

**\VN EVALUATION OF SLUM UPGRADING PROGRAMME (KENSUP): CASE
STUDY OF MAVOKO SUSTAINABLE NEIGHBOURHOOD PROGRAMME IN
MACHAKOS COUNTY ^ ^**

BY

MARY W. NDUNG'U



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NAIROBI

2011

DECLARATION

This project work is my original work and has not been submitted for a degree in any other University.

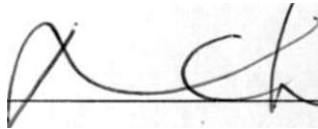
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Mary Wanjiku Ndung'u

This Project work has been submitted for the degree of Masters of Arts (Environmental Planning and Management) with our knowledge as University Supervisors.

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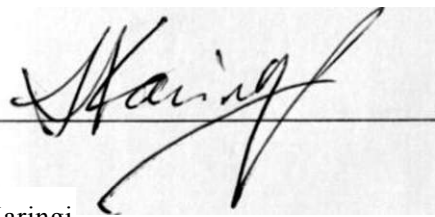


Date: / S V f f ^ f X

Nicholas Ochanda

University supervisor

Signed:



Date:

14/4/2012

Lincoln Karingi

University supervisor

DEDICATION

To my husband Patrick Ndung'u, my mother Eunice Wambui Mburu and my children Juliet, Eunice, Ian and Andrea and all the Mavoko Informal Settlements residents

ACKNOWLEDGEMENT

I am highly indebted to the following personalities and institutions for contributing to the project described in this report. I wish to sincerely appreciate the material and moral support of the entire staff of the department of Geography and Environmental Studies of the University of Nairobi especially my able supervisors; Mr. Nicholas Ochanda and Mr. I. Lincoln Karingi for their constructive criticism that provided a benchmark on which this study was built. Dr. Mwaura F., Department of Geography and Environmental Studies, University of Nairobi for his encouragement and moral support during my study period, Mr. Ndolo, Department of Geography and Environmental Studies, The University of Nairobi for his knowledge, support, encouragement and guidance on the qualitative techniques that shaped my study, Dr. Msingi, Department of Geography and Environmental Studies, the University of Nairobi for his guidance and encouragement when I almost gave up. Current Chairman Dr. Owour S., Department of Geography and Environmental Studies, The University of Nairobi for his encouragement and support towards completion of my research work. I sincerely thank the Municipal Council of Mavoko through the Deputy Town Clerk. SNP site officials, Madam Agnes and George Onyiro of UN-HABITAT, Madam Judy Mboo of MMC and Ministry of Housing officials and all the institutions that took part in this study for providing the necessary literature that informed the study at its conceptualization stage. Special thanks to all the leaders of various Housing Cooperative Societies for participating in a fruitful Focus Group Discussion that gave the study enormous insight. It is also noted with appreciation the co-operation of all the local residents and households visited during the research period for their role in making this study a success. To my very able lead research assistants; Mr. F. Omondi and Purity Muthoni thank you very much. Finally, I thank my family for their moral and spiritual support during the period. God bless you all.

ABSTRACT

Nearly all future population growth will be in the cities and towns of the developing world. Which are growing at unprecedented rate: soon the rural population will be less than the urban, while the number of urban dwellers living in poverty is increasing day by day. As a result of this, the demand for more urban land, shelter, infrastructure, social facilities, and employment has exceeded supply as evident in the current state of urban sprawl and proliferation of slums and squatter settlement. In response to this, the government initiated the Kenya Slum Upgrading Programme with one of its components being Sustainable Neighbourhood Programme (SNP). The programme aims at improving the lives of people living and working in the slums and informal settlements in all urban areas of Kenya. The study evaluates the state of the low income housing in Mavoko, determines the potential of the SNP in improving the living conditions of beneficiary population, explores the means used by the programme to achieve its goals; challenges facing its implementation and most important, the lessons learnt in the implementation of the programme. It further provides recommendations and proposes strategies for implementation of the programme. Interviews, focused group discussion, photography and observation were used to collect data which was analyzed using qualitative and quantitative methods. The data was processed to create data code book which was used to create digital project data base file ,first in Microsoft excel spreadsheet which was then exported into SPSS and save as a data file. The data was then subjected to analysis procedure starting with descriptive frequency and percentages provide sample data distribution tendencies. Data was presented in graphs, pie charts and photographs. The study established that majority of the residents in the area were tenants and squatters and hence lacked the motivation to redevelop the existing poor housing structures. Given the slum dwellers' low income, expenditure, savings and assets owned, the study established that the programme had the potential to improve the residents' standard of living. Civic education, strengthening of civil societies, community-government partnership, and formation of housing cooperatives and development of mixed housing arc some of the strategies being used in the SNP. However, the programme is constrained by poor communication systems, poor management of housing cooperatives, fluctuating prices of building materials and inadequate finance. The study recommends development of an

effective communication system, training and monitoring of housing cooperatives' officials, establishment of price controls to cushion the poor living in the slums and initiation of income generating activities to support the project by the government.

ABBREVIATIONS

ABT	Affordable Building Technology
ASAL	Arid and Semi-Arid Lands
CBOs	Community Based Organization
DDP	District Development Plan
KRSO	Experimental Reimbursable Seed Operations
FBO	Faith Based Organization
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GNP	Gross National Product
GoK	Government of Kenya
HCS	Housing Cooperative Society
IBRD	International Bank for Reconstruction and Development
IDB	Inter - American Development Bank
KBS	Kenya Bureau of Standards
KENSUP	Kenya Slum Upgrading Programme
KENSUF	Kenya Slum Upgrading Fund
LATE	Local Authority Transfer Fund
LASDAP	Local Authority Services Delivery Action Plan
MDGs	Millennium Development Goals
MMC	Municipal Council of Mavoko
MOU	Memorandum of Understanding
MOH	Ministry of Housing
HCS	Housing Cooperative Societies
NACHU	National Cooperatives Housing Union
NGO	Non-Governmental Organization
PM	Particulate Matter
SL	Sustainable livelihood
SNP	Sustainable Neighbourhood Programme
SWOT	Strength, Weaknesses, Opportunities and Threats
UN	United Nations

UNCKI)	United Nations Conference on Environment and Development
UNCUS	United Nations Commission on Human Settlement
UN-HABITAT	United Nations Human Settlement Programme
USAID	United States Agency for International Development
VVB	World Bank

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Box I: Neighbourhood upgrading in Latin America

DECLARATION

This project work is my original work and has not been submitted for a degree in any other University.

Signed: _____ Date:

Mary Wanjiku Ndung'u

This Project work has been submitted for the degree of Masters of Arts (Environmental Planning and Management) with our knowledge as University Supervisors.

Signed: _____ Date:

Nicholas Ochanda
University supervisor

Signed: _____ Date:

Lincoln Karingi
University supervisor

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter introduces issues, background information on slums and informal settlements, SNP, states the research problem, purpose of the study and poses the questions that the study aims to explore. The chapter also outlines the study objectives, research hypothesis and justifies the study while stating assumptions. Finally define various operational terms and concepts used in the study and outline challenges faced by this study.

1.1 Background

As indicated on United Nations Human Settlements Programme (UNHSP2003) report that slums and informal settlements have the most intolerable of urban housing conditions, which include insecurity of tenure ,lack of basic services especially water and sanitation, inadequate and sometimes unsafe building structures, overcrowding and locations on hazardous land. In additions slums and informal settlements areas have high concentration of poverty and social economic deprivation, which include broken families, unemployment and economic, physical and social exclusion. The dwellers in these areas have limited access to credit and formal job markets due to stigmatization, discrimination and geographical isolation. The areas are often reception of the city's nuisances, including industrial effluent and noxious waste, and the only land accessible to them is often fragile dangerous or polluted. It's out of this necessity to provide quality life to those living in this area, the governments of Kenya come up with mechanisms to deal with them and one of the programme is the Sustainable Neighborhood Programme (SNP), which is a resettlement project under the Kenya Slum Upgrading Programme (KENSUP) based in Mavoko Municipality.

As a pioneering novelty, the SNP is being used by the UN-Habitat and the GoK to assess the innovative approaches to slum upgrading and housing provision in Kenya. In this study, the researcher intends to evaluate how SNP will improve the housing situation of the informal settlements and other living conditions. The focus is to improve the livelihood of those living in the informal settlements, strengthening of the civic society and community members and provision of affordable housing. Training of community members in sustainable practices lies at

the core of this programme. Women and men will be trained in community organization and participation, sustainable construction and the manufacture of affordable building materials.

The programme is being implemented through partnership arrangements at the community and local government levels. The local authority's capacity will be strengthened to enable them support, facilitate community-driven housing, infrastructure and social service delivery and accessibility

Programme concept attempts to address some of the causes of failure of previous slum upgrading initiatives in the country. In the past, newly provided housing units were sold or hired out by the target beneficiaries to be occupied by members from higher socio-economic groups. One of the major causes of this economic displacement is that the income levels required to sustain cost recovery for providing improved physical and social infrastructure could not be reached by the target population. It is recognized that to enable slum dwellers to generate sufficient income to afford upgraded shelter conditions, empowerment through training and promotion of income-generating activities is crucial.

The SNP aims at creating more environmentally sustainable neighbourhoods through:-

- Reduction in the need for vehicular roads and other neighbourhood development costs through promoting urban structures that are less dependent on motorized transport which will have zero emissions.
- The use of cheap and innovative building materials that entail labour intensive construction techniques for houses
- Recycling and use of waste
- Harvesting and re-use of water
- Ecological sanitation systems with composting of human waste and household refuse
- Tree planting for environmental conservation

The successful completion of the project will provide the informal settlement dwellers with alternative life through affordable housing, clean water, alternative energy (renewable energy) income generating activities, schools, developed saving cultural through the formation of cooperatives, healthy society due to improved drainage, waste management, and greening of the area.

Platel: 1 SNP construction site.



1.2. Statement of the Problem

The worsening state to access shelter for all, safe water and sanitation, security of tenure, social exclusion and environmental degradation is a result of severe overcrowding, state of homelessness, and environmental health problems in slums and informal settlements. The global rise of urban poverty and insecure tenure status takes place in the context of accelerated pace of globalization (Stren, 2001). As a result, the urban low income groups have no choice but to rely on any available 'idle land' for access to land and shelter, thus fostering the expansion of unplanned settlements in cities.

Proliferation of informal settlements and persistence of urban slums in Kenya and East Africa are caused and sustained by (a) lack of urban land and planning policy; (b) Unrealistic construction standards and regulations; (c) Private sector housing targeting only the high and middle income groups; (d) Lack of strategic positioning by governments and local authorities; (e) Lack of public infrastructure; and (f) The politicking of informal settlements and social housing along party lines. Slums interventions have had mixed results due to the persistence of exclusion of target groups; failure to recognize low-income household ability and willingness to pay frequent persistence of non-participatory approaches; lack of focus on well being of target households; inadequate partnership, networking and coordination; upgrading non replicability and unsustainable approaches (UN-Habitat 2006). Effective strategies aimed at improving shelter conditions, especially for lower- income groups, cannot be divorced from overall poverty alleviation and social and political inclusion.

The informal settlements in Mavoko have high concentrations of poverty especially of social and economic deprivation, which may include broken families, unemployment and economic, physical and social exclusion. Slum dwellers have limited access to credit and formal job markets due to stigmatization, discrimination and geographic isolation. Informal settlements and Slums areas are often recipients of the city's nuisances, including industrial effluent and noxious waste, and the only land accessible to slum dwellers is often fragile, dangerous or polluted land that no one else wants. People in these areas suffer inordinately from water-borne diseases such as typhoid and cholera, as well as more opportunistic ones that accompany HIV/AIDS (UNHSP 2003).

The programme's main focus is to improve the livelihoods of those living and working in the informal settlements of Mavoko Municipality (UN-HABITAT, 2006). According to the project document (Kensup 2003), the SNP is working at relocating slum dwellers of Mavoko to a newly developed neighborhood with mixed designs, size and cost of housing units to cater for different income groups within Mavoko Municipality living in the informal settlements. Land for the project was given by the Government of Kenya in exchange for a debt swap with the Government of Finland (Ibid). The SNP was developed to come up with solutions of upgrading informal settlements and is linked to capacity building and income generation. The land was divided into two parts, one part of land is being developed by the government of Kenya through the Ministry of Housing and it is constructing 402 mixed housing units with a major target on the low income earners and lower middle income earners in Mavoko for integration for sustainability. The total land available for SNP housing is estimated at 100 acres (GOK, 2003).

The SNP also aims to improve local governance and strengthen the capacity and the role of the informal sectors households in developing sustainable neighborhoods who are living in deplorable settlements. To this end, slum dwellers from within Mavoko Municipality are being trained in sustainable neighborhoods development, including but not limited to roads and housing construction, sanitation and water supply, waste management and production of low-cost construction materials (UN-HABITAT, 2003).

Mavoko Municipality is a rapidly expanding economy which includes; industries, retail markets and housing estates developments along the Nairobi-Mombasa Highway and within the greater Nairobi Metropolitan area. This has attracted many people to move to the area in search of employment opportunities within the local industries, growing number of housing project and flower farms within the area. Due to lack of affordable housing by the Mavoko Municipal Council for the low-income earners and unemployment, 25 rapidly growing informal settlements with an estimated population of 30,000 have emerged in the area. Fifty per cent of this population does not have access to decent and affordable housing, safe drinking water, and sanitation hence the need for the provision of affordable housing for them (GOK, 2007).

The SNP project was initiated to solve housing problem, improve the livelihood of slum dwellers through capacity building to empower the slum dwellers in self-help projects and income generating activities such as production of building materials and building components. Also the programme was adopted to as innovative approach to slum upgrading in Kenya through the SNP as a pilot project and develop a comprehensive housing package including a finance component that will enable slum dwellers to improve their housing and other living conditions in the area (KENSUP 2003).

1.3 Research Questions

The study sought to answer the following specific questions:

1. What is the state of informal housing in Mavoko informal settlements?
2. What is the potential of the Sustainable Neighborhoods Program in improving the living conditions of the beneficiary population in Mavoko informal settlements and challenges being faced in its implementation?
3. What are the various means being used to achieve the Sustainable Neighborhood Programme's goals in the study area?
4. What is the best way of dealing with the challenges for an effective implementation of the project?

1.4 Objectives of the Study

The study was guided by the following objectives;

1. The main objective was to determine the potential of SNP in improving the living conditions of beneficiary population in Mavoko informal settlements.

Specific Objectives include;

- I. To examine the state of informal housing in Mavoko informal settlements.
- II. To examine the potential of Sustainable Neighborhoods Program in improving the living conditions of the beneficiary population in Mavoko informal settlements and identify the various means being used to achieve the Sustainable Neighborhood Programme's goals and objectives in the study area.
- III. To explore the challenges facing the implementation of the sustainable neighborhood programme in Mavoko informal settlements.
- IV. To identify important lessons that has been learnt from the implementation of the Sustainable Neighborhood Program and recommends effective strategies for its improvement and successful replication in future.

1.5 Research hypothesis

The study was guided by the following null hypothesis:

1. "SNP is not independent of living conditions of the Mavoko informal settlements dwellers,
2. Mobilization of resources by the beneficiary population is not independent of the Sustainable Neighborhood Programme

1.6 Justification of the Study

The study was chosen to evaluate SNP programme which is under the Kenya slum upgrading projects in the country. The project is unique in that it has involved the community during the planning stage, trained community on issues of leadership and management of resources, saving culture through formation of the cooperatives, environmental concerns so as to make their areas habitable and clean through formation of waste management groups, concept of relocating the communities from their current settlement which are in deplorable conditions with no water, drainage, electricity to a well planned settlement with all the facilities was welcomed with no hesitation, unlike other settlements.

The study offers the first effort to evaluate and systematize information on SNP initiatives by articulating the full range of activities and actors involved. The findings of this study will accord SNP a higher insight and strengthen its potential in improving the housing infrastructure services and the overall livelihoods of people living and working in the informal settlements. Such findings will also strengthen the capacities within the Mavoko Municipality governance framework. The findings will also be useful in building a foundation for SNP in urban planning and management. The output of the study will further form a primary source for those who have the responsibility and interest in the upgrading of slums notably KENSUP Secretariat, land use professionals such as physical planners, surveyors, and architects, custodians of public interest (political, religious leaders, residents associations and civil society) and the wider urban community.

The study is also intended to provide a SNP implementation framework which can be replicated in other informal settlements in the developing world. It will also enhance multidisciplinary and multisectoral understanding of SNP while providing concrete indicators against which success can be measured. Other rapidly growing informal settlements in Kenya are also expected to benefit from the recommendations of the study. The study will also contribute to a body of knowledge currently not in existence in Kenya and internationally on quantitative and qualitative, SNP implementation methodologies, key actors and the causal process.

There is a general consensus that the SNP concept was initiated at an opportune time when urban planners, developers, managers and other actors in the urban sector were exploring a more inclusive and empowering approach to solve the ever increasing problem of housing the urban poor. However, growing concerns of whether the programme's goal of improving the livelihoods of the target population following delays in its completion, will be realized has led to the erosion of hope and confidence among the beneficiaries.

1.7 Scope, Assumption and Limitation of the study

The study was confined to Mavoko Municipality in Machakos County and was limited to evaluating the Sustainable Neighbourhoods Programme with an ultimate aim of making effective recommendations for the improvement of the project's implementation process and its successful

replication in other areas with similar characteristics. The variables the study aimed at covering were the state of low-income housing in the area, the potential of SNP in improving the living conditions of those living in the informal settlements, the means being employed in achieving the project's goals and identify challenges facing its implementation. The findings will be used to inform and provide recommendations on how to effectively improve the project's implementation and its successful replication in other informal settlements.

The study made several assumptions both at the design and execution stages. The subject of Sustainable Neighbourhoods is still evolving especially in many developing countries such as Kenya. This therefore presented a case of paucity of data making the concept somewhat controversial and fluid. This also made the perception of the study elusive in the earlier stages of its conceptualization. This was overcome by wider review of literature and active consultation.

The study faced logistical problems, due to the complex and fragile nature of the area of study coupled by the high emotions and suspicion among the residents of the area of study. This made the effort of gathering accurate data difficult. Careful administration of questionnaires and the employment of other appropriate data collection instruments such as focus group discussions and use of Community Development Assistants assisted in overcoming this problem. Lastly, the study was constrained by inadequate funding. This necessitated the scaling down of the budget.

1.8 Operational Definition of Terms and Concepts

Capacity: A combination of knowledge, skills and aptitudes that individuals or organizations possess to carry out what they consider their mission or mandate. It is the quality of 'doing or acting' as a function of expected aims and results as per the prescribed terms of references or benchmarks (Kirui, 2003).

Capacity building: A process that aims at upgrading the combination of knowledge, skills and aptitude that individuals or organizations possess to carry out what they consider their mission or mandate (Kirui, 2003).

Evaluation: Systematic collection and analysis of data needed to make decisions, a process in which most well- run programs engage from the outset (Cohen et al., 1996).

Habitat Block: Refers to blocks made of sand and cement on site using block modes equipment.

Informal Settlements: Refers to dense settlements comprising of communities housed in self constructed shelters under conditions of informal set up. Many of the terms and concepts that form the basis of this study have multiple meanings. Therefore, it is imperative for the purpose of this report that the meanings of these terms and concepts be clarified (UN-HABITAT, 1999).

Local Authority: A democratically constituted institution composed of people's representatives (Councilors) and technical officers operating as government of a sub-national area and whose autonomy is enshrined in a supreme national law (Kirui, 2003).

Poverty-: The inability to attain a minimal standard of living measured in terms of basic consumption needs such as food, clothing and shelter or the lack of income to satisfy them (Kirui , 2003).

Poverty Reduction: A deliberate process of targeted interventionist policies, programmes and projects aimed at reversing the trends of all forms deprivations (Kirui, 2003).

Slum: Area characterized by sub-standard housing and squalor, lacking in tenure security, lacks electricity and water. The area is densely populated, with unsanitary conditions and social disorganization (UN, 1984).

Sustainability: refers to social, economic activities and progress to satisfy human needs and qualify life (UN-HABITAT, 2006).

Sustainable neighbourhood Programme: is a mixed use area with a feeling of community .Sustainable neighbourhoods meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to high quality of life.

Urban Management: Is a function of governance and existing institutional frameworks in order to realize social, political, economic and environmental concerns (GOK, 2006).

1.9 The Study Area

It covers the physical, ecological set, the economic and the social set up of the municipality.

1.9.1 Physical

1.9.1.2 The Location

This subsection covers location, topography, drainage, geological and soils and climate of the study area in relation to the implementation of the Sustainable Neighborhoods Programme.

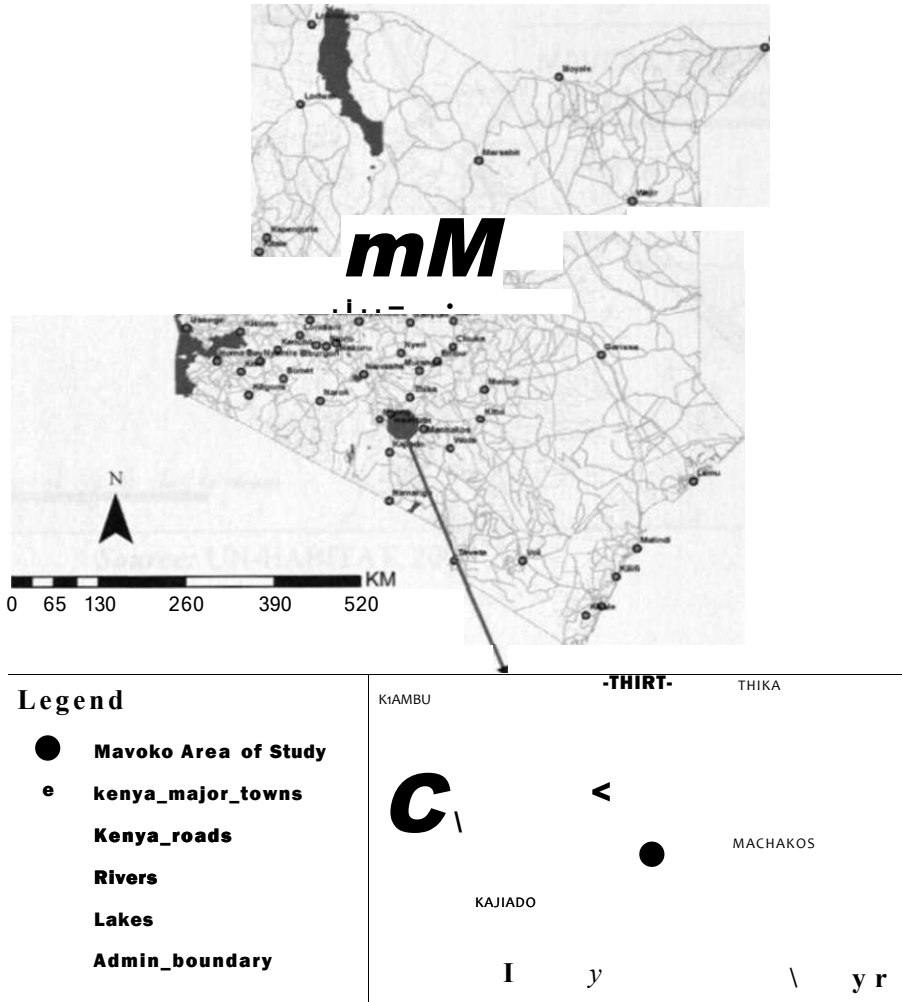
The study area is located in a semi-arid stretch of land in Athi River, about 20 kilometers South East of Nairobi City center and 2.8 kilometers off the Nairobi-Mombasa Highway within the Mavoko Municipal Council (MMC), in Machakos County as shown in 1.2 indicate the sustainable neighbourhood programme with Mavoko municipality while, 1.1 , 1.3 and 1.4 , indicate the physical, and some actual location of the slums The location is considered prime since this is the anticipated growth path of the Nairobi Metropolitan Region. Mavoko Municipality covers an area of approximately 693 square kilometers with an estimated population of about 65,000 people. Majority of the land in the area is owned by the Government, Council and the rest is owned by private entities and developers. The SNP project covers the entire area as contained in parcel number L.R. 27664 measuring 100 acres (GoK, 2005).

1.9.1.3 Topography and Drainage

The site is nearly flat and has a slight gradient of about 1:60 towards the South West. Consequently, drainage is poor and rain water does not percolate well forming pools of water along access roads drains causing flooding. The overall drainage is basically from west to east with Athi River forming the major drainage system in the area. However, the Municipality is not well endowed with water resources since it falls under Arid and Semi Arid Lands. Water resources in the area include; seasonal rivers and streams, boreholes, dams and to a minimal extent, water harvested during rainfall seasons. Underground water as a source of water in the area ranges from moderate to low due to massive nature of the parent rock. However, this water is saline due to the high quantities of soluble minerals and hence requires treatment before consumption (Gok. 2008).

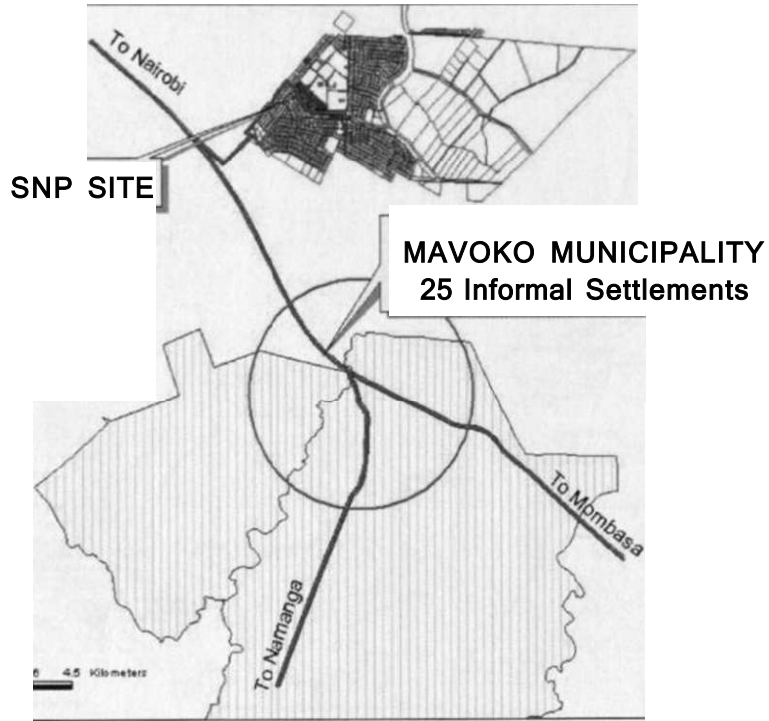
Figure 1.1: Map of Kenya showing the area study

MAP OF KENYA SHOWING MAVOKO AREA OF STUDY



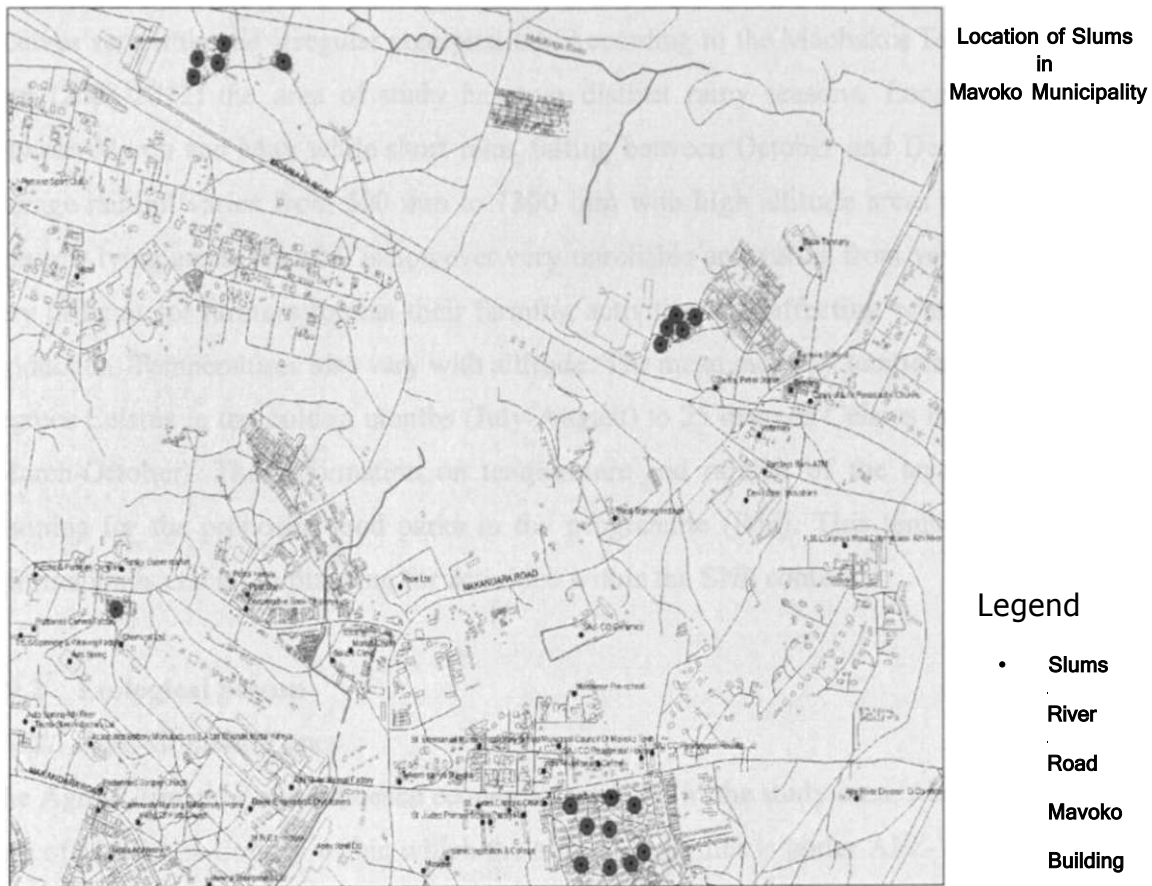
Source: Modified from Macmillan Atlas by Researcher 2011

Figure 1.2: Location of the SNP site in MMC



Source: UN-HABITAT, 2007

Figure 1.3 Physical locations of slums in Mavoko Municipality



Source: Researcher 2011

1.9.1.4 Geology and Soils

The geology of the area belongs to metamorphosed of Kapiti phonolite and Nairobi Trachytes. The soils types are vertisols and Rendzinas - poor drainage black cotton soils. These soils are developed on quartz-feldspar gneisses. The area is occupied by rocks of basement system which are generally of tertiary and Achaean age, metamorphosed by high temperatures and pressures. Folding, erosion and volcanic activities followed the metamorphism effects. The volcanic activities produced the Kapiti Phonolite, Athi tuffs, and Nairobi phonolite (Saggerson, 1991)

1.9.1.5 Climate

The area experiences a pleasant climate similar to that of Nairobi although relatively warmer, varying from highland and equatorial on the hill summits, to semi-arid on the plains. The area receives very little and irregular precipitation. According to the Machakos District Development Plan (2008-2012) the area of study has two distinct rainy seasons. Long rains experienced between March and May while short rains falling between October and December. The annual average rainfall varies from 500 mm to 1300 mm with high altitude areas receiving more rain than low lying areas. Rainfall is however very unreliable and varies from year to year making it very difficult for farmers to plan their farming activities thus affecting both crop and livestock production. Temperatures also vary with altitude. The mean monthly temperature ranges from 12 degrees Celsius in the coldest months (July-August) to 25 degrees Celsius in the hottest months (March-October). The information on temperature and rainfall of the area of study helps in planning for the proposed food parks in the programme (Ibid). This temperature and rainfall information is crucial in planning for activities within the SNP context.

1.9.2 Ecological Set-up

1.9.2.1 Agro-Climatic Zones

The Agro- Climatic Zone influence economic activities in the study area. About 55% of the total area of Machakos County within which the area of study lies is under AEZ-V, 37% under AEZ-VI and 8% under AEZ-II-IV (Machakos District Development Plan, 2008-2012). This makes the area of study one of the ASAL areas in Kenya.

1.9.2.2 Vegetation

The study area falls within the larger Machakos County which is characterized by many types vegetation types. Some areas have thick bush with scattered large trees. Other areas have grass with scattered trees while along the river and Dry River valleys are large trees with thick under growths e.g. the fig trees (Machakos District Development Plan, 2008-2012).

1.9.2.3 Wildlife

The study area is adjacent to Kitengela area which is considered a wildlife dispersal area and migratory corridor for the wildlife coming from the adjacent Nairobi National Park.

1.9.3 Economic Set Up

This subsection covers economic pillars of the study area. It ranges from agriculture, industry, trade and commerce, tourism, transport, mining and communication.

1.9.3.1 Agriculture

The dry nature of the study area does not favor large scale agriculture. However, small scale farming is practiced in the area with a primary goal of feeding the local households. There are also a few flower farms bordering the study area which provide sources of employment for the local community (Machakos District Development Plan, 2008-012).

1.9.3.2 Industry

The study area is home to over 60 heavy and light industries and factories where a bigger percentage of the beneficiary populations work as casual laborers (Machakos District Development Plan, 2008-012).

Due to its proximity to Nairobi, the area also serves as a dormitory town since many of the residents work in the capital city and return home in the evening.

1.9.3.3 Physical and Social Infrastructure

The area is served by a class A road, the Nairobi-Mombasa Highway. It is also served with other minor roads most of which are dilapidated and impassable during rainy sessions. Notably is the quarry road North East of Mlolongo Township off the Nairobi-Mombasa Highway Plate 3.1 shows the developments within the site. There exists a piped public water supply point 1.5 kilometers to the South West. However, the water supply from the Municipal Council can be described as erratic. There is also a 33 KV power line which passes by the SNP site from which electric power to serve the neighborhood can be obtained. Telephone lines are 2.7 kilometers away from Mlolongo Township and the wireless telephone is well served (GoK, 2009).

Plate 1.2: Sustainable Neighborhood Programme site



Mavoko municipality has several types of houses; those provided by private investors. Within the SNP project the Ministry of housing has put up more than 400 housing units, jua kali shed, a market and a school as indicated by plate 3.1. Storm water drainage is under construction together with sewerage to serve the project.

1.9.4 .Social set up

The subsection discusses the population dynamics of the study area..

1.9.4.1 Population Profile

The size and demographic variable of a population is an important ingredient in the development process and the quest to alleviate poverty since it determines the pattern of resource utilization in any specific area. Mavoko Municipality is home to a rapidly expanding industrial activity along the Nairobi-Mombasa Highway and within the proposed greater Nairobi Metropolitan area. Due the perceived employment opportunities within the local industries and the growing number of flower farms within the area, significant numbers of people have moved the Athi River town in search of gainful employment (GOK, 2001). Population of Mavoko registered growth over time , likewise the National population registered tremendous growth as illustrated below in table 1.1.1.2 , 1.3 and 1.4 showing potential population growth as projected below

Table 1.1 Kenya Demographic profiles 1950-2035

	m				m / m				m				m				
	5 737	6 531	7 508	8 684	10 090	11 740	13 707	16 311	19 163	22 278	25 237	28 387	31 799	35 242	38 208	40 503	42 31
	340	448	597	818	1 158	1 741	2 555	3 337	4 271	5 214	6 204	7 429	9 064	11 190	13 826	17 070	20 88
S	5.6	6.4	7.4	8.6	10.3	12.9	15.7	17.0	18.2	19.0	19.7	20.7	22.2	24.1	26.6	29.6	33.0

Source: Population Division of the Department of Economic and Social Affairs of the United Nations, 2009

Table 1.2 Comparisons between rural and urban population growth rates, 1950-2035

Indicator	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025
Rural annual growth rate (%)	2.59	2.79	2.91	3.00	3.03	3.10	3.48	3.22	3.01	2.49	2.35	2.27	2.06	1.62	1.17	0.88
Urban annual growth rate(%)	5.54	5.73	6.30	6.96	8.15	7.67	5.34	4.94	3.99	3.48	3.61	3.98	4.22	4.23	4.22	4.03

Source: Population Division of the Department of Economic and Social Affairs of the United Nations, 2009

From the table above the population growth rate shows that, since the second population census of 1948 has been on an upward trend and by 2035 it is projected (UN 2009) an estimated population of 68 million in Kenya and 43million people will be living in urban area. From the results of the census indicated high population growth rates with a large majority of the population being from the youth. The population growth patterns experienced both at the national and regional levels of the country have been mainly driven by three main demographic processes; fertility, mortality and migration. However, high birth rates have contributed more to

the country's population growth than any other demographic event this is due to improved maternal health.

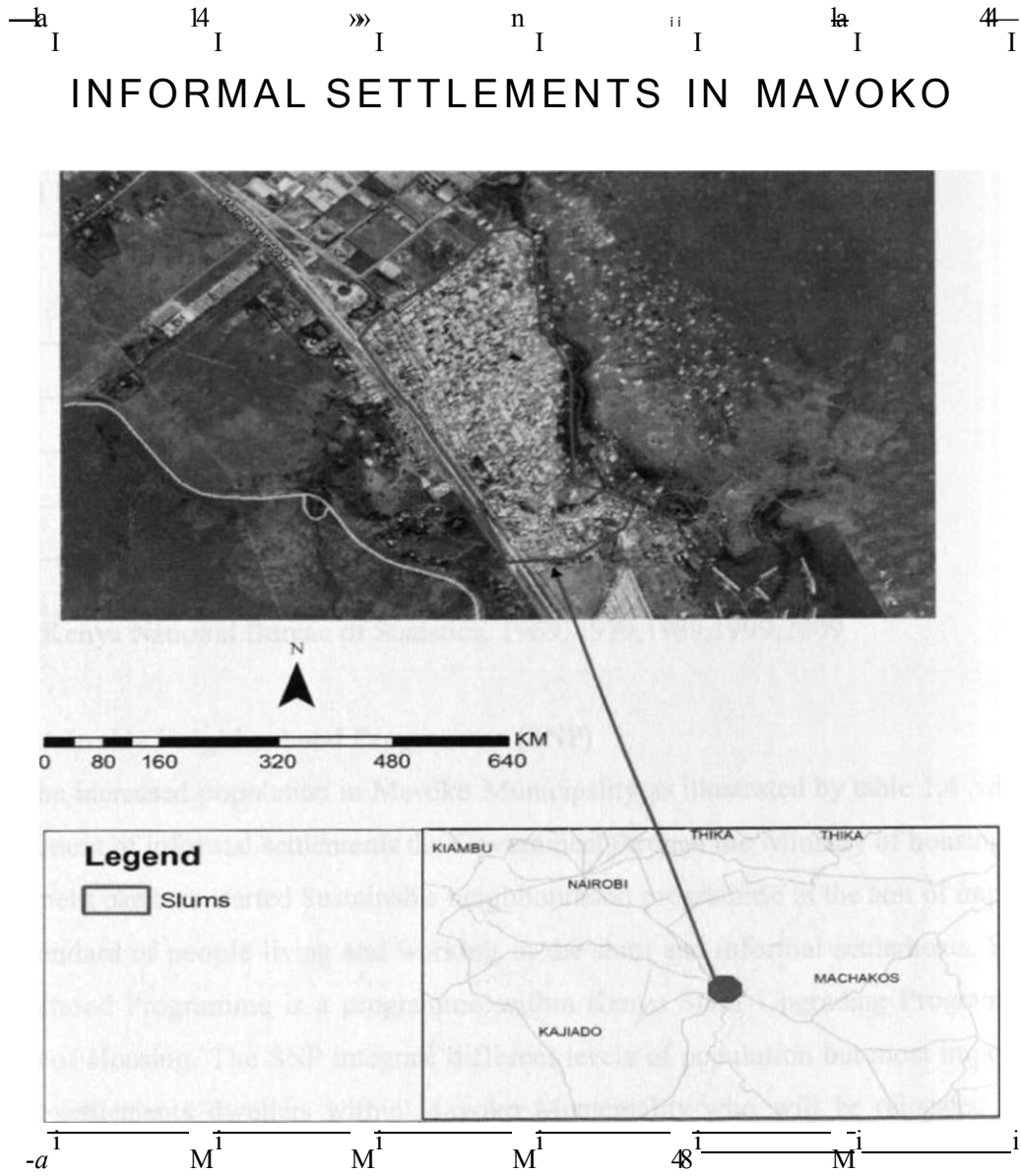
Table 1.3 Kenya population growths 1897-2009

Year	Population (millions)
1897	2.5
1948	5.4
1962	8.6
1969	10.9
1979	15.3
1989	21.4
1999	28.9
2009	38.6

Source: Kenya National Bureau of Statistics 2009

According to the Kenya population and housing census of 2009, the total population of Machakos District, urban areas and within which the Mavoko Municipal council of study falls is estimated at 293,434 persons with the male population being 152,083 and that of the female being 141,351 giving a population ratio of 1:1. (GOK.,2009). In the absence of a systematic provision of affordable housing by the MMC for low-income employees and those seeking employment, about 25 rapidly growing informal settlements with a current population of approximately 30,000 have emerged in the study area. In addition, the industries in Athi River are also sources of employment for casual laborers from the informal settlements within the MMC area. A large number of the low-income bracket and cannot afford to rent houses in the general rental housing market, hence the need for the provision of access to affordable housing for them (GOK, 2008).

Figure 1.4 Informal Settlements in Mavoko



Researcher 2011

Population growth Rate of Mavoko Municipality took a nose dive between 1999 to 2009 .with an increase of over 100 per and this has had a negative impact to the existing infrastructure which could not accommodate such a huge population within a short period of 10 years. The growth was drastic as indicated on table 1.4 of the population growth of Mavoko. Thus majority of the population who migrated to the area in search of employment had to look for alternative accommodation through construction of illegal settlements which grew to become the current

informal settlements. The population growth rate has over stretched the local authority beyond limit and is unable to provide adequate housing to its population. This also translate to more informal settlements being established as the population continue to grow in the area as illustrated on table 1.4 as more industries get established.

Table1.4 Population growth in Mavoko from 1969-2009

Year	Males	Females	Total Population (thousands)
1969	3303	2040	5343
1979	5409	4351	9760
1989	7770	5302	13072
1999	27409	21527	48936
2009	152,083	141,351	293,434

Source: Kenya National Bureau of Statistics, 1969, 1979, 1989,1999,2009

1.20 Sustainable Neighborhood Programme (SNP)

Due to the increased population in Mavoko Municipality as illustrated by table 1.4 ,which led to establishment of informal settlements the Government through the Ministry of housing and other development partners started Sustainable neighbourhood programme in the aim of improving the living standard of people living and working in the slum and informal settlements. Sustainable Neighborhood Programme is a programme within Kenya Slum Upgrading Programme in the Ministry of Housing. The SNP integrate different levels of population but most importantly the informal settlements dwellers within Mavoko Municipality who will be relocated from their current deplorable settlements to a different settlement area where houses are being constructed by the Government of Kenya through the Ministry of Housing. The communities have formed housing Cooperatives which will be a drive of acquiring subsidized houses. Members of the cooperatives have been saving through their various housing cooperatives and will be given first priority to buy Houses.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

The chapter represents the growth and effects of slums and informal settlements, past theories effects of urban growth, looks at different interventions in addressing housing needs globally, regionally, and locally laying emphasis on slum upgrading in Kenya. The review is aimed at providing a comprehensive insight and knowledge for the formal evaluation of the Sustainable Neighborhood Programme for Mavoko Informal Settlement in Mavoko Municipality, Machakos County, Kenya.

2.1 Slums and Informal settlements

Slums do occur in a vacuum they result from a combination of different factor among them poverty or low incomes, inadequacies in housing provision system, the poor are forced to seek affordable accommodation and land that become increasingly inadequate. The number of urban people living in poverty is to a large extent, outside the control of city governments (UNHSP 2003), and is swelled by a combination of economic stagnation, increasing inequality and population growth especially through migration. Informal settlements are established on land that is informally sub divided and sold or leased to households who have built their own dwellings. Some of the land used in this way is deemed unsafe or unfit for planned residential development, such are the land occupied by the extensive informal settlements built on stilts over the tidal swamps of Guayaquil (Ecuador) and Cartagena (Colombia) and the Tondo foreshore of Manila (Philippines). In some instances, it is land reserved for future developments (roadside, railway tracts and canals) and other areas /countries traditional structures have powers over land in tandem with the state .

2.1.2 Theories and Models Shaping informal settlements

Several theories and model have been spearheaded to elaborate on the formation of slums and informal settlements

2.1.2.1 The ecological school and the neo -classical model

The model saw the internal spatial organization of cities as an outcome of ecological competition for niches between social classes who behave like different species in terms of their endowments and wants, and who would compete for different land uses, with the strongest groups taking the most desirable positions and the weaker groups occupying residual spaces.

2.1.2.2 Factorial ecology

In the 1970s a new paradigms came to dominate urban science, it was based on a multivariate analysis of the various socio - economic indicators distinguishing small areas in the city ; calculating indexes that would distinguish small areas in city , calculating indexes that would distinguish these areas from each other. Out of these three factor display themselves; socio economic, familism and ethnicity. (Wyly 1999, flood 2000b). Socio economic advantage was index of advantage that combined factors such as income, education occupation and measure the extent to which household well endowed with these factors were separated from those poorly endowed. Familism concerns the effect of family type, households with children and non working wives in the 1970s tended to seek suburban bungalows, while single persons were more inclined to live in apartments in central cities. Ethnicity usually measured the proportion of those born outside any particular region.

Factorial ecology lapsed along with other quantitative approaches in the post-modern disciplinary of 1980s and 1990s .Factorial ecology studies have not been attempted in cities of developing world because of a lack of appropriately detailed data at the sub-city level (Wyly 1999). The theory demonstrated that socio advantage and social disadvantage are the major agglutinative forces in cities, it indicate that the rich or middle class act to exclude the poor because they no longer need them around and have an antipathy towards them.

2.1.2.3 Conventional Neo- Classical (Alonso Muth-Mills Model)

The model indicates that residential differentiation is based on housing and lands costs. Lower income people live in particular areas because they can outbid the rich for the kind of housing that is there. There are several augments which have been fronted by the model;

1. Employment: Employment opportunities for the rich and poor are not consanguineous so the rich locate near for example office areas while the poor locate near for example factories or markets.

2. The second argument is amenity which is self-enforcing is that both public and private investment suited to each class tends to locate accordingly and attract more people of a similar social economic profile, services for the poor also tend to cluster for example welfare, agencies, food distribution and public medical facilities.

3. The third argument relates to exclusionary zoning, it is seen as the main factor distinguishing different cities, and is probably responsible for most of the more visible tract-wide spatial separation of the classes. The 'wrong side of the tracks' is actually enshrined in local laws and regulations that prevent poor people from building the kinds of houses that they can afford in rich areas or conducting the kinds of informal income generating activities that are necessary for livelihoods; Factories, noxious or polluting industries, possibly waste disposal facilities are located within these areas.

4. The fourth argument is based on the post modern of cultural landscape in which spatial distinctions are embedded in social construction of what is real. Poverty and slums are essentially, comparatively notions that assign particular groups and particular places to the good, the rich and the successful; the bad, poor and unsuccessful adds the paths of people's lives end to follow these assigned constructs unless they can redefine their own self-worth.

2.1.2.4 Urban growth

A) Global Perspective

Population growth has been the main demographic issue of the 20th century and continues to be the focus of attention in the developing world. The growth is largely due to extraordinary success of modern medicine, raising life expectancies by 40 percent over the century (UNHSP 2002). Also is a consequence of, but also a requirement for, economic development, rural urban migration, political factor, instability, civil war and this influence refugees usually flood into the cities where they feel relatively safe and can find accommodation. An increase of income per capita has, in every country, been accompanied by urban growth. Often two-thirds of the GDP is generated in major cities housing one third of the total population. Urban growth has been an integral part of human civilization and continues unabated in the world (UNCHS, 1988) for

example Babylon (600 400BC) had an estimated population of 350, 000, Rome (15BC350AD) reached 1.1 million inhabitants and the population of Angkor (9001100AD) in present Cambodia was 1.5 million .World -wide urbanization, however belongs to the 20th and 21st century. While the developed world was highly urbanized by the 1960s, most developing countries were just starting the process. In 1970, only 37% of the global population lived in cities (UN-Habitat, 2003).

By 2005, 49% of people worldwide lived in urban areas (UN-Habitat, 2006). Most of this growth is expected to take place in the developing countries whose urban population is projected to reach 56.4% by the year 2030. The developing countries have a high average annual urban population growth rate of 2.3 per cent, in contrast to the developed world's rate of 0.4 per cent (UN-Habitat, 2006). In Kenya, the population growth rate is estimated at 4% per annum with the rate of urbanization currently standing at 40%. And by 2030 50% of Kenyans will be living in cities (GO K, 2010).

B). Regional Perspective

According to (Berghall 1995), urban growth in Africa is a function of a number of factors such as: declining agricultural productivity and rising population density in the rural areas which pushes the landless and the unemployed out, availability of more jobs and higher incomes in urban areas relative to rural areas and the link between education and propensity to migrate. Empirical evidence in rural-urban migration and international migration suggests that the educated and skilled constitute the longest-distance migrants since they are in great demand and are more knowledgeable of what to expect in their new abode.

However, rural migration can also be seen as a consequence of the failure of education to adapt to economic conditions and the needs required and in demand in the immediate environment. Natural population growth is yet another cause of urbanization. According to (Mubvami & Kamete, 2001) Sub- Saharan Africa for instance, is the most rapidly urbanizing yet economically poorest region of the world; almost every country is experiencing a growing housing deficit. For instance, Zimbabwe's urban housing deficit in 1992 was estimated at about 670,000 units but by

1999 the figure had risen to over one million, the backlog in provision of housing in South Africa was 2.3 million in 2003 while Cameroon had an annual deficit close to 70,000 units (UN 2003).

C).Local Perspective

In Kenya, the annual housing demand in urban areas is estimated at 150,000 housing unit while supply is estimated at 40,000 units per annum resulting in a supply gap of approximately 110,000 housing units per annum (GOK, 2009).

In most developing countries, this housing deficit is being met by informal housing delivery systems which are providing at least rudimentary shelter for the growing numbers of urban poor households, where the vast majority resides. By 2006, one third of the world's urban population was living in housing poverty, i.e., in slums and informal settlements (UNCHS, 2006). In Kenya, almost half of the city's population lives in over 100 slums and squatter settlements within the city, with little or inadequate access to safe water and sanitation (GOK 2003). Recognizing the continuing growth of slums and informal settlements in the urban areas of Kenya and the need to improve the lives of those living in these settlements, the Government of Kenya and UN-HABITAT (UNCHS-Habitat) agreed to pursue a joint Slum-Upgrading Programme to confront the issue of urban slums and informal settlements thus giving birth to Kenya Slum Upgrading Programme (KENSUP).

In Kenya, urbanization has a long history as early urban settlements existed along the Kenyan Coast in the 19th century A.D. However, the growth of many urban centre's particularly in the interior can be traced to the pre-independence era when the centre's were used for administrative and political control by the colonial rulers (Obudho, 1990). In the last four decades like many other countries in Sub-Saharan Africa, Kenya has experienced rapid urban growth . Kenya's urban population increased from 340,000 thousand people in 1950 to 6,204,000 million people in 2000 representing an increase of 1725 percent, compared to the national population that rose from 5.4 million people in 1948 to 28.7 million people in 1999 representing a growth of 431 percent (GOK, 2006). The proportion of the urban population annual growth rate to the national population also increased from 7.4 percent 1960 to 19.0 percent in 1995, and expected to reach 24.1 percent by the year 2015. (. United Nations prospectus 2009)

The population growth rate since the population census of 1948 has been on an upward trend and by 2035 it is projected (UN 2009) an estimated population of 68 million in Kenya and 43million people will be living in urban area. From the results of the census indicated high population growth rates with a large majority of the population being from the youth. The population growth patterns experienced both at the national and regional levels of the country have been mainly driven by three main demographic processes; fertility, mortality and migration. However, high birth rates have contributed more to the country's population growth than any other demographic event due to improved maternal health.

Kenya urban centres are characterized by spontaneous growth and haphazard development which have mainly taken place outside urban planning interventions. This has led to constrain in provision of water sanitation, security infrastructure, housing and transportation. This to some extent is a result of limited capacity in terms of requisite technology, human resources and financial outlay, to prepare timely and sustainable physical development by the planning agencies.

2.2 INTERNATIONAL INSTRUMENTS ON THE RIGHT TO ADEQUATE SHELTER

Shelter has been declared a basic human right since the Universal Declaration of Human Rights (UN, 1948). It has been a subject of several international instruments to which Nations including Kenya have been signatories and voluntarily bind themselves. The following are some examples of major and/or important instruments that address the right to adequate housing:

2.2.1 (a) Universal Declaration on Human Rights

Article 25:1 states that, *"everyone has a right to a standard of living adequate for health and well-being, including food, clothing, housing and medical care and the necessary social services"* (UN, 1948).

2.2.2 (b)The International Covenant on Economic, Social and Cultural Rights

Article 11(1) recognizes the *right of everyone to adequate standard of living, including adequate food, clothing and housing, and to the continuous improvement of living condition* (UN, 1966)

The member States are thus expected to take appropriate steps to ensure the realization of this right.

2.2.3 (c) The Vancouver Declaration on Human Settlements

(UN, 1976), under section II of the General Principles states that; "the improvement of the quality of life of human beings is the first and most important objective of every human settlement policy. These policies must facilitate the rapid and continuous improvement in the quality of life of all people, beginning with the satisfaction of the basic needs of food, shelter, clean water, employment, health, education, training, social security without any discrimination as to race, colour, sex, language, religion, ideology, national or social origin or other cause, in a frame of freedom, dignity and social justice".

2.2.4. (d) The Global Strategy for Shelter to the Year 2000

(UNCHS, 1990) asserted that; all citizens of all States, poor as they may be, have a right to expect their Governments to be concerned about their shelter and to accept fundamental obligation to protect and improve houses and neighborhoods, rather than damage or destroy them.

2.2.5.(e) Agenda 21 chapter 7

Restated that; *"access to safe and healthy shelter is essential to a person's physical, psychological, social and economic well-being and should be fundamental part of national and international action "*.

Having ratified the above international instruments, the solution to housing the low income populations in Kenya does not only lie in production of housing units in numerous housing projects duplicated all over the country, but it also involves a focus on the target populations, improving their quality of life in terms of employment, education, training and social security among other aspects.

2. 3 GOVERNMENT INTERVENTIONS

The Government of Kenya has put in place mechanism to address issues of inadequate housing and also improvement of living conditions of communities living in the informal settlement.

This has been through formulation of housing policies starting with Sessional paper No.5 of (1966) which was reviewed to retrieve housing situation by sessional paper No.3 (2004), the overall goal of the housing policy is to facilitate the provision of adequate shelter and a healthy living environment at an affordable cost to all socio-economic groups in Kenya in order to foster sustainable human settlements. This is seen as a way of minimizing the number of citizens living in shelters that are below the habitable living conditions as well as curtail the mushrooming of slums and informal settlements in major towns. With modern development trends of decentralization and stakeholder participation, central governments have shifted from total control and implementation of development projects but have instead moved to working as an enabler and an overseer of development, engaging local authorities and numerous partners in contractual agreements to work towards building the nation

As an implementation mechanism to work towards the adoption of international instruments on the right to adequate shelter, the government of Kenya started a nationwide programme; KENSUP in 2001 which aims at improving the livelihoods of people living and working in slums and informal settlements of Kenya.(KENSUP Implementation Strategy 2005). In order to meet the objective of facilitating progressive realization of the right to adequate affordable housing by all citizens, the government of Kenya through the Ministry of Housing has pulled a number of partners from other government sectors, regional and local authorities, local housing cooperative societies, civil society, financial institutions and the private sector increasingly coming up with different concepts and approaches that will help improve the lives of the urban poor.

2.4 THE EVOLUTION OF HOUSING DEVELOPMENT STRATEGIES AS GUIDED BY WORLD PARADIGMS

Shelter has largely been affected by the international development of paradigms as well as international instruments on right to housing (Gitau et al., 2001). Efforts to improve the living standards for low income populations through provision of decent and affordable housing in Kenya and other developing countries have been characterized by a change of national policy actions overtime directed by UN policies. As a member state of the United Nations and a

developing country, the Government of Kenya is obliged to working towards set development goals by adapting and implementing international policies.

2.4.1 The 1960's to early 1970's public sector built housing

The period between 1960's towards early 1970's, was the age of modernization and urban growth in many parts of the world. It is also around this time that some countries such as Tanzania, Uganda, and Kenya among others were getting independence from their colonialists.

At independence, the GOK continued with the policy of slum clearance enacted during the colonial period though it started providing conventional housing units. Public funded housing provided was however, biased in favor of the middle and upper income groups yet nearly 70 percent of urban housing demand was from the low income groups. As the number of low income population increased, so did the increase of informal settlements constructed using mud and wattle, cartons and lusted iron sheets any materials available and also lacking in essential services (Stren, 2001).

As noted by (Karirah 1999), large scale projects were to construct urban housing estates in Kenya as a key element in effort to create stable urban middle class, which was characterized by mass demolition of slums and forced evictions. Slum clearance depleted a large portion of the urban housing stock without any replacement, hence creating a severe shortage.

2.4.2 Mid 1970's to Mid 1980's, Aided Self Help Housing

In mid 1970's to mid 1980's, was the age of redistribution where developed countries through the World Bank had to help developing countries house their citizens. The implementation of this change resulted from the shift of World Bank to addressing shelter, poverty and basic needs through supporting governments of developing countries through loans to implement low income housing (Pugh 2001). This was reflected in the Vancouver Declaration on Human Settlements ratified in 1976: Paragraph 18 of the declaration demands that:

"All countries, particularly the developing ones, must create conditions which make it possible for a full integration of women and youth in political, economic and social activities, particularly in the planning and implementation of human settlement proposals and in all the associated activities, on the basis of equal rights, in order to achieve an efficient and full utilization of available human resources, bearing in mind that women constitute half of the world population; (Vancouver Declaration, 1976; Chapter II-18)."

During the period, the housing policy shifted to where the state was to support self help housing programmes through site and service projects. It involved the recognition of the people themselves taking action to construct their own housing units. The plots allocated by the State were seen as a mode of subsidy to enable them to own a house. During these periods, the State stopped demolition of slums and instead turned to upgrading the settlements and providing infrastructure; roads, schools, markets (UN-Habitat 2006). The strategy was financed by World Bank and USAID, and included provision of serviced sites on cost recovery basis (Straaten, 1989). The First Urban Project in Dandora, Nairobi comprised 6000 serviced plot; followed by Second Urban Project in Mombasa. Kisumu and Nairobi. About 9000 plots were serviced in Kayole and Mathare North both in Nairobi, 1,700 serviced plots in Kisumu. The Third Urban Project was undertaken in Eldoret, Kitale, Nakuru, Nyeri and Thika. Target communities were organized into building groups and others into voluntary savings in cooperatives while the government focused on legalizing tenure and provision of basic infrastructure i.e. Roads ,sewer line, water, schools ,hospitals and electricity (GOK, 2006).

This however failed due to the assumption that families had financial resources to build the houses. Poor families did not benefit from these projects and ended up with gentrification. In Kenya, many households in the site and service schemes could not afford to build on the sites awarded. Evidence in Nairobi and other parts of the country showed that majority of the plots were occupied by tenants who were of relatively higher income groups rather than the original target population (Mitullah. 1984).

In 1986, the Government ushered in the implementation of the Structural Adjustment Programmes (SAPs); which led to the withdrawal of site and service schemes and Government subsidies and instead provided an enabling environment for housing development. Various policies governing land delivery, building and infrastructure, land use, long term financing and cost recovery, and the role of private sector were integrated into the urban development process. The enabling approach moved away from direct housing provision and concentrated more on creating incentives for other stakeholders to provide housing and basic services (Swazuri, 1999).

2.4.3 Late 1980's and onwards; the enabling approach

By mid 1980's, there was a need to secure an enabling framework for action by the people, private sector and markets. It was acknowledged that the government alone could not provide housing for its citizens single handedly and that partnerships with other stakeholders would help in developing housing infrastructure for developing countries. (UNCHS, 1990), The Global Strategy for Shelter of 1988 advocated for developing countries to review their housing policies and adopt the enabling approach to housing provision with more emphasis on poverty alleviation. This was further reviewed in the 1996 Habitat II whose focus was on adequate shelter for all and sustainable human settlements development (UNCHS, 1990). From the year 2000 onwards, the Millennium Summit while focusing on Millennium Development Goals and target 11 on slums, observed as follows:

"The United Nations Millennium Declaration recognizes the dire circumstances of the world's urban poor. It articulates the commitment of member States to improve the lives of at least 100 million slum dwellers by the year 2020 (Target 11, Millennium Development Goal No. 7). As large as 100 million may seem, however, it is only 10 per cent of the present worldwide slum population, which, left unchecked, will multiply threefold to 3 billion by the year 2050 (UN-HABITAT 2005)".

2.4.4 Redevelopment/ Urban Renewal

Redevelopment of urban areas or urban renewal, involves demolition of dilapidated slum structures and constructing new ones as has been done Pumwani- Majengo in Nairobi. Phase I of Pumwani-Majengo redevelopment project was implemented by the National Housing Corporation with funding from the Central Government. A total of 284 three-roomed flats were constructed, each with floor area of 45 square meters. The rooms were designed to allow or subletting of one or two rooms at about Ksh. 3,500 per month against the repayment of Ksh. 1,700 per month. This design provides an option for affordability (Gok, 2006). However, the Pumwani-Majengo Phase II and the Nyayo High Rise ended up being unaffordable to slum dwellers. Redevelopment of Mathare 4-A by the Catholic Archdiocese of Nairobi has neither been a success story. The Nairobi City Council is also planning to redevelop its old estates using a partnership approach (Ibid).

2.4.5 The Cooperative Approach

Cooperative societies created and regulated by the Cooperative Societies Act (Cap 490) of the Laws of Kenya, which is a vehicle for mobilizing both people and finance for housing, particularly those within the low-income bracket. The Primary Housing Cooperatives, for which National Cooperative Housing Union (NACHU) is an umbrella organization, which benefit communities through sensitization and mobilization of resources, training and technical services. The main products of NACHU are cooperative housing mortgages, house rehabilitation, resettlement, infrastructure development and income generating housing programme (GOK, 2006).

Housing cooperatives have gained popularity in recent years in both housing development and slum upgrading since it encourages people with minimal income to save and bring resources together. The target population has formed saving schemes that will enable them acquire loans for buying and building houses. At least six housing cooperatives have been formed to cater for 23 out of 25 informal settlements in Mavoko, as at 2008 (Mboo, 2009).

2.4.6 Local Authority Service Delivery Action Plans

The Local Authority Service Delivery Action Plans (LASDAP) is a planning process that precedes transfer of financial resources from central government to the grassroots through local authorities (GoK, 2006). The plans are prepared through participatory consultative method that allows stakeholders to identify and prioritize activities for funding under Local Authority Transfer Fund (LATF). Some components of slum upgrading have and can benefit from such allocations. For instance, Eastleigh funds were used to provide water and open up drainage system (Ibid).

2.4.7 Constituency Development Fund (CDF)

The Constituency Development Fund (CDF) represents transfer of financial resources from the central government to the grassroots through constituencies. The introduction of CDF has seen some investment in some components of upgrading in the informal settlements. For instance, through a participatory process in Huruma Nairobi, a total of Ksh. 5 million was released to construct a social hall and nursery school (GoK, 2006).

2.4.8 Enhancement of Affordable Mortgage Schemes

Innovative ways of accessing funds for different activities in housing and slum upgrading are emerging. These include Micro-finance institutions that can offer small amounts of funds on short-term basis to low-income earners as spearhead by Un-Habitat through Housing finance company of Kenya (HFCK).

2.4.9 Kenya Slum Upgrading Programme (KENSUP)

Various policies have been used in the country in dealing with the issues of inadequate housing, proliferation of informal settlements in the past. Even though these policies and strategies had considerable impact on slums and informal settlements, the settlements have continued to increase in urban areas. It is in recognition of the persistent problem of slums and informal settlements that the Government of Kenya embarked on a Kenya Slum Upgrading programme (KENSUP). The programme is a collaborative initiative between GOK, UN-HABITAT and is aimed at improving the livelihoods of at least 5.3 Million slum dwellers by the year 2020 through funding from exchequer and donor agencies (KENSUP, Implementation Strategy, 2005-2020). It is designed to benefit all urban areas of Kenya starting with selected settlements with legal boundaries of Nairobi City Council (NCC), Mombasa, Kisumu, Nyeri and Mavoko Municipal Council (MMC). The most innovative aspect of KENSUP is 'enabling slum dwellers to be fully and actively involved in improving their own livelihoods and neighborhoods'. The Programme underscores the principles and values of good governance that are meant to promote inclusiveness (GoK, 2006).

2.5 SUSTAINABLE NEIGHBORHOODS PROGRAMME (SNP)

Sustainable neighbourhood is a mixed use area with community concerns. It is a place where people want to live and work, now and in the future. Sustainable neighbourhoods meet the diverse needs of existing and future residents, who all are sensitive to their environment, and contribute to a high quality of life as illustrated on figure 2.1 by Duany 1994 and also through the conceptual frame work on figure 2.2. They are safe and inclusive, well planned, built and run. and offer quality opportunity and basic services to all. Sustainable neighborhoods aim to

accomplish long-term social, environmental, economical, governance, and physical factors as detailed below:

Governance: Well managed neighbourhood with effective and inclusive participation, representation and leadership for both gender in managing the welfare of the neighbourhood.

Transport and Mobility: Well connected communities with efficient transport services and communication linking residents to their work places and services (health, education, recreation, commercial areas etc). Residents should be able to assure as many of their needs as possible within walking distance from their homes. A street pattern ought to take the form of a continuous web with paths linking one place to another. Good public transport infrastructure is essential in order to limit motor vehicle use.

Environment: Providing the opportunity for people to live in an environmentally friendly way (low energy consumption or passive buildings, minimized waste generation, recycling, use of natural and environmental friendly materials, minimizing water consumption) enjoying clear and safe surroundings.

Economy: A flourishing and lively local economy with availability of public, private, community and voluntary services which are accessible to all residents

Equity: This is a system which is fair for both the present and future generations (decent homes at prices people can afford, services reasonably priced for all and public open spaces accessible to all).

Diversity: Create socially cohesive and diverse communities through a mix of social categories (mix of housing types and employment opportunities, shared community activities by all) and mix of generations.

Mixed use: This is a crucial difference to existing suburb areas which are often zoned (keeping separately residential areas from industrial and commercial quarters), a sustainable neighbourhood offers a mix of functions (living, working, making use of recreational and commercial areas).

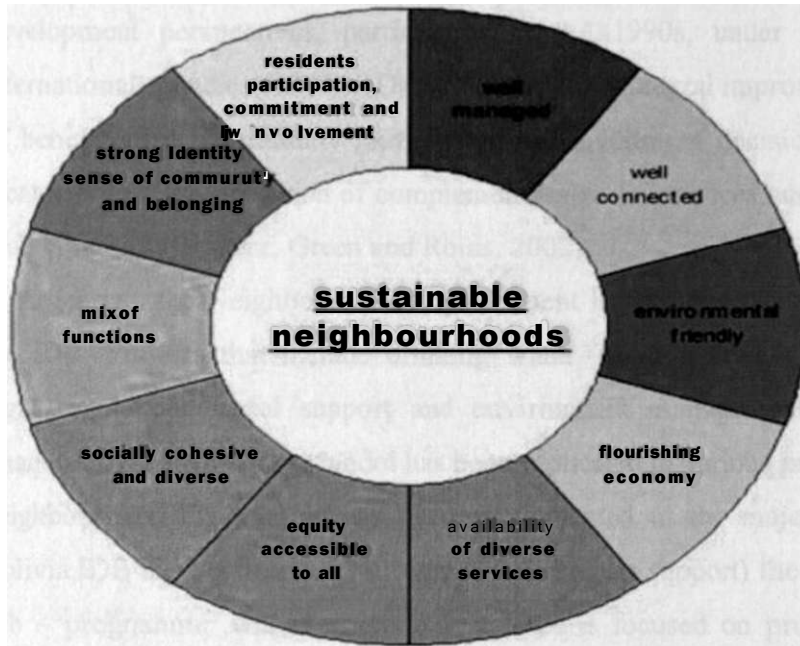
Identity: Active, inclusive and safety with a strong local culture and other shared community activities; provide the sense of community and belonging that many residents seek. Therefore, each neighbourhood needs a clear centre (a place where residents can find shops, social and cultural activities etc).

Citizens and residents participation, cooperation and involvement: Residents need to interact and be involved in the co-creation of their neighbourhood and they need to have a say on the way their community is managed. Neighbourhoods do more than house people; they form a support for wider activities, providing many of the social services that link individuals with each other, giving rise to a sense of community.

The SN is able to meet the diverse needs of existing and future residents, sensitive to the environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equal opportunity and good services for all. It asserts that for communities to be sustainable, they must offer:

- decent homes at prices people can afford
- good public transport
- schools
- hospitals
- shops
- a clean, safe environment

Figure 2.1 Operation conceptual model of Sustainable Neighborhoods concept in developed countries



Source: Duany, 1994

In Developed countries they have implemented new types of development based on ecological concepts for example Vauban neighbourhood in Germany, Bedzed in UK and Grenoble in France, the neighbourhoods are inspired by and take into account in their design and operation the principle of sustainable development, as defined by Brundtland report: social equity, ecological dynamics and environmental protection as illustrated on figure 2.1 by (Duany 1994) and the modified conceptual model on figure 2.2 by the researcher. These areas have been changed into mixed use neighbourhood including housing, schools, commercial centre, two parks and all the buildings are designed to save energy (Ann 2010).

In Latin America and the Caribbean countries integrated programmes for informal settlements is one of various strategies that the region uses to improve access to land by the poor, recognizes the social construction of habitat by the poor families, tries to capitalize and improve on investments made by the poor families and community; as shown on box 1

Box 1: Neighbourhood upgrading in Latin America

Neighbourhood upgrading programme objectives have changed overtime from an individual infrastructure or tenure solution oriented to a more integrated poverty alleviation and urban development perspectives, particularly in the 1990s, under programme co- financed by international agencies (IDB, IBRD). It includes: the integral improvement of the living conditions of beneficiaries, community participation in investment decisions, improved management of local services, the provision of complementary social services and the increased participation of municipalities (Brakarz, Green and Rojas, 2002).

In Argentina, the Neighbourhood improvement Programme began in 1997 with financing from the IDB. Projects that include drinking water, water treatment, sanitation, electricity energy, legal regulation, social support and environment management are eligible for programme financing. The programme model has been replicated in various provinces including Salta, where neighbourhood Programme has been implemented in the majority of its municipalities. In Bolivia, IDB has co-financed (40% local counterpart support) the Neighbourhood improvement sub - programme, whose primary objectives is focused on providing collective subsidies to groups of families for neighbourhood infrastructure. The programme is coordinated with other components of the new housing systems including the reorganization of the housing finance and subsidy system. The sub-programme has been implemented in 87 neighbourhoods of different regions in Bolivia. The Favela/Barrio programme, a IDB financed effort operating since 1995 in Rio de Janeiro, sought the integration, in a period of four years, of 105 medium size slum communities into city fabric. Via complementary municipal and programme interventions, the programme financed infrastructure, roads, social, and recreation infrastructure, parks, credit for building services. The Chile Barrio Programme, also financed by IDB, is oriented towards the 115,000 families living in irregular settlements. Sector resources and interventions (training, healthcare, employment opportunities and housing) are coordinated in an integrated plan to respond to family needs.

In Peru the material bank, provides financing to individual families for building materials towards basic home construction, expansion and improvement.

Source: Clichevsky, Nora (2003)

In Kenya Sustainable Neighborhoods Programme (SNP) initiative was initiated 2004 as a programme within the Kenya Slum Upgrading programme (KENSUP). The SNP is collaboration

between the Government of Kenya, the Government of Finland and UN-Habitat as major stakeholders amongst other partners (UN-HABITAT, 2003).

2.5.1 SNP and Community Mobilization

Before the initiation of the programme communities were living as individual and working together was difficult especially saving, security but after the programme was introduced to the community there has been change and people's lives have change. The overall emphasis of the SNP was primarily on the production of houses, but also improvement of livelihoods of slum dwellers through capacity building to empower them in self-help and income generating activities such as the production of building materials and building components so that they can take charge of their own development, for instance by getting the communities living in the informal settlements employed as skilled workers in the project. In the implementation of this project, UN-HABITAT's role is to test new, innovative approaches to slum upgrading in Kenya through the SNP housing project as a pilot project and develop a comprehensive housing package including a finance component that will enable slum dwellers to improve their housing and other living conditions (SNP Project Document 2003). In order to implement this housing project, constant coordination at the grass-root level was necessary and important.

The residents of Mavoko informal settlements were mobilized into saving groups. These CBOs were registered at the social service department of the local authority. This was done per settlement that was aimed to act as tools of community cohesion as well as enable the people come together and address their problems. The groups' savings were aimed at buying houses in the SNP project or help with purchase of construction materials for self help building (SNP, 2005). In the course of project implementation, the CBOs were merged and transformed to HCS. According to the SNP project document, target beneficiaries must have lived in respective informal settlement for not less than five years, be active savers in the local organizations and well known by neighbours (SNP, 2007).

In order to fulfill the need to empower people and enable them organize themselves to take charge of their own situations, through the facilitation of the UN-HABITAT, the communities in the HCS were trained to start Community Action Plans (CAPs) that were meant to address the

issues of health, education, security and environment in the settlements with the help of the Mavoko Municipality. This yielded positive developments over time where the issues of security were solved from within through community policing.

The programme ensured that children don't drop out of school and bursary funds were linked to poor families through the civic leaders. In addition, the physical environment was clean as dumping of household waste was controlled. The municipality constructed garbage receptacles in many points of the settlements and serviced them regularly (SNP Progress Report 2005). The implementation of programme started by transforming the residents of the 23 informal settlements identified to benefit through trainings, cooperative formation, financial management and leadership skills in preparation of adoption and acceptability of the programme.

2.5.2 The SNP Challenge

As a pilot project meant to provide housing and improve the livelihood of low income households in Mavoko informal settlements, the programme has not been without hitches and missing links in the due course of implementation. Initially, all the project stakeholders were working according to the project document until 2008. The Government of Finland which was a key stakeholder in the SNP pilot project pulled out. Efforts by UN-HABITAT programme manager to apply for resumption of funding were not honored by the donor demanding the drawing of a strategic plan to further implement the project revising the initial project document and defining the role of all the concerned partners. Other sources of funds were still available for the project but were conditional. The ERSO (Experimental Reimbursable Seeding Operation by UN-HABITAT) and KENSUF (Kenya Slum Upgrading Fund by the Government of Kenya) funds were only available to housing cooperative funding and not for daily administration of the project. The fund didn't attract funding from development partners as it was intended to ,it just depend on government funding which is not adequate to tackle the issues of slums. In addition, coordination of stakeholders with different concepts towards implementation has resulted to programme delay due to lack of adequate financial resources to implement the drafted concepts. This includes the training of production of various types of alternative building materials and the drawing of various house designs to be experimented.

The community savings have also been unstable and most of the times going low every month due to project fatigue. Until 2007 when the Government of Kenya through the Ministry of Housing contracted the construction of 420 housing units for the SNP Mavoko project, some cooperative members had already started pulling out. It is a challenge to the management committees as they cannot keep members in the societies against their will since membership is voluntary and exit is voluntary as well. With this happening, there is fear that the project may end up in gentrification (Kensup 2009). Also some cooperative have misappropriated funds for members leading to collapse and mistrust. In this research, focus is directed at evaluating the project with a major view of establishing its potential in improving the livelihoods of the target population and challenges facing its implementation and how best these challenges can be overcome with the project's implementation improved.

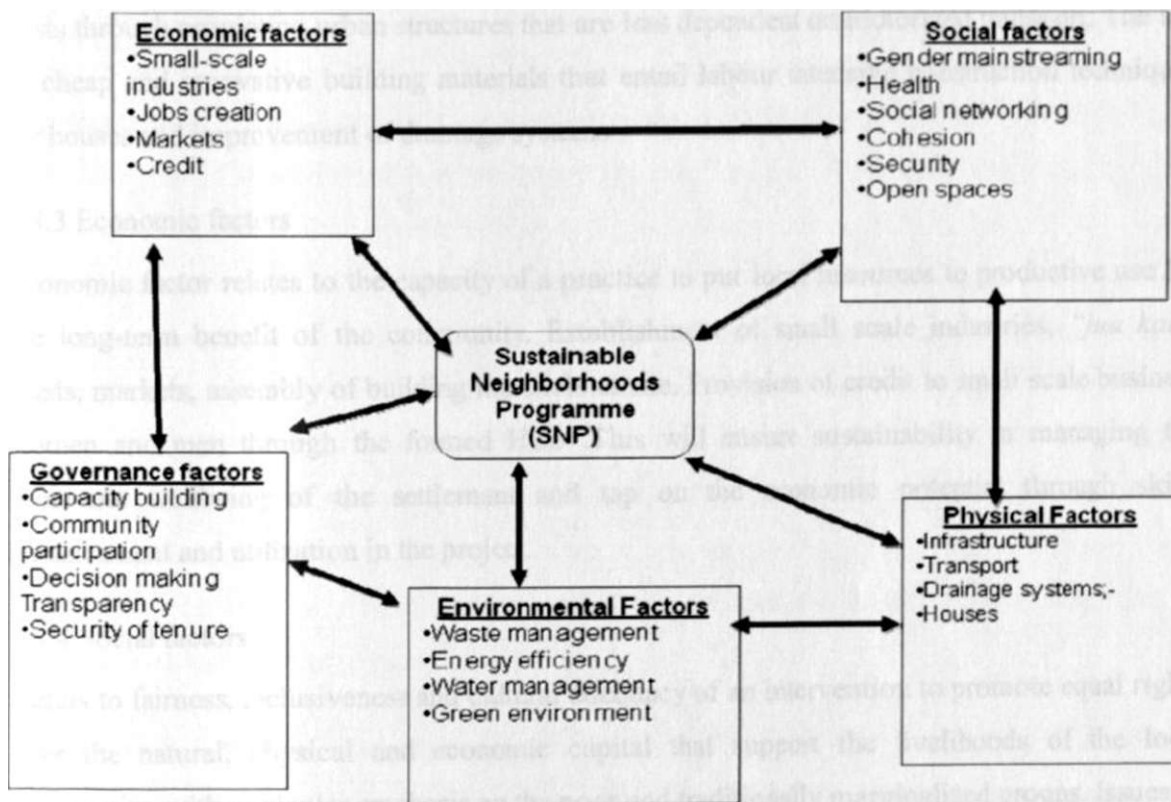
2.6 IDENTIFICATION OF GAPS

The issue of slum proliferation has attracted enormous research but there is need to focus on the impacts of upgrading programmes on the various groups of people within the informal settlements including the youth, children, women and the most vulnerable people such as the disabled. Tapping on livelihoods from the poor has not been utilized as it ought to be, there was no data to show the project was being implemented by the communities whose the project was intended for. The Ministry concerned with upgrading the slums uses the cooperative model where members are encouraged saves to enable them purchase houses but for those who can't afford to save due to unemployment are left out of the programme , need to identify other option to bring them on bond. The other gap identified in the programme has not indicated how the cooperatives will work on acquiring the houses which gives the communities a lot of anxiety. The other major gap is that only a few members will benefit from the programme ,the rest of the community has not been indicated what option there is for them because there are only 450 houses constructed and out of that only 250 units is set aside for the communities. .No specific slum policies by the government to adequately deal with the informal settlements and slum issues especially strong institutional and legal framework and the existing housing policy does not provide adequate mechanism.

2.7 SUSTAINABLE NEIGHBOURHOOD PROGRAMME CONCEPTUAL MODEL

As indicated in the conceptual framework Sustainable Neighborhood Programme (SNP) is the function of five factors (Governance, Environmental, Physical, Social, and Economic Factors) which interlink with each other, they also complement each other. Support through savings Economic factors in the cooperative , micro-finance schemes and skills training helps building governance factors .physical and social factors; capital .If there no finances to invest infrastructure maintenance and constraints to work in shared groups result in declining physical, natural and social factors as it is in the informal settlement in Mavoko. Environmental management influences physical factors and social factors such as health. Sustainable development, as defined by the Brundtland Report in 1987, is "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs." This definition does not specify that sustainable development only refers to environmental sustainability, but implies that there are more than just physical needs that need to be met. In order for a society to make efforts to become truly sustainable considerations must also be made to economic, governance and social sustainability.

Figure 2.2: A Conceptual Model of sustainable neighborhoods Programme



Source: modified from Duany 1994

4 » ^ Indicate linkages between the variables, the programme to be sustainable all the above mentioned variables must work together so as to reduce stress as explained below by each variable

2.8.1 Environmental factors

This entails recycling and use of waste; water harvesting, ecological sanitation systems with composting of human waste and household refuse (kitchen waste) which will be used in the kitchen garden; Tree planting will be enhanced to improve beauty of the area and environmental conservation.

2.8.2 Physical Factors

This involve reduction in the need for vehicular roads and other neighborhoods development costs through promoting urban structures that are less dependent on motorized transport; The use of cheap and innovative building materials that entail labour intensive construction techniques for houses and improvement of drainage systems

2.8.3 Economic factors

Economic factor relates to the capacity of a practice to put local resources to productive use for the long-term benefit of the community. Establishment of small scale industries, "*jua kali*" sheds, markets, assembly of building materials at site. Provision of credit to small scale business women and men through the formed HCS .This will ensure sustainability in managing the economic wellbeing of the settlement and tap on the economic potential through skills enhancement and utilization in the project.

2.8.4 Social factors

Refers to fairness, inclusiveness and cultural adequacy of an intervention to promote equal rights over the natural, physical and economic capital that support the livelihoods of the local community, with particular emphasis on the poor and traditionally marginalized groups. Issues of health will be emphasized through provision of health services, staying together will enhance social networks creating social cohesion among the beneficiaries boosting security.

2.8.5 Governance factors

This refers to quality of governance systems, guiding the relationship and actions of different actors in the programme and the informal settlements. It implies the democratization and participation of local civil society in all areas of decision-making and community empowerment. It also concerns activities that are aimed at improving the well-being of the neighborhood in issues, it affirms that no man, woman or child can be denied access to the necessities of a settlement, including adequate shelter, security of tenure and water. The programme has enhanced governance and created room for members of respective cooperatives to elect their leaders in a democratic process. The above environmental, social, economic and governance factors work interchangeably to enhance sustainability of neighborhoods.

CHAPTER THREE: METHODOLOGY

3.0 INTRODUCTION

Research methodology, as stated by Claire et al (1962) is the arrangement of conditions for collecting and analyzing data in a manner that aims at combining relevance to reach purpose with economy of procedure. Decisions regarding what, where, when, how many and by what means a problem is solved constitute research methodology. According to Bogdan and Tailor (1975), the term methodology in social sciences refers to the process, principles and procedures by which we approach problems and seek answers. The study sought to examine the state of low income housing in Mavoko informal settlements, determine the potential of SNP in improving the living conditions of the beneficiary population and explore various means being employed to achieve the SNP's goals while exploring challenges facing the implementation of the programme in the study area. The ultimate goal of the study was to identify important lessons that have been learnt from the implementation of the project and recommend an effective strategy for its improvement and successful future replication.

3.1 Research Design

The study included descriptive research, photography, discussions and observation among others that sought to examine the state of low income housing in Mavoko informal settlements, determine the potential of SNP in improving the living conditions of the beneficiary population and explore various means being employed to achieve the SNP's goals while exploring challenges facing the implementation of the programme in the study area. The type of design adopted for this particular study was a case study. A case study is considered an in depth study of a particular situation rather than a sweeping statistical survey Mugenda & Mugenda. (2003). It is a method used to narrow down a very broad field of research into one easily researchable topic. While it does not answer a question completely, it gives indications and allows further elaboration and hypothesis creation on a subject Hannsen et al., (1973). The case study research design is also useful for testing whether scientific theories and models actually work in the real world Miller & Krumbein,(1954). It is argued that a case study provides more realistic responses than a purely statistical survey (Ibid). The advantage of the case study research design is that you can focus on specific and interesting cases. This may be an attempt to test a theory with a typical case or it can be a specific topic that is of interest. For instance, it is interesting to evaluate the

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Sustainable Neighbourhoods Programme and develop an effective strategy for its improvement and eventual replication in other areas.

As noted by Hannsen et al. (1973), case studies are also flexible and may lead to the introduction of new ideas. While a pure scientist try to prove or disprove a hypothesis, a case study might introduce new and unexpected results during its course, and lead to research taking new directions which could be more meaningful in the research area (Ibid). However, Mugenda and Mugenda (2003) argue that a case study is such a narrow field that its results cannot be extrapolated to fit an entire question and that they show only one narrow example. The duos add that case studies are also limited to the extent to which one can generalize them to fit an entire population or ecosystem.

In view of both arguments for a case study, it was considered the most appropriate for this study for various reasons. One is because the field of study, which is slum upgrading, is too broad and dynamic and therefore the need to narrow down the research through a case study. Its choice was also an attempt to establish whether the implementation of the SNP in the study area is making relevant progress and is in keeping with the original programme intent. The research was also unique as it tried to develop an effective strategy for the improvement of the implementation of the programme and its successful replication in other areas. Such issues of slum upgrading can only be appropriately derived from a case study but not from a statistical survey.

3.2 Nature and Sources of Data

The study sought to evaluate the Sustainable Neighbourhoods Programme in the Mavoko informal settlements of Machakos County. To attain this goal, two types of data was collected as indicated on the summary of nature of data on table 3.1. The primary data from the field gave first hand information about the general information on the state of low income housing in the study area, the potential of SNP in improving the living conditions of beneficiary population, various means being employed to achieve SNP in the area, challenges facing its implementation and important lessons that have since been learnt from the programme. The secondary data on the other hand was gleaned from documented information, which included writings by others about the topic of study as a whole as well as the available literature on initiation, planning and

implementation of the programme. Such data was then passed through the statistical process as recommended by Kothari (1995).

Table 3.1 Summary of nature of data

No.	Objectives	Nature of data	Method of data collection	Instruments used
1	State of low income housing	<ul style="list-style-type: none"> • Rent • Physical state <ul style="list-style-type: none"> • Material use • Physical and social status • Infrastructure 	Observatory Photography	Observation guide
2.	Potential of SNP	<ul style="list-style-type: none"> • Financial capacity of the Government and community • Income generating activities • Governance • Environmental • Capacity building • Partnership 	/ interviews Observations Focus group Discussion.	Observation guide Questionnaire Desktop analysis
3.	Means to achieve SNP	<ul style="list-style-type: none"> • Community initiative • Government Initiative • Donor Initiative 	Desktop Analysis	Questionnaire Interviews
4.	Challenges being faced	<ul style="list-style-type: none"> • Social • Economic • Political 	Interviews Desktop Analysis	Questionnaire Interviews Desktop Analysis
5.	Lessons learnt	Experiences learnt weakness	Interviews Observation	Questionnaire

Source: Researcher, 2011

3.2.1 Sources of Primary data

Primary data was obtained from sampled informants, focus group discussion, field observations and interviews with resource persons in the context of the subject of study. The following data was collected; state of housing in terms of rent, physical state of the houses in the informal settlement, infrastructure, and economic activities by the residents of the informal settlements.

3.2.2 Sources of Secondary Sources data

This involved a systematic identification, allocation and analysis of published and unpublished information about the study area, the subject of study and the concept of Sustainable Neighbourhoods in general and with much reference to the initiation, planning and implementation of the programme. Information generated from these sources include the goals, objectives and strategies of SNP ,the background of the project, the role of various stakeholders in the programme ,policies and strategies on implementation of the living conditions of the poor. These included national and local development plans, abstracts,(GOK,2009) Kenya Population and Housing census, published and unpublished reports by the GOK and UN-HABITAT and other government documents (like the National Housing Policy, relevant Acts of parliament and Vision 2030), relevant books, published and unpublished reports by other authors on the subject of study and reviews of the above sources in journals and magazines.

3.3 Population Description

The population sampled was finite and was provided by true households according to the 2009 population census (GOK, 2009). The Ministry of Housing, UN-HABITAT and Municipal Council of Mavoko formed a special and critical respondent groups hence were part of the universe. Other respondent groups included; 10 sampled households from each of the six housing cooperative societies, local opinion leaders. Governmental and Non-Governmental institutions, FBOs, interest groups, representatives of line organizations working in the neighbourhood, special groups, parastatals, private sector organizations, bilateral and multilateral development partners, professional organizations, academia and political representatives.(List of organization annexed in the report)

3.4 Sampling Methods

The sampling units representing the smallest entity that provided responses were the households. These were considered the lowest identifiable social institutions within which activities take place. Households are ideally units of production, consumption and reproduction. The choosing of this sampling unit was predicated on the premise that impacts of the Sustainable Neighbourhoods Programme and its attendant consequences are experienced and felt at the household level. A sample of 61 households was taken from a universe of six housing cooperative societies representing the 23 informal settlements in the area of study. Such samples were considered convenient in terms of yield of data, and of finance and time available. The village (An Enumeration Area as per the 2009 population census) was the smallest unit used in sampling. Sampling techniques were employed by the study drawn from the 23 rapidly growing informal settlements with a current population of approximately 30,000 (UN-Habitat 2008) as emerged in the study area. This ensured a truly representative sample and adequate coverage of the area. The sampling techniques included the following:

3.4.2 Purposive sampling

Purposive sampling was used to select the relevant ministries for example MoH, UN-HABITAT, NACHU, Council employees, clerk of works at the project site, opinion leaders, and relevant governmental and non-governmental institutions directly or indirectly operating in the area of study to obtain respective information in light of the subject of study. The criteria employed in identifying the above respondent oscillated around their mandates, roles and activities vis-a-vis SNP implementation efforts in the study area.

3.4.3 Determination of Sample Size

Sample size

According to Birchall (2008): $s = (z / e)^2$

Where:

- s = the sample size
- z = a number relating to the degree of confidence you wish to have in the result. 95% confidence is most frequently used and accepted. The value of 'z' confidence, 1.96 for 95% confidence.

e = the error you are prepared to accept, measured as a proportion of the standard deviation.

In this case the degree of confidence adopted is 95%. According to (William G .Barry J)in 'Exploring Market Research' ideally, similar studies conducted in the past will give a basis for judging the standard deviation. The study adopted 0.25 as the expected error from a previous social economic Analysis by UN-Habitat on SNP in 2008.

Hence, $s = (1.96/ 0.25)^2$

Therefore $s = 61$ is the desired sample size

3.4.3 Cluster sampling

The population was therefore clustered along the cooperatives. Each stage involved clustering and balloting of all the equally legible population. This ensures a fair and representative sample.

Table 3.2: Cluster of Cooperative societies

No.	Co-operatives	Interviewed People
1.	Kagama Housing Co-op	10
2.	Kikwaka Housing co-op	10
3.	Kinavae Housing co-op	10
4.	Jambakwaka Housing co-op	10
5.	Old mlolongo co-op	10
6.	Ngalawa Housing co-op	11
	Total	61

Source: field survey 2011

3.4.4 Control group

A total of 10 respondents who were not in the cooperatives were drawn from the population using snow ball method of sampling.

3.5 Methods of Data Collection

This subsection discusses the methods, instruments used to gather field data. The methods employed included Focus Group Discussion (FGD), questionnaires administration, oral interviews, and reviews of documented literature, photography and guided observation.

3.5.1 Questionnaires

Two types of questionnaires were used for purposes of this study. They included questionnaires for the households, government and non-governmental institutions. The household questionnaires were used to capture the views of the households with regard to the potential of SNP in improving their living conditions, various means being employed to achieve the programme, challenges facing the implementation of the programme and important lessons they have learnt since the inception of SNP in the area. A total of 61 household questionnaires were used to collect such information. Plate 4.1 shows a research assistant administering a household questionnaire to one of the households in the study area.

Plate 3.1: A Research Assistant Administering a Household Questionnaire



Source: Field Survey, 2011

A total of 2 institutional questionnaires were administered to selected government and non-governmental institutions in the study area to obtain their perceptions, views and dimensions on

the concerns of the topic of study. Questions in all the questionnaires were both closed-ended and open-ended. The questionnaires were administered by the researcher together with the research assistants.

3.5.2 Focus Group Discussion Method

Participatory application of data collection was used under the banner of Focus Group Discussion (FGD) to capture the feelings and aspirations of various stakeholders on the purpose of this study. Plate 3.2 shows a Focus Group Discussion in progress. Morgan (1998) observed that FGD is done over a relatively shorter period of time (a few days to a few weeks) and while collecting data in this manner, emphasis ought to be put on learning directly from local inhabitants. For instance Chitere et al (1991) used FGD lasting four weeks in establishing the status of development services and living conditions in Kabras and Mwingi divisions and provided a basis for choice of intervention strategies in the areas. This methodology was used to collect views from the stakeholders concerning the topic of study in general, challenges facing the implementation of SNP in the area of study, its potential in improving the living conditions of the beneficiary population, effectiveness of the various means being employed to achieve the goals of SNP and important lessons that the participants have learnt from the implementation of the project in the study area.

Plate 3.2: A Focus Group Discussion Session in Progress



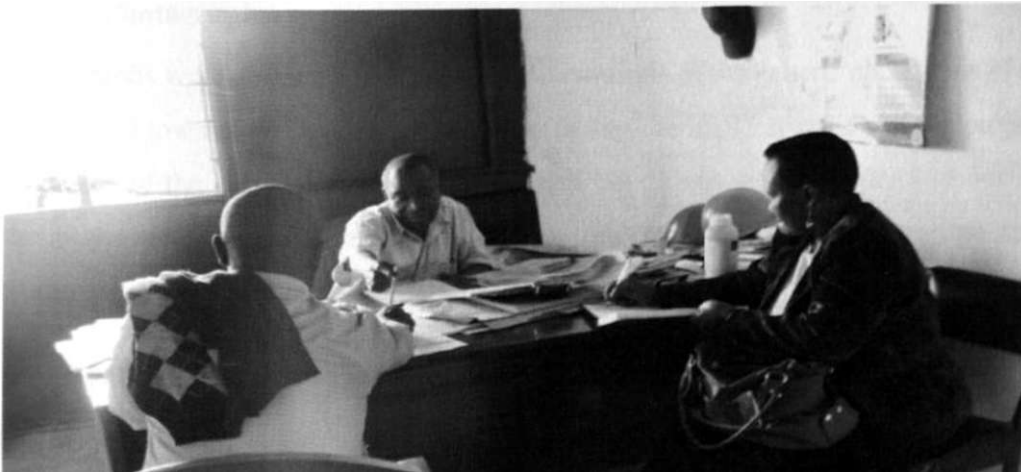
Source: Field Survey, 2011

The FGDs sessions culminated into an all-inclusive plenary session for the stakeholders. The discussions were chaired and moderated by the researcher assisted by the research assistants and local leaders. The views generated by the discussants informed the development of an effective strategy for the improvement of the project and its successful future replication in other areas with similar characteristics.

3.5.3 Oral Interview Schedule

Oral interview schedule was used to obtain information from the, MOH, Municipal council of Mavoko, UN-HABITAT, and Clerk of works at the project site. As key players in the implementation process, these institutions provided vital information that contributed immensely to the realization of the research objectives. Kerlinger, (1973) observes that interviews are advantageous because of face to face interpersonal intersection. Plate 3.3 shows an interview between the researcher and the clerk of works at the SNP site.

Plate 3.3: Interview by researcher with the clerk of Works at S/P Site office



Source: Field Survey, 2011

3.5.4 Participant Observation

Participant observation method was used to obtain information on various aspects of the SNP implementation process in the study area at the household, community, construction and policy levels. Such observations focused on the state of the low income housing in the area, various means being used to achieve the project's goals and some of the challenges facing its implementation. The application of this method was premised on the notion that observation increases range of relevance and reliability of data as noted by Piel (1982).

3.5.5 Review of Documented Information

Review of documented information also formed part of the data gathering methods employed in this study. The documents reviewed included Acts of parliament and relevant policy documents such as the revised National Housing Policy, relevant writings by various authorities on the subject of study, published and unpublished reports, household surveys among others. Such documented information helped in realizing the objectives of the study.

3.5.6 Photography

Photographs were also used to capture manifestations of the general conditions of the study area, the state of low income housing, challenges facing the implementation of the project and various attributes of the data collection process. Such conditions included socio-economic activities in the study area, environmental conditions of the area, physical infrastructure and the general topographical features of the study area.

3.6 Data Analysis and Presentation

The data collected was analyzed and presented using descriptive statistics and other quantitative methods recommended in a research of this nature.

3.6.1 Descriptive Statistics

These included averages, percentages, and rankings. Averages and percentages were used to analyze per capita income levels, levels of education attained, skills, sexes, main economic activities in the study area, awareness level vis-a-vis the SNP implementation process, the saving capacities of households among others. The results were presented using tables, graphs and pie charts.

3.6.2 SWOT Analysis

The strength, Weakness, Opportunities and Threat (SWOT) method of analysis was used to gauge the effectiveness of the existing SNP implementation strategy in the study area. It was also used to analyze the potential of the project in improving the living conditions of the target population in the study area. In a more precise manner, Scholes and Johnsons (1999) aver that SWOT analysis summarizes the key issues from the project environment and the strategic capability of a system that are most likely to impact on strategy development. This is useful as a basis against which to judge future courses of action. The aim therefore is to identify the extent to which the current strengths and weaknesses of the existing implementation strategy is relevant to, and capable of dealing with the changes taking place in the project environment.

3.7 Pilot Study

Pre testing of the instruments designed for purposes of collecting data was carried out prior to the actual field survey to determine the validity and reliability of the instruments. The research instruments were pre-tested to a selected sample with similar characteristics to the actual sample that would be used in the study. Coolian (1994) noted that pilot trials entail trying out prototype of a study of questionnaires on a sample in order to discover snags or errors on a design, or develop workable and effective measuring instruments. In so doing, Mugenda & Mugenda (2003) caution that subjects in the actual sample should not be used in the pre-test as such attempts may increase chances of biasness. Information obtained through analysis of the pre-tested instruments was compared with documented reports and substantial deviations corrected so as to ensure reliability of these instruments.

CHAPTER FOUR: RESULT AND DISCUSSION

4.0 INTRODUCTION

This chapter presents the Findings of the study and attempts to answer the research questions posed by the study on the outset.

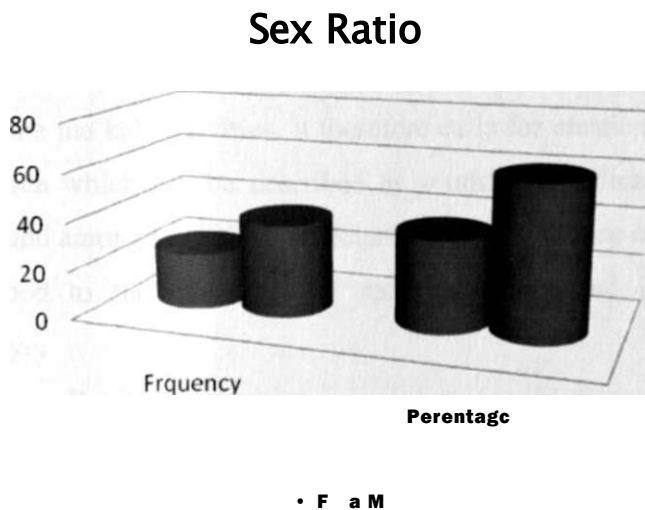
4.1 Demographic, Economic and Social Profiles of the Study Area

This section presents the household characteristics in terms of; ages, sex, monthly income and expenditure, monthly savings, assets, period lived in the area, professional training, nature of housing, and employment levels among others.

4.1.1 Household Size, Age , Sex Ratio and years lived in the area

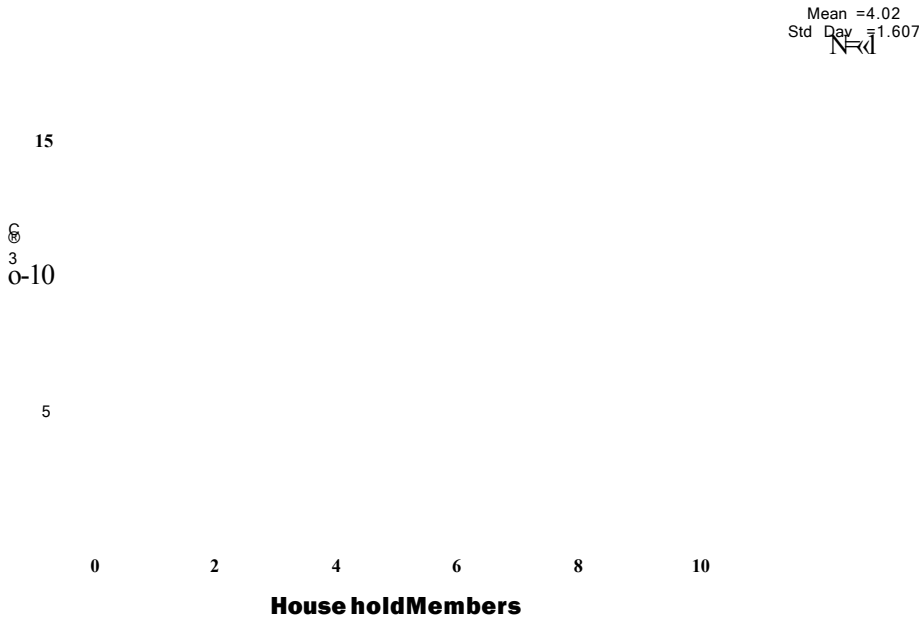
The average household size in the study area is between three and five members per household at 73.8 percent (figure 4.2) with 37.7 percent of the population being female and 62.3 percent being male as shown on (figure 4.1)

Figure 4.1: Sex Ratio



Source: Field survey, 2011

Figure 4.2 Household Size



Source: Field Survey, 2011

About 80 percent of the respondent population in the area is aged between 21-50 years and described as the productive population. However, as presented later in this chapter, a big percentage of this population is unemployed and they are in Jua kali hardly making ends meet as indicated on table 4.0 on economic activities and business activities as indicated on plate 4.1 showing some jua kali activities. It therefore calls for creation of employment opportunities for the population which can be described as youthful as indicate on table 4.1 .Establishment of revolving fund among the SNP beneficiaries to enhance their economic activities and also utilise the livelihood to the advantage of reducing slums and informal settlements in Mavoko municipality..

Plate 4.1 : Business activities

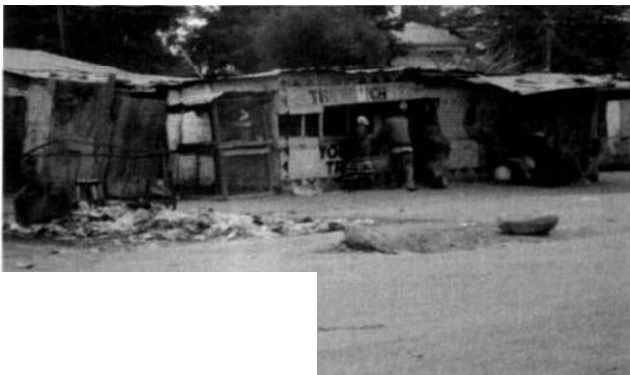


Table 4.1 Age group distribution

No.	Age groups	Frequency	Percentage (%)
1.	19- 24	5	10
2.	25-29	4	9
3.	30-34	12	15
4.	35-39	15	21
5.	40-44	11	13
6.	45-49	5	10
7.	50-55	4	9
8.	56-59	3	7
9.	60-65	2	6
10.	Total	61	100.0

Source: Field Survey, 2011

In terms of period lived in the area; the study established that 60 percent of residents have lived in the area for more than 15 years as indicated on table 4.2 .and only 33 percent have lived in the area for less than 10 years. The main reasons for moving to the area as established by this study were in search for employment in the surrounding industrial belt and affordable housing from the informal settlements. By providing schools, an environment for business and other basic social and physical infrastructure, the proposed housing programme would therefore have a great impact on the lives and livelihoods of the population which is targeted by SNP as the beneficiary population.

Table 4.2: Years lived in the area

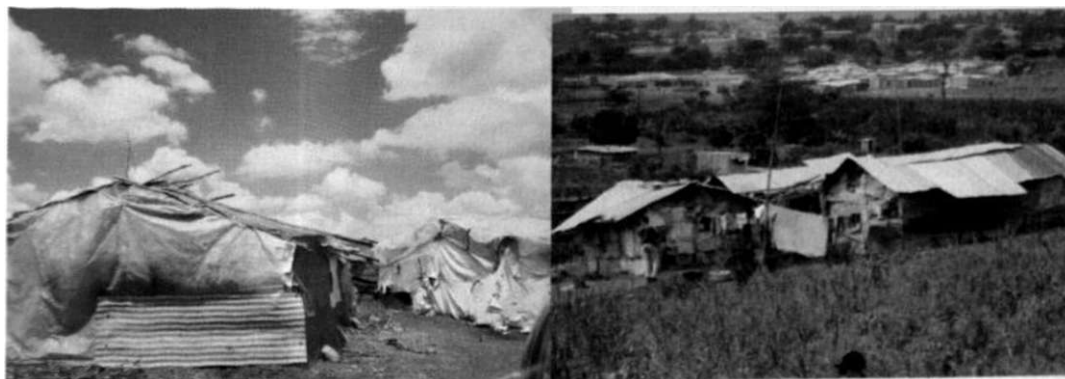
No.	Years lived in the area	Frequency	Percent (%)
1.	1-5	7	11.5
2.	6-10	13	21.2
3.	11-15	11	18.1
4.	16-20	16	26.2
5.	21-25	7	11.5
6.	26-30	5	8.3
7.	30+	2	3.2
8.	Total	61	100

Source: Field Survey, 2011

4.2 State of Low Income Housing in Mavoko informal settlement

According to the National Housing Policy (Sessional No.3 2004), urban low-income housing comprise of a minimum of two habitable rooms, cooking area and sanitary facilities, covering a minimum gross floor area of 36 square metres with physical infrastructure but the situation in MMC informal settlements is different because the respondent live in single rooms without any facilities provided . It also avers that the high level of poverty has rendered access to decent housing as an elusive dream to those living in abject poverty as indicated by photograph on plate No.4.2. and 4.3

Plate 4.2 Current Housing Situation



Source: Field survey 2011

The study established that; 49.2 percent of the residents were tenants, 29.5 squatters, 9.8 sub-tenants and with only 11.5 percent of the residents living in their own houses as shown in table 5.8. This may explain why the houses are in deplorable state since those residing in the houses are not the actual owners and are therefore not motivated to renovate the houses and they are also constructed on illegal land as shown on plate 4.3 below.

Plate 4.3 Poor drainage in the slum areas

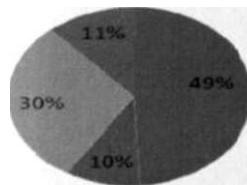


Source: Field survey 2011

Figure 4.3 Mode of house Occupancy

House Occupancy

- Tenant
- BSjb-tenant
- Squatter
- Owner



Source: Field survey, 2011

According to a survey carried out by SNP coordinator in 2008 indicated that 42.1% of these houses are built on illegally acquired land, 15.7% are squatters on either Government, privately

owned or municipal land, 41.5% are tenants while only 0.6% are land owners. According to Moser (1994), security of tenure and provision of services are related. Providers of main services are less willing to invest in physical and social infrastructure in areas where dwellings are likely to be removed.

Table 4.3: Land tenure in the Area of Study

Land Category	Percentage (%)
Tenant on MMC Land	11.8
Tenant on GoK Land	4.4
Tenant on Privately Owned Land	25.3
Tenant on Illegally Acquired Land	37.0
Squatter in MMC Land	4.6
Squatter on GoK Land	2.3
Squatter on Privately Owned Land	8.8
Squatter on Illegally Acquired Land	5.1
Land Owner	0.6
TOTAL	100

Source: Field survey, 2011

As shown on plate 4.2, 4.3, 4.4 the houses are in deplorable states and lack basic sanitation, water, poor drainage, schools, lack of access roads and are not fit for human habitation with poor environmental condition.

Plate 4.4: Shanties in the Area Study



Source: Field Survey, 2011

4J The Potential of SNP in Improving Living Conditions of Beneficiary Population in Mavoko informal settlements

The chief goals of SNP are; (a) improving living conditions and (b) strengthening the capacity, role of the informal and community sector in developing sustainable neighbourhoods. Before the programme started people living in the informal settlements lived in deplorable situation as depicted on photographs on plates 4.2, 4.3, 4.4 but the implementation of the programme is set to transform the lives of the people. Their shelter will be improved as indicated on photograph on plate 4.5, with provision of jua kali sheds, drainage provision schools, green areas and open spaces for their children to play.

The programme takes cognizance of the concept of subsidy, the SNP project document also notes that the most important concepts of sustainable neighbourhoods' development also include: participatory planning of neighbourhoods with due concern of the pedestrians and the cyclists to minimize private vehicular traffic and pollution; using building materials that are environmentally friendly and locally produced.; water harvesting from roof and re-use of waste water; ecologically sustainable sanitation (e.g. composting toilets, urine collection among others); re-use and re-cycling of solid waste; urban agriculture and backyard gardening; integration of work with housing; home-based enterprises; secure tenure; special attention to the needs of women, AIDS orphans, the youth and the elderly; innovative financial mechanisms and cost recovery; community self-management through residential associations; and services' demand management. The Ministry takes the advantage of large numbers in mobilising of

resources however small it seem, it enable the Government get support from development partners to mobilise for funding towards the programme which will be extended to the communities.

The null hypothesis for the study stated " sustainable Neighbourhood programme is not independent of living conditions of the Mavoko informal settlement dwellers was rejected after chi-square test was used , to determine whether there is a significant difference between the expected frequencies and the observed frequencies, the formula used is

$$X^2 = \frac{(O-E)^2}{E}$$

The Data used, was collected from the sample of incomes earned by the respondents. The results of the hypothesis:

Table 4.4 Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
How many respondents?	61	31.00	17.753	1	61
How much do you earn currently?	61	4761.4754	1236.97863	2750.00	8000.00

Table 4..4. »s by respondents)

Amount	Observed N	Expected N
2750.00	2	5.5
3250.00	8	5.5
3750.00	11	5.5
4250.00	7	5.5
4700.00	1	5.5
4750.00	7	5.5
5000.00	7	5.5
6000.00	8	5.5
6500.00	8	5.5
7000.00	1	5.5
8000.00	1	5.5
Total	61	

Table 4.4.2: Test Statistics

Chi-Square	.000	23.213
Df	60	10
Sig.levels	1.000	.010

Key:

1. df-degrees of freedom
2. Sig-Significant levels

The calculated value of the chi-square is **23.213**, the degree of freedom is **10** of how much respondents earned, and the critical value at **0.05** significant levels is **18.31**. Reject **H₀** if calculated value of chi square is greater than the critical value at the chosen significance level.

At 95% significant level, the result of the study indicates the sustainable neighbourhood programme is dependent of the improving the living conditions of Mavoko informal settlement dwellers

4.3.1 Household Income and Expenditure

A).Household Income

The information on the monthly or yearly income and subsequent expenditure among the households is important in determining their saving capacity in the housing cooperatives. According to the study findings approximately 21 percent of the households earn between Ksh. 2500-4000-per month 125 dollars which translate to less than 1.25 dollars per day below World Bank indicator for absolute poverty as shown on table 4.5 on monthly income by the respondents, even the rest of the respondent have poor earnings. It therefore means that the households depend on other sources of income, such as reliance on kinship networks or support from their spouses to service their monthly expenditures .This is attributed to low levels of investment, high levels of unemployment and low literacy levels that characterize the population.

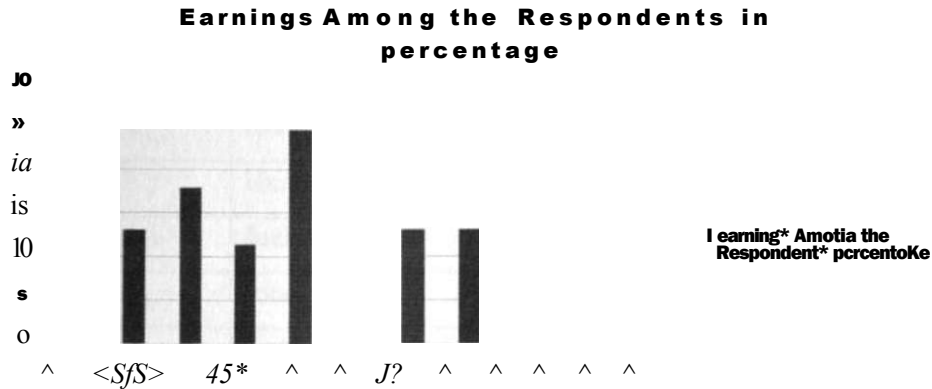
Table 4.5 Monthly Income

No.	Income per month(Bracket	Frequency	Percent
1.	2500 - 3000		3.3
	3100 -3500		13.1
3.	3600 -4000	11	18.0
4.	4100 -4500		11.5
5.	4600 - 5000	15	24.6
6.	5100- 5500		
7.	5600- 6000		13.1
8.	6100- 6500		11.5
9.	6600- 7000		2.45
10.	7100-7500		
11.	7600- 8000		2.45
12.	Total	61	100

Source: Field Survey, 2011

The program aims at solving the housing problem in the area while providing an opportunity to improve lives and livelihoods of the low income households and thus considered to be of great potential. In light of this, the SNP project is viewed by many household to be having enormous potential that will go a long way in improving their living conditions.

Figure 4.4 Monthly incomes



Source: Field Survey, 2011

Bi. Household Expenditure

In terms of monthly expenses, most households according to Table 5.6 spend between Ksh. 5,001- Ksh. 10,000 on various items such as rent, food, water, education, transport, electricity, wood, charcoal, paraffin, health, cloths, telephone and others. This leaves the households with a huge deficit that they are forced to look for alternative means of survival. It also affects their saving capacity and their requisite contributions to the housing cooperatives

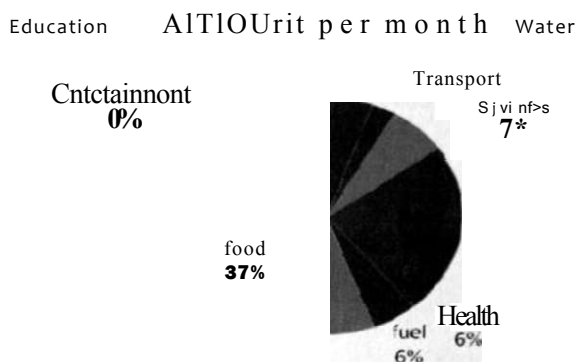
Table 4.6: Households Monthly Expenditure

No. of households	Households Expenditure	Amount per month (Kshs.)	Average amount per household (Kshs).	Percentage per household
61	Water	17,950	294	5.226379386
61	Transport	9,900	162	2.88251565
61	Savings in Co-op	24,600	403	7.162614646
61	Rent	81,450	1,335	23.71524239
61	Health	18,850	309	5.488426263
61	fuel	20,300	333	5.910612899
61	food	127,400	2,089	37.09419129
61	Entertainment	700	11	0.203814238
61	Education	42,300	693	12.31620323
61	Total	343,450	5,630	100

Source: Field Survey, 2011

Table 4.6 shows that monthly expenditure of the households is spent on food followed by rent. The average monthly expenditure on rent among the households ranges between Kshs. 500-1335 and from the study the household interviewed have little or no expenditure for entertainment.

Figure 4.5: Households Monthly Expenditure



Source: Field Survey, 2011

4.2 Savings and Assets Owned

In the above scenario, most households have limited income to service their relative expenditures which implies that their ability to save is normally compromised. In cases where savings are practiced, most households save their money in the housing cooperatives (this is not an option but a necessity due to buying of houses within the SNP). With the initiation of the SNP project and the subsequent formation of housing cooperatives in the area, the study findings indicate that even though the monthly income is normally inadequate in most cases, households juggle to save though it may not be as regular as it is supposed to be as discussed in the study finding.

The null hypothesis for the study stated "The Mobilization of resources by the beneficiary population is not independent of Sustainable Neighborhood Programme dwellers" was rejected after chi-square test was used, to determine whether there is a significant difference between the expected frequencies and the observed frequencies, the formula used is

$$X^2 = \frac{(O-E)^2}{E}$$

E

The Data used, was collected from the sample of savings to the cooperatives made by the respondents..

The results of the hypothesis:

Table 4.7. Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
How many respondents?	61	31.00	17.753	1	61
How much do you save in your cooperative?	61	403.2787	281.04994	100.00	1000.00

Table 4.7.1 Cooperative Savings

Amount	Observed N	Expected N
100.00	3	10.2
200.00	25	10.2
300.00	8	10.2
400.00	1	10.2
500.00	15	10.2
1000.00	9	10.2
Total	61	

Table 4.7.2: Test Statistics (Hypothesis, A&B)

Chi-Square	.000	37.852
df	60	5
Sig.levels	1.000	.000

Key:

1. df-degrees of freedom
2. Sig-Significant levels

The calculated value of the chi-square is **37.852** the degrees of freedom is 5 of how much the respondent save in their cooperatives, the critical value at **0.05** significant levels is **11.07**. Reject H_0 if calculated value of chi square is greater than the critical value at the chosen significance level.

At 95% significant level, the result of the study indicates mobilization of resources by the beneficiary population is dependent of the Sustainable Neighbourhood Programme. Therefore the null hypothesis is rejected.

The amount saved by households per month ranges between Kshs. 200 and Kshs. 1,000 per month and some save 10- 20 shilling per day as shown on table 4.6 on household monthly expenditure . During this study, it was established that the amount saved in the cooperatives by all the households' ranges between Kshs. 200-1,000 per month. According to the cooperatives officials, the amount saved by a household will determine their ability to own houses. The table

below shows the type and cost of houses in the SNP which will be sold to members of the registered cooperatives.

Table 4.8: Type and cost of different houses in the SNP

Type of house	class	Cost (Kshs)
three bedroomed maisonette	C2	4,500,000
three bedroomed bungalow	C1	4,500,000
medium low cost Two bedroomed flats	B3	2,000,000
three bedroomed bungalow	B1	2,500,000
low cost Two bedroomed	A3	500,000
three roomed expandable bungalow	A2	1,000,000
Four house cluster	A1	1,500,000

source: Ministry of Housing

VB: A1-A3, B1-B3, C1-C3 means the coding of houses types, since the houses will be sold to three different income categories. From the informal settlements the, houses will costs between Kshs_ 500,000 and 1,000,000 and will be released to the formed cooperatives which will act as a guarantor to respective members as shown on table 3.2 .

4.3J Education Level, Main Economic Activity and Employment Status

Table 4.9 indicate that majority of the residents (90.1 percent) in the study area have attained both primary and secondary school education. 1.6 percent respondents have university education.

5 percent have college education while 1.6 have not attained any formal or informal education, and this is a strong indication why majority cannot access better paying jobs.

Table 4.9 : Education levels in the study area

Education Level	Frequency	Percent
None	1	1.6
primary level	30	49.1
Secondary	25	41.0
College	4	6.5
University	1	1.6
Total	61	100.0

Source: Field Survey, 2011

The various levels of education possessed by the residents indicate their capacity to participate in the implementation of the SNP project at different levels. With regard to employment status, the survey findings indicated that most of the respondents (Heads of Households) 83.6 percent of household heads are self-employed in different economic activities, 9.8 percentage casual workers, and 6.6 percent are in permanent employment as indicated on table 4.10 . This shows that the residents are striving to make incomes though not adequate.

Table 4.10 Economic Activities

Economic Activities	Frequency	Percent
Business	27	45.8
Casual Labourer	6	9.8
Driver	1	1.6
Farming	1	1.6
Juakali	21	34.3
Tailor	1	1.6
Teaching	4	6.6
Total	61	100.0

Source: Field Survey, 2010

4.4 DISCUSSION

4.4.1 Partnerships

An interview with the clerk of works as shown on plate 3.3 at the project site also revealed that the project will also attract investors in the area and influence the development of social and physical infrastructure leading physical, environmental, economic and social reforms in the area of study. However, the use of septic tanks for liquid waste management is seen by the study to be expensive in terms of management and sustainability by the communities

4.4.2 Evaluating the Achievement of SNP in the Study Area

Section three of the SNP project document outlines that the programme is to be implemented in two main phases after the preparatory phase namely; the capacity building and pilot implementation phases. The preparatory phase was scheduled to take 5 to 6 months for the

capacity building phase and a total of 18 months for the pilot implementation phase. The following forms part of the implementation strategy:

4.4J Strengthening Civil Society through Establishment of Building Associations

As outlined in the project document, the institutional sustainability of this programme is to be achieved through the establishment of Building Associations called Neighbourhood Development Committees that will monitor and coordinate the implementation of the programme on local level. Each neighbourhood is to establish its own Building Association, and eventually all neighbourhoods to be united under one umbrella association representing all low-income neighbourhoods. Each Building Association is also to have a Board of Directors and a managing Director to oversee and coordinate the activities. However, the study established that the proposed Building Associations are yet to be formed even though the construction of an ABT centre is on-going.

4.4.4 Empowering People through Training

Training of community members in sustainable practices lies at the core of the programme. The programme is intended to train community members both men and women in sustainable construction, water supply, sanitation and solid waste management. The training is expected to enable them to manufacture cheap building materials, build their own houses and participate through mutual-aid in the construction of infrastructure. A contractor development programme will ensure the participation of private contractors in the construction of the pilot sustainable neighbourhood. Even though the community members are supposed to be engaged in the development of the pilot sustainable neighbourhood, the findings of this study indicate that the involvement of members of the local community has not been minimal since a contractor was engaged and only those qualified masons benefitted. Approximately 300 members of the cooperatives as indicated on table 3.2 have been trained in issues on cooperative management, savings, governance among others. According to a government official in the Ministry of Housing, there is disconnect between the contractor at the SNP site and the local community. This could have adverse effects on community participation in the program activities.

4.4.5 Community-Government Partnership

According to SNP project document, the programme is to be implemented through partnership. The aim is to create an enabling environment for partnership. In this regard, two forms of partnership are considered viable in the implementation of the project namely; "Component sharing", and "Cost sharing." The neighbourhood level work is the responsibility of the particular community while the Government is responsible for the city and municipal area level work. The communities will buy the houses through the cooperative from the government and also will be responsible for the running of the neighbourhood activities for example, cleaning, security among others.

4.4.6 Development Team Approach

This is to be used in the pilot sustainable neighbourhoods development phase. In this approach, experienced and qualified persons are to assist the local communities and community-based contractors with the administration and management of their contracts, offer technical training, provide plant and assist in the supply of necessary material and equipment. The development team also employs and trains members of the local community to manage store facilities, monitor progress and assist with administration. In this context, the development team is regarded as construction facilitators who arrange for resources that the contractor lacks. The development team is composed of a programme coordinator, chief technical adviser, engineer, construction manager and community development officer. However, the current development team in the community-based SNP project in the study area lacks motivation from the government. This has affected their performance and the completion of the project as planned.

4.4.7 Strengthening the Role and Capacity of Local Authorities

According to Mavoko Municipal Council officer, the government has been training the Council officers on how to support and facilitate community-driven housing and infrastructure delivery is equally important means of implementing the project. Municipality support people-driven sustainable neighbourhoods development in many ways such as: ensuring sufficient land for new housing, eliminating constraints imposed by the regulatory framework which discourage the development of small-scale sectors, facilitating the participation of small-scale firms and community-groups in public works through community contractors; provision of strategic plans and technical manuals for the construction of services and infrastructure; establishment of

technological support for communities and self-help builders and setting up effective cost recovery systems. Strategic plan has been implemented, 300 members from various cooperatives have been trained.

4.4.8 Formation of Housing Cooperative Societies

Under the Sustainable Neighbourhoods Programme in the study area, a total of six housing cooperatives representing twenty three informal settlements in Mavoko have since been formed and registered. The cooperatives include: Old Mlolongo, Ngalawa, Kafema, Jambakwaka, Kikwaka. and Kinavae Housing Cooperatives. The establishment of Housing Cooperatives is considered a viable means of realizing the objectives of the SNP project. Generally, they (Housing Cooperatives) are considered institutional frameworks whereby members who are weak economically are able to gain more control over resources, technologies and other factors of housing production. They serve as means to expand opportunities and options for individual members because of group efforts. Cooperatives are a legal entity and there are binding laws and regulations to guide members in their operations. 80% of members of the registered cooperatives save regularly and receive official receipts for their payments.

Housing Cooperatives are also considered in the context of the implementation of this project as institutions that would help in community recognition, provide a platform for improvement of local leadership, educate members about their roles, rights and responsibilities in the development of sustainable neighbourhoods, and establish an alternative source of finance for the housing project. The societies are also considered by the project planning team as a tool for curbing the challenge of speculation and gentrification since cooperatively owned housing limits the ability of individual households to sell houses in an open market (private land tenure to individual can lead to upward filtering).

4.4.9 Development of Mixed Housing

This is a means being used to meet the housing needs of different income groups:- low, middle and high income groups as indicated on (Table 4.8: Type and cost of different houses in the SNP) Estimated to cost a total of Kshs. 900 Million, the project is expected to provide a total of 450 housing units while integrating different housing levels in the same neighbourhood. The

proposed housing typologies include: bungalows, flats and maisonettes as shown on plate 4.5. The different income groups are expected to share social and physical infrastructures such as power, water supply, waste management systems, market facilities, major access roads and other basic amenities. In terms of disposing of the developed housing units upon completion, the low income households especially members of informal settlements will be allowed to buy a certain number of housing units at a subsidized rate through their respective housing cooperatives. The middle and high income groups on the other hand will be expected to buy the housing units in an open market system which will compliment the services of the group from the informal settlement in the programme. The houses will be given in the following format; 250 housing units will given to the slums dwellers who are members of the six cooperatives, 100 housing units will be given to the low middle income earners, and the remaining 100 to the upper middle income earners.

Plate 4.5: Proposed Housing Typologies at the SNP Site



Source: Field Survey, 2011

4.5 Challenges facing mobilisation of resources needed to implement SNP

The implementation of the SNP in the study area is faced with a number of varying challenges. These challenges bear economic, political, technical, physical, environmental and social challenges. They include but not limited to:

4.5.1 Communication System

Part two of the KENSUP Communication Strategy (2005) recognizes the important role communication plays in the implementation of slum upgrading programmes. Communication according to the strategy is a tool that empowers stakeholders to meaningfully participate in the implementation of the slum upgrading projects so as to achieve suitable results. However, the current communication system for the implementation of the SNP project in the study area is characterized by social exclusion, ineffective information dissemination process and lack of accountability and transparency. The local communication strategy is exclusive and incomprehensive. It has therefore failed to create an enabling environment to allow for positive implementation of the project. The study established that there is poor communication between the project implementing agencies and the local community and even among the implementing agencies themselves. The cooperative officials for instance reported that they were not aware of the progress of the program. This had in turn affected the saving pattern of the community.

4.5.2 Management of Housing Cooperatives

During the study, it was established that the cooperatives are faced with a lot of management problems ranging from leadership wrangles to embezzlement of funds for example old Mlolongo cooperative officials especially the secretary as singled out, has misappropriated more than 7 million shillings for members and non members through false pretence of selling houses to them, issuing fake receipts The continued wrangles and embezzlement of funds, lack of transparency and accountability in almost all of the six Housing Cooperatives in the area appear to discourage membership while at the same time jeopardizing their growth and development. In an interview with some of the officials from some cooperatives it was established that the incumbent officials had not received requisite training on how to manage the cooperatives as encapsulated in the project planning document. The high poverty and illiteracy levels in the area have also affected the saving capacities of the co-operators thus affecting the financial and knowledge base of the cooperatives.

4.5.3 Qualified Community Contactors

According the SNP site manager, most of the skilled labour needed in the site is outsourced and this is quite expensive for the project and has also affected the expected output. The outsourcing

of skilled labour has been occasioned by inadequate qualified community contractors in the area according to site officials.

4.5.4 Fluctuating Prices and Low Quality Building Materials

The stated market prices of building materials such as stones, sand, and cement, among others keep on changing thus affecting the construction budget. This change in the prices occasioned by supply of poor quality building materials by some suppliers has affected the timeline for the completion of the project and the quality of construction work.

4.5.5 Poor Drainage and inaccessible roads

The area has no drainage system therefore when it rains the storm water floods making the area impassable; also the soil which is black cotton has poor absorption, doesn't permeate well. The earth roads leading to the project site are also impassable when it rains and dusty during dry and windy seasons which affects delivery of materials thus delay of the project.

4.5.6 Transportation Problem

The cost of transporting building materials and labour to the site is expensive owing to its location away from the Nairobi-Mombasa Highway (2 km) and the poor access linking the site from the tarmac road. The access roads are also inaccessible during rainy seasons and this affect transportation to the site.

4.5.7 Finances

Even though the project was initially estimated to cost a total of Ksh.900,000,000 million the fluctuating market prices of building, materials and erratic economic showings have since seen the project cost exceeds the estimated figures. This has led to inadequate funds being available for the implementation of the project. This inadequacy has led to delay in the completion of the project as per the work plan.

4.5.8 Completion of the Project

This is a challenge that has been occasioned by a number of factors such as but not limited to: changing prices of building materials, inadequate funds for project implementation, unfavourable weather, poor communication strategies, ineffective project monitoring and evaluation

mechanisms, transportation challenges and inadequate qualified contractors. The delay has led to the erosion of confidence and hope among the informal settlements dwellers on the potential of SNP project to solve their housing needs.

4.5.9 Monitoring and Evaluation

There seems to be a mismatch among the stakeholders in the implementation of the SNP in Mavoko with regard to the progress in its implementation. The project's progress monitoring 'system' is weak and unsystematic. In the reading and understanding of this study, the last progress monitoring of the project was carried out in 2004. This is arguably along period of time to evaluate the project in terms of new development and emerging issues.

Despite the challenges currently facing its implementation, the project is seen to be have enormous potential in improving the living conditions of those living and working in such settlements as it aims at training and empowering the informal settlements' dwellers in sustainable neighbourhoods' development, including but not limited to roads and construction, sanitation and water supply, waste management and production of low cost housing materials. According to the findings of this study, 89.7 percent of the residents of Mavoko informal settlement are interested in trainings on management, leadership, and entrepreneurship among others. The study found out that the on-going housing project in the study area is set to address the housing needs of different income groups by developing different housing typologies (such as high-rises, bungalows and maisonettes) in the same planned neighbourhood while providing basic physical and social infrastructure such as access roads, water supply, *juakali* shades, schools, septic tanks, market place, health facilities, power supply among others.

4.5 Lessons Learnt

A lot of lessons have been learnt from the implementation of the SNP project in the study area, worth noting is that the SNP carries unquestionable potential for solving the housing problem in the urban informal housing sector. By advocating for the improvement of local governance and strengthening of the capacity and role of the informal and community sectors in developing sustainable neighbourhood, the SNP is arguably a pro-poor approach. However, the realization of its principal goals and objectives remain by and large, functions of the type and structure of the implementation strategy adopted and adapted.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter presents a summary of findings; draws conclusions and give recommendations on the way forward with regard to improving the implementation process of the sustainable Neighbourhoods Programme.

5.1 Summary of the Findings

The first objective of this study sought to evaluate Kenya slum upgrading with the focus of sustainable neighbourhood programme with it main focus is to improve the living conditions of people living in the informal settlements. The study established that majority; about 49.2 percent of the residents are tenants with only 11.5 percent of the residents living in their own houses. Most of these houses are built on illegally allocated land and are in deplorable states and lack basic sanitation, infrastructure, and other essential services as shown on photographs on plate 5.2, 5.3 and 5.4. The second objective of the study aims at determining the potential of SNP in improving living conditions of beneficiary population in Mavoko informal settlements. The project is seen to having enormous potential in improving the living conditions of those living and working in such settlements by empowering the informal settlements' dwellers in sustainable neighbourhoods" programme especially creating mechanisms to save as little as they can afford, the programme also includes but not limited to roads and construction, sanitation and water supply, waste management and production of low cost housing. Various means have been employed to help in the realization of the objectives of the study.

According to the study findings there is need to strengthen civil society through establishment of building associations, empowering people through training, community-government partnership, development team approach, strengthening the role and capacity of local authorities, formation of housing cooperative societies, and development of sustainable neighbourhoods so as to promote sustainability in the programme this arrangement will enhance continuity and sustainability In terms of the challenges facing the implementation of the project, the study established the following: poor Communication System, poor Management of Housing Cooperative Societies, inadequate Qualified Community Contractors, fluctuating Prices of

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Building Materials, poor Quality of Building Materials, unfavourable Weather, transportation Problem, inadequate Finances, delay in the Completion of the Project and ineffective Monitoring and Evaluation. From the study, a lot of lessons have been learnt within the realm of the SNP project in the study area, but noteworthy is that the SNP carries unquestionable potential for solving the living conditions of informal settlements which include housing problem in the urban informal housing sector and if the teething problems are tackled it can be replicated to other areas where it will impact positively to the lives of people living and working in the informal settlements.

5.2 CONCLUSION

From the analysis of the findings, the following conclusion can be drawn. Despite the challenges facing its implementation in the study area. Sustainable Neighbourhoods Programme remains a crucial concept for solving the housing problem in the urban informal housing sector. By advocating for the improvement of local governance and strengthening of the capacity and role of the informal and community sectors in developing sustainable neighbourhoods, the SNP is a pro-poor approach. However, the realization of its principal goals and objectives remain by and large, functions of the type and structure of the implementation strategy adopted.

Urban growth is a phenomenon that provides opportunities and benefits, but also has negative consequences: poverty and inequality; slum proliferation and environmental degradation; social instability and lack of security. Town and cities in developing countries are unable to provide housing, infrastructure and services in pace with the population growth. The result is unplanned shanty towns without basic services, where conditions are miserable. Informal settlements are also the product of failed policies, bad governance, inappropriate legal and regulatory frameworks, dysfunction markets, unresponsive financial system, corruption and lack of political good will. In response, various programmes have been introduced to address the upgrading of informal settlements but without much success. The sustainable neighborhood programme which encourages participation of the beneficiaries poses as an opportunity for reversing this trend and improving the livelihood of the people living in deplorable conditions in the informal settlements.

5.3 RECOMMENDATIONS

The fourth objective of the study endeavoured to recommend an effective and comprehensive strategy or the improvement of the implementation process of SNP project in the study area and for its successful replication in other area with similar characteristics. In so doing, it is in the interest of this study that several key recommendations be made. These recommendations have been categorized as short term and long term. This subsection is therefore a presentation of the recommendations.

a) Poor Communication System

- Initiate team building exercises aimed at reinforcing the need to communicate and work together to meet the SNP goals.
- Work with the various organs of SNP to conduct regular meetings for purposes of developing common understanding of the programme.
- Work with the various SNP organs to develop tools that will help in timely delivery of relevant information to the various stakeholders (e.g. development and placement of relevant radio and TV programs, setting up and equipping of a model information centre that will serve the immediate neighbourhood and other sites, Put up notice boards at strategic places and encourage HCS and other community member to post relevant information and gather feedback, hosting radio and television talk shows in formal and folk media, use of brochures and pamphlets informing on the various aspects of SNP

b) Poor Management of Housing Cooperative Societies

- Ensure trainings are carried out immediately after the election of new officials
- Regular training should also be held on both members and officials of the cooperatives
- Enhance the saving capacities of cooperatives members through training on micro-finance initiatives.

c) Inadequate Qualified Community Contractors

- Relevant ministries should ensure the existing polytechnics are well equipped to train local communities with construction skills
- Refresher courses should also be introduced to local contractors to upgrade their skills
- Engage community members in design and construction works of the project to gain meaning experience.

d) Fluctuating Prices of Building Materials

- Government to put price controls on building materials to control and stabilize the prices
- Establish a body to handle inconsistencies in price and quality of building materials

e) Poor Quality of Building Materials

- Establish a body to ensure quality and standard materials are supplied

f) Poor Drainage and inaccessible roads

- Construct drainage system to allow storm water flow and tarmac the road network to ensure the area is accessible and materials are delivered on time irrespective of the weather.
- Forge public private partnership in the provision of infrastructure.
- Promote community based management infrastructural management systems

g) Inadequate Finances

- Sensitize the members of the Cooperatives to save and invest on housing development.
- Initiate income generating activities within the beneficiary community.
- Build capacity and facilitate networking of the cooperatives with other successful cooperatives while adopting best practices.

h) Delay in the Completion of the Project

- Provide the necessary facilitation on the completion of the project.
- Explain to the stakeholders the cause(s) of delay in the completion of the programme
- Embrace the spirit of team work in the implementation of the programme.

i) Ineffective Monitoring and Evaluation

- Establish an efficient monitoring and evaluation system that integrates all stakeholders
- Review and develop the existing communication strategy
- Encourage participatory monitoring and evaluation,

j) Connection with other neighbourhoods

- **Encourage inter-connection with other neighbours within the area for sharing of common services for instance roads, water .electricity, schools, and markets among others**
- Help build cohesive societies which promote sustainability.

5.4 Recommendation for further research

Further researchers should investigate the following pertinent areas:

- The place of physically challenged persons in SNP
- The role of cooperatives in provision of housing in the informal settlements.
- Stakeholders and their specific roles in the implementation of SNP
 - > Partners in implementing the project for instance, UN- Habitat, Municipal councils
 - > Development partners for instance ,World Bank
 - > Donors for instance Finland Government
 - > Communities

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APPENDIX B: STRATEGY FOR THE IMPLEMENTATION OF SUSTAINABLE NEIGHBORHOOD PROGRAMME

ISSUE/PROBLEM	COPING MECHANISM	PROPOSED MECHANISM	ACTIVITIES	ACTORS	TIME FRAME
Poor Communication System	Coming up with communication tools	-Development of communication tools.	-Initiation of TV programmes -Setting up a communication centre -Production of Brochures	-SNP Executive Committee -MMC -Community Members -MoH -KENSUP Secretariat	3months
Poor Management of HCS	Training of official and holding elections	-Training of Cooperative Members	-Organization of Workshops, seminars -Promotion of exchange programmes	SNP Executive Committee -NACHU -MMC -MoH Community Members	2 months
Inadequate Qualified Community Contractors	Source from outside the region/ hold training workshops	-Training of Community contractors	-Engagement of community members in construction works. -Training of community	-MoH -MoRPW -MMC -Community members -SNP	2months

			members on appropriate building technologies	Executive Committee	
Fluctuating Prices of Building Materials	Increase budget allocation	Increase budget allocation	Direct importation	Ministry of Housing Ministry of finance	Financia 1 year
Poor Quality of Building Materials	Quality by KEBs, public works	Quality by KEBs, public works	Train communities in detecting materials	Ministry of Housing , Public works	3 months
Unfavourable Weather	Building during dry weather	-Weather Forecasting	-Forging partnership with Metrological Department	-SNP Executive Committee Community members Metrologica 1 Department	lyear
Transportation Problem	Proper Development and Maintenance of Infrastructure	-Proper Development and Maintenance of Infrastructure	Public/Private partnerships on infrastructural development & management -Engagement of local	-MoH -MoRPW -MMC -Local community -Private sector -Public sector	2 months

			community in the development of local access roads		
Inadequate Finances	Education and Sensitization on saving	-Education and Sensitization on saving	-Trainings on micro-finance -Seminars & workshops	-MoH -MoF -NACHU -SNP Organs -Local community	Financia 1 year
Delay in the Completion of the Pilot Project	-Team Work towards the implementation of the SNP project	-Team Work towards the implementation of the SNP project	-Promotion of team building activities	-MoH -All Organs of SNP	3 years
Poor Monitoring and Evaluation Mechanisms	-Review and Development of effective Monitoring and Evaluation of the project	-Review and Development of effective Monitoring and Evaluation of the project	-Review of similar best cases	-All organs of SNP	1 year

APPENDIX C: Hypothesis Testing

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
How many respondents?	61	31.00	17.753	1	61
How much do you earn currently?	61	4761.4754	1236.97863	2750.00	8000.00
How much do you save in your cooperative?	61	403.2787	281.04994	100.00	1000.00

How much do you earn currently?

	Observed N	Expected N
2750.00	2	5.5
3250.00	8	5.5
3750.00	11	5.5
4250.00	7	5.5
4700.00	1	5.5
4750.00	7	5.5
5000.00	7	5.5
6000.00	8	5.5
6500.00	8	5.5
7000.00	1	5.5
8000.00	1	5.5
Total	61	

How much do you save in your cooperative?

	Observed N	Expected N
100.00	3	10.2
200.00	25	10.2
300.00	8	10.2
400.00	1	10.2
500.00	15	10.2
1000.00	9	10.2
Total	61	

Test Statistics

	How many respondents?	How much do you earn currently?	How much do you save in your cooperative?
Chi-Square	,000 ^a	23.213 ^b	37.852 ^c
df	60	10	5
Asymp. Sig.	1.000	.010	.000

a. 61 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.0.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 5.5.

c. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.2.

APPENDIX D : Partners Working with GoK in Slum upgrading

<i>Partners and International Organizations</i>	Other Special Interest Groups	Organizations
<p>UN-HABITAT.</p> <p>UNEP(United Nations Environment Programme)</p> <p>Shelter-Afrique SIDA(Swedish International Development Cooperation Agency)</p> <p>KFW (Kreditanstalt fur Wiederaufbau-Reconstruction Credit Institute)</p> <p>DFID (Department for International Development)</p>	<p>Shelter Forum</p> <p>NACHU (National Co-operative Housing Union)</p> <p>Pamoja Trust</p> <p>Umande Trust</p> <p>Amani Housing Trust</p> <p>Research Triangle</p> <p>ITDG (Currently Practical Action)</p> <p>HABITAT for Humanity</p>	<p>Kenya Private Sector Alliance</p> <p>Architectural Association of Kenya</p> <p>Law Society of Kenya</p> <p>Kenya Institute of Planners, Institution of Surveyors of Kenya</p> <p>Financial Institutions and Housing Development Agencies</p> <p>Kenya Association of Manufacturers</p> <p>Jomo Kenyatta University</p>

RESEARCH QUESTIONNAIRE
UNIVERSITY OF NAIROBI
FACULTY OF ARTS
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES
HOUSEHOLD QUESTIONNAIRE

Dear Sir/ Madam,

This Questionnaire is in aid of a research being conducted by Mary Wanjiku Ndungu student at university of Nairobi, Faculty of Arts, Department of Geography and Environmental Studies. The aim of the study is to carry out *'An Evaluation of Sustainable Seighbourhood Programme in Mavoko Informal Settlements in Mavoko Municipality of Machakos District* As an important stakeholder, you have been selected to participate in the study by answering a few questions. All information, which you offer, will be kept strictly confidential and used for academic purposes only

Order	Relation ship to HH Head	Sex: 1. Male 2. Female	Age (year)	Birth place	Period lived in the area	Education level Attained 1. No 2. Nursery 3. Primary 4. Secondary 5. College 6. University/ Higher 7. Do not know	Professional Training	Main Economic Activity

1. Background Information

a). Please fill in the information required in the tables below.

Total HH Income per month (Ksh)	Tick where appropriate		Household Expenditure per Month	
	Three years ago	Now	Item	Estimated Amount (Ksh)

Below 1751			1. Education	
1751-2250			2. Health	
2251-2750			3. Food	
2751-3250			4. Fuel	
3251-3750			5. Rent	
3751-4250			6. Transport	
4251-4750			7. Water	
4751-5000			8. Entertainment	
Above 5000			9. Others (Specify)	

2. Potential of SNP in improving livelihoods

(a) (i) To what extent are you familiar with Sustainable Neighborhood Programme?

Very familiar

Familiar

Not familiar

(b) What are some of the benefits you have accrued from the Sustainable Neighborhood Programme since its inception?

(i) Social

(ii) Economic

(iii) Political

(iv) Environmental

(v) Other (Specify)

What is **your role** in the implementation of the project?

What **kind of** contribution are you making towards the projects?

3. Problems and Constraints

(a) What are the problems/constraints that the implementation of the SNP has encountered?

(i) Social

(ii) Economic

(iii) Political

(iv) Environmental

(v) Other (Specify)

4. Important lessons to be learnt

(a) What lessons have you learnt from the implementation of the SNP?

(b) Do you have any comment to make on the best way to successfully implement future sustainable neighborhood programmes?

THANK YOU