

REPUBLIC OF UGANDA

MASODDE-KALAGI TOWN COUNCIL PHYSICAL DEVELOPMENT PLAN



EXISTING SITUATION ANALYSIS & DRAFT URBAN PHYSICAL DEVELOPMENT PLAN REPORT

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TABLE OF CONTENTS

EXISTING SITUATION ANALYSIS & DRAFT URBAN PHYSICAL DEVELOPMENT PI	AN
REPORT	I
1.1 INTRODUCTION	2
1.2 Report Structure	2
1.3 BACKGROUND	
1.4 Project Objectives and Scope	
2.1 LOCATION	
2.2 REGIONAL AND SUB-REGIONAL CONTEXT	
3. APPROACH AND METHODOLOGY	9
3.1 PHASE-1 INCEPTION PHASE	10
3.2 PHASE-2 STAKEHOLDER ENGAGEMENT AND DATA COLLECTION	11
3.2.1 Physical Planning Process popularisation	11
3.2.2 Stakeholder engagements	12
3.2.3 Key Informant Interviews/In-depth Interviews	15
3.2.4 Focus Group Discussions (FGD)	15
3.2.5 Questionnaires	15
3.2.6 Secondary Data or Desktop Review	16
3.2.7 Critical Observation/Field Inspection	16
3.2.8 Data collection.	16
3.2.8.1 Spatial Data;	16
3.2.8.2 Community Mapping	17
4.1 Policy framework	
4.1.1 Uganda's Vision 2040	
4.1.2 The National Development Plan (NDP) III - 2020/21 – 2024/25	
4.1.3 The Draft National Physical Development Plan (NPDP) 2019-2040	19
4.1.4 The Uganda National Land Use Policy (UNLP) 2013	19
4.1.5 Uganda National Climate Change Policy (NCCP), 2015	20
4.1.6 Uganda National Urban Policy (NUP), 2017	21
4.1.7 Uganda National Housing Policy (NHP), 2016	22
4.2 REGULATIONS, GUIDELINES AND STANDARDS	22
4.3 LEGAL FRAMEWORK	23
4.3.1 The Constitution of the Republic Uganda – 1995	23
4.3.2 The Physical Planning Act 2010 and as amended 2020	24
4.3.3 The Land Act, 1998	25
4.3.4 The Local Governments Act, 1997 (CAP 243)	25

4.3.5 The Building Control Act (BCA), 2013	26
4.3.6 The National Environment Act (NEA) 2019	27
4.4. INSTITUTIONAL CONTEXT IN PHYSICAL PLANNING.	27
4.4.1. Other Institutions under land management and land uses	29
5. DEMOGRAPHIC STRUCTURE	30
5.1 DEMOGRAPHIC TRENDS AND CHARACTERISTICS	31
5.2 TRENDS, DENSITIES AND SPATIAL DISTRIBUTION	31
6. NATURAL AND PHYSICAL SYSTEMS	33
6.1 Topography	33
6.2 DRAINAGE SYSTEM	33
7.1 HISTORICAL GROWTH AND DEVELOPMENT	36
7.2 THE TOWN'S SPATIAL STRUCTURE	36
7.3 THE TOWN DEVELOPMENT CHALLENGE AND OPPORTUNITIES	36
8.1 Education Services	38
8.1.1 Distribution of Education Institutions in Masodde-Kalagi Town Council	38
8.2 Health facilities	51
8.2.1 National Key Health Indicators	51
8.2.3 Distribution of health facilities in Masodde-Kalagi TC	52
8.2.4 Health Centre Facilities threshold	53
8.3 CULTURAL FACILITIES	58
8.4 Religious facilities	59
8.5 RECREATION FACILITIES	60
8.6 CIVIC FACILITIES	61
8.7.1 Community Centres:	64
9. HOUSING AND SETTLEMENT	66
9.1 SETTLEMENT PATTERNS AND TRENDS OF DEVELOPMENT	66
9.2 SETTLEMENT AND HOUSING TYPES	66
9.2.1 Housing conditions	68
9.2.2 Land ownership and Tenure Dwelling Units	69
9.3 HOUSING FINANCE	71
9.4 HOUSING CHALLENGE	71
10. ENVIRONMENT AND NATURAL SYSTEMS	75
10.1 PROPOSED INTERVENTIONS	

11. SOCIO-ECONOMIC CHARACTERISTICS
11.1 Household size
11.2 Ethnicity
11.3 Religious Affiliation
important for planning purposes78
11.4 HOUSEHOLD INCOME AND ECONOMIC ACTIVITIES
11.4.1 Economic position and contribution of the town to the National Economy 80
11.4.2 Gender and vulnerability analysis81
12.1 Sewerage
12.2 WATER SUPPLY
12.3 Solid Waste
12.4 ENERGY SUPPLY
12.5 TELECOMMUNICATIONS
13. TRAFFIC AND TRANSPORT NETWORK 101
13.1 ROAD TRANSPORT AND TRAFFIC
13.2 OIL PIPELINE
14. EXISTING LAND USE CHARACTERISTICS 111
15. PHYSICAL DEVELOPMENT PLAN PROPOSAL 119
15.1 Analysis of Community wish list120
15.2 PDP INTERVENTIONS124
15.3 SWOT ANALYSIS

MAPS

Map 1: Location of Masodde-Kalagi Town Council	6
Map 2: Masodde-Kalagi Town Council Administrative Units	7
Map 3: Map showing the Topography of the Town Council	. 35
Map 4: Accessibility of Primary Schools within a distance of 1.5 Km within Masodde-Kal	lagi
Town Council	. 48
Map 5: Accessibility of Secondary Schools within a distance of 1.5 Km within Masod	de-
Kalagi Town Council	. 49
Map 6: Physical Features map of Masodde-Kalagi Town Council	. 76
Map 7: Existing Utilities and Infrastructure	. 88
Map 8: Masodde-Kalagi TC Road Network1	108
Map 9: Masodde-Kalagi Town Council Existing Land use 20221	118

Map 10: Proposed Draft PDP for Masodde-Kalagi TC	127
Map 11: Selected Detailed Area of 4sq	128

Figures

Figure 1: Masodde-Kalagi Town's interconnection within the Central sub region	8
Figure 2: Physical Planning Phases for Masodde-Kalagi TC	9
Figure 3: Various Mapping Tools	17
Figure 4: Excerpt of the NPDP (Integrative Option)	19
Figure 5: Physical Planning institutional structure in Uganda	28
Figure 6: Cross cutting function of Physical Planning	29

PICTURE

Picture 1: L-R Assistant Team Leader paying courtesy to the Mayor and a meeting with the
Kyankwanzi District Physical Planning Committee. Source Field Reconaisence
Feb/2022
Picture 3: Physical Planning Process Popularisation Tools (Mega Phone, Banners and
stakeholder engagements)12
Picture 4: Meeting with various stakeholders
Picture 5: FGDs with various groups15
Picture 6: L-R Masodde-Kalagi HCII, Medical Clinic
Picture 7: L-R Embuga ya Mukwenda Omumyuka II and a dried up water spring
Picture 8:L-R Church of Uganda , catholic church and Mosque
Picture 9: L-R Sports ground within the Town Council
Picture 11: Masodde-Kalagi town council services
Picture 12:L-R Different settlement typologies and Housing types in Masodde-Kalagi TC 67
Picture 13: L-R Illustration of Different settlement typologies in Massode-Kalagi TC
Picture 14: L-R Temporary makeshift Housing types in Masodde-Kalagi TC 69
Picture 15:L-R Semi-Permanent and Permanent Structure in Masodde-Kalagi TC 69
Picture 16:L-R Kiboga-Masodde-Kalagi-Hoima road104
Picture 17: Some of the industrial use activities114
Picture 18: Some of the agriculture use activities115
TADIEC

TABLES

Table 1: Administrative units for Masodde-Kalagi Town Council	5
Table 2: Categories of Stakeholder at the Town Council Level	13
Table 3: Masodde-Kalagi Town Council Population as of 2014	31
Table 4: Showing Masodde-Kalagi Town Council population and projections	32

Table 5: Number and category of education institution with	in Masodde-Kalagi Town
Council	
Table 6: Health Related Targets in Vision 2040	
Table 7: Population threshold analysis of Health facilities	

LIST OF ACRONYMS

ASL	Above Sea Level
BCA	Building Control Act
CAO	Chief Administrative Officer
CBOs	Community Based Organisations
CBS	Central Broad Casting Service
CFR	Central Forest Reserve
CSOs	Community Support Organisations
DLG	District Local Government
DLO	District Land Offices
FGDs	Focus Group Discussions
FM	Frequency Modulation
GIS	Geographical Information System
GPS	Global Positioning System
IEC	Information Education and Communication
IR	Inception Report
MDAs	Ministries and Departmental Agencies
MLHUD	Ministry of Lands Housing and Urban Development
МоН	Ministry of Health
MZOs	Ministry Zonal Offices
NCCP	National Climate Change Policy
NDP III	Third National Development Plan
NEA	National Environment Act
NGOs	Non-Governmental Organisations
NLP	National Land Policy
NLUP	National Land Use Policy
NPPB	National Physical Planning Board

NUP	National Urban Policy
PDP	Physical Development Plan
PPC	Physical Planning Committee
Q-GIS	Quantum - Geographical Information System
RFP	Request for Proposal
RTK	Real-time Kinematic Positioning
SOPs	Standard Operation Procedure
ТС	Town Council
TORs	Terms of Reference
ТРС	Technical Planning Committee
TWG	Technical Working Group
UBOS	Uganda Bureau of Statistics

SECTION-1: PROJECT BACK-GROUND AND ITS FRAMEWORK



1. INTRODUCTION AND BACKGROUND

1.1 Introduction

More than half of the world's population lives in urban areas. Due to the ongoing urbanisation and growth of the world's population, there will be about 2.5 billion more people added to the urban population by 2050, mainly in Africa and Asia. The world's urban areas are highly varied, but many cities and towns are facing problems such as a lack of jobs, homelessness and expanding squatter settlements, inadequate services and infrastructure, poor health and educational services and high levels of pollution.

Uganda is not exceptional, it is currently experiencing rapid urbanization estimated at 27% and by 2050, it will be among the most urbanized countries in Africa. Uganda's urbanization has been looked at as a prerequisite for the country to achieve uppermiddle-income status as part of achieving Vision 2040. However if the urbanisation is not well planned there is likelihood of unguided growth of towns and cities. This requires proper urban planning to guide proper land use and infrastructure investment.

Masodde-Kalagi as an urban administrative unit has existed for two years without a Physical Development Plan and is not exceptional among other urban towns in Uganda facing similar challenges related to proliferation of slums, encroachment on eco-fragile system, poor institutional mechanism to control and guide development, thus the intervention to plan the town.

1.2 Report Structure

This report a product of stakeholder engagements in Masodde-Kalagi Town Council and data collection i.e. both spatial, socio-economic and secondary data. The report is structured in three-sections as follows;

Section-1; Project Background and its framework (largely looks at the project background, methodology, Legal Frameworks)

Section-2; The Town's Existing situation and its analysis Section-3; The town's Physical Development Plan proposal

1.3 Background

The Government of Uganda is committed to ensuring orderly, progressive and sustainable development in the urban and rural areas, as part of the National agenda clearly articulated in the Uganda Vision 2040 and the Third National Development Plan (NDP III). The NDP III acknowledges the roles of urbanisation to socio-economic transformation. The aspiration is pursued under programme 15 Sustainable Urbanization and Housing. The goal of this programme is therefore, to attain inclusive, productive and liveable urban areas for socio-economic development. Urbanization offers considerable opportunities for accelerating socio-economic transformation through economic growth, employment and wealth creation.

The established social, economic and physical infrastructure provides employment to both rural and urban communities that propel both vertical and horizontal linkages with surrounding hinterland. Therefore, it is imperative to facilitate orderly urban development using urban planning as one of the key strategies to solve employment and other social-economic problems.

Masodde-Kalagi Town Council is one of the six Town Councils in Kyankwanzi District, in the Central Region of Uganda along Kampala- Hoima road. Since its gazettement as an urban authority in 2019, it had never had a Physical Development Plan (PDP) up-todate and thus the urban managers have been challenged on guiding development. This called for the need to prepare an Urban Physical Development Plan for Masodde-Kalagi Town Council (TC).

1.4 Project Objectives and Scope

The primary objective of the project is to provide a planning framework to promote and guide the development process in the Town in a sustainable manner through preparation of both the Physical Development Plan and a detailed plan for the selected part of the Town. More specifically, the project is concerned with the following:

- (a) Preparation of land use plan of the Town Council
- (b) Integration of ecological principles as an important component of the land use planning and environmental management process.
- (c) Maintaining the integrity of the cultural landscape including economic activities, any significant historical and archaeological sites, and the form and character of the neighbourhoods.
- (d) Safeguarding suitable sites for tourism, industrialization, urban Development, Human settlements and viable urban agriculture.
- (e) Planning for infrastructure systems, particularly road networks, water supply and sewage disposal, and ensure efficient use of existing and proposed systems.
- (f) Promote community participation in planning through information sharing, consultative, and collaborative mechanisms.

2. PLANNING AREA

2.1 Location

As per Terms of Reference (TORs), the Physical Planning exercise will cover the current administrative boundaries of Masodde-Kalagi Town Council. The town is located on the Kampala–Hoima Road, approximately Southeast of Kyankwanzi District, west of Kiboga Town Council whilst approximately, Northwest of Kampala, the Capital city of Uganda.

The Town is located along an infrastructure corridor comprised of the proposed Kampala-Busunju expressway that will feed into Kampala-Hoima Major road, Hoima– Kampala Petroleum Products Pipeline that traverses the Town among others. The Physical Planning territory for Masodde-Kalagi Town Council is largely comprised of the Administrative Boundaries made up of 04 Wards with a total area of 32.9 sqkm as shown below.

Ward	Masodde	Kalagi	Kigoma	Vvumba
Cells	1.Masodde	1.Kalagi A	1.Kigoma	1.Vvumba
	2.Kayunga	2.Kalagi B	2.kayera	2.Kkobyo
	3.Kabale	3.Kiseresi	3.Kiryamasasa	3.Luwawu
	4.Kirangazi			4.kafagagala
	5.Kikweyengo			
Total	5	3	3	4

Table 1: Administrative units for Masodde-Kalagi Town Council

Wards	Size (Sqkm)	Development Status	
Masodde	12.1	Peri-urban	
Kalagi	6.7	Urban	
Vvumba	9.6	Dural	
Kigoma	4.5	Kulai	
Masodde-Kalagi	32.9		



Map 1: Location of Masodde-Kalagi Town Council

Page 6 of 137



Map 2: Masodde-Kalagi Town Council Administrative Units

2.2 Regional and Sub-regional Context

In the sub region the town is interlinked with Kiboga Town as 'dormitory town" and is located within the cattle corridor as illustrated below;







Location of Masodde-Kalagi in the sub regional growth pole axis (Mubende, Mityana, Nakasongola, Hoima and Kiboga

3. APPROACH AND METHODOLOGY

The consultants used a combination of the following methodology: Planning Process Popularization, Community Participation, Key Informant Interviews/In-depth Interviews, Capture of Spatial Data, Questionnaires, Secondary data or desktop review, Critical Observation/Field Inspection and Stakeholder Consultative and sensitisation meetings among others. The following are the planned phases that the urban PDP has and will undergo.

PHASE-1 INCEPTION PHASE

PHASE-2 STAKEHOLDER ENGAGEMENT AND DATA COLLECTION

PHASE-3 DATA ANALYSIS

PHASE-4 1st DRAFT PDP

PHASE-5 2nd DRAFT PDP



Figure 2: Physical Planning Phases for Masodde-Kalagi TC

3.1 PHASE-1 INCEPTION PHASE

This phase involved two main activities i.e.

- a) assembling the required personnel, logistics and finalisation of contractual obligations with the Client,
- b) a rapid field urban appraisal of the planning territory to assess the peculiar physical planning issues, assess communication needs, extents of the administrative boundaries and its environs.

It is important to mention that the above activities were undertaken and informed the preparation of the Inception report which was approved.



Picture 1: L-R Assistant Team Leader paying courtesy to the Mayor and a meeting with the Kyankwanzi District Physical Planning Committee. *Source Field Reconaisence Feb/2022*

The Consultant proceeded to the field with guidance of the Physical Planner to map the extent of the planning area boundary using a hand held Global Positioning System (GPS) and also made observation of the landscape of the planning territory, socials services and general land uses.

3.2 PHASE-2 STAKEHOLDER ENGAGEMENT AND DATA COLLECTION

This phase is key to the physical planning processes and a number of tools were used in the process;

- Manuals of instructions (Guides to Research Assistants)
- Use of Key Informant Guides and notebooks.
- Observation Checklist
- The FGD Guide
- High Resolution GPS Receivers
- Digital Camera for taking critical photographs (where necessary)
- *High resolution satellite images*
- Topographic sheets for the planning areas
- Cadastral Information for surveyed plots/land
- RTK for topographic mapping

Stakeholder engagement and data collection involved a number of activities as shown below;

3.2.1 Physical Planning Process popularisation

The consultant popularized the planning process through stakeholder meetings, flyers, community mega phones, drive through announcement and other mediums of communication in the Town Council. The Town Council leadership and other stakeholders were widely informed of the planning process.

To further make sure that there is awareness created in the community together with the local authorities, banners were placed at convenient places on noticeboards. The banners were bearing public notices of the whole planning exercise in the Town. The popularization continued with the visit to the key stakeholders in the various Wards within the Town Council and in local language. This inclusive planning approach enabled the planning team to obtain key development/planning issues that relate to the Town's development. It also gave an opportunity for the team to identify the key resource persons at all levels. The overall objective of the planning process was discussed and presented to the stakeholders.



Picture 2: Physical Planning Process Popularisation Tools (Mega Phone, Banners and stakeholder engagements)

3.2.2 Stakeholder engagements.

This involved community sensitisations, consultations and community mapping. The Planning team made presentations to the community as part of the sensitisations and consultations and involved the communities in the mapping of their development aspirations. Community meetings were held in different places and below are the different categories of stakeholders engaged.

MEETING	CATEGORY OF STAKEHOLDERS
General Meeting	Kyankwanzi District representatives Town Council (Mayor, Councilors & Technical Staff, Chairpersons area land committee, Religious representative, NGO &CSO representative etc.)
Meeting in Masodde	Technical Staff and Leaders of the Ward and others (land lords, religious leaders, Cultural leaders/their representatives, youth-
Ward	women and elderly group representatives, business representatives, CSOs)
Meeting in Kalagi	Technical Staff and Leaders of the Ward and others (land lords, religious leaders, Cultural leaders/their representatives, youth-
Ward	women and elderly group representatives, business representatives, CSOs)

Meeting in Kigoma Ward	Technical Staff and Leaders of the Ward and others (land lords, religious leaders, Cultural leaders/their representatives, youth-women and elderly group representatives, business representatives, CSOs)			
Meeting in Vvumba Ward	Technical Staff and Leaders of the Ward and others (land lords, religious leaders, Cultural leaders/their representatives, youth- women and elderly group representatives, business representatives, CSOs)			
Table 2: Categories of Stakeholder at the Town Council Level				

Community participation is a key component of this planning process. According to the guidelines of public participation in spatial planning by MLHUD 2021, stakeholder engagement and participation in planning enhances the following:

- *i.* Promotes smooth collaboration between stakeholders, which ensures timely delivery of plans;
- *ii.* Leads to outcomes that had better reflect the needs and views of the wider community; Improves the quality and efficiency of decisions by drawing on local knowledge and reduces unnecessary conflict;
- *iii.* It helps build consensus for development initiatives, especially in the context of great demands, restricted resources and limited capacity;
- *iv.* It increases the efficiency of development investments by drawing on local resources and skill;
- v. Helps in managing external inputs through the involvement of all possible stakeholders in project identification, design and monitoring.





Picture 3: Meeting with various stakeholders

The consultant endeavored to ensure that the communities are actively involved in the planning process right from data collection, priority identification, setting objectives, goal formulation of the plan. During the process, stakeholders particularly the local community,

were given the opportunity to state their desires, preferences and proposals into the proposed plan. Community participatory mapping was done at a local meeting with the Town Council Communities.

3.2.3 Key Informant Interviews/In-depth Interviews

These were conducted with the Town council officials, the business community, the religious institutions, the Local Council leaders, Academic institutions, financial institutions like SACCOs, the prominent landlords in the Town, Children in Primary and Secondary schools together with some teachers among others. Data collected provided the background of the existing situation as well as the development aspirations of the stakeholders.

3.2.4 Focus Group Discussions (FGD)

FGDs were conducted with a number of residents in various categories like the personnel in the transport sector, the business community both males and females, primary and secondary school children, out of school children boys and girls as well as the female market vendors, Community Based Organization (CBO) and Non-Government Organization (NGO) leadership among others.



Page 15 of 137

3.2.5 Questionnaires

These were used on key urban residents at the household and institutional level. These surveys captured household information related to social services access, infrastructure, economic activities, employment etc.

3.2.6 Secondary Data or Desktop Review

A desk review of relevant documents at the Town Council and other umbrella organizations including policy and legal documents, progress reports, development plans, budgets and sector guidelines was conducted. A checklist was used to summarize the required information according to the different indicators being studied. Data from documents was analyzed using content analysis. Individual documents were collected and appraised in reference to particular themes under investigation. Kyankwanzi District records were also used together with other sectoral documents in the area of oil and gas, Uganda Investment Authority (UIA) and Ministry of Works and Transport (MoWT)/Uganda National Road Authority (UNRA) together with the National Development Plan III (NDP III).

3.2.7 Critical Observation/Field Inspection

This method was used to critically assess the conditions and nature of service delivery systems including inspection of infrastructure, education institutions, health centers, sanitation and water facilities, etc. The Consultants visited urban communities to take vital data. During the visit, the Consultants interfaced with all the relevant beneficiaries and stakeholders.

3.2.8 Data collection.

This involved collection of spatial data, community mapping and secondary data

3.2.8.1 Spatial Data;

The consulting team will use Real-time Kinematic Positioning (RTK) for collecting data to prepare property boundary maps for land owners within the selected detailed plan area. In

addition the team will use hand held Global Position Systems (GPS) Mobile Tablets (SM Maps) and Orthophotos while undertaking ground truthing of land uses and mapping of physical and social infrastructure.



Figure 3: Various Mapping Tools

3.2.8.2 Community Mapping.

Each of the Ward was involved in community mapping of their development aspirations. This was done on base maps provided; however, Technical Working Groups were formed to refine the community proposals.

4. LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK

4.1 Policy framework

There are several policies and legal instruments which guided the execution of this assignment as reviewed below and will also form the basis for the implementation of the main objective *"Preparation of the urban/local physical development plan for Masodde-Kalagi Town Council."*. These include the following;

4.1.1 Uganda's Vision 2040

The government of Uganda is committed to ensuring that the country becomes a major player in the East Africa Community block, COMESA and the global markets in general as part of the National Agenda clearly articulated in the Uganda's Vision 2040 and the National Development Plan III. Vision 2040 references the transformation of the people of Uganda from a peasant to a modern and prosperous country by 2040. The framework in *Chapter 4, Section 4.2.5* acknowledges that integrated physical planning and urban development (investment of physical and social infrastructure) as one of the fundamentals that must be strengthened to pursue a planned urbanization that will bring about better urban systems that enhance productivity, livability and sustainability while freeing land for commercializing agriculture by increasing settlement density.

4.1.2 The National Development Plan (NDP) III - 2020/21 - 2024/25

The overarching goal for National Development Plan III is to *"To Increase Household Incomes and Improve Quality of Life of Ugandans".* Chapter (6) sets strategies and intervention for physical development in Uganda. Objective 1, under section 429, of the NDP provides for the need to increase the level of compliance to physical development plans by both the private investors and Government projects (such as roads, dams, water supply schemes, irrigation schemes, housing, education, and health infrastructure among others.

Under the same Chapter, it also points out that, the government will develop and disseminate physical development standards, regulations, and guidelines and carry out

regular supervision, monitoring and inspection to ensure compliance with physical planning standards. This therefore gives mandate to Masodde-Kalagi Town Council to plan and prepare a physical development plan to guide development of this area.

Chapter 15: looks at sustainable urbanization and housing with a goal of attaining inclusive, productive and livable urban areas for socio-economic development. One of the interventions is to develop and implement integrated physical and economic development plans in the new cities and other urban areas. It is worth noting that Masodde-Kalagi Town council is located between two cities that is, Kampala the primate city and Hoima the strategic oil city, thus the inter-relation of these two cities will have an impact on its development.

4.1.3 The Draft National Physical Development Plan (NPDP) 2019-2040

The NPDP provides a basis for integrating spatial and non-spatial environmental, economic and social issues of national development planning. The core elements are patterns of human settlements, land uses and natural resources.

Masodde-Kalagi TC is situated within an Urbanisation Zone" or also referred to Secondary Agriculture Zone territory as proposed by the NPDP These zones contain future expansion pattern for existing cities, designated territories for new cities and areas for areas for future urbanization



Figure 4: Excerpt of the NPDP (Integrative Option)

4.1.4 The Uganda National Land Use Policy (UNLP) 2013

The UNLP of 2013 consolidates the various scattered policies associated with land and other natural resources with emphasis on both Land and land developments. The goal of the policy is to ensure efficient, equitable and optimal utilization and management of Page **19** of **137**

Uganda's land resources for poverty reduction, wealth creation and overall socio-economic development.

Some of the major issues addressed by the policy include underutilization of land due to poor planning and land fragmentation; environmental degradation and climate change; poor management of the ecological systems due to their trans-boundary nature and unsustainable exploitation arising out of the conflicting land uses and inadequate land enforcement of natural resources management, standards and guidelines.

Uganda National Land use Policy seeks to re-orient the land sector in national development by articulating its centrality vis-à-vis other sectors in economic development. It also has a bi-focal emphasis on land ownership and land development, stipulates incentives for sustainable and productive use, as well as other measures intended to streamline the institutional framework for land administration and management to ease the delivery of efficient and cost-effective land services. The policy introduces essential reforms for stemming off escalating land conflicts and land evictions.

4.1.5 Uganda National Climate Change Policy (NCCP), 2015

The goal of the policy is **"to ensure a harmonised and coordinated approach towards a climate resilient and low-carbon development path for sustainable development in Uganda".** The policy focuses on providing direction for key sectors that will be affected by the impacts of climate change, facilitating adaptation and strengthening coordinated efforts amongst sectors towards building an overarching national development process that is more resilient.

One of the adaption responses to climate change is through promotion of urban planning and development of human settlements that are resilient and robust enough to withstand climate change–related risks and hazards. The following are specific strategies for tackling this sectoral policy priority;

(*a*) Promote and encourage proper planning of urban centres in order to have climate change–resilient urban areas.

- (*b*) Revise and harmonise structural/building codes and standards, as well as the training on such standards, taking into account the expected changes in climate.
- (c) Improve disaster preparedness by increasing the number of well-equipped health facilities, constructing dams and dykes in flood-prone areas, and improving disaster preparedness and management knowledge and skills in regions prone to such climatic disasters.
- (*d*) Strengthen housing development policies, including subsidies to low-income communities.
- *(e)* Establish insurance schemes to provide reparations in regions affected by climatic disasters.
- (f) Develop climate change awareness programmes involving all communities and stakeholders.
- (g) Disseminate climate-change and early-warning information in local languages to improve community disaster preparedness.
- *(h)* Diversify economic activities to improve the resilience of rural communities dependent on climate-sensitive sectors such as agriculture and livestock rearing.
- *(i)* Create "green spaces" in urban centres to moderate temperatures and provide fresh air for healthy living.

4.1.6 Uganda National Urban Policy (NUP), 2017

The policy was developed to address a high urban growth rate estimated at 5.2% per annum, which the country is currently experiencing in the face of inadequate capacity to plan, guide and enforce orderly development in urban areas. The Goal of the policy is **"To promote livable urban areas that are organized, inclusive, productive and sustainable"**. The necessity of the policy was premised on two fronts; one to plan and harness urbanization processes as a catalyst for socio- economic transformation and development; secondly to address challenges facing the urban sector such as urban sprawl, environmental degradation, climate change, natural disasters, informal settlements, high levels of unemployment, urban poverty and crime among others in the country. One of the policy statements is that Government shall institute measures for effective and efficient management of urban growth and sprawl and some of these include promoting sustainable land use, combining urban extensions with adequate densities and compactness, preventing and containing urban sprawl, as well as preventing unnecessary land use change in urban areas

4.1.7 Uganda National Housing Policy (NHP), 2016

The Vision of the National Housing Policy is "**Adequate Housing for all**". The rational for the housing policy was due to several evolving issues and challenges at both global and national level such as the increased rate of urbanization, which has led to many challenges including general deterioration of the housing and living conditions of most of the urban dwellers. This is coupled with unmatched planning for provision of housing and other basic infrastructural services.

One of the priority areas of the policy is access to land for housing. There are challenges associated with access to land for housing such as land use planning and management, development control, economic value, availability, and ownership of land. Policy Statement 3 of the policy sets out that Government shall promote access to planned and serviced land at affordable prices in order to enhance housing development. Among the strategies are;

- (a) Encourage innovative approaches that ease access to affordable land and guarantee security of tenure to poorer sections of society.
- (b) Establish an effective and efficient conflict resolution mechanism on housing development.
- *(c)* Demarcate all eco sensitive and protected areas to guard them against encroachment.
- *(d)* Re-planning and re-development of existing housing estates that do not provide for maximum or efficient utilization of the land.

4.2 Regulations, Guidelines and Standards

A selection of regulations, guidelines and standards have been reviewed particularly those that have a bearing on land use, development application and building application such as Physical Planning Regulation 2011, Building Control Regulation 2020, the National Physical Planning Standards and Guidelines (NPPSG) 2011.

The NPPSG determines the scale, location and site requirements of various land uses and facilities. The assessment of planning for social facilities such as schools, health centres and open spaces among others rely upon threshold as provided for in the NPPSG. Equally planning for different uses such as residential in terms of density and commercial land use is clearly guided in the standards. The NPPS is applicable in four aspects i.e.

- (*a*) *Forward Planning* it provides an equitable basis for allocating scarce land resources and locational guidelines for various types of land uses and facilities.
- (*b*) *Development Control* it provides guidance on the scale, intensity and site requirements of developments as well as the supporting facilities required.
- *(c) Plan Implementation* it provides a yardstick to measure the sufficiency of land for various uses and adequacy of facilities to serve a planning area.
- *(d) Raising Quality of Life* it provides guidelines on environmental planning and conservation of our natural landscape, habitats, cultural heritage and townscape.

4.3 Legal framework

4.3.1 The Constitution of the Republic Uganda – 1995

This is the supreme law of Uganda and forms the apex of the legal framework in the Country. The law provides a framework in this context within which land is owned, land use regulated, protection and preservation of the environment, and power to local authority to plan for development.

- (a) *Land ownership*, Article 237(1) of the Constitution provides that land in Uganda belongs to the citizens of Uganda and shall vest in them in accordance with the land tenure systems as provided for in the Article 237(3) that land in Uganda is owned in accordance with customary, freehold, mailo and leasehold land tenure systems.
- (b) Protection and preservation of the environment. Article 245 states that parliament shall, by law, provide for measures intended to protect and preserve the environment from abuse, pollution, degradation; and to manage the Page 23 of 137

environment for sustainable development; and to promote environmental awareness.

- (c) *Land use.* Article 242 states that Government may, under laws made by Parliament and policies made from time to time, regulate the use of land.
- (d) *Planning.* Article 190 states that District councils shall prepare comprehensive and integrated development plans incorporating the plans of lower level local governments for submission to the National Planning Authority

The Constitutions provides a framework within which Physical Planning interventions are premised in planning for Masodde-Kalagi Town Council

4.3.2 The Physical Planning Act 2010 and as amended 2020.

The Physical Planning Act, 2010, provides a framework for which Physical Planning in Uganda is undertaken. The Act guides the process of preparing a physical development plan, its approval, implementation and development control. A few section have been highlighted in the context of preparing the Urban PDP for Masodde-Kalagi TC as follows;

- a) Section 03 of this Act **declares the entire country a planning area**. In other words whether you are within an urban area or rural area, you are subjected to plan approval processes for any development that is intended to be developed.
- b) Section 26 and the fifth schedule of the Act provides for matters to be dealt with in Urban development plans. In this context matters that constitute Masodde-Kalagi TC Urban PDP
- c) Section 27 of the Act provides procedures to be undertaken during the Public Display of the Urban Physical Development Plan inviting the public to inspect the draft plan
- d) Section 28 of the Act states the approving authority in this context, Masodde-Kalagi Town Council will adopt and recommend the plan to National Physical Planning Board for approval

 e) Section 30 of the Act gives power to Physical Planning Committees to control development for instance sub-section (c) the committee has to ensure proper execution and implementation of the approved Physical Development Plan

4.3.3 The Land Act, 1998

The act provides for tenure, ownership and management of land in Uganda. The Physical Development Plan for Masodde-Kalagi TC's proposals are to be situated on people's land. It is important to refer to the provision of land law compliance in plan provisions, implementation and development control.

- a) Section (2) subject to article 237 of the Constitution, all land in Uganda shall vest in the citizens of Uganda and shall be owned in accordance with the following land tenure systems, **mailo**, **freehold**, **leasehold and customary**.
- b) Section C42) on **acquisition of land by the Government**. The Government or a local government may acquire land in accordance with articles 26 and 237(2) of the Constitution.
- c) Section (43) and (45) refers to **utilisation of land, land use planning and zoning to be according to various laws**. A person who owns or occupies land shall manage and utilize the land in accordance with the Forests Act, the Mining Act, the National Environment Act, the Water Act, the Uganda Wildlife Act, Physical Planning Act and any other law.
- d) Section 44 (1). **Control of environmentally sensitive areas** states that the Government or a local government shall hold in trust for the people and protect natural lakes, rivers, ground water, natural ponds, natural streams, wetlands, forest reserves, national parks and any other land reserved for ecological and touristic purposes for the common good of the citizens of Uganda.

It is important that stakeholders are aware of the implication of the proposed plan. The owners of the land have to conform to the approved plans no matter their land rights held.

4.3.4 The Local Governments Act, 1997 (CAP 243)

The Act gives full effect to the decentralisation of functions, powers, responsibilities and services at all levels of local governments. The exercise of plan preparation for Masodde-Kalagi was initiated under the mandate of the Town Council leadership as provided for under the Local Government Act. Plan approval, implementation and development control entirely is the responsibility of the Local Authority. The provisions of the act are as follows;

- a) The Act establishes local government council section 9 (1) as the highest political authority within the area of jurisdiction of a local government and shall have legislative and executive powers. One of the executive arm of council is executive committee, which among other function oversee the implementation of the Government and the council's policies, projects, monitor, and coordinate activities of Non-governmental organisations in the area of their jurisdiction.
- b) Second Schedule Part 4 of the act provides for functions and services to be devolved by a district council to lower local government councils and among them is the control of trading centres, markets etc. and the carrying on of local industries and the organisations and encouragement of local trade.
- c) Section 35 provides for planning power of local lower local government whereby they are able to plan and appropriate resources in their jurisdiction. As part of the implementation of the various PDP proposals, it is expected that Council for Masodde-Kalagi Town will be able to appropriate resources accordingly for the plan implementation
- d) This Act also outlines the mandate of a local council in respect of the services they are supposed to deliver to the population including roads opening and maintenance, street lighting and other services.

4.3.5 The Building Control Act (BCA), 2013.

This Act guides on the development of structures through provision of building standards, promotes, and ensures planned, decent and safe building structures that are developed in harmony with the environment and for other related matters.

- (a) The Act provides for establishment of a National Building Review Board (NBRB), which among other functions is responsible for monitoring building developments.
- (b) The Act also provides for establishment of Building Control Committees at Local Government level and these are responsible for approving building plans and issuing building and occupation permits.

It is expected that for any building application within Masodde-Kalagi Town irrespective of individuals or institutions, there is need to seek permission from the Building Control

Committee for Masodde-Kalagi Town Council. The application for building permit will have to conform to development proposals as prescribed within the Physical Development Plan

4.3.6 The National Environment Act (NEA) 2019.

The act provides measures for the management of the environment and natural resources such as

- a) Environmental Management of Lakes, Rivers and Natural Beaches i.e. on
 - *i.* Restrictions on the use of natural lakes and rivers (section 52)
 - *ii.* Protection of riverbanks, lakeshores and natural beaches (section 53)
- b) Management and Utilisation of Wetlands.
 - *i.* Management of wetlands beaches (section 54)
 - *ii.* Restrictions on the use of wetlands beaches (section 55)
- c) Management of Hilly and Mountainous Areas
 - *i.* Restoration, reforestation and afforestation of hilly and mountainous areas. (section 57)
 - *ii.* Sustainable use of hilly and mountainous areas (section 58)

Section 27 and 28 provides for establishment, composition of District environment and natural resources committee and their functions. One of its function is to ensure that environmental concerns are integrated in all plans and projects approved by the urban or District Council

Section 48 of the Act is explicit on matters pertaining land use planning and it provides for the consideration of environmental issues during the preparation and implementation of land use plans. Provisions of relevant importance have been integrated as part of this assignment for example provision of protection zones around environmentally sensitive areas.

4.4. Institutional context in Physical Planning.

Physical Planning in Uganda is a decentralized function, in other words Local Governments are charged with the responsibility of planning and implementing physical planning activities within their areas of jurisdiction. Ministry of Lands, Housing and Urban
Development plays a supervisory role over the Lower Local Governments (Cities, Districts, Municipalities and Town Councils).

In regard to preparation of PDPs, MLHUD is responsible for preparing National and Regional PDPs whereas District, Urban and Local PDPs are prepared by the respective Local Governments. However in other circumstances, Local Governments or other MDAs can request for technical support from Ministry of Lands, Housing and Urban Development.

The Physical Planning Act 2010 (as amended 2020) provides for an institutional hierarchy for physical planning at National and Local Government levels. It provides for the National Physical Planning Board at the National level while at the District, Urban and local levels, it provided for Physical Planning Committees. The Committees are responsible for physical planning activities in their areas of jurisdiction.



Figure 5: Physical Planning institutional structure in Uganda

In the context of Masodde-Kalagi as earlier mentioned, the Town Council Urban Physical Planning Committee will be charged with the physical planning functions. i.e. (implementation of the plans and ensuring compliance to the proposed plan strategies). The Ministry will remain providing a supervisory role as and when needed.

4.4.1. Other Institutions under land management and land uses

The Land administration and management Agencies comprised of the Ministry Zonal Offices (MZOs) in this case Mityana Zonal Office for Kyankwanzi District. District Land Boards, District Land Offices (DLO) and Area Land Committees (ALC). All maters to do with land registration will be dealt with the respective land management institution and the land applications are expected to comply with the physical development layouts and strategies.



Figure 6: Cross cutting function of Physical Planning

As observed in the above figure, the function of physical planning is cross cutting into other sectors such as land management for instance, there has to be a physical panning component for any land registration application. Equally, for any environment management interventions, there has to be aspects of land use planning.

SECTION-2 EXISTING SITUATION ANALYSIS



5. DEMOGRAPHIC STRUCTURE

5.1 Demographic trends and characteristics

UBOS 2014 census indicates Masodde-Kalagi Town Council had a total population of **7,865** persons. In 2022, the projected population is estimated to be 10,930 while that of 2032 is estimated to be **16,493** *persons*.

Ward	Total
Masode	2,125
Kigoma	911
Kalagi	2,695
Vvumba	2,134
Total	7,865

 Table 3: Masodde-Kalagi Town Council Population as of 2014

Source: UBOS (Population by Parish Census 2014_Central Region)

5.2 Trends, densities and spatial distribution

The population has been projected using an average population growth rate of 4.2%. The consideration was made based on the following factors; *Construction activities in the oil and gas sector and regional industrial park developments that are within close proximity of the town*. It is anticipated that these and many more will influence the population of the town. Thus, an average of the National population growth rate of (3.2%) and the urban population growth rate of (5.2%) was considered as 4.2%. Therefore, by 2032 Masodde-Kalagi Town is estimated to be approximately **16,493** persons.

Year	Year 2014 Year 2022		Year 2032
Population growth rate		4.2%	4.2%
Ward	Total	Projected population	Projected population
Masode	2,125	2,953	4,456
Kigoma	911	1,266	1,910
Kalagi	2,695	3,745	5,651
Vvumba	2,134	2,966	4,476
Total	7,865	10,930	16,493

Table 4: Showing Masodde-Kalagi Town Council population and projections

SOURCE: NPHC (2014) and projections by planning team

The population density for Masodde-Kalagi Town Council has been progressively increasing in the last decade. The result of this is skewed development and intensified pressure exerted on the limited land resource and other social services and thus calls for more service provision and planning in order to contain the pressure.

6. NATURAL AND PHYSICAL SYSTEMS

6.1 Topography

Masodde-Kalagi sits at an average elevation of 1,235 above sea level (asl), with its lowest points ranging between 1120-1130 asl and its highest points ranging between 1328-1355 asl. Masodde-Kalagi is on a relative plateau surrounded by hilly, rocky, low-lying and often bare terrain.

6.2 Drainage system

The drainage system is the pattern formed by streams, rivers and lakes in a drainage basin. The urban areas of Kalagi Ward in the East are largely situated in the lower plains of the landscape interspersed with both seasonal and permanent wetlands while the Western part of the Town council is at the highest point.

The drainage pattern of Masodde-Kalagi town council is attributed to the presence of swamps e.g Masodde wetland. These wetland ecosystems feed into other bigger wetlands that finally feed into Lake Victoria. The water sources to the wetlands are mainly surface flows in terms of streams from the hills, precipitation (rainfall) and ground water discharge. Masodde-Kalagi Town Council is endowed with adequate surface and subsurface water reserves with numerous hills and wetlands. The swamps and streams contain water especially during the wet season. The water table along these swamps is quite high. This causes floods in the low-lying areas during the rainy season. However, some of the wetlands are being encroached upon and are being put under intensive cultivation which poses environmental concerns.

i. Major rivers draining the area

The major wetland draining the town council is Masodde wetland. This feeds into other major wetlands draining into Lake Victoria. The wetland also provide water for agricultural and industrial use.

ii. Key flooding spots

The low-lying areas are prone to flooding. Given the town councils terrain, a lot of run off comes from the hilly areas and finds its way into the low areas. The poor drainage cannot accommodate the excess water and channel it to the valleys given the fact that most of the roads lack proper drainage channels. The end result is flooding in these areas.

iii. The Effect of current and future urbanization on natural systems

The town council is mainly drained by Masodde wetland that runs across the town in westeast direction. The flow is from the western hilly area of Kigoma ward to the eastern part covering a large area of Kalagi ward. Most of the water that feeds this wetland originates from the hilly tops and also surface run off during the rainy season. Wetlands play a vital role in;

- Modifying the micro climate of the area
- Providing water for domestic, industrial, agricultural and animal use
- Purifying wastes matter from upscale residential area

However, the wetland is facing a threat of degradation by human activity as a large part of it has been encroached upon. There are non-permissible activities undertaken such as car washing as this release toxic fuels into the water.

- Environment management mechanisms such as by-laws need to be instituted so as to safeguard the natural eco-systems from human degradation.
- Buffering should also be undertaken
- Demarcation of the environmentally sensitive areas needs to be taken as a matter of priority by the town council.

iv. Planning and Evaluation for Individual Drainage Systems

Storm water drainage is concerned with the measures taken to control flow of surface water by collecting it and trapping it through suitably designed conduits away from developed areas. This is done to generally discourage the adverse effects of excess storm water build up. Undirected storm water would otherwise cause flooding thus impairing safety, health and wellbeing of the public as well as disrupting essential public and commercial services. From the field work survey, it was observed that most of the roads do not have developed drainage channels to convey surface run off to the natural systems like rivers and wetlands. The lack of drainage channels has impacted on a number of roads as they have developed pot holes and worn out.

To improve the lifespan of town council roads, appropriate drainage channels need to be built so as to channels water especially during the rainy season



Map 3: Map showing the Topography of the Town Council

7. TOWN GROWTH AND URBAN STRUCTURE

7.1 Historical growth and development

Masodde-Kalagi started as a trading post like many of the urban centres in Uganda in the early 1900's. Thus, it acted as a pull factor especially for population. The area had fertile soils for growing crops and large farm expanse of arable land. People moved in to settle in the neighbourhood due to availability of fertile land for cultivation

7.2 The town's spatial structure

The spatial structure of Masodde-Kalagi reveals observed patterns in the agglomeration of human settlements and the concentration of economic activity along the Kampala-Hoima highway. It is therefore characterised by a linear, dispersed and clustered settlement types and concentration of economic activities. The town has its central business district running along the main Kampala-Hoima road. The spatial structure of the town is composed of low-rise residential, commercial and institutions. This follows the linear orientation of the main highway. Clustered and dispersed settlements can be observed as one moves further away from the highway. There is also observed inequality in the spatial structure as some areas of formal and permanent housing while some areas of Kalagi are designated informal settlements. The informal settlements reflect a marked challenge in accessing infrastructure services. Linear infrastructure such as roads, piped water and electricity are a challenge. 'Inequalities in access to infrastructure reflect inequalities in both income and power' (Mitlin and Satterthwaite, 2013).

The hilly terrain of the town especially in its boundaries will continue be a natural buffer to the horizontal expansion/sprawl of the town. It is therefore anticipated that the town will increase in density in the lower lying areas at least for the near future until the urbanisation pressure reaches a breaking point.

7.3 The town development challenge and opportunities

Unplanned settlements are a major development challenge for Masodde-Kalagi TC. As of now, the town has not had an urban development plan to guide and regulate development leaving the urban development to spontaneous, informal and sometimes even illegal. Rapid population increase will also put a strain on the sustainable urban development of the town if it is not marched with commensurate investment in the provision of the necessary urban services. It risks promoting the growth of informal settlements. This is the case currently.

The existence of the main Kampala expressway presents a main opportunity as it allows trade and commerce to thrive in the town due to increased accessibility from both Kampala and Hoima. It also provides an opportunity to adopt the concepts of transit oriented development along the highway.

Availability of urban land for a variety of land uses from residential, commercial to institutional and well as agriculture. This land is also available for expansion of the settlements, for investments that can expand the economic base of the town.

The natural features of the town such as the surrounding hilly terrain and the swamp provide natural buffers to urban sprawl hence reducing the negative outcomes of the uncontrolled physical development of the town.

8. SOCIAL SERVICES

Social services are a range of public services by the government, private sector, profit and non-profit organizations, which are meant to create more effective organizations, build stronger communities and promote equality and opportunities. It is a product or activity that is carried out that meets the needs of a wide section of users. Its effectiveness is based on the provider's ability to understand the recipient's needs and requirements.

These services range from education, health care, religious, police, subsidized housing community management and a congregation of others.

8.1 Education Services

Government is responsible for the provision of relevant, equitable, quality and affordable education to its citizens and her population can do this through ensuring the availability and proper utilization of educational facilities. The NDP III prioritises the strategy of ensuring a well-educated and enlightened human resource as essential to facilitate development. This section gives an insight on the general trend in Masodde-Kalagi Town Council's performance in respect to the national accessibility indicators for pre- primary, primary and secondary education. It discusses the state and distribution of education facilities in the Town council with specific emphasis on quality, affordability, accessibility and utilisation of education services.

8.1.1 Distribution of Education Institutions in Masodde-Kalagi Town Council

Masodde-Kalagi Town Council has 14 Education Institutions comprising of 05 ECDC in form of Nursery Schools, 6 primary schools, 3 secondary school, and no tertiary/vocational institutions. The tables below provide the existing situation and distribution in the Town Council.

EDUCATION FACILITIES								
WARD	N/S	P/S	SS	TERTIARY/VOC.	TOTAL			
KIGOMA	0	1- Kiryamasaas a p/s-Govt	0	0				
Total	0	1	0	0	1			

Page 38 of 137

MASODDE	King stone N/S Cream Star N/S	Kirangazi P/S Govt Masodde Muslem P/S- Govt Masodde Modern P/S- Private	1. Gava SS- Private	0	
Total	2	3	1	0	6
KALAGI	1.SJ Stirling N/S 2.St. Pius N/S	1. Bishop Bukenya P/S- Private	1. Beatrice SS- Private		
Total	2	1	1	0	4
VVUMBA	1. St. Aloysius Infants Sch.	1.St. Joseph PS Vvumba - Govt	1.St. Joseph SS Vvumba- Govt		
Total	1	1	1	0	3
Grand Total	5	6	3	0	14

 Table 5: Number and category of education institution within Masodde-Kalagi Town Council

a) Early Childhood Development Centres (ECDC)

Pre-primary education is the first level of education enshrined in the 2008 Education (preprimary, Primary and Post primary) Act of -2008. The age group of 3 to 5 years' old constitutes a time of remarkable physical, mental and psycho–socio growth. These years lay the foundation for subsequent learning and development. SDG Goal 4, target 4.2 guarantees that all girls and boys have access to quality early childhood development care and pre-primary so that they are ready for primary education. However, in Uganda, this kind of education is optional thus its provision is dependent on NGOs, individuals and the private sector.

Analysis of quality indicators as far as pre-primary education is concerned shows that Masodde-Kalagi Town Council pre- primary quality indicators were far below the national performance in terms of quality spaces for the Pupils. However, there is need to improve upon the quality of the physical infrastructure that houses some of ECDCs/ nursery schools and enforce quality in content that is being consumed by the young leaners. It is important to note that unqualified personnel man some of these institutions, some were set up in unsuitable premises such as garages for residences, some premises were squalid, and the Town Council's supervisory mandate needs to be stepped up. Ideally, all children aged 3-5 years ought to enrol in school in order to meet SDG 4.2 target

Challenges of ECDC

 It was pointed out in the consultative meetings that a number of ECDC facilities were located in structurally unfit facilities, many lacked qualified personnel and this was a sector that deserved more attention in form of control and regulation by the local government authorities.

b) Primary schools

There are two categories of primary schools namely; private primary schools under the management of non-government Agencies and private personnel, and Government Aided schools and the former are the majority in the Town Council.

Although the Ministry of Education and Sports controls primary, trains, registers and supplies all required teachers, prescribes a national curriculum and provides textbooks, administrators and inspectors, a lot more needs to be done in regard to construction of schools, teachers' houses, sanitary facilities and furniture. This has hindered the progress in the education standard of primary schools in Masodde-Kalagi Town council. However, there is also an active involvement by the religious institutions in supplementing the government in education service delivery. In spite of these, the pace of expanding primary schools is slower than the rate of demand for basic education in primary schools and the problem is compounded by the rate of population increase. The physical development plan for the town council will address this gap to make sure that there are enough schools within safe walking distances especially in regard to primary level education.









c) Secondary education

Post Primary includes secondary and tertiary education. Secondary education comprises of two levels namely; four years of lower secondary education leading to the Uganda Certificate in Education (UCE) and two years of upper secondary education leading to the Uganda Advanced Certificate in Education (UACE). Presently, Masodde-Kalagi town council has one Government aided and two private secondary schools.









- Low quality of education at all levels due to shortage of critical infrastructure (sanitary facilities, accommodation for staff), lack of essential training equipment, tools and low level of inspection
- Late reporting for duty by most teachers due to absence of staff houses in most schools
- High school dropout rate some of which can be attributed to other general challenges in the education sector such as early marriages and early pregnancies

faced by the girl child and the vice of child labor, this attributed to Covid-19 lockdown

- Insufficient funds at the Town Council to facilitate all the schools demands and expectations
- Limited functionality of SMCs due to lack of awareness of their roles and responsibilities in the management of schools
 - High enrolment rate especially in UPE schools that leads to over congestion in classrooms
 - Late release of UPE funds
 - Inadequate capacity at the Town Council level to facilitate effective monitoring and supervision
 - Limited community / parental involvement in education

Objectives:

- To ensure decent quality of life for the people of Masodde-Kalagi TC by providing educational prospects and competitive or viable skills to individuals to enhance their potential for positive change of their society.
- To reduce on the distance travelled by leaners and allow equitable distribution in all parts of the TC
- To reduce on overcrowding in lower level education institutions and also absorb the increasing graduates of UPE and USE.

Strategies:

• There is need for adequate allocation of land for educational facilities to meet the current and long-term needs. These must be within residential neighbourhoods, with ready access and distant or buffered from major roads and provided with required community facilities such as sports facilities and resource centres.

Population threshold Demand Analysis for Education Social Services by 2032

Basing on the proximity analysis of the existing primary schools in the town council as highlighted in map 6, the Town Council is fairly served in terms of primary schools. This therefore means that if we subject the pupils to a 2km walking distance, all pupils within the Town council would be able to access an education facility. Further still, technical analysis of the population projections of year 2032 pits the population of the town council at **16,493**. Basing therefore on the catchment or threshold population of 4000 for urban areas (primary schools), it's envisaged that the town council should have 4 primary schools by the year 2032.

However the town council currently boasts of about 6 primary schools putting provision to way above even the 2032 needs assessment estimated at 4 primary schools. The circles in map 6 indicate catchment areas within a radius of 2km. The fact that map 6 projects overlaps is an indication of high levels of service provision. This therefore references the fact that Masodde-Kalagi town council is well serviced in terms of primary schools, so the physical development plan will not propose any other new primary schools, but rather recommend improvement in terms of standards and quality of existing ones.

However, further improvement of primary education facilities should factor in the role of the private sector and thus aim at boasting their operations, but also make sure that they adhere to the standards set by Ministry of education and sports. It's very clear that many of the primary schools in the town council do not meet the minimum basics and therefore effort should not be tagged to the numbers, but rather the quality of the institution and the product it churns out.

In matters concerning secondary schools, basing on the current projected population of **16,493** and the 50,000 threshold population for secondary schools, Masodde-Kalagi town council should have only 1 secondary school. However, it already vaunts of 3 secondary schools. Using a 1.5km radius for secondary schools as per the physical planning standards and guidelines, map 7 below is already positing overlaps, but these overlaps are concentrated in one area leaving other areas of Kigoma ward and its surroundings without a secondary school. The planning team has therefore proposed one more secondary school in the areas of Kigoma ward.

Current Number of Education Facilities	Catchment Population as per NPPSG- 2011	Projected Population 2032 with 4.2 Growth Rate	Projected Demand for Education Facilities by 2032	Total Education facilities that will be required by 2032
Tertiary (0) both Private & Government Aided	50,000	16,493	1	A tertiary facility has been proposed to cater for the whole area.
Secondary (3) include both Private & Government Aided	50,000	16,493	1	The current number of education facilities are able to meet the projected demand,. However , areas of Kigoma and its surroundings have been left un served . As a result, one secondary school has been proposed to serve these areas. <i>School buildings in urban centres should</i> <i>preferably adopt the vertical concept of</i> <i>buildings most especially the boarding schools</i> <i>to reserve land for future expansion and save</i> <i>space.</i>
Primary School includes both Private & Government Aided. Also Nursery & P/S (6)	4,000	16,493	0	The current number of education facilities are able to meet the projected demand. However existing education facilities that are not to standard needs to be upgraded -Integration of pre-primary schools into the primary school is advisable

Table 7: Population threshold analysis of education facilities



Map 4: Accessibility of Primary Schools within a distance of 1.5 Km within Masodde-Kalagi Town Council



Map 5: Accessibility of Secondary Schools within a distance of 1.5 Km within Masodde-Kalagi Town Council



8.2 Health facilities

Uganda identifies the right of everyone to enjoy the highest attainable standard of physical and mental health, irrespective of socio-economic status, gender or age. A healthy population is essential for the advancement of human development, wellbeing and economic growth. In pursuit of Uganda Vision 2040, the health sector targets to produce a healthy and productive population that effectively contributes to the socio-economic growth This would be attained through the provision of accessible, affordable and quality health care through the delivery of preventive, promotive, curative, rehabilitative and palliative health services by both the public and private sector.

The 1995 Constitution of the Republic of Uganda and the Local Government Act 1997 mandates the Local Governments to plan, budget and implement health policies and health sector plans. They have the responsibility for the delivery of health services, recruitment, development and management of human resource (HR) for District health services, development and passing of health-related by-laws and monitoring of overall health sector performance.

This study analyses level of health service delivery in Masodde-Kalagi Town Council - four wards and the effectiveness of the social service infrastructure with regard to the different health services/facilities in the planning area ranging from hospitals, Health Centres, clinics, maternity homes, drug shops and, pharmacies. It also analyses availability of health services infrastructure, utilisation of the same by residents, distance residents travel to nearest health facility and the challenges associated with provision of health services in Masodde-Kalagi Town Council planning area.

8.2.1 National Key Health Indicators

The ultimate goal of the National Health Sector Development Plan (HSDP) 2015/16 –2019/20 is accelerated movement towards universal health coverage with essential health related services needed for promotion of healthy and productive life. The health related targets outlined in Vision 2040 are stipulated in table below.

Development Indicator	Baseline Value (2010)	Target (2040)
Maternal Mortality Rate (Per 100,000	438	15
live births)		
Infant Mortality Rate (Per 1,000 live	54	4
birth)		
U5 mortality Rate (per 1,000 live birth)	90	8
Life expectancy at birth (years)	51.5	85
a b i		

Table 6: Health Related Targets in Vision 2040

Source: Vision 2040 & NDPIII

8.2.3 Distribution of health facilities in Masodde-Kalagi TC

Masodde-Kalagi Town Council has only one Health Centre II in Vvumba ward. It does not have any Health Centre III. The entire planning area has one Health facility, which serves beyond its jurisdiction, and it is over congested.



Picture 5: L-R Masodde-Kalagi HCII, Medical Clinic

HEALTH FACILITIES							
WARD	HCII	HCIII	HCIV	Clinic	Drug Shop	Total	
KIGOMA	0	0	0	0	0	0	
MASODDE	0	0		0	2	2	
KALAGI	0	0		1	4	5	
VVUMBA	1. St. Noah HCII	0	0	0	0	1	
Grand Total	1	0	0	1	6	8	

8.2.4 Health Centre Facilities threshold

The hierarchy of health service delivery system in Uganda include Health Centres IV, III, II and I (VHTs). The target population for Health Centre IV is 100,000, Health Centre III is 20,000, Health Centre II is 5,000 and VHTs is 1,000. HC IIIs provide basic preventive, promotive and curative care and provides support supervision of the community and HC II under its jurisdiction. There are provisions for laboratory services for diagnosis, maternity care and first referral cover for the lower local governments. The HC IIs provide the first level of interaction between the formal health sector and the communities. HC IIs only provide outpatient care and community outreach services. An enrolled comprehensive nurse is key to the provision of comprehensive services and linkages with the village health team (VHT).

Based on the targeted population of 2,000,000 per Regional Referral hospital, 500,000 for a district hospital, 100,000 for Health Centre IV and 20,000 for Health Centre III, the Town will require an additional HCIII to support HC II which the planning team has recommended for upgrade. Under the peripheral analysis context, the Town council is still surrounded by HC IIs as shown in map 9.

Current Number of Health Facilities	Catchment Population as per NPPSG- 2011	Projected Population 2031 with 4.2 Growth Rate	Projected Demand for Health Facilities by 2032	Total Health facilities that will be required by 2032
HC IV (0) include both PNFP and Government Aided	100,000	16,493	None	None

a) Current situation and demand for Health Facilities in Masodde-Kalagi TC

Page 53 of 137

HC III (0) include both PNFP and Government Aided	20,000	16,493	1	1 Health Centre III will be needed
HC II (1) include both PNFP and Government Aided	5,000	16,493	Phased out by upgraded to HO	MoH thus to be C III

Table 7: Population threshold analysis of Health facilities



Map 8: Existing health facilities



Map9: Peripheral health facilities analysis.

b) Challenges Associated to Health Service Delivery

- These were inequitably distributed throughout the Town Council.
- The physical and sanitary situations of the existing health facility in the Town Council constitute a risk for both the patients and the medical staff. These gaps and variations have exposed inefficiency in the ability of the health sector in the Town Council to deliver well-organized and effective health services.
- Stringent budgetary constraints which compromises service delivery and quality of the service in Public sector health facilities. The sector has also been subjected to frequent budgetary cuts.
- Inadequate Provision of emergency and basic Obstetric care.
- Inadequate equipment in all public health facilities and demotivated staff.
- Challenges recorded were lack of drugs, high expense of the services, under staffing, long distance to the facilities and poor service delivery
- The prominent challenges residents encounter with clinics in the Town Council was affordability since the services were regarded as expensive

Objective:

- Provide efficient and effective health service system in the TC
- To elevate and provide equal distribution of health services within Masodde-Kalagi Town Council.
- To institute a quality health care system that would stimulate and support a healthy and productive population and achieve social economic transformation of Masodde-Kalagi Town Council
- To elevate and evenly redistribute existing health facilities and develop new health and emergency facilities to foster competence and effectiveness in the delivery of the services within Masodde-Kalagi Town Council.

Strategies:

- Enhance access to proper health care and improve the health status of the population particularly mothers and (infants) children in the TC
- To provide adequate and accessible health services to the people of Town Council by reducing child mortality, improving maternal health and combating HIV/AIDS.
- Strengthening use of data to improve planning, ensuring continuous quality assurance and improvement, monitoring and performance of health services;
- Strengthening human resource for health through attraction, recruitment, motivation and retention of adequately sized, equitably distributed, appropriately skilled, motivated and productive workforce;
- Strengthening the existing infrastructure (such as staff houses, water, energy and equipment) for effective service delivery while upgrading selected facilities to meet demands of health services and;
- To provide primary health care services to the vulnerable groups
- To ensure access to quality Uganda National Minimum Health Care Package with emphasis on vulnerable populations
- To provide integrated promotive, preventative, curative and rehabilitative services in conjunction with the private sectors
- Procurement of public health tools and equipment.

8.3 Cultural facilities

Masodde-Kalagi Town Council is much in bond with the Buganda Kingdom, in that the Kabaka has some land In the Town Council. The kabaka has an office the Mitubba Esatu which host a small building for cultural values.



Picture 6: L-R Embuga ya Mukwenda Omumyuka II and a dried up water spring.

8.4 Religious facilities

Places of Worship

These are used to enhance community cohesion and, in some instances, a social safety net since they provide conducive space for people to socialize, meet and mark important community and family milestones.

WARD	RCC	C.O.U	PAG	SDA	MOSQUES	Total
KIGOMA	1	1	2	0	0	4
MASODDE	1	1	4	0	1	7
KALAGI	0	1	2	1	1	5
VVUMBA	1	0	0	0	1	2
TOTAL	3	3	8	1	3	18





Picture 7:L-R Church of Uganda, catholic church and Mosque

8.5 Recreation facilities

These are facilities set aside purposely for public relaxation, sporting and leisure. Generally, sports facilities are considered to be a subsidized service because they cost money to construct, maintain and some are available for free use by the community. However, they have broad economic and health benefits for the wellbeing of the community since they provide space/land for the recreation and tourism. They enhance property values and individual health, reduce in incidences of none communicable diseases, provide employment and they provide free venues for the community to relax and reduce urban stress. This study specifically analysed availability, accessibility and utilisation of playgrounds, open spaces, parks, play lots, and tennis/ volleyball or basketball courts. Most of the recreation facilities were part of the education facilities which were not easily accessible to the Community and they were poorly manage hence there need for planning on equitable distribution and management.



Picture 8: L-R Sports ground within the Town Council

8.6 Civic facilities

The government of Uganda adopted a decentralized form of service delivery with the ultimate objective of bringing services closer to the population. These services are delivered by public officers who must set base at the grass root, close to the service beneficiaries to effectively offer services unique to locality, thus promoting efficiency, effectiveness and responsiveness in service delivery. However, stakeholders indicated that the biggest challenges with public service delivery in the Town Council was corruption, poor service delivery, staff absenteeism, and high staff turn-over in preference for better jobs.



Picture 9: Masodde-Kalagi town council services

Security facility: Police Station and Prisons

Vision 2040 highlights peace and security as pre-requires for socio- economic development. Society's fabric at individual, household, community and national level must be at peace for any development to take place. The Uganda Police Act, Cap. 303 provides for functions of the Uganda Police to inter- alia include protecting life and property and other rights of individuals, to enforce law and ensure public safety. This can only be attained through provision of adequate physical infrastructure and well-facilitated personnel. According to the United Nations, the recommended police to population ratio is 1:500 and the Uganda Police Council recently elevated every Town Council in the country to have a police station. The implication is the need for adequate service in town and the need to improve upon the level of security services in the entire Town since security is an important pre-requisite for socio- economic transformation and development.



Map 10: Existing social services and utilities.
8.7 Other facilities

8.7.1 Community Centres:

As population growth and the resultant urbanization set in, there is a tendency for the affected population to become cosmopolitan, thus the need for social support networks to harness and harmonize the various social norms and expectations to enable the population take on its new modernized identity. Masodde-Kalagi Town Council has a growing number of ethnic groups, thus the need for community structures and support systems to mold especially the children and the youth into responsible citizens to promote community cohesion and social stability. Community centers are some of the structure that can be used by society to harness social stability and community bonding and cohesion.

Community centres are public premises which can be used by communities free of charge for recreation purposes, avenues for community engagements, meetings and gatherings for exchange of ideas which can develop society, or host public administrative offices at the grassroots level. They can also be utilized as information or resource centres. There is therefore a serious gap and the Town population seem to be unaware of the benefits of these structures. There is need to plan for community centres at all hierarchies of administration.

Objective

- Promote community identity, cohesion and social stability through establishment of community development infrastructure and related services at the grass root level.
- To establish a well-balanced network of markets in the Town Council that is adequate in scale, distribution and standards for the social and economic development of the populace in the Town Council.
- Improve distribution and access to sports and recreation facilities in the Town Council to enhance social harmony, recreation health, careers, and tourism in Masodde-Kalagi Town Council.



Map 11: Existing infrastructure and Social Services

9. HOUSING AND SETTLEMENT

9.1 Settlement patterns and trends of development

Masodde-Kalagi Town Council is rapidly urbanising as seen in the increase in the physical size of the built-up urban space. The most built up wards are Masodde and Kalagi with a marked higher density of settlements. The wards of Vvumba and Kigoma are less urbanised and built-up, more rural and with more agricultural land uses, including gardens and forested areas. The settlements are most concentrated in the low lying areas. There is a marked decrease towards the hills and higher areas where the settlements become sparse. The most densely settled areas are along the Kampala-Hoima highway.

The highway will continue to have an effect on how the town develops with denser settlements expected to continue to sprout up along the highway. There is an opportunity to have a transit-oriented development of the town with the highway be a datum along which the town develops. The surrounding hills also have an impact of restricting the urban development of the town in the short and medium term as it presents challenges to the development of settlements. The settlement pattern of the town also has an implication on the growth and economic development of the town. The more rural areas of Kigoma and Vumba will continue to be agricultural productivity areas while business and commerce will thrive in Kalagi and Masodde.

9.2 Settlement and Housing types

Masodde-Kalagi Town's settlement could be characterised by 03 types of settlements i.e. Linear, Clustered and Dispersed. The dominant housing characteristic are of permanent, semi-permanent and temporary. The different settlement and housing types as observed are largely influenced by land ownership, and socio-economic status of the residents.



Picture 10:L-R Different settlement typologies and Housing types in Masodde-Kalagi TC



Picture 11: L-R Illustration of Different settlement typologies in Massode-Kalagi TC

9.2.1 Housing conditions

The Housing type in Masodde-Kalagi town council is predominantly permanent, semipermanent and temporary. The semi- permanent is also observed mainly in the main central business district of the town in Kalagi and Masodde, while permanent structures made of permanent materials can be seen littered across the entire town council.

Housing density is higher the wards of Kalagi and Masodde, specifically along the sections close to the Kampala-Hoima highway. Low density settlements can be mostly observed in the wards of Vvumba and Kigoma. The housing condition in Masodde-Kalagi town council typically reflect the income status of residents with the urban poor mostly concentrated in the informal high density residential areas such as some areas in Kalagi and Masodde, in makeshift temporary structures of semi-permanent structures.

In terms of Housing ownership, it was observed that residents either own their housing or rent the spaces from landlords and other house owners. Rental housing was observed in the wards of Kalagi and Masodde. Throughout the entire Town Council, residents either rent or own the housing units.

The materials observed in the buildings in the town council include brick, mortar, stone, tiles or corrugated iron sheets for the permanent structures and other temporary materials such as recycled metal sheets and plastics was also observed in the areas with temporary or makeshift housing.



Page 68 of 137



Picture 12: L-R Temporary makeshift Housing types in Masodde-Kalagi TC

Picture 13:L-R Semi-Permanent and Permanent Structure in Masodde-Kalagi TC

9.2.2 Land ownership and Tenure Dwelling Units

The land ownership and tenure system in Masodde-Kalagi town council characterised by a mix of tenure systems including customary, mailo (private), leasehold and freehold. Some portion of the land in the Town council belongs to the Buganda kingdom and simply leased to individuals for use. Tenure dwelling units include the stand alone single family units, semi-detached rental units, rental apartments with different combinations of residential units such as single and double bedrooms. The following represent the different land ownership Public Land (2.2%) 69 hectares and Private Mailo (97.8%) 3230 hectares



9.3 Housing Finance

In Masodde-Kalagi Town Council, the predominant housing finance systems is the individual financing of housing construction or rent from individual savings and income. It was not clear if some housing financing is provided to residents through banks, credit societies, and other co-operatives and financial institutions. Access to finance remains a key hindrances to the development of affordable housing solutions, off-site and on-site infrastructure. Housing finance should be promoted to provide access to credit which needs to be extended for housing, services, and business development, especially financing for developers and infrastructure providers, and micro-credit for households (UN Habitat, 2014)

9.4 Housing Challenge

Inadequate supply of decent, affordable housing. Due to rapid urbanisation, increasing population both due to natural births and increased migration to the town council, the demand for decent housing exceeds its supply in Massode-Kalagi town council.

Poor physical condition of housing. The growth of informal settlements is a big challenge to the provision of housing in the town council. Unplanned, and poorly serviced houses with poor structural stability are commonplace within the boundaries Massode-Kalagi Town council.



Picture 14: L-R informal housing in Massode-Kalaagi TC



Picture 15: L-R informal housing in Massode-Kalaagi TC

Unaffordability. Affordability is about the percentage of household income that one spends on rent as a factor of all the other expenses. the majority of the residents of Massode-Kalagi town council spend more than 30% of their incomes on housing hence making housing unaffordable.

Lack of tenure security. Majority of residents of Massode-Kalagi council do not have tenure security due to lack of titles to their land. Land related conflicts are also prevalent within the town council.

Poor access to infrastructure services.

Access to on-site and off-site infrastructure services is poor in the town council. Piped water supply is available but the coverage remains low relative to the available population to be served. There is no public sewer system to serve the town, electricity distribution is also low and there is poor solid waste collection and disposal systems within the town. Where utilities exist, efficiency of services is low and illegal connections are a big problem.



State of infrastructure services in Massode-Kalagi TC.

Poor accessibility and mobility

Roads and access routes exist within the town council but are not sufficient and/or in a poor condition. Most of the road in the town council are not all-weather roads. Within and around informal settlements in Massode ward, the roads are in a poor physical state, poorly planned or non-existent. Poor linkages between road networks with left over spaces between buildings come to be used as access areas and alleyways. This creates challenges for mobility and accessibility for residents using different modes of transport such as motorists, pedestrians, cyclists and drivers.

Lack of access to housing finance

Majority of residents of Massode-Kalaagi TC are low income earners with very limited access to housing finance loans and other credit facilities. This is a major limitation to provision of adequate and decent housing. It also hinders the supply of good quality housing for rent.

Proposed Interventions

- Provision of a detailed area plan for the informal settlement neighbourhoods within Massode ward. This would provide a guide for the detailed area development of the town and begin to detail some of the strategies suggested.
- Provision of different housing typologies to address the housing needs of different demographic categories. Housing interventions need to be inclusive and sustainable and rooted in participatory approaches. Housing solutions should cater for the entire range of income groups.

- Densification of settlements in some areas the town council especially around the commercial hubs (both the local areas and the CPD). A more compact town council promotes more efficient use of available services and controls sprawl while securing land for agricultural and other uses.
- Greenification. We propose the deliberate effort to maintain and improve on the green cover of the town council. Green building technologies such also be promoted in the form of passive systems. Streets in the town council should be lined with trees to provide shade, sound buffer, and improve air quality.
- Development of a detailed master plan to guide the development of the neighbourhood based on a comprehensive housing needs assessment. In-situ slum upgrade and rehabilitation that encourages vertical and horizontal mixing of uses
- Provision of basic on-site infrastructure services such as waste management system. Sites and services interventions should be explored to avail the necessary linear infrastructure like water and electricity and sewerage services. Community led and demand led approaches should be used to prioritize and influence the content of initiatives and to weigh on standards and services options to ensure acceptability and enhanced demand responsiveness. Encourage single-sector investments in services as opposed to the full range of services due to the resource constraints. Development of an urban waste management system scalable at household, neighbourhood.
- Need to open up new road networks to improve accessibility, mobility and connectivity within the neighbourhood. Emphasis should be on providing infrastructure for different modes of transport and ensuring the connectivity between the modes. Walking and cycling and the use of public transport should be promoted as sustainable modes and requisite infrastructure prioritised. Adopting transit-oriented development strategy through encouraging higher density of development along the main Kampala-Hoima road.
- Public-Private Partnerships or more comprehensive Multi-Stakeholder Partnerships should be introduced through pilot projects, as an opportunity for all stakeholders to experiment with and learn from new approaches.
- The use of savings as a strategy, promoted by civil society organisations for redevelopment and provision of basic infrastructure services should be encouraged in Massode-Kalagi Town council.

10. ENVIRONMENT AND NATURAL SYSTEMS

Masodde-Kalagi Town is traversed by both permanent and seasonal wetlands that form part of the town's landscape. Over time with increase in population, there has been degradation of the wetland for settlement, agriculture, and industrial and for other resources. The wetlands form part of Victoria Nile sub catchment Water Management Zone. There exists central Forest Reserve Luwunga and dispersed forest cover (especially planted). Part of the town in the East is within the low lying area especially in Kalagi Ward.



Map 6: Physical Features map of Masodde-Kalagi Town Council

10.1 Proposed Interventions

The following are some general proposed interventions

- i) The current efforts of wetland restorations should be intensified (regulating activities, enforcements and demarcation)
- ii) Buffer around the Central Forest Reserves
- iii) Encourage residents and institutions to plant a tree (Its should be part of the approval process of their development plans)
- iv) Regulating residential and agriculture in gazzeted zones among others
- v) Encourage compact development within the town

11. SOCIO-ECONOMIC CHARACTERISTICS

11.1 Household size

Respondents in both KI sessions and FGDs were asked to share with the consultants the average household size in the town and they gave a range of 5 to 7 people though they gave a rider that this may vary according to the religious affiliation and tribal attachments.

11.2 Ethnicity

In as far as ethnic composition throughout the planning area is concerned, the Baganda are the predominant ethnic group. Luganda is the most commonly spoken language by most tribes that live in the Planning area. The findings show that the Banyankole and Banyarwanda are the next in line followed by the Banyoro, Bacholi, Barundi among others. The implication of this is that since Masodde-Kalagi TC is currently multi-ethnic, there is need for the planning approach to come up with interventions/ programs that address the needs and interests of individuals that belong to different social groups. But also, be considerate to the disadvantaged groups of people in service delivery.

11.3 Religious affiliation

There are quite a number of religious denominations that exist in the planning area. This is even reflected in the number of different religious facilities that are spread throughout the Town Council. Study findings revealed that majority of the people are Catholics, followed by Pentecostals, Moslems, Protestants, and Seventh-day Adventists together with other isolated religious practices. It is vital to understand the resident's religious denominations because their affiliations tend to determine their culture and values which is very important for planning purposes.

11.4 Household income and economic activities

Study findings reveled that the household income levels vary in the planning area but the key economic activity in the area is commerce and trade since the area historically began as a small seasonal market area for a few animals and crops in the 1990s after the liberation war in the 1980s. Other main activities which vary in propotion are: General trading (shops, restaurants, daily markets), restaurant business, Farming, Stone quarrying, brick-Page **78** of **137**

laying, welding and fabrication. Small-scale maize and coffee mills, Lodging (Small hotel), bar business for relaxation and social interaction, Health and Educational facilities have also emerged complemented by the long stretch of shops both retail and wholesale. These are not only serving the Town Council residents but also the local centres beyond including the neighbouring sub-counties.

Transport facilities especially the boda-boda industry and taxis which facilitate movement of people and goods to and from the planning area to the hinterland and beyond is also booming. The implication of this booming trade and commerce is the boost in housing development and cattle trade in the area. Other prevailing economic activities in the Town are dealing in animal feeds, house rental business, real estate dealers as a small scale, motor mechanics in small scattered garages among others. The planning approach should therefore maintain the integrity of the traditional economic activities of commerce and trade, agriculture and other business enterprises which were captured in the spatial data collection exercise.

The Town Council with support from the district will require engaging the population so that it embraces commercial agriculture. Programs like Parish Development Model, the MYOOGA, YLP, UWEP, and Operation Wealth Creation can be leveraged to have more people in commercial agriculture. Another opportunity to trigger the economic potential are the saving groups and village banking scheme approach which have been introduced and currently operational in the area.

a) Livelihood activities

Residents in Masodde-Kalagi Town are engaged in a number of economic activities. Livelihood activities range from **trade and commerce** (town's central business district, include small scale family shops "dduukas"), **subsistence farming** (food production and animal rearing especially in the areas of Kigoma and Vumba, **transportation** (boda-boda riding, truck driving), **markets** (food markets, roadside food markets, clothe market among others), **formal employment** (public services, private organisation, NGOs among others),

informal employment *food vending, petty trading,* artisan *work, bicycle repairs, carpentry workshops etc.*)

11.4.1 Economic position and contribution of the town to the National Economy

Government of Uganda through the NDP III and other sectoral programs like LED, Parish Development Model, NUSAF III among others, has taken a deliberate effort to focus on business enterprises, trade and commerce potentials at the lowest levels like wards and parishes in the urban areas. One of the opportunities for Masodde-Kalagi TC is its strategic position along the Kampala – Hoima trans-highway coupled with the two national bypasses that will connect with the industrial parks for Kapeeka and Kasanda. The economy of Masodde-Kalagi Town Council is based largely on Commerce and Trade together with Farming. Others related economic potentials are varying business activities, agroprocessing, commercial activities like shops for general merchandise, banking etc. The main investment opportunities that can be a contribution to national economy and thus for integration in the planning process are agro-processing, real estate, transport, hotel and storage, microfinance institutions, standard animal market together with a modern abattoir, regulated urban agriculture, forestry along the surrounding hills among others. Banking services ought to be introduced in the Town Council to complement on the existing village banks and SACCOs.

However the FGD respondents recommended Leaders to promote financial literacy and organizing more respondents into saving and investment groups. The Primary Growth Sectors, which directly produce goods and services in Masodde-Kalagi Town Council, are commerce and trade (assorted), agro-processing, urban agriculture, hotel and lodging industry and real estate development. The industrial activities in the Town are agro-based, which involves processing of grain into flour, and production of animal feeds from the by-products. Other than agro processing, there is also metal fabrication. The contribution of some of these sectors has not been measured and so, the extent to which they contribute to the national economy is yet unknown. We need baseline data.

Respondents in FGD discussions highlighted the following factors that are affecting the economic sector: Increased crime rates, High levels of unemployment due to the lockdown,-Covid 19 also affected the education sector negatively among other sectors, other social ills like drug abuse and Prostitution which were also highlighted during the FGD discussions with young girls.

11.4.2 Gender and vulnerability analysis

According to the Women Land Rights Agenda 2021 under MLHUD, there still exits exclusion of women and girls' equal rights access to and needs in urban planning, design and adequate housing. The WLRA report therefore recommends the preparation and implementation of Integrated Physical Development plans that are gender responsive – responsive to the needs of women, the girls and all children in general among other stakeholders.

Interaction with the respondents in the FGDs revealed that gender mainstreaming is taking shape including gender inclusion and equity considerations. Women FGDs working in the informal sector like vending and in the gazatted market area revealed that they are currently participating in various economic activities for economic transformation of their households though there are still prevailing circumstances of gender based violence and patriarchal beliefs that affect women access to property. One of the KIs who happens to be in the Business had this to say *"Women in Masodde-Kalagi are hardworking and active and have challenged men when it comes to work. They understand the philosophy of group formation and means of sustaining the same. They just need a boost to realize their dreams of economic transformation".*

There are quite a number of vulnerability categories i.e. the elderly, the chronically ill persons in homes, the children especially the school drop outs, PWDs, Sex workers,

12. INFRASTRUCTURE AND UTILITIES

The town has a number of infrastructure and utilities in different conditions and type that were observed during field reconnaissance. They include among others **Road Infrastructure** (*Main Road, Distributors and Accesses*), **Water Infrastructure** (*public stand points, taps, borehole, and rain water harvest tanks*), and power infrastructure (*transmission and distribution lines, transformers, street solar lamps*) **telephone and internet infrastructure** (*telecom network masts*). It is important to note that inventory of the infrastructure and utilities will be undertaken during Data Collection. Service demand and gaps will be identified during data analysis to identify suitable proposals.

12.1 Sewerage

i. Existing Sanitation Systems and Methods (survey)

The Town Council has the overall responsibility of maintaining a safe health environment including provision and construction of sanitation facilities, which include public toilets/Latrines, emptying, collection and haulage of fecal sludge, provision of Fecal sludge haulage to treatment plants and Wastewater treatment plants operated by NWSC. Provision of household sanitation is a responsibility of individual households. Under 1995 water statute NWSC is mandated to provide sanitation related activities as follows;

- Wastewater collection.
- Wastewater treatment.
- Fecal sludge treatment.
- Industrial wastes discharge consents.
- Investment planning and implementation

The survey revealed that the population only relies on on-site sanitation systems for excreta disposal. There is no system for latrine emptying and fecal sludge collection.

ii. Existing sewerage systems and challenges

Currently, the population relies on onsite systems for wastes management mainly pit latrines and septic tanks. The Town Council has no public toilets. There are no emptying, collection and haulage of fecal sludge services. There are no disposal facilities such as sewer lagoons.

Challenges,

- Lack of fecal sludge collection and disposal.
- Lack of fecal management services.
- Lack of emptying services.
- Lack of decentralized sludge disposal sites.
- Cost of constructing disposal facilities is high due to high cost of construction materials.
- Lack of public toilets.

iii. Proposed Sewerage System Developments

A site for the wastewater (sewage) treatment plant has been proposed not in the town council, but proposals have been made to use the nearby lagoon in Kiboga town council. This site was developed with aerated ponds as the treatment process.

- The new waste water treatment plant is to be developed incorporating the following facilities;
- Installation and operation of screens, grit chambers and flow meters;
- Installation of drying beds for removed sludge
- Installation of a seepage-receiving chamber upstream of the screen and of the grit chamber.

The main reasons for selection of these sites are;

- Sites located at a reasonable distance away from the busy C.B.D
- Sites are located a way from high developed areas, thus there is large area available.
- Easy access to the sites for operators and users of the WWTP, by car and truck for example for cesspits emptying trucks)
- Presence of a natural outlet (wetlands) for treated wastewater.
- iv. Recommendations

- Improve sanitation by providing tenable sanitation infrastructure and solutions that meet the growing demand in the Town.
- Formulation and enforcement of sanitation byelaws.
- Maintaining a safe health environment providing and improving storm water management

12.2 Water Supply

Access to drinking water is a human right and therefore very important in facilitating development in any urban setting. Water services infrastructure is a fundamental enabler for the smooth operation of public facilities such as Hospitals, Schools, Markets, and Construction. Without adequate water supply, key functions such as commercial industrial, primary production and education facilities would not function well.

The Ministry of Water, and Environment (MWE), through the Directorate of Water Development (DWD) has the mandate of managing water resources, as well as coordinating, regulating and monitoring all water and sanitation activities and providing support services to local Governments. DWD regulates water use and waste discharge, supports urban areas in implementing decentralized water supply and sanitation programs and implements new construction and rehabilitation of schemes in small towns and rural growth centers. It is also responsible for the development of water supplies for production.

I. Field Survey findings

The water supplies system existing in the Town council heavily depends on natural. Most of the water resources in the Town council are reliable both in the wet and dry season although other sources are considered unsafe, most especially from the open wells within the Town council usually contaminated due to poor maintenance.

II. Water Supply Service Area (NW&SC and others)

The survey indicated that the majority of the town council population relies on natural sources of water supply mainly springs and shallow wells which are usually polluted and this impacts on the health of residents given the trends in population and economic growth. The current service area of the piped water network is only limited to the small part of the

town council mainly in Kalagi ward. The rest of the residents use varied water sources that include spring wells, boreholes, among others. Access to safe water is between 70%-95%. This is as a result of non functionality of water point sources attributed to water quality, technical breakdown etc. (Water supply Atlas Kyankwanzi District as of May 2022)

The situation needs to be urgently addressed by provision of safe and reliable water to the town council. The issues that need to be addressed urgently include;

- The cost of water distribution networks in the entire town council.
- The high prices usually charged by the providers

The town council PDP makes spatial provisions for reservoir installations to ensure all locations in the town are served. Feasibility investigations are required to ascertain ground water sources in addition to investigating whether the existing wetlands can provide adequate water supply to service the entire town council, otherwise the town council will have to use water from other rivers. In order to conserve surface water, it is important that where these (surface waters) are located, buffer zones for rivers and wetlands should be observed, implemented and enforced in accordance with national (wetlands, river banks and lake shore) management regulations 2003.



Access to Safe Water



Page **86** of **137**

The current service area of the piped water network is only limited to the central area of the town council mainly in the cells of Kalagi ward and part of Masodde ward. The water supply is unreliable as the pressure is too low.

The outskirts of the town heavily rely on natural water sources such as open wells, streams, swamps among others. This pose a health hazard as the water from these sources is always polluted and unfit for human consumption.

IV. PDP spatial requirements and recommendations

- Provide access to safe piped water supply in all the areas of the town council
- Ensure safe water supply within easy reach distance of 0.2 km in Masodde-Kalagi town
- Ensure maintenance of water facilities and provide facilitation of the local water user committees to fully implement their responsibilities.
- Reduction in water costs by installation of more public water points especially stand pipes



Map 7: Existing Utilities and Infrastructure

12.3 Solid Waste

Management of solid waste is an important factor in planning of particularly urban settings. Solid waste management in Masodde-Kalagi Town Council is still a challenge as far as garbage collection, transportation and disposal is concerned. Some communities have devised their own coping mechanisms and garbage is indiscriminately disposed of in unconventional places. Most of the wastes generated in the Town Council is biodegradable solid wastes and a small proportion of non- biodegradable mainly consisting of polythene bags and plastics, which are a danger to the environment if not properly handled.

i. Field Survey findings

The survey indicated the challenges of solid waste management in the town council. There is an existing solid waste management facility in the town council. However, its location is not favorable and it is poorly managed. It was observed that the wastes are just dumped in this facility without proper sorting or segregation. Solid waste is still managed at household level. Most of the wastes generated in the Town Council is biodegradable solid wastes and a small proportion of non- biodegradable mainly consisting of polythene bags and plastics, which are a danger to the environment if not properly handled.

ii. Current Characteristics of Solid Waste and Practices for solid waste disposal

a) Wastes storage

Storage of garbage before its collection is an important process and shows level of commitment to orderly solid waste management. Analysis of methods of garbage storage revealed that the local authorities still have a daunting task of community sensitization on the best practices in solid waste management. The best option would be to store the garbage generated at the household level in proper dustbins. However, the survey revealed that a high proportion of households that do not have any viable method of storage and there is indiscriminate dumping, especially in main centers like Kalagi and Masodde.

b) Wastes storage

Storage of waste at source is the first essential step of Solid Waste Management. Every household, shop and establishment generate solid waste on day-to-day basis. The waste should normally be stored at the source of waste generation till collected for its disposal.

There is, therefore, a need to educate the local community to store waste at source, dispose of the waste as per the directions of the local bodies and effectively participate in the activities of the local authorities to keep the cities clean.

It is recommended that the Town Council installs wastes collection facilities like roadside garbage bins and skips in various locations of the Town so as to reduce on littering of wastes by the population. It is also recommended that the compost site should be developed as a site for collection, management and disposal of all solid wastes both degradable and non-biodegradable. Also at the compost, there should be sorting of the wastes whereby those that can be recycled are separated from those that cannot and then buried.

c) Disposal

The Survey findings indicated that solid wastes are stored in improvised containers including polythene bags, old tins, and old basins before being disposed in Skips, burnt or composted. Additionally, the Town council has no necessary equipment like garbage trucks

in

waste



collection.

The rising quality of life, and high rates of resource consumption patterns especially in urban areas have had an unintended and negative impacts on the urban environment in terms of generation of wastes far beyond the handling capacities of urban governments and agencies.

It should be noted that many urban areas are now grappling with the problems of high volumes of waste, the costs involved, the disposal technologies and methodologies, and the impact of wastes on the local and global environment. But these problems have also provided a window of opportunity for Towns to find solutions -involving the community and the private sector; involving innovative technologies and disposal methods; and involving behavior changes and awareness raising. These issues have been demonstrated by good practices from many urban areas around the world. There is a need for a complete rethinking of "waste". A rethinking that calls for,

WASTE to become WEALTH

REFUSE to become RESOURCE

TRASH to become CASH

iii. Wards

In the wards, wastes are managed at household level. Residents are in charge of storing the wastes that they generate before disposing it off at the garbage collection points where it's transported to the waste dump facility. Few wastes collection points were mapped out and these are located in busy areas like markets and informal areas. For residents in the outskirts of the CBD, there are no collection points for wastes instead it's disposed of in the gardens given the fact that majority of the wastes generated is biodegradable in nature. However, to ensure good hygiene and sanitation in the town, wastes management practices need to be implemented so as to ensure a clean and livable town. Facilities such as garbage bins need to be installed in various locations especially busy areas and along the roads so as to reduce on indiscriminate waste dumping. It will also make it easier for the town council authorities to collect wastes from these to the management facility.

iv. Industrial

At the moment, industrial sector is not well developed in Masodde-Kalagi town council. This is mainly attributed to unreliable power supply. Currently industrial waste is mainly wastes from food processing industries and the wood processing industries. However, with the high level of urbanization that is expected, industrial sector is likely to boom and this will come along with its impacts both positive and negative. On the negative part, noise and air pollution, environmental pollution from industrial was will be prominent.

There the town council needs to develop by-laws in advance so as to guide industrial establishments and also protect environment form the negative impacts of industrial establishments.

v. Institutional

Most of the wastes generated from institutions especially from schools is biodegradable mainly comprising of food stuff peelings and left overs. Most of this waste is managed by the school as it provides manure for the school gardens. However, for the nonbiodegradable wastes, the institutions should put in place mechanisms for the proper collection, storage and transportation to the management facility.

For toxic wastes especially medical facilities, this has to be disposed of with care so as to minimize environmental pollution and reduce on the negative impacts on human health

vi. Toxic waste

These consist of mainly industrial and medical wastes. These require adequate treatment before it's disposed of to the environment. In most cases incineration is the best option for management of this type of wastes.

The town council has no designated facility for the management of toxic wastes.

Future Landfill/waste disposal facilities

Landfill has been the cheapest methods of solid waste disposal. The sanitary landfill is a technique for the final disposal of solid waste in the ground that causes no nuisance or danger to public health or safety; neither does it harm the environment during its operation or after its closure. This technique uses engineering principles to confine the waste to as small an area as possible, covering it daily with layers of earth and compacting it to reduce its volume.

The purpose of landfilling is to bury or alter the chemical composition of the wastes so that they do not pose any threat to the environment or public health. Landfills are not homogenous and are usually made up of cells in which a known volume of waste is kept isolated from adjacent waste cells by a suitable barrier. Barriers between the cells commonly consists of a layer of natural soil or clay, which checks the downward or later escape of the waste components or leachate.

However, given the problems that could be caused by the liquids and gases produced by the decomposition of organic matter the PDP proposes for a dumpsite where segregation of wastes will be done before disposal. It is also recommended that in future, given the demand, this will be developed into a landfill. The PDP provides land for a dumpsite facility. The detailed analysis of the identified location of a dumpsite facility and the development of the rest of the solid waste system will require detailed analysis that is obviously beyond the scope of this study.

vii. Waste management recommendations

The recommended policy for the solid waste system is to institute a spatially comprehensive solid waste system which combines domestic and town council management strategies. The composting strategy will maximize recycling, provides cost-effective hierarchy of collection and disposal components, and minimizes permanent elements such as land-fills, so as to improve health and prevent pollution of human and natural environments. In order to do this, the following strategies are proposed:

- Town council detailed planning processes should provide a comprehensive waste handling and disposal system
- Specify a hierarchy of collection, sorting and disposal facilities which promotes sorting at source, diversion to recycling processes, and minimization of collection and transport costs;
- Ensure high frequency of collection so that the public is encouraged to use the formal and organized system of disposal, rather than casual dumping.

- Routine community sensitization programs should be carried out on the negative impacts, health, drainage, air pollution etc. of informal dumping of waste, and the benefits of recycling;
- Ensuring that the composting plant is big enough, and planned well in advance, to cater for rapid population growth and increases in income levels.
- Implement programs to businesses and industry to provide information on proper disposition facilities at their premises.
- Provide educational programs at schools, youth organizations, and volunteer organizations on proper wastes management.
- Prepare Town Council solid waste by-laws to cater for indiscriminate littering of waste
- Solicit funds to procure Refuse Skips and Town dust bins
- Secure funds and truck for garbage collection and transportation

12.4 Energy supply

i) Existing energy use types - survey findings

The Socio-economic survey assessed the type of energy used in town council mainly for cooking and lighting by the households. The town's current energy use comprises of biomass and fossil fuels. Most of the biomass energy is from wood, which is consumed in the form of charcoal and firewood. The findings of the study show that majority of the households use firewood and charcoal for cooking. A little portion uses paraffin for cooking. This shows that the population in the town majorly depends on biomass for household cooking energy requirements. As a result, this leads to environmental degradation, as a lot of trees have to be cut down in order to provide wood for cooking and making charcoal. The findings also indicated that for lighting requirements, majority of residents use paraffin to solar energy for lighting with a few using electricity. The households that use energy generated by generators and solar live in tenements in the town council which are connected to business premises most especially the commercial structures, lodges and do pay an extra cost to procure fuel.

The main burden of biomass collection and use is the gender disparity whereby women are the major domestic caretakers and employees in the informal food industry. The critical source of energy required for industrial and commercial production in the town is hydroelectricity.

ii) Existing situation on electricity generation, supply and distribution

The absence of adequate and reliable source of energy has constrained the growth of the industrial sector in the town council. The existing small scale agricultural processing facilities mainly rely on fuel which is prohibitive to the growth of the town's industrial sector. A number of Agencies are engaged in prevision of electricity in the town council and they include but not limited to;

a) Electricity Regulatory Authority (ERA)

The Electricity Regulatory Authority is a Statutory Body established to regulate the Generation, Transmission, Distribution, Sale, Export and Import of Electrical Energy in Uganda. ERA also ensures compliance to License conditions by Licensees. ERA is also mandated to establish a tariff structure, approve rates of charges and ensuring a sustainable Electricity Supply.

Some of the functions of the authority include,

- To approve rates of charges and terms and conditions of electricity services provided by transmission and distribution companies;
- To review the organization of generation, transmission and distribution companies or other legal entities engaged in the generation, transmission and distribution of electricity.
- To develop and enforce performance standards for the generation, transmission and distribution of electricity;
- To encourage the development of uniform electricity industry standards and codes of conduct.

b) UMEME

The core purpose of Umeme is to manage and upgrade the distribution infrastructure to ensure evacuation of electricity from transmission stations to end users through an efficient safe and reliable distribution network. It's also engaged in;

• Investing in business activities that enhance the security of power supply

• Achieving network service quality standards acceptable to the community and deliverable from future maintainable earnings of the network business

• Developing and utilizing staff skills and the company's intellectual property, while providing a safe environment for staff, contractors and the public

• Operating in accordance with the principles of environmentally sustainable management

• Acting responsibly and co-operatively in the community and adopting a responsible approach to social and cultural issues.

It was observed that the town is connected to the national grid as defined by the 3phase power lines that pass through the town council. This provides power connection for businesses and the residential areas.

iii) Access and use

Electricity Power lines run along the major roads of the town council mainly along Hoima-Kampal Road. From distribution lines evacuate power and distribute it to the various parts of the town council.

Also, to note is that not all parts of the town have access to electricity. The outskirts are not connected to the national grid. This has hampered to development of the industrial sector and other income generating activities. Therefore, there is need to invest in more programs that are geared towards extending power to all parts of the town council.

iv) Planned expansion of power generation and extension/transmission

The Uganda electricity generation company limited (UEGCL) Mission for 2018 – 2023 is: "To Sustainably Generate Reliable, Quality and Affordable Electricity for Socio-Economic Development". This mission statement seeks to ensure that energy production corresponds to the envisaged dynamism of energy demand, given the Government's goal of social and economic transformation of the population. In line with the Strategic Themes, the following strategic goals were developed to guide on what the Company intends to achieve over the next five years;

- Generation capacity- Increase generation capacity from 380 MW to 1300 MW through a generation mix of hydro, solar and geothermal,
- Project completion: Complete the construction of the on-going projects of Isimba, Muzizi, and Nyagak by 2022, taking into consideration quality, cost and ensure new priority projects are initiated during the planning period.
- Operations: Commence operations of the completed hydropower projects
- Stakeholder satisfaction: Ensure stakeholder satisfaction of at least 80% per annum.
- Health, safety and environment: Ensure compliance to the HSE regulations and attain ISO 14000 and 18000 accreditations.

With the anticipated increase in electricity generation in the country, its believed that the power will become reliable and cheaper to connect. Most of the town council residents will get connected to the grid.

v) PDP recommendations

- Residential developments should be avoided under or along high voltage power lines
- Roads should be planned and developed to run parallel to the power lines
- To minimize on injury and death, safety measures should be put in place especially in areas where people live near substations
- No permanent development or land use should be permitted along the wayleave corridor. Only permitted uses to include; open spaces, Orchards, Nature conservation, Parking, Cycle lanes among others.

12.5 Telecommunications

i. Telecommunications Sector in Uganda

Access to efficient and affordable ICT services is a key factor in promoting private sector investment given that this significantly reduces the cost of communication. Internet services also stimulate the growth of other related sectors of the economy. It is not possible to establish the contribution of the ICT sector in Masodde-Kalagi town. However, on the national level, the sector currently employs a significant number of the population and contributes almost 2 percent to the country's GDP. All these are attributed to the improved ICT infrastructure (National Budget Speech 2015/2016).

ii. Optic fibre network

The demand for the internet services has doubled in the country for the last ten years. Internet has promoted the growth of the business and service sectors by facilitating easy and quick exchange of information. Many institutions rely on internet to do research and come up with innovative scenarios of solving problems. The provision of the internet services was privatized and has been taken over by service providers such as MTN, Airtel. They have incorporated it as a service whereby everyone who owns a smart phone can easily buy data bundles and access internet. They are also improving their coverage in the entire country by installation of more telecom masts. In, addition they are ensuring that every part of the country has internet access by installation optic fibre cables and these are transmitted by poles or incorporated into the power transmission poles.

The town council has a fair to good access to internet depending on one's location. During the survey it was observed that the town council's terrain characterized by hill tops provides a favorable ground for the installation of telecommunication facilities especially masts. With the anticipated influx of people into Masodde-Kalagi and the neighboring towns due Oil production, the need for internet is going to double in the town council and this calls for the need to plan for it in advance. The PDP will plan for a site that will take care of these installations when the demand arises.

iii. Regulation and Policy

a) National Broadband Policy 2018

According to the National Broadband policy 2018, the government recognizes Broadband infrastructure as a Public Utility (like water, transport and energy) and coordinate its planning, development and management for all actors to avert duplication, review the licensing regime in order to achieve universal access and service of communications.

The policy aims at achieving the following objectives;

- Avert duplication and therefore wastage of resources in the provision of broadband among the key stakeholders in the ICT sector
- Optimize usage and increase the efficiency of broadband infrastructure utilization in the country.
- Ensure that all parts of the country are connected to broadband and not only the urban areas as it is the case today.
- Review the licensing regime for the telecom and broadcast operators to ensure that their operations are in line with the ICT sector strategic objectives.

Under Policy objective 1, the main focus is to ensure Connectivity for All:

To achieve this, the strategies include;

- Classify Broadband infrastructure as a public utility just like transport, energy and water in order to avert duplication;
- Integrate broadband infrastructure in the planning and development of physical infrastructure such as roads, railways, energy and oil pipelines;
- Regulate, coordinate and harmonize the development, deployment and sharing of all broadband Infrastructure (both private and public) among all stakeholders;
- Establish Internet exchange points and ensure that all domestic traffic remains within the country; e) Establish common international gateways in order to manage all international traffics originating and terminating in the country;
- Ensure that all local broadband connectivity for all MDAs/ local entities are independent of international internet connectivity. It is critical for both security and affordability of broadband services;
- Develop a one-stop center concept to streamline the licensing regime and fees payable for development and use of ICT infrastructure; this will ensure all stakeholders in the licensing process are under one roof (regulators, local councils, environmental issues, etc.)
- Promote and implement the national postcode and addressing system, towards last mile delivery of services to facilitate e-commerce; and
- Develop appropriate legal frameworks to implement the policy

iv. Recommendations

The PDP recommends the following strategies,

- Planning for designated areas especially hilltops for the installation of telecommunication facilities like masts.
- Reduction in the cost of data by network service providers

13. TRAFFIC AND TRANSPORT NETWORK

13.1 Road transport and traffic

i. Area survey findings (conditions and length)

The town's road network is characterized by bound surface roads and loose surface roads which are motorable in Nature. However, the town's topography has impacted on the status of some roads as some have a lot of pot holes caused by surface run off from the hilly areas. This has made some roads impassable due to pot holes. In addition, the town Roads have no pedestrian walkways and some areas are accessed by foot paths that traverse some parts of the town. The roads within the town council have been grouped into the following classes based on their functionality for the transportation sector.

	Road class	Function		
1	Primary Roads	Roads linking essential provincial centres to a higher-class road		
		(urban/rural centers). Linkage between districts local		
		population centers and development areas. Major function is to		
		provide both mobility and access.		
2	Secondary Road	Roads linking locally important centers, to more important		
		centers, or to higher class roads (rural/market centers) and		
		linkage between locally important traffic generators and		
		associated rural hinterland. Major function is to provide both		
		mobility and access.		
3	Tertiary Road	Any road link to minor center (market/local center) and all		
		other motorable roads. Major function is to provide access to		
		land adjacent to the secondary road system		
4	Access Road	Any road link to residential neighbourhoods and all other		
		motorable roads. Major function is to provide access to land		
		adjacent		

Masodde-Kalagi town council has a total road network of about 98.15 km. Of this, National Roads constitute a total of 13.94 km, District Roads 33.37 km, and Urban Roads and cover 51.24 km

Road categories	Road names	Surface type	Road condition
Primary Road	Hoima-Kiboga Road	Bound Surface	Good
Secondary Roads	 Musaalaba-Kisozi Road Musaalaba- Kafagagala Road Masodde-Nkooko- Nalweyo Road Masodde-Kiduumi Road 	Loose Surface	Good
Tertiary Roads	Kigundu RoadBalosi Road	Loose Surface	Good Fair
Access Roads	 Musenze Road Vvumba-Karaganzi Road Mukwaya Road All Roads to various areas within the town 		

Apart from Kiboga-Masodde road which is tarmacked, the remaining roads within Masodde-Kalagi town council are not tarmacked. During rainy season some of the roads are impassable because of the surface materials that are largely composed of clay soil type and due to lack of drainage facilities along most of the roads. In other parts of the town council some roads lack culverts, while others are destroyed leading to flooding. Most of the roads

are dusty during the dry season given the surface material (earthworks) this increases air pollution levels that may result to respiratory diseases. The above circumstances not only inconvenience residents but also disconnect some neighborhoods making it difficult for residents to access markets and social service facilities.

ii. Mobility and accessibility in the town and linkage with outside

The mode of transport in Masodde-Kalagi town council is road. Roads are of vital importance to the growth and in guiding orderly development of a town, enhancing poverty reduction by improving access between town's uses, town and rural communities, town and regional and rural communities and ultimately enhance socio-economic growth and development.

The existing road network (secondary and tertiary roads) in the town is comprised of earth and gravel surfaced and are in good and fair condition. However, with some roads in the town in deplorable state, accessing services like schools, health centers is always difficult and also utilities such as electricity, and water cannot be extended to areas of the town without planned roads or worse without good and proper accessibility.

iii. Mobility and accessibility between urban nodes and neighborhood

Transportation is a major factor in contributing to social and economic growth and development of a region and so the presence and state of the transport network is key to development. Effective transport networks, including roads, public transport, airports enable business people to get their goods to markets while at the same time enabling employees get to work, students to get to school, visitors to reach their destinations, and people to access goods and services.

There are a number of Roads that connect the town to other centers within and outsides the town council such as the neighboring Sub-counties. However, the hilly topography of the town council has limited the establishment and connection to some of the nodes in the west.

iv. Hierarchy of routes and activity corridors

The Road network in the town council has been categorized into four classes basing on their functionality. These include; Primary, Secondary, Tertiary and Access Roads.

a) Primary Road

This provides linkage of the town council to other urban centers in the region. It also provides linkage between districts local population centers and development areas. The major function is to provide mobility. This category of Roads carries heavy traffic and access is also restricted. The town council is traversed by one Primary Road (Kiboga-Masodde-Kalagi-Hoima Road) that passes in the middle of the town. Due to its function and the likely developments in Hoima because of Oil production, the volumes of traffic that this Road is going to carry is likely to double or even triple. Most of the traffic is going to be vehicles transporting Oil products from the Oil refinery to the Kampala Storage terminal in Buloba, Mpigi district. Therefore, given the fact that this Road passes in the middle of the town and the high traffic volumes its likely to carry, there is need to plan for safety measures so as to protect the residents in the town.

Slip off lanes in the centre of the town have to be planned for to cater of the business community in the town council.



Picture 14:L-R Kiboga-Masodde-Kalagi-Hoima road

b) Secondary Road

The Secondary Roads interlink various local centers within and outside the town council. This category of roads will also provide connections to farms and rural residences. They generally will not and may include curbs or sidewalks. Bikes and vehicles share the road. Street tree plantings are appropriate where visual screening or buffers are necessary. Smooth and well-maintained road surfaces are critical for the transportation of agricultural products and for encouraging local traffic to use off-highway routes.





c) Tertiary Road

These are roads interlinking the villages within the town council as shown in the Plan. The road width recommended for these roads is (10m - 15m) depending on the function. More of these roads will be highlighted in the detailed Plan.

d) Access Road

All neighborhoods will be accessible to both Vehicular and pedestrian traffic. Also, every single plot must have access from the main road. The vehicular accesses will be tertiary roads. Local neighbourhood access and cul-de-sacs leading from tertiary roads will provide access to residential plots. Pedestrian/cycle lanes in each neighborhood should access group of dwellings to the public neighborhood facilities.

It's recommended that all the major roads within the town council should be tarmac, labeled and with marked road reserves for walkways and urban utilities like power lines, water lines, communication lines among others.

Cul-De-Sac Connections

Cul-de-sac connections are narrow pedestrian walkways that provide shorter walking distances to commercial or civic destinations. Privacy for abutting land owners can be managed with vegetative screens or fences. These also create opportunities for neighbourhood 'pocket parks

v. Proposed strategies for the PDP

To improve on the Road network and connectivity, the following strategies need to be undertaken seriously when the Physical development plan for Masodde-Kalagi town council is prepared and implemented;

- An Integrated Transport System all viable sectors and modes of transport in the town should be designed, constructed, operated and managed as an integrated and complimentary system.
- Accessible Public Transport Services there is need to expand public transport services and facilities throughout the town council thereby providing easier access to transport modes.
- Integrated Urban and Transport System Planning major new land use projects should be planned and designed together with a matching transport planning to ensure that the new development will not worsen the general traffic situation, and that the new development is properly served with a modern transport system.
- Planning for NMT Facilities there is need to provide for attractive, safe and high quality NMT facilities for all users.

- There is need for Increased funding for operation and maintenance of the Road network.
- Provide parking facilities in entire town council
- Improve enforcement of traffic regulations especially in public transport.
- Planning and creating a hierarchy of roads within the town council



Map 8: Masodde-Kalagi TC Road Network

13.2 Oil pipeline

I. Extent of the product pipeline (ROW and length within the Town Council)

The Hoima–Kampala Petroleum Products Pipeline (HKPPP) is a proposed pipeline to transport refined oil products from the Oil refinery in Kabale, Hoima to the storage and distribution terminal in Buloba Mpigi district approximately 28 kilometers, by road, west of Kampala's central business district. The overall total length of the pipeline from Hoima to the Oil Storage terminal is approximately **211 kilometers**. The pipeline will transport various products, including gasoline, diesel, and kerosene and jet fuel.

Within the town council, the products pipeline passes in some parts of Kigoma and Vumba wards. The pipeline Right of Way **(ROW) corridor is 30m**. This reserve will take care of the pipeline itself and other supporting infrastructure and utility facilities such as underground powerlines, heating stations and pumping stations.

Given the volatility of the products that it carries and the danger these products pose to the environment and the residents, proper planning of land uses and infrastructure especially along the pipeline ROW is very critical as to avert the likely negative impacts on the environment and the population.

i) Impact to the town in terms of opportunities and safety.

The construction of the pipeline is likely to impact the growth and development of the town council either positively or negatively. Proper planning is required so as to minimize the likely negative impacts.

a) Positive Impacts

- Upgrade of access roads within the town council
- Provision of social
- TC economic boost due to the beneficial impacts, training and purchasing of goods.
- Creation of employment opportunities
- Provision of ready market for the agricultural products
- Improvements of the people's livelihoods

b) Negative impacts

- Displacement of the population especially along the pipeline ROW
- Loss of lives especially from bursting of the pipeline
- Destruction of the environment during construction.
- Under valuation of people's land
- Delayed compensation
- Population influx into the town council and increase in related social issues
- High level of fear, uncertainties, and anxieties amongst the population

14. EXISTING LAND USE CHARACTERISTICS

The land use study was conducted by use of remote sensing techniques and ground verification processes. A satellite image of quick bird of 2021 at a clear resolution was utilized by the team. The existing Land Use Analysis classified six (06) level land use categories as required by the level of planning for the local urban physical development plan. The land uses are; Agricultural-Residential, Commercial, Institutional, Subsistence farming, Infrastructure and Environmental. Map below and table summarise the comprehensive land uses pertaining in Masodde-Kalagi Town with their acreage and percentage coverage, the relationship between the different land uses to the major transport routes. The mapped land use activities in the town council depict a number of characteristics including;

- Linear pattern of growth and development along the transportation routes. This is for both residential and commercial uses.
- Most of the land away from the transport routes has been reserved for subsistence farming.
- Concentration of developments within the commercial centres
- Commercial centres are located at the junction of transportation routes.
- The pattern of settlement is defined by generally scattered homesteads and some limited clustered homesteads
- The housing structures include a combination of both permanent, semi-permanent and temporary structures
- Subsistence agriculture is the dominant land use in the town.

The location and characteristics of each of the broad land use categories are discussed in more detail below:

14.1 Residential uses

From the analysis, there was no pure residential land use mapped. Basing on the nature of the town with mainly rural-urban characteristics, linear settlements are a combination of both residential structures and agricultural gardens hence forming agriculture-residential land use. Even within the commercial centers, it's a combination of both commercial and residential use on the same structures. However, with the growing urbanization trends in the town, there is going to be invasion-succession of land uses in the areas that are currently under agriculture-residential use. This is likely to lead to intensified residential development.

14.2 Commercial uses

The land use occupied 86.6 acres of the total land use area. Commercial land use includes all those centers providing business opportunities, involving the selling and buying of goods. The main and busiest Commercial center (C.B.D) is at Kalagi and Masodde. The commercial land use accommodated a variety of activities including retail stores, services, clinics, drug shops, eating places, small bars and roadside kiosks. The foot print of commercial land use is not planned nor is it defined in the town but is sprouting all over and mixed within other land uses. Nonetheless, it serves the needs of the residents of Masodde-Kalagi town council. The major centers are basically two and are located along the road thus dictating the emerging growth pattern. These two local centers are linked by by the Kampala-Hoima highway. There are other smaller trading centres providing low order goods such as; Vumba, Kigoma among others. Locations are informal and devoid of required services and infrastructure. The existing centres (local very small-scale sector) specialize in quite similar non-tradable activities with no clear comparative advantage over the other, these number of activities include:

- Sale of agricultural produce;
- Household necessities
- Sale of clothing and footwear, general retail merchandise
- Mini-workshops for repair of motorcyles and sale of spare parts
- Jua-kali activities on road reserves in the open such as metal fabrication, making of furniture, and many others

- Small clinics and drug shops

14.3 Industrial uses

The industrial land use was very limited in the town yet the sector is prioritized in national and local development plans to drive the town's economy and contribute significantly to Uganda's economy. Industrial development in the town council is still in infantry stage and is limited to agro-processing characterized by low value addition, non-standardized products and hence less competitive in local, regional and international markets. Land use mapping identified four (4) grinding mills (Factories) that were evenly distributed in the town. The dominant industrial activity involved processing of agricultural raw products; maize and wood using Electricity. Other informal industrial activities captured included carpentry and metal fabrication workshops.

The spatial data survey revealed that majority of the residents are engaged in Matooke, Maize and Coffee production. This requires establishment of processing industries for value addition before sale outside the town and district. The establishment of these industries is likely to provide employment opportunities for the unemployed in the town and beyond. This will create other needs like affordable housing, which the plan will have to address.

The PDP target therefore is to encourage development of value addition, processing and light manufacturing sub-sectors to purge the town's economy. The target is to ignite and attract investment in higher value sub-sectors, particularly in higher processing and manufacturing which have a greater contribution to productivity e.g. in grain milling, food manufacturing, and financial services which all have above average returns to job creation and productivity.



Picture 15: Some of the industrial use activities

14.3 Agricultural (Subsistence)

Mixed agricultural and residential

Mixed agricultural and residential use accommodates the needs of food production as well as settlement needs of the residents. The land use pattern is mainly scattered all over the town area away from the transport routes and linear along the transport routes. The activity involves growing of various crops like Matooke, Coffee among others on small scales/numerous land sub-divisions. It is also comprised of scattered settlements mixed with agricultural gardens. This Land use pattern has been dictated by agriculture being the main economic activity in the area and the need to produce both for domestic consumption and for sale.



Picture 16: Some of the agriculture use activities

14.4 Environmental Land Use : Wetland

The environmental land use covers area occupied by wetlands, streams, natural and planted forests and these are usually unsuitable for human occupation. There are a few patches of planted forests which are distributed in various locations within the town and the pattern of distribution is mainly adjacent to wetlands. These are mainly of eucalyptus plantations. The increasing level of urbanization is one of the issues that the town council has to tackle given the fact that urbanization is linked to economic, social and environmental transitions. The National Environment (wetlands, river banks and lake shores management) Regulation, 2000 specify a protection zone of 30 meters for wetlands. Our mapping and satellite analysis processes identified the major wetland systems in the town council to include; Masodde wetland.

The residents use the wetlands as a source of water for agriculture purposes and for livestock grazing. However, there has been encroachment on these wetlands especially for agriculture like Vegetable growing and other economic activities like Businesses. This has rendered some of the wetlands and swamps to become seasonal due to the reduced water catchment areas. There is therefore need for massive and routine sensitization of the community on protection of wetlands. Wetlands need protection because they are a critical component of the town's hydrologic cycle. They help to recharge ground water, store water and purify water through various biochemical processes. They are also important for controlling floods, filtering wastes, providing water during the dry season for livestock. The town wetlands are also critical in serving as a buffer and modifying the extreme weather conditions of drought and therefore are effective in controlling some of the effects of climate change. Given the impact of climate change, there is need for initiatives geared towards preserving the environment of the town by promoting tree planting and preservation of ecologically sensitive areas like wetlands.

Despite the categorization of the two as environmental, encroachment for agriculture, residential, mining; Stone quarrying and other activities are evident in the area. Wetlands for example have been cleared for Businesses and Agriculture. The encroachment on wetlands for agricultural use and at times settlements has been attributed to the change in local area climate. The recurrent drought, the changes in weather patterns; short intensive rainfall events, the increase in day time temperatures with heat waves occurring both in the dry and wet seasons are partly attributed to the destruction of these resources.

14.5 Institutional land Use

Institutional land use accounts for acres of the total planning area. The institutional land use category includes a variety of uses including; educational facilities, health facilities and religious facilities.

(a) **Education**

Land under this category includes land accommodating all educational institutions in the town council. The town council has a number of educational facilities are spread all over the town council including Primary schools, Secondary Schools and few Nursery schools which they are both private and government owned. The town council has 6 Primary schools, 3 Secondary Schools, and no Technical Institutes. The spatial distribution of primary schools is in such a way that they are fairly distributed in all the wards. Some town council residents also access educational services from institutions outside the council boundary.



Map 9: Masodde-Kalagi Town Council Existing Land use 2022

SECTION-3 PLAN PROPOSAL



Page **119** of **137**

15. PHYSICAL DEVELOPMENT PLAN PROPOSAL

This section covers the development proposals and strategic interventions in various spheres of physical and socio-economic development in Masodde-Kalagi Town council. The following form the broad strategy for the PDP.

- 1. Masodde-Kalagi Town Council PDP Vision
- 2. Goals and objectives of the Masodde-Kalagi Town Council PDP
- 3. Conceptual framework
- 4. Analysis of Community wish list

Masodde-Kalagi Town Council Physical Development Plan is prepared in accordance with guidelines from a diversity of sources which have provided the wealth of knowledge to support the process. Specifically, a number of documents have been integrated in the making of Masodde-Kalagi Town council PDP and these include, but not limited to Uganda's vision 2040, NDP III, NPDP and others. Additionally, the development of the plan is guided by the vision and mission statement of the Town council. The Physical Development Plan is to guide urban development of the town by providing a broad framework and guideline for orderly and coordinated development.

15.1 Analysis of Community wish list

Stakeholders proposed a number of issues to be included in the plan as follows

<u>FGD Issues</u>

Physical Planning Concerns / Challenges

- Illegal developments, noise (regulate the community radios and those dealing in sale of Music items) and air pollution because of the dust, deforestation is rampant.
- In one of the FGDs with Boda-Boda Stage operators "Some businesses are misplaced e.g. the daily market should be relocated in the outskirts so as to avoid accidents".
- The CBD has no parking space, the taxi-park needs adequate space and in suitable location. There is need for a public toilet in the CBD.

- "Encroachment on wetlands and the administrative offices should be pushed outside the local centre" (voice from the Boda-Boda FGD).
- The poor drainage system coupled with illegal/ unplanned developments and inadequate water supply are affecting productivity of the town and thus making the town not competitive.

Physical Planning whilst and proposals from the Community

There is currently one police station and thus a need to have more given the growing population.

- i. The current market should be upgraded to higher standard to make it attractive with a conducive business environment.
- ii. There is need to institute a public leisure park to supplement on the private one in place.
- iii. Commercial banks should open up branches in Masodde-Kalagi to complement on the efforts by the SACCOs and Village banks.
- iv. There is need to encourage tree planning because of the heavy storms, the strong winds which are a threat to people's safety. These have on several occasions destroyed people's property.
- v. There is need for more telecommunication boosters across all mobile phone networks as well as a radio station.
- vi. There is need for utility extension i.e. water and power.
- vii. Open up more roads to ease connectivity and thus boost economic production activities connecting the production centres to markets. Upgrade the existing roads regularly.
- viii. There is need for a cultural and recreational centre (multi-purpose) for relaxation and attracting those in transit to make stop-overs and relax including the locals.
- ix. Establish garbage collection centres, street lighting and playground facilities.
- x. The FGDs with Primary School Pupils: Pave the pedestrian walk ways, regularly upgrade the road network, erect road signs like zebra crossings, support street kids to go back to school,

- xi. There is need for diary processing plants, the stray animals should be regulated and the bar operations should also be regulated in the town.
- xii. We need a stadium, a cemetery as well as a modern land fill and the processing facility for fertilizers since we have many animals in the vicinity. The production value chain for the agricultural sector should be carefully thought through in accordance with the recommendation from the CBO officials FGD.
- xiii. One of the KIs who happens to be in the Business had this to say: "In terms of physical planning, we need gazatted places for modern multipurpose markets, a taxi park, and industrial area, there should be measures to protect the wetlands and forests. Drainage is a challenge especially the water run-off from Vumba areas. The local leadership should be vigilant regarding enforcement..."

PROPOSAL	LOCATION
	GENERAL MEETING
Protected Wells	
Roads	
Equitable services/balanced services	
Better Hospital	
Good schools	
Play ground in each ward	
Maintaining Religious Facilities in their	
location	
Cemetery	
Residential areas and commercial centres	
Abattoir for slaughtering animals	
Market in the better location off the road	
Electricity	
Piped water (water tap)	
Markets in each ward	
Hospital in each Ward (Health Centres)	
Valley Dam for the livestock	
Light Industries (factories) for agro	
processing	
Better Drainage system	
Sewer lagoon	
Dumping site for solid waste	
Entertainment Centres (community Centres)	
Green Parks	

Needs Assessment Matrix for Masodde-Kalagi Town Council

•	Parking Terminal – Taxi parks & Lorry Park	
•	Street Parking	
•	Demarcation of Wetlands and protection of	
	natural resources	
•	Firefighting units	
•	Police (station and Post) for security	
•	Administrative areas Civic (Administrative	
	Wards)	
•	Airstrip (Port)	
•	Recreational Centre	
•	Services/facilities for the PWDs (people with	
	disabilities)	
•	Police (station and Post) for security	
•	Administrative areas Civic (Administrative	
	Wards)	
	Secondary school	
	Roads	
	Industrial	
	Growth centres	
	Electricity	
	• Water	
	Health facilities	
	Schools (nursery and primary)	
	Markets	
	Taxi park	
	Houses for staff	
	Sports stadium	
	Hotels	
	Recreation centres	
	Police post	
	Tourism excursion	
		MASODDE
	Roads	
	Cemetery	
	Slaughter slab	
	Piped water	
	Daily market	
	Health center	
	Secondary school	
	Taxi park	
	Road humps	
	Police post	
	Technical institute	

•	Play ground	
•	Community center	
•	Industrial area	
•	Public toilet	
•	Garbage disposal site	
•	Valley dam , administrative offices	
•	Electricity	
		VVUMBA
•	Schools	
•	Technical institutes	
•	Police post	
•	Piped water	
•	Roads	
•	Electricity	
•	Market	
•	Town council headquarters	
•	Food market	
•	Health facilities	
•	Garbage disposal site	
•	Shallow wells	
		KALAGI
•	Water	
•	Roads	
•	Preserve religious facilities	
•	Shifting the power line	
•	Humps on the main road	
•	Health facilities	
•	Preserve the open market	
•	Daily market	
•	Community center	
•	Electricity	
•	Public toilet	
•	Industrial area	
•	Play ground	
•	Green parks	
•	Tavi navl	
	Taxi park	

15.2 PDP Interventions

The specific strategic planning interventions are discussed below according to;

- i. Social services
- ii. Economic infrastructure

- iii. Infrastructure and utilities
- iv. Transport and road network
- v. Environmental and natural resources
- vi. Urban Governance & Development Control

The various land use proposals are highlighted in the table below;

Table 21-1: Proposed land use proposals for Masodde-Kalagi Town council

PROPOSED MKTC LANDUSE CVERAGE					
NO.	CATEGORIES	ACRS	НА	SQKM	% COVERAGE
1	Abattoir	4.52	1.83	0.02	0.06
2	Buffer	490.65	198.56	1.99	6.03
3	Cemetery	3.62	1.46	0.01	0.04
4	CIVIC	9.34	3.78	0.04	0.11
5	Commercial	310.63	125.71	1.26	3.82
6	Community Centre	9.68	3.92	0.04	0.12
7	Educational	162.56	65.78	0.66	2.00
8	Forest	1855.09	750.73	7.51	22.82
9	Health	7.40	3.00	0.03	0.09
10	High Density Residential	679.79	275.10	2.75	8.36
11	Medium Density Residential	1828.81	740.09	7.40	22.49
12	Low Density Residential	753.40	304.89	3.05	9.27
13	Industrial	179.46	72.62	0.73	2.21
14	Landfill	8.65	3.50	0.04	0.11
15	Market	8.01	3.24	0.03	0.10
16	Open Space	8.54	3.46	0.03	0.11
17	Play Ground	18.00	7.28	0.07	0.22
18	Religious	31.87	12.90	0.13	0.39
19	Lorry Park	3.53	1.43	0.01	0.04
20	Taxi Park	1.16	0.47	0.00	0.01

21	Urban Agriculture	1311.55	530.77	5.31	16.13
22	Wetland	444.49	179.88	1.80	5.47
	Total	8130.74	3290.39	<u>32.90</u>	100.00

15.3 SWOT Analysis

STRENGTH	WEAKNESS		
 Availability of land for 	 Conflicting stakeholder interest 		
agriculture and settlement	 Insecurity of tenure 		
areas	 Encroachment on eco-systems 		
 Vibrant population 	 Limitation of the town's 		
 Development oriented 	expansion due to the		
leadership	topography (hills)		
 Location along the highway 	 Lack of community awareness 		
 Soil fertility for production 	to Physical Planning		
(food basket)	 Human resources (Physical 		
 Industrial Establishment 	Planner, Engineer)		
OPPORTUNITY	THREATS		
 Location along the highway 	 The oil pipeline 		
 Strategic location within the 	 Land grabbing 		
sub region (Industrial	 Future Road expansion 		
parks)	(Expressway)		
 Future Road expansion 			
(Expressway)			



Map 10: Proposed Draft PDP for Masodde-Kalagi TC

Page **127** of **137**



Map 11: Selected Detailed Area of 4sq