

2014

NDHIWA SUB-COUNTY INTEGRATED DEVELOPMENT PLAN 2014-2019

MASENO UNIVERSITY

Department of Urban and Regional Planning



EXECUTIVE SUMMARY	8
CHAPTER ONE	10
1.0 Overview	10
1.1 Goal	10
1.2 Purpose of the study	10
1.3 Background to the study	11
1.4 Problem statement	13
1.5 Justification	15
CHAPTER 2.....	16
2.0 LITERATURE REVIEW	16
2.1 Planning Principles	16
2.1.1 Sustainability	16
2.1.2 Integration.....	22
2.1.2.1 Functional integration.....	22
2.1.2.2 Social integration	23
2.1.3 Green Economy	24
2.1.3.1 Introduction	24
2.1.3.2 Objectives of green economies.....	25
2.1.3.3 Enabling conditions for green economy	25
2.1.3.4 Significance of green economies	26
2.2 Legal framework.....	27
2.2.1 Millennium Development Goals (MDGs)	27
2.2.2 Vision 2030.....	28
2.2.3 The Constitution of Kenya (2010)	28
2.2.4 The National Land Policy	28
2.2.5 County Government Act, 2012	29
2.2.6 Physical Planning Act, 1996.....	29
2.2.7 The Urban Areas and Cities Act, 2011.....	31
2.2.8 Environmental Management and Coordination Act (EMCA, 1999).....	31
2.3 Institutional frameworks.....	32
CHAPTER 3 3.0 STUDY AREA.....	35
3.1 LOCATION.....	35
3.2 HISTORY.....	38

3.3 GEOLOGICAL AND SOIL CHARACTERISTICS	38
3.4 CLIMATE	39
3.5 VEGETATION.....	39
3.6 WILDLIFE	40
3.8 DRAINAGE	40
3.9 LAND.....	41
3.10 SOCIAL ECONOMIC ACTIVITIES	42
3.11.2 Demographic challenges in the Sub-county	47
3.12 CULTURE AND CUSTOMS	47
3.12.1 Favourite Dishes.....	47
3.12.2 Religious customs.....	47
3.12.2 Marriage customs	48
3.12.3 Music.....	48
3.12.4 Kinship, Family and Inheritance	49
3.13 INFRASTRUCTURE AND UTILITIES	49
3.13.1 COMMUNICATION	49
3.13.2 SEWERAGE	50
3.13.3 WATER.....	51
3.13.4 TRANSPORT	51
CHAPTER 4.....	54
4.0 METHODOLOGY	54
4.1 Introduction	54
4.2 Research design	54
4.3 Sampling design	54
4.4 Sample and sampling techniques	55
4.5 Instruments of data collection	55
4.5.1 Primary data.....	55
4.5.2 Secondary Data Collection	55
4.6 Data Analysis.....	56
CHAPTER 5.....	57
5.0 FINDINGS AND DISCUSSIONS	57
5.1 Introduction	57
5.1 Water	57
5.1.1 Water Sources.....	57

5.1.2 Quantity Of water used.....	58
5.1.3 Water Safety	58
5.2. Sanitation	58
5.2.1 Availability of sanitation facilities	58
5.2.2 Human waste disposal	59
5.3 Transport and Communication	61
5.3.1 Mode of Transport	61
5.3.2 Roads.....	62
5.3.3 Communication	62
5.4 Agriculture.....	62
5.4.1 Land size.....	62
5.4.2 Ownership documents	63
5.4.3 Land use	64
5.5 Banking services.....	64
5.5.1 Banking services availability.....	64
5.6 Markets	65
5.6 Housing	65
5.6.1 Roofing materials	65
5.6.2 House ownership	66
5.7 Security.....	66
5.6 Education	67
5.6.1 Primary Distance	67
5.6.1.3 Secondary Distance.....	67
5.8 Energy.....	67
5.8.1 Lighting.....	67
5.9 Health.....	69
CHAPTER SIX.....	70
CONCLUSION AND RECCOMENDATIONS	70
6.1 WATER.....	70
6.1.1 Challenges	70
6.2 SANITATION	71
6.3 TRANSPORT	71
6.4 EDUCATION	72
6.5 HEALTH.....	72

6.6 ENERGY.....	73
6.7 LAND.....	73
6.8 BANKING	74
6.9 MARKET.....	74
6.10 INSECURITY.....	75
cCHAPTER 7	81
7.0 SPATIAL ANALYSIS ANALYSIS AND LANDUSE PROPOSALS	81
7.1 LANDUSE CONSTRAINTS	81

EXECUTIVE SUMMARY

Ndhiwa Sub-County Integrated Development Plan (SCIDP) 2014-2019, being the first SCIDP for the Sub-County, has been prepared by the students of the department of urban and regional planning, Maseno University. The work followed the County Integrated Development Planning Guidelines provided by the Transition Authority in collaboration with the Ministry of Devolution and Planning. The guidelines contained clear and explicit formats and frameworks for collection, collation, validation and organization of information provided in this SCIDP. This plan is therefore in consort with the National Planning guidelines and best practices in terms of content development, triangulation, use and application at all devolved units in the Sub-County.

In preparing this document, reference was made to Homa Bay County Development Profile 2013, Homa Bay County Strategic Plan 2013-2022, Strategic Urban Development Plan for Ndhiwa Bay Municipality 2008-2030, Report of the MTEF Budget Making Consultations 2012-2015, Report of the Second MTP Consultations 2013-2017, Report of the County Budget Consultations 2013-2014 and the resultant approved budget, Reports of the Sectoral Working Forums and other Consultative Forums for the CIDP. All these documents were prepared with invaluable inputs from various development stakeholders in the county. We also borrowed from the results of the Kenya's 2009 Population and Housing Census and from relevant publications and other sources. Cognizance was made of the fact that the SCIDP would form the basis on which the County Government of Homa Bay would institute appropriate measures and develop budgets for the development of Ndhiwa Sub-County.

This Sub-County Integrated Development Plan conforms with and is informed by the national aspirations and the strategic direction provided by the Kenya Vision 2030, that is the country's long-term development blue print covering the period 2008-2030. The Vision is anchored on three pillars namely: the Economic, Social and Political Pillars. The Economic Pillar aims at achieving and

maintaining a stable economic growth rate of 10 per cent or more annually up to the year 2030. The Social Pillar aims at building a just and cohesive society enjoying equitable social development in a clean and secure environment. Finally, the Political Pillar aims at achieving an issue-based, people centered, result-oriented and accountable democratic political system, anchored on the rule of law

Ndhiwa Sub-County is one of the 7 sub-counties found in Homa Bay County in Nyanza region as provided in the Kenya's constitution 2010 that was promulgated on 27th August 2010. It lies at the latitude of 0° 27" South and 0° 52" South, and between longitudes 34° 12" East and 34° 40" East. It has a population of 172212 people and covers an area of 171.4 km².

The plan is divided into six chapters. Chapter one deals with general introduction which provides objectives of the study, statement of the problem and justification of the study.

Chapter two gives the literature review. Factors dealt with under this chapter include legal and institutional framework, integration and sustainability aspects of development and green economy technology. Chapter three deals with the study area, this includes position and size of the sub-county, administrative and political units, physiological and natural conditions and settlement patterns. In addition infrastructure coverage, community organizations, forestry and agro forestry, tourism wildlife and industry is also included. The population profiles and projections form part of sub-county general information. The chapter also elaborates the strategies the county will employ to address the current challenges and previous development shortfalls including mitigation of the effects of cross-cutting issues such as climate change, environmental degradation, HIV/AIDS, gender inequality among others.

Chapter four describes the methodology employed in collecting for the preparation of the Sub-County Integrated Development Plan (SCIDP). Chapter five deals with the findings and discussion of the data collected during the study. Chapter six which is the final chapter of this project deals with conclusion and recommendations drawn out from the findings and discussion. Tables and indices of key socio-economic statistics on the sub-county and the major milestones for tracking development in the county are also provided.

CHAPTER ONE

1.0 Overview

This chapter gives a brief description of the area of study as well as the objectives. It brings out the need for preparation of the Integrated Development plan for Ndhiwa as well as justification on why the plan is important.

1.1 Goal

To prepare an integrated development plan for Ndhiwa sub-county

Specific objectives

1. To analyze the socio-economic and environmental concerns in Ndhiwa sub-county
2. To identify the development opportunities in Ndhiwa sub county
3. To assess the development challenges within the sub-county
4. To propose a framework to guide sustainable development in Ndhiwa sub-county

1.2 Purpose of the study

The purpose of the study is to examine the conditions and prospects of Ndhiwa Sub County with respect to the infrastructure availability and conditions, education facilities, social facilities, housing facilities and the tenancy system that is in place, land ownership and the utilization of space within Ndhiwa, population distribution as well as water availability and distribution within Ndhiwa Sub County. Recommendations on ways of addressing the problems will also be given.

1.3 Background to the study

Twenty-first century land use planning faces both an opportunity and a threat. On the one hand, it is widely counted on and expected to deliver both sustainable development and livable communities. On the other hand, it must cope with serious conflicts in the values related to these two beguiling visions, which represent the big visionary ideas of contemporary urban planning. The Future of land use planning may well depend on how it resolves these conflicts and creates settlement patterns that are both livable and sustainable.

Sustainable development seeks to reconcile the conflicts among economic development, ecological preservation, and intergenerational equity, as reflected in the familiar definition from the report „Our Common future „(World Commission on Environment and Development, 1987):

"Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (p. 8). As its United Nations origin attests, sustainable development is a global vision, although it has been taken up by planners in the U.S. and other developed countries (Krizek & Power, 1996). Its central value can be boiled down to a balance among the three "E's: environment, economy, and equity (Berke, 2002, p. 30).

In practice, land-use planning proved to be one of the most important arenas in which conceptions of sustainable development are contested. Here, more than anywhere else. It has become clear that trying to turn the broad consensual principles into policies, procedures and decisions tends not to resolve conflicts but to expose tensions inherent in the idea of sustainable development itself.

Spatial planning is an activity centered on making decisions relating to the location and distribution of land use activities. The role of spatial planning includes the following

- i. To create the conditions for an enhanced quality of life.
- ii. Fulfilling the aims of efficiency and democracy through public participation.

iii. Meeting the challenge of sustainable development.

In addition, one of the main objectives of Spatial Planning is to ensure that the utilization of land resources is planned and implemented in an organized manner to meet the needs of present and future generation. Spatial Planning requires an integrative and comprehensive planning approach in order to rationalize the appropriate land use activities.

Spatial planning is intended to promote and foster sustainable development along the following principles of the five S's i.e.

- i. Synergy
- ii. Sustainability
- iii. Sensible
- iv. Strategic
- v. Supportive

Ndhiwa sub-county faces myriads of planning issues and challenges; some of the emerging issues in the sub-County include the following;

- ☐ Ineffective urban planning methods and inadequate development control
- ☐ Poor standards of urban infrastructure and services
- ☐ Inadequate revenue collection for services
- ☐ Lack of community participation in urban planning and management
- ☐ Lack of efficient water supply and waste management infrastructure

Therefore, it is with reference to above highlighted challenges that an urgent solution is needed to address them. Therefore the best model to adopt to ensure that a reasonable developmental progress

is made is the preparation of integrated plan which incorporates all the aspects of the challenges.

Further, Homabay County Government lacks sufficient financial capacity to undertake several and simultaneous investments and as a result there is need to prioritize investments and concentrate on few sectors such as agriculture and education which have significant forward and backward linkages hence fostering growth.

1.4 Problem statement

Ndhiwa as a sub-county of Homa Bay County has experienced population increase just like the general population growth in the country. The large urban center in the sub-county is Ndhiwa town, which is growing at a faster rate. Starting from the general development guidelines of Vision 2030 and the Millennium Development Goals (MDG), they bring about the integration of the development in order to satisfy all the sectors that lead to the general growth of the counties and country at large. Ndhiwa is still experiencing low level of development and poverty in spite the great potential in her people, climate and the resources.

Given that devolution has created a way for each county to provide for their people through the devolved functions such as agriculture, education, health services, livestock, trade, industry, cooperatives and tourism development, physical planning, transport, public works, energy and utilities, minerals, natural resource, wildlife conservation and environment, aquatic resource, cultural services, finance and economic planning, proper integrated plans have not yet been prepared. This hence has led to unplanned utilization of the resources while aiming at achieving development.

Ndhiwa is still experiencing problems of poor roads and infrastructure, few and unequipped health facilities, few learning institutions hence long walking distances, inadequate clean water and sanitation, among others. This hence comes against the MDGs that require fulfilling the basic needs of the people. To a larger extent Ndhiwa is still experiencing such challenges of not meeting people's needs.

Lowering down of the formation of integrated development plan to the sub county level would make sure that all the resources are identified and exploited to meet the development agenda of the wider country.

Integrated development plan as provided for in the Urban Areas and Cities Act, 2012 and in the County's Government Act is to be fulfilled to provide ways for the management of the resources and to improving the situation of the towns. The unutilized resources would hence be identified to satisfy the needs of the people of the present and also keeping in mind the future needs. This is to provide way for the development of other plans and that are to guide the development of the area. This makes sure that the sustainable development is achieved through the planning process as per required by the laws.

The planning students of Maseno University hence take into account the provision of integrated development plan thereof.

1.5 Justification

With the implementation of the constitution which led to the devolved government, the development in the counties and the sub counties have to be guided by the Integrated Development Plans (IDPs). This is a requirement as stipulated out in the county government act 2012.

The situation that is currently on the ground calls for the need to identify the areas that need urgent attention in planning and development the need for preparation of IDP that will bring out these sectors and areas and spur development.

Ndhiwa Sub-county is facing a number of challenges such as unemployment, food insecurity, poor infrastructure and social amenities as well as environmental degradation caused by sugar industries located within the sub-county hence the preparation of a sub-county integrated development plan will help in addressing such challenges faced in Ndhiwa Sub-County.

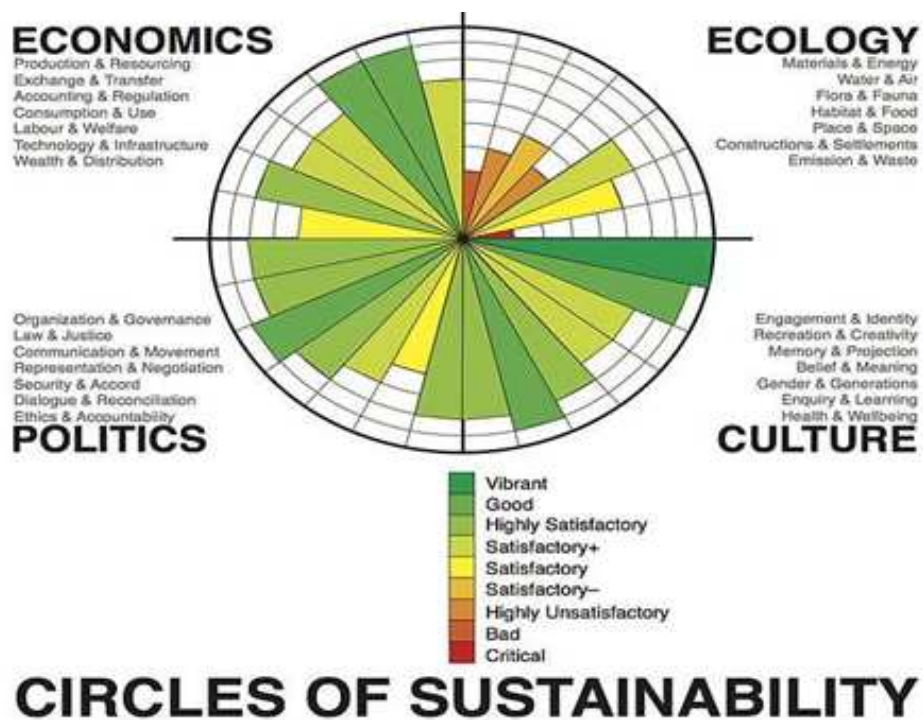
The sub-county is also facing a high prevalence of HIV and worrying maternal and infant mortality rates and their eradication needed concerted efforts therefore the SCIDP will help the sub-county avert the health challenges by stipulating the strategies needed to employ in overcoming such challenges.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Planning Principles

2.1.1 Sustainability



Economic sustainability

Economic sustainability is the term used to identify various strategies that make it possible to use available resources to their best advantage. The idea is to promote the use of those resources in a way that is both efficient and responsible, and likely to provide long-term benefits. In the case of a business operation, it calls for using resources so that the business continues to function over a number of years, while consistently returning a profit.

Specific sustainability measures

Trade Department

Industrialization Department

- ☐ Implementation of industrialization policies

Tourism Department

- ☐ Promotion of tourism

Local Authorities

- ☐ Provision of markets
- ☐ Licensing of traders within the trading centers

Local Council

- ☐ Maintenance of Market centers and provision of facilities such as toilets and water
- ☐ Contribution to the Sub-county Joint Loan Board.

Physical Planning Department

- ☐ Will take a lead role in developing Ndhiwa Sub county structure plan in proper planning of the sub-county as an investment hub
- ☐ Carry out needs Assessment
- ☐ Undertake training and capacity building
- ☐ Undertake workload analysis

Environment sustainability

Purpose of environmental sustainability is to promote, conserve and protect the environment and improve access to water and housing for sustainable Ndhiwa sub county development. Provision of safe and clean water is crucial for a healthy population. Lack of clean water is closely associated with outbreak of water borne-diseases such as typhoid and cholera which have been a major killer disease in the county. Through the construction of dams and boreholes, the sector is useful in providing water for livestock and human consumption particularly during the drought spell period in the district.

The provision of technical advice on appropriate irrigation methods is also crucial as a means of enhancing food security hence reduction of hunger in the sub county. People are encouraged to participate in sectors where they make the greatest contribution in terms of ideas and recognition. Political leaders other than being invited in person would be provided with opportunity to make opening statements whereas the rest would react and contribute in a plenary.

Individuals who were called upon to manage various processes were individuals who had background training and experience in those processes to the largest extent possible.

This comprises the Water, Environment and Natural Resources sub-sectors. About 30% of the household have access to portable water and this expected to increase with the implementation of the devolved fund for community development projects. Water supplies are operational and other small water projects do exist serving smaller areas. About 60% of the population is adequately served. Over the last five years the Ministry has rehabilitated water supplies, drilled boreholes, de-silted and constructed new dams and pans.

The specific environmental sustainable principles

- ☐ Prioritize investment in the budgets
- ☐ Capacity-build community members in project management for sustainability of water projects in the county

- ☐ Create awareness and enforce measures against water pollution through bathing, washing, effluent discharge and poor sanitary facilities at the beaches near water sources especially springs rivers and lake shores
- ☐ Enforce riparian regulations governing access and development close to water sources, river banks and beaches
- ☐ Explore introduction of water charges to support investment and management of water resources; harness rainwater harvesting technologies and sustainable use of water resources
- ☐ Hasten infrastructure transfer of the sewerage to South Nyanza Water Supply Company for sustainable water and sewerage in the Sub County
- ☐ Provide and prioritize minor repairs and maintenance of sewerage infrastructure in Homa bay and adjacent areas to improve % of budget set aside for development of water resources
- ☐ More money allocated to water resource development
- ☐ Most facilities are well maintained
- ☐ More water catchment areas and wetlands protected
- ☐ More community members trained of facility maintenance
- ☐ More money collected from users for maintenance of water facilities
- ☐ All households reached by adequate clean/safe water
- ☐ Rehabilitation of already existing water projects

Social and cultural sustainability

Adopted at the 1992 Earth Summit, Agenda 21 recognized that sustainable development in the 21st century would rely upon the ability of healthy communities to develop broad social compacts. Eliminating poverty, and encouraging participation in decision-making by all social

groups such as sports, culture and the arts, social protection and services, and devolution and planning.

Sustainable and equitable socio-cultural and economic empowerment of all residents the need is to formulate, mainstream and implement responsive policies through coordinated strategies for sustained and balanced socio-cultural and economic development of the Country and empowerment of vulnerable and marginalized groups and areas.

The involves the promotion of equality and equity in development; empowering the youth through sports and other development activities, enhancing provision of basic services, building capacities of communities and community institutions as well as providing an enabling environment to allow diversification of rural economies The departments of Gender and Sports have empowered communities and individuals to participate in development with particular emphasis on the vulnerable

members of the society and developed talents in sports and other activities as well as mainstreaming the gender issues in all development initiative. They have also made available reading materials, information and facilities.

The department of Social Services promotes self-reliance and sustainable livelihood for and with communities through community mobilization and utilization of locally available resources. In the current socio-economic environment this mandate assumes an even more urgent and a significant dimension as the level of destitution and poverty is increasing. The department targets the marginalized, vulnerable and special interest sections and individuals to mainstream their concerns and integration in County development.

The Ministry in charge of Youth affairs should increase support to youth development programmes, facilitate opportunities to youths by training and encouragement in development,

develop and strengthen leadership and skills among the youths, provision of funds and trainings as well as mobilization of youth groups to engage in income generating activities.

The structures established by the National AIDS Control Council are spearheading all HIV and AIDS matters in the Ndhiwa Sub County.

Specific socio-cultural principles

- ☐ Empowerment of communities and individuals to participate in development with particular emphasis on women and children
- ☐ Mainstreaming gender issues in all development initiatives
- ☐ Initiate, lobby for and advocate legal reforms on issues affecting women, and to formulate laws, eliminate all forms of discrimination against women
- ☐ Mainstream all gender in all development initiatives and institutionalize the mandates of the National Commission on Gender and development
- ☐ Promotion and development of sports and sports facilities at all levels
- ☐ Empowerment of youth to participate in Development coordinating youth education programmes
- ☐ Managing, marketing, rehabilitating and maintaining sports stadia to provide avenues for sports development
- ☐ Facilitating opportunities for youth to participate in all processes of national development
Ensuring improved and effective youth participation in all structures of decision making
- ☐ Developing and strengthening leadership and life skills among the youth
- ☐ Entrepreneurship development; employment creation, environment conservations Strengthen curricular and life skills training;
- ☐ Enhance talent identification and development

- Provide resources for wealth creation and apprenticeships; Support business incubation and startups by the youth
- Have a local databank for monitoring social-cultural development trends in the Ndhiwa Sub County

2.1.2 Integration

Integration includes the following dimensions:

- i. Functional - mixed use areas with good infrastructure and services
- ii. Social - different social and cultural groups
- iii. Economic - a mix of different income groups and economic activities

2.1.2.1 Functional integration

Functional or physical integration involves creating development that is not mono-functional or sterile. The aim is to create lively and interactive living and working areas where all dimensions of activity including cultural, educational, and economic and others are catered for.

The result of functional integration is the availability and accessibility of a range of services and amenities required for daily life. Functional integration can be achieved through the implementation of mixed use, higher densities, infilling, and the co-location of living, working, service and recreational opportunities.

Benefits include local income generation, accessibility of goods and services, reduced need to travel and transport goods, lower financial and environmental costs, a diverse and dynamic urban environment and a more efficient provision of infrastructure and other services.

2.1.2.2 Social integration

Social integration involves facilitating a diverse and vibrant population mix in a community where all population groups are catered for. This includes catering for different cultural, age, ability and income groups. Social integration can be achieved through the provision of mixed housing, different land tenure and financing options and variations in dwellings. It can also be achieved through multi-purpose community centres and through the strategic location of business centres, markets and institutions.

The benefits of social integration include social interaction, co-operation, understanding and tolerance, people from different backgrounds enriching one another, cross-cutting interest groups, overcoming differences and enhanced human resources and capacities available in communities.

2.1.2.3 Economic integration

Economic integration results in a community that reflects a diversity of income groups. It will also have a range of different scales of economic activities and possibilities and opportunities.

This can be achieved through the conscious provision of spaces and opportunities for the full range of economic requirements for a community, such as urban agriculture, small-scale selling, markets, entrepreneurial centers, business support and the more traditional opportunities such as commercial activity areas.

The benefits include increased employment opportunities, local buying power and ultimately a more economically successful community.

2.1.3 Green Economy

2.1.3.1 Introduction

The green economy is one that results in reducing environmental risks and ecological scarcities. It is an economy or economic development model based on sustainable development and knowledge of ecological economics. UNEP defines a green economy as one that results in “improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities” (UNEP 2010). In its simplest expression, a green economy is low-carbon, resource efficient, and socially inclusive. In a green economy, growth in income and employment are driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

Sustainable development has been the overarching goal of the international community since the UN Conference on Environment and Development (UNCED) in 1992. Despite the efforts of many governments around the world to implement such strategies as well as international cooperation to support national governments, there are continuing concerns over global economic and environmental developments in many countries.

These have been intensified by recent prolonged global energy, food and financial crises, and underscored by continued warnings from global scientists that society is in danger of transgressing a number of planetary boundaries or ecological limits. With governments today seeking effective ways to lead their nations out of these related crises whilst also taking into account these planetary boundaries, green economy (in its various forms) has been proposed as a means for catalyzing renewed national policy development and international cooperation and support for sustainable development. The concept has received significant international attention over the past few years as a tool to address the 2008 financial crisis as well as one of two themes for the 2012 UN Conference on Sustainable Development

(Rio+20). This has resulted in a rapidly expanding literature including new publications on green economy from a variety of influential international organizations, national governments, think tanks, experts, non-government organizations and others.

2.1.3.2 Objectives of green economies

A major purpose of the green economy is to stimulate green investments in and across various economic and social sectors. Such investments should help to use natural capital and ecosystems, both considered to be critical economic assets, in a more efficient way or to substitute them by other assets, in particular when there is a risk of depletion or degradation. The investments should, at the same time, support the creation of social equity and generation of decent jobs.

The key aim for a transition to a green economy is to enable economic growth and investment while increasing environmental quality and social inclusiveness. Critical to attaining such an objective is to create the conditions for public and private investments to incorporate broader environmental and social criteria. In addition, the main indicators of economic performance, such as growth in Gross Domestic Product (GDP) need to be adjusted to account for pollution, resource depletion, decline ecosystem services, and the distributional consequences of natural capital loss to the poor.

2.1.3.3 Enabling conditions for green economy

There should be vibrant policy frameworks in controlling excessive environmental degradation requires implementing effective and appropriate information, incentives, institutions, investments and infrastructure.

Better information on the state of the environment, ecosystems and biodiversity is essential for both private and public decision making that determines the allocation of natural capital for economic

development. The use of market-based instruments, the creation of markets, and where appropriate, regulatory measures, have a role to play in internalizing this information in everyday allocation decisions in the economy. Such instruments are also important in correcting the market and policy failures that distort the economic incentives for improved environmental and ecosystems management.

The other key to balancing different forms of capital recognizes that substitutability is a characteristic of current technologies. Investing in changing and substituting these technologies can lead to new complementarities. Most renewable energy sources, such as wind turbines or solar panels, considerably reduce the amount of natural capital that is sacrificed in their construction and the lifetime of their operation, compared to fossil fuel burning technologies. Both of these types of solutions -setting thresholds and altering technologies - are important for achieving a green economy.

2.1.3.4 Significance of green economies

i) Reduce environment degradation

Continuing environmental degradation, land conversion and global climate change affect the functioning, diversity, and resilience of ecological systems and the goods and services they supply evidenced in reduced land productivity in Ndhiwa sub-county. The potential long-term impacts of these effects on the health and stability of ecosystems are difficult to quantify and value. Increasing collaboration between environmental scientists, ecologists and economists will be required to assess and monitor these impacts (MEA 2005; Polasky and Segerson 2009). Such interdisciplinary ecological and economic analysis is also necessary to identify and assess the welfare consequences for current and future generations from increasing ecological scarcity.

ii) Poverty eradication

The majority of the population in Ndhiwa, depend directly on natural resources. They currently live on land prone to degradation and water stress, and in upland areas, forest systems, and dry lands that are vulnerable to climatic and ecological disruptions (Comprehensive Assessment of Water Management in Agriculture 2007; World Bank 2003). The tendency of rural populations to be clustered in number of sectors with green economic potential are particularly important for the poor, such as agriculture ,forestry, fishery and water management, which have public goods qualities. Investing in greening these sectors, including through scaling up microfinance, is likely to benefit the poor in terms of not only jobs, but also secure livelihoods that are predominantly based on ecosystem services. Enabling the poor to access micro insurance coverage against natural disasters and catastrophes is equally important for protecting livelihood assets from external shocks due to changing and unpredictable weather patterns

2.2 Legal framework

2.2.1 Millennium Development Goals (MDGs)

They include:

1. To eradicate extreme poverty and hunger
2. To achieve universal primary education
3. To promote gender equality and empowering women
4. To reduce child mortality rates
5. To improve maternal health
6. To combat HIV/AIDS , malaria, and other diseases

7. To ensure environmental sustainability
8. To develop a global partnership for development

These goals will be part of the basis on which the integrated plan for Ndhiwa sub-county will be developed. This way, the plan will be able to meet most of these goals if not all.

2.2.2 Vision 2030

This is Kenya's main development blueprint. It has three pillars which includes the social, economic and political pillars. The economic pillar seeks to guide development within the country that will help attain the vision's goal. The social pillar seeks to build a just and cohesive society with equity in a clean and secure environment in the county. Political pillar aims at realizing democratic system that respects rule of law. Vision 2030 will guide in the development of Ndhiwa's Integrated Development Plan so that the final output suits the locals need and at the same time is in line with the country's overall development standards, that is, vision 2030.

2.2.3 The Constitution of Kenya (2010)

The constitution is the supreme law of the land. Any undertaking including planning must take cognizance of its provisions and seek to fulfill its requirements. The constitution has given promises to citizens which seek to transform how things must be done especially in the public realm. Plans for instance should be based on sustainable development and therefore the integrated development plan for Ndhiwa should take into consideration provisions in the constitution and encompass them in the plan.

2.2.4 The National Land Policy

It concerns itself with land ownership, the use of land-use planning, land administration, solutions to historical injustices on matters about land in Kenya. This policy, The Sessional paper No. 3 of

2009 seeks to guide the country towards efficient, sustainable use of the land for prosperity and posterity. This will be useful towards preparation of our integrated plan for Ndhiwa since it deals with land. It recognizes land use planning regulations and multiplicity of legal regimes related to land. The NLP provides that the government shall (a) align the power of development control with new categories of land ownership (b) Empower all planning institutions in the country to regulate the use of land taking into account the public interest (c) Harmonize the institutional framework for development control (d) establish development control standards procedures and practices (e) ensure effective enforcement of development control.

The NLP takes cognizance of the important role of planning promises to deal with land tenure policies which make planning ineffective. The NLP aims to harmonize the institutional issues in order to promote land use planning through the mandate of police

2.2.5 County Government Act, 2012

This Act provides for county governments' powers, functions and responsibilities to deliver services and for connected purposes. The Act advocates for citizen participation or involvement which is an integral part in the development of Ndhiwa's integrated development plan. This act also has a whole section on county planning under which there are types of county plans. Among the county plans there is County Integrated Development Plan which will serve as a guideline to the preparation of Ndhiwa's Integrated Development Plan.

2.2.6 Physical Planning Act, 1996

This Act makes provision for the preparation of a physical development plan. Part IV of the Physical Planning Act, sections 16-28, provides for the preparation, purposes, and implementation of physical development plans and for connected purposes.

The provisions of this Act apply to all parts of the country and in all land tenure systems except such areas that the minister may by notice in the gazette specify. The approval of developments will be considered and approved upon applications and grant all development permissions at county level.

2.2.7 The Urban Areas and Cities Act, 2011

Part IV of the Act provides that urban areas and cities shall be managed by a board appointed by the county executive committee and others nominated by the professional bodies for 5 years. Small towns shall be run by a committee appointed by a governor and approved by the county assembly. Section 36(1) provides that every city and municipality shall operate within the framework of integrated development planning which shall give effect to development of urban areas and be a basis of development control. Section 36(2) provides that an integrated urban or city development plan shall bind, guide and inform all development and decisions and ensure comprehensive inclusion of all functions.

The urban areas and Cities Act gives emphasis to the mandatory preparation of integrated urban Development plans by all city and Municipal councils to guide development in all the areas under their jurisdiction. This process varies from the previous where the minister approved the plans.

2.2.8 Environmental Management and Coordination Act (EMCA, 1999)

It creates an overhead agency and provides for public participation in environmental law. The act also establishes National Environmental Council (NEC) and NEMA. It provide for the establishment of an appropriate legal and institutional framework for the management of the environment.

It sets national goals and objectives and determines policies and priorities for the protection of the environment. It also promotes co-operation among public departments, local authorities, private sector, Non-Governmental Organizations and such other organizations engaged in environmental protection programmes.

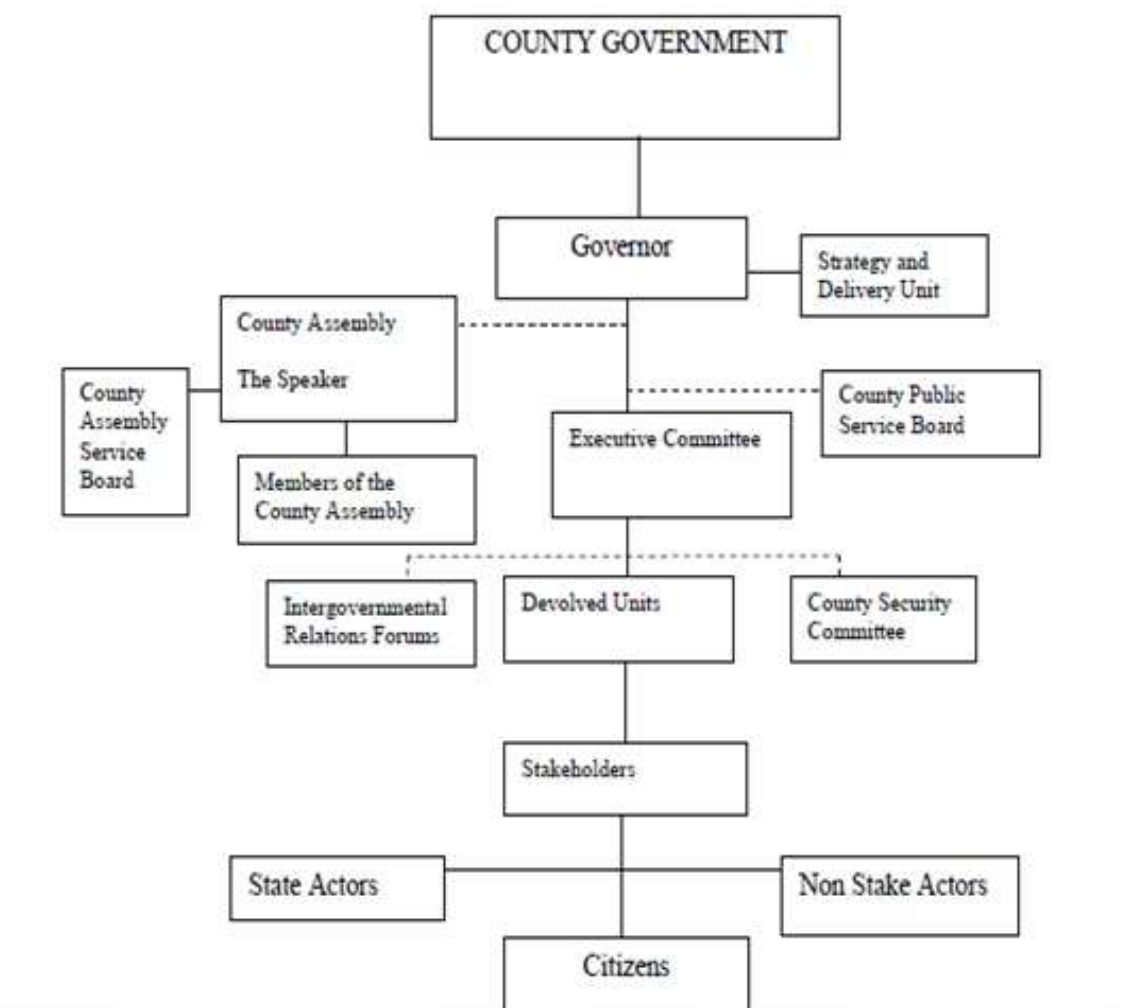
It coordinates various environmental management activities being undertaken by the lead agencies. Promote the integration of environmental considerations into development policies, plans, programmes and projects, with a view to ensuring the proper management and rational utilization of environmental resources, on sustainable basis, for the improvement of the quality of human life in Kenya.

2.3 Institutional frameworks

2.3.1 County Government

It headed by the county Governor and it will be involved in coordinating integrated development planning within the county and ensuring integrated planning within the county. It seeks to ensure linkages between county plans and the national planning framework while engaging citizens in the planning process

Below is the county organizational flow



2.3.2 NGOs

These will be important especially at implementation level since they will introduce new technologies which are easy to solve current problems within Ndhiwa at the whole county at large. They will also provide funds for projects that they have been established.

They will enhance community empowerment and enlightenment in effort to poverty eradication through introducing new innovations especially at local level. They will work with other institutions towards implementing this integrated plan.

2.3.3 CBOs

These are community based organizations which are important in mobilizing resources for the locals and also helps in bringing community members to work towards meeting a common goal. They will serve to identify local resources that are available within the area.

2.3.4 CDF Committee

This will act to supplement county Government and provide funds for improving various facilities within the county. It is an example of what can be referred to as community driven development initiative.

2.3.5 National governments Ministries and parastatals

This will provide policy direction, creating an enabling environment and provision of technical and financial support

2.3.6 Private Sector Organizations

These organizations will be useful in providing goods and services, mobilizing resources and provision of markets for goods and services in Ndhiwa Sub County.

CHAPTER 3

3.0 STUDY AREA

3.1 LOCATION

Ndhiwa sub-county is part of the larger Homa Bay County in Nyanza region of Kenya.

It lies at the latitude of $0^{\circ} 27''$ South and $0^{\circ} 52''$ South, and between longitudes $34^{\circ} 12''$

East and $34^{\circ} 40''$ East.

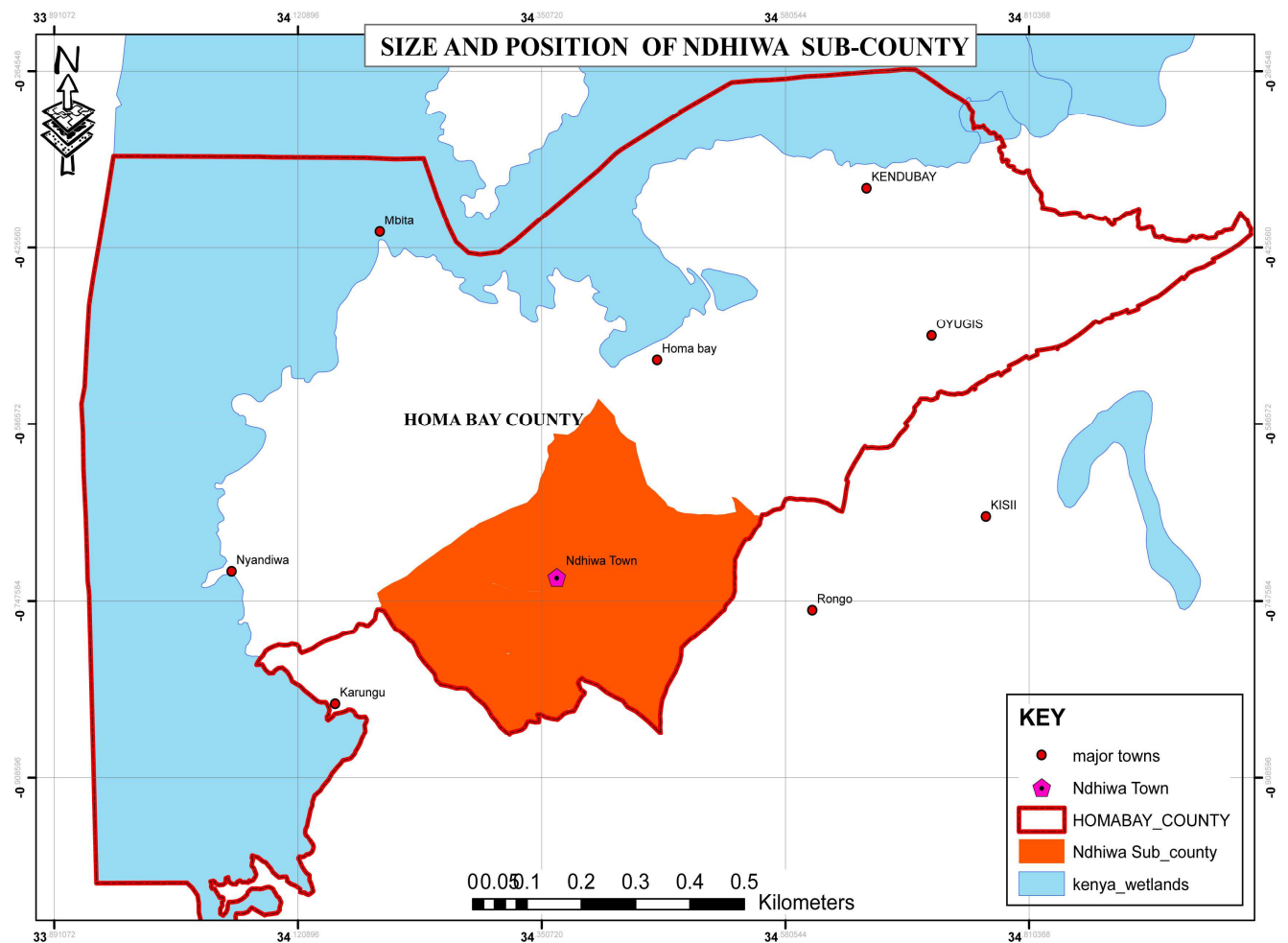


Figure 1

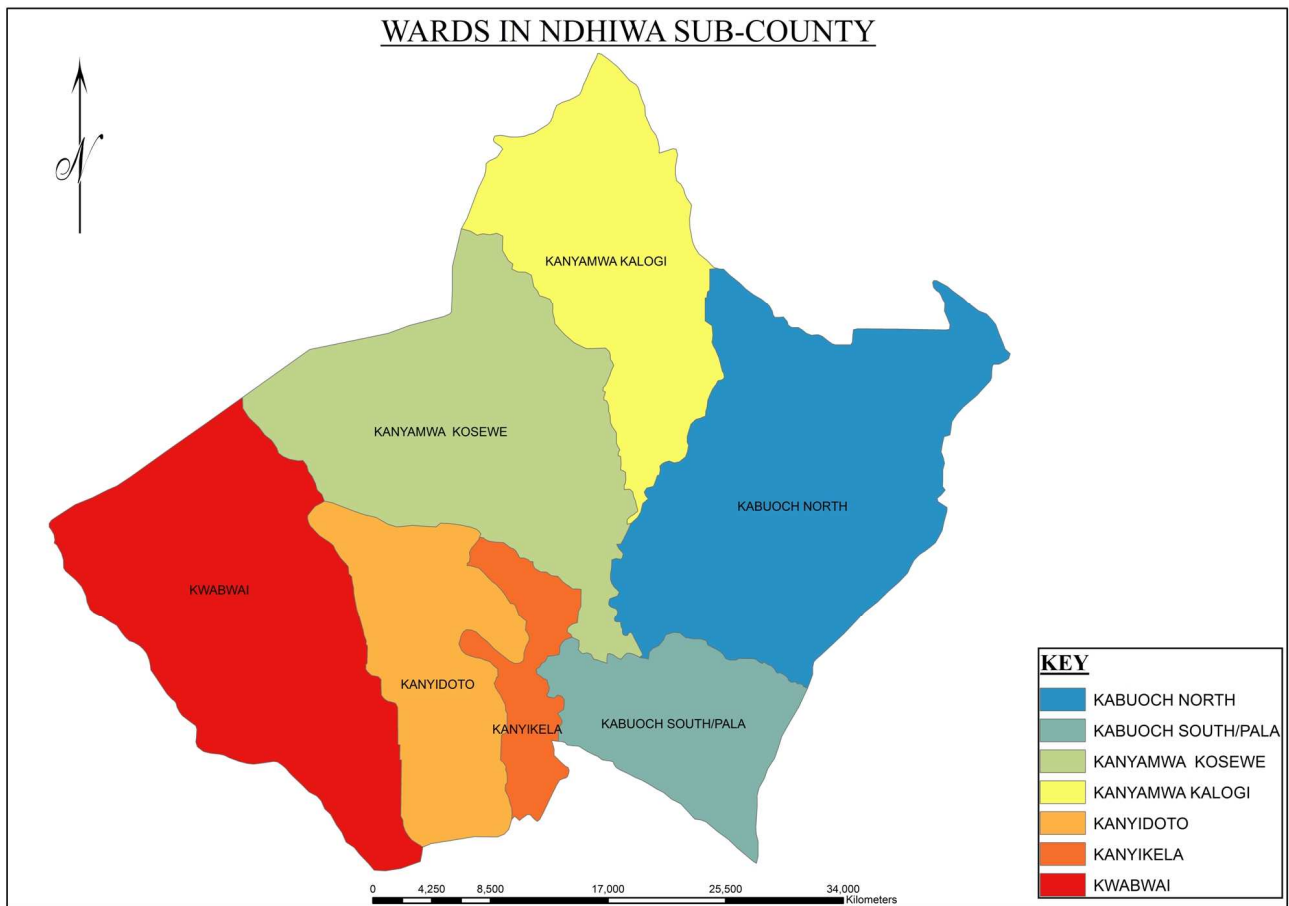


Figure 2

The table below represents its area and population as per individual administration units.

NDHIWA SUB-COUNTY			
POPULATION: 172212			
AREA IN SQ KM 711.40			
WARD	APPROX.AREA IN SQ. KM	POPULATION	SUB-LOCATIONS
Kwabwai ward	140	31596	Kamdar Ranchar,Kamdar Kawanga, Kasirime Kawanga, Kadhola, Kamdar Kodondo, Kanyolo, Kachuth
Kanyadoto ward	67.30	16331	Kabura North, Kaganda North, Kaganda South, Kabura South
Kanyiketa Ward	29.70	6283	North Kanyikela, South Kanyikela
Kabuoch North ward	137.40	35270	Kawuor/Kawere, Karading, Konyango, West Kachieng, East Kachieng, Konyango-Kachwanya
Kabuoch South/ Pala ward	99.60	26332	Koguta, Kobita, Kamenya/Kaguria
Kanyamwa Kologi ward	100.50	23442	Kadwet, Kachola, West Kochieng, Komungu, Kakaeta, East Kochieng

Kanyamwe	136.60	32958	Kwamo,Kayambo, Kabonyo,
Kosewe ward			Kwandiko

3.2 HISTORY

The dominant ethnic group in Ndhiwa constituency is the Luo .The Luo of Kenya descend from early fishing, agricultural and herding communities from western Kenya's early pre-colonial history. These qualities, plus others like intermarriages and wars led to the starting of the modern-day Ndhiwa centre. This centre acts as the main market and headquarters for the Subcounty and is also the headquarters for the Ndhiwa constituency.

3.3 GEOLOGICAL AND SOIL CHARACTERISTICS

3.3.1 Rocks

The sub-county is underlain by various rock types such as Agglomerates, Conglomerates, Tuff sandstone, Granite and Other deposits which are useful in the construction industry.

3.3.2 Soils

It is black cotton in nature with high levels of nitosols and osols. Although the residents have vast lands, these soils are difficult to work upon with simple hand-held equipment especially during heavy rains, therefore, making farming difficult.

Other areas are dominated by alluvial soils, mainly the sandy loam type which is well drained and suitable for cotton, sunflower, maize, beans, cow peas, sugar cane, potatoes and vegetable production. Example is Kanyikela Ward.

3.4 CLIMATE

3.4.1 Rainfall

The area experiences two rainy seasons, the long and the short rains, which fall between February and March and between August and November, respectively. However, there are some dry seasons such as in December and January.

The average annual rainfall is 1379mm. The rainfall is only enough to sustain growth of crops such as cassava, sunflower and sugar cane that require minimal rainfall.

3.4.2 Wind

Generalized wind speeds average about 4 m/sec and have certain regularity due to the convection effect of the large water body of the lake that borders the often hot dry land in the nearby sub-counties.

3.4.3 Temperature

It varies with altitude and proximity to the lake and tends to increase towards the lowlands.

Temperatures are highest between December and March with an average temperature of 22.5° C while the lowest temperature is experienced in April and November with an average of 20.6° C. Temperatures drop sharply at night.

3.5 VEGETATION

It is largely acacia woodland and bush lands growing over expansive black cotton soils, which also cover most of the larger Homa Bay, apart from the hilly areas which have rock outcrops. These woodlands are covered by several indigenous species of trees.

Moreover, since agriculture is still exercised in most parts of the county, crops also form part of the vegetation cover as do grass in open fields, homesteads and compounds, as well as trees planted for landscaping and environmental conservation like the jacaranda which dot the landscape of the county.

3.6 WILDLIFE

There are several species of animals found in the area. They range from few small land and water animals like snakes, fish, birds and mongooses to big land animals such as gazelles.

3.7 TERRAIN

It refers to the slope of the land. The sub-county lies in a gentle sloping land that affects surface water runoff, distribution and construction of infrastructural services and other amenities.

However, there are other areas that are hilly while others are swamps and wetlands.

This gradient is beneficial while distributing water to different places.

3.8 DRAINAGE

There are different water sources in the Sub-County. They include springs, rivers, boreholes, wells and water points. Apart from these sources, people have dug dams and practice water harvesting techniques. The water is used for domestic, commercial and industrial purposes.

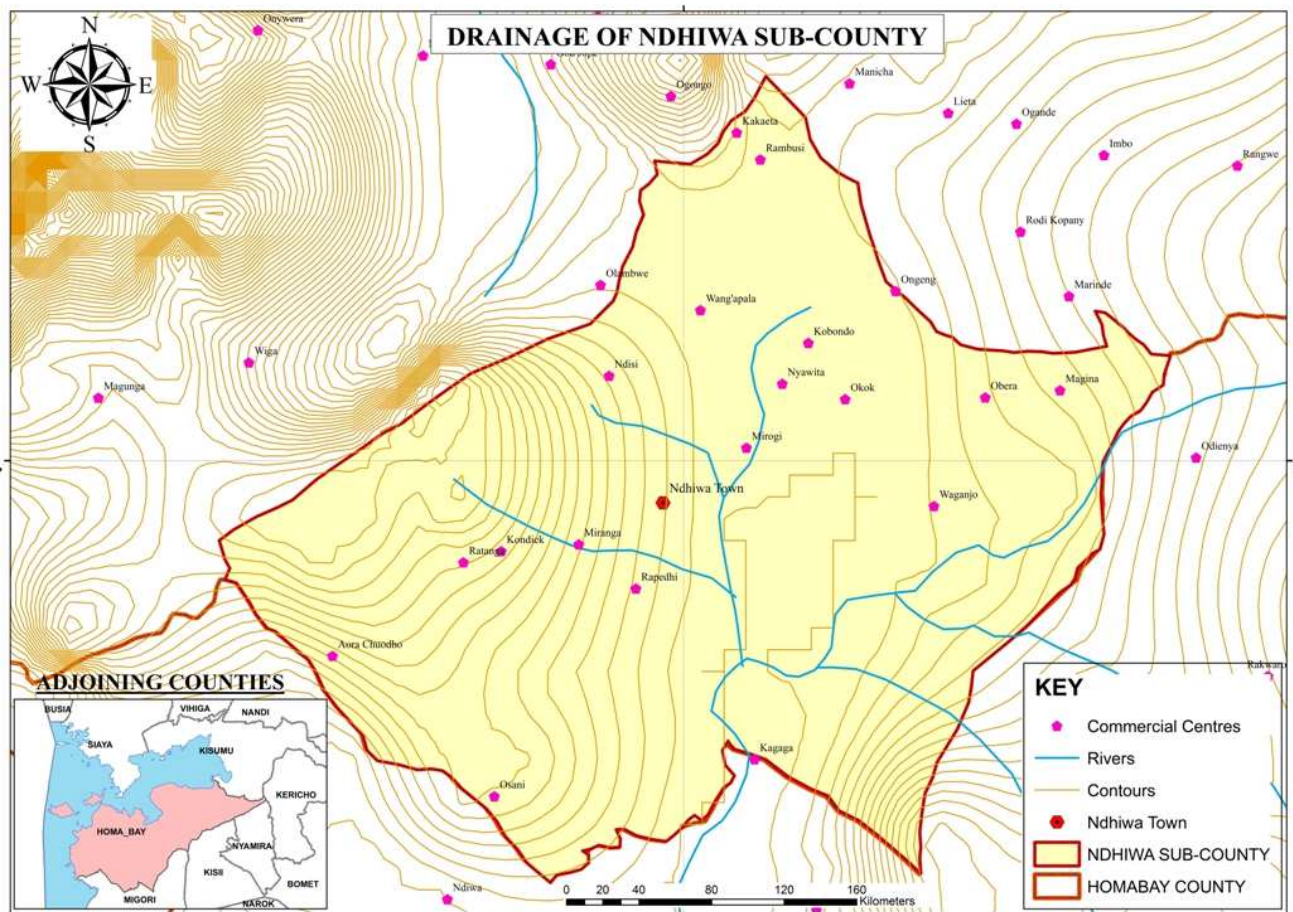


Figure 3

3.9 LAND

Categories of Land found in the area include:

Public Land- These are the lands that are neither private nor communal and any others that have been declared to be public by an Act of Parliament. The ownership and management of these lands is rested on the hands of a Public Office. An example is the Road reserves.

Community Land- This is land that is lawfully held, managed and used by a specific community. Examples are the communal open spaces that have been used for agriculture.

Private Land- This is land that is held, managed and used by an individual or other entity under statutory tenure. The owners usually have title deeds. \

3.10 SOCIAL ECONOMIC ACTIVITIES

Ndhiwa sub-county is one of sub-counties of Homa Bay County in the defunct Nyanza province. The sub-county has a poverty level of 50.2% with age dependency ratio of 100:107. Ndhiwa subcounty is endowed with various resources which are a key base for her economic activities. The major resources include: water, arable land, livestock, pasture, minerals and wildlife.

3.10.1 Main economic activities:

The major economic activities in the sub-county include:

- ☐ Fishing and fish trade
- ☐ Fish processing
- ☐ Commercial business
- ☐ Agricultural products like: maize, millet, cassava and sun flower

3.10.2 Tourism

The various tourist sites in the area provide a base for the tourist activities within the area. These sites include: Ruma national park and other tourist hotels.

3.10.3 Financial services

The county has several commercial banks and also micro finance institution which serves the local area and the people of Ndhiwa sub county.

3.10.4 Social activities

The social facilities in the county include the following: education and health facilities. The facilities form the base for the social capital of the area.

3.10.4.1 Education

The sub county has several primary schools, secondary schools, tertiary colleges.

The primary schools which provide the basic education are close to one thousand primary schools and two hundred and thirty secondary schools.

Ndhiwa Sub County has no university but however has several private polytechnics.

There are also adult literacy classes within the sub county.

3.10.4.2 Health

The sub county has single sub-district hospital, several dispensaries, health centers, medical clinics and VCT centres. However the county has a low level of doctor to population level which is estimated to about 1:150,000.

The sub-county has a high infant mortality that with estimated figures of about 137/1000

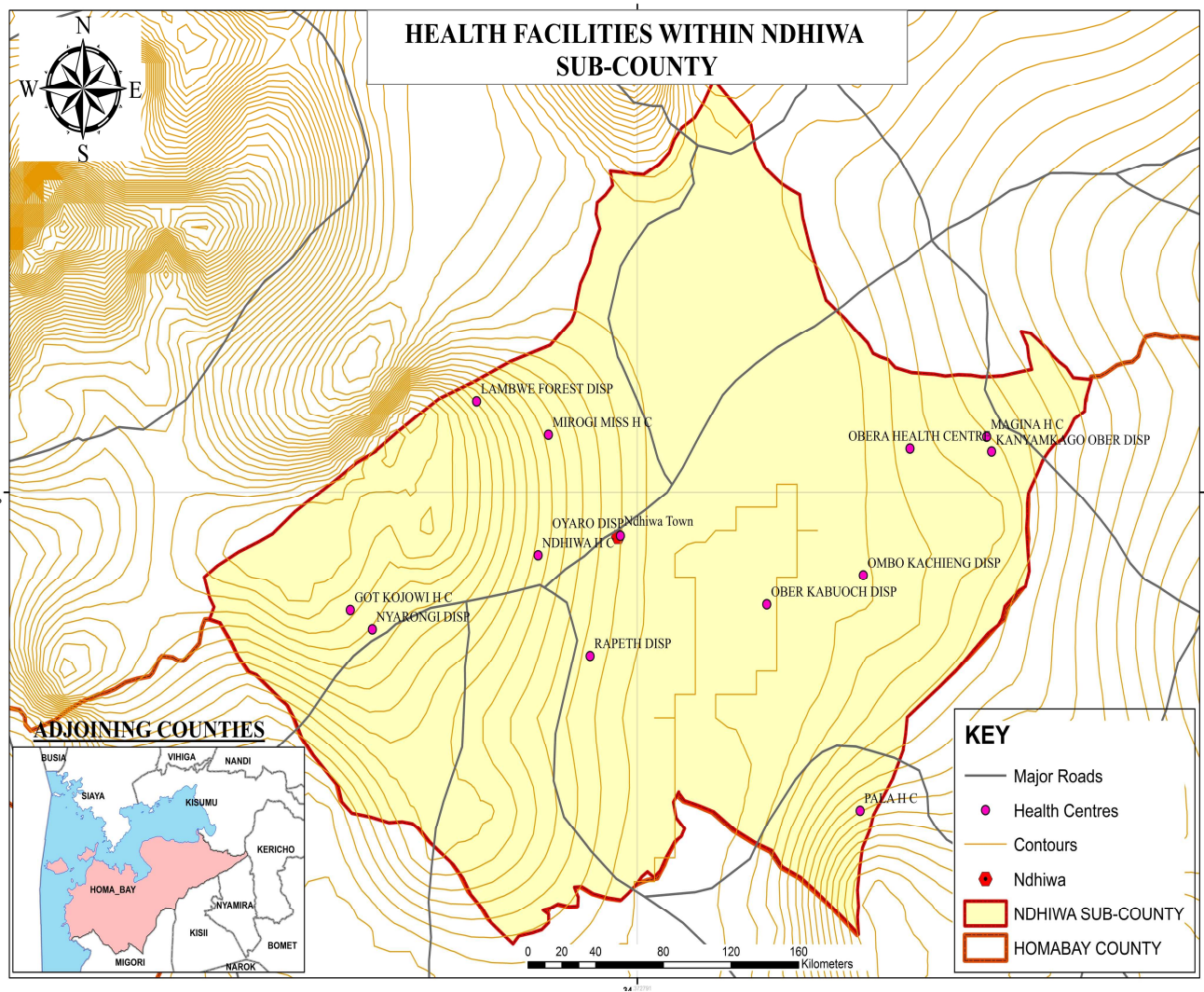


Figure 4

3.11 POPULATION AND DEMOGRAPHIC CHARACTERISTICS

3.11.1 Population size

Ward	Area (Sq. Km)	Population (2009)	Population projection (2014)	Population projection (2019)
Kwabwai	140.30	31,596	36,098	41,242
Kanyadoto	67.30	16,331	18,658	21,317
Kanyamwa Kosewe	136.60	32,958	38,797	44,325
Kanyamwa Kologi	100.50	23,442	26,782	30,598
Kanyikela	29.70	6,283	7,178	8,200
Kabuoch North	137.40	35,270	40,296	46,038

Kabuoch South	99.60 34,370	26,332	30,084	
Total	172,212 711.40 226,090		197,893	

(Source: Kenya National Bureau of Statistics: 2009 population and housing census)

According to the 2009 population and housing census, the main tribe is Luo. However, the population of the sub-county in general constitutes mostly of mainly young people. The female reproductive age in the sub-county is hence spread over the 15-49 year age bracket and makes up about 20% of the municipal population. The labour force is spread over the 15 - 49 year age bracket.

The life expectancy of the sub-county is more or less the same as that of Homa Bay County which stands at 48 years for males and 52 for females. This is a great deal lower than the national average, which is 57 and 58 for males and females respectively. The low age can be attributed to the increased poverty and prevalence of HIV/AIDS.

3.11.2 Demographic challenges in the Sub-county

The following constitute of the main challenges that the population of Ndihiwa sub-county face in general;

- High poverty levels
- Low employment opportunities
- High mortality /infant mortality rates
- High dependency levels
- Low life expectancy
- High rate of in-migration

3.12 CULTURE AND CUSTOMS

The majority of the population is Luo.

3.12.1 Favourite Dishes

The favourite meals for population residents include fish especially tilapia, usually accompanied with ugali (called kuon in Dholuo) and vegetables. Many of the vegetables eaten by the Luo were shared after years of association with their Bantu neighbors, the Abaluhya and the Abagusii. Traditional Luo diet consisted of kuon made of sorghum or millet accompanied by fish, meat, or vegetable stews.

3.12.2 Religious customs

Like many ethnic communities in Uganda, including the Buganda, Langi, Acholi, and Alur, the Luo do not practice the ritual circumcision of males as initiation. Instead, children formerly had their six lower front teeth removed at an initiation. This ritual has largely fallen out of use and many have come to the practice of circumcision at birth.

In 1907, Johanna Owalo formed the first African independent church in Kenya called Nomiya, or "the mission I was given". Nomiya church is a mixture of Christian, Islam and traditional African religious doctrines. The church practices circumcision for male children at the age of 8 days and usually prays facing north. The church currently has a following of 800,000 in the Nyanza region. Other local churches include Legio Maria, Roho, Catholic, Adventists and Fwenya among others.

3.12.2 Marriage customs

Historically, couples were introduced to each other by matchmakers, but this is not common now in Ndhiwa. Like many other communities in Kenya, marriage practices among the Ndhiwa have been changing and some people are moving away from the traditional way of doing things. The residents frequently marry outside their ethnic group. The traditional marriage ceremony takes place in two parts, both involving the payment of a bride price by the groom. The first ceremony, the "Ayie", involves a payment of money to the mother of the bride; the second stage involves giving cattle to her father. Often these two steps are carried out at the same time, and, as many modern Luos are Christians, a church ceremony often follows. If the husband should die during or after the marriage, it was customary (though now a largely unobserved custom) for the brother to act as a replacement.

3.12.3 Music

Traditionally, music was the most widely practiced art in the Luo community. It was used for ceremonial, religious, political, or incidental purposes. The Luo music was shaped by the total way of life, lifestyles, and life patterns of individuals of this community. Because of that, the music had characteristics which distinguished it from the music of other

communities. This can be seen, heard, and felt in their melodies, rhythms, mode of presentation and dancing styles, movements, and formations. The most heard songs in the sub-county are dholuo songs.

3.12.4 Kinship, Family and Inheritance

When the time of the inheritance comes the ideology of seniority is respected: the elder son receives the largest share, followed in the order of seniority. After the father's death the senior son takes over the responsibilities of leadership

3.13 INFRASTRUCTURE AND UTILITIES

3.13.1 COMMUNICATION

Communication is the exchange of data from one individual to another. Residents of the sub-county use different communication media. These methods range from traditional horn blowing to advanced internet-based as discussed below:

- 1) Postal Services. According to the Homa-Bay County Integrated Development Plan, the whole county is served by 10 well serviced and located postal offices. These offices are found in major towns and centers including Ndhiwa. They offer different services including money transfer, letter posting, rental of personal or public boxes etc.
- 2) Telephone. The sub-county enjoys approximately 62.7% cell phone penetration. These services are offered by leading telecommunication companies such as Safaricom, Airtel, Yu and Orange. Landlines, provided by Telecom Kenya, are no longer in use due to constant vandalism of its connectivity infrastructure. On the other hand, use of fax services has been deemed out-dated.

3) Courier Services. Individuals who wish to send their parcels safer and faster can use courier services provided by a range of security firms such as Riley and G4S. Offices. On the other hand, companies and businesses located in the area can create online back-ups and data banking. Internet users can access it using their own mobile phones after paying small charges as provided by their service providers or through a cyber café located in most centers charges in these cafes range between 50 cents to 1 shilling per minute

3.13.2 SEWERAGE

Sewage is the term used for describing wastewater which often contains faecal matter, urine, laundry waste and industrial waste. It mostly emanates from domestic households, institutions, industries and certain agricultural practices.

Ndhiwa sub-county's sewerage mostly originates from households, agricultural wastes and business premises. Their waste ends up in septic tanks in peoples' properties which often help collect domestic waste. Solid waste from households and business premises is dumped into local dumpsites and are later burnt. There is no presence of sewer lines in the sub-county. A higher percentage of the population use pit latrines which serve as disposal points of their own. Storm water runs through natural trenches and ditches and ends up in rivers. Plans are underway though to build the sewer system of Ndhiwa town and Homabay County at large.

3.13.3 WATER

Residents in Ndhiwa sub-county use several natural water sources such as rivers, springs and boreholes. In general, there are around 2,200 water points in Homa-Bay County and most of them are concentrated in Ndhiwa sub-county. On the other hand, private investors also provide such services.

There are several other water projects that are being carried-out in the sub-county. One worth mentioning is the Rehabilitation and extension of Ndhiwa Water Supply, that would see the project operate at full capacity and ensure wider supply coverage by 2017 (Homa-Bay County Integrated Development Plan). Others include:

- ☐ Protection of natural springs: It's currently promoted throughout the county by construction of concrete protection works and laying-up of pumps. Ndhiwa sub-county has around 10 natural springs.
- ☐ Provision of water harvesting equipment to residents.

3.13.4 TRANSPORT

The main type of transport in the area is Road transport. Only the major roads are tarmacked while all other access roads are dry-weathered. However, plans are underway to tarmac these roads, therefore, ensuring easy access to the markets and also lower the transport cost.

There is neither a railway nor a pipeline or airstrips in the sub-county but efforts to provide these services are on-going.

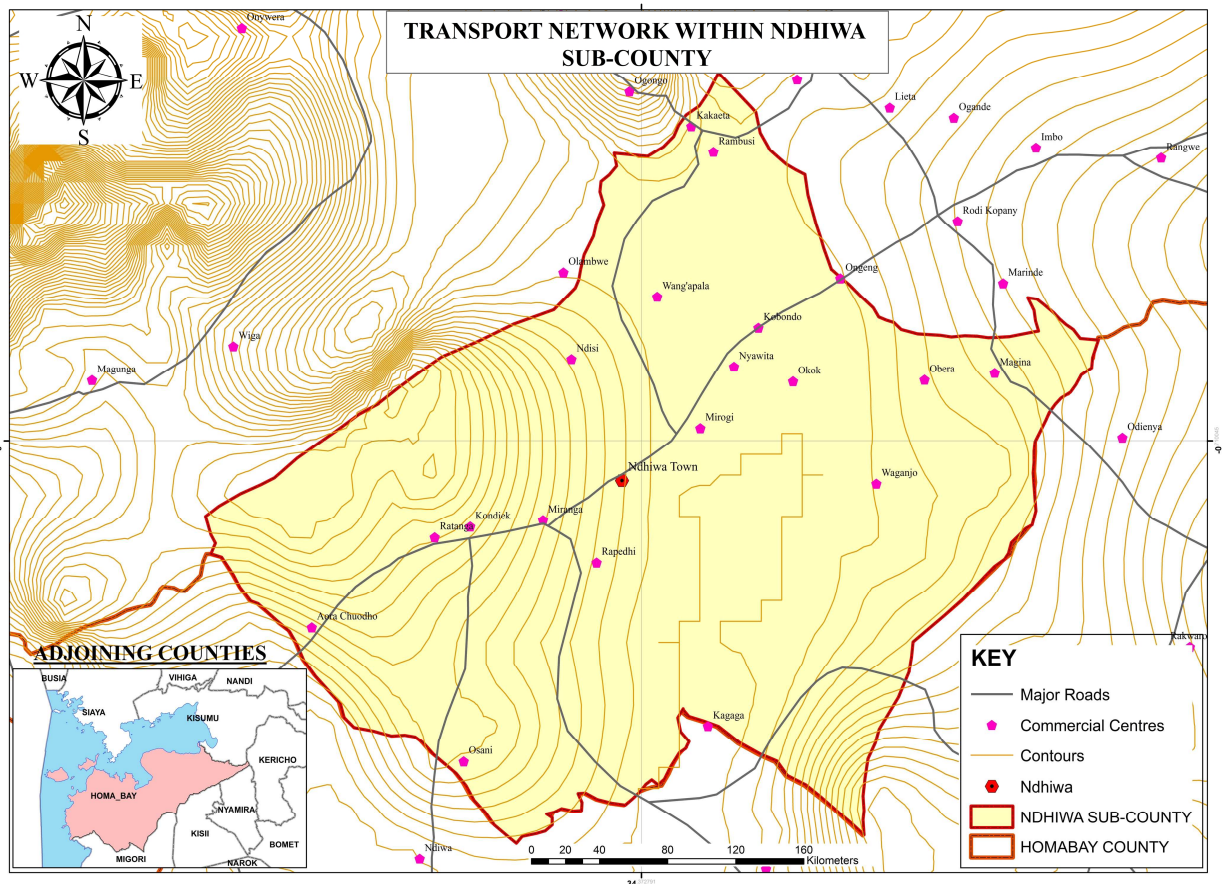


Figure 5

3.13.5 ENERGY

Electricity is the most important essential in our present times dominated with electric powered instruments, machines and information technology aided human activities in households, education, health care, wealth creation and entertainment.

The sub-county is mainly supplied with electricity from Sondu Miriu Hydro Power

Project which was developed by Ken Gen (Kenya Electricity Generating Company Ltd (the major supplier of electricity in Kenya).

The greatest demand for electricity is from homesteads. In addition to the overall demand from industries, there is an increase in connections to homesteads through rural electrification and CDF initiatives which puts a strain on the existing grid infrastructure.

Data from the authority indicated that rural electrification has increased from 4 per cent in 2003 to 22 per cent in June 2011.

Most of the urban areas within the Sub-County e.g. Ndhiwa center have a well-maintained street lighting. However, most rural areas still lack electrical connections thus a growing need to intensify rural electrification programmes. Sangoro Hydro Power Project, estimated to cost a further Sh3.5 billion, will be kicked off soon and it is expected to boost the power output.

Other sources of energy used in the area include solar, kerosene and candle.

CHAPTER 4

4.0 METHODOLOGY

4.1 Introduction

This section discusses the research design, target population, sample and sampling procedure, research instruments, data collection instruments and data analysis procedure.

4.2 Research design

This is an applied research. The study sought to use descriptive statistics to analyze the present situation in Ndhiwa Sub-County. The purpose of the descriptive survey was basically to observe, describe and document aspects of the situation of the study subject as it on the ground. The research design is aimed at collecting both qualitative and quantitative data. Quantitative data was opted for because it's easy to summarize, which is helpful in facilitating communication of findings as well as comparison. Further, it gave the researcher an opportunity to handle large number of cases. The design involves observation of existing scenario especially the existing resources and services. The study also employed Qualitative research approaches in seeking to understand the information views, values and predictions of the residents of Ndhiwa Sub-County concerning the integrated development plan.

4.3 Sampling design

The study population under focus in the study was majorly household owners and dwellers within Ndhiwa Sub-County. Hence, the research used Ndhiwa residents from the seven wards as the target population. Random sampling was used in administration of questionnaires to ensure that there are equal chances in selection of the respondents across the entire area.

4.4 Sample and sampling techniques

Stratified random sampling technique was used to draw sample for the study. This method helped in improving representation of each stratum (wards representation) within the population and ensuring that these strata were not over represented. The random sample was preferential because it was free from bias and therefore each ward had a chance to be included in the sample.

4.5 Instruments of data collection

4.5.1 Primary data

Primary data was collected using 507 questionnaires. These were majorly used to gather firsthand information about the study topic. It provided an opportunity for anonymity to provide high response rates.

Interviews were also used to interview key informants to get a greater insight to the problem under investigation. Further, the research employed use of observation on the existing scenario i.e. conditions of infrastructural services, educational facilities, health facilities and public utilities among other factors. The study also used the focus group discussion with residents of the area to identify the main development challenges faced by Ndhiwa Sub-County residents of all the seven wards in the sub-county.

4.5.2 Secondary Data Collection

Secondary data were obtained from books, articles and internet sources to review literature. Secondary data were also obtained from the County Integrated Development Plan for HomaBay County.

4.6 Data Analysis

The Data collected from respondents during the study were coded, refined and transformed into meaningful information. The information was then analyzed using Statistical Package for Social Sciences (SPSS). The output data generated were in form of charts, graphs, frequencies and percentages.

Qualitative data was operationalized by categorizing, tabulating and recombining evidences to address the research questions. Quantitative analysis was presented and interpreted using a descriptive statistics such as frequencies and percentages presented in the forms of pie charts, bar graphs, tables, graphs and inferences were made from them.

CHAPTER 5

5.0 FINDINGS AND DISCUSSIONS

5.1 Introduction

This chapter forms a crucial stage of the study. It consists mainly of the analysis of the field/research findings with guidance of the set objectives of the study. The analysis is categorized into different classifications based on the information gathered during the field visit. The classifications are basically on the issues which are to be addressed by the study and are sequentially analyzed as by the following order:

5.1 Water

5.1.1 Water Sources

The main water sources in Ndhiwa Sub County are traditional wells (57%), rivers (23%) wells (15%), and boreholes (5%). In addition to this a small percentage of the residents rely on roof harvesting to supplement the above three other sources.

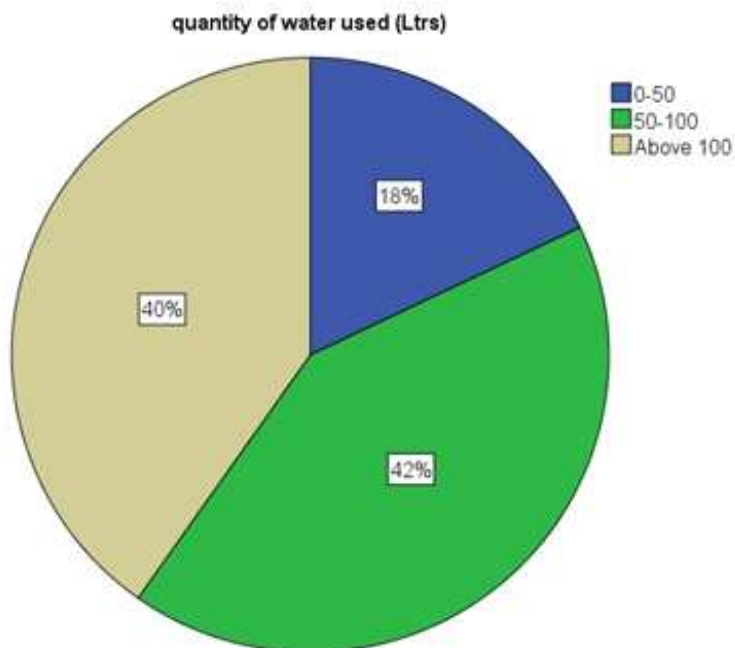


Figure 6

5.1.2 Quantity Of water used

On the quantity of water used, 40% of the residents use more than 100 liters of water per day, 42% utilize 50-100 liters of water per day while 18% consume less than 50 liters of water per day for their household uses. Those consuming large volumes of water practiced agriculture. I.e. they grew some crops such as potatoes and maize at the same time keeping some livestock and poultry. Those using the least amount of water did not practice agriculture and used the water for basic needs such as cleaning and drinking.

5.1.3 Water Safety

Majority of the residents considered the water safe for drinking, but the residents of Kanyikela and Kwabwai had problems of accessing safe water for drinking due to high levels of pollution arising from factors such as high levels of soil erosion. Those who considered the water as unsafe used methods such as boiling and use of artificial treatment chemicals such as water guard.

5.2. Sanitation

5.2.1 Availability of sanitation facilities

Residents who have access to a sanitation facility stands at 65% of the population while the rest 35% do not have access to a sanitation facility therefore use other methods like open defecation.

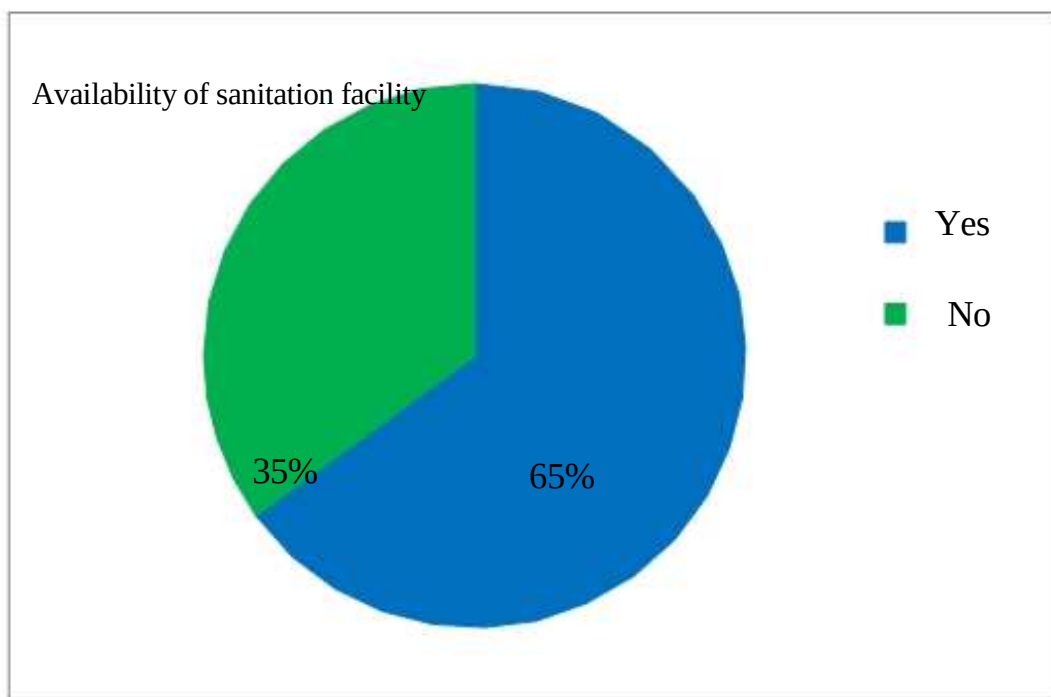


Figure 7

5.2.2 Human waste disposal

For waste disposal in Ndhiwa Sub County, 85% of the residents use pit latrines as a method of human excreta disposal while the rest 15% use septic tank for this form of disposal which means that they use flush toilets within the house and direct the waste into a septic tank.

5.2.3 Nature of sanitation facilities

Condition of the sanitation facilities used were gauged using the ensemble condition of the walls and roof to which majority were made of mud walls and corrugated iron sheets roof. An example is rugged walls and rusty, broken iron sheet roof would be taken as bad condition of the sanitation facility. 54% of the sanitation facilities were in good condition, 22% were in a fair state while the rest 24% were viewed to be in bad condition.

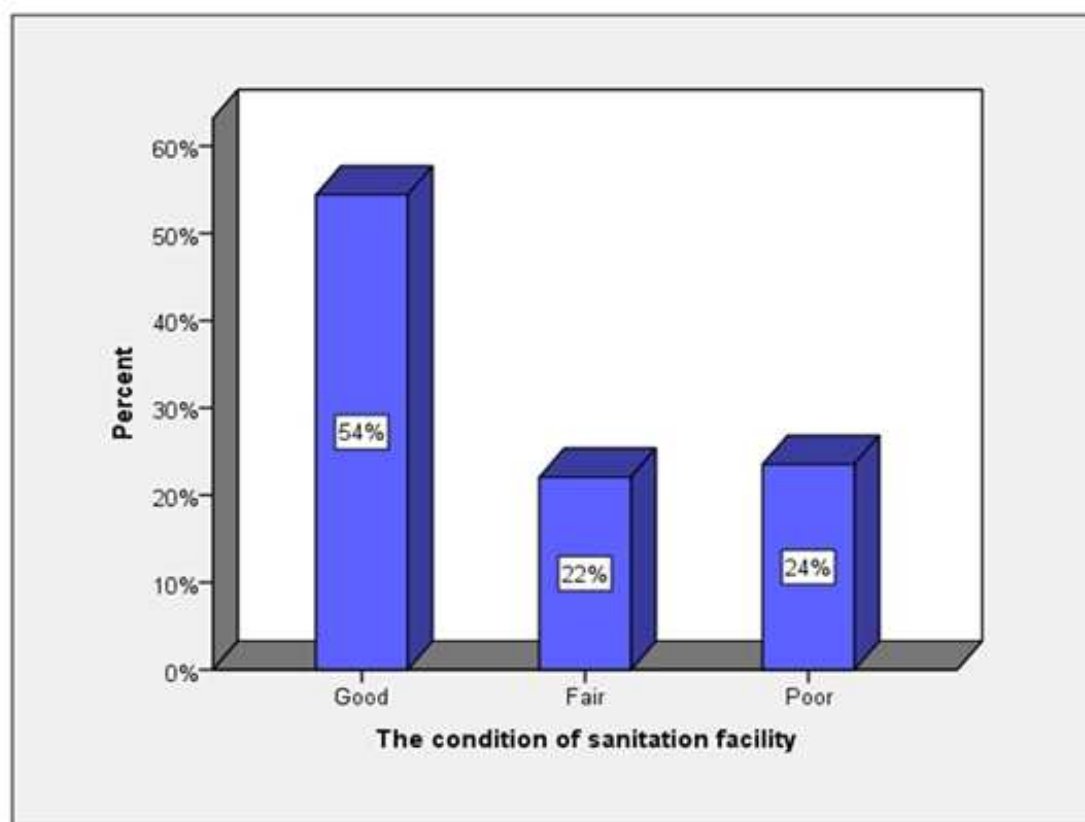


Figure 8

5.3 Transport and Communication

5.3.1 Mode of Transport

The major mode of transport used in Ndhiwa Sub County is public transport. 41% of the respondents interviewed used public transport such as Boda Boda (bicycle and motorbikes), matatus to reach their destination followed by walking at 30%. The few people (9%) use private means. This private means include: bicycles, vehicles, motorbikes among others.

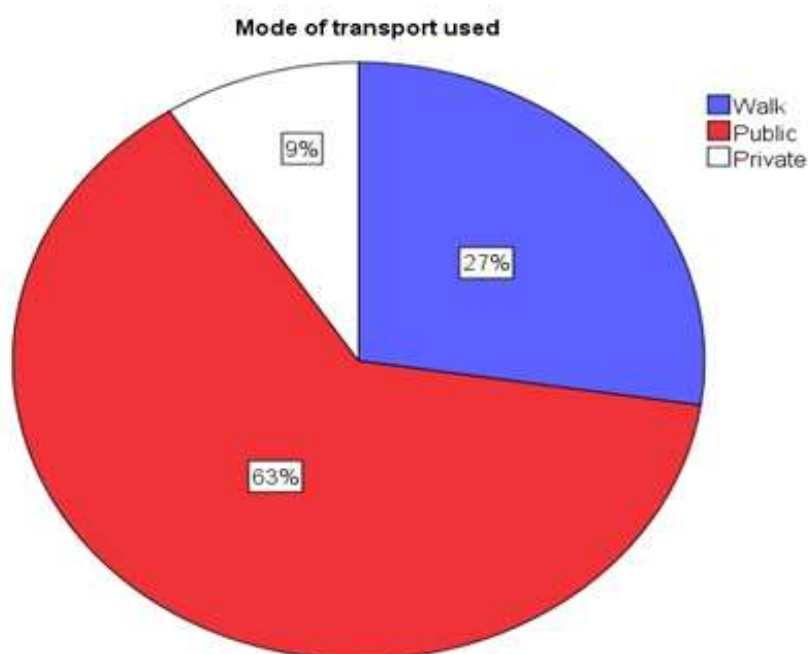


Figure 9

5.3.2 Roads

The roads in Ndhiwa Sub County are in poor condition. Most primary connector roads are tarmacked and in good condition with some under construction e.g Homa Bay - Rodi Kopany. However, 63% of the responded felt that the secondary connector roads and feeder roads are in dilapidated condition while 24% said that the road network is poor. The road condition and network currently makes Ndhiwa Sub County residents spend more resources on transport which translate to high cost of living in the sub county. 13% expressed their views that transport charges are their main challenge. This comes as a result of poor road network and condition.

5.3.3 Communication

Ndhiwa Sub County is poorly covered with mobile network. Although, 99% of the people interviewed use mobile phone as a means of communication. Only 1% use telephone/landline which already being faced out by mobile phones which are cheap, convenient, flashy and attractive. There also exist main post office in Ndhiwa Town which is responsible for delivery of letters and parcels.

5.4 Agriculture

5.4.1 Land size

In Ndhiwa Sub County, people owned small pieces of land. The average size of land that the majority (46%) owned ranges between 2-4 acres of land with the second category (34%) owning less than 2 acres. These sizes of land are uneconomical considering that 93% uses the land for agriculture. The individuals who substantial amount of land (5 acres and above) are only 20 %.

5.4.2 Ownership documents

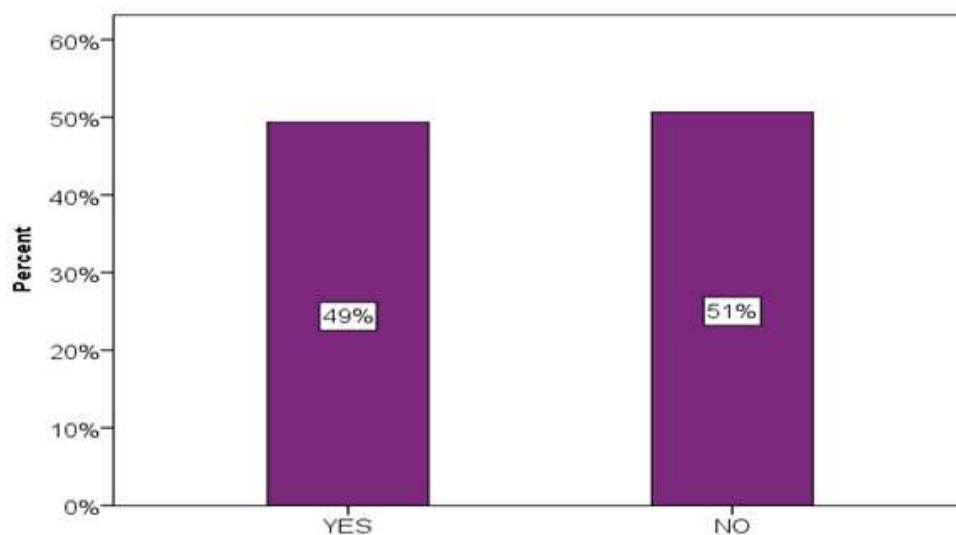


Figure 10

The population in Ndhiwa Sub County with ownership documents to their land is 49%. The rest (51%) do not have ownership documents. In Kolobi, for instance, lack of ownership of title deeds was a major problem since the residents could not acquire loans from financial institutions since they lacked collateral.

The residents cited some of the following reasons as to why they did not have land title deeds:

- a) Nonpayment of the necessary application fees
- b) Incomplete land adjudication process.
- c) Lack of knowledge in the steps/process of acquiring the ownership documents
- d) Land hoarding by the parents/ trustee to the land.

5.4.3 Land use

The main economic activity in Ndhiwa Sub County is agriculture. The individuals who practice agriculture are 93%. Other land uses are residential which takes 7%. Out of the 93%, only 12% grow commercial crops such as sugarcane and groundnuts while 88% grew subsistence crops such as potatoes, maize and cassava. The majority (51%) who grew subsistence crops cited that the harvest was not enough to take them through to another harvest year. 49% of the people interviewed assured that their harvest takes them through another year.

5.5 Banking services

5.5.1 Banking services availability

Availability to banking services is fairly good with 63% of people interviewed Citing that banking facilities are available such as Moblie Pesa (M-pesa), Airtel money and Commercial Banks. The available commercial banks include Equity and Co-Operative bank in Homabay. The distribution and access of the formal banking facilities is still poor since only one banking institution is available in Ndhiwa Sub County at the time of study. I.e. Equity Bank.

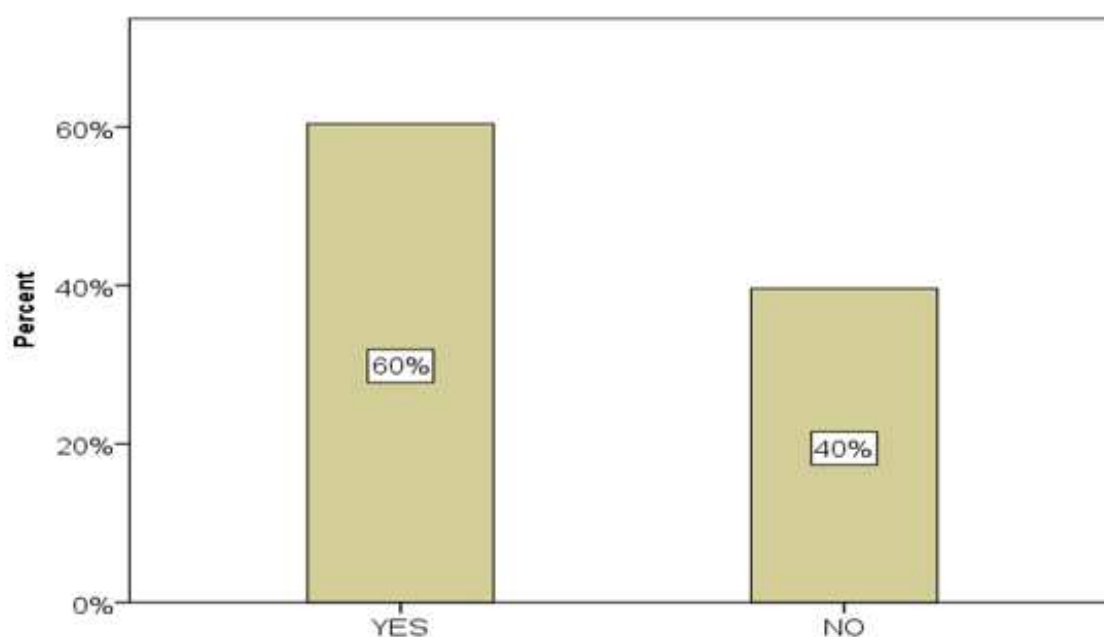


Figure 11

5.6 Markets

Access to markets was not a major issue in Ndhiwa Sub County. The nearest market distance according to the 53% of the people interviewed is less than 1km. only 1% covers a distance of 4km and above to reach the markets.

5.6 Housing

5.6.1 Roofing materials

The majority (84%) of the respondents have houses with iron sheet roofs while 16% had their houses made of grass roof. Of the houses made of iron sheet roof, most are semi-permanent 49 meaning the walls and floor are made of mud while a few are permanent that is the walls and roof is made of concrete.

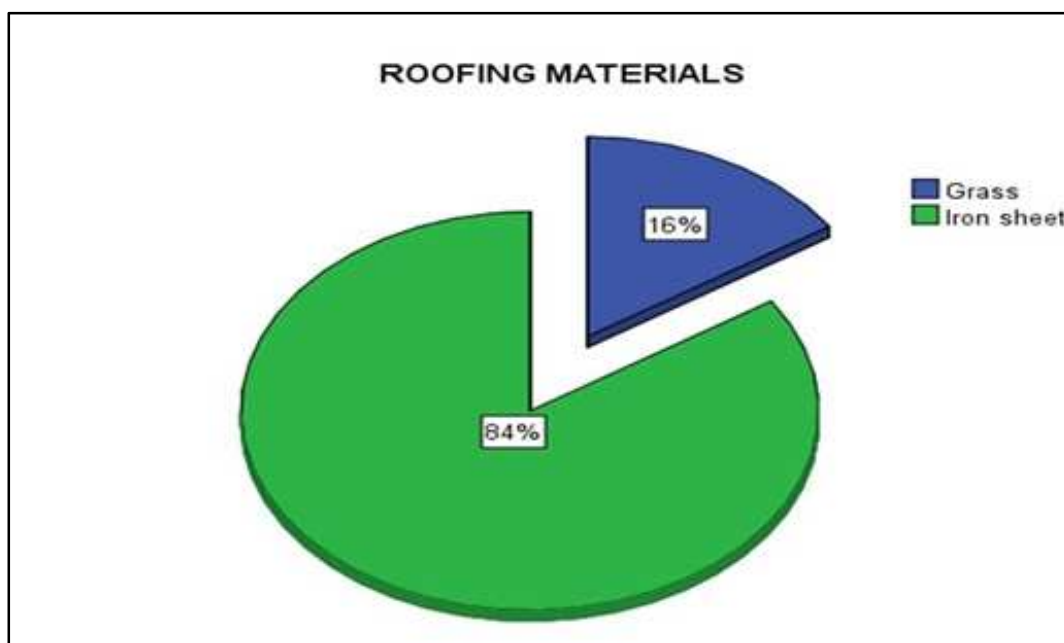


Figure 12

5.6.2 House ownership

Most residents interviewed own houses which means that they possess land on which they have constructed their own houses. This represents 74% of the population while the rest 26% rent the place where they live in, paying an amount in rent to the landlords at the end of every month.

5.7 Security

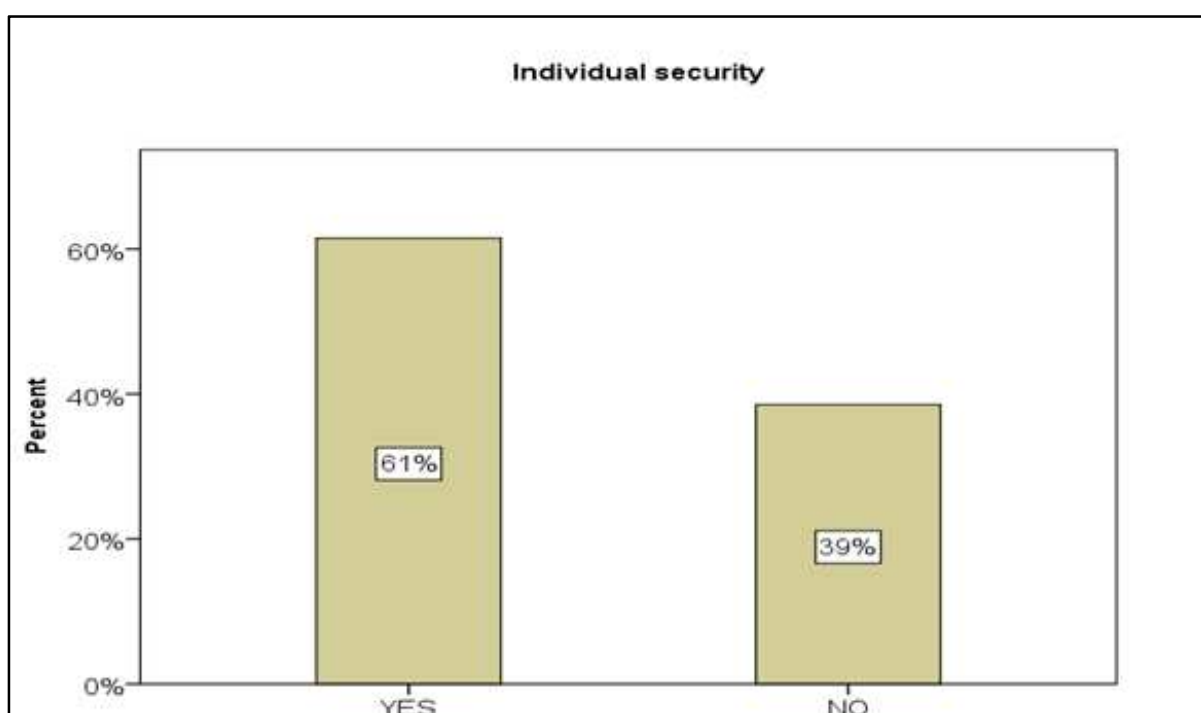


Figure 13

Generally, security in Ndhiwa Sub County was good apart from a few cases reported by the residents. From the pie chart below, 61% of residents in Ndhiwa sub-county admitted that, the government through the chiefs ensured that adequate security was provided. Various police posts had been set up across the wards to beef up security. 39 % of the residents did not feel safe and cited factors such as laxity and corruption as among the police officers as contributing factors to low levels of insecurity in the region.

5.6 Education

5.6.1 Primary Distance

Education is the key to success therefore it should be given as a priority in each society. Most of the pupils (65%) in Ndhiwa sub-county go to primary schools located within 1km, 28% travel between 1-2 KM, while the rest (7%) have to travel for more than 2 km to access school. As for the pre-primary schools, most are attached to an existing primary school for accessibility purposes by the younger kids. However in Kolobi ward the distance between primary schools was wide, owing to the fact that they were very few.

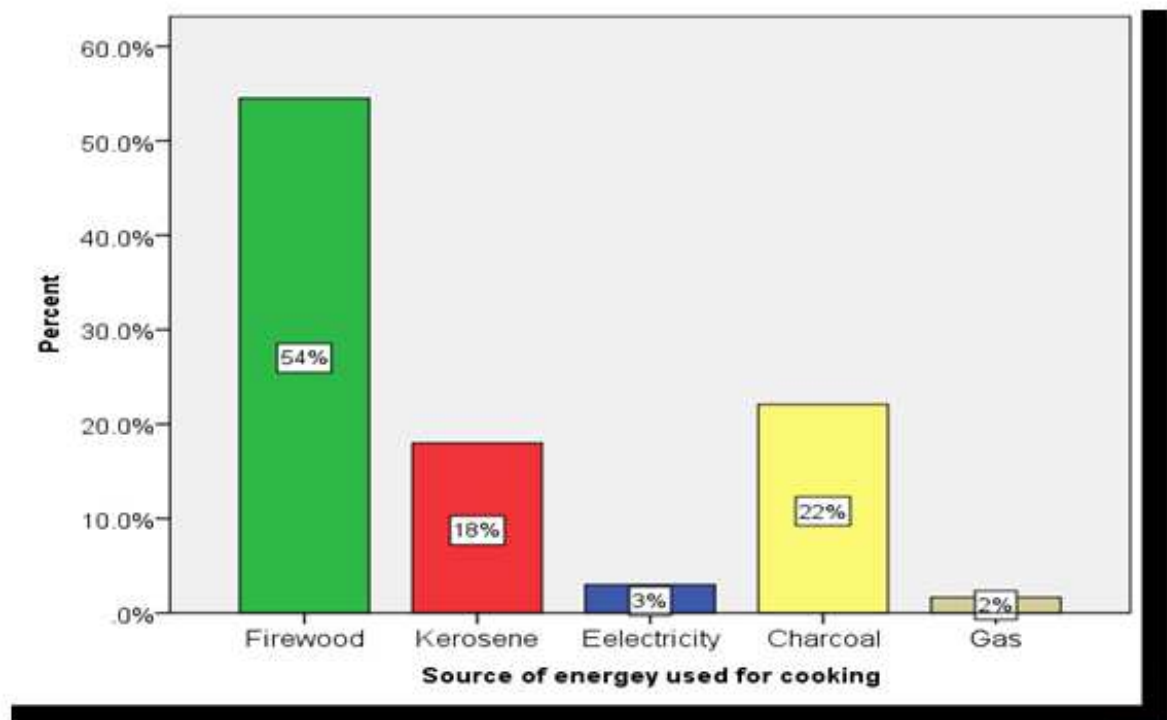
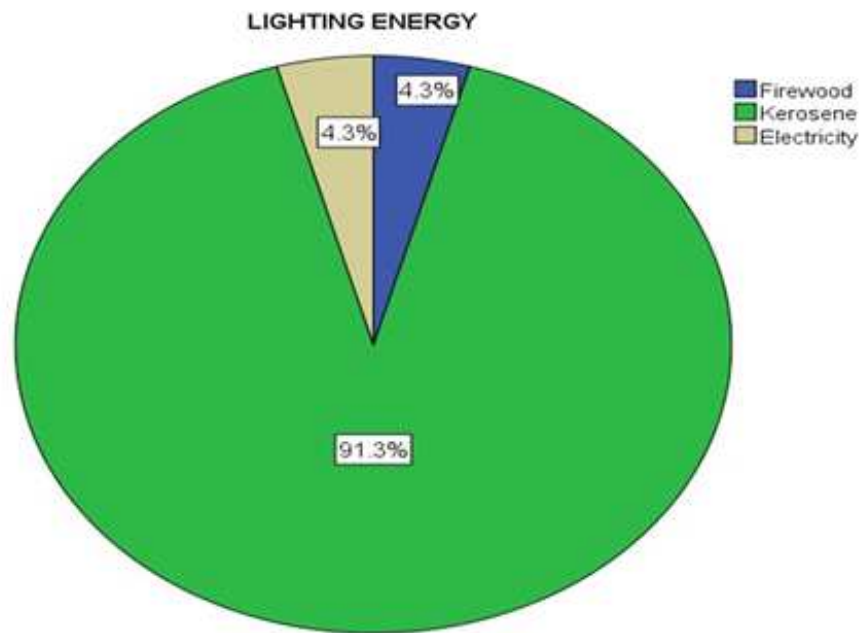
5.6.1.3 Secondary Distance

The minority (42%) of students in Ndhiwa sub-county walk for less than 1km to access schools while 58% of students walk for more than 1km to access schools, some of the students cannot afford boarding schools hence they therefore are needed to use alternative modes of transport.

5.8 Energy

5.8.1 Lighting

The source of lighting used in Ndhiwa sub-county is electricity, kerosene and firewood. The major source of lighting energy used is kerosene which makes 91%, followed by electricity and firewood which make 9%. Most people prefer using kerosene because it is readily available and cheap.



5.8.2 Cooking

The sources of energy used for cooking include firewood, kerosene, charcoal, electricity and gas. About 54% of people in Ndhiwa sub-county use firewood because it is readily available, 22% of people use charcoal, 18 % use kerosene, 3% use electricity while the other 2% of people use gas for cooking. Most people prefers using firewood for cooking since it's cheaper than the other sources of energy while gas and electricity are used by only a small percentage of people since they are quite expensive.

5.9 Health

Most of the people in Ndhiwa sub-county prefer going to the dispensary and clinics because, they are nearer hence makes it cheaper in terms of transport. 88% of people prefer going to the dispensary while 9% of people in Ndhiwa sub-county prefer going to the clinics.

Very few people go to sub-district and private hospitals for example, only about 17% of people in Ndhiwa sub-county prefer going to the sub-district hospital which is quite far.

CHAPTER SIX

CONCLUSION AND RECCOMENDATIONS

6.1 WATER

6.1.1 Challenges

The following are water challenges:

- i. Residents who don't own boreholes or wells have to cover long distances to access water from their sources. 53% of the population walk for over 1km daily to get water from the nearest source).
- ii. Though 57.35% of the respondents considered water safe, 42.65%, which is a significant Number, considered it unsafe. Water safety is not guaranteed and this poses a challenge since all people have the right to access safe water.

6.1.2 Recommendations

- i. Construction of dams for rainwater harvesting. Also houses can be fitted with ridges and tanks to tap the water. This will enable the residents to save much time and effort required to fetch water from the river.
- ii. Sinking of community wells and fitting them with the pumping system to enhance the process of drawing water. More wells available will serve the entire population adequately.
- iii. Treatment of water using less costly methods like boiling and chlorination which are more affordable to the residents to improve on the water safety.
- iv. Water recycling and/or reuse will minimize wasting this precious resource and ensure that it is used sparingly and sustainably so that the future generations will also use it.
- v. Civic education should be conducted to increase knowledge on the importance of water conservation.

- vi. Set up special fund to accelerate supply and distribution of water to enhance access by residents.

6.2 SANITATION

6.2.1 Challenges

- i. High percentage of people (71%) lack basic sanitation facilities like toilets
- ii. There are high incidences of water borne diseases due to the above constraint and this endangers the lives of the residents.

6.2.2 Recommendations

- i. Encourage the use of dry sanitation technologies like traditional pit latrines and ventilated improved pits which are relatively cheap as they do not require water for flushing
- ii. Clarify the role of government and other stakeholders in delivering sanitation services
- iii. Engagement of local authorities with the residents especially the poor to understand their sanitation needs and wishes and establish means to achieve such goals.
- iv.

Carry out civic education on the importance of proper sanitation.

6.3 TRANSPORT

6.3.1 Challenges

- i. High transport charges especially in the evenings and during rainy seasons makes travelling expensive. 9% of the population studied face this challenge
- ii. Poor road network with small road coverage further affects the transport sector as a section of the population (24%) responded.
- iii. Poor road condition affects the largest section (63%) and therefore proves to be the major challenge in the transport sector.

- iv. Other challenges like harsh weather, straining by people with special needs and dust were challenges to a smaller section of the study area.

6.3.2 Recommendations

- i. Gravelling of the dry weather roads to make them passable during the rainy season.
- ii. Compelling the sugar factory to frequently maintain the local roads since they rely on it heavily to transport in raw materials and produce out to the markets.
- iii. Increase county and CDF budgetary allocations to development of roads to increase the road network and quality.
- iv. Installation of speed humps especially in market centers to reduce motor speed hence reduced accidents and their severity.
- v. Erection of road signs to control and co-ordinate traffic flow in the market centers.

6.4 EDUCATION

6.4.1 Challenge

- i. Long distance to schools, especially, secondary schools where a higher percentage (58%) walk for more than 1km to access schools.

6.4.2 Recommendations

- i. Carry out demographic surveys of the area and build secondary schools based on population density.

6.5 HEALTH

6.5.1 Challenge

- i. Higher level hospitals like sub-district and district hospitals which offer higher order and more quality services are far from the rural areas. They are near to only 12% of the respondents.

6.5.2 Recommendations

- i. Decentralization of health services.
- ii. Improved human resource of available health facilities in terms of number and quality.

6.6 ENERGY

6.6.1 Challenges

- i. Overreliance on non-renewable sources of energy. Residents mostly use kerosene (91.3%) for lighting and firewood (81.82%) for cooking.
- ii. Lack of electricity in most rural areas.

6.6.2 Recommendations

- i. Promote the use of solar energy as an alternative for lighting.
- ii. Promote the use of biogas for cooking and lighting_ use cane waste and animal waste.
- iii. Introduction and use of the energy-saving jiko to lower consumed amounts of fuel and increase efficiency.
- iv. Introduce the use of cow dung to make charcoal balls instead of using trees to reduce the deforestation rates.
- v. Afforestation to restore trees cut for firewood.

6.7 LAND

6.7.1 Challenges

- i. High levels of land fragmentation with increasing population reducing them to sizes that can't be put into significant use.
- ii. Higher percentage (67%) of the locals lack land ownership documents such as title deeds.
- iii. Food insecurity as the harvest of most respondents (50.88%) can't last them to the next season.

6.7.2 Recommendations

- i. Issuance of title deeds to facilitate the security of tenure.
- ii. Encourage locals to carry out land conglomeration to increase their yield thus improved food security.
- iii. Increase the number of agricultural extension services personnel so as to effectively serve the vast sub-county.
- iv. Reviving of the peanut processing cottage industry to make peanut farming economically viable.
- v. Encourage farmers to form cooperatives that will enable them fetch higher prices for their produce rather than relying on middlemen who exploit them.

6.8 BANKING

6.8.1 Challenges

- i. Despite a higher percentage of the residents having access to financial services like M-Pesa and Equity agents there is still inadequate access to formal banking facilities which can offer loans and other financial facilities to farmers.

6.8.2 Recommendations

- i. Formation of local self-help groups which offer soft loans to members and loans at a higher interest to non-members.

6.9 MARKET

6.9.1 Challenge

- i. Long distances to the markets (63% walk for over 1km).

6.9.2 Recommendations

- i. Construction of more markets in the area.

6.10 INSECURITY

6.10.1 Challenge

- i. Poor handling of insecurity issue as most respondents (67.14%) were dissatisfied.

6.10.2 Recommendations

- i. Promotion of community policing programs.
- ii. Provision of suggestion boxes or community comments books in every police station or post.
- iii. Ensuring that each police officer signs the performance contract to facilitate performance appraisal.
- iv. Increased budgetary allocations to the security sector.
- v. Enhance fight against corruption within the police force and hasten the police reforms.
- vi. Encourage private- public partnership in providing security services.

6.11 IMPLEMENTATION MATRIX

CHALLENGES	AREA	STRATEGY	ACTION PLANS	ACTOR	TIME FRAME
WATER Unsafe water sources, long distances to water sources.	ALL AREAS	To increase access to clean and safe water.	Drilling more boreholes and wells Providing methods of treating water to make it safe e.g solar water heating	Homabay county government Private partners e.g. self-help groups and NGOs Households	MEDIUM TERM AND CONTINUOUS
SANITATION Lack of sanitation facilities high incidences of waterborne diseases	ALL AREAS	To create proper waste disposal methods and protect water and water sources from contamination	Establishing affordable and up to standard waste disposal facilities e.g. pit latrines	Homabay county government	
TRANSPORT	ALL	To improve	Improving on	Homabay	Short term

High transport charges Poor road conditions Poor road network	AREAS	road condition and network and reduce costs and inconveniences incurred in the transport sector	the condition of existing roads through tarmacking them and creating new ones. Pricing policy to avoid exploiting travelers	county government KeRRA KURA	Medium term Long term
EDUCATION Long distances to schools	ALL AREAS	To enhance access to educational facilities and quality educational services	Increasing the number of educational facilities and equipping them with sufficient learning materials and staff	National government	Long term

HEALTH Uneven location of health facilities	ALL AREAS	Improving on the spatial distribution of health facilities within the sub county	Constructing more health facilities to cater for the population needs	Homabay county government	Medium term Long term
ENERGY Lack of electricity, overreliance on non-renewable sources	ALL AREAS	To promote/ encourage use of renewable / alternative energy sources	Rural electrification program Use of biogas and solar energy as alternatives for cooking and lighting	Homabay county government Households	Medium term
LAND Land fragmentation, lack of land ownership documents	ALL AREAS	To formulate minimum plot sizes	Set minimum agricultural land size,	Homabay county government Land boards, Ministry of lands	Medium term And continuous

BANKING Limited formal banking facilities	ALL AREAS	To establish formal banking facilities to be accessed by existing and potential customers	Spreading more banking Facilities where they do not exist	Private sector-public sector partnership	Short term Medium term
INSECURITY Poor handling of insecurity issues	ALL AREAS	To improve the quality of services offered by the security department	Increase the number of security personnel in the area Encourage community policing Improve on the quality of service rendered to citizens	National government Private security firms	Medium term
MARKETS Long distances to markets	ALL AREAS	To improve on market distribution	Constructing more market centers that	HomaBay county government	Medium term

		and increase consumer access to goods and services	are easily accessed by buyers and sellers		
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CHAPTER 7

7.0 SPATIAL ANALYSIS ANALYSIS AND LANDUSE PROPOSALS

7.1 LANDUSE CONSTRAINTS

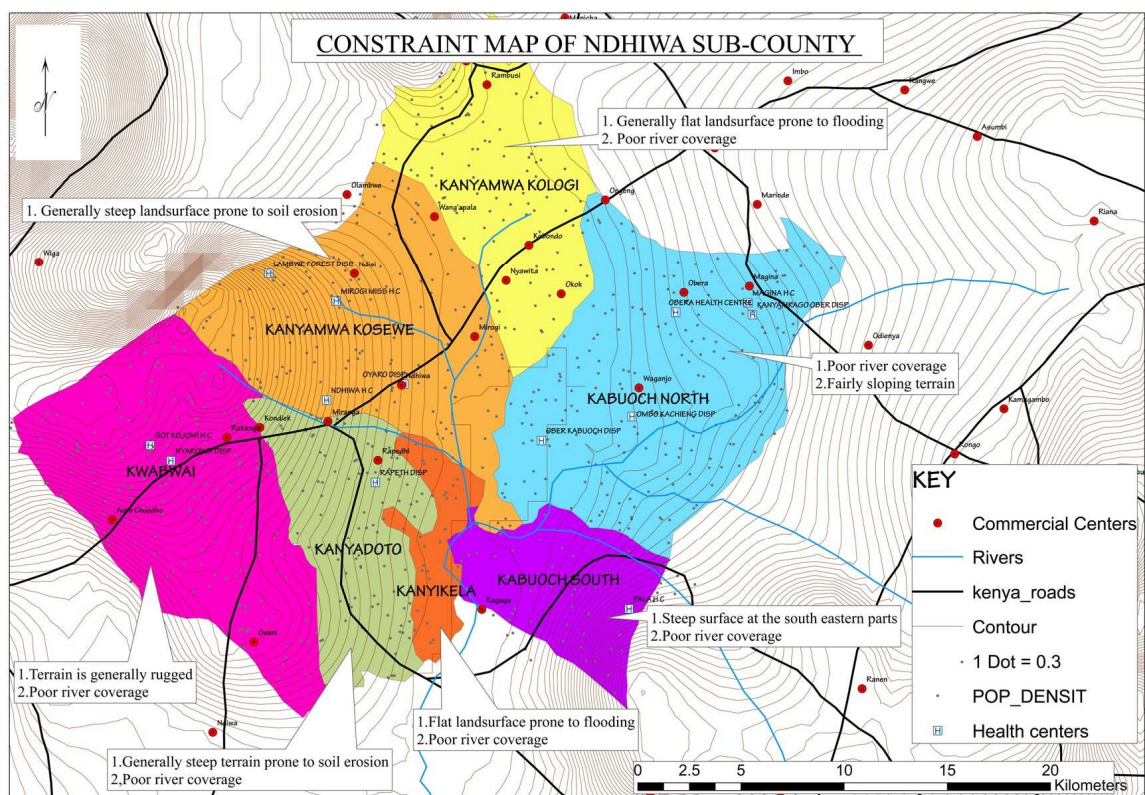


Figure 15

The following are some of the spatial constraints in each and every ward as indicated above:

Kwabwai

In Kwabwai the Terrain is generally rugged. Due to the nature of the terrain, the area is prone to erosion especially on the ridges. This has made farming in this area a challenge considering also that most individuals own small pieces of land..

Kanyadoto

Kanyadoto has Steep terrain which is not good for agriculture and settlement. This is because water retention is low. Hence the water table is forcing to dig deep boreholes to get water for domestic use. The people who use borehole in Kanyadoto are 94%. This also as pose a water problem in Kanyadoto since only 2% access water from the river due to poor river coverage. The area also is prone to soil erosion. The top soil in most parts of Kanyadoto has been swept by surface runoff leaving the soil bare. Thus the existing soil cannot sustain the crops hence low yield.

Kanyikela.

Kanyikela has a generally flat landscape. This is suitable for agriculture since fertile top soil from the surrounding from other area settle in Kanyikela as sediments. However the area is prone to flooding although it has poor river coverage. Due to floods, the farmers do not get enough yields. The floods also affect human settlement negatively resulting into loss of property and life.

Kabouch south

Kabouch South has a Steep slope at the south eastern part that is not suitable for development. It also prone to erosion especially on the eastern part. The soil erosion causes pollution in the river during rainy seasons. It has poor coverage of the river. The river is located on the northern part of Kabuoch south., not easily accessible to the southern residents of Kabouch south.

Kabuoch north

North Kobuch terrain is fairly sloping towards the western part of the area. The river coverage is poor considering the size of Kabouch North. During dry season, there is shortage of water due to low water table especially in the eastern part of Kabuoch North landscape is gently raising.

Kanyamwa kosewe

The land surface in Kanyamwa is steep .on the north western side of this area is the steepest part in Ndhiwa Sub County. The area is prone to soil erosion in both wet and dry season. Its water table is also low. Although it has got a fair share of the river than the rest of the area, water is still a problem. This is due to the pollution of water resulting from soil erosion and other human activity industrial activity in the area (sugar cane factory). Hence the water is not safe for drinking.

Kanyamwa kologi

Kanyamwa kologi has fairly Flat landscape. The area is also prone to flooding hence not good for human settlement. This is due to consequence of flood such as water borne diseases, destruction of property and death. There is also poor river coverage

7.2 LANDUSE OPPORTUNITIES

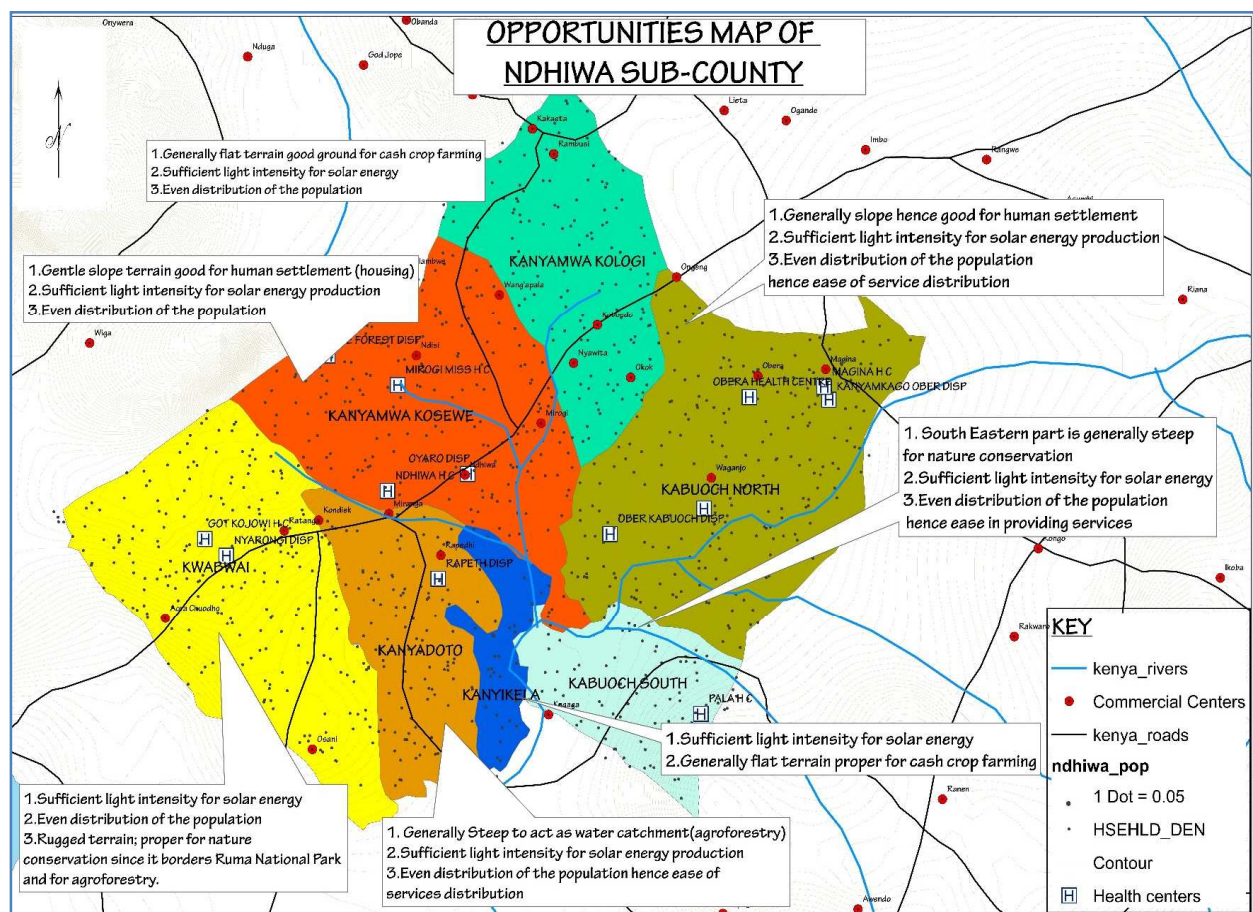


Figure 16

The following are some of the spatial analysis as indicated in map above

Light intensity

All the wards in Ndhiwa Sub County receive high sunshine intensity. The sun intensity can be harnessed and is sufficient for solar energy. The solar energy can be used cooking, lighting and in running the machines in industrial activities. It can also assist to reduce challenges of fossil fuels such as pollution, global warming, respiratory diseases and other diseases, deforestation among others.

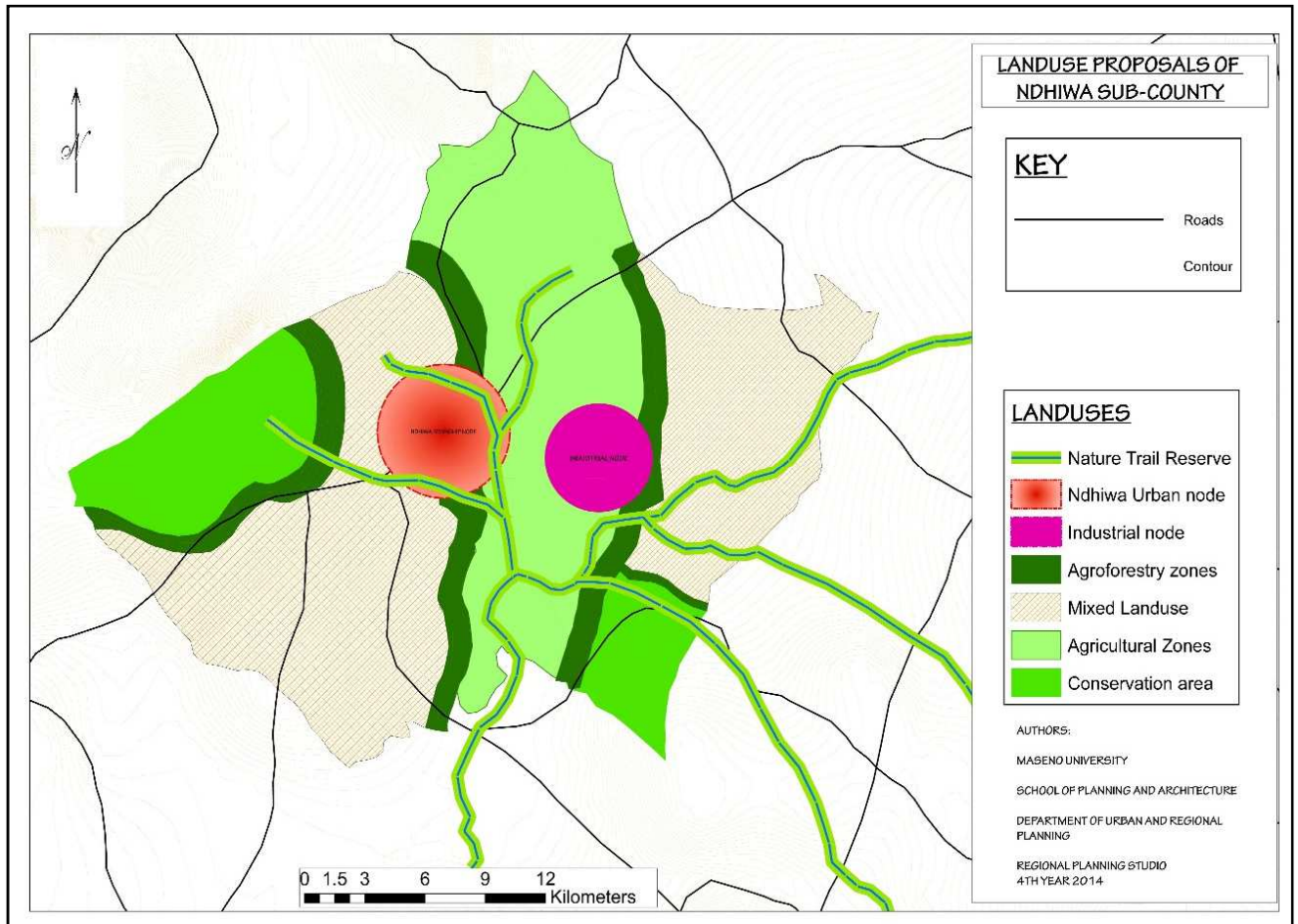
Even distribution of the population

In almost all the wards, the population is evenly distributed hence provision of utilities such as electricity, mobile network and other services easy and cheap.

Topography

In Kwabwai and Kabuoch South, the terrain is rugged. This is appropriate for nature conservation since agriculture cannot thrive in these areas. In addition, Kwabwai also borders Ruma national park, hence its suitability as a nature conservation area. The steep slope of Kanyadoto presents a better opportunity for agroforestry that can act as water catchment. Kanyamwa kologi and Kanyikela have fairly flat landscape good for agriculture especially cash crop farming while in Kanyamwa kosewe and Kabuoch north is gentle sloping. These two areas are better for human settlement since the areas are rarely flooded and water table near.

7.3 LANDUSE PROPOSALS



The main land use proposal proposed in Dhiwa Sub County is:

- a) Agricultural
- b) Industrial
- c) Commercial
- d) Agricultural cum residential (mixed land use)

This land use has been categorized as shown in the map above

Nature trail reserve

A proposed 60 m riparian reserve has been provided along the river to improve biodiversity of plants and animals along the river. The nature trail act as a natural flood mitigating devices by acting as sponges. The plant community along the nature trail absorb and recycle nutrients, act as natural filter for improving water quality, minimize siltation stabilize soil and help in maintaining the general river channel.

Ndhiwa Urban node

This is proposed commercial node of Ndhiwa Sub County. It is centrally located for easier access by all. Its location has been influenced by various land uses that surround it like agricultural zone, industrial and mixed land use and agricultural zone and conservation zone.

Agroforestry zone

The proposed agroforestry acted as a buffer zone for various land uses such between mixed land use (residential and agricultural)and agricultural zone, mixed land use and conservation areas. The buffer zone assist to preserve each zone as planned. Thus there will be limited encroachment in each zone. This will help to improve environmental quality in Ndhiwa, Thus environmental sustainability will be achieved.

Industrial node

The proposed industrial node borders agricultural zones and its near the commercial node and mixed land use.

Agricultural zone will provide raw materials, residential zone in the mixed land use will provide labour to the industries and commercial node will provide ready market for the finished goods. This will help to achieve the social and economic sustainability

Agricultural zones

Proposed agricultural zones have fairly flat terrain suitable for agricultural land use. The proposed type of agriculture is cash crops such as sugar cane farming. This is due to the existence of a sugar factory within Ndhiwa. The type of soil and harsh weather condition especially during dry season favors sugar cane plantation.

Mixed land use

The proposed mixed land is agricultural and residential. The proposed residential land use will provide residence to the urban workers and industrial workers, the agricultural section will also provide food to the residence of Ndhiwa Sub County thereby improving for security of the sub county.

Conservation area

Proposed conservation area has a rugged landscape. These areas are normally unsuitable for development. Therefore mainly because of the nature of the terrain and also because the western conservation area is near Ruma National Park.

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