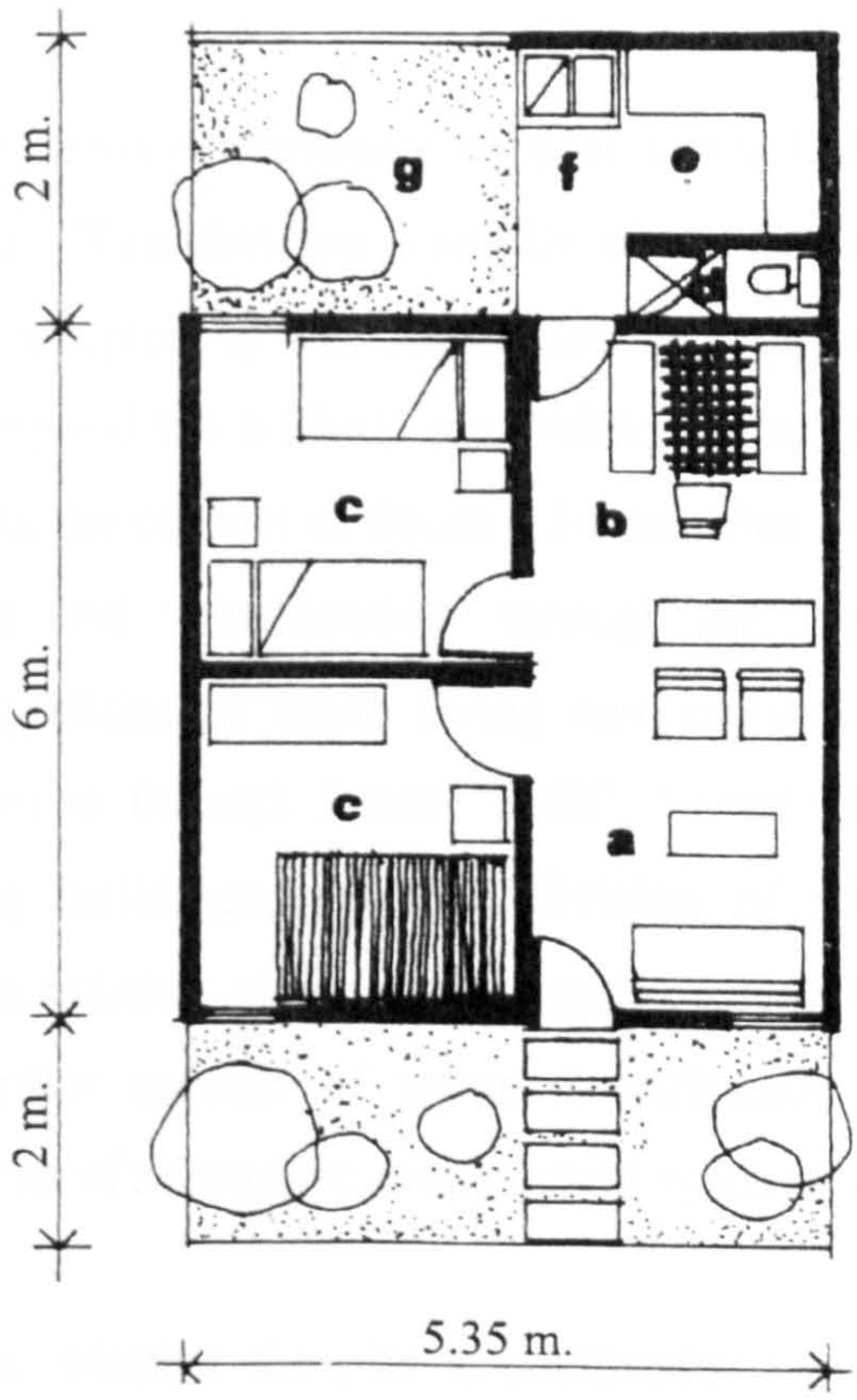


The critical factor in the subdivision of the plot is its frontage. Widths of plots in all the study districts except As-Sahafa, when subdivided into two, will give frontages that range between 6 to 8 metres, while in As-Sahafa they range between 8.5 and 10.5 metres. Practical experience has shown that these resulting frontages could possibly be used to develop independent residential units. For example, Arrigone (1997) has shown that in the Dublin Street project and Devon Street project in Cape Town in South Africa plot sizes were as small as 43 sq. m. in the first project and ranged between 20 and 59 sq. m. in the second project. Plot frontages (width) in these projects were less than seven metres. He also showed that in an experimental housing project of PREVI in Lima, Peru, plot areas ranged between 87 sq. m. (6.6 X 13.2) and 96 sq metres (9.8 X 9.8). Other examples from Central America have shown similar or even lower values. In an old UN led pilot project in Salvador (UN, 1973:24), plot sizes of one of the models was approximately 54 sq. m. with 40 sq. m. built-up area. The plot

is 5.4m. wide and 10m. deep, with two bedrooms, a living room, a dining room, a kitchen, bathroom, a laundry area and a garden (*Figure 7.13*). Another unit in the same project was covered a roofed area of only 33.2sqm, but with a bigger lot size to allow additional construction (UN, 1973:29).

The resulting frontages of the plot subdivision would give better results if alternative building types were adopted, such as concrete frame or burnt brick wall buildings, but the results in the case of traditional houses, which are usually built of single floor detached rooms of mud or *gishra*, linked with verandas may not be good enough. In As-Sahafa, there may not be a problem of subdivision while maintaining the traditional type without significant change in its qualities, because it has large plot frontages. The experience of Fallata fourth-class district in south Khartoum, which was completely demolished in 1993, where plots were 100 sq. m. built of traditional mud rooms, has shown difficulty in increasing the roof space despite the overcrowding of the area.

Figure 7.13 Small plot floor plan – El Salvador
Source: (UN, 1973)



a. Living room
b. Dining room
c. Bedroom
d. Bathroom
e. Kitchen
f. Laundry area
g. Garden

Official regulations of plot subdivision in Sudan dates back to the mid 1950s and may still be valid. Osman (1992) pointed out that plot subdivision of any plot or part of a plot in Sudan could be achieved under three conditions:

- The minimum area of the residual plot should be 400 sq. m. in first-class housing area, 300 sq. m. in second-class housing area and 200 sq. m. in third class housing areas.
- Plot frontage should not be less than ten metres.
- Frontage/depth ratio should not be less than one-third.

Such conditions constrain legal plot subdivision particularly in low-income third class housing areas, which clearly shows that it is not achievable. It also difficult to achieve under the recently adopted reduced plot standards in first and second-class areas. While we find an officially accepted standard of 100 sq. m. in former Fallata fourth-class area, such area is not acceptable in the case of official plot subdivision. Also, these conditions may not be compatible with ownership rights in the case of Islamic inheritance system. These were applicable in the 1960s, when plot sizes reached 1500 sq. m. in first class areas. Obviously, there is no clear rationale behind these regulations. They rather constrain plot development.

The subdivision process involves reducing the plot size to half or less. Therefore, the issue of plot size adequacy arises. If subdivision is legally admitted, eventually this means that half the plot size is officially accepted by the authorities as adequate. For traditional houses, it is difficult to vertically expand the built-up area without a substantial cost increase, or without redeveloping the plot. In the context of South African urban planning, Arrigone (1997) argues that urban compaction and 'densification' through the approach of low-rise/high-density would achieve good qualities of urban living environment. He argues that low-rise/high-density could be achieved through house 'infill', 'consolidation' of informal settlements, conversion of existing buildings, legal subdivision of plots and legal construction of additional dwellings on existing plots. The concept of densification through low-rise / high-density and other similar models of urban densification or compaction approaches in Khartoum can work better if alternative construction systems are adopted.

It could be argued that, whether the plot is subdivided or not, it accommodates nearly the same number of people in all cases. The difference legal subdivision makes after inheritance is that occupants are likely to spend more money to improve, expand or redevelop the plot,

due to the existence of security of tenure. Before subdivisions, the shareholders may not be willing to spend money to improve the house because it is not yet known in which way the shares will be settled.

Plot subdivision has another advantage. Small plots are more affordable by the low-income and middle-income households than the large plots. The half-plot price, then, will not obviously be half the price of the whole plot, if it is subdivided into two. There is often a marginal cost increase in the half-price of the plot but it is not highly significant and does not critically affect the affordability. The more plots that are subdivided, the more available housing becomes to low and middle-income people. It could be concluded that plot subdivision in the low-income housing areas would likely increase the floor space. Therefore, it should be enabled through eliminating relevant impediments. A minimum plot size and minimum frontage could be identified by the authorities because extraordinarily smaller plots might yield unfavourable consequences, such as poor hygienic conditions and habitability problems caused by overcrowding. This requires further grounded research or experimental housing projects.

Subdividing the plots may also encourage the consolidation process, and a neighbourhood compaction, which is desirable (Breheny, 1996; 1997; Jenks et. al. 1996a; 1996b; Thomas, 1996). If the occupants have access to finance they will tend to extend their houses by infilling the unutilised areas within the plot or converting the verandas into rooms, which is recently practiced in the traditional houses. If there is still a need to expand, they will be forced to expand vertically.

Table 7.10 Plot sizes for subdivision options

		Original plot size	**2/3 plot size**	**Half plot size**
District	***Assumed plot coverage***			
Ad-Deim	100%	202	135	101
	50%	**101**	**72.4**	**50.5**
Abu-Adam, Al-Azhari	100%	300	200	150
	50%	**150**	**100**	**75**
Al-Kalakla, As-Sahafa	100%	400	267	200
	50%	**200**	**133.3**	**100**

The alternative to the plot subdivision is to develop a multi unit house or apartment, keeping the original plot size. However, this alternative requires more sophisticated construction systems and more input of the imported building materials, hence substantially increasing the overall cost. Therefore, they will not be affordable by those on low-income. To cut down the cost of such types it will be necessary to minimize the floor area per person and to introduce cheaper construction systems that utilize local building materials and more simple technology. It is also important not to stick to a single type of construction such as the currently adopted type of concrete frame buildings. It will be rather economic and advantageous if alternative techniques are adopted.

7.5 Consolidation process of the housing

Rodwin and Sanyal (1987) pointed out that, under the conditions that governments do not take full responsibility in providing housing for people, they take care of themselves by building within their convenience. He argued that the bulk of the urban poor throughout the developing world are sheltered by the incremental approach (Rodwin and Sanyal, 1987). Also, in the light of the highly urbanizing low-income countries, incremental housing becomes an unavoidable option. Incremental housing approach is one of the best policies for low-income households because it allows them to match housing with household incomes and characteristics as they change over time, holding on to the increasing property values in the process (Baross and Van der Linden, 1990).

Housing in the low-income areas in Khartoum is developed incrementally because of the inability of the bulk of the households to pay a lump sum cost for the construction or to pay in big instalments for the local contractors. Under these prevailing conditions, incremental housing construction approach seems inevitable in low-income housing areas in Khartoum. The factors influencing the incremental house construction system in Khartoum are:

1. Income of the household and the available construction finance options.
2. The prevailing contracting method and self-help.
3. The overall cost of the dwelling unit and the floor area required.
4. The construction system and technology.

The most critical issue regarding the incremental approach is the period from acquiring the plot or starting construction up to make the dwelling unit liveable and the housing output quality and standards. It is a function of how much money could be saved to build the house.

Assuming no availability of windfall finance sources, if the monthly saving is low, the period becomes long. In the long run, as one of its basic responsibilities, the role of the governments in such cases is to develop policies that provide opportunities for low-income people to generate more income, to create more job opportunities, and adopt more sound fiscal policies. It is also the role of the government to realize alternative finance systems. Also, if the house cost is cut down then the period will be shortened. The house cost is often reduced by reducing the space standards, infrastructure standards and the construction standards. However, the issue of reducing standards is controversial because it is interconnected with housing quality. Under the circumstances of lack of finance, the households or the authorities may be forced to adopt low standards. However, these low standards might have a negative impact of increasing maintenance costs.

The impact of the lengthy construction period that is caused by the inability of the households to save enough money has influenced the occurrence of mixed housing qualities within, not only the third class housing areas, but also other housing class areas. It also created high vacant plot ratios within the low-income housing areas that continued for long periods.

A physical survey carried out as part of this study for block 13, Al-Azhari residential area in August 2000 found 75 percent of the plots were still vacant since 1991 when the plots were first distributed to the people as site-and-service. *Table 7.11* shows the break down of spaces for the whole block. The table shows that only 58 percent of the area is allocated as residential plots, while the other 42 percent is allocated for circulation, community facilities and government reserve areas. The density has been calculated as 19 plots per hectare. Taking into account the current median household size in Al-Azhari as seven persons and assuming it as a future household size, the planned net residential density will be 135 persons per hectare. There are no clear zoning regulations in terms of built-up ratio, the permissible building height or floor space, that are adopted for the area by which a certain density could be assessed. *Figure 7.14* shows the plot statuses. The figures of the surveyed plots show that only 220 households began constructing their houses. Out of these only 39 percent households have moved in, while the rest of the plots are either incomplete, only walled, or complete but not inhabited. These 220 plots represent only 25 percent while the other 75 percent of the plots are still vacant. Reference to this study, during the last ten years the growth rate of plot development has been calculated as 22 plots annually, which accounts for only 2.5 percent of

the total number of plots. It must be noted here that owners of these plots have just begun construction, which does not mean that these plots are complete.

Table 7.11 Al-Azhari district housing space analysis

Land use	***Number of plots***	***Area in sq. m.***	***Percentage***
Residential plots	874	262,200	57.5
Open Spaces	11	18,900	4.36
Mosques	2	3,600	0.79
Kindergartens	2	1,250	0.28
Health centres	2	1,125	0.25
Government reserve	2	1,125	0.25
Spaces with undefined uses	3	5,800	1.28
Shopping	2	2,800	0.62
Roads		156,740	34.49
Total area		454,440	100

The total built up area, which is approximately 9,758 square metres, developed at an annual rate of 976 square metres floor space. By selecting only the complete dwelling units, the median floor space was 58 sq. m. representing 19 percent of the plot size. If this is to be considered a planned floor space for a house, then the total floor space for the whole block will be 50,692 sq. m. This also means the current total built floor space, which is 9,758 sq. m. represents 19 percent of the target floor space. It could be concluded that, if the growth rate of the building construction remains the same and continues within the currently prevailing conditions, the district will likely be completed within another 40 years to reach the current level of the median floor space, bearing in mind that the current floor space is much below the actual capacity of the area.

It is important to try to explore the reasons behind this slow process of development. Obviously the housing plan did not include any detailed programme of when people should move in, when people should or will begin construction which is carried out through only self-help, when people are expected to finish construction and so on. The decisions are in the hands of the households not in the hands of the authorities. Particular factors affecting the slow development of the area include:

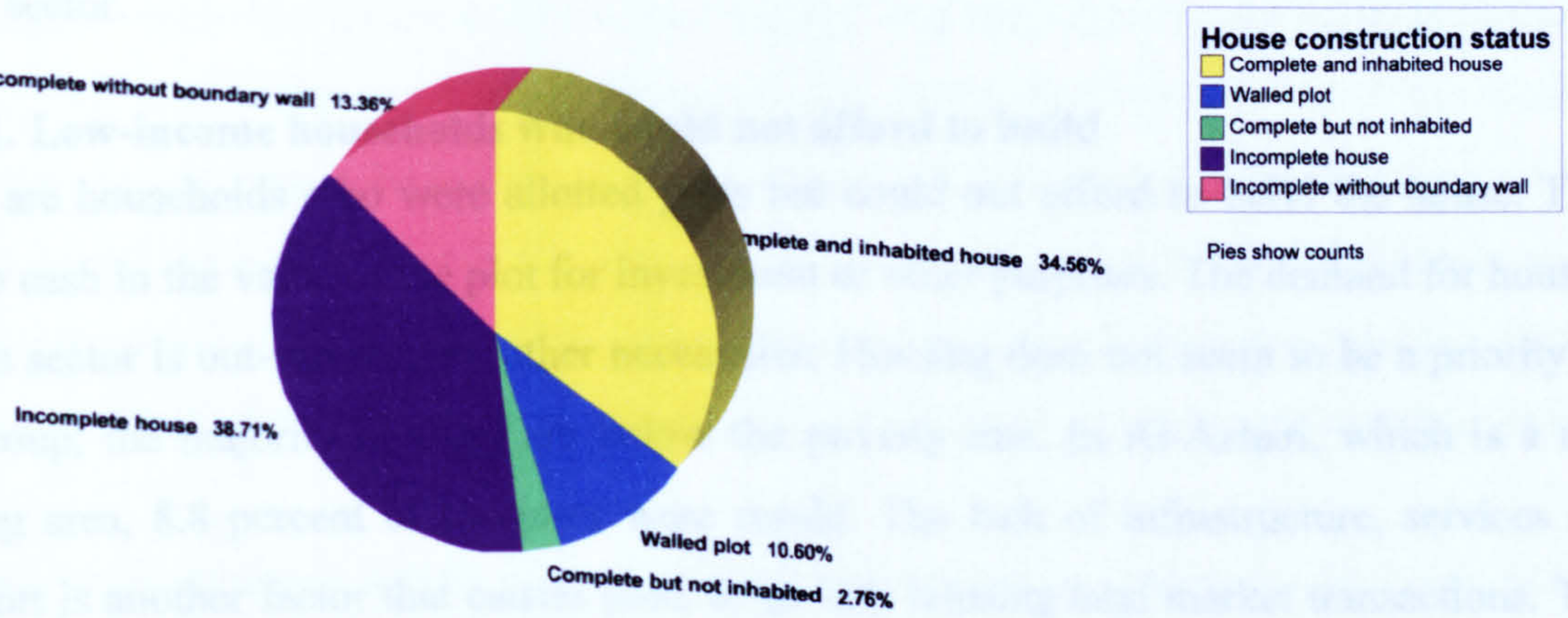
1. ***Lack of utility infrastructure***: These areas were not provided with any sort of water supply, electricity and drainage, which are the most important services to begin with in the development of the area. People pay additional costs for not only the domestic use of water but also for construction. People have to first provide their own sanitary

facilities by digging wells for the commonly adopted pit latrines. Some people dig these wells which are initially used for water supply but later they are converted into a sanitary facility. Digging wells, which is done manually by hiring labour, is one of the most expensive items in the overall cost of the dwelling. It depends on the geology of the area and the water table. Most districts of Khartoum have a water table of about 14 metres, while some districts in Khartoum North and Omdurman exceeded 25 metres. The metre cost of digging increases as the well goes deeper and soil becomes rocky or sandy. Water points are provided in some districts through extensions from the nearby areas where possible.

2. ***Remote location***: Most areas are located at the city peripheries, where there is no public transport. Households who want to begin construction have to pay additional costs for not only private passenger transport but also building materials transport. The additional transport cost arises from the fact that most household members need to commute daily for work, education and other purposes.
3. ***Lack of community facilities***: The new schemes rely on the close old areas for education and health facilities and shopping. The government education and health facilities in those areas often reach their service threshold, forcing some low-income households to pay for private education.
4. ***Lack of finance for construction***: This is an underlying factor behind the slow construction process. Households at the early stages are often over committed by the costs of many items, which include the costs in 1, 2 and 3 above in addition to the down payment of the land cost and the following instalments, the cost of building materials and sometimes the contractors to build a part of the house in order to move in.

Based on the factors that affect the slow process of development, the question is how the development process of these districts can be accelerated. Obviously, it is important that a minimum level of services should be provided to reduce the cost burden on the households. The government, restricted by the weak finance capabilities, should enable the provision of these services at the early stages of the project. Urbanization, which has been negatively viewed as causing the majority of urban problems, could be viewed positively as an accelerator of development because it increases the demand for housing, hence increasing the housing supply. To conclude, if it is required to speed up the development process of the district it is important to deal in some way with the previous factors.

Figure 7.14 House construction statuses in Al-Azhari district
(for the households who began construction)



7.6 Actors in the housing plots market and their behaviour

This part of the chapter tries to investigate the role of the actors in the sites-and-services plots market. An important phenomenon in the sites-and-services projects in Khartoum is the leakage of a remarkable number of the plots to the land market by the first beneficiary before construction. This could be regarded as a failure indicator of the sites-and-services project. It is assumed according to the housing plan and its allocation system that these plots should be allocated to households that are in a real need for shelter but, for one reason or another, these plots are resold. Figures from the survey show that 8.8 percent of the plots in Al-Azhari district were resold. This figure is actually from the households who moved in the district, which means that these households bought the plot, built it and moved in. This also concludes that the actual number of the resold plots is much bigger than this figure. Those who sold their plots must have an alternative shelter. It also indicates that the housing allocation system has targeted some incorrect households.

The identification of the actors and their role would be useful to derive some implications that might help the public sector to set policies aiming at enabling these actors for increased housing supply and better housing land market performance. The partners in the market transactions of the low-income housing areas in Khartoum are either sellers or purchasers. The role of each of the partners is discussed in the following section:

7.6.1. Sellers

The sellers of the housing plots are four main actors: the low-income households who cannot afford to build, agencies and individuals involved in land speculation, inheritors, and the public sector.

7.6.1.1. Low-income households who could not afford to build

These are households who were allotted plots but could not afford to build the house. They tend to cash in the value of the plot for investment or other purposes. The demand for housing for this sector is out-weighed by other necessities. Housing does not seem to be a priority for this group; the majority of them are below the poverty line. In Al-Azhari, which is a new housing area, 8.8 percent of the plots were resold. The lack of infrastructure, services and transport is another factor that causes plots to go into housing land market transactions. This 8.8 percent includes this group. This group raises a question of what the basis is for giving households who cannot afford to build a plot of land at very nominal prices. The long period between obtaining the plot and starting construction is a good indicator of the affordability and inability to accumulate sufficient money to start construction.

7.6.1.2. Agencies and individuals involved in land speculation

This sector holds the land for investment and capital accumulation. It is one of the major factors that impede the physical growth of the residential areas. They usually interfere in the land market as purchasers at the early stages of the housing scheme where they buy the plots at cheap prices and hold them in order to be sold when the prices increase. The performance of this sector is mainly influenced by government fiscal policies, the tax system, and to a minor extent to the regional and international currency exchange rates. However, this sector is not part of the tax base because they do not appear in the lists of the officially registered activities. Some of the market transactions are not done through the real registration of land whereby tax could be paid, but through an authorisation given by the owner to the mediator to sell the plot to a third party.

7.6.1.3. Inheritors

This condition applies to a house or a family house whose inheritors could not agree to keep it up as a family house. In order to resolve the conflict there are two alternatives, either to sell the house so that every family member takes his share out of the overall inherited properties in addition to any other available cash; or to subdivide the plot according to the apportionment values. The second case is clearly possible if the plot is large enough to be subdivided in a way that everyone's part is adequate to accommodate the inheritor household

or good enough to be sold in terms of shape, accessibility or frontage. The number of inheritors may be large to the extent that when the plot is subdivided the parts become insufficient to accommodate all the families of the shareholders. In that case, some shareholders would sell their part to another member who can afford to pay for it. In that case, some of the shareholders will leave the house and others will stay. Some of the wealthy inheritors may willingly leave their share to the others who cannot afford to rent or buy another house somewhere else in the city. These over spill groups of households are one of the main residents of the new squatter areas. Those who were qualified for a piece of land in the housing schemes move to the new housing areas if they have already received their plot.

The inheritance system - similar to most Muslim communities - follows a specific method of apportionment that stems from the unchangeable Islamic rules. A major characteristic of that rule, in the case of 'nuclear family' as an example, is that the wife obtains one-eights of all the inherited money and assets converted into their monetary value and the parents' share is one-sixth each if they are alive. The residual is divided between the children on the basis that every son obtains double the share of a daughter. Other cases - for example if there are no children - have different rules.

Subdivision of plots is not practised on a wide scale in low-income areas but in the inheritance case it sometimes becomes a necessity to resolve the conflict between the inheritors. The main reason is that the plot is usually developed as one residential unit that accommodates a single household that could later transform to an extended family. A second reason is the difficulty of subdividing the plot without introducing major changes in the building layout and design, which often becomes expensive and unaffordable. A third reason is cost. The plot value drops remarkably as the size becomes smaller making the shareholder less willing to sell his share. A fourth reason is the tradition that inhibits people from selling the house to a stranger and the fear of disintegrating the family in case the plot is sold.

Ad-Deim and As-Sahafa districts are the districts most affected by the factor of inheritance (26 percent and 13 percent respectively), which conforms to ages of the households and the age of the districts. The resold plots in Ad-Deim constitute approximately 63 percent of the total plots due to its closeness to the city centre.

7.6.1.4. The public sector

During the last decade, the public sector intervened in the land market as a seller. Valuable pockets of vacant urban land were subdivided for housing and other land uses and sold on a commercial basis for investors. These pockets are generally in locations where water supply, electricity and telephone services could be easily extended to from the neighbouring areas. The revenues were utilised to finance some city projects such as the new White Nile River Bridge. However, the government's target group is the middle to high-income groups. Low-income housing groups are less involved in these transactions. Some of these pockets were reserved for exchange. Those who are qualified for a piece of land in the new housing projects or already own a plot of land in remote areas are entitled to pay the cost difference between the plot in the new area and the plot in the area reserved for exchange. It has been observed that the supply of the plots reserved for exchange is less than the demand, because the overall number of the supply is limited. Although the prices are fixed by the government for all housing areas, they are still less than the market price, which causes the high demand for the plots for exchange, which in turn mean that some of them are bought for speculation, not for housing need. The public sector's attitude towards land market is only to react when problems arise, i.e. a piecemeal approach. It could therefore be argued that the housing supply is a result of tactical actions.

7.6.2. Purchasers

The purchasers in the housing plots market are the small entrepreneur and business class individuals, the Sudanese expatriates and the agencies and individuals involved in land speculations.

7.6.2.1. Small entrepreneur and business individuals

These are households who can afford to buy a new house and wish to replace a house somewhere else in the city with better qualities. This sector includes some business people which effectively entered the land market as purchasers. They are primarily involved in investment and commercial business activities during the last two decades. They were able to benefit from the market instability and the conflicting economic policies that lead to unstable inflation rates. Parts of this sector sell their houses in the low-income housing areas and buy better houses in a higher housing class area. The banking system in Sudan is not generally involved in housing and real estate trade activities or mortgages. The land is often sold for cash and once-for-all payment and in some cases through exchange of properties (barter).

Therefore, the plots sold in that case are influenced by the rate of capital accumulation of the households of that group. This sector also includes migrants from rural to urban areas.

7.6.2.2. Sudanese expatriates

During the last two decades expatriates acted as an important actor in the housing market as purchasers, besides their role in maintaining and keeping the families above the poverty line. Approximately 32 percent of the household heads have either worked abroad in the past or currently work abroad; and 46 percent of the households have one or more close relative working abroad. These close expatriate relatives, particularly sons, often share the living expenses with the household. The role of this sector in the housing market is becoming less intensive due to the remarkable drop in the savings in money transfer of the expatriates who are concentrated in the Gulf countries. It could be clearly expected that the role of this sector will dwindle. The method of purchasing housing with a cash down payment was not very common in Khartoum until the last two decades, when the expatriates entered the market as important actors as purchasers.

The money remittance of the expatriates constitutes an important source of hard currency in the balance of payment. It usually covers five fields, (1) financially supporting close relatives, (2) private house construction, (3) taxes imposed by the government including annual tax, *zakat* (legal Islamic charity), compulsory transfer, and services and finally (4) different forms of individual investments. During the last few years relative improvements in the balance of payments due to exploitation of oil and economic reform policies have created a tendency of some of the expatriates to (5) transfer their money as savings inside Sudan. Therefore forming a fifth field, this was not happening in the past due to the fluctuating rates of exchange and inflation.

The money transfer by the expatriates for construction of private housing is constrained by the loss of a high portion of it to the hands of the trustees and the contractors, caused by the inefficient legal and regulatory mechanism that would preserve the rights of all participants, therefore leading to a slow construction process, reduction in building standards, and increased cost of services, causing an increased cost of the whole house. Such conditions, which were not accompanied by serious reforms, led to a substantial decrease in the amount of transferred money. Alternatively, some of the expatriates tended to save their money abroad in order to accumulate enough money to buy a finished house. The housing

construction market in that way was negatively influenced, while the finished housing market began to flourish. Currently, no availability of a finished housing market exists in Khartoum, which could resemble the case in Ghana, where a traditional system exists (Tipple et al., 1998). While housing in Ghana is allocated by the chiefs, housing in Khartoum is allocated as plots by the government.

However, the finished housing market is only affordable by expatriates and the high-income population, who constitute a very limited ratio of the whole population and the market is dominated by the cash sale. Most Sudanese expatriates included in the 32 percent figure stayed abroad for periods that were long enough to save money to buy a finished house in cash. Activation of the construction sector by exploiting the expatriates' money transfers has a direct influence on the supply of more housing units, and creating job opportunities for low-income people. On the other hand, the flourishing of the finished housing units market has a lower impact on those on low-income.

7.6.2.3. Agencies and individuals involved in land speculation

This group are actually real estate traders who tend to increase land prices, because they impose additional costs onto the real value as profit and to cover any additional expenses. Plots are held in the hands of these mediators as a commercial commodity that is subject to market forces. Observations have shown that land prices increase seasonally when expatriates return for summer vacations. No clear rules are set by the government to regulate the work of this group; and no trials were made to assess their role in the housing process. The government, though benefiting from the registration taxes and other form of taxes, have no clear mechanism or policy that would influence the revenues from the taxes, or to increase or decrease the housing plots supply.

The leakage of a high number of the allocated plots to the hands of land speculators shifts their prices from the subsidized prices to the free market prices, where there is great profit margin. Therefore, these plots will no longer be affordable by the poor if they wish to purchase them from the land speculators.

Undeniably, land prices were stable for some time during the release of the plots in the housing plan of *Al-Engaz*, because of the supply of a large number of plots all at once in the

land market through the sites-and-services projects. Plots, which have gone into land market transactions, included the following types:

1. Plots sold by the households who could not afford to build their own houses.
2. Plots sold by households who managed to obtain more plots, or already had another.
3. Plots sold because the households have chosen to stay with relatives or in family house for free.
4. Plots belonging to households who have a cheap rent and are favoured by closeness to place of work.

Chapter 8

To Whom Housing Plots are Allocated

Chapter 8 To whom housing plots are allocated

8.1 Introduction

This chapter discusses the housing supply in Khartoum through analysis of household characteristics and their housing finance and affordability capabilities to derive conclusions that might have some implications and influence on the housing supply and to give an assessment of the process. The chapter accordingly tries to give an answer to the question; to whom are sites-and-services allocated in general by examining the current household characteristics in study areas. In another way, this chapter deals with some *aspatial* aspects of the housing supply process. The focus will be on the household characteristics that have relevance with the housing allocation indices used by the government in the sites-and-services projects. To be specific, the chapter focuses on analysing household size and structure, household head age, migratory status, and income variables. These were discussed in chapter five, with a view to evaluate their validity as sites-and-services allocation indices.

This chapter focuses on the data analysis of the socio-economic factors that are derived from the allocation criteria of the sites-and-services housing projects in Khartoum. The data is mainly derived from the field survey of the thesis. The purpose is primarily to examine these variables in respect of their effectiveness in providing an efficient supply process, highlighting the positive and negative aspects and undertaking an overall assessment.

The chapter is composed of four main parts. The first part discusses the specific socio-economic variables of the beneficiaries that have relevance to the allocation process of the sites-and-services housing projects and their potential influence on the supply process. The second part discusses the types of households based on the life cycle. This part attempts to explore the availability of any sort of relevance between this type of classification, which has been identified by the author, and the characteristics of their respective housing needs within the general outlines of the government housing plans. This classification has been viewed as being helpful in setting out the relevant housing supply system and the housing policy in general that could be adopted within the public sector's role. The third part provides a tenure-based analysis of the supply viz., the behaviour of the owners and the renters and their prospective role in the supply. This part analyses the characteristics of both types of the households with a view to deriving some housing policy inferences to be adopted by the government to scale up the housing supply in Khartoum. The fourth part discusses the

income, affordability and the housing finance capabilities of the households, as an underlying socio-economic factor in the housing supply process. The importance of these issues stem from the fact they are important factors in the government housing allocation process. Household income is also adopted by the government in the allocation process as a classifying factor in the housing classification system.

8.2 Households characteristics and housing allocation indices

8.2.1. Household size

The household size is a major determinant of the eligibility to a plot in the government housing projects. It is the main criterion of the plots allocation system. This has been discussed in chapter 6, *Table 6.5* where the indices and their relevant weights are illustrated. While indices allocated for the migratory status are fixed at not more than five points, the indices allocated for household size, indicated in the table as 'social status', can reach up to a minimum of 19 points for a five-person household. Under the limited number of plots in the sites-and-service projects that has to be allocated and the large number of applicants, small size households are filtered out and the large households are filtered in if this criterion is strictly applied.

Table 8.1 shows that on the whole, household sizes are generally large (average 7.1 and median 6 persons). The table also shows that the beneficiary households of Al-Azhari district obtained the highest points within the accumulated number of the applicants, according to the allocation system, which explains why household sizes are high (average 7.12 and median 7 persons). There is a ten-year gap between the low-income government housing project of Abu Adam (1980) and the next housing project of Al-Azhari (1990) in Khartoum City. This long period between the two housing projects and the delay of the government in meeting the increasing demand for housing during that period has created an accumulated demand. Abu-Adam has a larger household size (average 7.8 and median 8 persons). It possesses similar population characteristics of the new Al-Azhari district. Households in both districts have moved in their houses, built or rented houses, notwithstanding of the lack of services and infrastructure in the area. Another reason is that these households were probably forced by the high rent rates in the old districts and their need for more living space at a reasonable cost to accommodate the large size household. These are also largely justified by the high room occupancy in Abu Adam and Al-Azhari as illustrated in *Table 7.9* chapter seven. The

household size in Al-kalakla is low because the district was originally a squatter area in the process of being upgraded; the gap is not considerably large with other old areas.

Table 8.1 Household sizes by district

	Ad-Deim	*As-Sahafa*	*Al-Kalakla*	*Abu-Adam*	*Al-Azhari*	*All Districts*
Mean	6.26	6.1	5.51	7.78	7.12	**6.47**
Median	6	6	6	8	7	**6**
IQR	(4, 8)	(4, 8)	(4, 7)	(6, 9.8)	(6, 8)	**(5, 8)**

8.2.2. Age of the head of the household

In developed countries, it has been estimated that housing costs three to four times the combined annual income of the owners so that virtually all housing is bought or built with finance. Housing finance is usually repayable within twenty years (Jones and Datta, 1999) or twenty-five years. This period is enough to enjoy owner-occupation living at a young age. Obviously, in the housing allocation system in Sudan it seems no consideration was given to setting out some finance principles that would encourage or enable the finance of housing through the banking system. The applicants acquire the plot at the age of 45 years, where they will be at a stage in their life that demands exhaustive expenditure on grown-up children education, health care, and increasing expenditure on recreation, socialisation and other conveniences. The banks will obviously be reluctant to offer credit finance, if it happens to be available, because of the low savings and because the applicants will be approaching retirement age. *Table 8.2* illustrates ages of the household head by district.

The allocation system in government housing projects determines that households are given plots at an old age. The majority, approximately 76.7 percent, of the household heads of Al-Azhari, which is a new housing project, are above fifty years old. Young household heads occur only in Al-Kalakla because it is originally a squatter settlement that was later upgraded. This means that young households, who can afford to build houses and who could not have access to a plot in the government housing projects, tend to seek a plot in other places through purchasing or illegal acquisition of land in the peripheral areas. The market prices of land in such areas are markedly lower than plots in the government housing areas. Therefore, they become more attractive to young households.

A considerable segment of older households who were given plots in the new low-income housing areas will often be unwilling to complete the house because they are close to retirement age. The retired households in Al-Azhari account for 27 percent of the households.

The remaining working years will not be enough to save enough income to complete the house. The sons who are mostly young would share with the family to build and complete the house, but certainly, it depends on how far they are willing to do that and how essential the matter is to them.

Table 8.2 Household head ages by district

	Ad-Deim	*As-Sahafa*	*Al-Kalakla*	*Abu-Adam*	*Al-Azhari*	*All Districts*
Mean	52.4	47.5	49.1	51	54.2	**50.3**
Median	55	43	50	50.5	56	**50**
IQR	(45, 60)	(40, 55)	(40, 58)	(41, 60)	(45, 64)	**(40, 60)**

8.2.3. Length of stay in Khartoum

The length of stay in the capital city of Khartoum is taken as a significant distinction factor in the eligibility of a plot in the housing plans and the resettlement of the displaced people (Bannaga, 1996). It indicates the migratory status of the households in the surveyed districts. *Table 8.3* shows the length of stay in Khartoum by tenure. It can be noted that applicants in old housing areas in Ad-Deim and Sahafa have a shorter length of stay than in the newer districts of Abu-Adam and Al-Azhari.

Table 8.3 also shows that a remarkable number of renters did not obtain plots in the housing projects in spite of their lengthy period of stay in Khartoum, which is clearly justified by high 75% IQR. Some of these renter households clearly failed to obtain a plot in two successive projects or more, clearly because they were surpassed by households growing faster.

Table 8.3 Length of stay in Khartoum by tenure

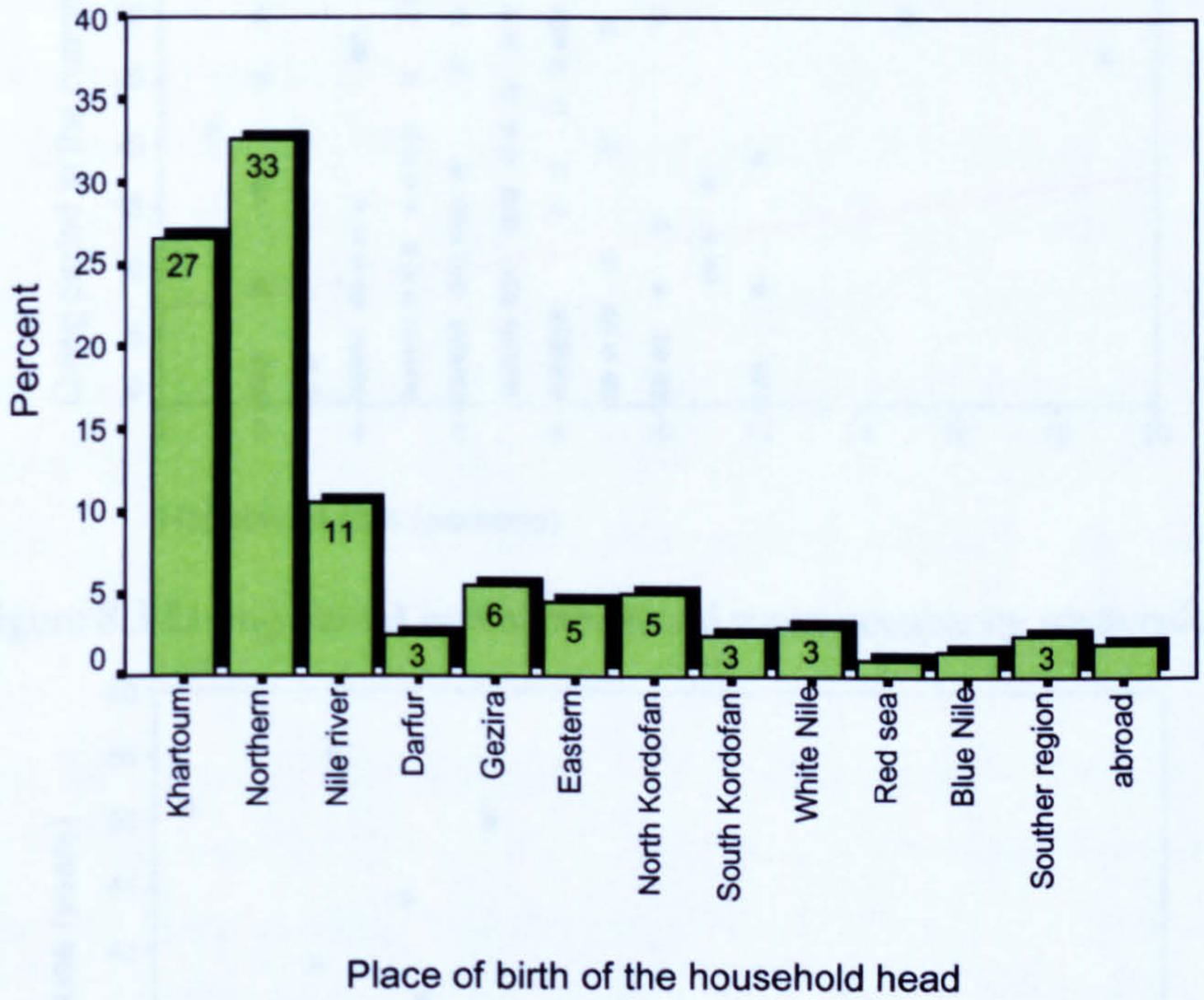
		Ad-Deim	*As-Sahafa*	*Al-Kalakla*	*Abu-Adam*	*Al-Azhari*	*All districts*
Owners	***Mean***	40.1	37	26.9	30.5	31.7	33.6
	Median	40	35	23	26.5	30	33
	IQR	(29, 55)	(30, 47)	(17, 36)	(19, 46)	(23, 41)	(20, 44)
Renters	***Mean***	23.8	21.5	20.8	26.6	-	21.9
	Median	23.5	21	17	30	-	21
	IQR	(14, 37)	(11, 30)	(13, 29)	(12, 40)	-	(13, 31)

Figure 8.1 illustrates the place of birth for surveyed districts showing the variety of the origins, and they hailed from all parts of Sudan but almost 50 percent are originally from the Northern and River Nile states, while only about 26 percent are born in Khartoum. Although the migratory status could be adopted as a decisive factor in the allocation process and filtering, five points are given to an applicant who brings a certificate that he lives in Khartoum irrespective of his previous duration of stay. Prioritising points are only given

according to the year of application after the 1977 last housing project, but the opportunity to apply is not always available and depends on the government decision to release plots as a housing project.

The survey results show that the majority of the migrants prefer to stay in Khartoum, but about 6.4 percent would like to return to their original home (*Al-balad*) in the rural area on retirement or as soon as possible, while 39 percent prefer to stay in Khartoum but keeping in touch with their original home. The housing policy should therefore consider this fact in the assessment of the demand for housing and the allocation process of the plots, in a way that the supplied plots in the site-and-service projects should match the rate of migration.

Figure 8.1 Place of birth of the household heads



The survey results (see *Figure 8.2*) show that room occupancy decreases as the length of residence in Khartoum increases based on a correlation coefficient of –0.171 (Pearson's method). Rooms are built through incremental construction and it is assumed that people build more rooms as the household size increases but this is not the case. The built rooms do not match with the increasing household size. The household size increases because of both the newborn children and the relatives received from *al-balad* who stay temporarily for protracted periods for study, looking for jobs or elderly relatives on retirement. Financial constraints imposed upon the household head could be taken as a significant underlying factor

in reducing the expenditure for housing extensions. The graph in *Figure 8.2* shows that the household size expectedly increases with the increase in the living period in the current house, which supports that more space is needed to accommodate the increasing household size. The graph in *Figure 8.3* is a scatterplot, which indicates that the room occupancy tends to fall as living period in the current house increases.

Figure 8.2 Living period in Khartoum and the household size scatterplot

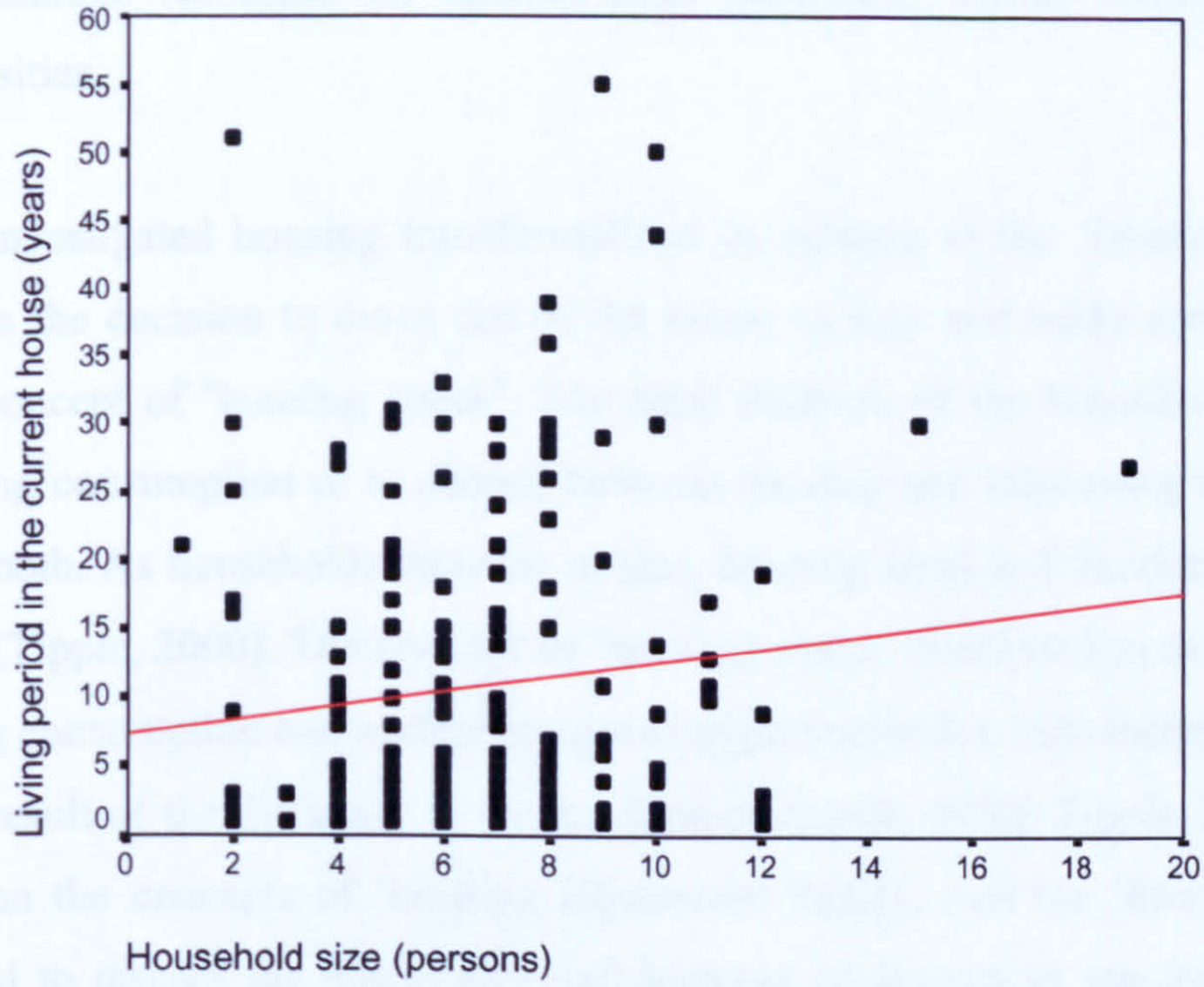
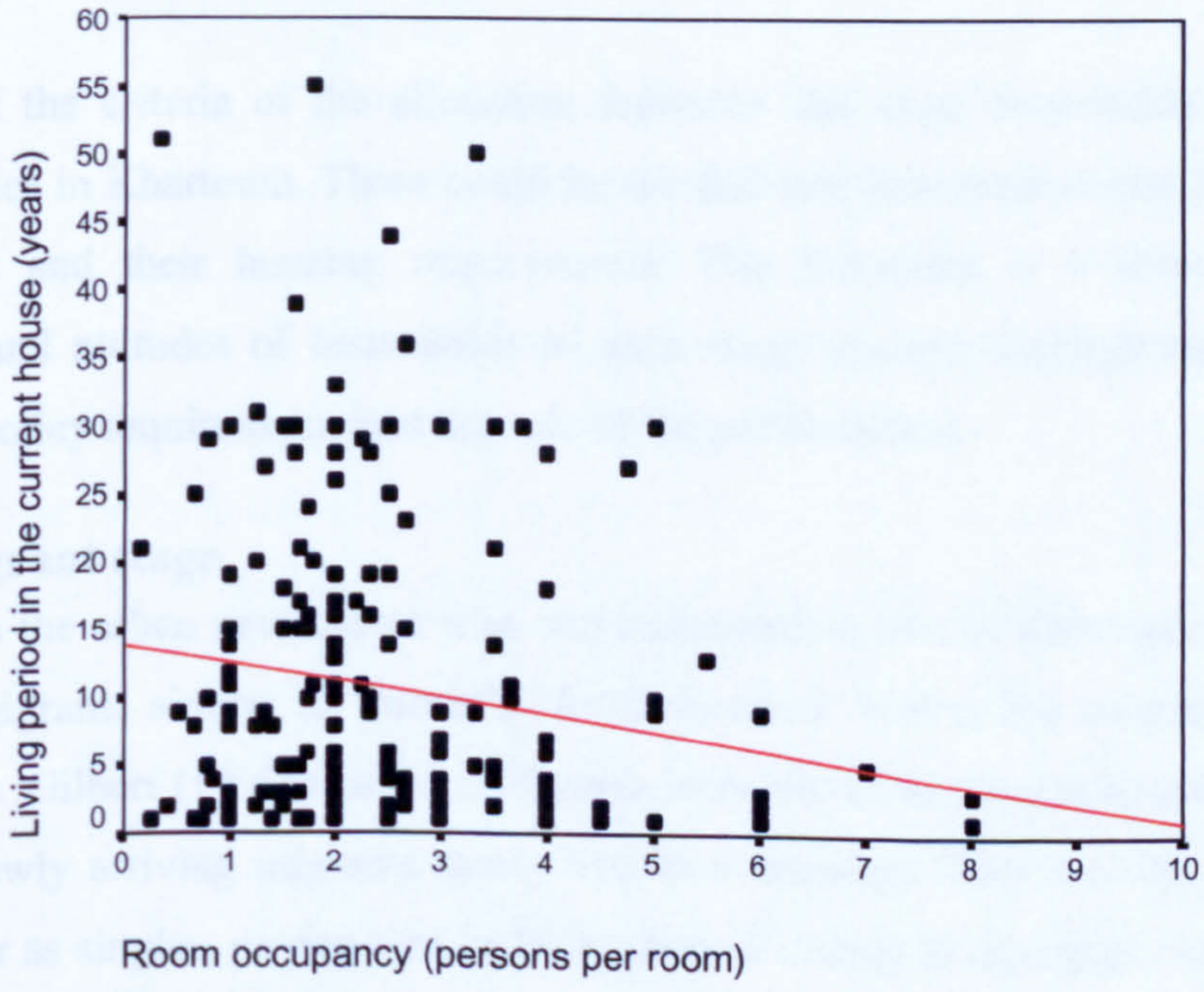


Figure 8.3 Living period in Khartoum and room occupancy scatterplot



8.3 Household life cycle

An important issue in any housing policy or urban development finance programme is to define the beneficiaries of the programme or the 'target group' (Tym, 1984). It is also important to establish what the basic social unit of the target group is which occupies the housing unit, in the sense of whether it is a nuclear family or a wider extended family (Tym, 1984). Tym (1984: 210) suggests that whatever a particular form of 'household' the family takes needs to be seen as an indivisible unit requiring economic sustenance, and able to form its collective financial resources for shelter, food education, travel, clothing and other household necessities.

Tipple (2000), investigated housing transformations in relation to the 'housing adjustment theory', which is the decision to move out of the house or stay and make some changes in relation to the concept of 'housing stress'. The final decision of the household is either to adjust the housing consumption or to choose between moving and improving the house or a combination of both. As households increase in size, housing need and the demand for more space increases (Tipple, 2000). The concept of 'housing stress' is referred to as being the gap between housing consumption and preference growing gradually but with increasing intensity over time, as a result of the difficulty to change housing (Seek, 1983; Tipple, 2000). Taking into consideration the concepts of 'housing adjustment theory' and the 'housing stress', it would be helpful to discuss the households and housing conditions in low-income housing areas in Khartoum in relation to family life cycles.

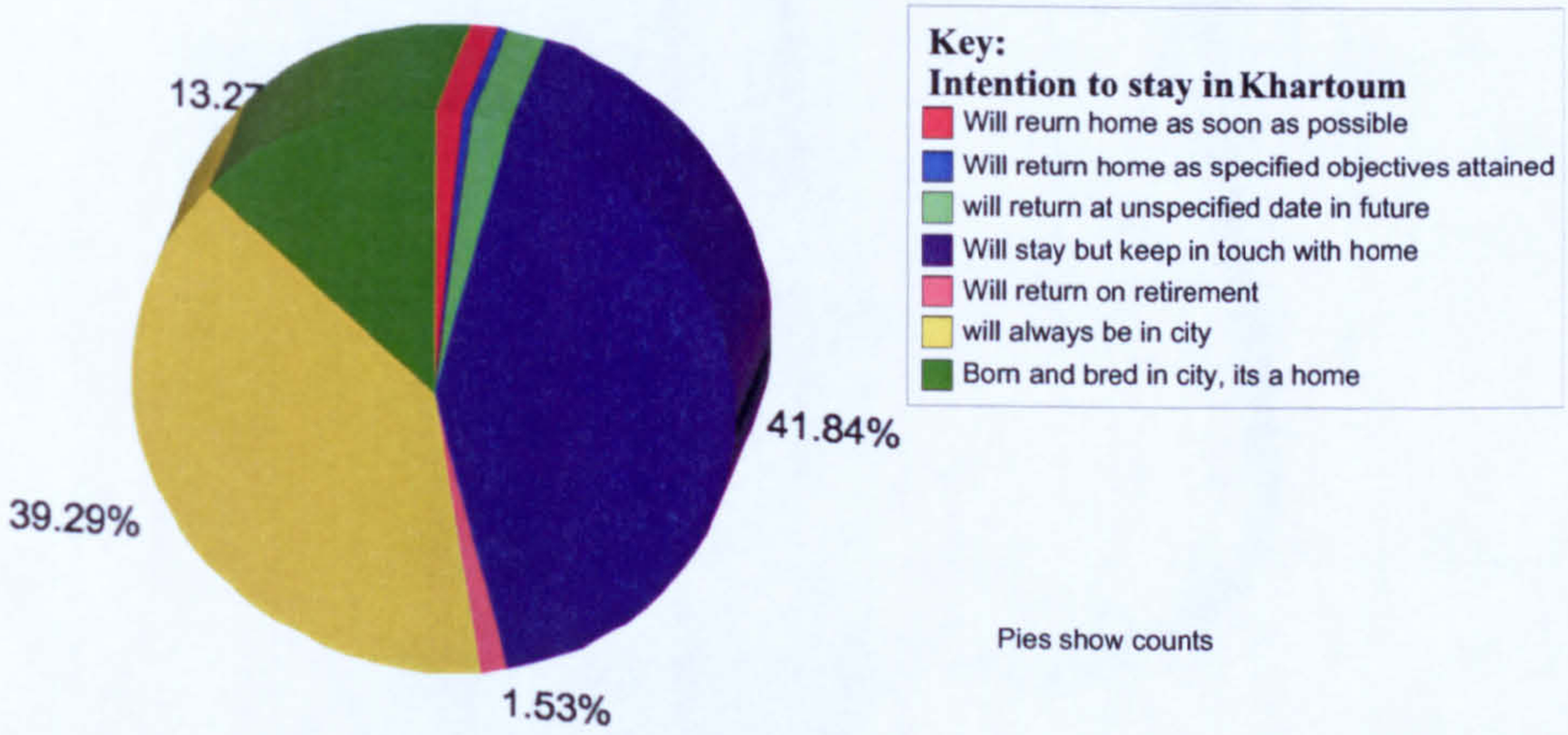
The analysis of the criteria of the allocation indicates that most households pass through similar live cycles in Khartoum. These could be divided into four main stages in reference to household type and their housing requirements. The following is a discussion of the characteristics and attitudes of households in each stage through highlighting the relevant housing issue, policy requirements and the role of the public sector.

8.3.1. New migrant stage

This category is the urban newcomers who were attracted to live in Khartoum. They form a class of new migrants similar to Turner's '*bridgeheaders*' within the concept of self-help (Turner, 1976b). Gilbert (1992a) based on figures from the Latin American context supports the idea that newly arriving migrants rarely live in ownership. They usually live first with their relatives or as singles, paying rent or living free of charge at this stage, while they look

for jobs, which is the case in Khartoum. Some stay for protracted periods while they come for education in higher educational institutions or medication in the well-equipped hospitals or seeking opportunities to migrate abroad and similar purposes. Generally, once most of these people are familiarized to Khartoum living environment they often stay in Khartoum and choose not to return back home. *Figure 8.4* shows that 76.1 percent of the households have either chosen to stay in the city and keep in touch with relatives in the home village or have chosen to stay forever in the city. They may be members of lineage or from the same tribe. The questionnaire has shown that 77 percent of the households have one or more members of lineage living or staying for short or long periods with the household. A large part of this percentage constitutes the group of the 'new migrants'. The group at the 'new migrants' life cycle stage constitutes a remarkable part of the urban future population.

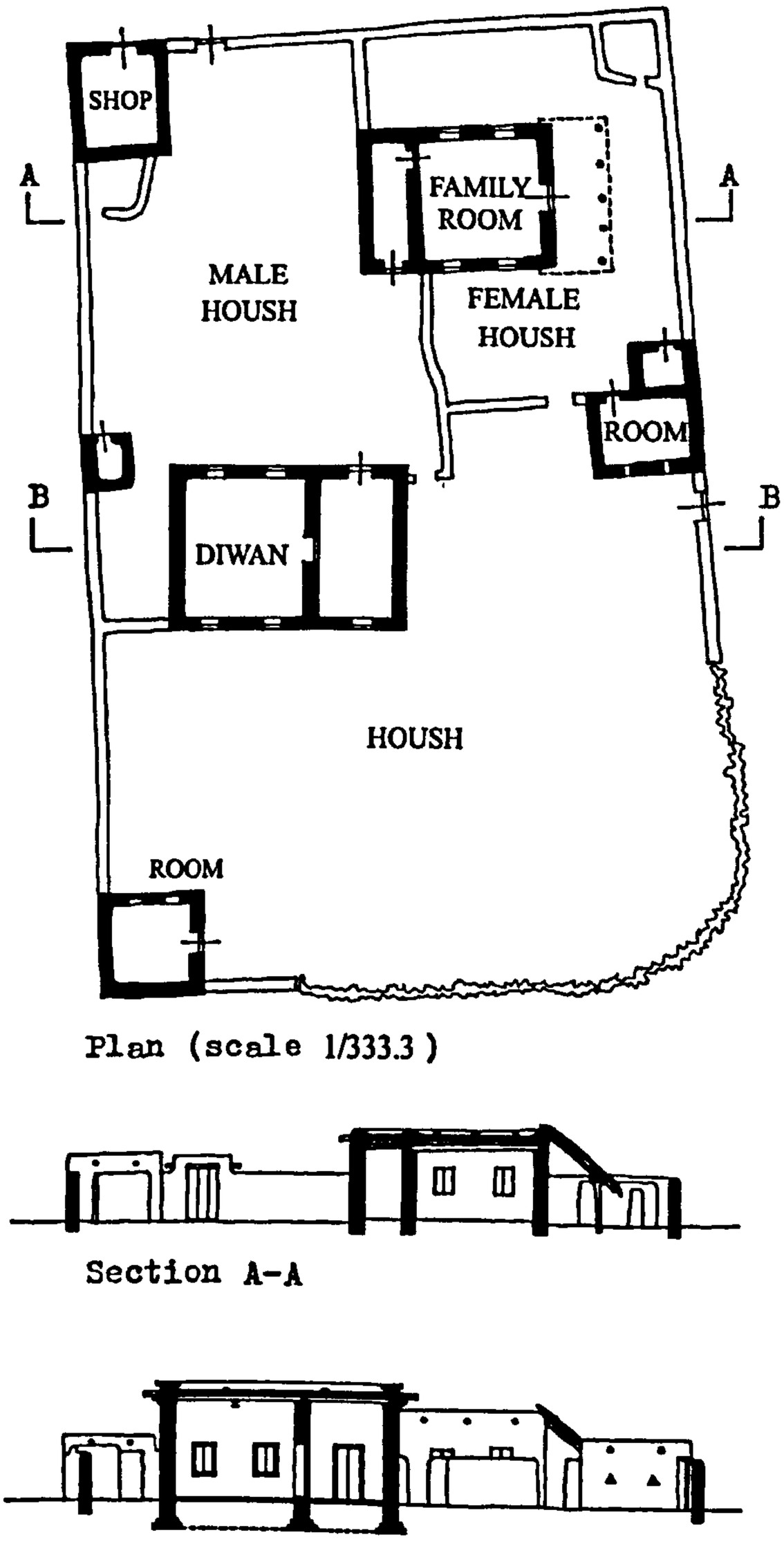
Figure 8.4 The intention of the household head to stay in Khartoum



The main housing requirements of this group are provided by the earlier relative migrants who accommodate them, mostly for free. Such methods could be regarded as a solution from the side of these newcomers but a problem to those who accommodate them because they share with them their living space and living expenses. The demands for private housing requirements for this group are generally not very urgent and it does not constitute a remarkable problem, at least to the officials responsible for housing provision. Surely, they should not be totally excluded from the government housing supply programmes anyway, and may be from the sites-and-services allocation process as well, contrary to the current system.

The inconvenience to the households who accommodate these people is clear, but most households endure this long period of stay and do not react because these attitudes are traditions and cultural issues that are originally based in the rural areas, brought to urban life. *Figure 8.5* shows an example of houses in the rural areas in Udeid village in Al-Bashagra, Gezira south Khartoum where a separate compartment (*diwan*) is assigned for male guests for both receiving guests for daily reception and prolonged periods.

Figure 8.5 A rural house in Gezira – Central Sudan[93]



[93] Source: an unpublished study by University of Khartoum about Bashagra Area Settlements in Gezira (1964)

8.3.2. Monogamous households as renters

The newly formed household tries to seek separate living quarters or a house. It is a general feature than households in their early life cycle live in rental accommodation (UN-HABITAT, 2003d). In view of the fact that the majority of the households are low-income, they tend to rent rooms if they can afford to pay for them, because they cannot afford to buy a completely-built house in one lump sum payment, and payment through mortgage does not exist. This group of households forms the majority of the population of the squatter areas in their early stages of formation. They tend to illegally acquire a plot of public land as squatters, if they have access to it, or buy a cheap piece of land in those areas because of their acute need for shelter. These plots are often at the periphery areas of the city. They are also attracted to those areas because rents are relatively low.

Households at this lifecycle stage have to work hard to increase their income to pay for the rent and to save money in order to buy a house or land in the future and to pay for the living expenses of their growing families as well. Rodell (1990) pointed out that the expenditure pattern of the renters' resembles the buyers' as it has a dual function of paying for housing and accumulation of wealth. Households in this group are mostly subjected to financial stress if they stay for longer periods in this lifecycle stage before they acquire a house as owner-occupier, without having sufficient sources of income that would sustain them.

8.3.3. Monogamous household as owner-occupiers

Households at this lifecycle stage are mostly married couples with young children who have recently obtained plots in the sites-and-services, but the data analysis of the beneficiary households in *Al-Engaz* housing projects, particularly in Al-Azhari district, have shown that the majority are married couples with adult sons and daughters. However, households in this group, particularly those who could not build a complete house, might be involved in self-help housing activities to complete their houses. They therefore need government support of a different type. Policies encouraging or supporting the self-help housing activities will be feasible and desirable for the households at this lifecycle stage. The more the support policies are intensified the faster the households complete the house construction. Characteristics and guidelines of self-help housing policies have been highlighted in chapter two.

The group at this lifecycle stage is juxtaposed by another group who could not obtain plots in the sites-and-services projects, although they are qualified. Obviously, the housing

requirements of this group will cause an accumulated housing demand as long as they are willing to become owner-occupiers since this group will mostly be renters.

8.3.4. Family house living

Tipple and Willis (1992) suggest that, based on observation, in Ghana the traditional compound, which is actually designed for several households, has been the major provider of housing for the poor majority and probably represents the most effective means of provision. Family houses in Khartoum, which are similar to the Ghanaian compound but smaller, are either extended families willingly staying in the same house, or a household with married sons and daughters living with their parents because they cannot afford to buy a house or to pay for rent to live separately. It has been observed that most of these married sons and daughters would like to separate from their parents and have a free life as a monogamous family. These married sons and daughters predominantly have small and few children and they are in the early ages of their married life. Their problem is that they cannot compete in the government sites-and-services projects, simply because of the low point scores they will get. Similarly to the second group, under pressure of their housing needs these married sons and daughters might be forced to move to squatter areas. *Al-Engaz* housing project *(al-khutta al-eskaneiyah lel-Engaz)* gave some room to this group of small households who wish to separate from the extended family house by allowing them to apply through their professional and institutional associations' lists *(altagdeem al-fi'awi).*

To conclude, the housing policies and the housing allocation system could be redesigned depending on the requirements of each of these groups according to their lifecycle stage. Actions, priorities, programs and strategies could therefore be designed for each of the groups separately. Also, the roles of all the societal sectors in the housing supply process, mainly the public and the private sectors and their respective institutions, can be clearly identified.

8.4 Household income, housing affordability and finance

8.4.1. Household income

Household income is an important factor in housing supply process and housing affordability. The significance of income also arises from the fact it is one of the most used standard measures of poverty. It is also part of the human development indicators. For example, UNDP calculates the human development index as a composite of three measurable dimensions of human development measures: life expectancy, school enrolment, literacy and income

distribution (UNDP, 2003: 60; UNDP, 2004:128; UNCHS, 1996b). It has been noted that the definition and the method of assessing income distribution of households by relevant agencies varies. While in some cases the agencies consider household income, in other cases they consider only the income of the head of the household (UNCHS, 1996b: 391).

Tym (1984) pointed out that household incomes are always difficult to measure and usually difficult to record, but he also adds: "This is not of course to say that the world is a universally dishonest place" (Tym, 1984: 211). He holds that while the records of earnings of the principal household income-earners may be available from regular employment, normally with a reasonable degree of accuracy, supplementary incomes and income from other family members are difficult to define. These supplementary incomes are often treated as insignificant, but actually he found, for example in Ghana, the weekly earnings of the itinerant woman traders, carrying goods as head loads, would equate the weekly repayments that would be required if the household were to take a serviced plot in the proposed sites-and-services project (Tym, 1984). Similarly, Tipple et al. (1997: 115) from their experience in Ghana found that data on household income is difficult to measure and almost impossible to collect. The data therefore lacks accuracy and is mostly unreliable. A difference exists between income from formal employment and the whole received from different sources, which may include tips, bribes, petty business and commissions, locally expressed in Ghana as 'the Grace of God'. Such features are greatly similar to the case of Khartoum. Household expenditure was used as a better indicator (Tipple et al., 1998).

The research was confronted with the difficulty of clear-cut identification of the income of the households. This is ascribed to varying understanding of the respondents of what is actually meant by income, in spite that the interviewers were keen to give a clear understanding of income. Most people in Khartoum express their income as what they receive as salary from their employers on a monthly basis, which is known locally as (*maheiya*). In this way, money received from other sources was greatly neglected by the interviewees as part of their monthly income as it is sporadically received hence giving unrealistic results. In cases where the respondent was the wife, or any adult member of the households figures given are doubtful, as many household heads as part of local practices do not reveal their income to the wife or sons, they give only estimates. Women also sometimes tend to exaggerate the household income as a tendency to show off, while some other males tend to give lower incomes that what they

actually receive fearing to fall in any additional financial commitments, or to show modesty or to be afraid of being bewitched or to avoid evoking jealousy from other competitors.

8.4.1.1. Defining household income

To deal with some of the complexities on income data a variety of questions were included in the questionnaire (Appendix 2). Questions related to income in the questionnaire were made in three forms, income from the regular job, the total monthly income, income received by all household working members and income based on the sum of expenditures *Table 8.4*. The objective was to obtain the data about income in any form, as some respondents are sensitive towards inquiries about their financial statuses. The following section is an analysis of income of household based on the four types of income variables. The analysis also includes the income per person variable.

Monthly income from the regular job

These include salaries from regular employment of those who receive a regular salary including all the allowances, and the approximate estimated monthly income received by those who are self-employed. It is a good measure for the levels of salaries paid by the different public and private sector institutions in Khartoum.

Table 8.4 Household income in thousand Sudanese Dinars (SDD)

(Conversion: £ 1= SDD480)

	Monthly income from the regular job (Salary)	***Total monthly income***	***Income received by all family members***	***Income based on the total sum of expenditures***
Mean	25.3	44.5	45.5	47.8
Median	15	28.8	30	39
IQR	(7, 30)	(15, 50)	(17.6, 50)	(28.1, 56.1)

Total monthly income

This includes income from the regular job in addition to income from other sources and income from additional job or jobs. This is a good indicator for those households who work to increase their income in different ways. It has been found that 13.3 percent of the respondents have additional income from other sources.

Income received by all household members

The survey and the questionnaire design allowed producing the overall household income by summing up the individual incomes of the working family members. It is a noticeable feature that 48 percent of households share the living expenses, although the shares of each cannot be exactly calculated from the survey. The number of income earners (*Table 8.5* and *Figure 8.6*)

indicates the particular feature of the social life and the lifestyle of those on low-income. Some migrants tend to maintain their rural lifestyle and were not influenced by the urban life style to some extent. This feature is reflected in household budget sharing of the living expenses. It also indicates the availability of extended family type. Living together and sharing accommodation reduces living costs.

There are few income-earners per household in Ad-Deim and Al-Kalakla because the first is a very old area and dominated by households of old couples who were actually extended families, or the original old owners who live alone because their sons opted to live separately, and the second is a squatter area where marital life begins with a monogamous household. As-Sahafa and Abu-Adam sons and daughters are mostly over 20 years of age, so they could be engaged in employment. The case of Al-Azhari is slightly different because the criteria of allocation of the plot involves that the beneficiary households must have a large number of sons, daughters and relatives to obtain high point scores.

It can be observed in Al-Azhari and As-Sahafa that the wage earners in the household are relatively numerous. Income pooling of the income earners through consolidation would create savings that can be partially utilized in construction and improving the house. Ward (1982b) pointed out that this income consolidation phenomenon was an important household income feature in Mexico. The potential surplus is created because the food costs and living expenses in particular tend to be economized as the household grows. The co-operation and mutual sharing of the responsibilities further economizes and reduces the costs of some items, such as transportation, and sometimes extends to sharing the clothes and household effects.

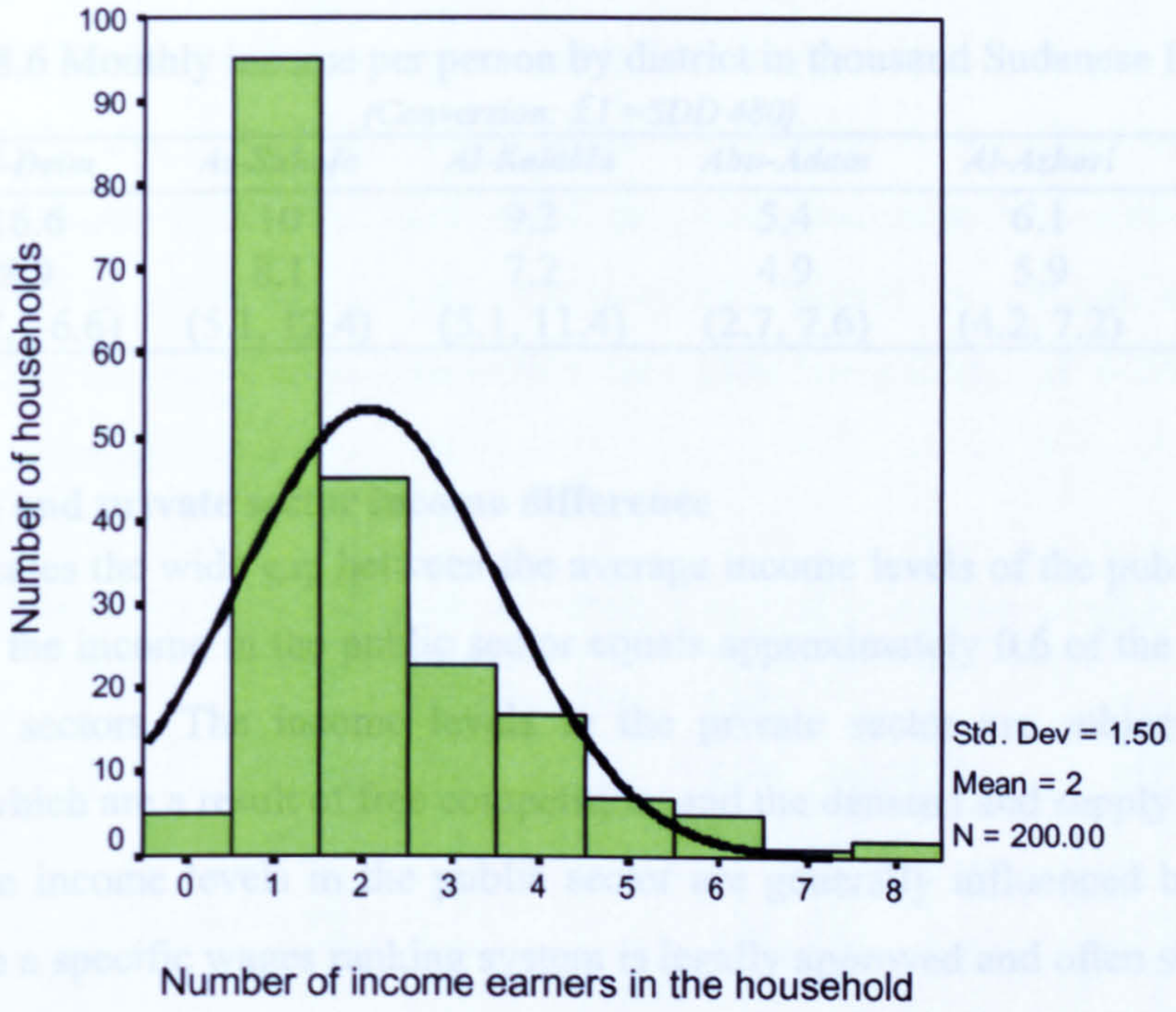
Income based on the sum of expenditures

This type is likely to represent the real income because it is a result of the expenditure on different items as stated by the respondent himself. Such items include expenditure on food, water supply, transport, electricity and cooking gas, telephone, clothes and footwear, medicine, education, recreation and savings. It is easier for the respondent to give a rather accurate estimation for a single item than the overall expenditure.

Table 8.5 Number of income earners in the household by tenure

	Owners	*Renters*	*All types*
Mean	2.3	1.5	2.1
Median	2	2	1.5
IQR	(1, 3)	(8, 1)	(1, 3)

Figure 8.6 A histogram of number of income earners in the households



A gap can be noticed between the received income and the income calculated based on expenditure. This may support the assumption that income levels are generally low because they fall below the actual living expenses of households. These living expenses have to be met by all means. Therefore, households tend to adopt different ways to compensate the deficit, including unethical and corrupt methods. The deficit is also covered by remittance by the expatriate relatives, other sorts of windfall gains and to a lesser extent by additional jobs. 72.8 percent of the households' total income is less than the sum of expenditures. The analysis has shown a correlation of 0.736 between the reported monthly income and the income based on the sum expenditures, based on Pearson's method. This might indicate a sensitivity of the interviewees to questions about money. They often tend not to report their exact income but rather lower estimates.

Income per person

The analysis of the income per person by district (see *Table 8.6*) reveals lower income levels in the new district of Al-Azhari and the old but under developed district of Abu-Adam. Income levels in old districts and Kalakla upgraded squatter area are higher. This figure could be seen as an indicator of poverty levels. Variations in income per person are apparent, which means that sites-and-services schemes might be one of the causes affecting income level differentiations, owing to the variation of application of different allocation criteria, different

sorting methods, different public sector policies, and different historical stages of the city development.

Table 8.6 Monthly income per person by district in thousand Sudanese Dinars

(Conversion: £1 =SDD 480)

	Ad-Deim	*As-Sahafa*	*Al-Kalakla*	*Abu-Adam*	*Al-Azhari*	*All Districts*
Mean	16.6	10	9.2	5.4	6.1	**9.4**
Median	8.9	8.1	7.2	4.9	5.9	**6.4**
IQR	(3.7, 16.6)	(5.1, 12.4)	(5.1, 11.4)	(2.7, 7.6)	(4.2, 7.2)	**(4.4, 10.7)**

8.4.1.2. Public and private sector income difference

Table 8.7 indicates the wide gap between the average income levels of the public and private sectors, where the income in the public sector equals approximately 0.6 of the income levels in the private sectors. The income levels in the private sector are subjected to market mechanisms, which are a result of free competition, and the demand and supply forces. On the other hand, the income levels in the public sector are generally influenced by government policies, where a specific wages ranking system is legally approved and often strictly applied. The public sector employment constitutes the majority of the so-called limited income groups[94] *(zawi ad-dakhl almahdood)*. The market forces influence on the income levels has a different effect. Evidence has shown that before 1989 the public sector employment in Sudan had occupied a prominent status in the urban labour market and wages in the public and large private sector segments were higher than the average (Cohen, 1996). Also generally it was observed that wages in the public sector have decreased dramatically to 60 to70 percent of the levels of 1978 because of the deepening economic crisis reduced government budgets, and the inability of the government to achieve satisfactory economic growth rates. While the university earnings constituted four times skilled labour in 1972, they shrunk to 2.5 by 1986 (Cohen, 1996). Calhoun et al. (1987: 365) previously noted that government officials in Khartoum are paid salaries a tiny fraction of those in the private sector, which resulted in many of the best leaving for employment elsewhere.

It could be observed in the public sector employment structure in Sudan in general and Khartoum in particular during the last fifteen years or so that there is an increasing rate of women enrolment in the public sector employment and a remarkable shift of men to the private sector or to self-employment. The main reasons for this are the higher rates of salaries

[94] These could be defined as those households involved in a regular shift jobs and receive almost a fixed monthly paid salary. The definition could be because it would be difficult for these households to substantially increase their jobs because more of their time is devoted to the regular job.

in the private sector and the migration for better living conditions and higher income levels abroad. As women are culturally not committed to spend their private income on the living expenses of the households, they often accept low salaries, particularly single young women. However, wives willingly share the living expenses with the spouse. In contrast, men are committed according to the Islamic teachings to financially maintain the household and spend money on the living expenses. This change is mainly caused by the low salary rates in government jobs that were almost kept within very little increments, not sufficient to cover the continually inflating living expenses.

Table 8.7 Monthly income disparities between the public and the private sectors,
based on income from the regular job in thousand Sudanese Dinars
(Conversion: £1= SDD480)

	Public sector	***Private sector***	***All sectors***
Mean	22.3	38	27.2
Median	13.3	25	15
IQR	(7, 25)	(10, 50)	(7, 32.5)

A feature of employment in the public sector is the job security concerning the regular pay and the end of service bonus and pension in spite of its low rates, whereas jobs in the private sector depend on the economic activity of the employer and the stability of the income. In the private sector often no monthly end of service pension is paid but there is a lump sum bonus payment. No doubt, the housing finance mode and the affordability in Khartoum are influenced by the variations between the public and private sector income attributes, which mean that they have been treated differently when housing finance policies need to be established. However, the figures from the questionnaire indicated that employment in the public and private sectors are 48 percent and 52 percent respectively.

8.4.2. Housing affordability

As this chapter discusses the household socio-economic characteristics, it is important to deal with the household financial ability to obtain a house, i.e. housing affordability, which is an important aspect in the housing supply. The discussion of affordability becomes more important when we look at the access of those low-income people to housing such as in our case. The literature has shown a wide coverage of affordability, particularly in the developed world where it is regarded as an essential issue in the formulation of housing policies.

Affordability is a term that addresses the relationship between household income and housing cost. It is influenced by three main factors: changes in the share of housing that is devoted to household housing expenditures, changes in the loans and interest rates and the costs of different housing solutions (Struyk, 1988:36). Smith (1997) argued that the concept of affordability is a complex matter and difficult to define on a general basis and that the individual circumstances surrounding a purchase transaction cannot be generalized.

In the developed world, affordability problems date back to mid 1950s when the cost of housing escalated sharply. The poor were accommodated through the filtering process (Harms, 1972). In most developed countries housing affordability has become a top issue in the housing policy agenda and has received increasing attention during the last two decades or so, where policy makers identify limits for housing affordability, rents and corresponding amounts of subsidies. This limit is expressed as a percentage of the household income spent on housing, by which households paying more than that limit are deemed to have an affordability problem (Linneman and Megbolugbe, 1992; Bourassa, 1996). For example in Canada the Canada Mortgage and Housing Corporation recommends that the total payments for principal, interest, property taxes, heating and half of condominium fees (where applicable) should be equal to not more than 32 percent of the gross household income. Another limit of not more than 40 percent of household-income has also been recommended for other total debt service including car payments, loans, credit card debt, etc. For renters, a standard of 30 percent of the gross household income is recommended as affordable rent payment, where the gross household income is the income from all sources before deducting taxes[95] (Linneman and Megbolugbe, 1992). In the UK, rents were assumed by the National Federation of Housing Associations (NFHA) in 1994, to be affordable if it does not exceed 25 percent of the income of the head of the household (Balchin and Rhoden, 2002:297). In Australia home ownership affordability has traditionally been based on the mortgage repayment capacity of the purchaser whereby the loan repayment cannot go beyond a ceiling of 30 percent of the purchaser's gross income (Smith, 1997). Amongst the different affordability definitions, the federal government of the United States uses the definition of the Department of Housing and Urban Development (HUD), which adopts the 30 percent ratio. The definition states that housing costs, rents, the cost of basic utilities, mortgage, tax and insurance are affordable when they constitute not more than 30 percent of the household's

[95] http://www.housingaffordability.ca/pages/renters.html last accessed in August 15, 2004.

income. Those who pay more than this ratio are deemed to have affordability problem, and those who pay over 50 percent are said to have a severe burden[96].

Most definitions mentioned above, which are developed countries examples, did not consider the factors of the household size and type, housing quality or adequacy, and poverty limits. A further definition, which considers these factors, was brought up in a broader term as the ability of the household "to occupy housing that meets well-established norms of adequacy (given household type and size) at a net rent which leaves them enough income to live on without falling below some poverty standard" (Aboutorabi and Abdelhalim, 2000:1-2). This definition adversely used substandard housing as a symptom of a housing affordability problem. Aboutorabi and Abdelhalim (2000) suggest that affordability can be measured by two methods. The first is the 'market concept' that measures income against household living costs expenditures on food, clothing, etc., where the balance indicates affordability and the second adopts a reverse approach, shifting the affordability from housing to non-housing costs. They argued that, in both ways, the balance between housing and living costs, presented by the rent-to-income ratio, is the indicator of housing affordability (Aboutorabi and Abdelhalim, 2000:2). Bourassa (1996: 1868), using the 'ratio test' term for that percentage of income spent on housing, which is the most common method of measuring affordability, argues that using this 'ratio test' is unsatisfactory in that households at the bottom of the income distribution will have insufficient income residual no matter how little they spend on housing, while households at the upper parts of income distribution are likely to have a residual surplus more than is required. To deal with this issue, housing affordability should be measured with reference to household expenditure on other needs such as consumer goods and services (Bourassa, 1996). Earlier, Grigsby and Rosenburg (1975) defined affordability in terms of the adequacy for other household needs of income remaining after deducting the housing costs, and Lee (1985) pointed out that it was commonplace for designers to use the affordability figure of 20 or 25 percent of the household as given for housing costs during the 1970s, where 'household income' and 'housing costs' variables in the standard affordability equation were relatively rigidly defined and there was little questioning of the relationship between the two. Lee (1990) argued that the affordability criterion assumes that societies behave in a predictive way and that the factors responsible for causing an existing set of

[96] http://www.mhp.net/termsheets/initiativeguidebook/housingaffordability.pdf, last accessed April 9, 2006.

behavioural patterns will continue to exist and hold for a foreseeable future, and therefore it becomes unrealistic. The relationship between housing affordability and poverty are apparent, and it is best expressed by Tipple (1994a: 593) who argues that:

> "with some cogency, that the poorest households cannot really afford to spend anything on housing, and that the ability to pay the magic 25 percent of income so hollowed by many policy-makers only begins fairly well up the income scale. In reality, however, it has been shown that, in developing countries in general, the proportion of income actually spent on housing is highest for the poorest groups and then declines with income, quite steeply at first but remaining reasonably steady in the upper ranges of low income and above."

Affordability criterion used to be applied in urban housing development programmes. A working definition of affordability was devised by Keare and Jimenez[97] (1983:6) as follows:

> "If 'a' represents the average propensity to consume (the proportion of monthly income 'Y' a household is willing to spend on it), then a unit of project housing with service level 'j' and monthly cost of 'Cj' is estimated to be affordable down to the 'i th' percentile of the income distribution if the following is true: $aYi \geq Cj$ "

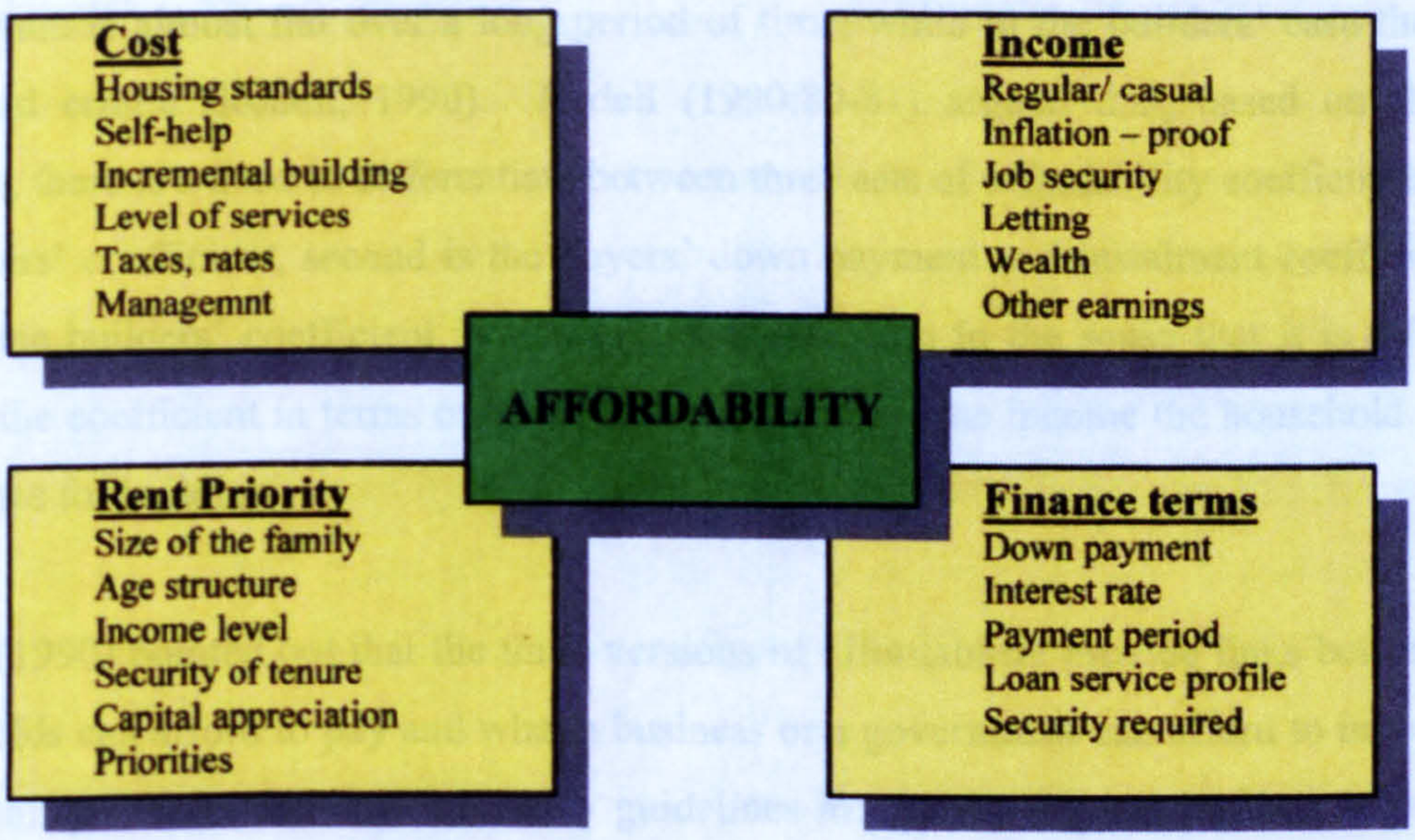
Problems of housing affordability in developed countries have special features that might be different from the developing countries. In the US for example, high housing prices and competition for the limited supply of low-quality housing caused by imperfections of the filtering process completed the low-income affordability problem for low-income households, while the sluggish income growth, coupled with increasing house prices created a housing affordability problem for the middle-income households. While the private market continued to provide new housing at relatively high prices, the price structure was supported by inflation and changing tastes rather than by real income gains (Linneman and Megbolugbe, 1992). Generally, housing affordability for low-income households is primarily a result of down-payment constraint and income inadequacy. It is also partly related to high housing prices attributed to an inadequate supply, reflecting policies such as rent controls (Linneman and Megbolugbe, 1992: 388). Linneman and Megbolugbe (1992) hold that privatisation of public housing is likely to reduce the distortions that have depressed the low-income housing supply process.

Parry and Gordon (1987) assume that affordability studies are important in the upgrading and sites-and-services projects where cost recovery is involved, based on the question of how much the target groups are likely willing to spend on housing and associated facilities. They

[97] This definition was also quoted by Michael Lee in (Lee, 1985:132; 1990:64).

also assume that affordability should not be seen as a static factor but they should rather be seen as something extremely illusive and responsive to guidelines or directives from authorities. They pointed out that economists distinguish between four components of housing affordability. Figure 8.7 illustrates in detail the four components and the main factors of each component.

Figure 8.7 Affordability components
Source: Parry and Gordon (1987)



In the practice of affordability in housing projects in Nigeria, Agbola (1990) argued that government housing units were found to be outrageously expensive and were heavily subsidized. The adoption of the rule of thumb for estimating the household expenditure and the use of imported standards made the completed buildings unaffordable for the target programme beneficiaries. For those projects to be affordable they would need to be geared to the employment needs and the purchasing power of the low-income urban households (Agbola, 1990).

In the World Bank supported sites-and-services projects, a key issue in the project design was household affordability. The evaluations studies of sites-and-services projects financed by the World Bank have shown that they were affordable down to the twentieth percentile (Keare and Parris, 1982: vi). For the sites-and-services projects in Khartoum, the issue of

affordability is not considered because the allocation system does not involve any affordability limit for the beneficiary households. No credits are available to these households to finance construction of their plots. Almost all construction is done through self-finance of the household.

Rodell (1990) holds that instead of the conventional affordability version, there is a need for three versions of affordability theory as far as household expenditure on housing is concerned: spending on rent, buying a house and building a house, as he argues that expenditure patterns tend to be different in the three cases. The rent curve of renters' expenditure is almost flat over a long period of time, while in the builders' case the line is short and erratic (Rodell, 1990). Rodell (1990:80-81) argued that, based on the three versions, there is a need to differentiate between three sets of affordability coefficients: one is the renters' coefficient, second is the buyers' down payment and instalment coefficient, and finally the builders' coefficient, which he believed erratic in the sense that it is difficult to predict the coefficient in terms of how much percent from the income the household is likely to allocate for building.

Rodell (1990) pointed out that the three versions of affordability provide links between what households can afford to pay and what a business or a government can afford to invest. From these, policy makers can derive subsidy guidelines for the development of housing. He also holds that 'research using the builders' version is not likely to advance very far beyond its present', giving essentially qualitative conclusions.

In the case of sites-and-services projects in Khartoum, there is a need to deal with the builders' version of affordability, but the same problem of the difficulty of predicting the affordability coefficient still exists, even with high rates of uncertainty in the prediction of household expenditure.

Affordability is linked to the availability of a banking system providing sufficient loans that could influence the housing market, which does not exist in Khartoum. Most low-income households are not familiar with the banking system. The survey has shown that 82 percent of the household heads have no local currency bank accounts, while 13 percent have and others have both local and foreign currency accounts.

Observation shows that housing in Khartoum has not yet been viewed economically as a commodity that should have its own special market mechanism. Finished housing units for sale have a limited market and often limited ranges of choices of such types are available to purchasers. Traditional housing units for sale are often sold as vacant plots, assuming no value for buildings erected on them because these buildings are often substandard buildings or do not provide optimised living standards. This is because most buyers, who often pay in cash, are assumed to have additional financial resources that allow them to rebuild the house at a better quality.

It is probably impossible in Sudan, under the current unstable economic policies, to set specific policies that state some limits of housing affordability, such as a percentage ceiling of what part of the household income should be allocated for housing. Wide gaps of income and irregularities in the income distribution patterns, changing inflation rates, increasing construction costs, increasing housing and land prices, absence of regularity system, absence of finance institutions, widely varying housing standards and existence of poverty incidence, all characterize the affordability problem in Khartoum. Also the housing market in Sudan operates in the Islamic mode of economics, where no interest rates are allowed, which determines the need for developing a special affordability measures.

Attempting to derive some affordability indicators from the fieldwork, *Table 8.8* shows the percentage of expenditure on housing construction in Al-Azhari district. This district is the most recently built district and is still in the early stages of development. It is also part of the *Al-Engaz* housing plan. In spite of high uncertainties that lie in household income data and the difficulties in obtaining these data, results have been found to be meaningful. In the district, houses are classified as complete and incomplete, and these types are applied to three methods of income assessment: total household income, income based expenditure and income from the regular job. The table was done by dividing the money spent by the household in construction by the period of construction, and then calculating the percentage of the result from the income. The table shows that households have spent a median between 19 and 20 percent of their income in housing construction. The IQR indicator is important here as it implies whether or not the households rely only on their income. Obviously, the completed houses have been developed by finance from sources other than the household income. These are indicated by figures above 100 percent. The IQR at its lower value is a good indicator of the existence of poverty, where households spent only 6 percent of their

income on housing construction to meet their shelter need. The high medians for the income from the regular job are clear indicators of low-income levels of individuals, which reveal the high difficulty of reliance on only the income of the individual for housing finance.

Housing affordability in the developed countries is not necessarily to be adopted in Sudan. One of the features of affordability in developed countries is that it is used as a relative term to indicate cheap house price. It did not specify clearly "affordable to whom?" A different version of affordability needs to be adapted to Sudan.

Table 8.8 Monthly household expenditure on construction in Al-Azhari district
(as percentage from income)

		Completed houses	*Incomplete houses*	*All*
Total household income	***Median***	94	14	21
	IQR	(10, 641)	(6, 51)	(8, 102)
Income based on expenditure	***Median***	27	19	19
	IQR	(13, 134)	(11, 43)	(12, 45)
Income from the regular job	***Median***	71	54	63
	IQR	(14, 1225)	(13, 171)	(13, 186)

Affordability will be more valid in Sudan if variables such as household size, housing type and housing standards in terms of optimum floor space and number of rooms are incorporated into the formula. Further studies to consider these variables need to be developed. Using the ratio as a crude figure gives only general indications that suit broad policy guidelines. These figures do not suit the economists for banking credit finance, firstly because most market forces that affect affordability are fluctuant and are not fully controllable by the public sector and secondly because credit finance itself in Sudan is different from the free market system and it is not actually available for low-income households.

8.4.3. Housing finance

Housing finance has become one of the top issues in the housing policy agenda in developing countries and it is gaining growing importance. There is also a clear recognition of the importance of finance in resolving the Third World housing poverty (Merrett and Russell, 1994). The problem facing housing finance through the formal system is that formal finance systems are difficult to reform because of the difficulty of achieving a target return rates where margins are low, projects are characterized with high risks, and investment projects are carried out over long periods of time (UNCHS, 1991b; 1993). Renaud (1984) suggests that

'all housing finance systems have to reconcile three objectives, which may conflict with each other: affordability to the borrower, viability to the lender, and resource mobilization for the expansion of the system or economy as a whole' (Renaud, 1984).

Formal housing finance institutions in the developing countries in Africa and Latin America are experiencing difficult finance circumstances and operating in a difficult environment. Their programmes for extending finance to the poor are not a priority (UNCHS, 1996b). Formal housing finance institutions failed to reach the poor for several reasons:

- Ineffective land markets with ambiguous titling procedures.
- The poor are perceived by the lending institutions as being a 'high risk' group, because the principal operational objective of these institutions is to minimize risk.
- Financial transactions with the poor are administratively more expensive compared to higher-income savers and borrowers (UNCHS, 1996b; Patel and Burra, 1994).

Buckley (1999) pointed out that worldwide there is a move towards market-based competitive housing finance systems and new methods of finance are emerging. He believes that methods of finance will undergo a substantial change in future with varied forms, but he goes on to describe this change as follows (Buckley, 1999:55):

> "In some respects, the change in the housing finance system around the world is much like the replacement of an old car with a newer model. The old car will not simply work in the new environment. It is not a matter of if it will crash, but rather a matter of when. For safe driving in the new environment, a car with a better design, not just a new car, is needed. Consequently, housing finance reforms should be pursued not only because they can provide efficiency gains and trickle down distribution benefits, but because they can help avoid serious economy-wide disruptions" (Buckley, 1999:55).

It is important to differentiate between two main types of housing finance, conventional and non-conventional. Conventional housing finance relates to loans provided by the formal finance institutions. They are characterised by the large size of individual loans, a minimum income requirement, term credit, real property as collateral and a fixed schedule of debt repayment. The non-conventional finance is defined as credit for self-build processes which does not share these characteristics of conventional finance. An example of the non-conventional finance is the Rotating Savings and Credit Associations (ROSCAs) (Merrett and Russell, 1994).

For low-income urban households, the process of shelter development is, by necessity, carried out in an incremental process, as they cannot afford to build complete houses at a stroke. Incremental development is necessitated by the scarcity of housing finance loans (Mitlin, 1997). Evidence has shown that low-income households can develop their own shelter over time with minimal external financial inputs, but constraints on the supply of housing finance still forms one of the most serious barriers to the enabling approach to shelter (UNCHS, 1993). The next part discusses the forms of low-income housing finance in Khartoum.

8.4.3.1. Conventional finance and credit through Banks and public sector

The formal finance agencies in Sudan do not offer loans for the complete housing units because they require large capital values that are mostly beyond the financial capacities of the banks. However, some government departments used to offer small short-term loans equivalent to a hundred month salary on condition that the limit does not exceed SDD80,000. These loans served a tiny portion of the low-income households and were practically stopped for shortage of resources (Abdulrazzag, 1995). These were therefore not effective. Attalmannan (1999) reported that financing real estate (including housing loans) were forbidden in the banking system transactions because most of the bank deposits tend to be current accounts and in the case of increased inflation, problems arise because repayment periods are relatively long. The formal finance in Sudan is led by the Real Estate Bank, which was established in 1967. During the 1970s, the bank shared financing 18000 houses, with a total loan of 23 million Sudanese Pounds (equal to the current rates of SDD2.3 millions[98]) through small loans for construction and purchasing building materials. However, currently the Bank has shifted to financing public low-cost core houses. During the 1990s, the bank financed 1740 houses in three years in Khartoum and Atbara city north of Khartoum (Abdulrazzag, 1995).

Attalmannan (1999) outlined up a number of recommendations to improve the finance of urban projects in the central part of Khartoum that have relevance to improving the housing sector finance. The recommendations include giving more governmental support and subsidies to banks that are involved in real estate finance, involving more banks in housing finance for limited income groups, enabling public participation and community-based self-help, and improving the regulatory system for increased private sector investments.

[98] The Sudanese Pound nearly ranged between 1.25 and 1.0 Sterling Pounds in 1970s.

Recent developments in the banking system in Sudan are that small amounts and short-term loans are currently being offered for housing. Small size loans are suitable for both the finance agencies and the builders of the self-help housing who need to start construction and move into the building, if measures are available for loan recovery. An interview with a bank official has shown that approximately two-year repayable loans and a ceiling of not more than about ten million SDD (equivalent to £21,000) are currently available according to the Islamic mode of finance *(murabaha)*. Conditions for the loan include real estate collateral (plot ownership) and approximately 10 percent down payment. Obviously, such conditions suit mostly the middle to high-income households. The down payment alone for such a loan is sufficient to build a finished two-room house. The collateral condition also forms a filtering factor that excludes low-income households. Merrett and Russell (1994) argue that where collateral is a criterion of eligibility for a loan, the modest real assets of self-helpers are rarely deemed to be satisfactory. The terms of condition set by the financing system that needs a collateral form a basic constraint for low-income people who did not obtain plots in the government sites and services projects as well as squatter areas which are not in the process of upgrading.

Another constraint of housing finance for low-income households in Khartoum is the informal sector employment. The frequency of changing jobs could be taken as an indicator of the lack of job security, which is demanded by the housing finance system for loan repayment, if credits are available. The survey revealed that 71 percent of the household heads have changed their employment once or more. This factor is just as important as the ability to save part of the income. The employment structure shows that only 54 percent of the household heads have official jobs, 21 percent are self-employed, 16 percent retired. The other 9 percent are either casual or unemployed.

Based on the previously discussed finance issues, Low-income households primarily rely on their own individual sources of finance in the absence of the formal public sector supported finance sources. Obviously, the situation will continue to exist if no substantial improvement or structural adjustment is undertaken. Such conditions assert that self-help will remain one of the main shelter provision approaches that should be regulated by the public sector.

8.4.3.2. NGOs

Although there is evidence from Third World countries that suggests the contribution of the NGOs in housing finance is growing (Mitlin, 1997; Jones and Mitlin, 1999), this role has not taken an effective role in Khartoum. The government has not yet recognized the role which NGOs and CBO's can play in housing. In India, only four out of 18 NGOs involved in housing and community finance were providing housing finance (Mitlin, 1997).

The example of widely cited Grameen Bank in Bangladesh (UNCHS, 1993; 1994e; 1991a; 2000; 1996b; Hung, 1999; Merrett and Russell, 1994; Ahmed, 1998) shows that no collateral was involved. This NGO-led example has demonstrated that the "poor are bankable" (UNCHS, 1997a). Loan beneficiaries' savings, which are set in groups around five to ten, act as a guarantee with other group members being responsible for loan repayment in the case of default. The bank succeeded in providing loans for rural people. Only the poor are eligible for loans; particular concern was given to women. Loans are paid back on a weekly basis in consistency with employment and income modes (Mitlin, 1997; Hassan, 1994). The experience of the bank proved to be successful in cost recovery, but certainly needs revaluation of some aspects for more successful self-help practice and the use of traditional building materials in Bangladesh (Ahmed, 1998).

Another example was initiated in Bombay, under the auspices of the Society for Promotion of Area Resource Centres (SPARC), inspired from the concept of Grameen Bank. In this initiative women slum dwellers were organized into *Mihila Milan* (meaning "women together"), in order to form savings and credit groups attracting resources from meagre self-help earnings in the informal and low-paid sectors of the economy. The object was to consolidate the savings into a central fund large enough to attract high rates of interest in the formal financial sector, whilst at the same time being used as collateral against which to raise loans from a variety of other sources. These funds and other resources provided finance packages that were much more suited to the needs of poor households than the conventional finance institutions lending (Patel and Burra, 1994; UNCHS, 1996a).

UN/ESCWA[99] (1993: 27-28) recommendations included encouragement of housing banks, extending the formal banking system to the informal sector, reforming lending procedures,

[99] A key speaker of this symposium was John Turner. The Symposium aimed at fulfilling three objectives. First, "Promote an integrated and multi-disciplinary approach at both the micro and macro levels of low-cost housing

mobilizing public sector expenditures and household savings to improve low-cost housing delivery for the poor, targeting limited income groups, encouraging housing cooperatives, involvement of NGOs, encouraging home-based enterprises, and adapting financial experience in other countries.

In the case of Khartoum, as mentioned in the previous section and chapter six, constraints of the involvement of NGOs in housing are partially a result of the poor operation of the economy and the wide scale poverty, partially due to the lack of enabling policies and partially due to the lack of public awareness of these roles. Evidence discussed before has shown that it is possible that NGOs can effectively participate in housing finance.

8.4.3.3. ROSCAs

Another form of non-conventional finance, not necessarily only for housing, is the Rotating Savings and Credit Associations termed as (ROSCAs). It is a wide spread phenomenon especially in Africa, Asia, Caribbean, Middle East and among early immigrants in Europe and USA, representing between 8 to 10 percent of the GDP in Ethiopia and half of the national savings in Cameroon (Besley, et. al, 1993). It is a method of savings where a group of individuals gather in a group of meetings, in each every member contributes a 'pot' that is allocated to each member in every meeting, by investing on social capital. It is a method of saving for purchasing goods where there is no access to credit finance (Besley, et. al, 1993). ROSCAs are important sources of finance for poor people where no credit finance is available. In the previous section we have seen how governments could not develop finance sources for poor people through formal finance systems. ROSCAs as one of the informal credit market types, proved to be an important source of financial capital in countries with underdeveloped banking sectors, which has long been regarded as predatory and insignificant (Hung, 1999). This is likely to be the case in Sudan. Hung (1999), argues that ROSCAs are complementary in credit risk management to the formal financial sector in countries with poor banking systems. Besley, et al., 1993 argued that ROSCAs can assist members to raise big

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delivery, ranging from construction techniques, to policy and legislation, to considerations for environmental, social and economic issues, at the local, national and regional levels". Second, "Expose people from a wide range of disciplines and backgrounds to different perspectives on the subject; provide them with the opportunity to exchange knowledge, experience and technical know-how and to formulate joint activities capitalizing on the transfer of expertise among the countries of the region". Finally, "Strengthen information dissemination and awareness among public officials and practitioners of the complex issues involved in low-cost housing delivery and of the possibilities for adapting appropriate innovative techniques and means for incorporating them into national and sectoral development strategies."

sums sooner than if they saved by themselves. A differentiation should be made between informal and formal ROSCAs. The first is regarded as a kind of micro-finance often held up by NGOs, while the second is carried out by some commercial banks and car dealers (Schreiner, 1999:3). In Argentina, Schreiner (1999:1) argued that net savers earn lower rates with formal ROSCAs than with bank accounts, but net borrowers pay lower rates. He also pointed out that formal ROSCAs increase access to small loans and savings services for the un-banked in Argentina, while NGOs probably cannot do much to promote them.

In Khartoum, ROSCAs are common among women in low-income areas and are observed among individuals who regularly receive their income on monthly basis in the formal sector, weekly basis in the informal sector and casual and unskilled labour markets. Klonner (2003) argues that ROSCAs are common among high-income as well as low-income households. Individuals in Khartoum participate in ROSCAs if they intend to buy relatively expensive durable goods or spend it for a service, such as paying for medication or education. ROSCAs in housing in Khartoum are not suitable for buying a complete housing unit, or a piece of land as the costs of these do not cope with money saved through ROSCAs, but they can partially support financing these items. ROSCAs are more suitable for buying large building material items such roof materials for rooms, doors and windows or building a room. However, interviews with a few number of households in the low-income areas revealed that almost all of them have shared a ROSCA at some stage in the process of housing, which often takes a long time. Groups of ROSCAs are mostly formed among relatives, neighbours, friends, and work mates based on personal linkages with each other.

The monthly median income of the household is SDD30,000, and the propensity of expenditure on housing has been previously estimated as 20 percent, equal to an annual expenditure on housing of SDD6,000. This means a house that costs SDD265,000 with 48 square metres floor area, if financed through ROSCAs, would be repaid in approximately 44 months, or roughly four years. This makes most of the housing construction components such as the roof and openings fall approximately within the finance limits of the ROSCAs.

The problem of ROSCAs in the new housing areas such as Al-Azhari district is that income levels are lower than old areas, and the expenditure on some items such as transport, utilities and services are higher than old areas, a few percentage of households have moved in, which all create a difficult environment for ROSCAs, particularly because the majority are in need

of increasing the roofed area. However, ROSCAs in such areas can obviously constitute an important, if not a primary, method of savings in the absence of credit finance for these people. It also conforms and suits the self-help housing approach where people incrementally build their houses. ROSCAs also are accepted as a method of savings as no interests are involved which makes it complies with the Islamic modes of finance. The relatively short term of ROSCAs, which is often less than one year, makes it unaffected by inflation and market prices fluctuations. To conclude, obviously ROSCAs can play an effective role in the development of housing. The government's attitude towards ROSCAs is that they should be promoted and encouraged by organizing, regularizing and motivating the NGOs and the CBOs involved.

8.4.3.4. Self-finance through additional income and self-help

The issues of the additional jobs, rents and home-based enterprises are embedded in the paradigm of self-help, in the controversy of whether households would do better to exploit the surplus time in self-help housing activities or to utilize their time in an additional income generating activity, then hire contractors to develop their houses. The issue is challenged by the availability of no spare time, particularly the poor who use any available time pursuing their livelihoods. UNCHS/ILO (1995: XX) and Tipple (1994b) pointed out that instead of addressing the householder and the house interface, attention should be focused on the contractor/house and the householder/contractor interfaces, ensuring that the housing supply inputs should be geared towards hiring small-scale contractors and adopting labour-intensive methods. Practically, we may need to consider both because most of the labour used by the contractor is from the poor sectors themselves. Some householders might have enough capacities to develop their own houses and for others it might be more suitable to get involved in additional income generating activity to hire small-scale contractors. For policy makers it would be more suitable if the householders are divided into these two categories, and then tailor the policies accordingly. In the context of Latin America, Ferguson and Navarrete (2003) assume that there are three types of programmes, based on the experience of Latin America that would best suit progressive housing development in other developing regions:

(a) 'housing micro-finance;

(b) low/moderate-income land development; and

(c) direct demand subsidies.'

Under the prevailing poverty incidence in the low-income areas in Khartoum personal savings from regular jobs constitute a minor field of finance. One of the characteristics of these low-income districts is that household heads involved in additional jobs to increase their income constitute as low as 13 percent, most of them are in the public sector[100]. The median monthly income from the additional job is SDD20,000, exceeding the income from the regular job, equivalent to 118 percent of the regular job. This is probably normal because employers often offer double payment for overtime. In the whole sample, income from the additional jobs constituted only 14 percent of the income from the regular job. In such cases where no sufficient additional jobs are available for more income generation, it would be more rational to encourage householders to opt for self-help housing.

8.4.3.5. Donations and windfall incomes

Windfall profits have been used to denote profits gained from the increase of land values, and have been viewed as a phenomenon that should be prevented by enforcing betterment levies and taxes (UNCHS, 1991b; 1993) Unlike the previously mentioned types of finance this is greatly unpredictable though it constitutes an important source of finance, and therefore it would be difficult to assess its influence on the housing supply process. In the survey reliance on the memory of the respondents to guess how much money they received as a donation or a windfall was not practical. Sources are numerous, donations from relatives, remittances, particularly from expatriates, is the primarily source.

Abdulrazzag (2001:11-12) identified the housing finance problems in Sudan as follows:

1. Escalating construction costs and building materials prices.
2. Low purchasing power.
3. Increasing inflation rates and the decreasing exchange currency rates.
4. Low public expenditure on housing.
5. The limited finance capabilities of the formal finance institutions.

8.5 Tenure-based analysis[101]

This part of the chapter analyses the housing supply process by investigating the behaviour of the owners and the renters and their role. The section tries to raise the relevant issues based in

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[100] The survey have shown 19 percent in the households in the public sector are involved in additional jobs and only 9 percent of household in the private sector and involved in additional jobs.

101 The methodology adopted here is adapted from the methodology used in a number of studies about Ghana in (Tipple et al., 1999), (Tipple et al., 1998), (Tipple et al., 1997), on housing supply in Ghana. The author reviewed most of these studies at later stages of the research program.

literature and highlights particular characteristics of the owner-occupier and the rentals in Khartoum through the field survey results analysis.

The tenure-based classification of occupancy takes various forms. Payne (2000) identified ten forms of tenure

- Pavement dweller, sleep in streets, doorways, etc. (homeless).
- Squatter tenant.
- Squatter 'owners' un-regularized.
- Tenants unauthorized subdivision.
- Squatter 'owners' regularized.
- Owner unauthorized subdivision.
- Legal owner unauthorized construction.
- Tenant with contract.
- Leaseholder.
- Freeholder

No recent figures were found about the tenure types for the whole of Greater Khartoum. However, El-Agraa and Shaddad (1988:98) found that in 1987 the percentage of rentals in urban areas in Sudan was 18.6 percent. *Table 8.9* illustrates the results of a hundred percent (216 plots) sample survey of Block 17, As-Sahafa carried out within this thesis. It indicates that 14 percent of the households are renters, and 12 percent of the plots (houses) include a rental household.

Table 8.9 Tenure breakdown of Block 17 As-Sahafa district - Khartoum

	Number of S&S plots	*%age of plots*	*%age of households*	*Tenure (total hh)*
Owner-occupier Monogamous household	88	40.7	35.4	86% Owners
Owner-occupier renting to one household	18	8.3	14.4	
Owner-occupier renting to 3 household	2	1	3.2	
Owner-occupier extended household	82	38	33	
Renter - Whole house	18	8.3	7.2	14% Renters
Renters - Two households	7	3.2	5.3	
Renters - four households	1	0.4	1.5	
Total	216	100%	100%	100%

The government sites-and-services projects in Khartoum play an important role in converting the beneficiaries from renters to owner-occupiers. In later stages, these households might become housing suppliers when they can afford to build more rooms for rent. These projects also clearly affect the demand and supply of the rental housing market. They also affect the socio-economic characteristics of the old and new projects, particularly if the number of the

supplied plots is large, which is likely to be the case in *Al-Engaz* housing plan. In the early stages of the new project, the supply of the rental accommodation increases in the old areas as a remarkable number of households who obtained plots in the new projects move to live in the new areas. New societies are often created in the new districts.

8.5.1. Owner-occupancy and rental housing

8.5.1.1. Owner-occupation

Owner-occupation represents the optimum security of tenure for the residents where most households would like to fulfil. It is a highly desired tenure choice among the urban poor in third world cities. In developed countries, for example in the Australia, it is estimated that 90 percent of the population attain owner-occupier sometime in life (Bourassa, 1995: 1163). Owner-occupier mode of tenure is linked with incremental and self-help housing (Gilbert, 1999). This is based on the works of John Turner whose contention was that the urban poor must be able to make their own decisions on their shelter issues. Turner also believed that the housing problem of these groups could be solved through self-help, mutual aid, core housing and progressive development (Turner, 1976b; Hansen and Williams, 1987; Harris, 1998b). These modes clearly operate better where owner-occupiers exist. Where security of tenure exists self-helpers will be able to build their houses. Hansen and Williams (1987) and Tipple and Willis (1991b) argue that increased owner-occupier generates increased rental housing. Gilbert (1999) believes that owner-occupancy is desirable, but it must be seen as more than purely living in the same house forever. Solutions should encourage poor households to buy and sell plots for increased income generation and mobility. Conditions in some of the developing countries show that houses are seldom bought or sold (Tipple, 1997: 114). *Table 8.9* shows that owner-occupier households in Al Sahafa old district total 86 percent. This figure gives a clear picture of the housing tenure in Khartoum's formal housing market. The tenure in the old unauthorized settlements does not differ greatly, and the figure is slightly greater. Owner-occupier mode, in the case of Khartoum where no mortgage finance is available, is also related to wealth generation through selling, renting out rooms as shops or residential and creation of some home-based enterprises.

8.5.1.2. Rental housing

Renting housing, besides being viewed as a kind of tenure, is also a major income generating activity (UN-HABITAT, 2003d; Strassmann, 1987; Tipple, 1994a: 600; 1996). Latest estimates show that half of the world's population live in rental housing (UN-HABITAT,

2003d). Encouraging production of rental housing therefore, through public and private partnership, is one of the most important aspects in the development of enabling shelter strategies (UNCHS, 1993). To improve the housing land market performance it is necessary to liberalize the housing market and eliminate the regulatory constraints, particularly for private landlords who are the main suppliers of rent accommodation in Sudan. Rental housing remains an important component in the housing supply. UNCHS/ILO (1995) gave a clear summary of what Hansen and Williams (1987) and Tipple and Willis (1991b) argued on owner-occupier and rental housing:

> "The growth in the supply of rental housing frequently depends on the growth of owner-occupied housing often at the lower end of the market. As most cities in the developing world are likely to double and triple in size over the next two or three decades, rental markets will assume an increasing share of the housing supply. Policies which will encourage owners to rent out rooms, and which will encourage ownership by the expectation of some rental income, will be a vital part of a government's arsenal of enabling policies" (UNCHS/ILO, 1995:141).

Rental income in Tanzania is important for 2 per cent of urban households (UNCHS, 2001b). In Sudan there are too many constraints imposed on the housing rent market. The rent controls in the rent control law of 1953, modified in 1972 in Sudan which was again replaced by the Rent Control Act of 1982 with no radical modifications, imposes a number of limitations on the real estate rent market forming a real constraint that impedes the market efficiency and income generation from the renting. There is a conflict between the fundamental issue of the concept of free market and the limitations imposed by the rent control law. The rental market operates better in a *lassies-faire* market environment with a limited intervention by the government. The fundamental issue in the rental market is that it should be left to the contract terms between the landlord and the renter based on a free market economy. At the same time, the law states that the renter should not be evicted before completing seven years, except according to a judicial verdict.

The rent law states that for buildings which have been rented after 1953 the monthly rent value should be equal to 12 percent of the construction costs plus 6 percent of the land value. Implementing the law is difficult due to the following:

1. Difficulty of frequent changing of the rent agreement or contract.
2. Ever changing or increasing inflation rates reduces the real monetary value of the rent, and the difficulty of changing the rent contract to cope with the inflation rates.
3. Fixing the rent value conflicts with the free market concept.

4. No consideration was made for any arising external factors that could influence the rent value.
5. The law focuses on the social benefits of rents and ignores the economic benefits that can influence the whole community, such as the improved housing market and hence increased supply of housing.
6. The rent is usually associated with availability and vacancies, which motivates the population mobility. As the vacancy rates are generally low in low-income housing areas, finding rental accommodation will be difficult. Moreover, the duration of stay of the renter becomes longer. Therefore, it could be justified that the eviction within seven years goes in conformity with the difficulty of obtaining a new alternative residence. Such conditions have a negative consequence in the rental market in that landlords become reluctant to let their vacant accommodations unless enough eviction right is secured in the new contract. In the light of the huge increase in the supply of urban housing land during the last decade, the housing supply has increased to some extent. Therefore the justification becomes less valid.

Rentals eviction within not less than seven years in the Rents Law in Sudan has been justified by the legislator as being within local conventions. Laws should be either based on *Sharia* or convention that does not conflict with the *Sharia*. The Rents Law did not differentiate between the housing that has originally been built for rent and the accommodation that has temporarily been rented and the extensions that have been built for generating additional income in low-income housing areas. The Rents Law seems to back the renter against the landlord. The law ignores the probability of the income changes of the renter within the seven years. He could afford to pay for the rent elsewhere or could afford to build his own house. On the other hand, the landlord could become in severe need of his own rented house to accommodate his family members and his newly married sons or daughters or to expand due to the increase of the household size. A clear bias of the law against landlords could be observed. The government should intervene only to realize a balance within the government's social and economic objectives.

The rent control law of Sudan was primarily designed to resolve the conflicts that arise between the tenants and the landlords. The law focuses on eviction issues and the rent value assessment. The law protects the tenants. Too many restrictions are imposed upon the landlords who are the main investors in the housing sector in Sudan (El-Agraa and Shaddad,

1988: 79). Such situations impose restrictions upon housing supply and the housing market. Rent controls are often designed to protect tenants and to tax landlords (Rakodi, 1995b: 802). Low rents often caused by rent controls deter maintenance and reduces investment in new housing. Legislations of rent controls are often designed to regulate the relationship between the tenants and the landlords, particularly protecting tenants against forced evictions (Rakodi, 1995b). Evidence has shown that in the case of Ghana, rent control is inefficient in the sense that costs imposed by the rent controls on the landlords are not all captured by the tenants and that rent control costs the landlords more than the net benefit given to the tenants (Willis et al., 1990).

8.5.2. Tenure-based occupancy analysis

The survey considered the tenure-based classification of the households into the two basic types; owners and renters. The owners included four groups, owners planning to extend, i.e. building additional spaces; owners not intending to extend; owners renting part of their house; and owners who have recently built their house or their house is still under the process of construction. This last group is mainly based in Al-Azhari district. Renters fall into two types, renters who own vacant plots somewhere in the city, and the renters who do not own plots. At the time of the study there were a large number of rental households who were given plots in the sites-and-services project of 1990, but had not yet started to build their house. The study will therefore examine this group, as well as the other group of renters who do not have plots. The selection of this classification allows analysing the housing supply process generally and for the particular area of Khartoum.

8.5.2.1. Habitable rooms by tenure

Table 8.10 shows a difference between the number of habitable rooms of the renters and the owners, which is expected because most landlords allocate few rooms for rent while occupying the largest part. The mean, the median, and the IQR at their low and high values are consistent because both owners and renters can live in a unit of one or two rooms as indicated by the figures. The gap could also be a result of the relatively high rent rates, which force renters to take fewer rooms. Also *Table 8.15* shows that the renters' income is generally lower than the owners'. These results do not conform to results of the early works of (Malpezzi et al., 1990; Tipple and Willis, 1991b), on their study of Kumasi in Ghana.

The surveyed renters with absentee landlords were unexpectedly 62 percent, which might indicate the availability of quite a large number of double home ownership in the sites-and-

services projects. This figure is an indicator of the percentage of sites-and-services plots resold by the original allottees. This is also supported by that some 14 percent of the owners in the field survey have reported that they own another house, mostly in the old areas.

The room occupancy by tenure (*Table 8.10*) has shown no critical variations between the owners and renters, which imply that smaller households rent fewer rooms and larger households rent more rooms, but generally, most renter households are small. The median renters household size is 5 and median owner household size is 6.5.

Table 8.10 Number of habitable rooms and room occupancy rate by tenure

		Owners	*Renters*	*All Types*
Number of habitable rooms	***Mean***	3.38	2.55	**3.11**
	Median	3	2	**3**
	IQR	(2, 4)	(2, 3)	**(2, 4)**
Occupancy rate ***(persons per room)***	***Mean***	2.51	2.53	**2.53**
	Median	2	2.33	**2**
	IQR	(1.6, 3)	(1.7, 3)	**(1.6, 3)**

Looking in more detail at the tenure types (*Table 8.11*), more deductions can be made about the habitable rooms. The owners intending to extend unexpectedly have more rooms than those who are not intending to extend. Those not extending might imply either they have reached a satisfactory level of number of rooms (they have a mean of 3.53 rooms per housing unit), or cannot afford to extend or have lost the motive for any other reason. This figure (mean 3.53 figure, rounded to 4) could be used as an indicator if the number of rooms is to be optimised or standardized for the traditional houses in Khartoum. This figure is consistent to plots sizes more than 400 sq metres. Generally, if alternative designs and construction types are adopted more rooms can be added.

Table 8.11 Number of habitable rooms in the house by tenure types

	Owners extending	*Owners not extending*	*Owners renting*	*Owners newly building*	*Renters plot owners*	*Renters non-plot owners*	*All Types*
Mean	3.94	3.53	3.83	2.54	2.71	2.42	**3.11**
Median	4	3	4	2	3	2	**3**
IQR	(3, 5)	(2, 4)	(3, 4.3)	(2, 3)	(2, 4)	(1.8, 3)	**(2, 4)**

In *Table 8.11* the mean number of rooms for the two types of renters and the newly built owners in al-Azhari district are low. The mean number of rooms for the renters who own plots is slightly higher than the renters who do not own plots. This seems to be normal because the majority obtained these plots through the sites-and-services plots allocation procedures that need to have a large number of dependants to qualify for the plot.

Accordingly, the two types of renters may need to build additional rooms to complete their houses while owners may not need to build more rooms. This argument is supported by the high room occupancy rate of the renters in *Table 8.10*. The low mean number of habitable rooms in Al-Azhari district (2.54) represented by the newly built tenure type is also normal because the majority of the households are in the early stages of construction, which is predominantly an incremental development and self-help that takes a long time. This argument is also supported by the large household size (7.11) and the largest room occupancy (3.2 persons per room) in *Table 8.12* and *Table 8.10* respectively.

It is important to draw some conclusions from the number of rooms for the different types of owners who are the main suppliers of rental accommodation. Generally the basic principle is that if owners are encouraged to build more rooms, more rent accommodation will be generated hence the supply will be increased. However, the analysis has shown that a great opportunity exists to increase the rent accommodation generated by the owners, as the number of rooms per plot is generally low. Adopting effective enabling strategies help in fulfilling this objective.

Table 8.12 shows that, on the whole, the mean household size in low-income districts in Khartoum is large. The mean household size of the renters owning vacant plots (6.4) is higher than the non-plot owners (4.8). Most households in this group have recently obtained plots in the government sites-and-services projects through the allocation system but they have not yet started construction, which explains why their household size is large. The question is why these groups have not yet started construction although they have received these vacant plots in the new housing projects. Reasons are lack of finance, the lack of services in the new districts and certainly the costs and benefits trade off between moving and staying in the old district. The mean household size of the owners renting out rooms is also small (5.7), which might indicate that some households tend to rent out rooms to increase their income, to meet the living expenses of the household, in spite of their large household size that might be in need for these rooms to be accommodated.

Table 8.12 Household size by tenure

	Owners extending	*Owners not extending*	*Owners renting*	*Owners newly building*	*Renters plot owners*	*Renters non-plot owners*	*All Types*
Mean	7.81	7.33	5.72	7.11	6.41	4.84	6.47
Median	8	7	6	7	6	4.5	6
IQR	(6, 9)	(6, 9)	(4.5, 7)	(5.5, 8)	(5, 7)	(2.8, 7)	(5, 8)

In *Table 8.13* the room occupancy for the owners of recently built houses and the renters owning a plot is higher than other tenure types, with medians of 3 and 2.5 and a mean of 3.2 and 2.92 respectively). These figures are justified by groups having recently obtained their plots in the housing project through the allocation system that qualifies the beneficiaries by the point scores determined the household size. However, all the figures are ostensibly high, and might be regarded as indicators of housing poverty. UN-HABITAT (2003d) suggests that occupancy rates of two persons per room or higher is an indicator of overcrowding.

Table 8.13 Room occupancy by tenure (persons per room)

	Owners extending	*Owners not extending*	*Owners renting*	*Owners newly building*	*Renters plot owners*	*Renters non-plot owners*	*All Types*
Mean	2.2	2.6	1.7	3.2	2.9	2.4	**2.53**
Median	2	2.4	1.7	3	2.5	2	**2**
IQR	(1, 2.7)	(1.7, 3.1)	(1.3, 2)	(2, 4)	(1.7, 3.8)	(1.3, 3)	**(1.6, 3)**

Table 8.14 Household age by tenure

	Owners extending	*Owners not extending*	*Owners renting*	*Owners newly building*	*Renters plot owners*	*Renters non-plot owners*	*All Types*
Mean	59	52.8	48.2	53.9	45.5	45.5	**50.3**
Median	55.5	52	50	57	43.5	42.5	**50**
IQR	(50, 66)	(43, 60)	(40, 55)	(45, 64)	(40, 52)	(35, 56)	**(40, 60)**

8.5.3. Income by tenure

The issue of income by district has been discussed previously in this chapter, but this section analyses the income in relation to the tenure categories. In this analysis, the household reported income has been used instead of the income-based on expenditure.

Table 8.15, on the whole depicts no significant difference between the owners and the renters in general, except at the IQR. Nevertheless, some remarkable differences could be observed when looking at the detailed classification of tenure types in

Table *8.16*. Variations could be observed at the mean monthly income while no significant variations occur at the median. The renters not owning vacant plots are those with the least mean monthly income followed by the owners renting rooms. This result is different from what has been found by Tipple and Willis (1992) in Ghana, where incomes of both renters and owners are similar and even their housing conditions were also similar, but controlled rents were lower (Tipple and Willis, 1992: 71). Unlike the two cases, Gilbert (1983) assumed

that it is a very common argument in the literature on tenure in developed countries that the income of the renter householders are generally lower than the those for home owners. However he suggested that renters tend to be amongst the poorer and more disadvantaged members of the urban communities, based on the bidding process where the better-off occupy the owner-occupied housing and the poorer are unable to occupy such houses.

Table 8.15 Monthly household reported income by tenure (thousand Sudanese Dinars)

	Owners	*Renters*	*All Types*
Mean	45	46	45
Median	30	27	30
IQR	(15, 60)	(15, 45)	(15, 50)

Table 8.16 Monthly household reported income by tenure (thousand Sudanese Dinars)

	Owners extending	*Owners not extending*	*Owners renting*	*Owners newly building*	*Renters plot owners*	*Renters non-plot owners*	*All Types*
Mean	51	48	37	52	63	27	45
Median	32	25	28	37	30	20	30
IQR	(10, 80)	(10, 79)	(19, 60)	(16, 60)	(15, 49)	(13, 39)	(15, 50)

8.5.4. Rents

The rents have shown some discrepancies that make any judgments on their implications uncertain, except that a general rule for accommodation rent could be observed. The rent controls and the inflation discussed earlier might have an effect on the fluctuating values of rent. Despite these values the correlation between the increase in the rent and the increase in the number of rooms was significant at 0.599 by the Pearson's method. The recently rented accommodation usually reflects a market value with reasonable feasibility to the landlord but as time passes these rents are affected by inflation and the general increase in the land and real estate prices, which in turn mean rents no longer cope with the market values. The landlord then asks for rent increases and therefore conflicts arise between the landlords and the tenant.

Table 8.17 Rent by number of rooms rented in thousand Sudanese Dinars

(£ 1= SDD480)

	Single room	*2 rooms*	*3 rooms*	*4 rooms*	*5 rooms*	*All renters*
Mean	8.3	12.6	9	13.9	15.6	11.4
Median	6.5	12	6.3	15	13	10
IQR	(5, 11.5)	(6, 17.5)	(5, 13.5)	(5.8, 20)	(7.5, 25)	(5, 15)

Rent-to-income ratios and house price to income ratios have been used extensively in literature as an important measure used in the assessment of the effective demand for housing and affordability (Mayo, 1987; Malpezzi, 1990; UNCHS, 1997a). Earlier, Burns and Grebler (1977) indicated that, however, when the general level of development increases as measured by the GNP per capita, it appears that the average fraction of income spent on housing also increases (Mayo: 1987).

Table 8.18 illustrates the rent–to-income ratios for the surveyed households. In the first column the ratio has been obtained by dividing the rent by the income based on expenditures plus the rent, giving a mean of 0.21. The second column illustrates the rent to income ratios based on income reported by the household, giving a median of 0.47. A large difference could be observed between the two ratios. However, the first seems to be unrealistic, because we found before a large difference between the two types of income. The figures in the second column reflect the real problem of the high rents although the reported income is often lower than the real income. Examples of affordability have shown that rent-to-income ratios should be kept as 25 percent of the income levels. The problem with high rent-to-income ratios in Khartoum is that rents generally tend to cope with the market value, while income levels particularly in the public sector are low. The gap is further exacerbated because the reported income is lower than the real received income. Rents should be left to the market mechanism with no government intervention. Example in Nigeria, rent controls, which has been regarded as a main solution to the housing problem applied for decades has shown that it has failed to achieve the desired objectives (UNCHS, 1994a).

Table 8.18 Rent to income ratios

	Rent to income ratio *(Income based on expenditures)*	***Rent to income ratio*** *(Income reported by the household)*
Mean	0.21	0.72
Median	0.2	0.47
IQR	(0.14, 0.28)	(0.24, 0.81)

Chapter 9

Discussions, Conclusions and Recommendations

Chapter 9 Discussions, conclusions and recommendations

9.1 Introduction

This chapter consists of four parts; the first is a discussion of salient housing supply background issues taking into consideration that the housing problem should be viewed within the context of some policy issues that might be regarded as a solution for the complex nature of a third world country like Sudan. These issues, however, were driven in some way by the discussions of the basic topics of the thesis theme and they are also based in the literature and the Habitat Agenda as prerequisites that enhance balanced socio-economic development in general and the housing supply in particular. The second and third parts highlight the specific findings of the thesis, trying to answer the main question of the thesis; what can be done to improve the role of the public sector in Khartoum and what can be done to increase the housing supply. These parts include results from the analysis of the different issues outlined in the thesis that are part of the major topic, which is the housing supply process in Khartoum and the role of the public sector. The fourth part puts forward some recommendations for policy and practice, as well as recommendations for further research.

9.2 Discussions of broad housing supply backdrop issues

9.2.1. The need for effective housing policies and strategies

The thesis has shown the absence of a clear national shelter strategy with clear objectives. Van Huyck (1987) argued that a written national shelter policy approved by the highest authorities is an important part of the country's development. Post (1996: 128) pointed out that there has never been an attempt in Sudan's history to formulate, for example, a national urbanization plan or policy. In Sudan budget planning is set on an annual basis as there are no short-term socio-economic plans, for example five-year national socio-economic development plans, by which plans for all sectors could be established including settlement development and housing, not only at the local level, but also at the regional and national levels. In order to establish effective housing policies by the public sector some old-fashioned visions in housing policies in Khartoum should be rectified. It has been pointed out that urbanization is a driving force for most urban problems in the developing countries. The government in Khartoum is clearly unable to cope with the population increase, which requires housing provision, infrastructure, including water supply, energy, sanitation and solid waste disposal, and community facilities. Relying on old policy solutions to reduce migration alone will not solve the housing problem. Such old policy solutions, in case they are adopted, should go parallel

with other policies to cope with the population increase. Chakrabarty (2001: 331) believes that urban professionals can reduce the negative effects of urbanization and make significant improvement to the urban living environment by adopting an 'integrated management approach'. In fact no clear or declared comprehensive policies that deal with national urbanization policies or national shelter strategies in Sudan with specified objectives were ever developed or adopted. Most solutions tended to be programmes with objectives of providing a quantified number of plots of sites and services, or upgrading. Officials are confronted with a challenge to cope with the rapid population increase. Old practises of fighting or reducing rural-urban migration, forced population displacement, negative viewpoint of urbanization, and forced eviction do not conform to the spirit of Habitat Agenda. Cities should be viewed as cores of national development and major contributors to economic development. Solutions to the shelter problem in Khartoum are characterised by piecemeal solutions. 'Do-nothing' policies by the housing authorities in aspects of enabling housing markets to work and scaling up the housing supply is likely to be the case in the housing sector in Khartoum. By 'do-nothing', it does not mean *laissez-faire*, as this is desirable for the housing markets to work better in all cases, but not erring too far in the direction of *laissez-faire* because the poor may be excluded from essential housing supply inputs such as land and finance (UNCHS, 1993; 2001b: 67). The housing problem is further exacerbated by the incomprehensive and non-policy-based plots allocation system, while the government could play an effective role through enabling strategies to improve the performance of the housing sector. Human settlements represent the core of the economic growth for the different countries, and can play an important role in development. The good governance and effective public/private partnership in those settlements can help eliminate poverty and reduce inequalities and they can also play a role as agents of social justice (UNCHS, 2001a).

The city of Khartoum is playing an important role in Sudan as a primate city. The primacy caused by the large gap of services and urban functions between Khartoum and the other centres in the administrative, services and industrial roles it is playing, makes the city attractive to rural-urban migration. These roles have further increased the burden on the city in terms of increased demand for housing and housing land, pressure on the existing services, more demand for infrastructures, and community facilities.

Doan (1995) found a weaker than expected relation between urban primacy and the adoption of national spatial development strategy. He highlighted two contextual factors, viz. stability

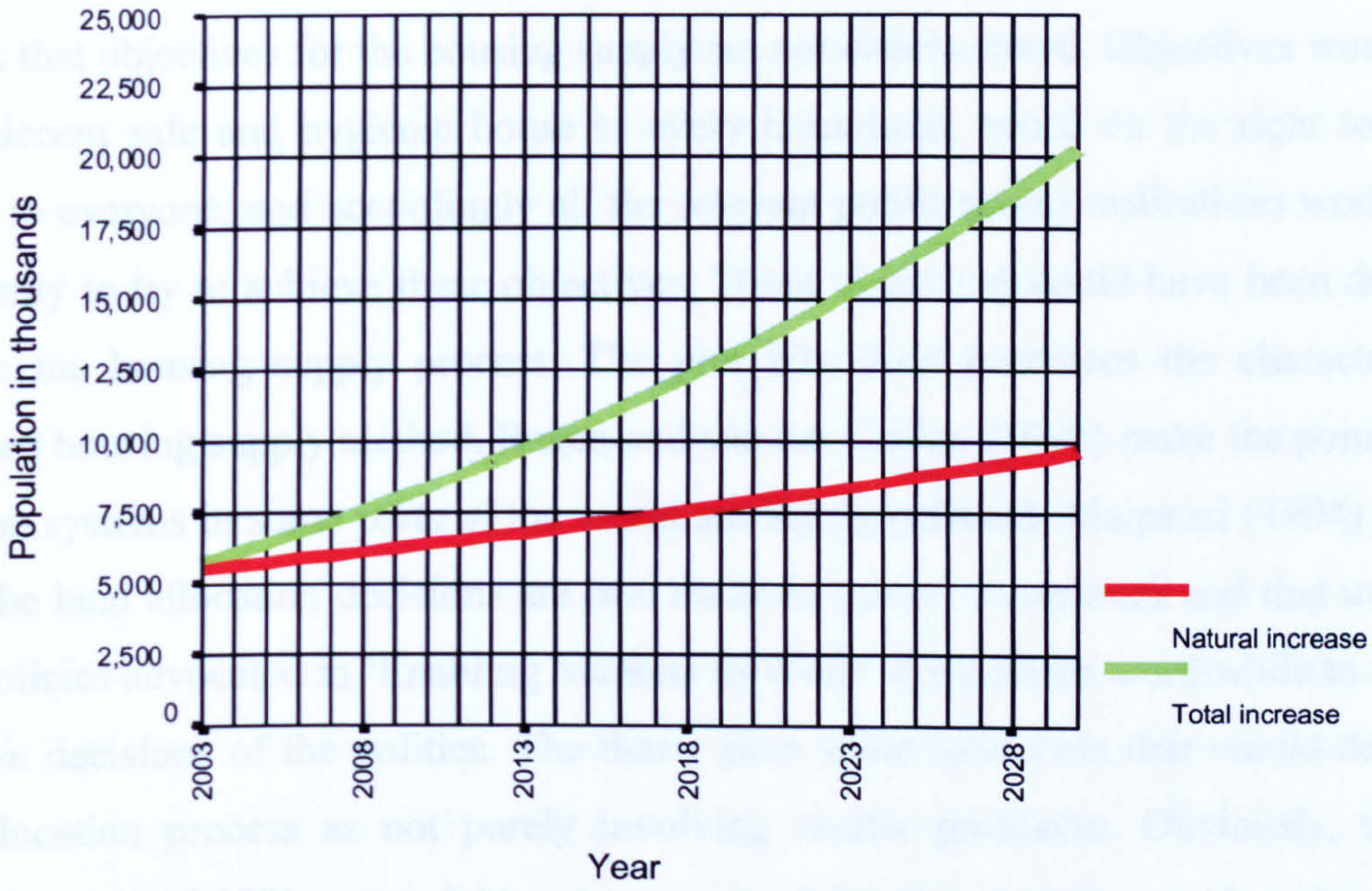
and autonomy of the government, as more effective than adopting these strategies, concluding that these policies are likely to be adopted when a government is stable. Doan (1995) also maintains that primacy is necessary but not a sufficient condition for adopting specific national spatial settlement policies. Hardoy and Satterthwaite (1988) hold that the integration of small and intermediate urban centres into the national development plans of the Third World countries is necessary to induce national development. They hold that government fiscal and macro-economic policies, sectoral priorities, combined with weak and ineffective local government often encourage new public and private productive investments to concentrate in a few (or indeed just one) large city, such as the case of Khartoum.

The main generator of demand for housing in Khartoum is, therefore, its attractiveness to rural-urban migration. While the annual natural population increase for Greater Khartoum is only 2 percent, the population increase caused by migration is around 5 percent for the period between 1956 and 1996, giving a total rate of increase of 7 percent (Mahmood and Ali, 1999). If the same rates continue in the future, which is likely to be the case, the housing problem will be further exacerbated. Estimates of population based on the projection done for this thesis, based on the lowest increase scenario of 6.1 percent fixed annual increase (Awad-El-Kareem et al., 1999), and the base population of 5.405 millions in the year 2002, shows that the population in Khartoum by 2015 will be 10.2 millions, i.e., approximately double the current population. *Figure 9.1* shows a population projection done by the author based on the 2.1 percent natural increase and 4 percent[102] fixed annual migration increase. Obviously, this implies the need for about double the current housing stock if the same policies and housing standards continue, assuming that the current housing stock is adequate. This gives a gloomy picture about the housing problem in a decade; let alone the need for other services and infrastructure and urban housing land coverage. Based on an average household size of 5.6 there will be a demand for another one million housing units by the year 2015, only to meet the overall urban population increase of Khartoum. This entails a need to shelter a mean of 60,000 households annually. Options and policies for the public sector to increase the housing supply to meet this demand, which this thesis is arguing for, will be highlighted in part two of this chapter.

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[102] This figure is assumed by the author to be an average rate for the whole plan period. It has been chosen to be lower than the current estimates to consider the tendency of the migration rates to decrease, which is likely to be the case. Common knowledge figures of migration rates in Khartoum show even higher estimates than the 5% reported by (Mahmood and Ali, 1999).

Figure 9.1 Population projection of Khartoum



The thesis has shown that two types of housing approaches in Khartoum are of overriding importance; sites-and-services and squatter upgrading. Both are arms of self-help housing; the principal option in housing construction for Khartoum. However, the focus was on the government sites-and-services as explained in chapter one. Housing in the case of Sudan is viewed as a 'social good' not a 'productive good'. Tipple (1994a) argues that whenever housing is regarded as a 'social good' making profit from housing is regarded as exploitive. Evidence is found in three areas, the method and allocation criteria, the taxes, and the regulatory system of rental housing. The analysis of these allocation indices did not draw any conclusion of existence of clearly drawn policies and strategies. The whole process is rather an ad hoc based process of land allocation.

In discussing the plots allocation system a number of conclusions could be drawn. First, the criteria and the whole process tended to be a rationing-based method, with no mechanism to achieve a real housing supply, in terms of increased roofed space. The allocation system did not specify who exactly should be the beneficiaries of the housing plots. The point system has, therefore, caused filtering out of small households and did not consider the household affordability.

Second, in discussing the plots allocation system many important questions that cast doubt on the objectives behind the system arise. The allocation system dictates that it is a rationing method but also tend to be more politicised. One of the problems with the housing sector in Sudan is that objectives for the housing supply are not clearly stated. Objectives would clearly state a decent safe and hygienic house to every household, based on the right to adequate housing to everyone, and accordingly all the relevant public sector institutions work together consistently to try to achieve these objectives. These objectives could have been designed to motivate the housing supply process. The plot allocation possesses the characteristics of politicised housing supply method. Baken and van der Linden (1993) make the point that land allocation systems in some parts of the world are highly political. Malpezzi (1994) holds that not all the land allocation decisions are best made in market framework and that under many of the policies advocated in 'Enabling Markets to Work' it would be worthwhile to reduce the allocative decisions of the politics. The thesis gave some indicators that would describe the plots allocation process as not purely involving shelter provision. Obviously, the supply process involved fulfilling two-fold purposes, supplying housing plots and at the same time gaining public political patronage. However, the process possesses the features of a move towards liberating the urban housing land, by a sudden supply of a huge number of the sites-and-services plots (almost equal to what has been allocated since independence), no matter what other consequences should be and what effect it should impose on the housing market performance and the urban structure as well. The housing policy in Khartoum and in Sudan in general lacks clearly defined objectives. Transitory objective of the government's housing plan is 'a plot of housing land to every eligible household'. The problem of fulfilling the objective lies in identifying who is 'eligible' and what type of 'plot' should be allocated.

Third, the allocation system and the sites-and-services adopted in Khartoum are not really housing supply policies, but rather they tend to be a method of land allocation approach with characteristics of wealth distribution policy viewing land as a wealth generator. It could be argued that it is rather a politicised approach that tended to maintain public support. This is justified by the huge supply in a short period just less than one year after the takeover of the *Engaz* government. At that time, the structural plan of Khartoum was still under preparation by Doxiadis and Mustafa, which meant the no availability of physical planning basis at the city level for the housing supply. Furthermore, the short period apparently was not enough to accomplish a full study and establish a clear housing policy that includes an assessment of the demand and supply of the housing, the methods of supply and other relevant issues. The

government itself was in the stage of establishing its own institutions, the broad governance and reform policies and wanted to become well established. Other evidence includes the split of the applications into two groups: applications through the labour unions and employment associations *(altagdeem al-fi'awi)* and application through the 'general list' *(al-kashf al-aam)* where all people can equally apply. To obtain a large number of beneficiaries it was important for the government to allot plots at nominal prices because if it was distributed at market prices most poor people might not be willing to buy simply because they can not afford it. However the result is that the policy most benefited low-income households regardless of the intention, hence characterising the supply as an income distribution policy features. However, at the other end, a considerable portion of the plots has filtered up to middle and high-income groups.

The housing classification system, which classifies housing into first, second, third and fourth classes, represents an inherited method of standardisation of the housing and social stratification. The review of the literature carried out for this research did not reveal a similar system of classification, which could have helped in comparative analysis. However, classifying agricultural land into categorizing according to its quality is a known technique and it is practised in Sudan as part of the land policy, where land is classified as first, second and third class and so on. It seems that this technique has been adapted to the housing land. Officially it is not highly restricted to improve or redevelop any plot in any of the housing areas, if the household could afford to. This makes the system less advantageous in the absence of effective city development controls and the changing income or social statuses of the household. However, particularly in the fourth-class areas the system allows low-income households to build more cheaply while not restricting improvements in the house conditions. The building codes in Khartoum exempts the poorer householders in the fourth class housing areas from building standards. This allows them to have a secure tenure without forcing them to build to unaffordable standards (Hardoy and Satterthwaite, 1993: 144). The compliance of the housing classification system with the measures of the grand notions of equality and justice and realization of equal chances among the people are questionable. In the past it might have represented quite a suitable policy when the economy was less dynamic in terms of wealth accumulation, the scale of public and private investments, inflation rates and low rates of urbanization. The classification system is currently in the process of being ruled out by the dynamically changing market forces. One of the advantages from the point of view of

the planning applied utility is that action area planning[103] at the urban scale could be suited to the housing class areas. Obviously strategies for each class area in action area planning will have different areas (subjects) of emphasis. However, action area planning in its professional meaning is not practised in Khartoum except at a limited scale in the upgrading of the squatter areas. There is a need to re-evaluate the real purpose of the housing classification system, and to clearly identify the objectives behind it, and accordingly re-establish an alternative system. Certainly it would be difficult to suddenly abandon the system without deciding upon an alternative system of plot allocation based on the housing classification system. An alternative policy should be controlled upgrading by the public sector, through consistent gradual transformation of the low order classes to the higher order classes. Householders could be encouraged by the authorities through the regulatory mechanism or targeted government subsidies to improve their shelter conditions within a certain plan period enough to save sufficient money to carry out these improvements. The plan period could be specified for each class area as part of a comprehensive city development plan, based on the household propensity to spend on housing. Targeted subsidies involve prioritising government expenditures on services and infrastructure and directing it to the action areas. They may also include temporary exemptions from taxes.

9.2.2. Coping with the demographic and social change

Urbanization has undoubtedly affected the social and demographic structures of the capital city. The population of Greater Khartoum has doubled nearly six times during the last 25 years and is further expected to reach over 10.2 million by the year 2015 as mentioned earlier. Although there are no data, observation shows that Khartoum was clearly affected by internal migration. During the 1960s, the majority of the population was northerners who were better educated than others. Owing to their proximity to Egypt the well off people used to migrate to Egypt for education and work. During the 1970s, the economy was to some extent stable and migration was slow. Sudan supported Egypt in Camp David's Treaty in 1979. Based on this agreement, Sudan received an annual financial aid from the United States and the flow of external capital and aid from the European Community continued. However, in 1983, the financial aid was stopped and Sudan became under embargo following the government shift

[103] Action planning is about solving land use problems of old areas. According to Chapin and Kaiser (1979: 71) action planning is a land use planning technique that mostly oriented to solving currently felt problems in selected areas. Action planning, "is responsive rather than anticipatory, and is oriented more to the present than to the future and more isolating salient features of a single problem and addressing them than to comprehensively coordinating the interactions among several problems". Action planning is alternatively for improvement plans or upgrading projects of old deteriorated districts.

to apply *shariah* laws. In the same year, the civil war in the south blew up. The period between 1983 and 2000 was worsened because of drought and famine, civil war, inflation, devaluation of currency and complete stoppage of international aid. Emigration during this period was intense. Northerners in Khartoum were most attracted by gulf countries. Migration of westerners and southerners to Khartoum also became more intense. Due to these waves of migration, the population structure was affected. Sudanese expatriates working abroad became a distinct group in Khartoum because of the wide gap in income created between this group and local residents.

Government officials should be aware of the impact of these demographic and social changes in urban planning and housing demand. Planning should be oriented towards strengthening social cohesion and achieving social inclusion and avoiding social exclusion of the various social groups in the housing supply and the allocation process. The housing allocation system should ensure different groups have equal chances and access to government housing plots. The housing classification system in Khartoum was criticized of representing some kind of social stratification. Therefore it should be adjusted to avoid such results.

9.2.3. The effect of the national political context on housing provision

The efficiency of housing provision and housing policy more generally is inseparable from the prevalent political conditions. In chapter one, the thesis gave a brief description of the economic, social and political conditions in Sudan. Post (1996) highlighted the crucial role of politics in urban planning and housing supply processes in Khartoum and how it influenced urban planning.

Sudan's regional, territorial and the intermediate State levels have changed many times since independence in 1956; being influenced by the political conditions and the ruling system. Although the federal system has been declared by the government to be the most appropriate type of government in Sudan; conforming to the cultural, tribal, and ethnic diversity, most powers are still centrally controlled. State governments still need more delegation of administrative power and financial support to enhance the housing supply process.

Post (1996) best outlined the conflict between the technical and professional planning practice in the field of urban planning and housing supply, and the politics in Sudan. The administrative system in Sudan is characterized by political instability. Political instability has

been strongly associated with the government system in Sudan throughout history after independence and is a common feature of politics in Sudan. By instability we mean the continuously changing government type and alliances, the administrative structures, the party alliances, regulatory and constitutional changes at different levels, local, regional and national levels. This demonstrates what has been pointed in chapter six; the absence of short and long-term development plans and clearly stated housing policies. Due to these varying conditions, any assigned plan is never completed because often newcomers in power cancel the previous plans and start afresh. Regardless of how effective existing plans are, newcomers tend to enforce new plans bearing their own personal stamp.

Post (1996) also explained the interference of politicians in the professional practice in housing plots allocation in both sites-and-services and the upgrading projects of the spontaneous settlements around the city. He holds that the compiled lists of candidates eligible for a housing plot in the sites and services show a tendency to favour family, friends and relatives of influential people in allied political parties, particularly the people's committees in the neighbourhoods (*Al-lejan alshaabeiyah*).

In chapter six, section 6.4.1.2, the thesis gave a chronological analysis of the housing supply in Khartoum in the light of the varying government types, and discussed the variations in the housing plots provision which were concomitant to these ruling systems. The political history of Sudan since independence in 1956 has experienced a chronically unstable ruling system. The government continuously oscillated between parliamentary democracy and military dictatorship (Post, 1996: 125). However, most of these military rules are best described as totalitarian. Often these military rules sought the patronage of one of the political parties to seize power. Other parties become opposition parties and considered all options to seize power. Most of the military governments came to power through military coups supported by a civic political party as mentioned before.

ElTayeb (2003) within many factors that influenced the economy of Sudan pointed out three main factors that had affected the political stability of the country and holds that the advent of Islamists/totalitarian rule has influenced both the political stability and the development through the economic embargo against Sudan.

9.2.4. Meeting the agenda of the international policy frames

City administrative and public sector officials should be aware that they work within an international housing policy arena, and the different international binding declarations. Most international policy frames, which finally culminated in the Habitat Agenda and the Sustainable Development Conference frame of work, represent a full coverage of the development issues and guidelines for governments to develop not only the housing sector but also all the human settlement development issues. A global trend in housing and human settlement development is taking place which governments are assumed to be aware of and try to commit themselves with its contents and outlined policies.

Observation, review of the literature and the results of the thesis have shown that the government, city managers and the local authorities in Khartoum are not sufficiently aware of the policy contents of the Global Shelter Strategy, the Habitat Agenda, and Sustainable Development of settlements, or they might be restricted by the problem of limited resources. These represent comprehensive guiding documents and framing human settlement development policy platforms, the public sector in Khartoum should make the best use of to improve not only the housing conditions, but also the whole human settlement conditions. The existing conditions in Khartoum clearly reflect a need to proceed through a long path to fulfil the stated objectives and the contents of these international policy frames. A wide gap between the existing conditions and the desired development levels exists in Khartoum. Locally developed policies conforming to these policy frames should therefore be established to bridge this gap. Steps involved include first, to identify the current levels of human settlement conditions through identifying the relevant indices, establishing effective institution then followed by steps to implement the policies.

9.2.5. Housing and poverty

It is not part of this work to make recommendations on poverty alleviation, but it may be beneficial to show its influence on the housing supply process and how it is linked to it as a background issue. The relationships between housing supply and poverty is evident and has been highlighted in the literature. The analysis of the housing supply process in Khartoum depicted that it operates in an environment where poverty prevails. People under the poverty line exceed half of the population in Sudan as a whole. This makes the country within the limits of most African countries. The challenge confronting the public sector is to establish some realistic programmes for poverty alleviation. Poverty eradication programmes should be

intensified through mobilizing the resources and involvement of both public and private sectors, Sudan's position paper, Poverty Reduction Strategy Paper[104] (PRSP)[105], restricted due to the lack of data on poverty and based on a sparse number of surveys, revealed an increasing incidence of poverty in general but with more rates in rural areas. The paper summarised the factors contributing to increased poverty as the lack of social services, lack of means of production, lack of institutional and legislative framework, civil war, and repeated drought waves in different parts of the country. However, no figures were included about population in poverty. The strategy specified target figures to be achieved in education, health care and water supply, but no details are given showing how these could be achieved. Some of these points may be congruent with what Davoudi and Layard (2001) highlighted as that poverty and the actions of the poor are seen as one of the main causes of non-sustainable development rather than recognizing poverty and environmental degradation are both consequences of existing development patterns.

Issues of poverty, housing poverty and the income poverty must be addressed and put into action in all the relevant public sector programmes. It is a basic role of the public sector to develop such policies and implement them. Sound solutions to the housing supply problems cannot be adopted without the development of effective poverty eradication programmes that target low-income households. Anti-poverty programmes are therefore essential as a prerequisite to increasing the housing supply processes. UNCHS/ILO (1995) highlighted a number of methods to reduce poverty. These include adopting labour-intensive public works, community participation, increased labour-based interventions (which exceeds equipment-based works in cost and quality though they may take longer), sustainability, and rationalized micro-capital grants to small-scale enterprises. Most important is adopting an "Urban Poverty Partnership" programme for expanding employment opportunities for low-income urban communities that focuses on poverty alleviation in three ways: looking at the issue from the perspective of the poor, eliminating institutional barriers for poverty alleviation, and finally highlighting the government's role in facilitating and enabling the private sector and community groups (UNCHS/ILO, 1995). The target groups and their consistent levels of

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[104] The PRSP approach which was initiated by the IMF and the World Bank in 1999. It results in a comprehensive country-based strategy for poverty reduction. It aims to provide the crucial link between national public actions, donor support, and the development outcomes needed to meet the Millennium Development Goals (MDGs), which are centred on halving poverty between 1990 and 2015.

[105] http://www.un.org/esa/socdev/ageing/workshops/tz/ppt/sudan_paper.pdf Accessed 9.2.2006, The website includes a presentation of Sudan's PRSP position paper in Dar es Salaam, Tanzania, October 2003.

poverty should be clearly identified in order to design effective policies depending on their consistent characteristics and conditions. Special emphasis should be given to low-income groups in housing poverty, particularly those who lack sufficient habitable spaces. No doubt food and nutrition programmes come first and they should not be surpassed, but they should be put together simultaneously and harmoniously.

Effective policies for poverty alleviation through housing policies have been recommended by (UNCHS/ILO, 1995) involving promotion of construction through self-employment and small-scale enterprises and labour intensive technologies. Government attitudes towards dealing with the informal sector should be improved by officially acting appropriately to integrate the informal sector into the mainstream of the economy. Policies also involve using the home as a work place (UNCHS/ILO, 1995).

Varying estimates of poverty in Khartoum have been found. These figures range from 75 percent to 90 percent in 1999. However, these figures are extraordinarily high. In the whole Sub-Saharan countries the percentage of the population in poverty is 35.8 percent of the total population (UNCHS, 1999). The analysis results in this thesis have shown that about 84 percent people in Khartoum live in poverty. The population of the survey was the low-income people in third class areas. This may explain why the result is high, and falls within the previous estimates.

9.2.6. City management and governance

In the era of globalisation, human settlements agencies must take further steps to cope with this new phenomenon and cope with the speed, complexity, scale and scopes of the international connections (UNCHS, 2001a). The way globalisation is viewed in third world countries might be different from the developed countries, where the inability to cope with it constitutes a major threat. There is a universal recognition by the international community of the right to an adequate standard of living, including housing, shelter provision and improvement of neighbourhood living environments (UNCHS, 1990b; 1997a; 1997b; 2000; UN/CHR, 1996). The Istanbul Declaration and the Habitat Agenda views cities as centres of civilization, generating economic development and social, cultural, spiritual and scientific advancements. Governments acknowledge the need for concentrated action in development of the human settlements in all aspects at local and international levels.

The public sector's role apparently lacks consistency in the functions, responsibilities and the authorities among the different housing-related institutions. Both vertical and horizontal administrative linkages between the relevant departments at both the central and state levels are not clearly set or effectively built. Also, the links between the central ministries and the state ministries are not clear enough. To have an efficient housing supply process there is a need to establish clear governance and efficient urban management institutions, with a clear assignment of roles and responsibilities. The decentralization at the State's level is important when some housing issues need to be supported by public participation and democratisation. Obviously the large number of departments and ministries with unclear divided authorities is a constraint that affects the efficiency of the process. Municipal service provision authority is divided between State departments and the localities *(mahalleyat)*. The decision-making and planning is strictly 'sectoral-based' with no enough co-ordination between the relevant institutions. The physical planning authorities are not well linked administratively with implementation authorities. There is, therefore, a need to restructure the institutions and integrate the implementation and planning authorities in fewer bodies with clear linkages. Local government empowerments and responsibilities should be further enhanced and activated, particularly in the provision of municipal services, which are essential in the development of housing areas.

Mobilization of the resources and the enabling strategies at the national level is an essential task that must be undertaken by the government represented in the public sector agencies because it is a basic means for increasing the national income and improves the financial performance of the public sector and improves the balance of payment, therefore increasing expenditure on housing. It has been explained that Sudan is rich with natural resources, including abundant river water and rain in approximately half of the country, vast fertile land and minerals including oil. There is a clear need and challenge to exploit these resources, most of which are still intact. Obstacles to exploiting these resources should be removed through some broad political actions and strategies, including restoring peace, resolving the southern region problem, putting an end to the civil war and settlement of the local and regional conflicts including the arising conflict of Darfur, extending good relations with the neighbouring countries, and normalizing relations with the international community. Such policies and strategies are important to bridge the local and international environments to attract the flow of regional and international investments and financial and technical support of United Nations agencies as their activities and roles in Sudan are below normal levels.

Investment and international support will certainly result in improved markets and economic conditions.

Solutions to the housing problem are inseparable from the solutions to the economic crisis of the country in both the national and regional contexts. Prerequisites to solving the housing problem in its broad context includes mobilization of resources to ensure increased housing supply. The implementation of the Habitat Agenda, and sustainable development represent an underpinning factor in not only the housing supply problem, but also all other human settlement and development issues. Steps to put these agendas into action are necessitated by the problem of the housing shortage, deteriorated housing conditions, environmental degradation, deteriorated living environment and lack of sufficient levels of services, most of which have been highlighted by this thesis.

In the democratic system of government there may be no crucial need for an income distribution policy because, automatically, all participants work through the associations and under the umbrella of statutory laws, regulation and the parliamentary system to preserve their rights. But in a totalitarian government there is a need to adopt some proclaimed policies of income distribution; those are needed in Sudan. These generally include, for example, how such scarce resources should be allocated between the beneficiaries and the community groups, who the beneficiary should be, how taxes should be rated and imposed, and how they should be distributed amongst various groups, how business and commerce should be licensed, and how government concessions should be offered, and so on.

It is essential for the development of the housing sector to promote the pertinent information systems. Data regarding household surveys, maps and records of land registration, financial flows and expenditures, beneficiaries of the housing plans and housing surveys should be documented and kept in retrievable form and updated frequently. These are key elements in the planning process and an essential component of planning information that allow planners and politicians in decision-making. The systems of planning information system in Khartoum need to be promoted and improved.

Generally, political instability and the changing social and economic conditions in Khartoum make housing planning in general, and for low-income groups in particular a difficult and a complicated task. Unlike the developed countries, the housing sector is confronted with the

lack of information and appropriate application of information technology. The poor functioning of the institutions and organizational mechanisms that would help in planning of the housing sector, monitoring, development control that would help in the decision making process, further makes the housing provision a complicated task. The thesis has discussed the functions and local level institutions in chapter five. There is therefore a need to develop planning information systems and institutional frameworks, particularly those which are related to the housing sector and regulatory frameworks.

A key issue in developing effective national housing policy is to improve the performance of administrative systems related to housing supply. The delegation of the authorities regarding decision-making in housing policy between the central government and the state governments may need to be further restructured in terms of procedural systems, legislative and executive power delegation. Functions and authorities of all relevant government bodies at both the national and state levels should be specified clearly. Conflicts and interferences should be eliminated, and replaced by complementarities and removal of task gaps. There is a need to clearly identify where housing supply authorities lie at the central level. Obviously the Ministry of Environment and Physical Planning has no clear and sufficient authority of decision-making regarding the housing process. This situation also indicates that the central ministry has the planning authority while the State ministry has the implementation authority. The following are our proposed functions, duties and major task fields of the three government levels:

1. ***Ministry of Environment and Physical Planning:***

   - Developing and adopting a comprehensive, realistic and effective national housing policy and shelter strategies and establishing a relevant institutional framework to ensure the implementation of the housing policy, and adopting the enabling approach in the development of the housing sector.
   - Settlement development and national settlement policies and regional plans.
   - Housing finance and settlement development finance.
   - Legislative and regulatory function.
   - Enabling primary infrastructure by the private sector.
   - Developing structural plans for major urban settlements.
   - Planning for and identifying the housing need and ensuring adequate housing supply for major urban settlements.
   - National land policies and relevant legislations.
   - Supervising the implementation of the Habitat Agenda, and sustainable development and the international policy frameworks, and the national housing issues, such as poverty issues.
   - Supervising the low-order institutions at the States level.

- Co-ordination with other departments, societal sectors and ministries for the implementation of the housing policy.

2. ***State Ministry of Housing and Public Utilities:***
   - Adopting and implementing a housing policy at the state level coping with the national housing and shelter policies
   - Implementing the structural plans and approved action plans.
   - Urban management.
   - Land subdivision and allocation.
   - Supervising the lower order institutions of the local councils *(al-mahalleyat)* and the municipalities.
   - Urban development control.
   - Ensure the provision of education and health services and community facilities.
   - Enabling the provision for minor infrastructure.

3. ***The Local Councils (Al-Mahalleyat)*:**
   - Provision of the municipal services.
   - Implementing the national and state shelter strategies at the local level.
   - Housing development control.

9.3 Prospective role of the public sector in Khartoum

9.3.1. Effective role of the public sector

The analysis has shown that the roles played by the public sector in Khartoum are not effective enough in settlement development generally and in the housing sector particularly. While we find that many housing researchers such as Batley (1996), Billand (1993), Sundaram (1989) and Payne (1999b), and some of the UNCHS publications such as (UNCHS, 1993), Hamdi and Majale (2004) and the Habitat Agenda call for effective public and private sector partnership in the responsibilities of the housing provision, these roles are very vague in Khartoum.

In the light of the failure of the public sector programmes to provide housing for those on low-income, it is necessary to first establish a conviction that investments in housing, infrastructures, and community facilities does not necessarily mean a waste of financial resources. Investment in housing is good for the economy and development (Tipple, 1994c; 1995) through creating jobs and income through rents, home-based-enterprises, and accelerated circulation of capital. Policies should be targeted to increase the investments of both the public and the private sectors through the enabling strategies. Under the commitments of the governments of Sudan to the Habitat Agenda, the public sector role in

Khartoum is required to shift from a mere housing plots allocation role to that of a housing supply enabler.

In the light of the inability of the government to provide sufficient housing through sites-and-services and self-help, the public-private partnership is inevitable as part of the enabling approach. The role of both the public and the private sectors must be changed to cope with the enabling approach and also to further enhance the role of each of them and clearly identify their functions in the housing supply process.

The public sector's role regarding the legislative function on housing development and housing issues needs to be further enhanced by updating and detailing the planning and land laws, regulations and ordinances. Inactive regulations that might be useful should be reactivated. Ineffective application of these regulations has been caused by the low expenditure of the public sector in housing. There is a clear need for the participation of the public, experts and professionals in developing the planning laws and building regulations and the whole regulatory system, which is a prerequisite for the enabling strategies, particularly land laws and rent laws. These laws and regulations should match with and adhere to the Habitat Agenda and Istanbul declaration, and the relevant international policy contents. Land laws should give way to effective private sector participation in housing construction and development. Fortunately, most land is under government control. Land lease for different purposes depends on the desire of the authorities. Most government actions on land are often reactive. They are not targeted to meet an estimated demand. Irrational rent controls should be gradually eliminated to realize an increased housing supply.

The thesis depicted a clear deficiency in the planning information system in Khartoum. Although national population censuses are carried out on a fairly regular basis every ten years, this data is not employed to develop the housing sector. Most information required to formulate housing and settlement development policy, in spite of its scarcity, may be interdepartmentally available but because of the weak lateral coordination between the different public sector departments becomes ineffective. Obviously there is a need to improve and further build the capacities of the Federal Ministry of Physical Planning to manage the planning information system. High-tech computerised systems are desirable but in the case of Khartoum, due to the lack of resources such technology may be difficult to attain. However, low-cost, more efficient systems should be developed. Benefits achieved would outweigh the

expenditure on such items. It is, therefore, essential for the development of the housing sector to promote the relevant information systems. Data regarding household surveys, maps and records of land registration, financial flows and expenditures, beneficiaries of the housing plans and housing surveys should be documented and kept in good form for quick retrieval and updated frequently. This will help in planning, programming and decision-making for housing and settlement development. Appropriate base maps of the whole city must be developed and be available to all the planning and housing-related institutions.

The government has released a larger number of plots in a short period of time, in comparison with other periods, without appropriate thinking of what the consequences would be on the local economy and the housing supply process and how the construction of these plots should be done, leaving almost the entire freedom for the households to build these plots, mostly through self-help. This public sector role that follows the land release should focus on eliminating the shortcomings that accompanied the allocation process. These include distortions in the beneficiary groups, for example small households were filtered out, the wealth gaps that have been created by plot ownership and the lack of affordability, in addition to the housing provision for the residual applicants who are still in need of plots. Under these conditions there is a need for more new roles of the public sector. These new roles include enabling policies and land speculation control policies, construction enablement and development control policies, housing finance policies, and self-help housing construction policies. The government can also utilize the process in mobilizing the economy, and developing more efficient land taxation policies that would enhance creation of an economically balanced community. Although these policies are general and may need details, the research focuses on the role of the public sector in increasing the housing supply for those on low-income, which is discussed in the second part of this chapter.

9.3.2. Partnership in housing supply and finance

The international policy frameworks recommend that governments should abandon providing finished housing. Alternatively, they are assumed to play their role as enablers of housing markets for improved supply. Evidence has shown that governments in developing countries cannot supply finished housing for low-income households.

Tipple (1994a: 596) argued that the lack of developed systems for of formal private sector housing supply is one of the major housing problems in Africa, and that large building

contractors, who are classified as private sector, are not generally involved in low-income housing construction. For improved housing provision, the private sector is accordingly assumed to play a more effective role in housing finance.

The thesis highlighted that housing should be provided through a combined effort of public and private sectors, in addition to the involvement of the civil society. The involvement of private sector housing finance and public private partnership is also embedded in the 'enabling strategies' advocated by international agencies involved in the human settlement development and housing finance. The problem with housing financed by the private sector is that they often target middle and high-income groups and exclude the poor. While the public sector allocates land, the private sector can play an important role in finance, supply of building materials and construction. The NGOs can play an important role in the provision of services and infrastructure and organizing the self-help activities and the efforts of the poor people for improved living conditions. Partnership involves sharing the benefits between all partners. The objective of the public sector is shelter provision and it has the control over the land. The private sector is looking for profits and can obtain the land from the public sector at subsidised costs on condition that they account for those on low-income. Benefits between all partners could be equally shared. The government needs to review the urban land policy and to set out rules and regulations by which land should be allocated to all participants. For investment purposes, land itself should be disposed of at market prices. Part of the revenues could be allocated for the provision of infrastructure and services for the low-income housing areas.

There is a need for housing officials and decision makers in Khartoum to be more conscious of the role the private sector could play in housing supply. In section 6.2.2 chapter six the thesis pointed out the areas where the private sector can contribute to the housing supply. These fields include the housing supply market inputs, i.e. land supply and marketing; infrastructure; finance; building materials and construction industry. Although the thesis focuses on the role of the private sector, it would also be worthwhile to highlight exactly how the private sector can be involved in housing finance.

The housing land supply in Khartoum is solely in the hands of the public sector who may allocate it at nominal prices. Housing land often constitutes nearly 50 percent of the total settlement area. For the housing land use, there is a specific allocation system that has been

discussed in section 6.4.2 chapter six. However, although it is not the focus of this thesis, no clear-cut criteria are available for allocating the other 50 percent of the land for other uses. Even for the housing land, the main channel of allocation is the housing plans.

It has been argued that whenever land supply is solely controlled by the public sector, it is likely that the allocation of land to different urban activities and groups may be not be efficient, is probably slower and more bureaucratic, and also open to corruption and politicisation (UNCHS, 1993). It is recommended by the Habitat Agenda that partnership is a solution to this problem. The roles of the other sectors, private sector and NGOs in Sudan comes after land is first allocated to people by the public sector through the housing plans, when it converts to the real market price. It is also argued that when land is solely in the hands of the private sector it is likely to be kept for speculative purposes or turned over to more profitable investment projects such as commercial or high-income residential uses, hence surpassing the poor people. In such conditions, partnership becomes an inevitable solution.

The thesis identified five methods of housing finance in Khartoum; formal housing finance; NGOs; ROSCAS; self-finance through additional income; windfall money. The private sector can play an effective role in formal housing finance. The thesis has also highlighted the limited capabilities of the private sector in Khartoum in participating in financing large-scale housing projects. The private sector housing provision mode in Khartoum is the 'individual owner-occupier technology'. Other options, for example 'developer landlords' and 'speculative private sector' finance, operate at a very limited scale and do not target low-income groups.

Taking into consideration that 'the poor are bankable', the private sector can effectively participate through the formal housing finance systems. Commercial banks could be encouraged and enabled through the official regulatory system and the fiscal policies of the central Bank of Sudan to provide loans for housing. Banks should also be effectively encouraged to provide finance for building materials and housing supply inputs and to provide finance for small-scale contractors. The thesis has highlighted the fact that small loans can play an effective role in launching self-help housing construction in the new government sites-and-services projects. Therefore, effective results can be obtained in housing supply if formal finance institutions provide such loans for low-income households in the new sites-and-services projects in Khartoum.

9.3.3. Efficiency, administrative competence and needs of manpower

The efficiency and administrative competence is affected by the political stability. Changing political conditions and governments often involves changing a large number of the experienced personnel and professional staff, who are often replaced by inexperienced ones. Hence, plans are often affected by such replacements. This indicates the need for separation between the qualified technocrats and the professional staff on one side and the higher administrative staff on the other to ensure the continuity and success of the plans.

The practice of politics, the administrative system and decision-making in Sudan are characterized by a top-down approach. In theory, there are three arms who interact together to develop sound professional urban planning practice and environmental education; architects and planners; the public; politicians. Haywood (1980) introduced the concept of 'tri-partite approach', in which these three arms work together with clearly defined roles, communicate and co-operate for an idealized professional practice, education and the development of urban environment.

Obviously, architecture and planning education in Sudan operates under the constraints of the lack of adequate qualified staff, adequate finance and adequately equipped institutions and mostly weakly structured curricula. The expansion in higher education in Sudan was rather quantitative, not focusing on the qualitative aspects of the graduates, therefore creating a risk of lowering standards. The expansion shows that it was not based on a real forecast of the actual future needs. Education must be accorded a high government priority. There is a need to establish manpower information systems to help in assessing the actual requirements, including replacement of the loss caused by brain drain. Programmes to exploit qualified Sudanese expatriates should be initiated. Programmes to stabilize and employ the qualified staff should also be extended. Obviously, incomes should be reassessed and opportunities to increase income for the staff should also be increased such as part-time employment, consultation, research, purposely designed research for the private sector and so on.

Daak and Al-Mardhi (1995), recognizing the existence of a shortage of qualified staff to implement the national housing policy, recommended that, due to the lack of information, a survey must be carried out to identify the demand for the qualified staff. However, a crude estimate could be made to identify the demand for architects and planners, the main specializations in housing. In order to make an appropriate estimate for the required

architects, planners and landscape architects there is a need to relay on certain measures and standards, or at least establish comparisons. However, in the case of Sudan no adequate data is available to give accurate estimates. Therefore, it will be useful to establish comparisons. The total number of students enrolled in all the three disciplines in all the Saudi Arabian universities, for example, is approximately 2,100 students. This gives a rate of one student for every 10,000 population. In Sudan, the total number of students enrolled in architecture and planning is approximately 2200, 50 percent of these in private sector institutions. In the year 1996 the total number of enrolled students was 1277, 38 percent of these are women (Ahmad and Sultan, 1995: 14). This gives a rate of 0.7 students per 10,000 population. To raise the standard of enrolment in Sudan to become similar to Saudi Arabia there will be a need to enrol an additional 1100 students in the educational institutions. It should be important to note that Saudi Arabia, unlike Sudan, employs a large number of foreigners. This means that enrolment in Sudan should be even higher to compensate for the difference made by these foreigners. The deficit in these specializations in Sudan is covered by cadres from other disciplines, such as geographers who work as city planners. The staffing is also below the desired levels because it is affected by the migration of the most qualified people. In order to estimate the actual demand some percentage should be added to compensate for migration. Haywood (1980) puts forward that successful educational policy must not only be only targeted to meet the local needs of the country, but also to create an environment where graduates will be able to work effectively. Accordingly, the educational policy in Sudan must compensate for the loss of the graduates caused by brain drain. Migration will continue until there is an economic environment where there are jobs and income security and stability for experienced staff. The number of other specializations and the administrative staff could be proportionally calculated based on the previously estimated number of architects and planners. Standards such as the number of administrative staff per every architect or planner are not available but they can be produced if accurate data is available.

The training of manpower in all the relevant housing professions is a complementary part in the development of the housing sector. Promotion of training should be an essential task of the public sector. Other societal sectors are also required to play the same role, motivated by the government. Employment and working conditions should be improved to stop the brain drain, which has clearly affected not just the housing sector but also all other sectors. More planning and housing specialists and professionals should be attracted to the public sector. This thesis has highlighted the wide gap between the salaries in the public sector and the

private sector. While the median monthly income in the private sector is SDD25,000 (equivalent to £ 521), it is only SDD13,300 (equivalent to £ 277) in the public sector. Based on this gap many employees shifted to the private sector for more income, affecting the performance of the whole sector. Low wages attract low labour skills. The government should rectify this situation to maintain the skilled labour in the public sector, but in the light of the lack of resources this may be difficult to achieve. Abusharaf (1997) argues that large waves of Sudanese migration have followed the Islamic military government takeover, the 1991 Gulf war and the renewal of the civil war in the south of Sudan. She argues that the old temporary migration of the Sudanese to the new world for high education, Egypt, oil-rich countries has now been replaced by migration caused by political unrest and economic stringency. Low wages in the public sector have weakened the performance of the whole housing sector. Low wages are often associated with corruption. While Sudan inherited good colonial professional practices and skills in housing construction, these were discontinued by reasons including migration and brain drain, low wages, and low government expenditure in housing. This is clearly observed when we compare the quality of colonial architecture and housing in Khartoum and the current qualities of housing and construction. Apprenticeship, artisanship, and labour skills, which are essential factors in housing construction and self-help development of housing (Tipple, 1995), were also discontinued. Construction qualities in low-income housing are declining steadily without any remarkable effort by the public sector to improve or at least control it.

Training and research development should be extended to adopt and adapt best international practices and experiences in the field of housing. Housing policy and practice in Khartoum has shown that housing officials are not fully aware of these practices, and these practices also show that housing officials have limited professional capabilities to cope with the increased demand for housing, bounded with many other regulatory constraints and resource limitations. Specialized educational and training institutions are highly essential to promote the housing supply process. Although this issue has not been discussed in depth in the thesis, it is an underlying factor in the inefficiency of the housing sector. Undergraduate education in Sudan concentrates on the discipline of architecture, with a focus on architectural theory and design, architectural sciences, and to a minor extent on construction. Disciplines of settlement development, urban and regional planning, city management, and environmental and urban design are almost totally ignored. Development of specialized courses in housing is important

to bridge the local experience with the international experience. Such measures are seen by officials as of minor significance but they are highly essential.

There are 31 universities in Khartoum; five of them are private sector universities. There are also 12 institutes offering diploma degrees. The total students enrolled in all these universities are 240,000 (Ahmad and Sultan, 2001), only 0.09 percent of them are architects and planners. Obviously, there is a need to adopt a better higher educational policy that responds to the needs of the development of the country in terms of specializations. The valuable government investments and expenditure in education should not be lost by brain drain. Policies to compensate for this loss and to encourage graduates to remain in the country must be adopted. There is a clear need to expand education in the fields of architecture and planning as part of motivating the housing supply and urban development in general in both qualitative and quantitative aspects. Postgraduate education, research and training must also be expanded as a prerequisite for better performance of the housing sector and urban development. To summarize, the actions required to improve the administrative competence and efficiency and to meet the manpower requirements include:

1. ***Education, training, and research***: adopting sound educational policy targets to meet the countries requirements in various housing specializations and encouraging research, improving the performance of the previously mentioned 'tri-partite approach'. The policy should include gaining experience from other countries.
2. ***Income policies***: improving the wages policy and creating a laissez-faire environment where incomes become linked to the market forces. The policy should also involve reducing the gap between the private and the public sector incomes.
3. ***Adopting anti-corruption policies***: this includes realizing transparency, publicity of all the work and documents, reducing confidentiality, revisions of the plans by external parties, journalism, reporting on corruption and listing those who commit corruption.
4. ***Establish sound regulations:*** creating a regulatory audit of all the standards, administrative procedures, laws, bylaws, etc., identifying where constrains lie, identify where gaps exist and remove all obstacles, ensuring that these regulations and laws satisfy all parties, and cope with economic rules, and satisfy equality and justice criteria.
5. ***Improving organizational structures***: this has been elaborated on in section (6.3.1) there are often conflicts in authorization. There is, therefore, a need to establish a coherent organizational structure with clear components and a clear identification of

the role of each and their administrative and legal boundaries where they can effectively operate.

6. ***Reducing bureaucracy***. The thesis highlighted that sites-and-services projects are characterized by bureaucracy and slow implementation of the plans because of the long procedural activities. It is, therefore, important to reduce such impediments by focusing on the achievement of actual objectives.
7. ***Human resource development policies***: improving health care, amenities, retirement pension, leisure and social interaction.
8. ***Ensuring technicality***: ensure technicality of the plans and to avoid political influence that might reduce this technicality and distort the objectives.
9. ***Licensing for professional practise:*** ensure that practitioners must be licensed, and to activate the roles played by trade unions and professional associations in developing expertise.

9.4 How the housing supply could be increased in Khartoum

This thesis examined two important of aspects housing supply in the government housing plan through application of different analytical techniques. These are the housing space standards adopted in the sites-and-services plots allocation process in chapter seven and the household characteristics of plan beneficiaries in chapter eight. A variety of indicators of space standards that relate to both the individual household requirements and the city planning requirements were investigated, in order to highlight their impact and derive policy guidelines. The analysis of the space standards primarily focused on plot sizes, plot coverage, habitable rooms, housing type and plot area per person variables, while the household characteristics focused on household size and structure, household types, income and expenditures variables. The analysis included other factors that relate to the house and the occupant, such as room occupancy, affordability and tenure, and the occupants' behaviour patterns in the housing market.

With a view to those standards, we find there is a real need to optimise these standards and establish them in a more rational method and to avoid the ad hoc application of standards. The objective should be maximizing the number of beneficiaries of the housing programmes, best utilization of the housing land resources within the city development plans, increasing the housing production and increasing the housing supply. The significance of these standards is clear because they have a direct influence on developing sound housing policies and effective

housing supply process. This part of the chapter is more detailed and discusses the salient results of the analysis in deriving conclusions that can be adopted as a policy outline by the public sector with an objective to increase the housing supply.

9.4.1. Settlement consolidation

Consolidation in housing specialization has been used to indicate the transition of the informal settlements through self-help and upgrading processes to enter the urban economy (UNCHS, 1989). Consolidation often involves tenure regularization, improving access to land, reducing the effect of building regulation, provision of services, etc. (UNCHS, 1991b). Consolidation also involves incremental development in the self-help housing. Napier[106] (2000), Kellett (1995) and Gough and Kellett (2001) dealt with incremental development of housing in the informal settlements as part of the settlement consolidation processes, and part of establishing the squatters into the urban economy.

The technical term most commonly used in the planning terminologies is density, which a measurable index. Indices such as persons per room, habitable rooms per dwelling, persons per hectare, residential units per hectare, most of which are used in this text, etc. are methods of measuring density. Vigier (1992) holds that 'densification' is associated with the increased land prices and urbanisation. From this densification is used to indicate the process of increasing the density of the built-up area. However, densification is likely an abstracted form of the process of compaction i.e. increasing the built-up area. In the Australian context, Troy (1996) pointed out that the consolidation policy (also called urban containment policy) involved developing compact cities by reducing the density. Consolidation has been used in this text to indicate the process by which settlements and residential districts are transformed into a compact form, focusing on the physical form and residential density, antonymous to the sparse form.

An important task that could be carried out by the public sector, as an essential part of the housing policy, is settlement consolidation being carried out through four approaches; consolidation by rationalizing the use of urban housing land, consolidation by plot subdivision, consolidation by improved standards and consolidation through housing

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[106] In an unpublished article on "The effectiveness of resident impacts on core housing living environments" Napier used consolidation to refer to building activities by residents aimed at bringing their core house to further stage of completion, whether using formal or informal methods.

extensions and incremental development. These approaches all aim to reduce the settlement density.

9.4.1.1. Consolidation by rationalizing the housing land use

Land economists argue that the effective area of the land can be increased through increased density of the built form (Balchin and Kieve, 1985; Shihembetsa and Olima, 2001). This thesis has shown that under-utilization of urban housing land rationalizes the need for improved subdivision process and rethinking the current ad-hoc methods of land subdivision. Obviously, the current practices of urban planning and land use techniques and land allocation, in addition to the government tendency to adopt site-and-services plots in an unplanned way, result in misuse of the valuable urban housing land. These projects have caused huge urban sprawl, creating a burden on the local and central government authorities to provide infrastructure, and have imposed additional transportation costs.

All the master plans adopted by Khartoum since independence have relied heavily upon the sites-and-services approach in the housing supply process as a solution to the housing problem that seems inevitable, as limited options are available to the housing authorities for increased housing supply. Even these projects were not adequately provided with services and infrastructure.

The sites-and-services plots in Khartoum were planned at low-density. Generally tradition and intuition are the basic factors that have governed the plot size and land subdivision practices. It is not the roofed space to be built that was the concern of the officials but, obviously, they were most concerned with the plot size that should be allocated for each household. In the process of allocating the plots of the sites-and-services in Khartoum, appropriate plot sizes and appropriate floor area per person standardization are questionable, as the key concern of the officials was to avoid the negative reflections of rationing and misallocation of the plots. The end result of the allocation system was an increased demand for housing land and urban sprawl.

The thesis has concluded that, despite this huge disposal of plots through the sites and-services, a very small ratio of the plot is actually developed in terms of roofed space, which might be taken as an indicator of poor utilization of the urban housing land and also a slow process of shelter provision. It also implies that the public sector have stood apart from its

role in promoting housing construction and plot development. Programmes should be designed to increase to capacities of the poor to construct their houses, increasing expenditure in housing, and to cut down the construction costs.

In Al-Azhari district block 13, which is part of the government housing plan, over the ten years since plots were first allocated, only 220 plot owners started construction out of the 874 plots, representing 25 percent. Out of these, only 39 percent have moved in, while the rest of the plots are either walled plots, incomplete, or under construction. We can assume equal or lower rates of growth for the rest of the housing plan plots because Al-Azhari is the closest district to the city centre and best located and best serviced compared to the rest of the districts. Furthermore, other figures (see Table 5.8) have shown that, in the housing plan of 1990-2000, the percentage of the vacant plots reached 64 percent (Osman, 2001).

The thesis has highlighted and explained the slow rate of the housing construction process in the new residential areas of *Al-Engaz* housing projects such as Al-Azhari district, causing disintegrated urban form, the city structure and urban sprawl resulting from the almost sudden supply of unprecedented large numbers of plots in the history of Khartoum. The process shows that the housing plan of *Al-Engaz* has probably been carried out on hunch and intuition with no satisfactory reliance on appropriate planning and analytical techniques. Though intuitive judgement is one of six basic methods of housing analysis that is commonly applied in the developing world, and is characterised by low consistency and moderate accuracy, it is still important in analysing issues not amenable to quantitative modelling and also in reflecting on the results or output of quantitative analysis and methods (Willis and Tipple, 1991b: 3). But the repercussions of such huge supply of plots were not comprehensively studied. For example the huge demand and the need to extend the infrastructure networks of the water supply, electricity, drainage were seemingly not catered for, let alone the fact the old residential areas are not sufficiently covered by these services.

The new planned plots by Doxiadis and Mustafa (1990 – 2000) were estimated as 398,600, while the number of plots planned for by the housing plan of *Al-Engaz* were 116,800 until 1992 representing only 29 percent of the demand. If the plots supply increases at the same rate, (Chapter seven highlighted how plots could be subdivided, and illustrations were given to show how plots could be practically subdivided. *Table 7.6* illustrated plot sizes in the study districts. The median plot size in the housing plans of Al-Engaz and most of the housing plans

after 1980 is 300 square metres. In the proposed housing policy, initially and practically we can assume half of this median size (150 sq. m.) as an acceptable minimum plot size, although we have seen that plot sizes could go below this figure. Based on this, the number of housing plan beneficiaries will increase by not less than 80 percent. The assumed plot size gives 75 sq. m. floor areas when built as single storey, giving approximately 11 sq. m. per person, three habitable rooms and can give an occupancy rate that does not exceed two persons per room. Increasing plot coverage and the number of floors will double the floor space.

Figure 9.2), the government should provide another 95,000. The total number of plots provided by all the housing plans from 1960 to 1987 was 95,000, in addition to another 70,000 plots of *Engaz* housing plan for the period from 1988 to 1995. This means that, if we assume the same rate of provision, the government should provide double what has been already provided by the year 2010. This figure is also equivalent to 9 percent of the National Comprehensive Strategy planned number of plots, which is 1,100,000 for the period between 1995 and 2000. What we can conclude is that if the government follows the same method of provision and the same housing standards and housing options there will be a demand for double the currently occupied planned housing land which is unlikely to be fulfilled. Alternative strategies that could cope with the demand figures and the planned figures must therefore be found, based on the fact that the government is the primary housing land disposer. Following the same pattern of city growth will obviously impose additional burdens on the government in terms of provision of infrastructure and services, and will also over-consume the available housing land, which may not be coping with sustainable development. Politicians, planners, and professionals should seek alternative strategies that must aim to rationalize the urban housing land to meet increasing demand.

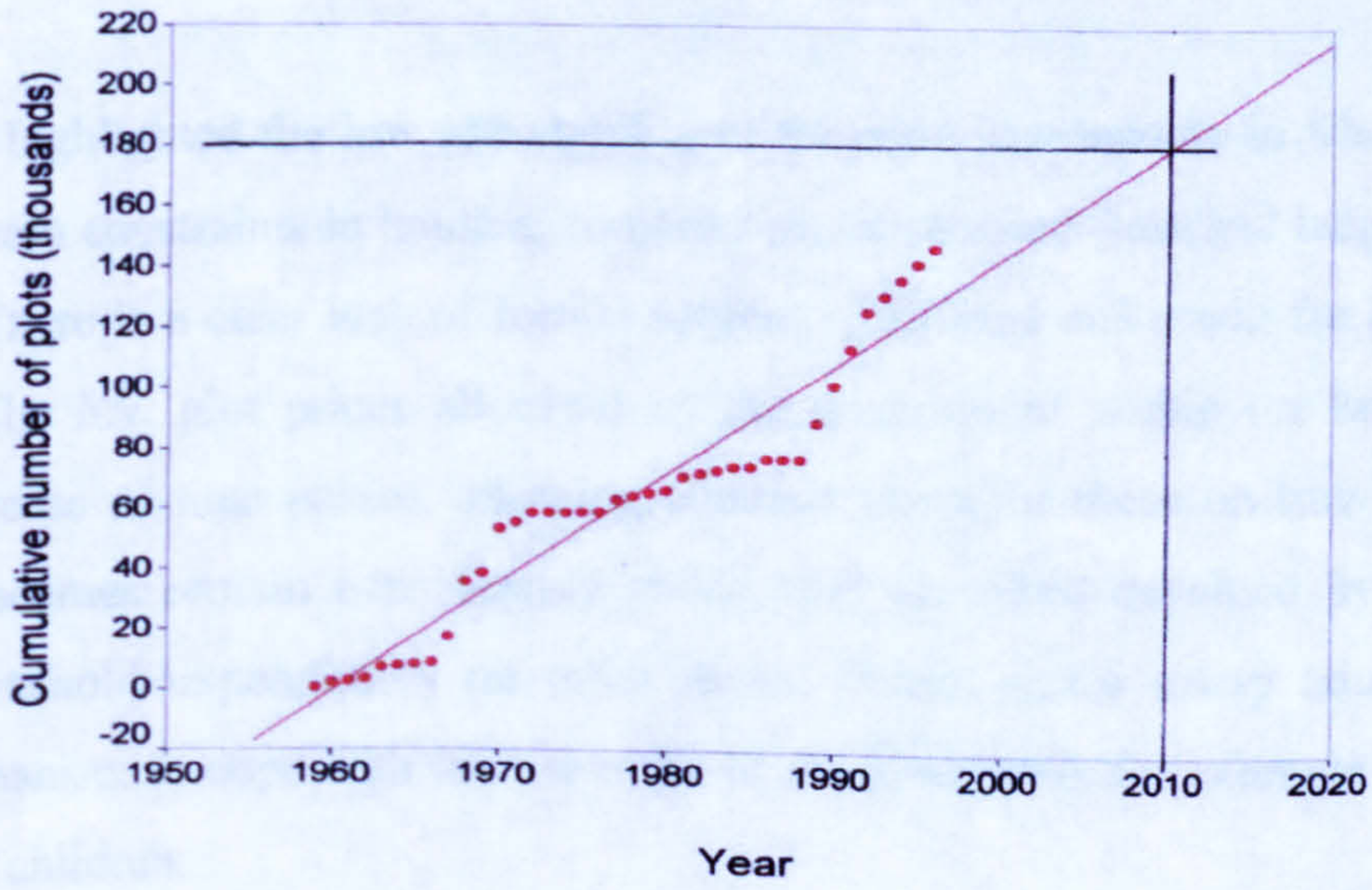
9.4.1.2. Consolidation by plot subdivision

The thesis results indicated an availability of under-utilization of urban housing land represented in high percentage of plot vacancies and incomplete construction of plots, hence justifying the need for settlement consolidation. To verify these results we need to go over the data analysis results. The currently adopted median plot size was 320 with an IQR of 289 to 400, and the plot size standard was 61.5 square metres per person in low-income areas, contrasting with the low floor area per person of six metres per person in Al-Azhari district. The analysis has also shown that the plot ratio was 19 percent in Al-Azhari district, which is obviously low. The room occupancy standard was 2 with IQR of 1.6 to 3 in all low-income

districts and the median habitable rooms per dwelling were 3. Also, referring to the overall housing area subdivision, only 57.5 percent of the district is allocated as net area for plots out of the total district area. From all these figures we can conclude that there is an inefficient utilization of housing land. Standards from some developing countries around the world, such as India, may be less than 30 square metres. There is, therefore, an opportunity for settlement consolidation to rationalize the housing land and to increase the housing supply. Suggestions to increase the supply of serviced plots in Zimbabwe included reducing infrastructure standards, and reducing plot size standards and allow for incremental improvements over time (Rakodi and Withers, 1995c).

Chapter seven highlighted how plots could be subdivided, and illustrations were given to show how plots could be practically subdivided. *Table 7.6* illustrated plot sizes in the study districts. The median plot size in the housing plans of Al-Engaz and most of the housing plans after 1980 is 300 square metres. In the proposed housing policy, initially and practically we can assume half of this median size (150 sq. m.) as an acceptable minimum plot size, although we have seen that plot sizes could go below this figure. Based on this, the number of housing plan beneficiaries will increase by not less than 80 percent. The assumed plot size gives 75 sq. m. floor areas when built as single storey, giving approximately 11 sq. m. per person, three habitable rooms and can give an occupancy rate that does not exceed two persons per room. Increasing plot coverage and the number of floors will double the floor space.

Figure 9.2 Governments housing plots supply trend



The first method by which settlement consolidation could be achieved is to allow for plot subdivision not only for the sites-and-services plots but also for the informal settlements, which bear similar characteristics. Plot subdivision will allow increased owner-occupancy and the owner occupancy realizes security of tenure which itself is essential in settlement development as advocated by Turner (1976b). Security of tenure will allow people to build more space for themselves and improve their living conditions. Security of tenure for those on low-income instigates self-help development of the house.

Plot subdivision means better utilization of the plot space. Through plot subdivision more compact settlements could be achieved (Breheny, 1996). Compact settlement is an alternative term for consolidation. Plot subdivision as a method for achieving compact settlements also provides more sustainable settlements (Hillman, 1996; Jenks et al., 1996a; 1996b, Williams, et al., 1996). On the other hand, smaller plots do not constrain building more space for the household, or even constrain the development of home-based enterprises (Tipple, 1993; Gilbert, 1988; Strassmann, 1987). Increased space can effectively be achieved by housing extensions and transformation (Tipple, 1996; 2000). Tipple (2000) and Tipple et al., (2002) maintain that plots should be large in the expectation that a single household could just manage thereon. Space for an HBE should be considered in the layout design of the plot. The housing policy should allow for housing extensions and transformation. Tipple et al., (2002) argued that regulatory systems should not be a hindrance to the provision for HBE in the house and that the few dangerous and unhealthy uses and practices created by HBE are controllable.

The thesis has highlighted the low affordability of those on low-income in Khartoum, which is one of the main constraints in housing construction that caused slow and lengthy periods of construction. There is a clear lack of formal sources of finance and credit for households on low-income. The low plot prices allocated by the government within the housing plan in Khartoum increase as time passes, allowing windfall gains for those on low-income, while salaries and incomes remain considerably stable, and are often devalued by inflation and increasing household expenditures on other items. Public sector salary structures do not include a mechanism to cope with the life cycle of the household, for example no increments follow birth of children.

Plot subdivision is consistent with the Islamic inheritance system. Part of the housing policy is that inheritors should be allowed to own their shares, and the plots should be subdivided if it is technically[107] possible however small the size could be. It should be pointed out that shared ownership is likely to discourage building more space. So, if plots are divided between the shareholders this is likely to realize security of tenure, hence motivating construction. The policy specifying a lower plot size limit pointed in 7.4 should be changed to allow for smaller plots.

Plot subdivisions are constrained by regulatory systems and the official and conventional planning and design standards; and to some extent by the construction technology and building materials. As discussed in chapter seven the regulations state that, in case of subdividing a plot, the frontages should not be less than ten metres and the remainder plot size should be minimum 200 sq. m. Such regulations should be changed to enable plot subdivision and allow for smaller plots. Appropriate plot subdivision could not be achieved because planners, architects and the professionals in Khartoum failed to develop alternative small size dwellings. The housing officials lack belief that land subdivisions could be achieved by smaller plots. The housing policy should modify the regulatory systems which constrain plot subdivision. Particular consideration should be given to improving plot apportionment system and alienation and setbacks. Such setbacks reduce the efficiency of the plot use, hence reduces the built-up area.

Low-income households who cannot complete building should be allowed to sell part of the plot, if they wish, to finance constructing their remaining part of the plot, or at least to improve their living conditions, or to capitalise its value for investment. This would obviously help in achieving poverty alleviation. In Al-Azhari district selling half of the plot at the current market prices would yield more than SDD2 millions (equivalent to £4200). This money is enough to finance a reasonably finished and complete traditional *gishra* house. Not necessarily all this money will be spent in construction, but certainly, a considerable part will be spent in housing. On the other hand the sold half plot will be affordable by other low-income households because their prices are likely to be low compared with the whole current plot prices. Also supply of the plots will certainly increase. In the author's estimates, if plot

[107] Technically would entail site constraints, solutions enforced by considering existing conditions, factors such as plot geometry and minimum possible frontage. The discussions with the supervisor of this thesis, Dr. Graham Tipple, revealed that in one of the studies it was found that a plot frontage should be six metres or more.

subdivision is allowed or encouraged at least in the government sites-and-services housing plan, the current housing stock may accommodate double the current beneficiaries if the plots are subdivided into only two, and may finance more than half of the construction of the whole housing plan.

9.4.1.3. Consolidation by optimising the housing standards

The analysis has shown that many of the official housing standards and those which came up from the analysis of the current conditions can affect housing supply, such as room occupancy, plot ratio and the plot size. The practice in Khartoum has shown a lack of appropriate land subdivision guidelines, criteria, and zoning regulations that would lead to appropriate estimates of densities, plot sizes, housing areas, and therefore the whole housing land coverage. Policies dealing with these standards would lead to increased housing supply. This part discusses how these standards could affect the supply.

Room occupancy is an important indicator for housing qualities and standards. Increasing room occupancy thresholds can absorb part of the housing need and reducing room occupancy requires more housing land. For example, Tipple (1994a), in Kumasi, Ghana, showed that reducing the overcrowding to a maximum of three persons per room would have required nearly 50 percent more housing than existed. At the local context, the analysis of room occupancy and the plot area per person clearly shows an existence of stalemate in housing standards in Khartoum. The median room occupancy in all districts is two persons per room and the plot area per person is 61.5 metres. This means that while each person enjoys a mean of 61.5 square metres of the plot, he shares a room with another person within this area. The room occupancy index at policy level could be used to forecast the housing supply.

The housing plan in Khartoum aims to provide 16,800 plots during the plan period, which has no defined closing date. Government reports have shown that around 41,000 plots were allocated while there are another 30,000 qualified households in the waiting lists. No data is available about the number of plots distributed so far, but preparations have shown that approximately 71,000 plots will be distributed to people.

The traditional housing type, which constitutes about 85 percent of urban housing, plays an important role in providing accommodation for low-income householders. Traditional

housing types are good for low-income householders when viewed within the concept of the self-help and incremental housing development, which are major housing options for those on low-income. The traditional houses most suit self-help and incremental development and respond to the requirements of the low-income households in Khartoum. Obviously, the traditional housing types will remain the main option for the foreseeable future, as modernization to replace these types for the last fifty years or so was slow. Some of these traditional houses formed 'family houses' for extended families, and provided shelter for newly married couples and unmarried grown-up household members, and those who cannot afford to live in independent accommodation. The housing policy should admits these roles, and preserve these merits, because they positively contribute to the housing supply. However, the housing policy should give way to housing layout design innovations and transformations that aim at increasing the built-up space.

Besides admitting the role of 'family houses' in housing supply for households on low-income, the government should encourage development of high density housing viz., apartments and multi-storey buildings, to partially meet the housing requirements of the middle and high-income households. This helps in providing for the low-income households through the filtering process, and launches aspiration towards modernization in the housing qualities and innovation diffusion.

9.4.1.4. Consolidation by housing extensions and transformations

It has been argued that housing extensions were found to be congruent with many precepts of sustainable development and could be enabled through policy to provide more housing space (Tipple, 1996). Although the thesis did not cover in depth the issue of transformation of housing, many transformations exist in old low-income housing areas in Ad-Deim. Ad-Deim is one of the oldest and most mature districts in Khartoum that were built about fifty years ago. Plot ratios in Ad-Deim have almost reached their maximum in most houses. The district used to be classified as a third class housing area where the building standards for example do not allow vertical expansion except with exemption, and the plot sizes are the lowest (200 sq. m.) compared with other districts. A remarkable number of houses in old districts were converted to family houses where more rooms were required to accommodate the growing household. For example, results have shown that 33 percent of the households in As-Sahafa, Block 17 have become extended families. Similar or close figures exist in Ad-Deim. Also the traditional housing types in Ad-Deim have a mean of 3.8 rooms per plot, while in Al-Azhari,

where the plot size is larger, the mean is 2.5 rooms per plot. The number of floors in Ad-Deim is the highest of all districts, which shows that the occupants of these houses have already increased their floor space. Moreover, Ad-Deim is more attractive to rental housing because it is close to the city centre, rationalizing the demand for more space.

The above figures demonstrate an existence of opportunity for encouraging housing extensions and transformations for increased roofed space. The current roofed space or the plot coverage is low. Most houses have plot coverage below 50 percent, while plot coverage could reach up to 75 percent or even more, and the number of floors could be increased, hence maximizing the floor space. These are possible if the building regulation and standards, the construction technology and building materials allow for them. Estimates show that, if we accept the IQR of between 3 and 4.75 habitable rooms in Ad-Deim we can have the roof space increased by not less than 50 percent, even though the traditional mud construction imposes some limitations on extensions. This space is enough to accommodate at least one additional small household.

9.4.2. Self-help and incremental construction

Almost all the housing plans in Sudan included statistical estimates of the housing units to be supplied according to the plan but unfortunately they did not include the implementation guidelines, finance options and other relevant housing policy details. All housing plans completely neglected how the plots should be built by the beneficiaries. The whole decision of developing the plot was in the hands of plan beneficiaries themselves, in terms of when to start construction, how to build and how to finance construction. The government intervention to motivate the housing construction is almost completely absent, leaving no option for low-income households other than self-help.

In spite of the varied results of the evaluations of self-help housing in developing countries, self-help housing is likely to remain an inevitable option in Khartoum and will remain a primary option for low-income households to build their houses for decades at least. An important part of government policy should be to help low-income households move into their plots, as this is the starting point in the self-help and incremental housing process. This requires a minimum of a "core loan" or "room loan". The finance required will be discussed in the next part. The tiny government expenditures on housing and subsidies should not necessarily be directed towards construction of individual houses but better be directed

towards the provision of infrastructure and public services. Gilbert (2004) holds that direct subsidies to housing are powerless to overcome the fundamental contradictions behind their adoption failed to fulfil the desired objectives and has often surpassed the poor households in some third world countries.

The role of the public sector in the sites-and-services projects has been confined to the allocation of open plots to the poorer households. The public sector's role was supposed to be extended further to provide opportunities of housing finance through a variety of modes including the public sector institutions and the banking system, improving the fiscal policies, improving and enabling the building materials and construction industry, and providing technical and consulting assistance in construction, where such issues are theoretically key issues in the sites-and-services and self-help housing. Moreover, the public sector stood apart from supporting self-help housing in the post-allocation stage. No clear evidence could be found that government support to the housing process extends after the plot allocation stage as far as the building process is concerned.

The government housing policy should intervene in the construction process of the self-helpers. Self-help home construction can be improved by the technical assistance initiated by the government, consultancy on costs, methods of construction, cost reduction, housing layout design, phasing out construction, housing services and infrastructure and improved artisanship. Admitting the role housing construction can play in generation of employment and income generation. Self-help housing should be shifted from the householder/ house interface to house/ contractor and householder/ contractor interfaces (Tipple, 1994b; UNCHS/ILO, 1995). This entails encouragement of self-employment and small scale enterprises (SSEs) as an important contributors to low-come poor people and the whole country as well. Self-help as a tradition still exists in urban communities in Khartoum particularly in remote areas, under *nafeer* norm (Osman et al., 2003). Both public and NGOs and CBOs could play a significant role in self-help development[108]. The housing policy should incorporate the efforts of all the societal sectors in an organized self-help.

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[108] It is important to cite here the work of Salah Osman, Gamal Hamid and Awad Saad (Osman et al., 2004), Senan Engineering Group, who led a voluntary experimental project for poverty alleviation in low-income areas in Khartoum State through organized self-help. This project was a joint effort between four participants: Self-helpers community, a donor NGO, the local council and the mentioned group. The project formed groups of community members to prepare building materials which was primarily cob and adobe. The community groups participated in construction and connection of water supply. The project pioneers gave also consultations on

9.4.3. Housing finance, affordability and access to the poor

Policies concerning, for example, the demand for imported building materials throughout the plan period did not clearly specify how they could have been financed and how they should fall within the affordability of the people. Generally the plans were not adequately studied from the economic point of view before implementation, in order to ensure the success of the sites-and-services plans. They lack satisfactory assessment of the market potentials, nor do they forecast, for example, the affordability, rents and prices under the changing economic conditions.

The sites-and-services programme was not accompanied by monitoring or evaluation processes that take into account the affordability and the income levels by which the annual supply of the housing units could have been assessed and accordingly compared with the effective demand.

The problem with the sites-and-services plots, which have been allocated in Khartoum, is how to provide a housing unit structure at a level that would allow low-income households to move in the new plot where they can start the incremental development and self-help housing. The Al-Azhari survey, which was carried out in 1999, has shown that the median incomplete house cost in Al-Azhari district is SDD275,000 (equivalent to £573) with an IQR between SDD168,000 (£350) and SDD463,000 (£965). These values could be assumed to be the house cost that allows households to move in. These values could also be used as the cost for the housing affordability. The median floor space for the houses in Al-Azhari is 48 square metres with an IQR between 20 and 61 square metres. Also the survey has shown that the median monthly expenditure on housing by the householders of Al-Azhari was 20 percent, and the median income was SDD30,000. This makes the house cost to be saved in less than four years (46 months) as a net value that does not include interest or any investment profits. Therefore, house value of SDD275,000 (£573) could be assumed as the most suitable level for housing supply in the new housing areas. This figure indicates the minimum money required as finance for the household to move in the new plot. These figures date back to 1999 when the survey was carried out. However, to update the figure it must be multiplied by a factor representing inflation and price increase rates. Financial institutions should therefore be encouraged to extend the loan repayment periods to more than four years. In section 9.3.1.2 of

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reducing costs and adopting improved techniques. This project won the third prize in the Symposium on Urban Development in Arid Desert areas, held in Riyadh, Saudi Arabia in 2003.

this chapter, it was mentioned that selling half of the plot in Al-Azhari would yield SDD2 million (£4200). This is equivalent to more than seven times the value assumed the most suitable level of housing supply i.e. (£573).

For policy makers, if it were required to improve the housing quality, it would be necessary to increase this house cost level. For improved levels of housing, this cost should be increased depending on the standard required to be achieved by the housing authorities. Also for updated price levels the figure should be multiplied by price increase index or inflation rates.

It is yet to be verified whether the housing allocation system positively or negatively influenced the housing process. Generally the way the housing plans were implemented could fall within the mobilization policies of the urban land resource, but unfortunately its impact at the city planning scale, and city future growth was not satisfactorily taken into account and fully analysed. Such policy has launched the construction process of the plots by low-income households, and everyone therefore will tend to seek different ways of finance. No reliable data is available by which households who require credit finance in Khartoum could be identified. This group constitutes not less than 80 percent[109]. The housing finance system could be directed to meet the demand of this group.

The housing policy should abandon provision of finished or semi-complete housing units, which is produced at a limited scale because only a few household benefit. The subsidies or any finance available should be directed to finance infrastructure. Any direct subsidies to the householders should be avoided. Obviously, the government expenditure on housing and settlement development should be increased to meet the challenges of implementing the Habitat Agenda. It should be noted that the government expenditure did not exceed 2 percent of the GDP. Special consideration should be given to the poorest sectors of the population and vulnerable groups who should be included in the poverty alleviation programmes and should benefit from the official *Zakat* Fund, whose basic role is to assist the poorest people. Also part of the policy should be to encourage building *rebat* and *awgaf*, which is are main charitable methods of housing the poor in Islamic societies. This has been explained in chapter four, section 4.3.3. The private sector should be encouraged to share the provision of infrastructure and provision of community facilities. Observation shows success in the involvement of the private sector in educational facilities.

[109] This is a rough estimation by the researcher with reference to some indicators from the field survey.

9.4.4. Housing and tenure choices

Housing policies should respond to demand for both owner-occupancy and rental accommodation (UNCHS/ILO, 1995) at affordable values. It has been argued that the growth of rental housing often depends on the growth of owner occupied housing (Tipple and Willis, 1991b; Hansen and Williams, 1987; UNCHS/ILO, 1995). The housing policy should aim to maximize the range of housing types and tenure choices available to people by considering all possible types (Gilbert, 1991b: 99; UNCHS, 1991b). The role assumed for the public sector on rental housing involves governments should relay as much as possible on the market mechanism; encouraging owner-occupation and encourage investment on rental housing; creating asocial housing sector; encouraging self-help landlordism through upgrading; conciliation and arbitration between the landlord and the tenants to settle rent disputes (UN-HABITAT, 2003f). Tenure choices in Khartoum include three basic types, owner-occupier, rentals and illegal squatters. Detailed types have been highlighted in chapter five. Obviously, in the light of the inability of the government to supply finished housing and in the light of the new proposed government role as enabler, the owner-occupier option would be effective in increasing the housing supply at the early stages of housing plans. Owner-occupier mode provides a satisfactory level of security of tenure (UNCHS, 2000), which is an important motivating factor in construction and housing autonomy. Increasing the housing supply through land subdivision as proposed earlier would be more effective where owner-occupancy is available. Owner-occupancy tenure choice responds to poverty and creates assets and gives access to housing finance and income generation through renting as well as creating opportunities for many types of home-based enterprises. The thesis proposal of increasing land subdivision increases owner-occupancy; and hence assists in launching the construction process by the owners and incremental development of the house.

Increased supply motivated by the increased plot subdivision will also increase rental housing. The whole process increases the built up areas for both sellers and buyers. The sellers will have a lump sum finance source gained from selling part of the plot. Their propensity to build more rooms will increase and could be more easily enabled by the government to build more rooms. The buyers, most of whom were previously renters, will obtain a secured tenure plot; similarly their propensity to build more rooms will increase. Smaller plots will likely help in providing variously sized rental accommodations and increases the rental housing choices. Smaller size plots will certainly provide lower plot prices affordable by low-income groups.

The research found that around 14 percent of the households in the planned low-income areas live in rental housing, while other available old figures of the late 1980s have shown that rentals in Khartoum are around 18.6 percent. No up-to-date figures for Greater Khartoum were found. This makes owner-occupancy the overwhelming tenure in the planned districts. Homeowners should, therefore, be motivated and encouraged by the government to build more rooms for rent. Plot subdivision will also increase owner-occupancy in the short run and rental housing in the long run. The third illegal squatter type will be discussed in the next section.

Obviously, if the current trend of supply standards continues, the demand for more housing land will increase. Newer low-income housing areas will be remotely located. As pressure on the existing housing land increases, rental housing will expectedly increase. If we accept the principle that rental housing is to be encouraged, then the percentage of the plots that is allocated to the high-income people in the sites-and-services projects should be increased, because they have better financial capabilities to build rooms for rent than low-income groups. Hence the housing supply will generally increase, and those on low-income might have more access to housing through the filtering process. In such cases, there will be a need to regularize, but not to valorise, the rental housing and to clearly and legally state out the rights of both the owners and the renters. Such regularization should be implemented within a national wealth distribution policy that does not bias any of the parties involved.

9.4.5. Informal housing and settlement upgrading

Estimates have shown that about 44 percent of the housing areas in Greater Khartoum first developed as informal squatter settlements. The research found the housing types in these areas bear similar characteristics of the other officially planned sites and services areas in Khartoum in terms of plot size and other housing standards, except for the development pattern and irregular road systems and the scarcity of open spaces. Squatters managed to illegally acquire plots of equal size following the planned areas. Affirming the significance of the informal housing in shelter provision, it would be essential to abandon the hostile attitude of the government towards informal settlements. Instead of confining the government's settlement upgrading actions to only aligning roads, efforts should be extended to increase the built up areas of these settlements. The densities in these squatter areas in Khartoum are lower than the formally planned areas, albeit no official figures were found. The thesis focussed on the government planned sites-and-services housing supply, however, the role of the informal

settlement is complementary to the overall housing supply, which cannot be ignored. Assumed consolidation described previously in this chapter could be equally adopted for the squatter settlements in Khartoum. This could be part of the squatter upgrading processes. Conditional grant of title deeds for squatters could be applied for plots and subdivisions which conform to the regulatory system, but not imposing unusual financial burdens on the poor households. Maximum plot size limits could also be conditional for granting title deed to the squatters in the upgrading process. Tipple (2004a: 371) suggests that:

> "upgrading should introduce service levels suitable for considerable HBE activity and, in very crowded conditions, consider measures to increase dwelling size where possible"

In section 9.3.1.2 it has been argued households are likely to build more rooms if the plots are large. In addition, it is likely that more HBEs could be developed if the plots are large. It is, therefore, important not to reduce plot sizes to the extent that affects home-based enterprise, not only in the informal housing areas but also in the formal sites-and-services areas. Those who acquired plots larger than this limit could be asked or persuaded to sell part of the plot to conform to this limit. This will adhere to the consolidation policy of the low-income housing areas.

9.4.6. Housing and cultural norms

Turner made a point that successful urban planning and government housing policy for the low-income people depends on the conformity of the government actions to the people's priorities and needs (Turner, 1968). Some cultural norms reflect the people's need and can have an effect on housing supply that could be promoted by the government. The extended family mode of living plays an important role in accommodating young married couples and adult sons and daughters until they can find separate homes. Family houses can accommodate more than one generation and household life cycle stages, and effectively mitigate the problem of housing shortage. If we admit the existence of these norms and their role, then regulations and practices which restrict the desire of the these families to build more rooms have to be abolished. Preserving these cultural norms through consideration of the extended family houses should accordingly be part of the housing policy. Allowing extensions, transformations, and vertical expansion of construction would accommodate extended families. Households applying as extended family may be given special considerations in the allocation system.

The thesis depicted that 76 percent of the households receive relatives who stay for protracted periods looking for jobs, higher education or medication in Khartoum. The housing requirements of all these groups are provided by the established urban relatives. If the government were actually committed to providing houses for these individuals as part of its policy, more plots should have been added in the housing plan to meet the housing need of these groups, which is actually difficult for the government to achieve. The government strategy should at least acknowledge this role played by the settled urban population; hence, the housing policy should consider it when dealing with housing standards, space requirements and planning regulations and plots allocation.

9.4.7. Improved sites-and-services plot allocation system

The government sites-and-services plots process directly affects housing supply. Applicants are filtered out through the system. No clearly designed objectives behind the process are observed, but generally the objectives appeared to be rationing, focusing on averting the dissatisfaction of the applicants and avoiding the feelings of people of being unjustly treated by official bodies.

Housing officials should be well acquainted with the difference that plot ownership makes in a large city like Khartoum. The implication of plot ownership was not best viewed as an income generator. Owning a plot means opportunities to create wealth or more income or access credit and finance, although financing construction in Khartoum through banks is limited to a very small portion of the households. In case of the plot being built, access to a plot means access to income in different ways such as renting, establishing business and credit. A tenant pays rent while owners do not pay. While plot owners can create capital non-plot owners have limited opportunities. Another problem incurred in the process is the income gap created between those who obtained plots and those who did not, which will obviously widen unless countered by a policy. From the issue of maintaining justice and equality between the people in the process of the housing allocation, certainly not all the applicants obtain plots. Some gain access to a plot and some do not gain access. Those who obtained plots will have an opportunity to generate wealth from the plot in different ways, selling, renting, developing or investing, while the other group will not have similar opportunities. Therefore, two distinct income groups will be created. The gap will further increase if the prevailing economic conditions increases the revenues, for example in an increasing inflation rates circumstances, property owners preserve the original value of their assets, because they

will be sold at any time at market prices. The government role should then be to reconsider the allocation criteria bearing in mind this fact, and to realize a balance in income distribution policies. The housing policy should reconcile merely realizing equality in the allocation system with the need to increase the housing supply. In Zimbabwe there was a problem of identifying target groups in the allocation of services. Rakodi and Withers (1995) suggested a solution to avoid the difficulties of targeting particular income groups by providing a wider range of plot sizes and infrastructure standards. It was also suggested that the supply of plots for low-income households should be increased as part of the policy to increase the supply of serviced plots. Plot subdivision method suggested by this thesis will allow for the incidence of creating variously sized plots to gradually take place in the sites-and-services areas.

The criteria used for the housing plots allocation lack comprehensiveness in covering all relevant factors that could be utilized for both realizing equality and justice as well as covering issues to accelerate the plot development process instead of slowing it down. Generally, the allocation process has shown that applicants steadily snowball because no closing dates are identified. It could be more rational if the plots to be allocated are scheduled out periodically in conformity with the estimated housing demand. The annual demand has been estimated at 60 thousand households. This demand could be scheduled out, for instance, on an annual basis in conformity with the rates of the population increase to avoid accumulation of the housing demand and to reduce the bureaucratic burden of the allocation process. Furthermore, the city housing development could easily be set within the city structural plan and the urban growth pattern. Obviously, the annual housing demand for the sixty thousand households should not necessarily be provided through only sites-and-services approach. The strategy should identify the distribution of these households over the different tenure types, the housing types and income groups. Based on all these the land demand for housing could be estimated based on the new plot sizes and relevant housing standards and fitted in the structural plan.

An important argument is to verify whether the housing plan and its plot allocation system adopted in Khartoum is a real housing supply approach or not. Allocating plots to the people does not in itself constitute an actual housing supply. There is still a long construction and services provision process that follows to attain a real housing supply. The distribution of a huge number of plots in the housing plan can be viewed as the launching point of the supply.

The conclusions of the analysis of the allocation criteria depict varied evaluations and ambiguities behind their validity, objectives, and purposes. Obviously the criteria score point assignments has shown the arbitrary nature of many of the scores that provide chances for corruption. Most of these allocation indices lack specification. No clear-cut identification of the related conditions exists. On the other hand, the criteria lack comprehensiveness, and sometimes bear an irrational weighing of the indices themselves. On the whole, the criteria have ostensibly shown some tendency to focus on humanitarian aspects that are based in the cultural beliefs of the society. Sympathetic considerations to old people, widowed women and the like are some examples. Nevertheless, the affordability to build was not seriously integrated into the criteria, as it could have been used to stimulate the housing supply process. Therefore, the policy tends to bear the characteristics of a wealth distribution policy.

9.5 Limitations of and recommendations for further research

The results of this thesis, which focussed on trying to understand the role of the public sector in housing supply, cannot describe the actual role in detail because of some limitations. These limitations are explained below. The results are clearly affected by the nature of the sample used for the thesis. The sample was drawn from Khartoum city, one of the three cities constituting Greater Khartoum. Within Khartoum city, some districts were selected to reduce the effects of the limitations. The non-availability of reliable information on the city population and censuses and reliable population forecasts surveys could not give quantitative result on the overall housing supply in Greater Khartoum. Most reviewed researches on housing in Sudan did not include reliable statistical information about the housing supply during the last decade. Also, a search in publication records on recent housing policies about Sudan at the University of Newcastle was almost negative, except for a few old materials. The results under these limitations make them inapplicable to any other locality except Khartoum itself, not even another developing country. The research is therefore a grounded research that looks into the role of the public sector for Khartoum city only. At least it may fill a gap in the availability of data on housing in Khartoum in the literature, and may fit the housing policy practises in Khartoum within the wide spectrum of the developing countries. Haywood (1985b) pointed out that poor data basis and political myopia formed key issues that have constrained his research about Gezira in Sudan. This could be a typical feature in Khartoum.

This research has been carried out under a number of limitations. First, the research has been pursued in Newcastle, while being based in Saudi Arabia and the chosen subject is about Khartoum – Sudan. This required regular visits to Newcastle for the supervisory meetings and

access to the rich library resources and other university computer facilities. Also visits were necessary to Khartoum for fieldwork, data collection and surveys. All these circumstances imposed time and effort limitations to carry out this research.

Second is that the research is self-financed, which imposed further limitations on the budget and availability on some logistics which might have made life easier and shortened the research period. However with a strong will and determined effort most of these constraints have been reduced to as minimum as possible.

Another important limitation was the difficulty of obtaining information on housing and the government housing plans and any government reports on the issue, which were scarce. Most of the necessary information is classified as highly confidential, particularly data on the system and method of housing plots allocation, the number of plots allocated and the records of allocation committees and other specialized committees. Personal contacts with officials, some of whom are colleagues, failed to obtain the most up-to-date statistical data on the number of plots allocated in the government housing plans and the up-to-date base maps of Khartoum. Notwithstanding all these limitations, the thesis provided some useful conclusions described in the previous sections of this chapter.

This study has generally revealed the availability of a wide research gap on all aspects of housing in Khartoum. Most of these aspects need to be satisfactorily covered, if it is intended to obtain an improved housing supply system. This also reflects non-awareness of the decision makers, politicians and the officials, as well as the significance of housing research on developing effective housing policies. The current processes of planning and implementation of the housing policies have deprived skilled professionals and local consulting firms from participating in developing sound policies. The low wages of the public sector, the brain drain caused by the increased demand for professionals abroad and high wages, and inefficient working environments, retarded administrative and management systems and lack of financial resources have expelled the skilled professional cadre from the public sector, which undertakes all the housing processes, towards the private sector and abroad. Corruption is an important factor in the non-availability of reliable data on the housing allocation system and statistical data on housing.

Understanding these results, it would useful to highlight some further research areas. First, detailed studies on land markets and the factors affecting the plot prices in Khartoum would cover an important gap in the housing supply, as land cost analysis has a direct influence on the housing supply for the urban poor. This field is also important because the research suggested that land subdivision could enable owner-occupiers to sell part of the plot to finance construction of the rest of the plot. Land markets in Khartoum have a distinctive feature because most land is government-owned and plots are released by the government to people, hence converted from subsidised prices to free market price on resale by the allottees.

Another important research field is exploring the behaviour of the plot owners in the housing construction and the development process, and their motives for developing house construction and the construction options and strategies aiming at accelerating the construction and reducing its period. Research should also cover what possible policies and strategies that could be adopted by the government to dispose and allocate the urban housing land and the ideal methods to achieve that. Research on housing in Khartoum should include a detailed review of the housing classification system and its inherent standards for increased housing supply, and more detailed investigation on the traditional housing types and the optimisation of their standards and adaptability to modernity.

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Appendices

Appendices

Appendix 1: Adequate housing

Source: quoted (UNCHS, 2000: annex 2)

The Habitat Agenda defines adequate shelter in the following manner:

> "Adequate shelter means more than a roof over one's head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost. Adequacy should be determined together with the people concerned, bearing in mind the prospect for gradual development. Adequacy often varies from country to country, since it depends on specific cultural, social, environmental and economic factors. Gender-specific and age-specific factors, such as the exposure of children and women to toxic substances, should be considered in this context" (UNCHS, 1997b: paragraph 60).

According to (UNCHS, 2000), The United Nations Committee on Economic, Social and Cultural Rights have drawn up the following seven principles to elaborate on housing adequacy:

> **"(a) Legal security of tenure**
>
> Tenure takes a variety of forms, including rental (public and private) accommodation, cooperative housing, lease, owner-occupation, emergency housing and informal settlements, including occupation of land or property. Notwithstanding the type of tenure, all persons should possess a degree of security of tenure which guarantees legal protection against forced eviction, harassment and other threats. States parties should consequently take immediate measures aimed at conferring legal security of tenure upon those persons and households currently lacking such protection, in genuine consultation with affected persons and groups;
>
> **(b) Availability of services, materials, facilities and infrastructure**
> An adequate house must contain certain facilities essential for health, security, comfort and nutrition. All beneficiaries of the right to adequate housing should have sustainable access to natural and common resources, potable drinking water, energy for cooking, heating and lighting, sanitation and washing facilities, food storage, refuse disposal, site drainage and emergency services;
>
> **(c) Affordable**
>
> Personal or household financial costs associated with housing should be at such a level that the attainment and satisfaction of other basic needs are not

threatened or compromised, Steps should be taken by States parties to ensure that the percentage of housing-related costs is, in general, commensurate with income levels. States parties should establish housing subsidies for those unable to obtain affordable housing, as well as forms and levels of housing finance which adequately reflect housing needs. In accordance with the principle of affordability tenants should be protected form unreasonable rent levels or rent increases by appropriate means, In societies where natural materials constitute the chief sources of building materials for housing, steps should be taken by States parties to ensure the availability of such materials;

(d) Habitable

Adequate housing must be habitable, in terms of providing the inhabitants with adequate space and protecting them from cold, damp, heat, rain, wind or other threats to health, structural hazards, and disease vectors, The physical safety of occupants must be guaranteed as well. The Committee encourages States parties to comprehensively apply the "Health Principles of Housing" prepared by the World Health Organization (WHO) which view housing as the environmental factor most frequently associated with disease conditions in epidemiological analyses; i.e. inadequate and deficient housing and living conditions are invariably associated with higher mortality and morbidity rates;

(e) Accessibility

Adequate housing must be accessible to those entitled to it. Disadvantaged groups must be accorded full and sustainable access to adequate housing resources, Thus, such disadvantaged groups as the elderly, children, the physically disabled, the terminally ill, HIV-positive individuals, persons with persistent medical problems, the mentally ill, victims of natural disasters, people living in disaster-prone areas and other groups should be ensured some degree of priority consideration in the housing sphere. Both housing law and policy should take fully into account the special housing needs of these groups. Within many States parties increasing access to land by landless or impoverished segments of the society should constitute a central policy goal, Discernable governmental obligations need to be developed aiming to substantiate the right of all to a secure place to live in peace and dignity, including access to land as an entitlement;

(f) Location

Adequate housing must be in a location which allows access to employment options, health care services, schools, child care centres and other social facilities. This is both true in large cities and in rural areas where the temporal and financial costs of getting to and from places of work can place excessive demands upon the budgets of poor households, Similarly, housing should not be built on polluted sites nor in immediate proximity to pollution sources that threaten the right to health of the inhabitants;

(g) Culturally Adequate

The way housing is constructed, the building materials used and the policies supporting these must appropriately enable the expression of cultural identity and diversity of housing. Activities geared towards development or modernization in the housing sphere should ensure that the cultural dimensions of housing are not sacrificed and that they should ensure, inter alia, modern technological facilities, as appropriate".

Appendix 2: Questionnaire

Questionnaire classification

Section	1	2	3	4	5	6	7	8	9	10	
	Administrative	Accommodation	Socio-economic 1	Socio-economic 2	Socio-economic 3	Housing extensions	Housing process 1	Housing preferences 2	Housing process 2	The neighbourhood	Tick the appropriate type
O = Sections to be completed by each type Shaded boxes: could be filled through observation by the interviewer • = To be filled if the respondent owns a plot and is planning to build * These groups include free living households											
Owners not extending – old areas.	O	O	O		O	O		•	•	O	
Owners extending – old areas	O	O	O		O	O				O	
Owners renting rooms.	O	O	O		O		O	•	•	O	
Owners/ newly building in new housing areas	O	O	O		O				O	O	
Renters / plot owners planning to build*	O	O	O	O	O		O	O		O	
Renters – non-plot owners*	O	O	O	O	O		O	O		O	

1. ADMINISTRATIVE REFERENCE

Case number:			1.01
Reference map number			1.02
Address			1.03
Telephone Number			1.04
Name of the interviewer			1.05
Name of the supervisor			1.06
Signature (supervisor's check)			
Date			1.07
Plot number			1.08
Block number			1.09
District			1.10
How many *housing units* does this plot include?			1.11
Respondent is: Male	1		1.12
Female	2		
Respondent is: Head of the household	1		1.13
Spouse	2		
Adult family member	3		

9.14 Questionnaire result (*for cases defined on a map*): (in the following box insert one of the questionnaire result numbers on the appropriate space of the questionnaire result):

1. No one at home or Respondent absent
2. House vacant
3. Refusal
4. Appointment made
5. Not a dwelling unit
6. Interview taken

Call number	1	2	3
Time			
Date			
Result			

2. ACCOMMODATION (ALL GROUPS)

2.01 What is the type of the house you are living in now?

Traditional single family house	1	
Traditional multi family house	2	
Flat.	3	
Villa	4	
Shanty	5	
Other (specify)	6	

2.02 How many floors does this house have? 2.02

2.03 What is the approximate area of the house?

1	Sq. m.	
2	Don't know	

2.04 What is the type of construction (mainly of the habitable rooms)?

Load bearing walls (Traditional)	1	
Load bearing walls with concrete roof	2	
Concrete frame structure	3	
Perishable construction	4	
Other (specify)	5	
Don't know	6	

2.05 What is the building material of the walls or the supports?

Mud or mud bricks.	1	
Red bricks with cement mortar.	2	
Gishra (red and mud bricks)	3	
Concrete columns	4	
Other (specify)	5	

2.06 What is the building material of the roof?

Traditional (baladi)	1	
Metal sheets	2	
Jack arch	3	
Timber.	4	
Concrete.	5	
Other (specify)	6	

How many rooms in the *house* you are living in now *(do not include the kitchen, toilet, store, passages, bathrooms, garages and verandas)*, specify the number in the box?

Bedrooms and Living room	1	
Family room or hall	3	
Sitting room	4	
Dining room	5	
Bathroom	6	
Toilet	7	
Kitchen	8	
Yard / Courtyard *(Housh)*	9	
Garage	10	
Servants room	11	
Garden	12	

Retail shop, crafts or service activity.	13	
Animal pen	14	
Storage	15	
Other (specify)	16	

2.07 How many rooms are there in this *house* as a whole (*do not include the kitchen, toilet, store, passages, bathrooms, and garages)*?

2.08	

Do you have exclusive or shared use of any of the following facilities?

2.08 Bathroom

Exclusive	1	
Shared	2	
None	3	

2.09 Toilet

Exclusive	1	
Shared	2	
None	3	

2.10 Kitchen

Exclusive	1	
Shared	2	
None	3	

2.11 Water supply

Exclusive	1	
Shared	2	
2.12None	3	

2.13 Electricity

Exclusive	1	
Shared	2	
None	3	

2.14 Courtyard/ *(housh)*

Exclusive	1	
Shared	2	
None	3	

2.15What is the type of the water supply in this house?

Water vendor.	1	
Well.	2	
Communal water point	3	
Single tap connection	4	
Multi tap connection.	5	
Other (specify).	6	

2.16 What type of sanitary system does the house have?

Pit latrine	1	
Temporary pit latrine	2	
Septic tank and soak away pit.	3	
Other (specify)	4	
None	5	

2.17 How satisfied are you with the following attributes of your house, giving a score between 0 and 10, zero is for not at all satisfied and ten is extremely satisfied (Please circle the appropriate answers and ***don't answer if you feel indifferent***).

2.18 Plot size	10	9	8	7	6	5	4	3	2	1	0
2.19 Size of the building area	10	9	8	7	6	5	4	3	2	1	0
2.20 Building layout and design	10	9	8	7	6	5	4	3	2	1	0
2.21Convenience and suitability	10	9	8	7	6	5	4	3	2	1	0

2.18 Is this house owned or rented?

Owned	1	
Rented	2	

(If owned please complete section 6. If rented please complete section 7)

2.19 Do you own another house elsewhere in this city?

Yes	1	
No	2	

2.20 If the house is owned, how did you acquire the land for this house?

Allotted by the government	1	
Bought	2	
Inherited	3	
Family house	4	
Other (specify)	5	

2.20 If bought, have you completed the registration?

Yes	1	
No	2	

2.21 In you opinion how difficult is the land registration process?

(Tick any of the boxes including the non-numerical boxes)

Extremely difficult (10)	٩	8	7	6	٥	٤	٣	٢	١	Not at all difficult (0)

2.22 In you opinion how expensive is the land registration process?

(Tick any of the boxes including the non-numerical boxes)

Extremely expensive(10)	٩	8	7	6	٥	٤	٣	٢	١	Not at all expensive

2.232.24 If rented, what is the approximate area of the rented part?

1	Sq. m.	
2	Don't know	

2.25 Do you rent any rooms?

Yes	1	
No	2	

(If **Yes**, *continue with question 2.26, if* **No** *go to section three)*

2.26 How many rooms are you allocating for rent?

2.26		rooms

2.27 To whom are you renting these rooms?

A relative or a friend.	1	
A family who I knew through another relative.	2	
A stranger	3	
A foreigner	4	
Other (specify)	5	

2.28 How many times did you rent the house since you first started renting?

2.28	1	

2.29 How much rent do you collect every month?

2.29	1	

2.30How much rent per month do you expect to collect this time next year?

2.30		£S

2.31 To what extent do you agree or disagree with the statement that renting a house or part of a house is a profitable investment?

(Tick any of the boxes including the non-numerical boxes)

Strongly disagree (10)	٩	8	7	6	٥	٤	٣	٢	١	Strongly agree (0)

2.32 How regularly does the tenant pay the rent?

(Tick any of the boxes including the non-numerical boxes)

Not at all regular (10)	٩	8	7	6	٥	٤	٣	٢	١	Extremely irregular (0)

2.33 Have you ever evicted a tenant before?

Yes	1	
No	2	

2.34 If yes, how difficult is evicting a tenant?

Tick any of the boxes including the non-numerical boxes)

Extremely difficult	٩	8	7	6	٥	٤	٣	٢	١	Not at all difficult

2.35How many months ago did you last ask the tenant for rent increase?

2.35		Months

3. SOCIO-ECONOMIC VARIABLES (1) - (ALL GROUPS)

3.01		State
3.02		Years
3.03		Years

3.01 Where were you born?
3.02 How long have you lived in Khartoum?
3.03 How long have you lived in this house?

3.04 Where was your previous residence before you come to live in Khartoum?

In another urban area in Sudan	1	
In my home rural area.	2	
In another rural area.	3	
Abroad.	4	
None	5	

3.05 Where was your previous residence after you came to live in Khartoum?

In a squatter area.	1	
In an upgraded squatter area.	2	
In an old govt. planned residential area.	3	
In a new govt. planned residential area.	4	
In a peripheral village.	5	
None	6	

3.06 Do you own any other residential land property elsewhere?

Yes	1	
No	2	

3.07 If yes, where is it?

Home rural area	1	
In an old area in this city	2	
In a new area in this city	3	
In another city.	4	

3.08 Do you intend to stay in this city? Please tick the most appropriate.

Will return home as soon as possible.	1	
Working here in order to return home.	2	
Will return home as soon as specified objective is attained.	3	
Will return home at some unspecified date in future.	4	
Will stay but keep in touch with the home area.	5	
Will return home on retirement.	6	
Will always be in the city.	7	
Born and bred in the city – it is a home.	8	

3.09 Are you employed?

Yes I am employed	1	
Yes I am self-employed	2	
Yes I am *casually* employed	3	
No I am unemployed	4	
No I am retired.	5	

3.10 In which sector are you currently employed?

Public sector	1	
Private sector	2	

3.11 How many hours per week do you work on this job?

3.11		Hours

3.12 Where were you employed before this current employment?

I was working temporarily in a private business	1	
I was working in the public sector	2	
I was working in another private sector company	3	
I was unemployed	4	
I was laid off from my original employment	5	

3.13 For how long have you worked since you were first employed?

3.13		years

3.14 How much money do you receive from your main job?

	3.14		£S	monthly
or	3.14	Less than	£S	monthly
		More than	£S	monthly

3.15 Do any of your family members share the living expenses with you?

1	Yes	
2	No	

3.16 If yes, approximately how much do they pay?

3.16	£S	monthly

3.17 Do you receive any income from other sources?

1	Yes	
2	No	

3.18 How much could you estimate this income?

3.18	£S	monthly

3.19 Do you have any additional income-earning job currently?

1	Yes	
2	No	

(If **No** *go to question 3.23)*

3.20 How many hours per week do you work on this additional job?

3.20		Hours

3.21 Is this additional job casual or regular?

Casual	1	
Regular	2	

3.22 How much do you earn from this additional job every month?

3.22	£S	monthly

3.23 How much money do you receive in total?

Daily £S	1	
Or, weekly £S	2	
Or, monthly £S	3	

3.24 Who is the main financial supporter of the household?

The household head	1	
One of the sons or daughters who live here.	2	
An expatriate family member	3	
Other (specify)	4	

3.25 What type of bank account do you have?

Don't have a bank account	1	
Local currency account	2	
Foreign currency account	3	

3.26 Have you ever worked abroad?

Yes	1	
No	2	

3.27 If yes, in which country have you worked?

3.27	

3.28 For how long have you worked abroad?

3.28		Years

3.29 Do you have any of your close relatives working abroad?

Yes	1	
No	2	

3.30 If yes, what is the nature of your relationship?

a son	1	
a daughter	2	
a brother	3	
more than one of the above	4	

3.31 In which country are they, he or she working?

3.31	

3.32 How much is your monthly expenditure on the following items?

Food	1	£S
Water supply	2	£S
Transport	3	£S
Electricity and cooking fuel.	4	£S
Telephone	5	£S
Clothing and footwear	6	£S

Medical expenses	7	£S
Education	8	£S
Social activities	9	£S
Savings	10	£S

3.33 Does your household own any of the following?

Radio cassette	1	
Television	2	
Gas cooker	3	
Refrigerator	4	
Deep freezer	5	
Satellite receiver & dish	6	
Air cooler	7	
Air conditioner	8	
Bicycle	9	
Motor cycle	10	
Sewing machine	11	
Car	12	
Taxi/ *Raksha*	13	
Truck/ Cart	14	
Lorry	15	

3.34 How many households live in this house? | 3.34 | |

3.35 Are you married to more than one wife?

Yes	1	
No	2	

(If No, *please skip the next two questions)*

3.36 If yes, how many of them altogether? | 3.36 | |

3.37 If yes, where does each live?

in the same house	1	
in two separate neighbouring houses	2	
in two different areas in the city	3	
in two different cities	4	

3.38 Do you usually receive relatives who stay frequently for short periods in this house?

Yes	1	
No	2	

3.39 If yes, how many of those relatives usually stay with you at a time?

Male young	1	
Male old	2	
Female young	3	
Female old	4	

3.40 For how long do they usually stay?

Few days every month	1	
Only in the long vacations.	2	
For study or looking for jobs.	3	
Rarely	4	

4. SOCIO-ECONOMIC VARIABLES (2) - (RENTERS)

4.01 Does the landlord live in this house?

Yes	1	
No	2	

4.02 If yes, how many rooms does he or she occupy?

4.02		rooms

4.03 How much rent do you pay your landlord monthly?

4.03	£S	Pounds

4.04 From whom do you rent this house?

A relative not living in the same house.	1	
A relative who is living in the same house.	2	
Private landlord not living in the same house.	3	
Private landlord living in the same house.	4	
Other (Specify)	5	

4.05 How many months ago did your landlord last ask for rent increase?

4.05		months

4.06 How regularly do you pay the rent to your landlord?

(Tick any of the boxes including the non-numerical boxes)

Not at all regular (10)	٩	8	7	6	٥	٤	٣	٢	١	Extremely irregular (0)

4.07 From which sources do you pay your rent?

From my own income sources.	1	
From my family income sources	2	
Rent paid by employer.	3	
Other (specify).	4	

4.08 If you are not paying rent, who is paying?

Rent paid by the employer.	1	
Free (family house).	2	
Free (a relative or a friend)	3	
Other (specify)	4	

4.09 Have you ever applied for a piece of land in the government plans?

Yes	1	
No	2	

4.10 If no, why don't you apply for a piece of land?

Because I don't qualify	1	
I qualify, but I don't think I will get it.	2	
I can't afford to pay cost.	3	
Other reasons.	4	

4.11 If yes, have you received your land?

Yes	1	
No	2	

4.12 Would you under any circumstances consider developing a house in this land?

Yes	1	
No	2	

(If yes please skip section 6 and complete section 8)

5. SOCIO-ECONOMIC VARIABLES - (ALL GROUPS)

Relation to household		Age	Sex		Social status				Mode of stay		Main employment	Secondary employment	Income from the main employment (£S)	Income from the secondary employment (£S)	Qualification	Educational level of students				
			Male	Female	Married	Single	Widowed	Divorced	Temporary	Permanent						University	Secondary	Primary	Nursery	Other (specify)
Household																				
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				

6. HOUSING PREFERENCES (1)
(OWNERS EXTENDING AND NOT EXTENDING - OLD AREAS)

6.01 Is the area of the plot enough for you?

Yes	1	
No	2	

6.02 Is the size of the built-up area of the plot you are living in now enough for you?

Yes	1	
No	2	

6.03 If it were not enough, would you under any circumstances consider extending the house?

Yes	1	
No	2	

(If **Yes** *continue with question 6.04, if* **No** *go to question 6.13)*

6.04 If you were to build an extension would you be most likely to build?

Single room	1	
Multiple rooms	2	
Extra household unit	3	
Extra floor	4	
Extra bath, toilet, veranda, kitchen, etc.	5	

6.05Listed below are a number of reasons for building an extension. Can you give each reason a score between 0 and 10, giving higher scores for those reasons would be most important to you, and lower scores for those would be least important?

For increased status	1	10	9	8	7	6	5	4	3	2	1	0
For increased space for family	2	10	9	8	7	6	5	4	3	2	1	0
To start a business	3	10	9	8	7	6	5	4	3	2	1	0
To earn rental income	4	10	9	8	7	6	5	4	3	2	1	0
For storage	5	10	9	8	7	6	5	4	3	2	1	0

6.06 Are there any other reasons why you might build an extension?

Reason 1	6	10	9	8	7	6	5	4	3	2	1	0
Reason 2	7	10	9	8	7	6	5	4	3	2	1	0
Reason 3	8	10	9	8	7	6	5	4	3	2	1	0

6.07If you were building an extension, how difficult do you think each of the following would be? Give a score between 0 and 10, giving higher scores for those things which you think would be most difficult, and lower scores for those which you think would the least difficult.

Obtaining building materials	1	10	9	8	7	6	5	4	3	2	1	0
Earning enough income	2	10	9	8	7	6	5	4	3	2	1	0
Getting other loan finance	3	10	9	8	7	6	5	4	3	2	1	0
Paying for land registration, taxes and other government fees												
	4	10	9	8	7	6	5	4	3	2	1	0
Paying the contractor or the cost of labour.												
	5	10	9	8	7	6	5	4	3	2	1	0

6.08 If you were to build an extension which of the following types of room would be most important for you to include in it? Give a score of 10 for the most important type of room, 9 for the second most important, 8 for the third most important and so on down to 1 for

the least important. If two types of room are equally important to the respondent, then give them the same score.

Living rooms for household.	1	
Living rooms for tenancy	2	
Bathrooms	3	
Kitchens	4	
Toilets	5	
Shops	6	
Storerooms	7	
Garages	8	
Verandas	9	
Other (specify)	10	

6.09 What would be the construction type of the extended part?

Load bearing walls (traditional)	1	
Load bearing walls (concrete roof)	2	
Concrete frame	3	
Shanty	4	
Other (specify)	5	

6.10 How long it will take you to build this extension?

6.10		Months

6.11 When will you start building the new extension?

6.11	

6.12 What in your opinion will be the cost of a complete average size room of your previously specified construction type?

6.12	£S	Pounds

6.13 If you are not considering extending the house, on the whole how satisfied are you with your house?

Extremely satisfied and would like to keep it as it is.	1	
Satisfied and would just maintain and up keep it.	2	
I am thinking of moving to another house and rent this one.	3	
I am thinking of rebuilding the house in the same plot.	4	
I am thinking of selling it and build a new house somewhere else.	5	
Indifferent or don't care.	6	

7. HOUSING PROCESS (1)
(RENTERS AND OWNERS PLANNING TO BUILD A NEW HOUSE)

7.01 If the house is rented, have you ever built a house for yourself?

Yes	1	
No	2	

(If **Yes** *go to question 7.04, if the answer is* **No** *continue with question 7.02)*

Would you under any circumstances consider building a new house in this city?

Yes	1	
No	2	

(If **Yes** *go to question 7.03, if the answer is* **No** *go to question 7.07)*

Listed below are a number of reasons why it might be important for you to one day build your own house. Can you give each reason a score between 1 and 10, giving higher scores for those which you think would be most important, and lower scores for those reasons which you think would be the least important?

For the lack of accommodation in the rented house.											
	1	10	9	8	7	6	5	4	3	2	1	0
The current house is no longer convenient or suitable											
	2	10	9	8	7	6	5	4	3	2	1	0
For status	3	10	9	8	7	6	5	4	3	2	1	0
For family security	4	10	9	8	7	6	5	4	3	2	1	0
To save money on rents	5	10	9	8	7	6	5	4	3	2	1	0
To earn rental income	6	10	9	8	7	6	5	4	3	2	1	0
To live independent of the main family											
	7	10	9	8	7	6	5	4	3	2	1	0

Is there any other reason why you would build a house?

Reason one											
	8	10	9	8	7	6	5	4	3	2	1	0
Reason two											
	9	10	9	8	7	6	5	4	3	2	1	0
Reason three											
	10	10	9	8	7	6	5	4	3	2	1	0

Where is the house you built?

In the home village.	1	
In another town.	2	
In this town.	3	

7.02 Why don't you live in the house that you built?

Reason 1		1
Reason 2		2
Reason 3		3

7.03 Why don't you build a house?

Reason 1		1
Reason 2		2
Reason 3		3

8. HOUSING PREFERENCES (2)
(RENTERS AND OWNERS PLANNING TO BUILD A NEW HOUSE)

8.01 If you own a residential piece of land, when did you acquire it?

8.01	

8.02 If you were to build a house what type of house would you build?

Traditional nuclear family house	1	
Traditional extended family house	2	
Traditional multi family house	3	
Single family villa	4	
Extended family villa	5	
Block of apartments	6	

Other (specify)	7	

8.03 How many bedrooms would the house have?

8.02		rooms

8.04 How many floors would the house have?

8.03		floors

8.05 If you were building a new house, how difficult do you think each of the following would be? Give a score between 0 and 10, giving higher scores for those things which you think would be most difficult, and lower scores for those which you think would the least difficult. The 0 score will be for the not at all important or the indifferent cases.

Obtaining or buying land	1	10	9	8	7	6	5	4	3	2	1	0
Obtaining building materials	2	10	9	8	7	6	5	4	3	2	1	0
Getting other loan finance	3	10	9	8	7	6	5	4	3	2	1	0
Paying the taxes and fees for land registration												
	4	10	9	8	7	6	5	4	3	2	1	0
Paying the contractor or the cost of labour.												
	5	10	9	8	7	6	5	4	3	2	1	0

8.06 If you were to build a new house which of the following types of room or spaces would be most important for you to include in it? Give a score of 11 to the most important type of room, 10 to the second most important, 9 to the third most important and so on down to 1 to the least important. If two types of room are equally important to the respondent then give them the same score.

Guests sitting	1	
Dining room	2	
Living room for household.	3	
Hall	4	
Bathrooms	5	
Roof terrace	6	
Shops or storerooms	7	
Courtyard or garden	8	
Servants room	9	
Garages	10	
Verandas	11	

8.07 What would be the construction type of the house?

Load bearing walls (traditional)	1	
Load bearing walls (concrete roof)	2	
Concrete frame	3	
Shanty	4	
Other (specify)	5	

8.08 How long will it take you to build this house?

8.08		years

8.09 When will you start building the new house?

8.09	

8.10 If the house you will build is traditional, what in your opinion will be the cost of a complete room of that type?

8.10	£S	pounds

8.11 Which of the following reasons describes why you couldn't or wouldn't build a house in this city?

I would like to build a house but I could never afford to build it.	1	
I will not be staying in this city long enough to want to build a house.	2	
I am already building a house elsewhere.	3	
I am happy staying where I am now and do not want to live elsewhere.	4	
I am too old now to start to build a house.	5	
The rules and regulations make it too difficult to build a house.	6	
I could never find suitable land to build a house.	7	
Other reasons (please specify in detail below).	8	

Reason 1		9	
Reason 2		10	
Reason 3		11	

9. HOUSING PROCESS 2

OWNERS – NEW BUILDERS IN NEW HOUSING AREAS

9.01 When did you acquire the land for this house?

2.21	

9.02 When did you start building this house?

2.19	

9.03 Is the house now *complete*?

Yes	1	
No	2	

9.04 If yes, how long did it take you to complete the house?

2.21	

9.05 How much did it cost you to complete the whole house up to the current stage in terms of the following things?

1	Land cost	£S
2	Labour	£S
3	Building materials	£S
4	Registration and other government fees	£S
5	External services connections	£S
6	Other costs(specify)	£S

If the house is not complete, how many more years do you think it will take you to complete the house?

9.06		years

9.06 If the house is not complete which part do you intend to add?
(Please indicate the number of each in the box)

Living rooms for household.	1	
Living rooms for tenancy	2	
Bathrooms	3	
Kitchens	4	
Toilets	5	

Shops	6	
Storerooms	7	
Garages	8	
Verandas	9	
Other (specify)	10	

9.07 How many *storeys* will the house have?

9.08		storeys

10. THE NEIGHBOURHOOD

10.01 How would you judge your social relationships with your neighbours?

(Tick any of the boxes including the non-numerical boxes)

Extremely strong	9	8	7	6	5	4	3	2	1	Very weak

Are the following amenities/ utilities provided in this residential area?

10.02 Piped water supply.	1	Yes	
	2	No	
10.03 Electricity supply	1	Yes	
	2	No	
10.04 Street lighting	1	Yes	
	2	No	
10.05 Paved roads.	1	Yes	
	2	No	
10.06 Public transport.	1	Yes	
	2	No	
10.07 Surface water drainage.	1	Yes	
	2	No	
10.08 Garbage collection.	1	Yes	
	2	No	
10.09 Cooking gas.	1	Yes	
	2	No	

Are the following community facilities provided in this residential area?

10.10 Schools.	1	Yes	
	2	No	
10.11 Health facilities	1	Yes	
	2	No	
10.12 Mosques / religious facilities.	1	Yes	
	2	No	
10.13 Police.	1	Yes	
	2	No	
10.14 Shopping facilities	1	Yes	
	2	No	
10.15 Recreational facilities.	1	Yes	
	2	No	

10.16 If you were to share the cost of provision of the infrastructure, which of the following you think is most important to pay for?

Piped water supply.	1	
Electricity supply	2	
Street lighting	3	
Paved roads.	4	
Surface water drainage.	5	
Garbage collection	6	

Appendix 3: The visual character of the low-income housing areas

Photo 1 As-Sahafa: mostly single storey traditional gishra construction; signs of penetration of multi-storey houses and illegal plot extensions



Photo 2 Old government sites-and-service districts still maintain its low-density low-rise construction

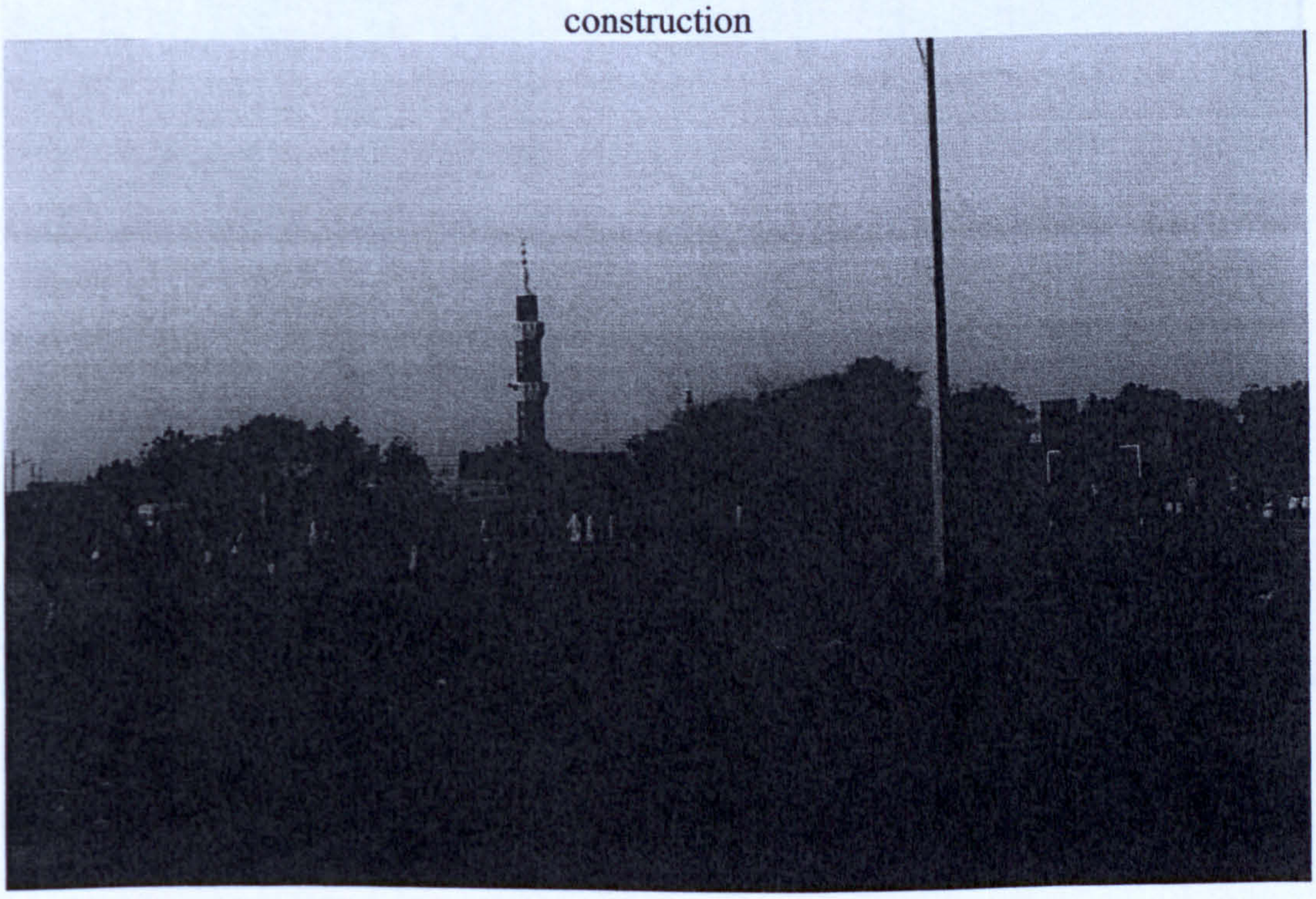


Photo 3 Abu-Adam low building density, high vacant plot ratio and poor services

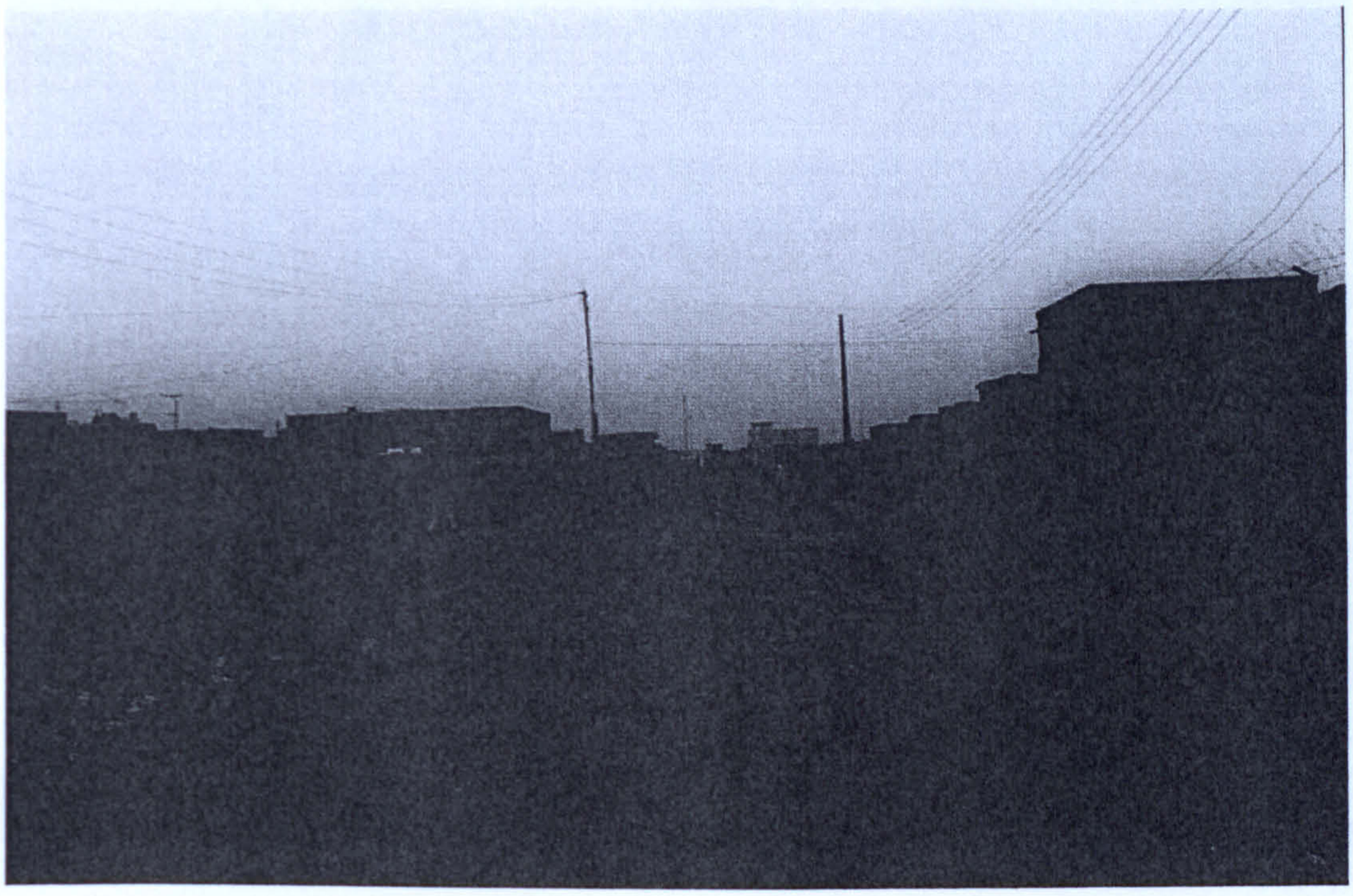


Photo 4 Abu-Adam: low-income housing plots hijacked by high-income people



Photo 5 Abu-Adam: large reserved lots low density incomplete development

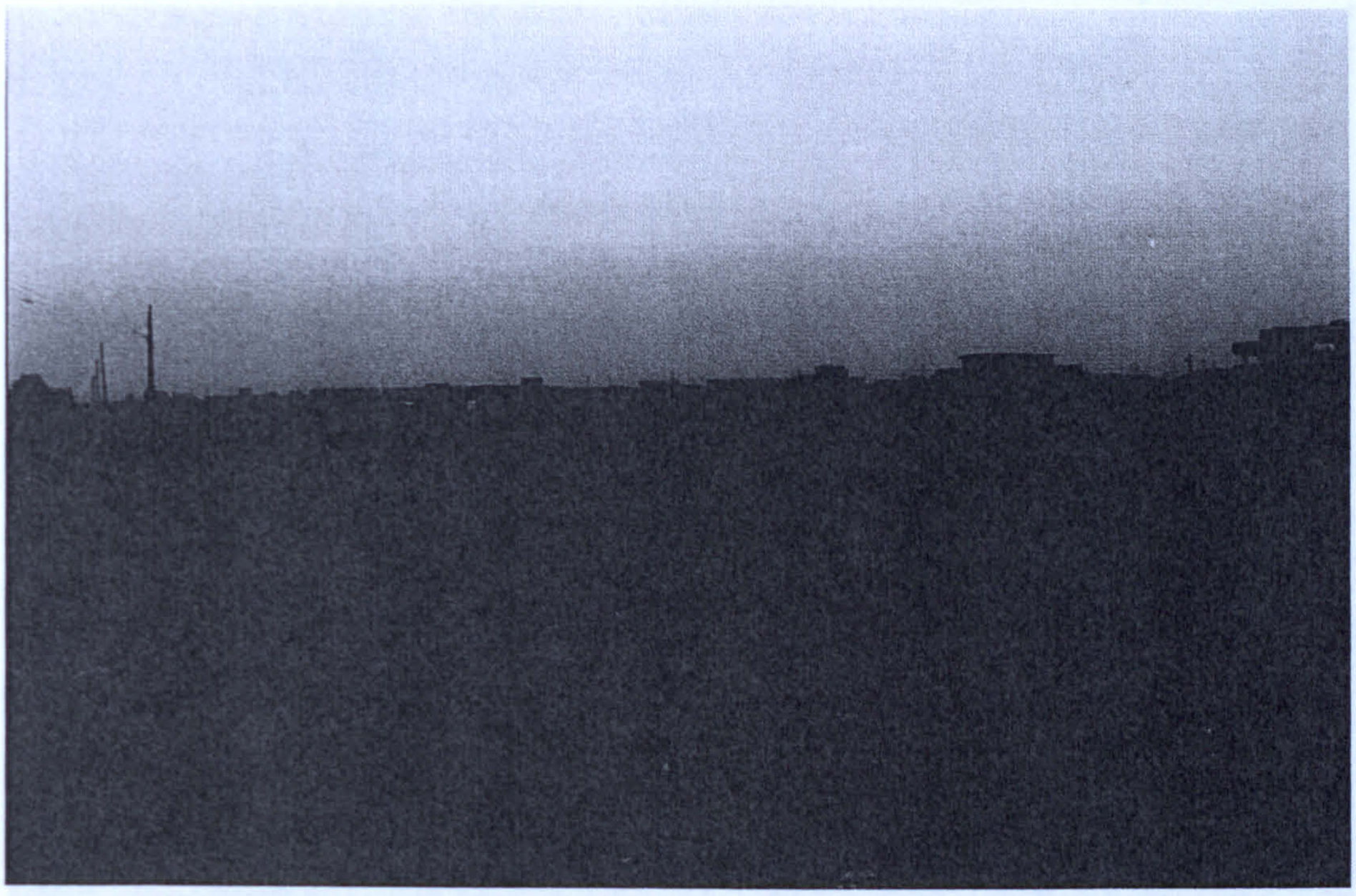


Photo 6 Abu-Adam: large reserved lots low density incomplete development



Photo 7 Low-income sites and services, some poor households move into the new plots start construction with recycled materials and start incremental development

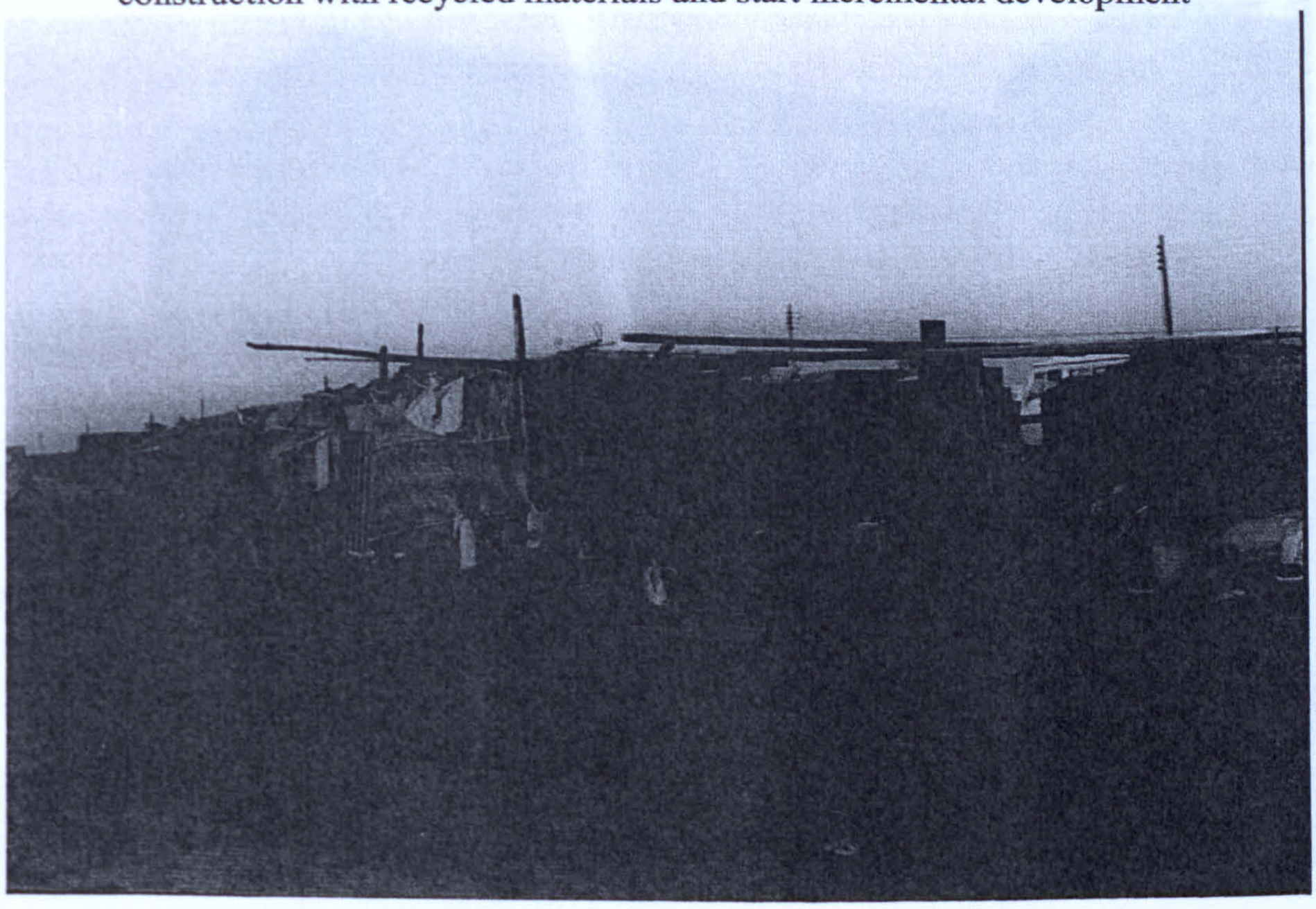


Photo 8 Low-income sites and services, some poor households move into the new plots as a second stage build at low standard and cheap mud construction

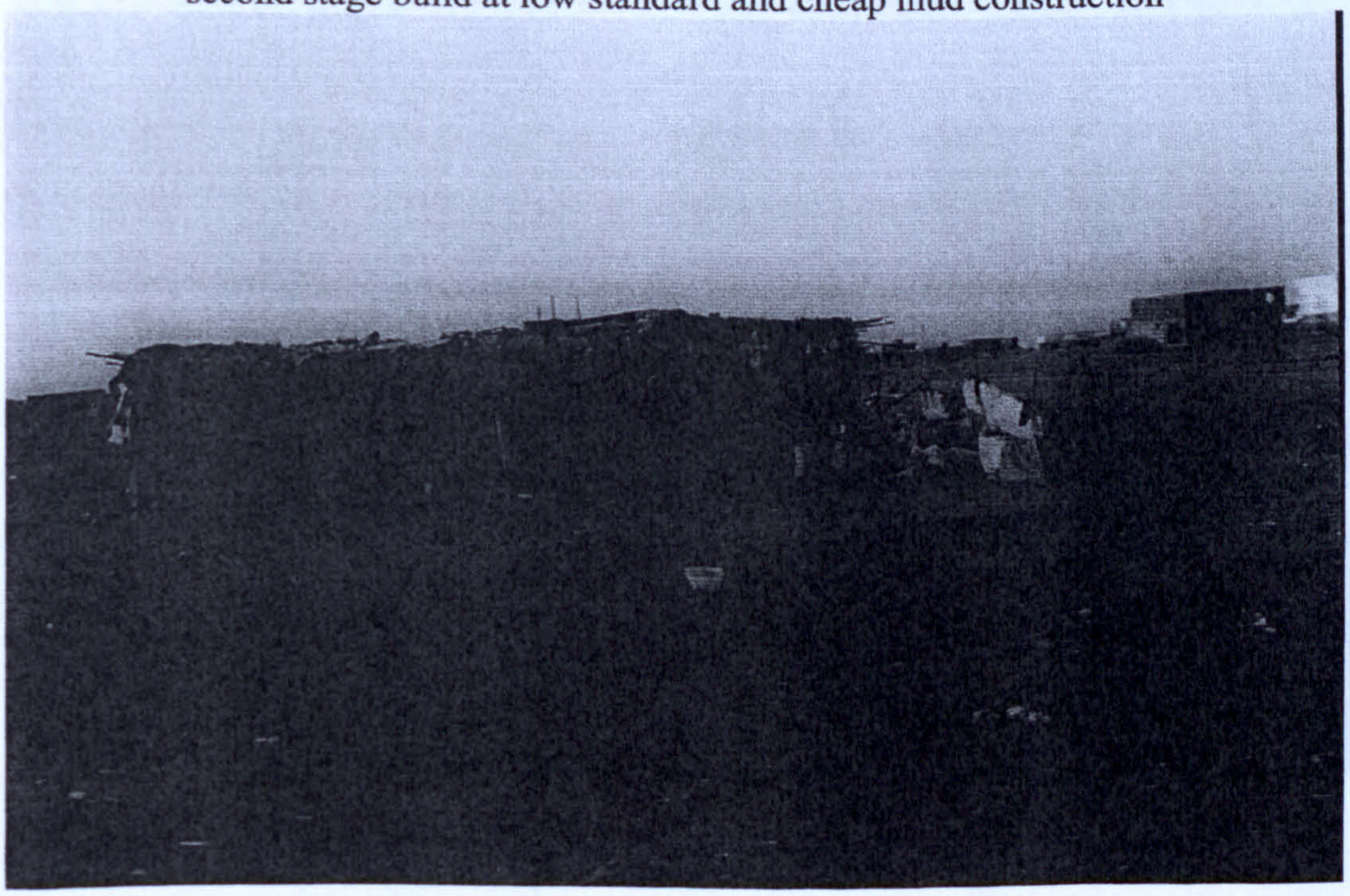


Photo 9 Low-income housing areas places of work, a carpenter shop showing gishra construction type with corrugated iron sheets

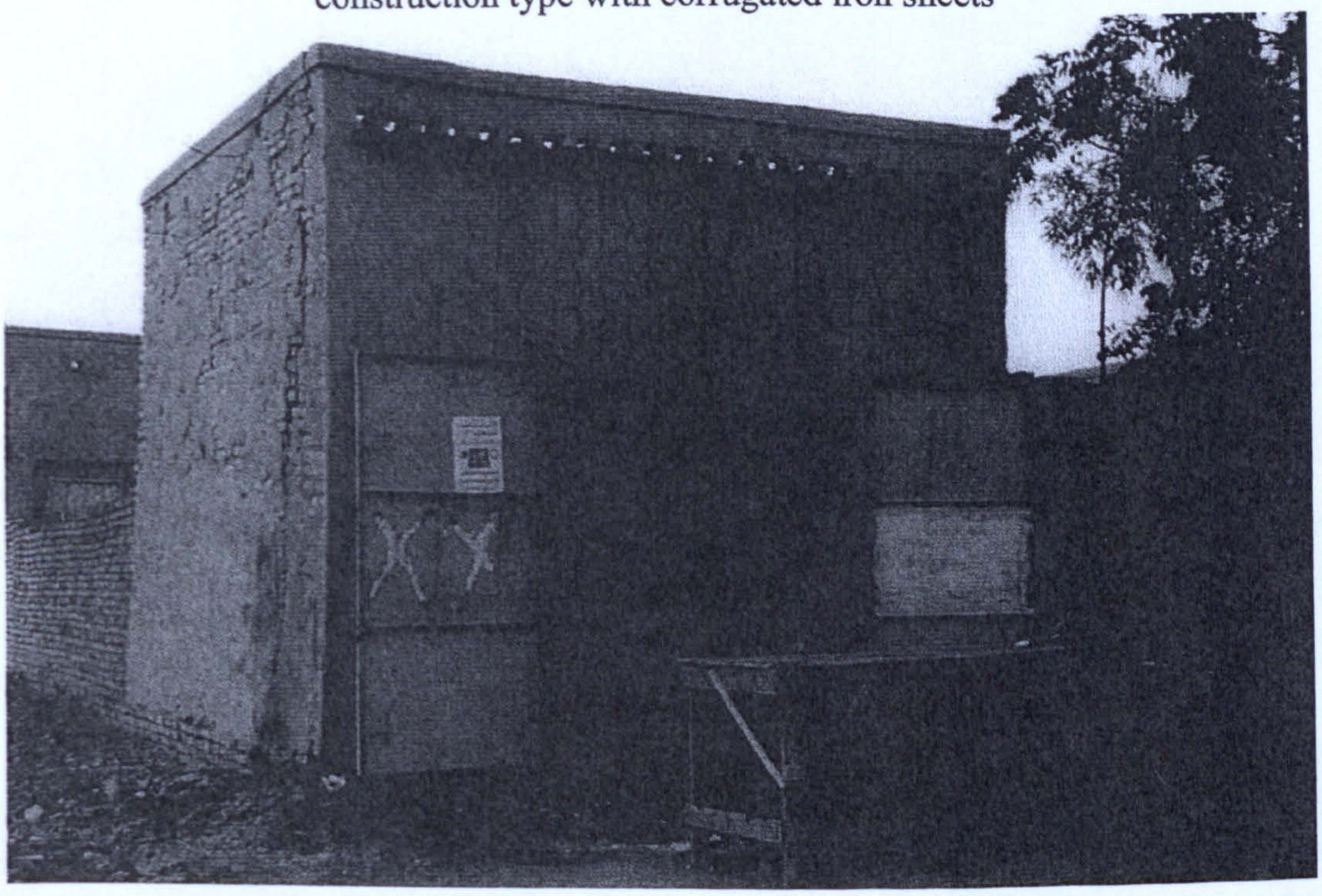


Photo 10 Low-income housing areas, a corner shop

