COUNTY GOVERNMENT OF MIGORI

DEPARTMENT OF LANDS, HOUSING & URBAN DEVELOPMENT

MIGORI COUNTY SPATIAL PLAN (2020-2030)

FIRST DRAFT PLAN REPORT

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ABBREVIATIONS AND ACRONYMS

A.I	Artificial Insemination
BOM	Board of Management
BPO	Business Processing Outsourcing
BTS	Base Transceiver Station
CBC	Competency Based Curriculum
CBO	Community - Based Organisation
CESA	Critically Ecological Sensitive Area
CIDP	County Integrated Spatial Plan
CRA	Commission on Revenue Allocation
CPLUDP	County Physical and Land Use Development Plan
DANIDA	Danish International Development Agency
ECDE	Early Childhood Development Education
EMCA	Environmental Management and Coordination Act, 1999
EMR	Electronic Medical Record
ESA	Environmentally Significant Area
FAO	Food and Agricultural Organization
FBO	Faith - Based Organization
FGD	Focus Group Discussion
FGM	Female Genital Mutilation
FY	Financial Year
GCP	Gross County Product
GDP	Gross Domestic Product
GIS	Geographical Information System
GPS	Global Positioning System

GSM	Global System of Mobile Communication
HA	Hectares
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
ICT	Information Communication Technology
IDA	International Development Association
IFMIS	Integrated Financial Management Information System
IPCC	Intergovernmental Panel on Climate Change
KEMFRI	Kenya Marine and Fisheries Research Institute
KENHA	Kenya National Highways Authority
KAA	Kenya Airports Authority
KERRA	Kenya Rural Roads Authority
KFS	Kenya Forest Service
Km/H	Kilometre per Hour
KMTC	Kenya Medical Training Institute
KNBS	Kenya National Bureau of Statistics
KPLC	Kenya Power and Lighting Company
KURA	Kenya Urban Road Authority
KUSP	Kenya Urban Support Program
KW	Kilowatt
KWH	Kilowatt Hour
KWH/M2	Kilowatt Hour per Square Metre
KWS	Kenya Wildlife Service
LAPSSET	Lamu Port - South Sudan - Ethiopia - Transport Corridor
LCD	Liquid Crystal Display

LPG	Liquid Petroleum Gas
LREB	Lake Region Economic Bloc
LVSWWDA	Lake Victoria South Water Works Development Authority
MIWASCO	Migori Water and Sanitation Company
MUCOWASH	Muhuru Community Water Sanitation and Hygiene
NCPB	National Cereals and Produce Board
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
NLP	National Livestock Policy
NMT	Non-Motorised Transport
NOFB	National Optic Fibre Backbone
NYAWASSCO	Nyasare Water Supply and Sanitation Company
PWD	Persons Living with Disability
REREC	Rural Electrification and Renewable Energy Corporation
SEQIP	Secondary Education Quality Improvement Program
TTI	Technical Training Institute
UNESCO	United Nations Educational, Scientific and Cultural Organization
VTC	Vocational Training Centres
WASREB	Water Service Regulation Board
WHO	Would Health Organization
WRA	Water Resources Authority

CHAPTER ONE : INTRODUCTION AND BACKGROUND

1.1 Overview

This report presents the Migori County Physical and Land Use Development Plan. It is composed of several components and results of the processes and procedures that culminated to development of a county spatial structure for Migori County, land and land management policies for the county as well as the various sector development strategies This first draft plan report provides the findings of the study undertaken for the county and the preliminary proposals to be validated by the stakeholders in anticipation of the completion of the plan that will provide a framework within which development shall take place within the county. This will help avert development challenges including uncoordinated developments, inadequate energy and support infrastructure for industrial development; low productivity in agriculture and rural development; poor industrial development inadequate health, education and recreational services; lack of land information management system; undeveloped road network; low levels of access to portable water and other basic services due to poor rural and urban development.

This first chapter provides a background of the project including deliverables and expected outputs, the planning vision informing the exercise, the planning context as well as the planning approaches and methodology applied.

1.2 Project Background and Expected Outputs

In spite of diversity of natural resources (minerals, water, wildlife, climate, land and culture) Migori County faces a number of development challenges including: uncoordinated developments, inadequate energy and support infrastructure for industrial development; low productivity in agriculture and rural development; poor industrial development inadequate health, education and recreational services; lack of land information management system; undeveloped road network; low levels of access to portable water and other basic services due to poor rural and urban development.

The County Spatial Plan will help to:

i. Assess the available resources, their level of utilization and potential;
ii. Indicate infrastructure and services levels and distribution and enable the County Government prioritize investments in infrastructure development;

iii. Provide strategic guidance in respect of the location and nature of development within the county;

iv. set out basic guidelines for a land use management system in the county taking into account any guidelines, regulations or laws as provided for under Article 67(2)(h) of the Constitution;

v. Set out a capital investment framework for the county's development programs;

vi. Undertake a strategic assessment of the environmental impact of the spatial development framework;

vii. Identify programs and projects for the development of land within the county;

viii. Provide a framework for coordinating County development programmers and strategies so as to avoid duplication of projects and wastage in use of both financial and human resources

ix. Form the basis for preparing sectoral programs and projects

x. Identify areas where strategic intervention is required

xi. Indicate areas where priority spending is required

xii. Form the basis for seeking donor funding and public/private partnership in development of the county

1.3 Planning Vision

The planning vision for Migori County up to the end of the planning period is:-

"A prosperous county that is founded on functional and effective governance, robust economic growth supported by efficient appropriate and adequate infrastructural service provision with sound environmental practices".

It is the culmination of a visioning exercise held with various stakeholder forums in August 2020, under phase I of the project. Key stakeholders engaged in developing the vision include local communities, civil societies, representatives of marginalized groups, county government of Migori technical officials and departmental heads, County Assembly Members, the County Executive Committee, the private sector as well as different experts and professionals.

1.4 Purpose and Objectives of the Plan

The plan has been prepared to provide a broad planning framework to guide physical & land use planning and growth within the county. The plan Indicates the desired pattern of land use within the County; provides strategic guidance in respect to location and nature of development; sets out

basic guidelines of a land use management, designates areas for conservation and recreation as well as, create a basis of prioritization of high impact investment in the County. The plan identifies projects and programmes through which to actualize the formulated strategies.

It gives guidelines for local area and detailed planning and shall facilitate the transformation of the lives of the citizens of Migori County through:

- Provision of an overall county spatial framework to guide development and anchor lower level plans
- Interpretation and localization of national and regional policies and strategies
- Establishment of a basis for infrastructure and services delivery, use and management of natural resources as well as environmental protection and conservation
- Identification of opportunities for job creation and employment
- Provision of policies and strategies to revitalize industries, trade and commerce for economic development
- Provision of policies and strategies for improvement of transport and communication networks and linkages
- Provision a guide to rural development and settlement
- Establishing a user-friendly GIS lab complete with the hardware, software and training county staff
- Guiding development of a functional planning unit and enhance capacity of the existing staff.

1.5 Scope of the Plan

Geographically, the plan covers the entire Migori County, 2,596.5 Km^2, consisting of the eight administrative sub counties i.e.; Kuria West, Nyatike, Suna West, Uriri, Suna East, Awendo, Kuria East and Rongo. This is inclusive of approximately 478 Km^2 of land under territorial waters. The 10 - year (2020 - 2030) County Spatial Plan shall be reviewed periodically to reflect the ever - changing development issues and priorities for the county. The plan delves into the analysis of the existing situation and goes on to provide a framework for sectoral improvement through zoning, land management policies, development strategies, projects and programs.

1.6 Approach and Methodology

The plan preparation process was undertaken systematically taking into consideration strategic planning principles as discussed below;

1.6.1 Approach

Approaches employed in preparing this plan were;

i. Multi-Sectoral Consultation

Relevant professionals from different sectors were involved the preparation of this CPLUDP, hence contributing in various ways to enrich the plan, including identifying sector-based issues and formulation of appropriate strategies. Key professionals involved include Transport Planners, Environmentalists, Sociologists, Economists, GIS Specialists, Water Engineers, and other relevant professions.

ii. Participatory

Part III of the County Governments Act provides for citizen participation. Section 87 (b) states that citizen participation in county governments shall be based on reasonable access to the process of formulating and implementing policies, laws, and regulations, including the approval of development proposals. In this light, the consultant, stakeholder consultation workshops and interviews were conducted at each stage of plan preparation process in order to build consensus and capture stakeholders' concerns.

iii. Evidenced Based Decision Making

The process relied on verifiable data, information and knowledge that will be gathered from experts in specific disciplines, making observation, photography, ground truthing, benchmarking and scenario building;

i. Public participation and stakeholder engagement;
ii. Evidence-Based;
iii. Use of planning and service provision standards;
iv. Subsidiarity in analysis;
v. Scenario building.
vi. Existing policies, legal statutes and standards.

1.6.2 Methodology

A ten (10) point process was systematically adhered to by the planning team to ensure successful delivery of this plan. These steps are as represented schematically below;

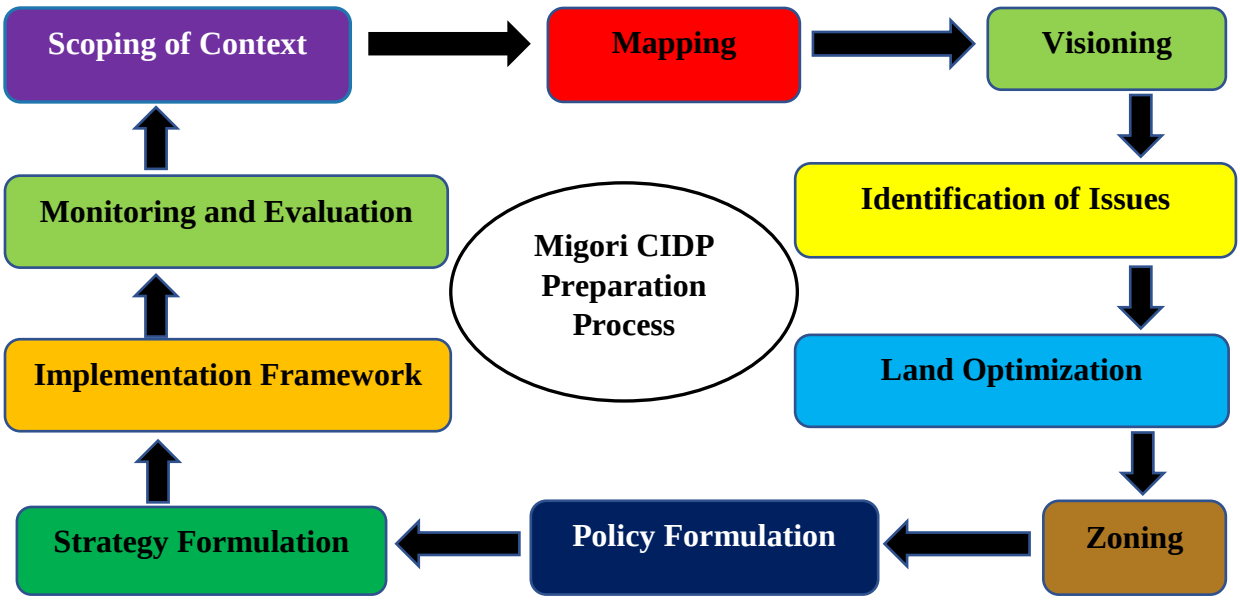


Figure 1: CPLUDP Preparation Process

With regards to this 1st Draft Plan Report, the planning process is currently at the strategy formulation phase which includes project proposals and programmes. Once the preliminary proposals are vetted and validated by stakeholders, preparation of the implementation framework will be undertaken for validated projects and programmes followed by a framework for monitoring and evaluation.

1.7 Planning Context

1.7.1 Legal and Policy Context

A. Legal Context

Preparation of this County Physical and Land Use Development Plan was informed by the various principles enshrined in the Constitution of Kenya, 2010 as well as other primary legislations including, the Physical and Land Use Planning Act, no.13 of 2019 and the County Governments' Act, 2012. The process was also informed by other supporting legislation including; Survey Act (Cap 299), Land Act No 6 of 2012, Environmental Management and coordination Act, EMCA (1999), Land Registration Act No.3 of 2012, Public Health Act (Cap 242), Intergovernmental Relations Act, No. 2 of 2012, Agriculture, Fisheries and Food Authority Act No. 13 of 2013,

National Government Co-ordination Act, No. 1 of 2013 and the Public Finance Management Act, 2012. The following is a brief discussion on the main legal basis of the plan;

i. Constitution of Kenya, 2010

The Constitution of Kenya vests the process of County planning to be a concurrent function between the national and the County Governments. In Article 66 (1), the Constitution provides power to the National and County Governments to regulate the use of any land and property through spatial planning. In the Fourth Schedule, Part 1 (21) mandates the National Government to set the general principles of land planning and co-ordination of planning by the Counties. Part 2(8) tasks the County Government with the responsibility of undertaking County Planning and Development.

The Constitution also spells out environmental, economic, and social rights to be enjoyed by every country's citizens. These rights include the Right to a clean and healthy environment, the right to healthcare services, accessible and adequate housing with reasonable sanitation standards, adequate food supply, clean and safe water, and education.

ii. Physical and Land Use Planning Act, 2019

The Act sets out the procedures and principles of Land Use planning, use and regulations, which have been applied in the analysis of the County. It gives priority to sustainability as a perspective to focus on in land and physical analysis and development. The act also informed the understanding of the interaction between economic, social and environmental aspects of the county and the resulting development impacts.

iii. County Governments' Act, 2012

The County Governments Act, 2012, provides for the preparation of a County Spatial Plan. Section 104 of the Act provides for the County Governments to plan for the County and that no funds shall be appropriated outside a planning framework developed by the County Executive Committee and approved by the County Assembly. This planning framework must integrate economic, physical, social, environmental, and spatial planning issues. The County Government Act requires that the County Spatial Plan set out basic guidelines for a land use management system in the County, considering any relevant guidelines, regulations, or laws.

B. Policy Context

In addition to the legal provisions discussed above, the planning team also made reference to key policy documents including the Vision 2030, the National Spatial Plan as well as other relevant sectoral policies including the Integrated National Transport Policy of 2009, the National Land Policy, 2009, National Housing Policy for Kenya, 2004, the Urban Development Policy, and the Integrated National Transport Policy of 2009. This was done in order to mainstream their objectives as well as the relevant flagship projects that may be planned for within county. The discussion below is of the main policy basis of the plan;

i. Vision 2030

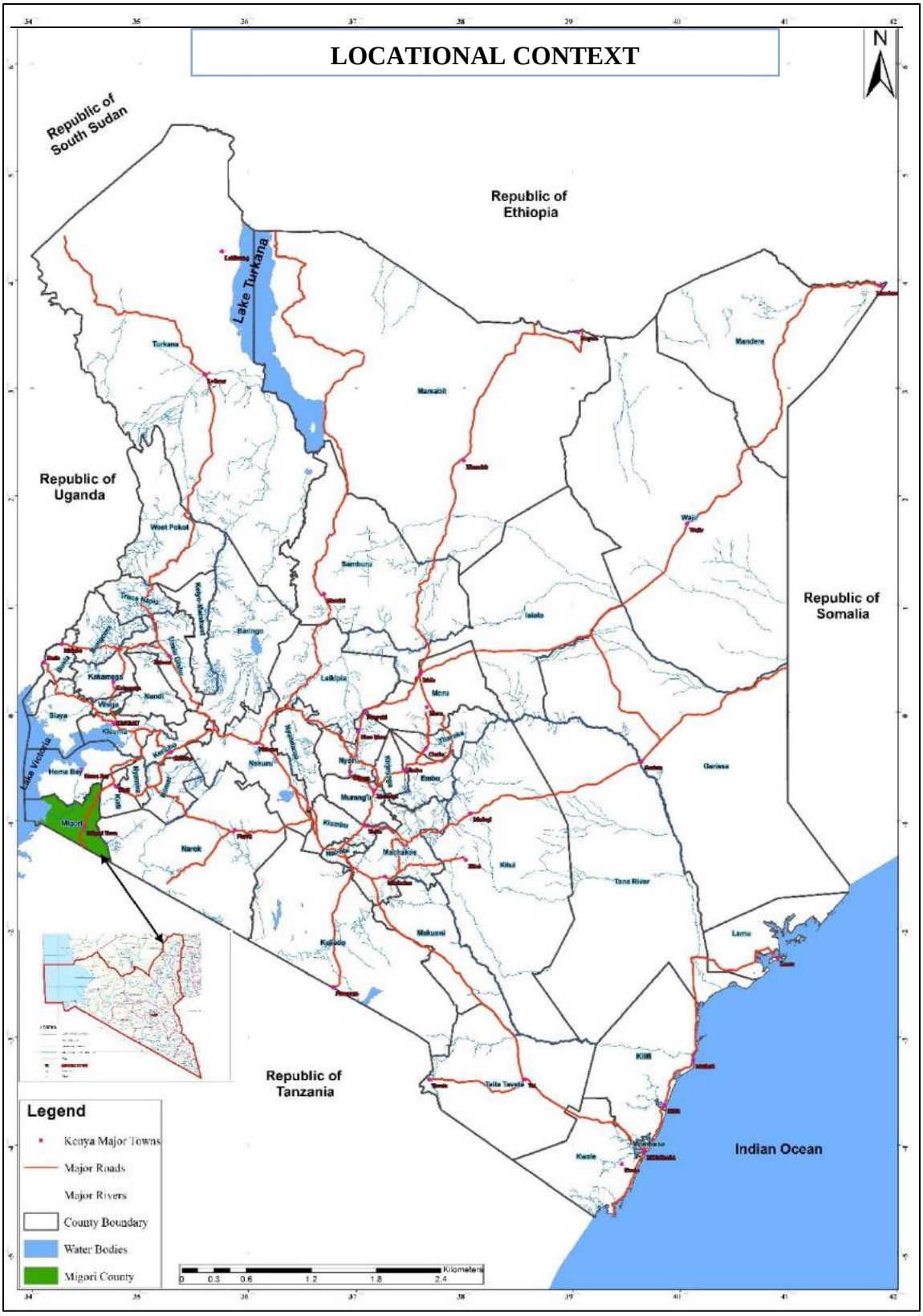
The Kenya Vision 2030 is the overarching development blueprint that seeks to transform the country into "a newly industrializing, middle-income country providing a high quality of life to all its citizens in a clean and secure environment." The policy document establishes three development pillars, which include the economic, social and political pillars. It outlines various flagship projects in every pillar that will improve the quality of life of citizens. The analysis of the County's development situation is cognisant of the aspirations, foundations, and principles outlined in the Vision 2030, such as sustainable economic growth, Land-based, people-centred, result-oriented, and accountable democratic political system.

ii. National Spatial Plan (2015-2045)

The National Spatial Plan is a territorial plan covering the entire country and highlights sectoral policies to achieve Kenya's Vision 2030. The preparation of Migori County Spatial Plan considered sectoral policies outlined in the National Spatial Plan. These informed the proposed projects accordingly.

1.7.2 Locational Context

Migori County, one of the forty-seven (47) counties in Kenya, is situated at the South Western border of the country. It lies between latitudes 1º 24' S - 1º 40' S and longitudes 33°55' E - 34º 50'E, approximately 265 Km North West of the capital Nairobi City and 115 Km South West of Kisumu City. The county is one of the six Counties in the Nyanza region of western Kenya, forming the Lake Basin Economic Block. It covers a total land surface area of covers a total area of 2,596.5 km^2 including approximately 478 km^2 of water surface (Lake Victoria). Migori County borders Homa Bay County to the North, Kisii to the North East, Narok to the South East, Lake Victoria and Uganda to the West, and Republic of Tanzania to the South. The county headquarters is Migori Municipality.



Map 1: County Locational Context

Source: Consultant's Edits, 2020

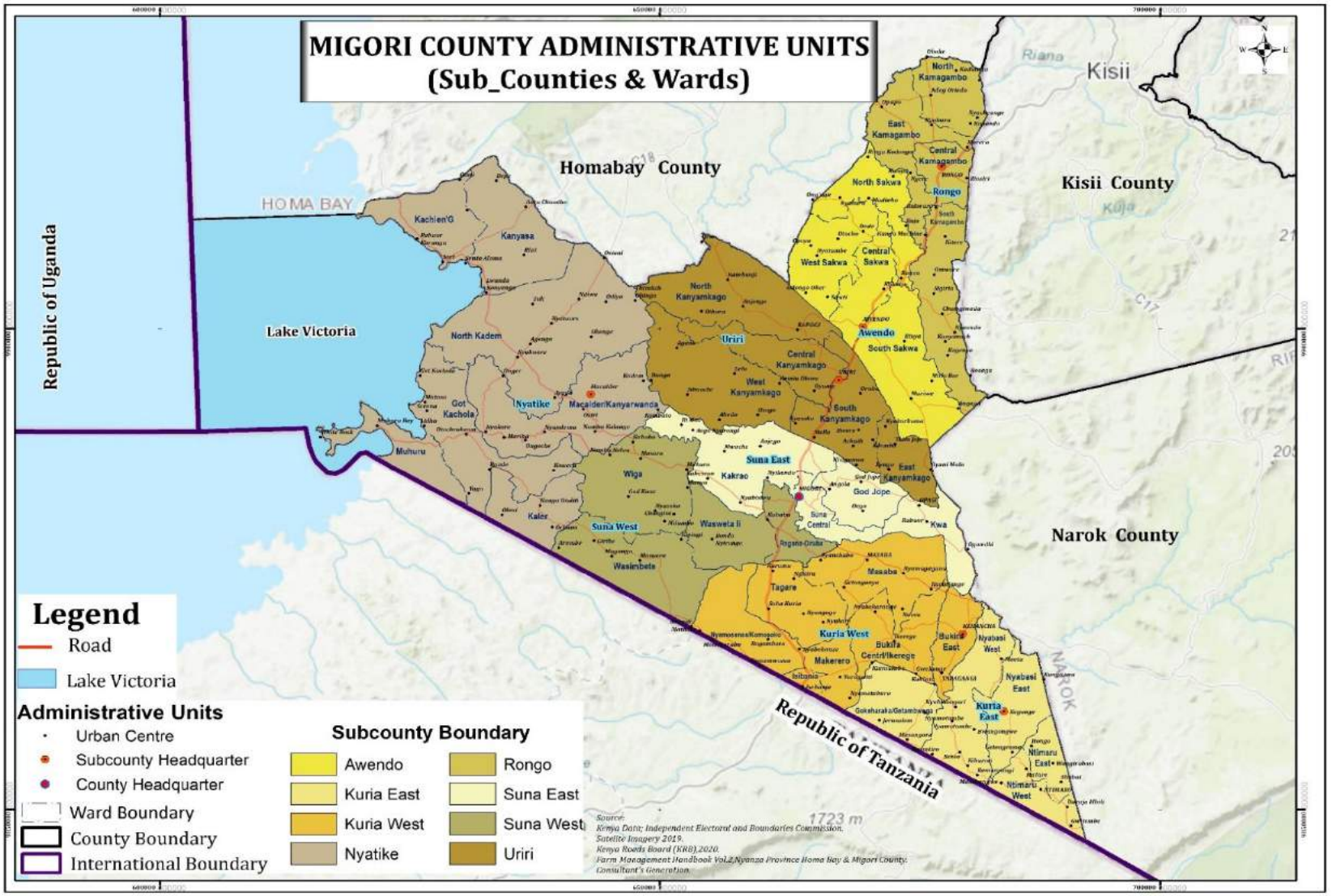
1.7.3 Administrative Context

Administratively, Migori County consists of eight (8) sub-counties namely; Rongo, Awendo, Uriri, Suna East, Suna West, Kuria East, Kuria West, and Nyatike sub counties. These are further subdivided into forty (40) wards as shown in the table below;

Table 1: Migori County Administrative Units

SUB- COUNTY	APPROX. AREA (KM^2)	WARDS
Rongo	213	North Kamagambo, South Kamagambo, Central Kamagambo, East Kamagambo
Awendo	255	North Sakwa, South Sakwa, West Sakwa, Central Sakwa
Uriri	392	West Kanyamkago, South Kanyamkago, East Kanyamkago, North Kanyamkago, Central Kanyamkago
Suna East	205	God Jope, Kwa, Suna Central, Kakrao
Suna West	288	Wiga, Wasimbete, Wasweta II, Ragana - Oruba
Kuria East	188	Gokeharaka/Getambwega, Nyabasi East, Ntimaru West, Nyabasi West, Ntimaru East
Kuria West	396	Bukira East, Bukira Central /Ikerege, Nyamosense/Getambwega, Isebania, Makerero, Masaba, Tagare
Nyatike	677	Kachieng, Macalder/Kanyarwanda, Muhuru, Kanyasa, Kaler, North Kadem, Got Kachola

Source: KNBS, 2019



Map 2: County Administrative Units

Source: Consultant's Edits, 2020

CHAPTER TWO : SITUATIONAL ANALYSIS

2.1 Overview

Phase one of the project involved undertaking a study to establish the existing development situation within the county. This would then provide the basis upon which phase II of the project would be pegged. As a result, the consultant produced a Situational Analysis Report as key deliverable and a precursor to the plan making exercise undertaken as part of phase II of the project. The Situational Analysis Report identified challenges hindering development. Additionally, the analysis of the existing situation led to establishment of development potential and opportunities to be leveraged upon, in order to ameliorate the emerging development constraints within Migori County.

The analysis was undertaken with the primary objectives of establishing the level of utilization of the identified resources, assessing gaps in infrastructural development and establishing the impact of development while identifying areas where strategic interventions were required. The study, undertaken along nine (9) thematic areas, using multiple techniques (including desktop study, general observation, interviews and discussions, measurements, and mapping of phenomena) yielded a report as follows;

2.2 Natural Resource Base

Natural resources are essential features due to their roles in socio-economic development. Natural resources are a livelihood source for communities by providing vital economic sectors such as agriculture, forestry, tourism, industrialization, and water. Natural resources exist in different categories, including renewable natural resources (living species and ecosystems); non-renewable natural resources (subsoil assets such as minerals); replenish-able natural capital (underground water, fertile soils, etc.); and cultivated natural capital (crops, forest plantations, etc.). The section takes stock of the existing natural resources in Migori County in terms of their size, location, distribution and potential uses that would be beneficial to human development.

2.2.1 Climate

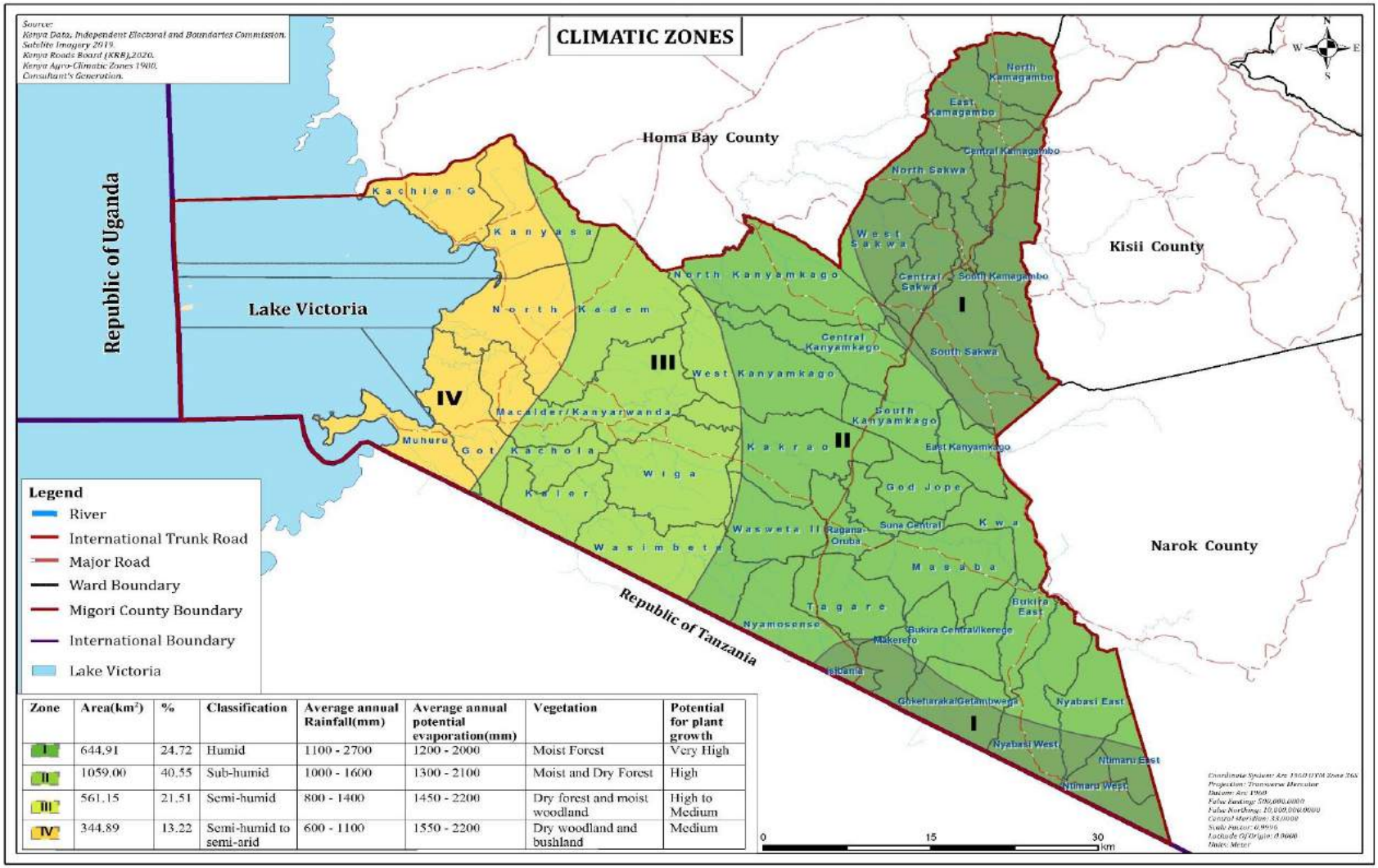
The County experiences an inland equatorial climate modified by the effects of altitude, relief, and the influence of Lake Victoria's extensive body of water. The County has four different climatic zones, which are classified as humid to sub-humid to semi-arid. These zones have been defined based on a relationship between mean annual precipitation and temperature.

The County's largest zone is zone II (Sub-humid), which traverses Uriri, Suna East, Kuria West and Kuria East Sub-counties. The climatic zones influence the distribution of vegetation as well as agricultural activities.

Table 2: County Climatic Zones as influenced by Humidity

Zone	**Sub-County**	**Area (km^2)**	**Percentage (%)**	**Classification**	**Average annual Rainfall (mm)**	**Average annual potential evaporation (mm)**	**Vegetation**	**Potential for plant growth**
I	Rongo, Awendo and lower parts of Kuria West and Kuria East	644.9	24.72	Humid	1100 - 2700	1200 - 2000	Moist Forest	Very High
II	Uriri, Suna East, parts of Suna West, Kuria West and Kuria East	1059.0	40.55	Sub-humid	1000 - 1600	1300 - 2100	Moist and Dry Forest	High
III	West of Suna West and Eastern Parts of Nyatike	561.2	21.51	Semi-humid	800 - 1400	1450 - 2200	Dry forest and moist woodland	High to Medium
IV	Western parts of Nyatike towards the Lake	344.9	13.22	Semi-humid to semi-arid	600 - 1100	1550 - 2200	Dry woodland and bush land	Medium

Source: Farm Management Handbook-Migori County, 2010



Zone	Area(km²)	%	Classification	Average annual Rainfall(mm)	Average annual potential evaporation(mm)	Vegetation	Potential for plant growth
I	644.91	24.72	Humid	1100 - 2700	1200 - 2000	Moist Forest	Very High
II	1059.00	40.55	Sub-humid	1000 - 1600	1300 - 2100	Moist and Dry Forest	High
III	561.15	21.51	Semi-humid	800 - 1400	1450 - 2200	Dry forest and moist woodland	High to Medium
IV	344.89	13.22	Semi-humid to semi-arid	600 - 1100	1550 - 2200	Dry woodland and bushland	Medium

Map 4: Climatic Zones

Source: Consultant's Edits, 2021

Rainfall

Annual rainfall averages from 975mm to 1,650 mm, with long rains experienced between March and May while the short rains occur between September and November. Dry seasons are experienced in two phases annually, with the first phase occurring from December to February, while the second phase is usually experienced between June and September.

The County's largest zone is zone II (sub-humid) receives an average annual rainfall of 1000-1600mm. The dry semi-arid areas of Nyatike are caused by low rainfall in the lower basin and low vegetation cover. These climatic conditions influence plant species' geographic distribution, both natural crops and crops that are sustainable with irrigation.

As shown in map 3, the spatial distribution of rainfall is highly variable. Spatially, annual rainfall varies less toward the east (upstream) and highly variable towards the West (downstream). Areas of Rongo, Awendo, and Isebania receive the highest amount of rainfall (1440-1650mm) while the lakeshore sub-county of Nyatike (divisions of Nyatike, Muhuru and Sori together with parts of Kegonga experience unreliable and poorly distributed rainfall. In this regard, the upstream and middle parts of the County (Agro-Climatic Zones I and II) get a higher amount of rain than the Western part of the County (Agro-climatic zones III and IV).

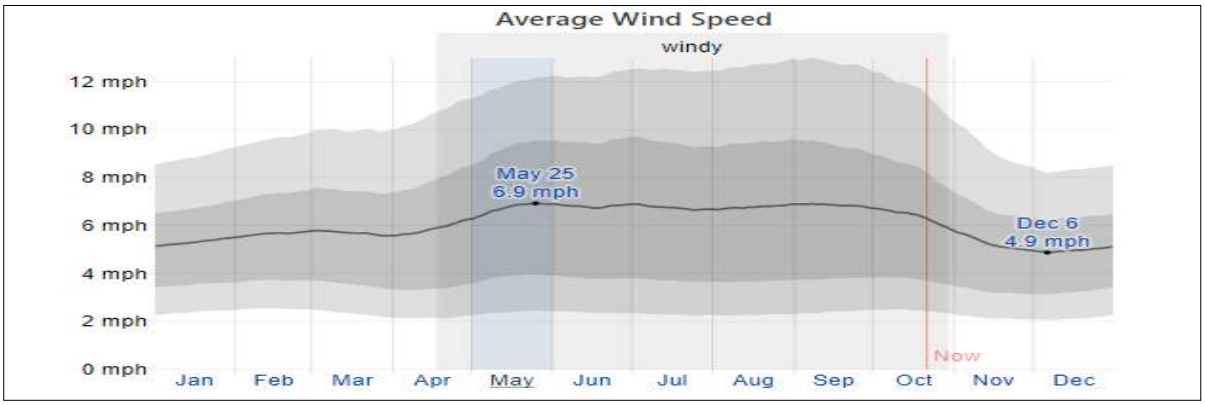
Temperature

The county temperature levels range from fairly warm-to-warm. The former is towards the East and Middle parts of the County while the latter is in the County's Western parts towards the lake. Annual temperatures vary between a mean minimum of 240^{o}C and a maximum of 310^{o}C, with high humidity and potential evaporation of 1200mm to 2200 mm per year. The rain stressed areas are characterized by higher temperatures and greater evaporative demand, i.e., the average annual potential evaporation (mm). In this regard, the Agro-Climatic Zones III and IV have greater evaporative demand than zones I and II. The low vegetation cover in the two zones has also contributed to this high evaporative demand. Map 4 shows the average daily temperatures of the County.

Wind

The wide-area hourly average wind vector (speed and direction) at 10 meters above the ground is approximately 9.5 Kilometres per hour. The wind speed is higher in the period between the months of April to October. Wind speed in the County is generally affected by topography and other factors in the County.

Figure 2: Annual average wind speed

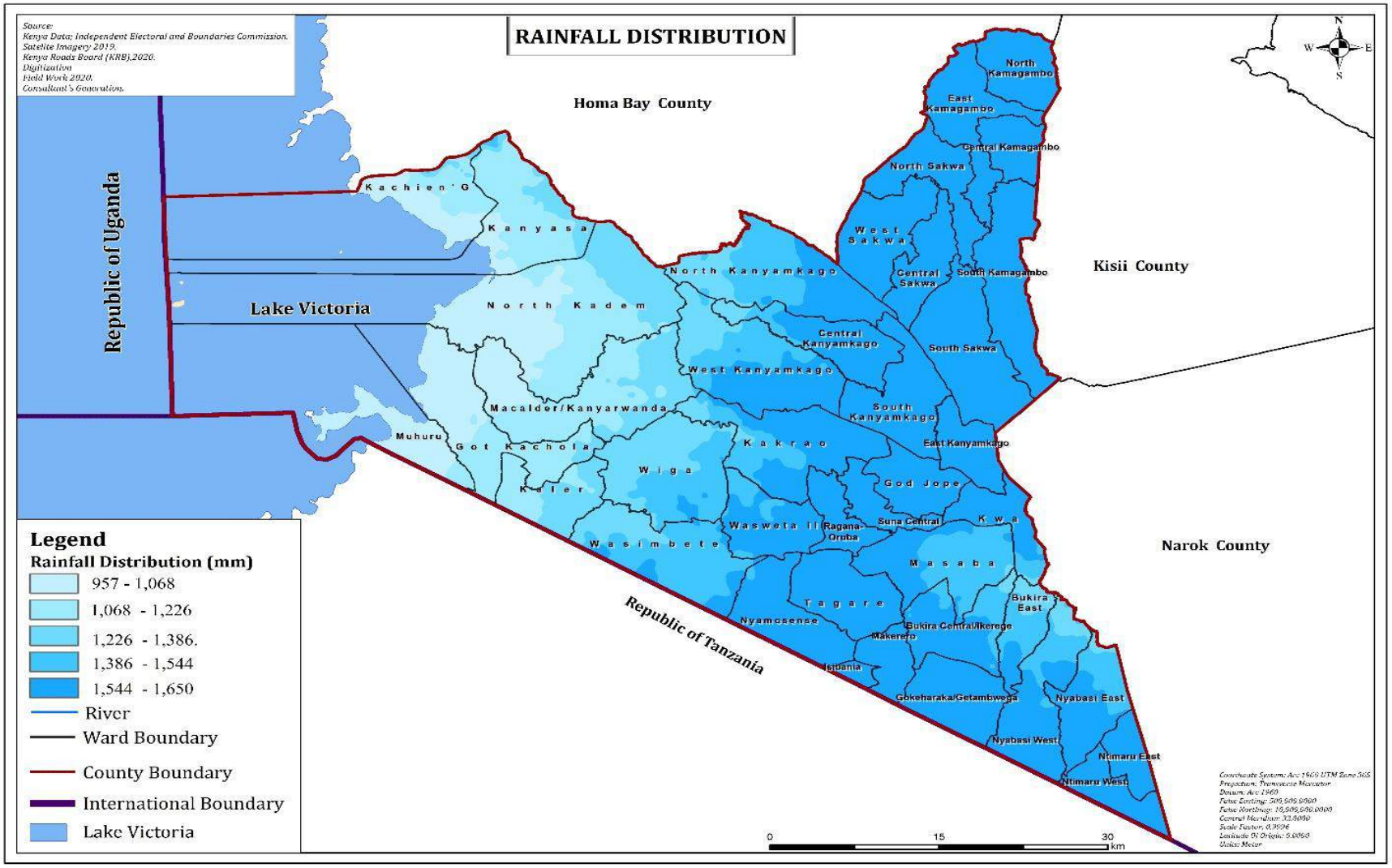


Source: https://weatherspark.com/y/98097/Average-Weather-in-Migori-Kenya-Year-Round

The wind potential for energy generation in the County is marginal. According to the wind energy generation standards, the cut-in speed for small turbines to start generating energy is 8 kph (2 m/s) while maximum power generation speed ranges 36 to 54 Km/h (10-15 m/s). The findings on wind speed and potential imply that the wind potential to generate energy in the County can only support small household-level energy generation. The spatial distribution indicates the potential for wind energy generation possibilities.

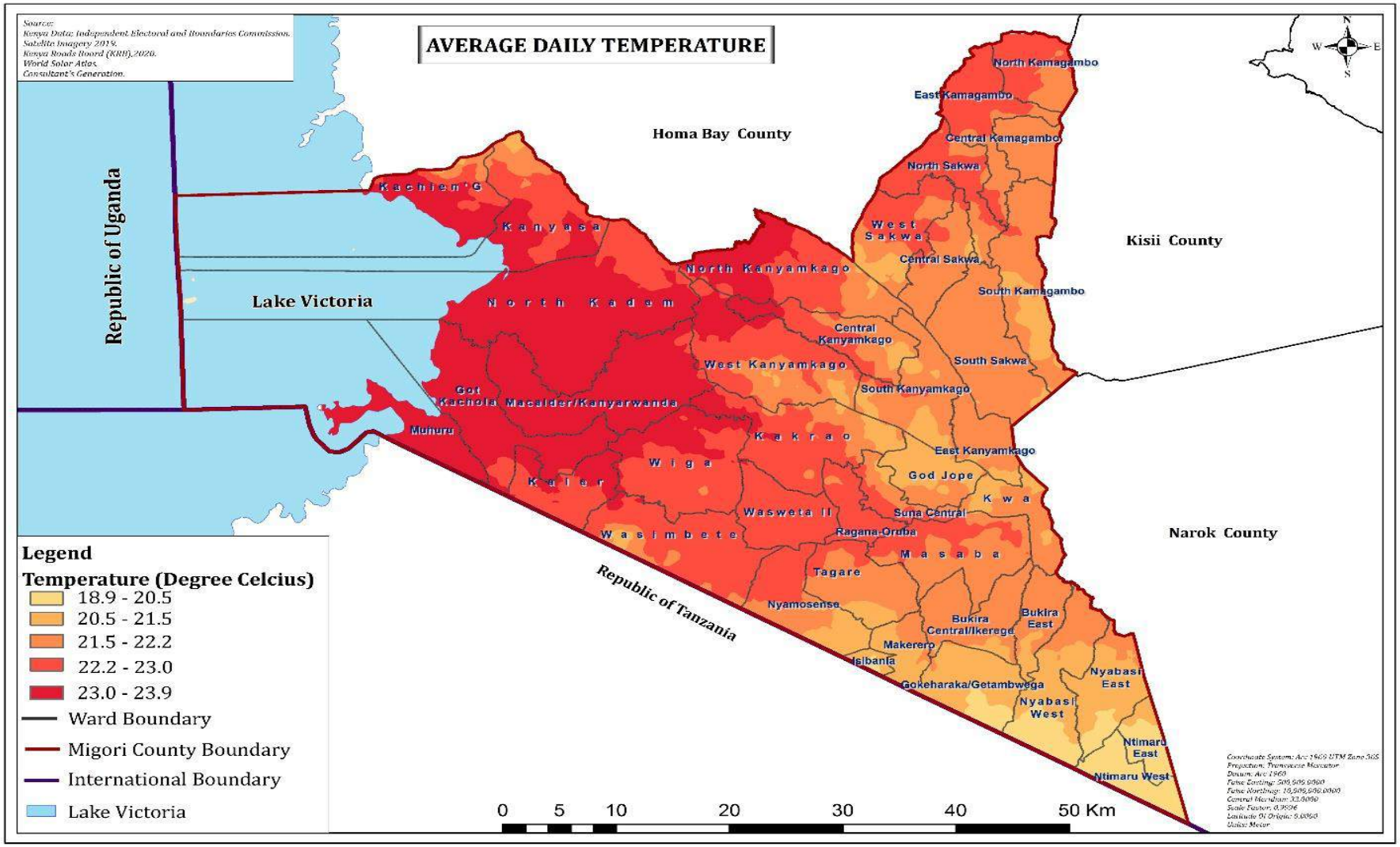
Sunshine

Migori County enjoys twelve hours of sunlight throughout the year. The transformation of sunshine into economic benefits is solar energy. The solar irradiation ranges from 5.2-6.2 Kwh/m^2 with photovoltaic power potential ranging from 4.6 to 5 Kwh/Kwp (*source: https://solargis.com/maps-and-gis-data/download/kenya*). Given the varied distribution of the sites with the highest solar potential, the County has the potential of tapping at least 1826 KW/year if the solar potential is holistically transformed into energy. This resource potential implies that tremendous opportunities exist in energy generation in the County. The map below shows the distribution of solar radiation in the County.



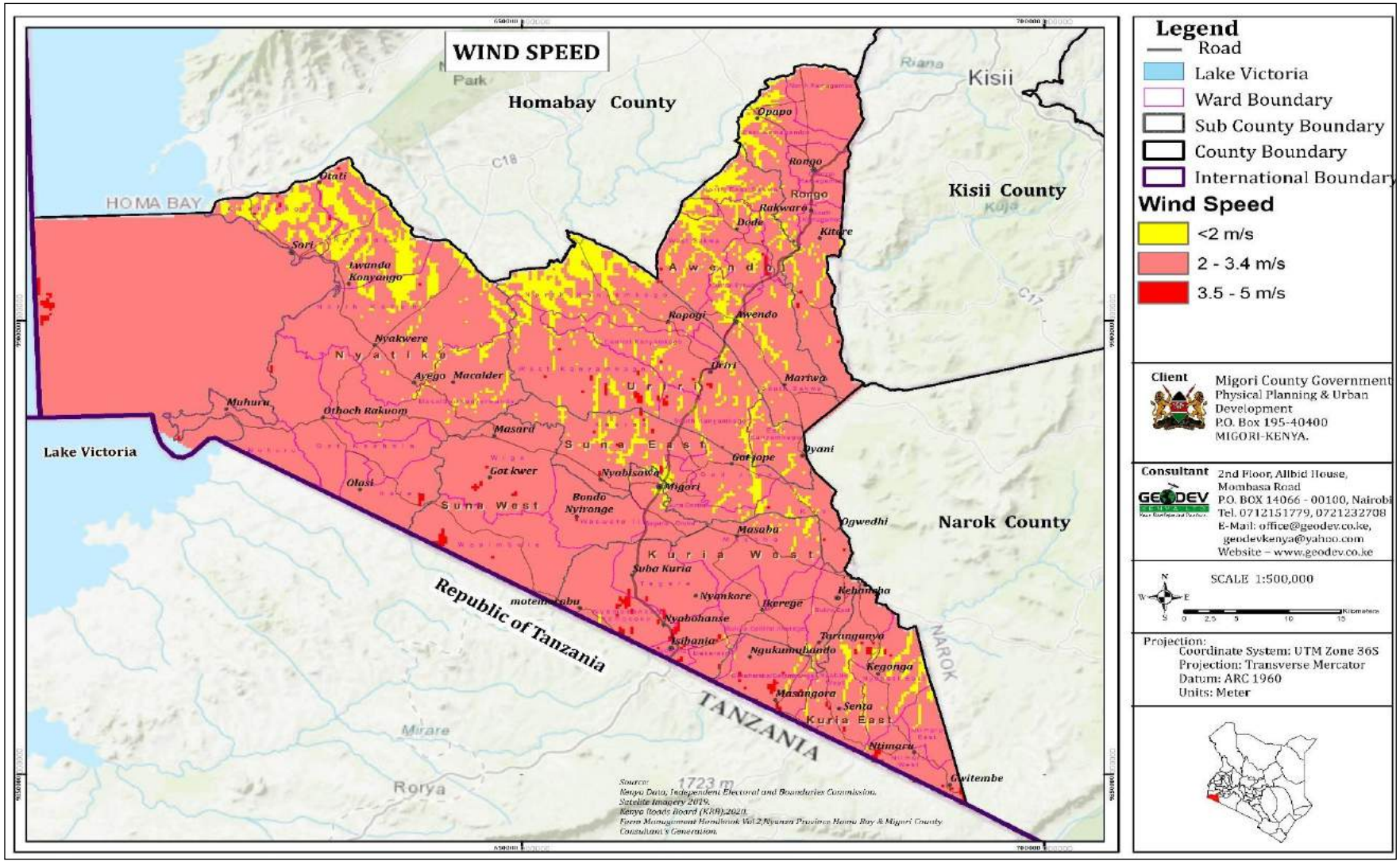
Map 3: Rainfall Distribution

Source: Consultant's Edits, 2021



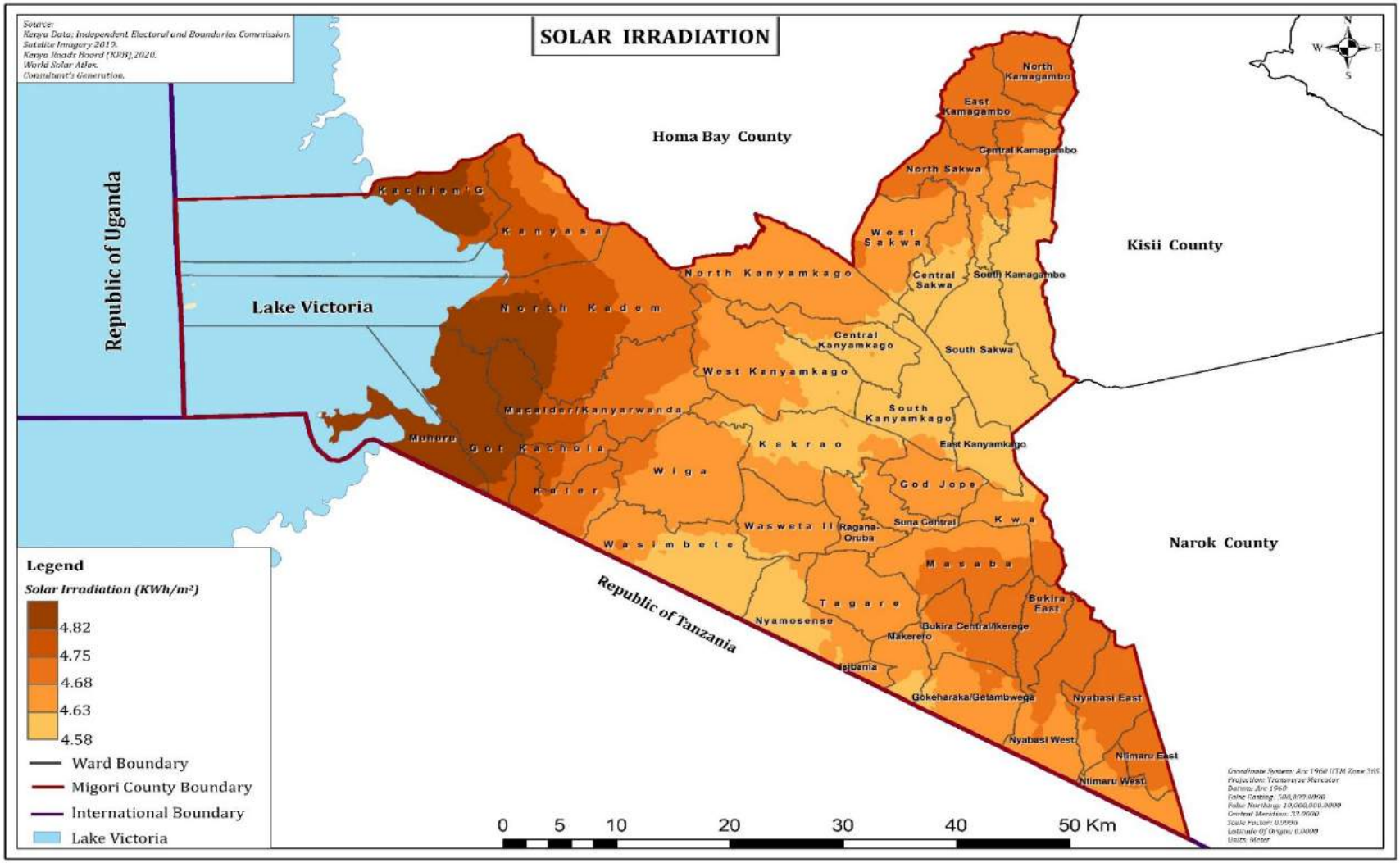
Map 4: Temperature Distribution

Source: Consultant's Edits, 2021



Map 5: Distribution of Wind Potential

Source: Consultant's Edits, 2021



Map 6: Solar Radiation

Source: Consultant's Edits, 2021

Climate Change

The main causes of climate change in Migori County include natural and persistent anthropogenic factors. The identifiable factors that contribute to the global climate change in the County include deforestation, air pollution from resulting from combustion activities that include burning of wastes in an uncontrolled and regulated manner, fuel engines, cooking appliances among other factors.

Impacts of Climate Change

The County is currently experiencing the impacts of climate change evidenced by the rising water levels of Lake Victoria displacing the residents living in the low-lying areas. Additionally, there are changes in the rainfall patterns that are attributed to climate change. Over the last two years (2018 and 2019), there has been prolonged rainy seasons in the County altering the farming patterns. There are also increased infestation of pest and diseases in the County a phenomenon attributed to the changes in climate.

Based on the observable change in the rainfall patterns, it is also anticipated that there are chances of the contrast happening. The County could also face drought and anger as a result of climate change.

The foregoing discussion establishes a justification on the need to evaluate possible adaptation and mitigation measures that would make the County resilient. Some of these measures could include demarcation of low-lying areas that are likely to face flooding in the future, so that the people can be salvaged from the impending risks.

Implication of Climate on Development in the County

The emerging zonation of the County as contributed to by climate has got various implications on the development. Nyatike region is presented as the Semi-humid to semi-arid region with high rainfall deficiency coupled with higher temperatures and the highest evaporation rates in the County. This condition presents a limitation in crop production as compared to the humid regions that covers Suna East, Kuria East and West, Rongo, Awendo, Parts of Uriri and Suna West Sub-Counties. Inherently, the region only remains to highly support animal husbandry in a relatively economical manner that crop cultivation. The Semi-humid to semi-arid area (Nyatike) require interventions in irrigation that any other region in the County to effectively and efficiently support crop production. Additionally, this area can only develop through agricultural policies that promote crops that do well in regions with high evaporation rate and are drought resistant. Similarly, the area has a comparative advantage in beef cattle like Sahiwal, goats (*Capra hircus Lineaus*), chicken/poultry. As compared the extreme contrast

regions that are humid. Consequently, the policy on the minimum land holding sizes has to be cognisant of the maximum carrying capacity of the semi humid to arid regions of Nyatike which require larger tracts of land. Finally, a lot more water conservation initiatives are required in this zones that any other zone in the County.

The humid regions have higher potential in supporting crop cultivation with a comparative advantage on dairy production. Their high crop cultivation potential makes it permissible to have a relatively lower minimal land holding size with higher land carrying capacity.

The climatic zonation of the County has also influenced the settlement patterns that has resulted in higher settlement density in Suna East, Kuria East and West, Rongo, Awendo, Parts of Uriri and Suna West Sub-Counties as compared to the semi-humid to semi-arid zones that constitute parts of Uriri, Suna West, and Nyatike. Consequently, higher densities in population and human settlements can be tolerated in the Humid to semi-humid regions due to their agricultural support capabilities.

Furthermore, the humid and the Sub-humid zones have the potential for being the food basket of the County due to the relatively cheaper cost of production in agriculture as compared to the semi-humid to the semi-arid zones (parts of Uriri, Suna West, and Nyatike) of the County. However, to achieve balanced development and equity, a lot of resources can have to be directed to the semi-humid to sub-humid to support strategies in agriculture such as irrigation which will make the county enjoy balanced regional growth.

Vegetation Cover

Forests, cropland, riverine vegetation, shrub land and grassland characterize the vegetation cover of the County. The County's Forest cover vegetation comprises indigenous forests, plantations established through planting seedlings, and woodlands characterized by trees. According to the County CIDP 2018-2022, the County has a potential forest conservation area of approximately 3641.52 Ha, out of which 1049.13 Ha is gazetted, and 2592.39 Ha non-gazetted. Also, 177 Ha is under natural forest and 462 Ha under forestry plantation. The major forests in the County include Nyasoko, Sagegi, Magina, Giribe, Otacho, Nyamarere, Rabuor, Ranen, Kwa, Aroso, Ombo, Omange, Got Kogalo, Nyaitara, Getambwega, Tarakwiti, Nyandiri and Makangwa

Shrub land area is characterized by high percentages of thickets of shrubs and young trees mixed with scattered grasses, wildflowers and other herbaceous vegetation. This vegetation type is mainly found in Nyatike Sub- County with varied patches in Kuria West.

Grassland vegetation is characterized by large open areas of grasses and is dominated by a nearly continuous cover of grasses. This vegetation type is mainly found in the Macalder and Sori areas of Nyatike Sub- County.

2.2.2 Physical Characteristics

Concerned with the earth's patterns and processes, physiography looks into the forces that produce and change rocks, oceans, weather, and flora and fauna. This section describes the County's physical characteristics. The elements examined and analyzed include topography, landforms, geology, soils, and climatic conditions.

Topography and Landforms

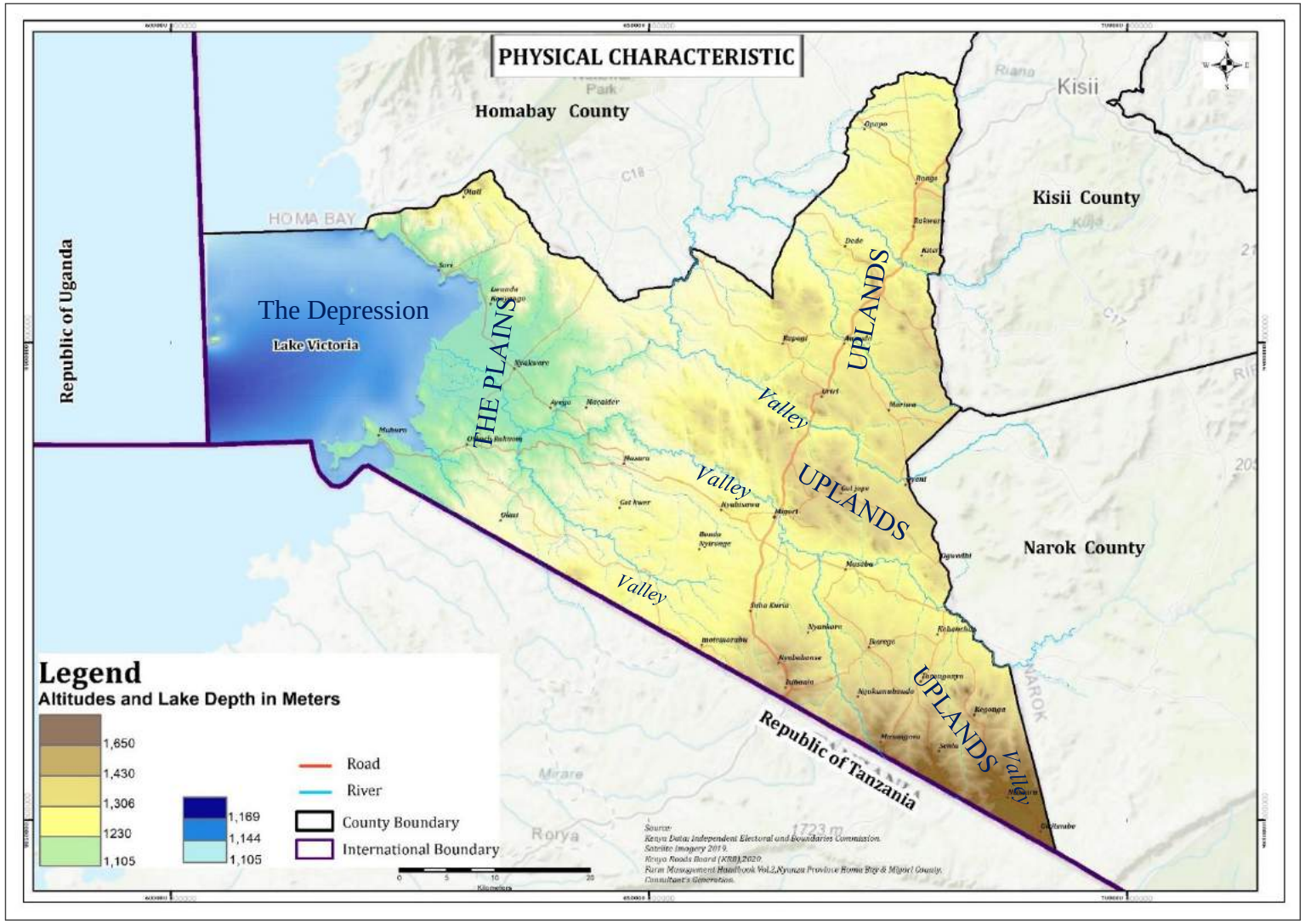
Topography is concerned with the shapes and features of the land's surface. The topography of the County variedly ranges from high altitude through mid-altitude to low altitudes as defined by landforms. The County's altitude ranges between 1140m above sea level at the shores of Lake Victoria in Nyatike Sub-county to 1900m above sea level in Rongo and Gwitembe area in Kuria East Sub-County. Undulating hills cover most of the County's landscape with few stretches of flatlands. Significant landforms that define the topography of the County include the hills - God Sibwoche (1475m) in Uriri sub-county, God Kwer (1420m), Mukuro (1454m) and Nyabisawa (1489m) in Suna West Sub-county, God Kwach (1340m) in Nyatike Sub-county, Renjoka (1592m) in Kuria West Sub-county, and Maeta (1733m) in Kuria East Sub-county- and low lands abutting Lake Victoria in Nyatike Sub-County. The County's general topography is illustrated in maps 2-6 and 2-7, illustrating the highest points and the lowest points in elevation and slopes. Migori County generally slopes from East to West, as evidenced by the change in elevation from Lake Victoria Region to Kisii Highlands and Narok.

The topography presents opportunities for development decisions on agriculture and human settlement decisions based on the possibilities presented by support strategies in irrigation, utility services and infrastructure development. Most of the County's (70%) landform is characterized by uplands (Gently undulating to undulating). The range of degree of slope for this landform is 2% - 8%. This landform is spatially distributed in the whole County apart from a few sections in Nyatike, Suna West, and Rongo Sub Counties. The description of the landforms is as presented in table 3.

Table 3: Migori County Landforms

Landform	Characteristics	Slope Range	Area (Km^2)	Proportion
Uplands	Gently undulating to steep and hilly areas Hilly to steep	6% and above	2,212.15	74.18%
Plains	Almost flat to permanently waterlogged Non-dissected erosional plains, flat to gently undulating and seasonally flooded	0 - 5%	207.22	6.95%
Valleys	V or U-shaped valleys	16 %	70.72	2.37%
Ridge	Very gently undulating	2 - 5%	10.12	0.34%
Depressions	Water bodies (Lake and Swamps)	0-1%	482.07	16.16%

Consultant's Extract, 2020



Map 7: Physical Characteristics

Source: Consultant's Edits, 2021

Hills

Hills and hilltops are natural assets that are ecologically significant in many ways. The hills are home to plants and animal species. It is not only the diversity of natural mountain species that is of value to humankind, both intrinsically and as a source of wild food. The hills are forested and provide forest products. Hills are also significant areas for important installation locations such as security installation, communication facilities, and aesthetics in the County. However, the hills face challenges such as; deforestation to pave the way for agricultural activities, which has led to soil erosion and degradation of the environment, and loss of aesthetics.

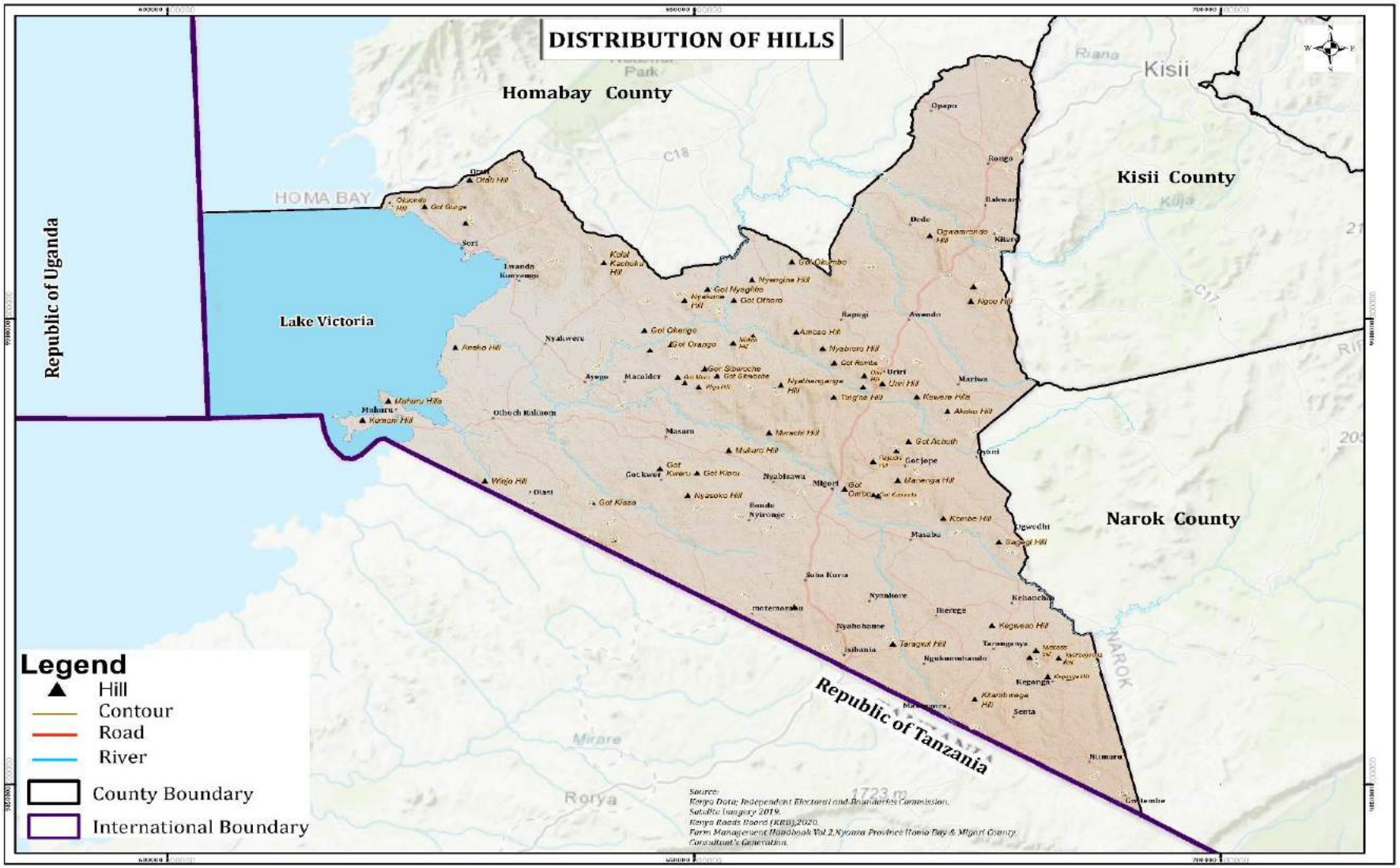
The major hills in the County are as presented in table 4 and map 8.

Table 4: Hills in Migori County

Hill	**Area (Km2)**	**Location**	**Current utilization**	**Remarks**
Nyakune	3.39	Uriri sub-county	Forestry	The vegetation cover is decreasing due to deforestation
Ogengo		Uriri sub-county	Forestry	The vegetation cover is reducing.
God Sibwoche	0.6	Uriri sub-county		
God Kwer	0.40	Suna West Sub county	Forested shrine	Protected by the local community.
Mukuro	0.25	Suna West Sub county	Forestry	Settlements are slowly replacing the forest cover
Nyabisawa		Suna West Sub county		
God Kwach	0.84	Nyatike Sub-county		
Nyatike	16.18	Nyatike Sub-county	Forestry	Degraded by mining activities.
Nyangwana		Nyatike Sub-county	Forestry	-
Renjoka		Kuria West Sub-county	-	-
Maeta	0.74	Kuria East Sub-county		
Magina	2.46	Suna East Sub-county	Forestry	Deforestation is taking place at the foot of the hill.
Aroso	0.41	Suna East Sub-county	Forestry	Deforestation at the foot. The hill is not detached.

Ombo	0.09	Suna East Sub-county	Forestry	Slowly being replaced by development
Chinato	-	Kuria East Sub-county	Forestry and Local tourism	Undefined edge of the hill.

Source: Field Survey



Map 8: Distribution of Hills in the County

Source: Consultant's Edits, 2021

Beaches

Lake Victoria has several beaches along the 42-kilometre shoreline that offers landing sites to fishers and travellers. The beaches in the County extend from Nyamanga to Muhuru Bay. The beaches in Muhuru Bay offers an ambiance environment characterized by white sands that present touristic opportunities.

Islands

There exist four islands in Lake Victoria's open waters in Migori County to the West bordering the Republic of Uganda as presented in table 5.

Table 5: Islands in Migori County

Island	Size (Km2)	Location	Physical Condition
Migingo	0.01	North Kadem	The island is used for settlement and a landing site for fishers from Kenya, Uganda, and Tanzania. The area has lost its biodiversity due to invasion by human activities.
Usingo	0.08	North Kadem	The island has limited settlement activities to the West.
Pyramid	0.52	North Kadem	The island has limited settlement activities to the West
Mbuiya	0.05	Kachieng'	The island is very steep and unsettled. It is still in its natural state.

Source: Satellite Image, 2020

Impact of the Physical Characteristics on Development

The physical characteristics of the County presents varied landscapes that could influence development on varied proportions. The plains, though exposed to the risk of flooding, there are adaptation mechanisms which include agricultural practices that would add value to social and economic livability index. The plains offer opportunity for rice farming, and seasonal grazing activities including forage production. However, these areas are generally unsuitable for settlement activities both rural and urban.

Hills, minor scrapes and ridges, though are hindrance to horizontal utility development, offer opportunity for gravity water supply, installation of communication network booster and gravity water supply and distribution reservoirs.

On nature perspective, the hill, minor scarps, and ridges offer opportunity for forestry activities which in return increase the community's access to ecosystem services offered in providing recreational and tourism opportunities, food and herbal medicine supply and food fuel.

The depressions and the valleys in the County host water bodies in form of the lake, rivers and swamps which not only provide water to the resident but also host aquatic flora and fauna. The lake, swamps and rivers offer opportunity for fishing and fish farming activities in the county. Migori County can develop its inland water economy from fisheries and tourism activities from these physical characteristics.

The uplands not only offer excellent grounds for human settlement but also provide fertile soils that are further accentuated with good climatic condition. These areas offer opportunity for intensive rain fed agricultural practices which can be further modernized to increase production in the county.

Geology

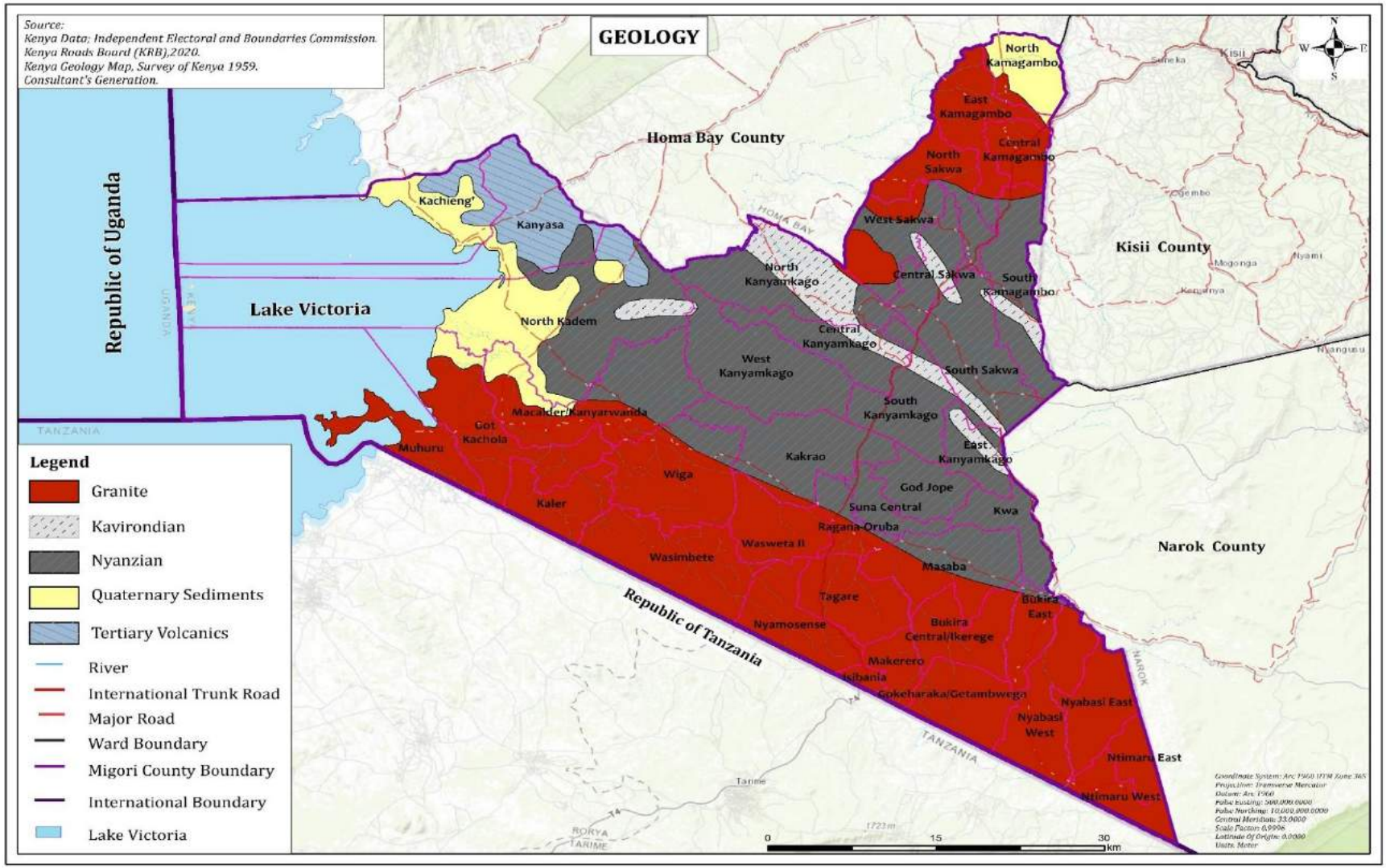
The County's topography is underlain by 'relatively acid' parent rock and Granite covering most parts of Kuria East, Kuria West, Nyatike, some parts of Rongo and Migori Sub-counties, with the rest being covered by the Nyanzanian and Bukoban rocks. Undifferentiated/various Rocks (Petroplinthlite) consists of the gold belt that traverses the County from East (Kehancha) to the West (Nyatike). These rocks have unquantified economic value that forms the industrial base of the County. Furthermore, the rocks are responsible for the soil formation and fertility that influences crop distribution and productivity in the County. Additionally, the geology of the County is critical in informing urbanization and agricultural development.

Table 6 and map 9 show the different rock types in the county.

Table 6: Type of Rock and the Coverage

Type of Rock	**Approximate Area (Km^2)**	**Percentage**
Acid Igneous Rocks (Synenites)	196.12	7.53
Basic Igneous Rocks (Basalts, nepheline phonolites)	157.46	6.05
Biotite Rocks (Hornblende Granites)	284.07	10.91
Granite and granodiorites Rocks	679.77	26.10
Intermediate igneous Rocks (Andesites, Phonolites)	528.35	20.29
Rocks with volcanic ash mixture	14.34	0.55
Fluvial Rocks (Sedimentary)	122.09	4.69
Undifferentiated/various Rocks (Petroplinthlite)	622.10	23.89

Source: Farm Management Handbook Migori County, 2010



Map 9: County Geology and Mineral Distribution

Source: Consultant's Edits, 2021

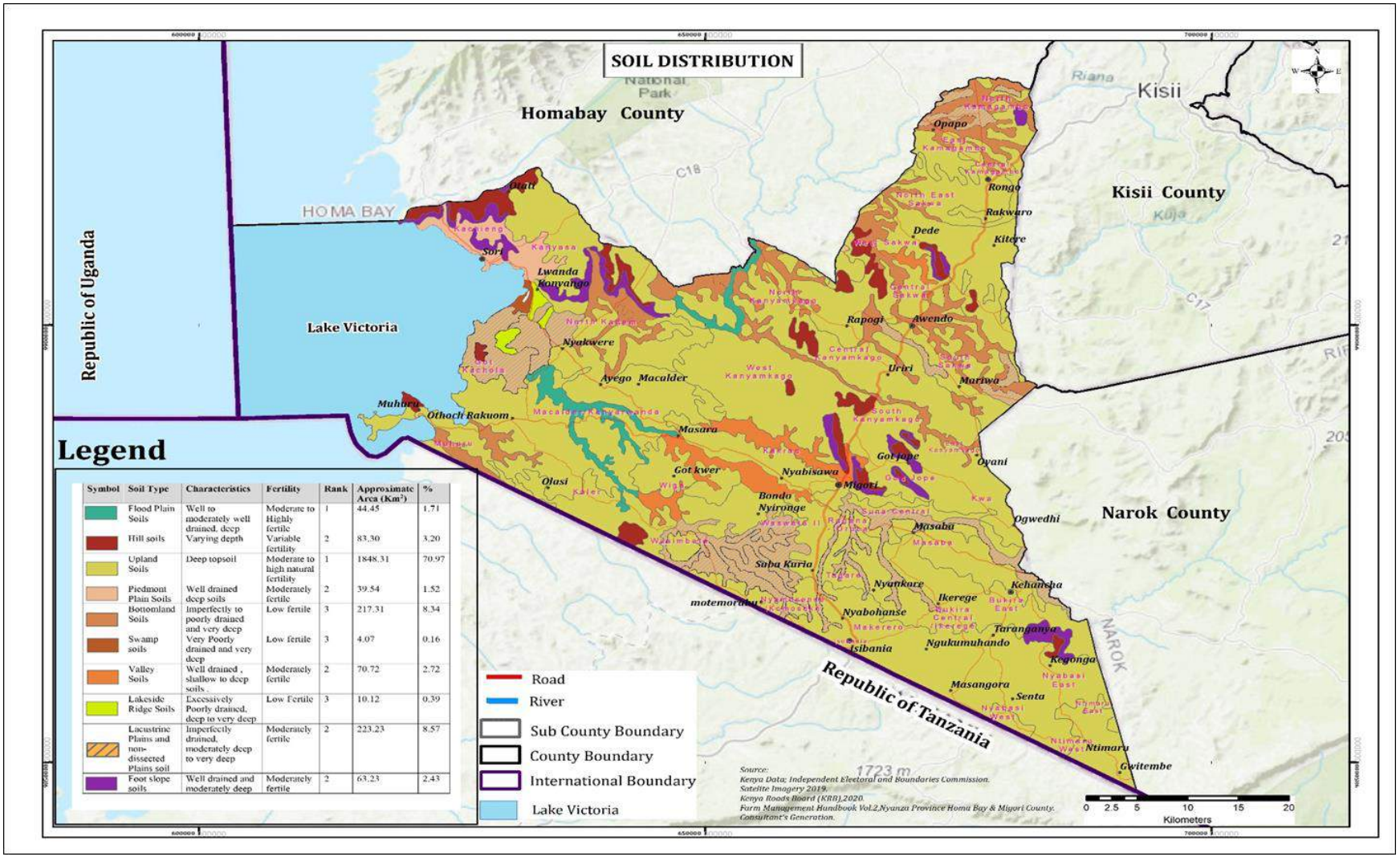
Implication of the Geology of the County on Development

The Nyanzian rocks, whose main mineral contents include gold, copper and zinc form a belt that runs from the western part to the South Eastern parts of the County. This implies that potential of mining activities from this mineral ore following this geological pattern. Significantly, the development on land along this belt is likely to be affected by the mineral extraction activities that are industrial in nature.

Soils

The predominant soil type in Migori County is Upland soils characterized by deep topsoil with moderate to high natural fertility levels. The soil type covers about 70.97% of the County's total and is found in gently undulating landforms. Soil types are highly varied in Nyatike Sub-county, ranging from upland soils to Lacustrine Plains and non-dissected plains soil imperfectly drained. The soil depth ranges from moderately deep to very deep. The least fertile soils are Bottomland Soils, Swamp soils, and Lakeside Ridge Soils. These soils are very deep and poorly drained.

The County has abundant clay soils deposits suitable for brick making and pottery (County CIDP, 2018-2022). They are in plenty, especially in parts of Uriri, Rongo, and Kuria constituencies. Rock deposits from which hard core and stone are extracted for the construction industry are also available in the upper regions of Nyatike and Uriri. The fertility of the soils, coupled with favourable climatic conditions, has also influenced the County's agricultural practices. Rongo, Awendo, parts of Uriri, Kuria East and West and Parts of Suna East and West have a relatively higher agricultural productivity than Nyatike, and parts of Suna West and Northern parts of Uriri. Map 10 shows the type, distribution, and characteristics of the soils in the county.



Symbol	Soil Type	Characteristics	Fertility	Rank	Approximate Area (Km²)	%
	Flood Plain Soils	Well to moderately well drained, deep	Moderate to Highly fertile	1	44.45	1.71
	Hill soils	Varying depth	Variable fertility	2	83.30	3.20
	Upland Soils	Deep topsoil	Moderate to high natural fertility	1	1848.31	70.97
	Piedmont Plain Soils	Well drained deep soils	Moderately fertile	2	39.54	1.52
	Bottomland Soils	Imperfectly to poorly drained and very deep	Low fertile	3	217.31	8.34
	Swamp soils	Very Poorly drained and very deep	Low fertile	3	4.07	0.16
	Valley Soils	Well drained , shallow to deep soils .	Moderately fertile	2	70.72	2.72
	Lakeside Ridge Soils	Excessively Poorly drained, deep to very deep	Low Fertile	3	10.12	0.39
	Lacustrine Plains and non-dissected Plains soil	Imperfectly drained, moderately deep to very deep	Moderately fertile	2	223.23	8.57
	Foot slope soils	Well drained and moderately deep	Moderately fertile	2	63.23	2.43

Map 10: County Soil Type, Characteristics and Distribution

Source: Consultant's Edits, 2021

Ranking of Soils in the County

The information on soils indicates a possibility of ranking of the soils based on fertility. The ranking criteria has therefore grouped the fertile and moderate to highly fertile soils, moderately fertile and finally the low fertile soils in the in a rank of one to three. The results are as presented in map 11.

Implication of the Distribution of soils on development

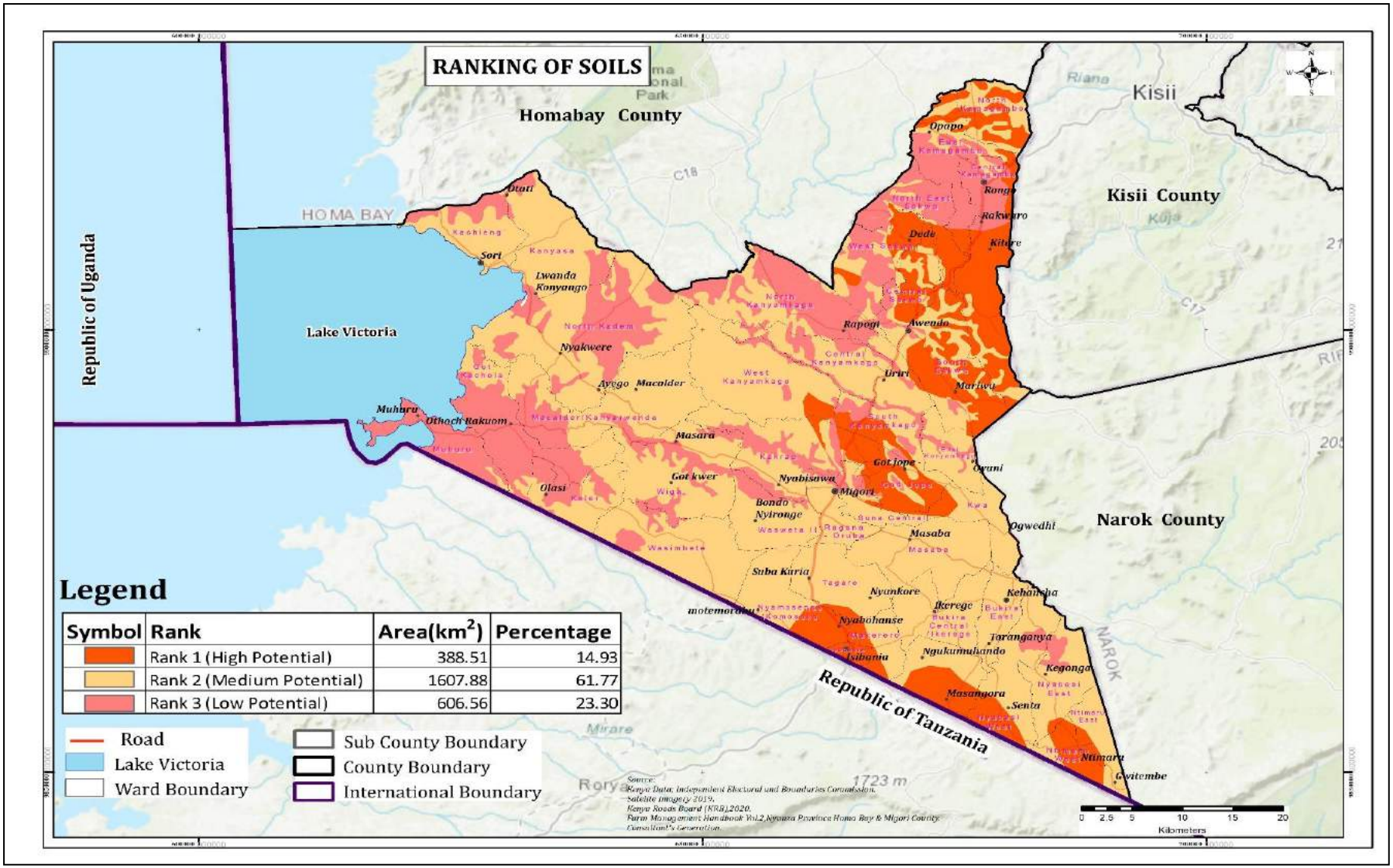
The level of soil fertility in the County is variedly distributed. A comparative assessment of the soil distribution and climate of the region indicate that the best soils are predominantly distributed in the areas that receive the highest rainfall in Kuria, Rongo, and parts of Uriri Sub-Counties. Similarly, the rank two soils in the County form the largest proportion of close to sixty two percent (62%). Some of these rank two soils could move to rank one is their level of water stress is reduced by interventions that would augment water supply.

The rank 1 soils are the best soils if put under agriculture-crop cultivation. The soils would be the best and prime agricultural land in the County that would require protection by policy. The second rank of soils would be the moderate soils that would also attract policy protection since they would move to rank one if other interventions are made such as irrigation. The third rank soils are the soils that would be released for other developments other than agriculture. However, the soils can also be availed for agriculture with high soil fertility interventions.

The distribution of soils to a certain extent, has influenced the pattern of human settlement in the County. It is not a coincident that the areas with rank one soils are the areas with high settlement density and concentrations. The agricultural productivity of these soils has influenced the existing settlement patterns. Nyatike, parts of Suna West and parts of Uriri Sub-Counties have a relatively lower settlement density. If all the factors are to be held constant, then the development policy of these areas under rank two and three would advocate for lower carrying capacity for both crops, animals and population as compared to the areas with the rank one soils.

How the soils are utilized in the County based on the distributions also has impact on the development of the County the soils that are over used without replenishing their fertility like in Kuria East and West, Suna East and West, Uriri and Rongo are experiencing diminishing fertility. The reduction in fertility consequently result in reduced production in crop cultivation. On the other hand, implication that arises with reduced fertility in the region is that the cost of production in the County is continuously rising since the farmers have to use fertilizer to get

good harvest. The situation then calls for farming practices that naturally restores and retains soil fertility. However, a redistribution in density to achieve balanced development and equity can be achieved with interventions such as irrigation, achieving fertility by introduction of rank one soils from elsewhere.



Map 11: Soil Ranking in the County

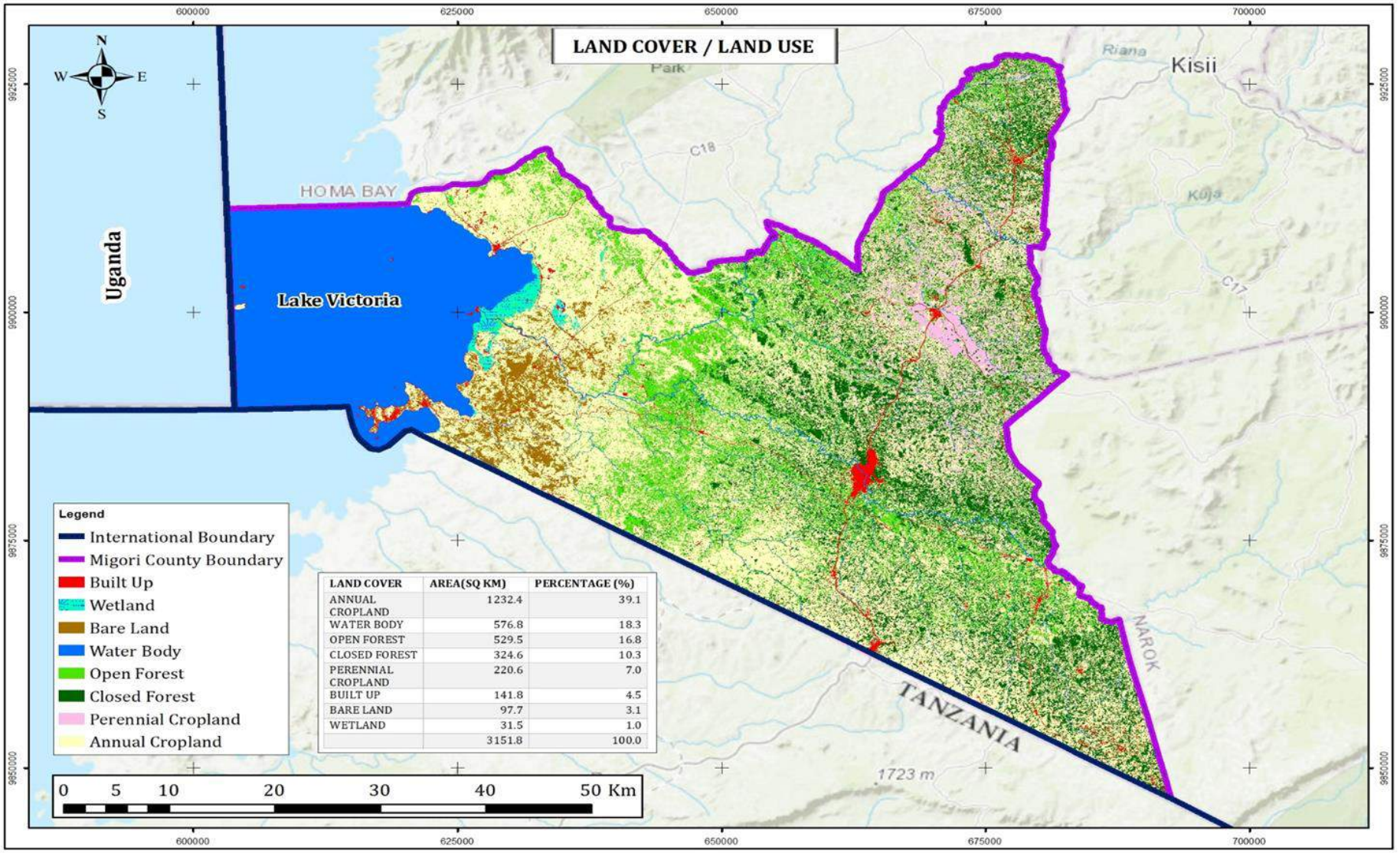
Source: Consultant's Edits, 2021

2.2.3 Land

This section presents issues relating to the County's land cover as well as an assessment of its natural resource base. With regards to the land cover, section assesses the existing distribution of activity areas such as built-up areas and cropland, and natural features including forest land, shrub land, grassland and wetlands in Migori County. It goes further to present a trend analysis for the same, revealing land use transformation in the County over time (1980-2020).

Land Cover

The land Cover analysis of Migori is undertaken to establish the existing land budget and to look at the general pattern of development in a predetermined classification. Land cover analysis is also key in determining the general trend of change that has occurred over time in the County for the various land uses. The land cover was developed by classifying a high-resolution satellite imagery using the Intergovernmental Panel on Climate Change (IPCC) land cover land use classification criteria. Land cover land use documents the portion of the County covered by cropland (annual and perennial), forests, riverine vegetation, bare land/rocky land, wetlands, water bodies and built-up features. Map 12 shows the spatial depiction of land cover in the county.



LAND COVER	AREA(SQ KM)	PERCENTAGE (%)
ANNUAL CROPLAND	1232.4	39.1
WATER BODY	576.8	18.3
OPEN FOREST	529.5	16.8
CLOSED FOREST	324.6	10.3
PERENNIAL CROPLAND	220.6	7.0
BUILT UP	141.8	4.5
BARE LAND	97.7	3.1
WETLAND	31.5	1.0
	3151.8	100.0

Map 12: Land Cover

Source: Consultant's Edits, 2021

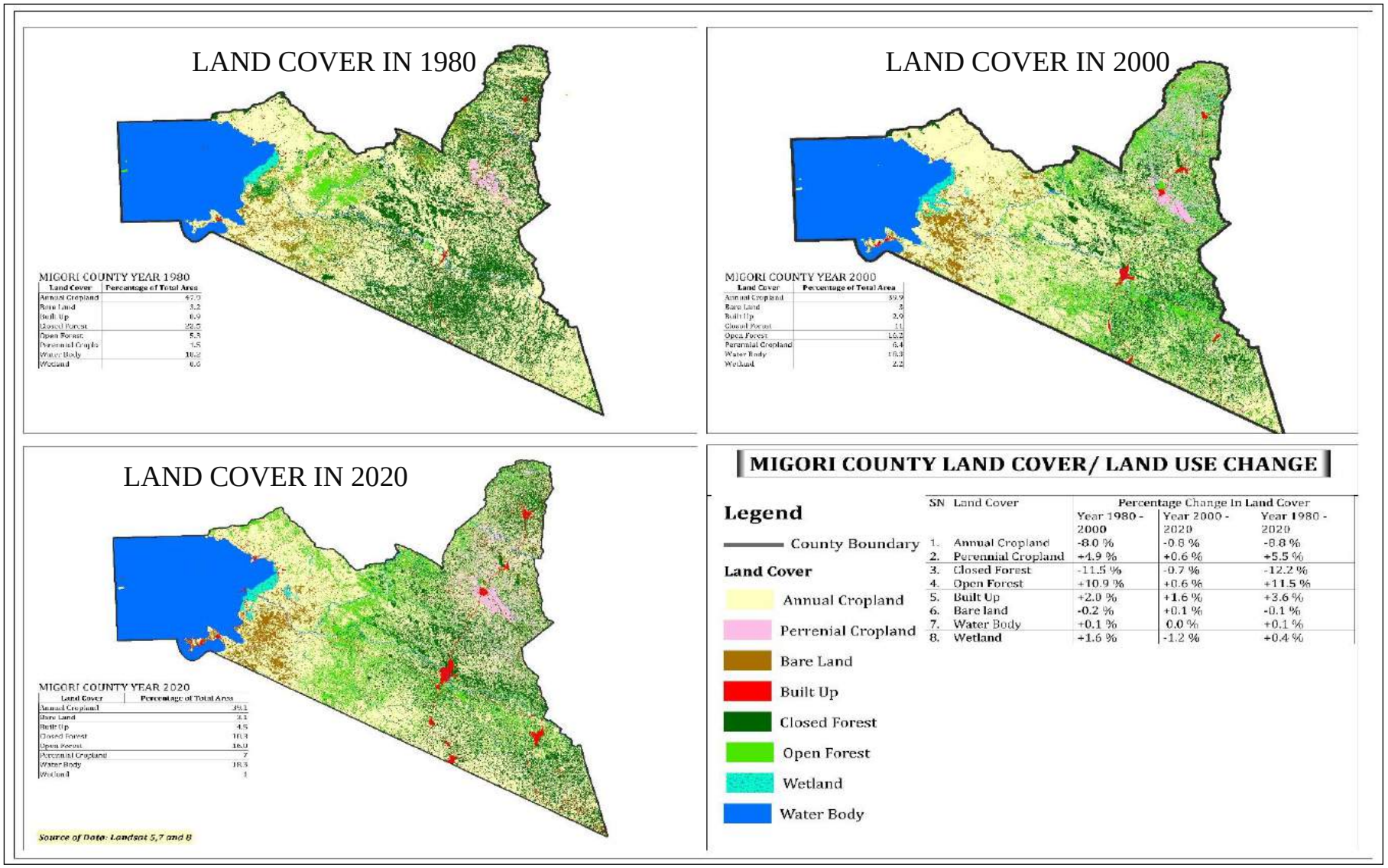
Land Use Change

A 40-year trend analysis of the land cover, achieved through the classification of satellite imagery for three distinct years (1980, 2000 and 2020) considering a 20-year interval, reveal that there are those land uses that are gainers and those that are losers. The built-up and cropland areas have been on a constant increase while the forested areas have been on the decrease. Significantly, the wetlands are shrinking as well. The implication of the trend shows the need for the conservation of the critical ecological areas such as the wetlands and forests. Table 7 and map 13 present the land cover change from the year 1980 to 2020.

Table 7: Land Cover, Trend Analysis

Land Cover	**Land Cover in percentage (%)**			
	1980	**2000**	**2020**	**Land Cover Change In 40 years**
Bare Land	1.3	1.1	1.6	+0.3
Built up	0.3	0.5	1.2	+0.9
Crop Land	50	67.3	72.3	+22.3
Forest	30.7	13.6	7.4	-23.3
Lake	17.3	17.1	17.3	0
Wetlands	0.4	0.4	0.2	-0.2

Source: Satellite Imagery Analysis (1980, 2000, 2020)



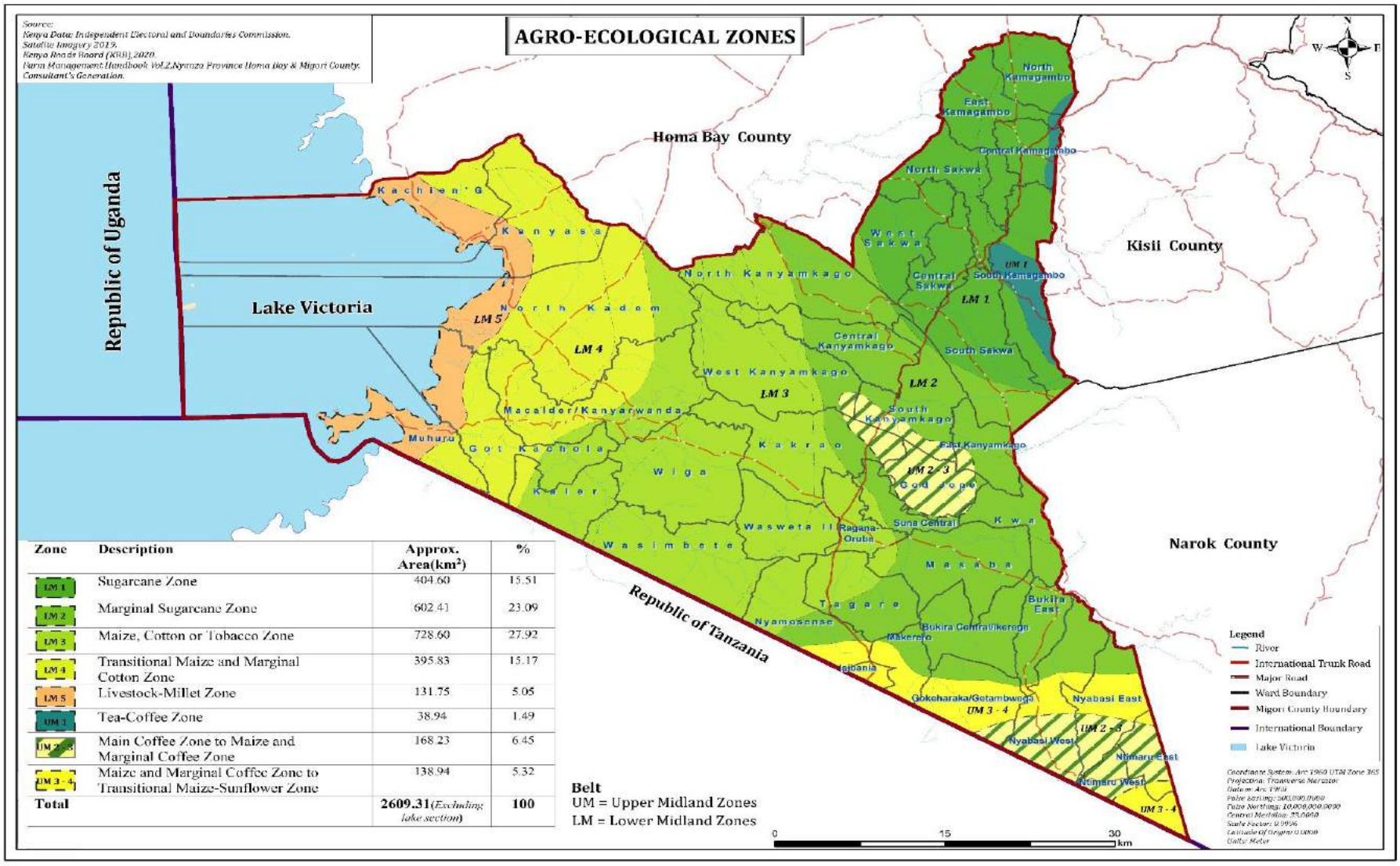
Map 13: Land Use Change Analysis

Average Land Holding Sizes

The average landholding sizes in the County are 1.2 Ha (3.0 Acres). In areas such as Nyatike and Kuria East, the mean holding size ranges 5 ha to 10ha. The variations in the land holding sizes across the County indicate the needs for varied development policies and land use regulations on agriculture. Nyatike and Kuria East areas can comfortably achieve higher livestock carrying capacity while the rest of the sub-counties have a relatively lower carrying capacity. Additionally, rural development strategy integrated with productive system on land shall draw variedly from the variations in the land holding sizes. There are those agricultural practices, specifically, in natural production systems that require relatively larger parcels of land to achieve economical returns. On the other hand, the high value crop production practices are feasible in areas with small parcels of land like Rongo, Awendo, Uriri, Suna East and West, Kuria, and West Sub-counties. However, for benefits to be reaped from land at optimal, technology is necessary.

Agro-Ecological Zones

Agro-ecological zones determine the type of agricultural activities that should be undertaken in particular areas to ensure optimal agricultural use of land. Migori County has two broad agro-ecological belts i.e. Lower Midland (LU) and Upper Midland (UM). The belts are further subdivided into eight (8) zones ranging from LM 1-5 to UM 1-3 as presented in map 14. The agro-ecological potential has a great policy impact on the rural development policy of the County.



Map 14: Agro-Ecological Zones

Source: Consultant's Edits, 2021

Land Availability Assessment

Land availability as a concept in spatial planning has been used to establish how much of the County's land can be availed for various categories of broader land uses at optimal. The objective of developing the land availability model for the County is to establish a land area for agricultural development and establish how much land can be availed for housing, urban development, and any other economic development other than agriculture. The assessment adopted a multi-criteria analysis by GIS. It involved ranking of soils based on fertility and depth, overlaying rainfall distribution and canal irrigation potential, and slopes to remove the lands with natural constraints.

The analysis established that land available for housing, urban development and other economic ventures constituted 456.69 Km^2. The land availability model is illustrated in chart 1 and map 16.

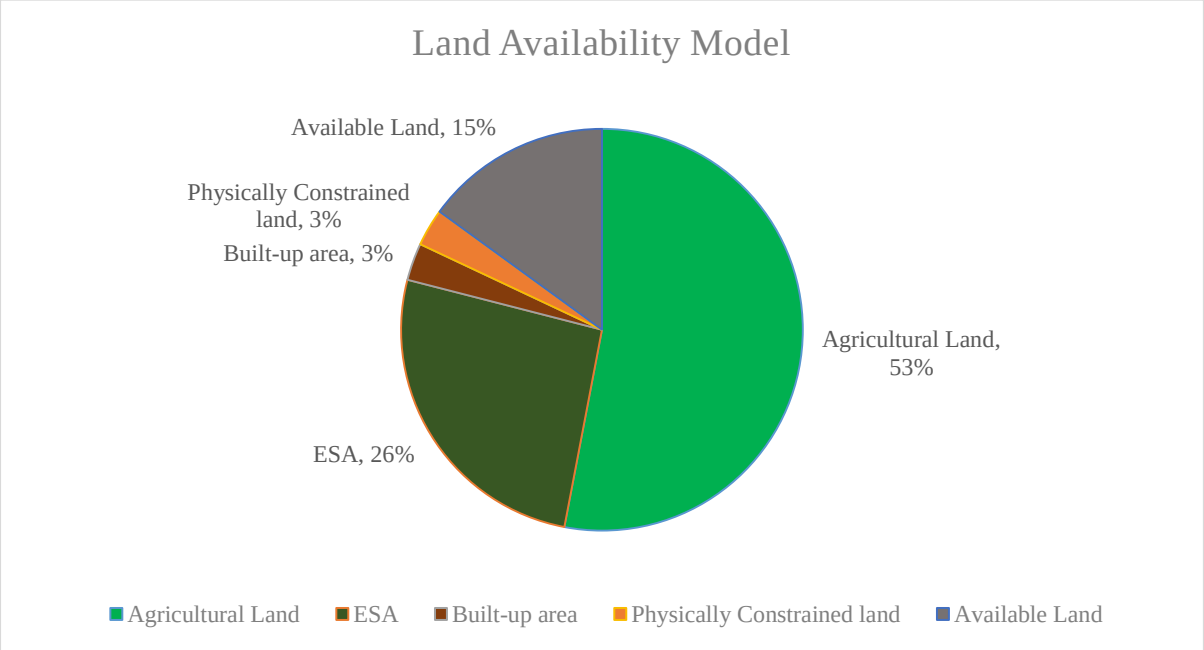
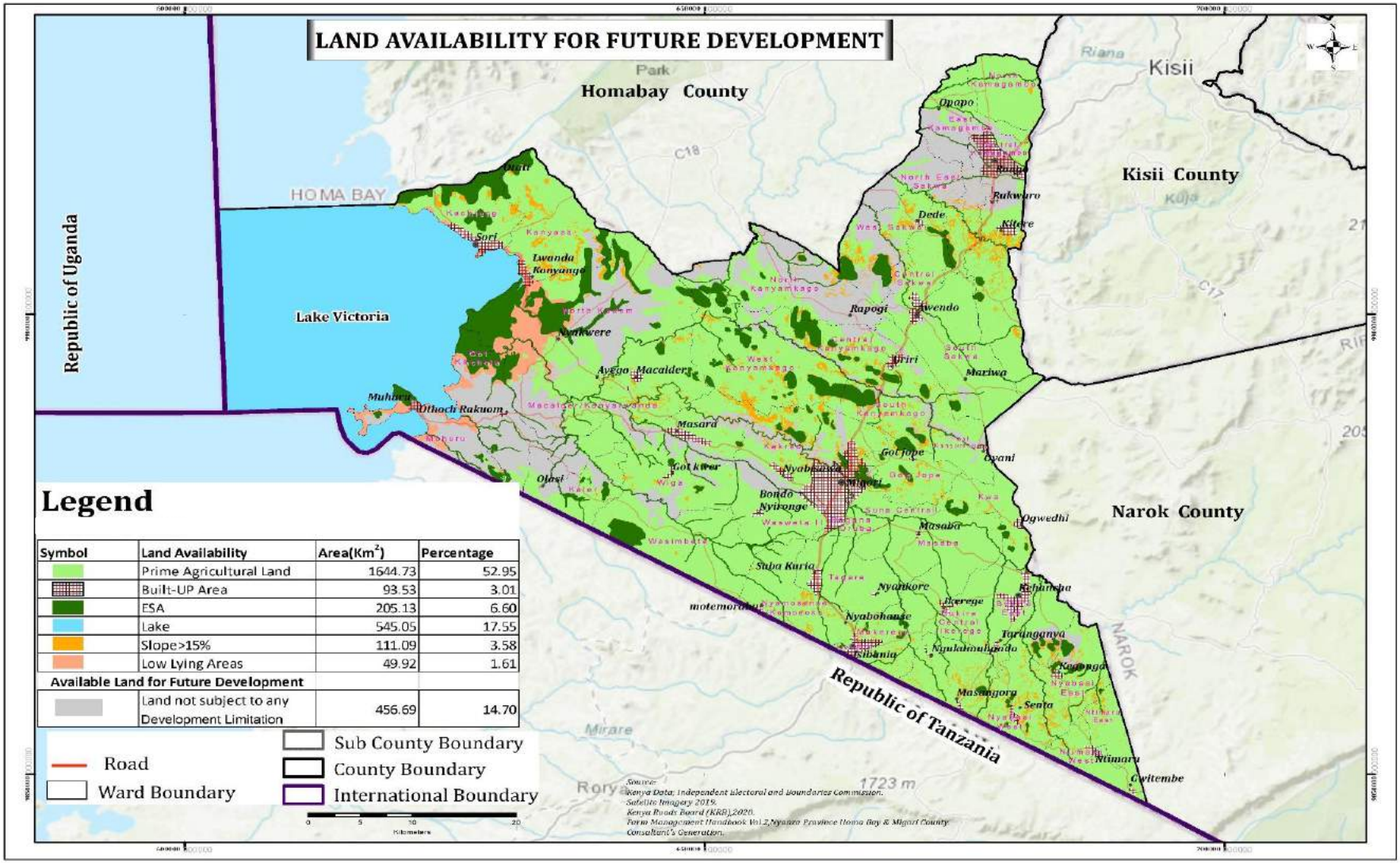


Chart 1: Land Availability Model

Source: Geodev (K) Ltd, 2020



Map 15: Land Availability

Source: Consultant's Edits, 2021

Implication of Land Availability on Development

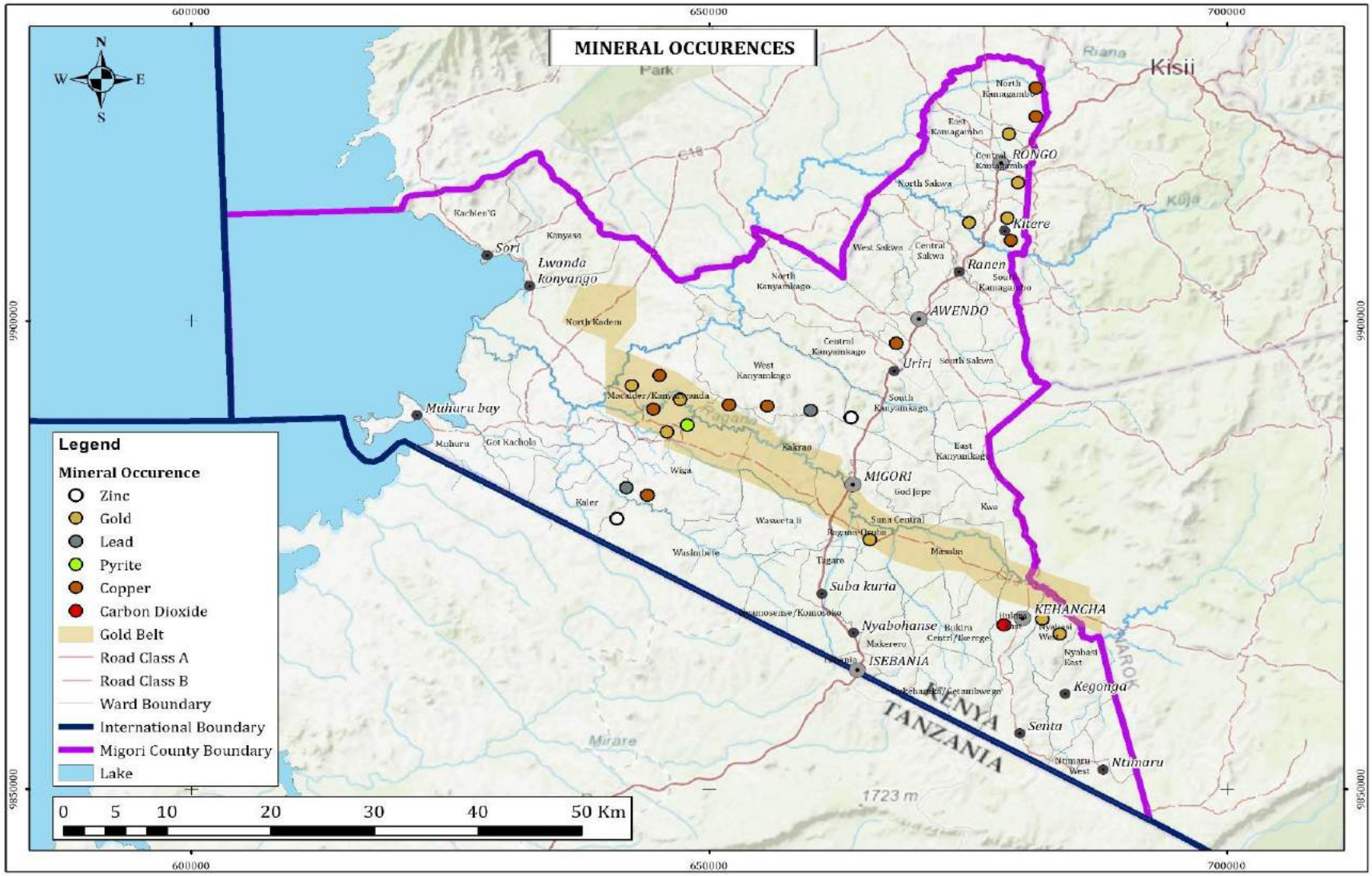
Highly constrained lands in terms of depth and low fertility levels should be prioritized for housing and urban development. The major urban areas such as Migori, Rongo, Muhuru Bay, Awendo, Sori and Kehancha have an opportunity for future expansion within the identified available lands. High impact industrial investment and developments that require large tracts of land can be directed to the established available lands within the county.

However, land available for urban development can be availed for agriculture with intensive soil fertility improvements that include but not limited to importation of soils to raise the depth of the soils and intensive use of fertilizer and manure in the areas with low fertility especially in Nyatike Sub-County.

2.2.4 Minerals Resources

Migori County is among the few counties in Kenya with proven gold, copper, and zinc deposits. These mineral resources are significant because of their economic value and the potential for unlocking economic development through investing in mining and industrialization. Gold-bearing rocks are found in Nyatike sub-county areas, with gold mining happening in Macalder and other sub-county areas. Other areas of North Kamagambo are also prospected to have traces of gold, zinc, and copper. Gold mining in the County is done at both artisanal and large-scale mining with simple mining methods and mechanized mining done respectively. However, the mining methods harm the environment due to land degradation and loss of vegetation and air, noise and water pollution.

Abundant sand deposits are available along Lake Victoria's shores and major rivers such as River Kuja, Riana, Awach, and Oyani. Sand greatly benefits the people living around the lake area, particularly in Nyatike Sub-County since it is a contributor to the construction industry. However, sand mining can result in land and environmental degradation, altering the natural river flows, leading to drying up of some rivers and loss of biodiversity in the river ecosystem. Map 17 presents an inventory of mineral occurrences in the county.



Map 16: Migori County Mineral Occurrence

Source: Consultant's Edits, 2021

Inadequate technology in exploration and exploitation of the mineral resources has resulted in poor mining methods and underutilization. Uncontrolled sand mining results in environmental degradation, loss of biodiversity, and eventual drying up of rivers.

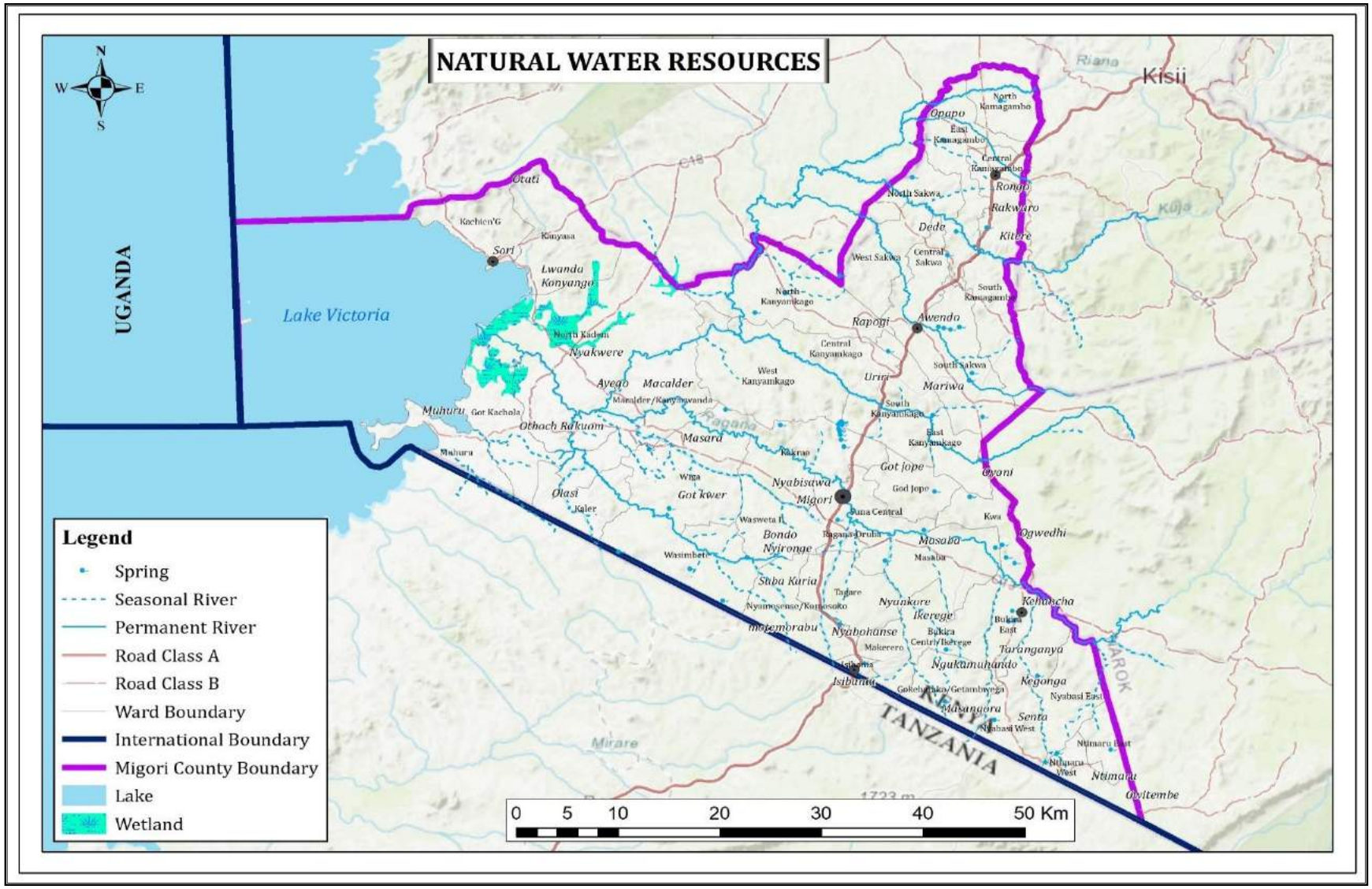
2.2.5 Water Resources

The County water resources are Lake Victoria, rivers (permanent and seasonal), springs and swamps forming surface water resources, and aquifers that form groundwater resources. The water resources are presented in the table below;

Table 8: Migori County Water Resources

Water resources	**Location**	**Capacity /Area**	**Length (KM) / Depth (M)**	**Condition**
Lake Victoria	Nyatike	478km^2	-	Highly impacted (polluted by solid and liquid waste)
Rivers Migori, Kuja , Riana, Ongoche, Misadhi, Sare, Ranen, and Oyani	Traversing Migori, Kisii and Transmara counties.	2.44(M^3/S)	486.5 km	Highly impacted (Encroached**,** Silted**,** Polluted)
Swamp Kanyuora-Aneko	Nyatike	42.19 km^2	-	Highly impacted (Encroached by agricultural activities, and polluted)
Osani	Nyatike	3.13 km^2	-	
Aquifers Migori Granite	Nyatike, Suna East and West, Kuria East and West	<240 M^3/day	<100 M	Under exploitation
Kaksingri volcanic	Nyatike	<240 M^3/day	<50 M	Under use/ exploitation
Nyanzian volcanic south	Rongo, Awendo, Uriri and Nyatike	<86 M^3/day	<60 M	Under exploitation
Springs	Numerous/ scattered	--	-	Mostly unprotected

Source: Field Survey, Geodev (K) Ltd, 2020



Map 17: Distribution of Water Resources

Source: Consultant's Edits, 2021

Implications of Natural Water Resources on Development

The primary conclusion from the assessment of the natural water resource base of the county is that it is well endowed with water resources. Despite the existing stresses on surface water availability in Nyatike Sub- County, all the hydrology system of the area converges in the region. Furthermore, the regions that are surface water stressed are complimented by groundwater that is available almost in the whole county. This phenomenon therefore means that the County can undertake socio economic development without the fear of deficiency in access to water.

However, for the water to impact positively in socio-economic development, there is the need to develop water supply infrastructure that will be able to avail the water from its natural reservoir to the people for various uses in the required qualities and quantities.

2.2.6 Forests

The forest cover in Migori County is approximately 1056.8 Ha which translates to 0.4% forest cover at the county level which is low compared to the recommended forest cover of 10 %. Gazetted forests are exclusively owned and managed by the National Government while the non-gazetted forests are managed by the communities living around them. It is prudent to increase the forest cover in the County to ensure environmental sustainability, promote improved aesthetic value of the County, and provide inputs for social and economic development.

Gazetted Forests

Migori County has eighteen gazetted forests covering an approximate area of five hundred and forty-eight hectares (548.8 Ha). The details on the characteristics of these gazetted forests are as presented in the table 11.

Table 9: Gazetted Forests

S/ No.	Forest	Location of forest by Ward	Approximate area (Ha)	Nature of tree species (Natural/ Planted)	Type of forest (Community, Public, Private)	Condition in terms of tree cover
1.	Otacho	Kakrao	107	Indigenous Exotic	Public	Plantation/ Indigenous/ Bushland
2.	Ranen	North Sakwa	69	Exotic	Public	Plantation/ Bushland
3.	Magina	Kakrao	28	Indigenous	Public	Plantation/ Bushland
4.	Giribe	Giribe	41	Indigenous	Public	Indigenous/ Bushland
5.	Nyasoko	Wiga	25	Indigenous	Public	Indigenous/ Bushland
6.	Mukuro	Wiga	25	Natural	Public	Indigenous/ Bushland
7.	Kwa	Kwa	20	Natural	Public	Indigenous/ Bushland
8.	Segegi	Kwa	8	Natural	Public	Indigenous/ Bushland
9.	Rabuor	Kwa	50	Natural	Public	Indigenous/ Bushland
10.	Nyamareri	Nyamareri	26	Planted	Public	Plantation/ Bushland
11.	Aroso	God Jope	10	Natural	Public	Indigenous/ Bushland
12.	Got Kwer	Wiga	5.2	Natural	Public	Indigenous/ Bushland
13.	Taragwiti	Isebania	17.6	Natural	Public	Indigenous/ Bushland
14.	Getambwega forest	Gokeharaka/ Getambwega	-	Natural	Public	Indigenous/ Bushland
15.	Omange	-	30	Natural	Public	Indigenous/ Bushland
16.	Got Koola	-	30	Natural	Public	Indigenous/ Bushland
17.	Ongidhiawa camp	-		Natural	Public	Indigenous/ Bushland
18.	Kuja bull camp	Rongo Sub-County	22	Natural	Public	Indigenous/ Bushland

Source: Kenya Forest Service (KFS) Migori Region

Non-Gazetted Forests

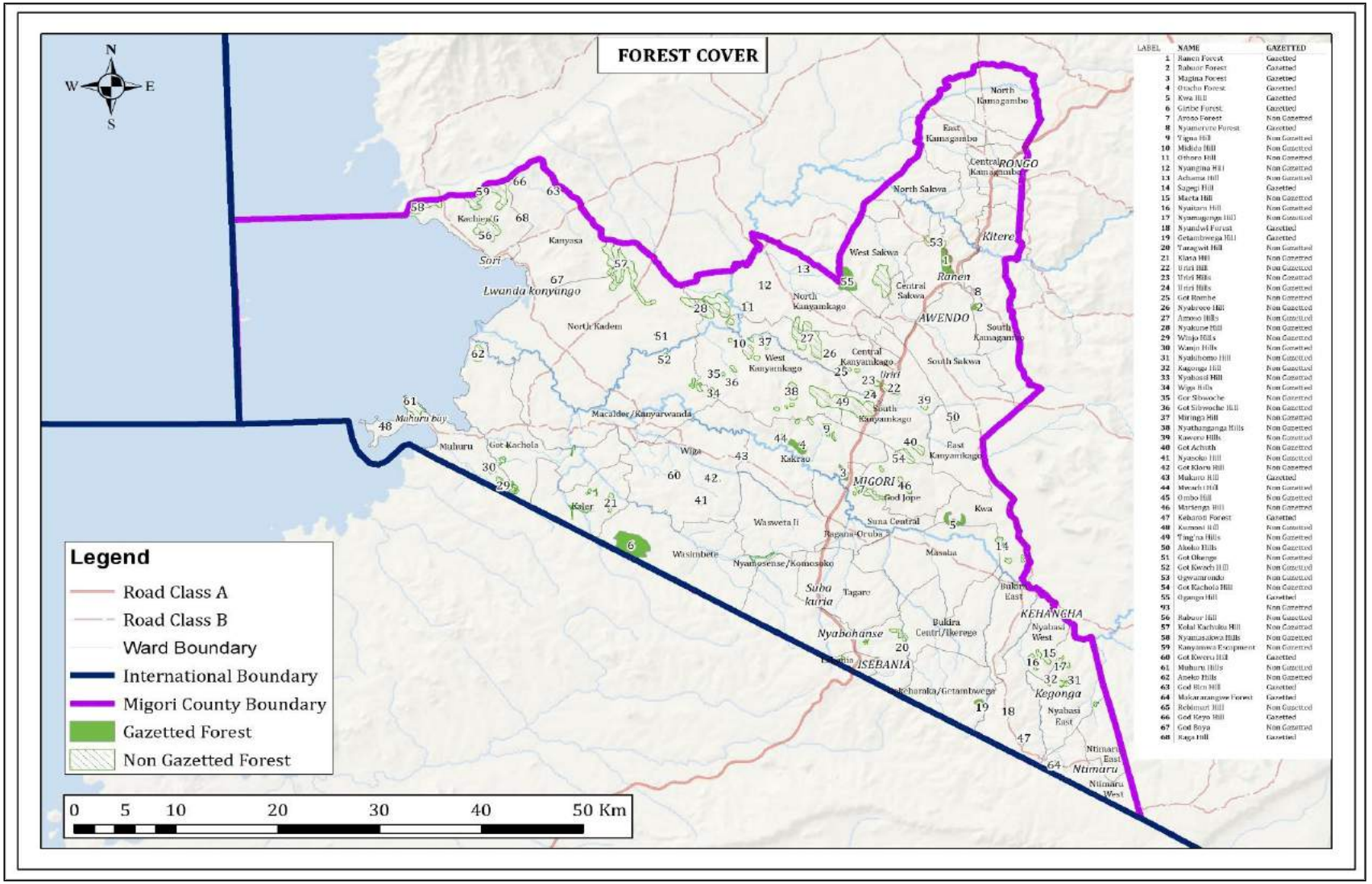
Non- Gazetted Forests in the County cover approximately five hundred and eight hectares (508 Ha). The details on the characteristics of these gazetted forests are as presented in table 10.

Table 10: Non-gazetted Forests

S/ No.	Forest Name	Location of forest by Ward	Approximate area (Ha)	Nature of tree species (Natural/ Planted)	Type of forest (Community, Public, Private)	Condition in terms of tree cover
1.	Ombo	Suna Central	6	Planted	Public	Plantation/ Bushland
2.	Nyatike Hill	Macalder	30	Natural	Community	Indigenous/ Bushland
3.	Nyangena Hill	North Kadem	35	Natural	Public	Indigenous/ Bushland
4.	Wath onger	Macalder		Natural	Community	Indigenous/ Bushland
5.	Nyabisawa	Wasweta		Natural	Community	Indigenous/ Bushland
6.	Aneko	Nyatike	152	Natural	Community	Indigenous/Bushland
7.	Got Kachola	Got Kachola	203	Natural	Community	Indigenous/ Bushland
8.	Maeta forest	Nyabisawa west	74	Natural	Public	Indigenous/ Bushland
9.	Kamotobo forest	Nyabisawa ward	-	Natural	Community	Indigenous/ Bushland
10.	Kunguku forest	Nyamosense / Komosoko	-	Natural	Community	Indigenous/ Bushland
11.	Achama forest	Uriri Constituency	43	Natural	Community	Indigenous/ Bushland

Source: Kenya Forest Service (KFS), Migori Region

Map 18 overleaf shows the spatial distribution of gazetted and non-gazetted forests in Migori County;



Map 18: Distribution of Forest in Migori County

Source: Adopted from Kenya Forest Service (KFS), Migori Region

Impact of Forests on Development in the County

The potential forest cover lies in the private forestry activities, riverine forest vegetation, hills and hilltop afforestation. If all the hills were to be forested, the county has a potential of achieving 1% forest cover under public land. Augmented with agro-forestry and afforestation practices in the County, there is the potential of achieving 10% forest cover.

As it exists, very little direct socio-economic development can be derived from the forests in the County. If the residents have to achieve commercial developments from forests, then the focus has to be in agro-forestry and afforestation for lumbering and wood fuel.

Existing initiatives

Despite the existing challenges observed in the sector, there are ongoing initiatives in form of proposals, programs and projects to ameliorate the challenges. The projects and programs are outlined below.

i. Development of several policies to conserve forests.
ii. Rehabilitation of degraded hilltops and conservation of existing forests.
iii. Initiatives to Increase forest cover in the County.
iv. Gazettement and protection of non-gazetted forests

2.2.7 Aquatic Resources

One outstanding aquatic resource in the County is Lake Victoria. The open waters of Lake Victoria have aquatic and semi-aquatic life of economic significance. The aquatic and semi-aquatic animals include fish, crocodiles and hippos, among other species of flora and fauna. The lake has a positive impact on the population because it is a livelihood source for most County residents. However, the lake is impacted by various human activities that have threatened the lake resource's viability. Human activities, such as farming, have influenced the quality of the lake ecosystem. The invasion of foreign fish species has reduced the number of various fish species inherent in the lake.

2.2.8 Energy Resources

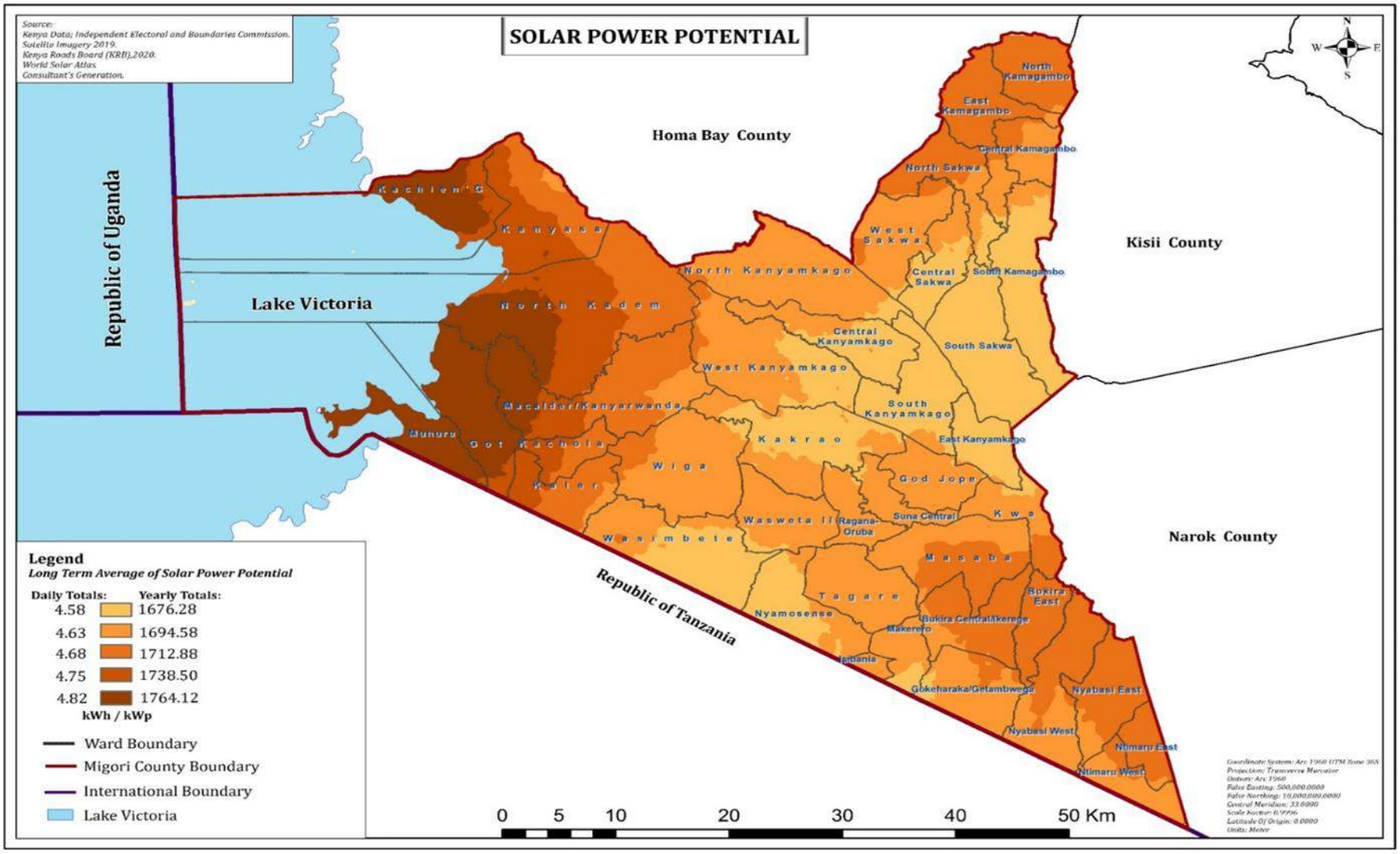
Hydropower

Rivers are the only hydropower producers in the county. There are eight permanent rivers in Migori County including R. Migori, Kuja, Riana, Ongoche, Misadhi, Sare, Ranen, and Oyani. River Kuja has a developed hydropower station at Gogo falls with an installed capacity of 2 megawatts. The river can generate over 40 megawatts if its full capacity is exploited.

The other permanent rivers also have a potential of power generation if dams are constructed across them. However, feasibility studies on the potentials of these rivers have not been done.

Solar Power Potential

Migori County has the potential of generating solar energy since it enjoys twelve hours of sunlight throughout the year. The solar irradiation ranges from 5.2-6.2 Kwh/m^2 with photovoltaic power potential ranging from 4.6 to 5 Kwh/Kwp (*source: https://solargis.com/maps-and-gis-data/download/kenya*). With the given solar potential, the County can generate at least 1826 KW/year of solar energy. Map 19 presents the solar power potential across the county.

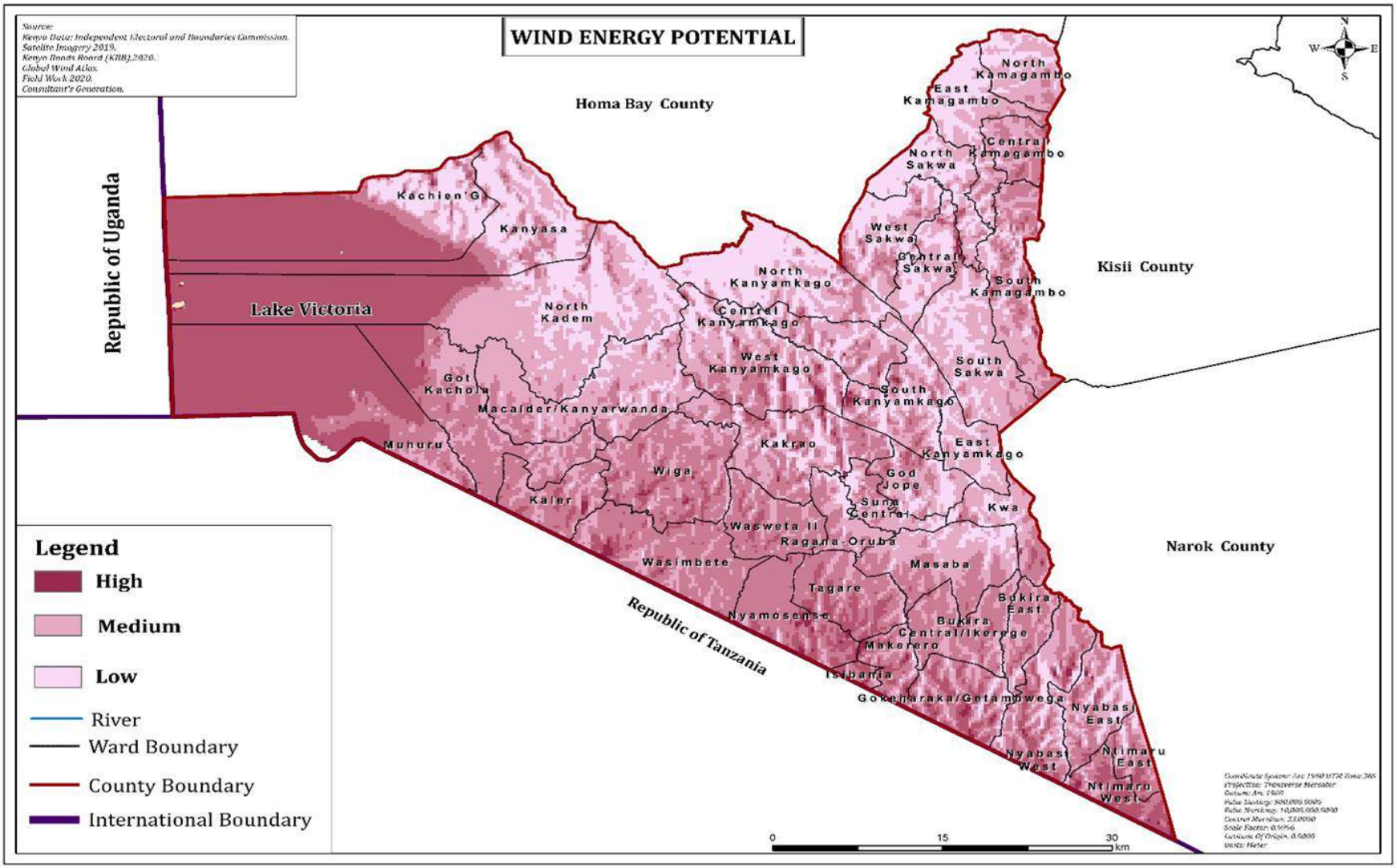


Map 19: Solar Power Potential

Source: Consultant's Edits, 2021

Wind Power Potential

Migori County has relatively low wind speeds which limit the ability of the county to generate wind energy. The largest part of the county has wind speed ranges of 2-3.4m/s while the highest wind speeds in the county range between 3.5-5m/s (map 2-4). According to the wind energy generation standards, the cut-in speed for small turbines to start generating energy is 8 kph (2 m/s) while maximum power generation speed ranges from 36 to 54 Km/h (10-15 m/s). The wind speeds, therefore, shows that the County can only support small scale wind power generation. Map 20 presents the wind power potential across the county.



Map 20: Wind Power Potential in the County

Source: Consultant's Edits, 2021

Other Energy Potential Sources of Energy

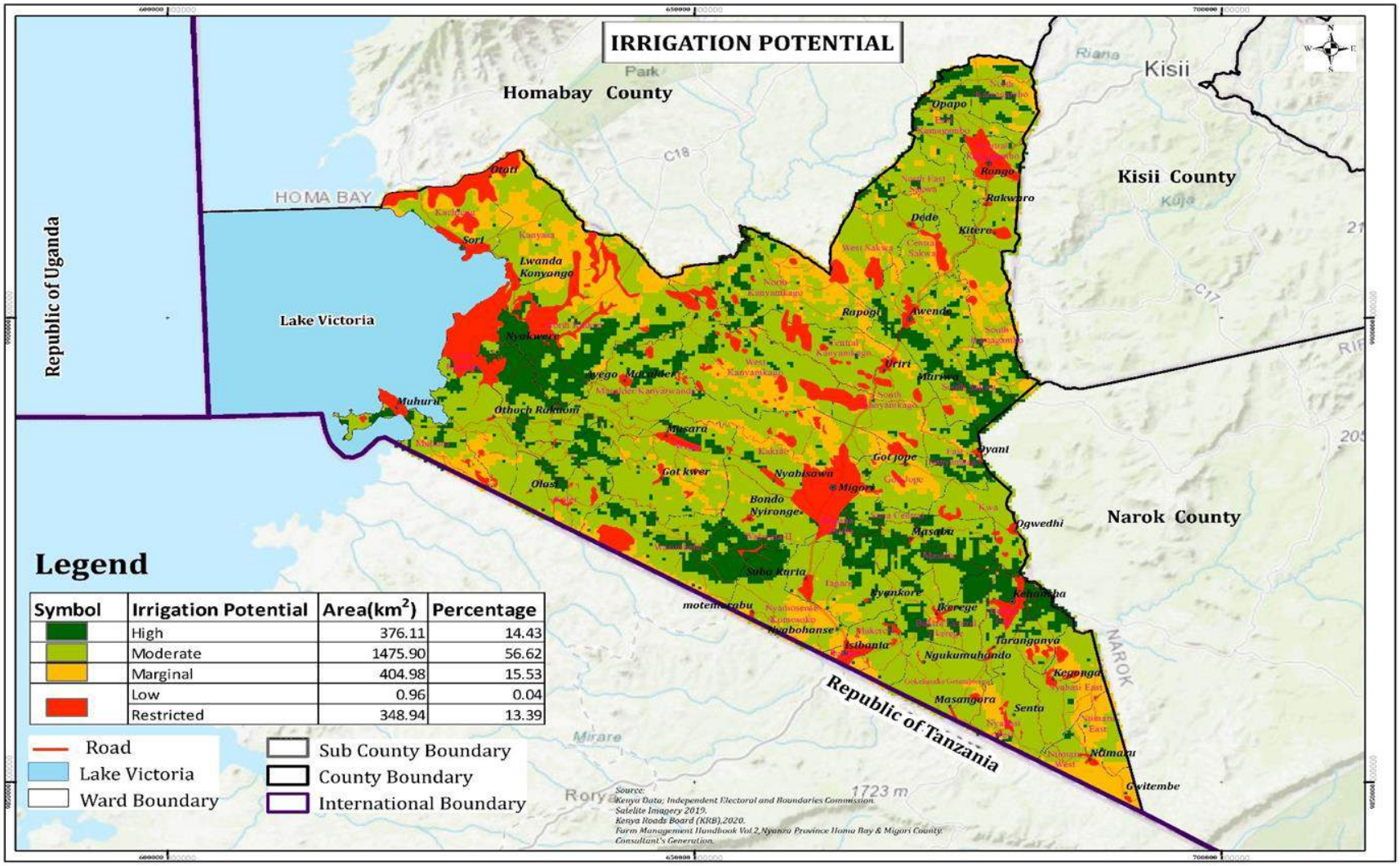
Based on the existing socio-economic activities in the County, other potential energy sources include biogas energy that can be produced from organic wastes generated at household levels across the County. Additionally, bagasse obtained from jaggery and sugar processing presents huge opportunity for energy production in the county. At the household level, the residents can also access wood fuel as a source of energy by growing trees.

2.2.9 County's Irrigation Potential

The irrigation potential assessment in the County is undertaken to establish the general irrigation potential and prioritization of irrigation areas based on the levels of rain water stress in the County.

General Irrigation Potential Assessment

The criteria used in assessing the irrigation potential were slope, soil types and fertility, and proximity to surface water. The finding indicates that approximately 73% (2,257 Ha) of the land area has irrigation potential. The land variation with the irrigation potential is that 12% of the land has the highest potential, 48% has moderate and 13% marginal potential for irrigation with the remaining land being of low potential or restricted from irrigation activities. The restricted areas include the areas that are already built-up, conservation areas, Lake Victoria, rivers, and hills. Map 21 presents an irrigation potential assessment for the county.

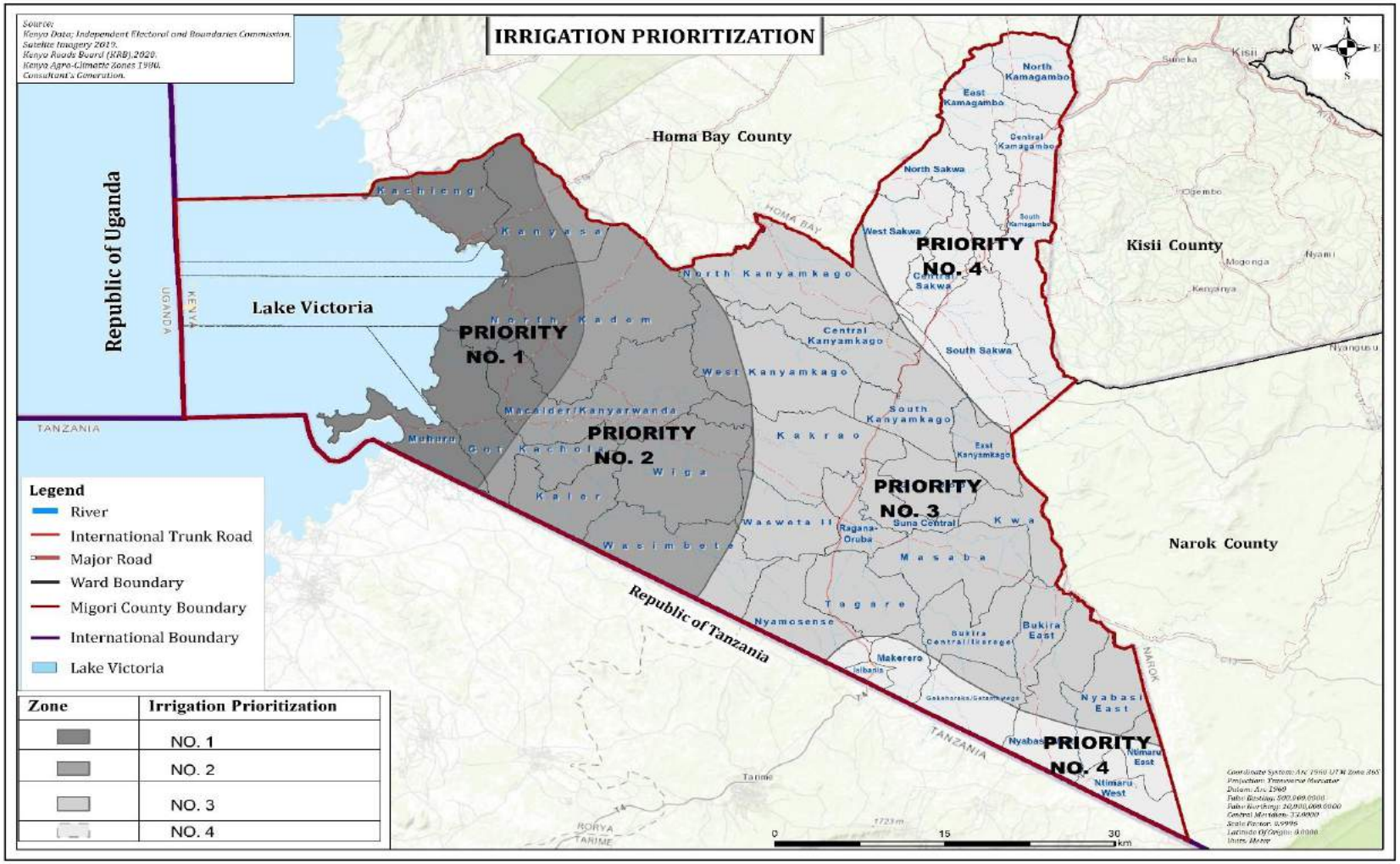


Map 21: Irrigation Potential Assessment

Source: Consultant's Edits, 2021

Prioritization of Regions for Irrigation

The variation in water availability in the County is attributed to access to surface, rain and ground water potential and distribution in the County. Informed by the rainfall distribution, Migori County has three levels of variation in the levels of rainfall water stress. Rongo, Awendo, Uriri, Suna East, Kuria East and Kuria West have limited water stress as compared to Nyatike Sub-County. This analysis prioritises Nyatike and parts of Suna West as priority areas number one and two for irrigation respectively. Furthermore, the areas are very vast with good and fertile soils that would rank highly in terms of agricultural potential when irrigation is introduced. Map 22 shows the irrigation prioritization zones for the county.



Map 22: Irrigation Prioritization

Source: Consultant's Edits, 2021

2.2.10 Flora and Fauna

Migori County has abundant flora and fauna. The flora includes various vegetation species, both natural and man-made while the fauna include hippopotamus, baboons, rock hyrax, Crocodiles, birds, a range of fish varieties. The availability of these resources puts the County in a position to establish a wildlife sanctuary which will help tap the tourism potential such as bird watching, sport fishing, and wildlife adventure. However, this sector has not been exploited hence the County needs to develop the industry and set up policies on optimizing wildlife resources.

Implications of flora and Fauna on Development

The existing flora and fauna have the potential for creation economic force in tourism and hospitality industry in the County. However, the socio-economic development envisioned require deliberate investment by the government to unlock this force. As it exists these opportunities are likely to be lost since the existing wildlife habitats including Kumoni hills and Mugabo and Nyumba ya Mungu Caves are shrinking and are rapidly being encroached by human activities. There is however an existing initiative to establish a wildlife sanctuary in the County.

2.2.11 Environmentally Significant Areas

Environmentally Sensitive Areas are spaces within Migori's natural systems that require protection to perform their ecosystem functions continuously. These areas include forests, Lake Victoria, beaches, wetlands, hills, rivers and river valleys, springs, dams, and prime agricultural land. Table 11 summarizes the environmental issues in Migori County.

Table 11: Summary of environmental issues in Migori County

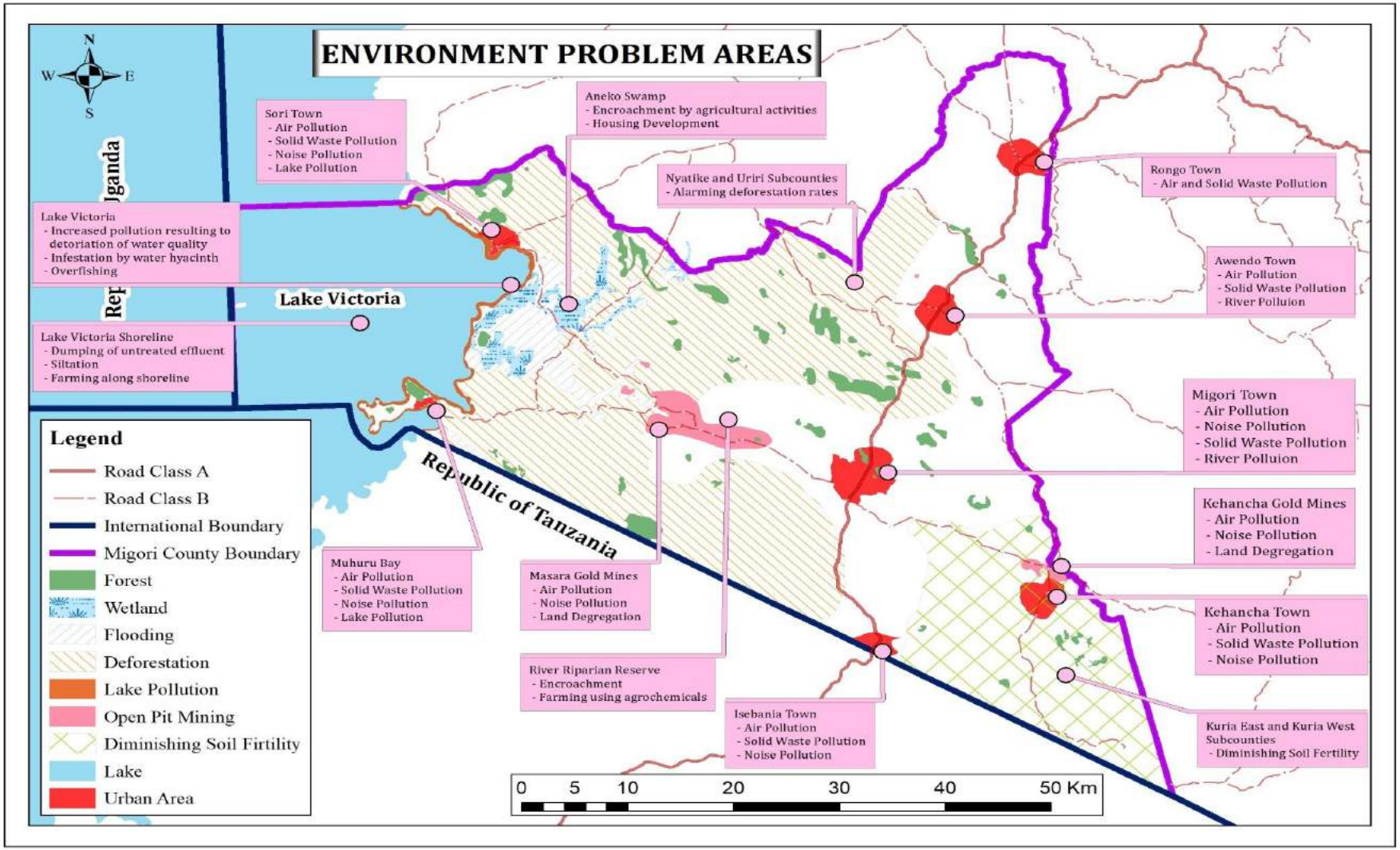
Environmentally Significant Areas				
Area	**Ecosystem Service**	**Value Capture (Dependency)**	**Threats**	**Recommendations**
Rivers and Riparian Reserves	• Water sources • Habitat for aquatic species (both flora and fauna) • Recharging groundwater	• County-Level population	• Siltation • Encroachment of riparian reserves by human activities. • Deforestation of riparian vegetation • Pollution caused by damping of solid and liquid waste.	• Define and demarcate riparian reserves as per the recommended environmental standards. • Dredging of rivers • Reforest the riverine vegetation as a conservation measure. • Ensure proper liquid and solid waste management within settlements.
Springs	• Water source • Recharging surface water systems	• Village level population.	• Limited conservation measures	• Improve the conditions of all springs by protecting them
Dams	• Source of water • Habitat to biodiversity.	• Village level population	• Siltation due to agricultural activities in adjacent landscapes.	• Create a riparian buffer of vegetation. • Desilt the affected dams.

Environmentally Significant Areas				
Area	**Ecosystem Service**	**Value Capture (Dependency)**	**Threats**	**Recommendations**
			• Encroachment. • Limited conservation initiatives.	
Wetlands	• Wildlife habitat; • Estuaries are breeding grounds for fish. • Purification of water; • Serving as floodplains; • Recharging aquifers. • Nutrients cycle	• Village level population	• Encroachment by human settlement and cultivation activities; • Pollution caused by liquid and solid waste.	• Discourage non-compatible activities around the wetlands e.g. settlements, and cultivation that alter the natural conditions of the wetlands. • Ensure proper liquid and solid waste management within settlements.
Lake	• Inland fishing • Water transport • Wildlife habitat • Aquaculture • Climate regulation • Nutrient cycle	• Supra National Population	• Pollution by waste and chemicals from farmlands. • Siltation at the shores. • Overfishing. • Infestation by foreign aquatic vegetation such as water hyacinth.	• Protection of the riparian vegetation that reduced erosion and contribute to the deposition of debris. • Removal of the foreign aquatic vegetation. • Regulation of fishing activities based on the permissible sizes of fish to be caught. • Proper waste management within settlements and in farmlands.
Beaches	• Habitats for flora and fauna	• National Level Population	• Pollution by solid waste • Destruction of vegetation.	

Environmentally Significant Areas				
Area	**Ecosystem Service**	**Value Capture (Dependency)**	**Threats**	**Recommendations**
Hills	• Home to biodiversity (flora and fauna) • Modifying climatic conditions • Source of springs and rivers	• Ward level population	• Deforestation for food, biofuel, and settlement activities. • Degradation caused by mining activities.	• Implement land use and land management regulations that protect the hills. • Rehabilitate degraded hills by refilling the open mines. • Undertake reforestation activities on the deforested hills.
Islands	• Habitat for humans and wildlife • Breeding sites for wildlife species. • Provide defense against high tides.	• National level Population	• Loss of biodiversity due to human activities • Pollution especially Migingo. • Encroachment by human settlement and activities.	• Regulate development activities on islands. • Promote proper waste management on Migingo Island.
Forests	• Wildlife habitats • Air purification. • Microclimate modification. • Source of steams • Source of food and medicine. • Climate regulation	• National Level Population (for the Protected forests) • Ward Level Population (for the Unprotected forests)	• Deforestation • Irregular acquisition and allocation of forest land • Forest fires	• Undertake afforestation and reforestation • Gazette the forests for legal protection purposes. • Engage the community in the forest conservation initiatives

Environmentally Significant Areas				
Area	**Ecosystem Service**	**Value Capture (Dependency)**	**Threats**	**Recommendations**
Agricultural lands	• Source of food for man • Temporary home for wildlife. • Atmospheric carbon balance	• County-Level Population	• Encroachment by human settlement (urban development). • Reducing fertility • Degradation by mining activities	• Protect prime agricultural lands. • Ensure there is continuous practices of soil restoration. • Effective implementation and enforcement of the land restoration policies.

Map 23 overleaf, shows environmental problem areas within Migori County.



Map 23: Distribution of Environmental Problem Areas

Implications of the Environmentally Sensitive Areas (ESA) on Development

ESAs perform critical ecological functions which have both social and economic benefits to the people of Migori County. Furthermore, they have significant economic value based on their inherent ability to support tourism activities. Contrastingly, the extent and impact of development in the County are also limited by these ESAs. The development of ESAs has to be encouraging sustainability and conservation. In as much as the swamps in lower Kuja area provide fertile grounds accentuated by the alluvial deposits, there are limitations in the environmental perspective that hinder crop cultivation or encroaching these spaces.

2.3 Population and Demography

Population analysis is essential in determining the needs of the current and future population. This section provides information on the population size and composition, projections, population density and distribution, and the population characteristics related to the indicators of well-being, outlined in the Human Development Index (HDI).

2.3.1 Existing Population Size and Composition

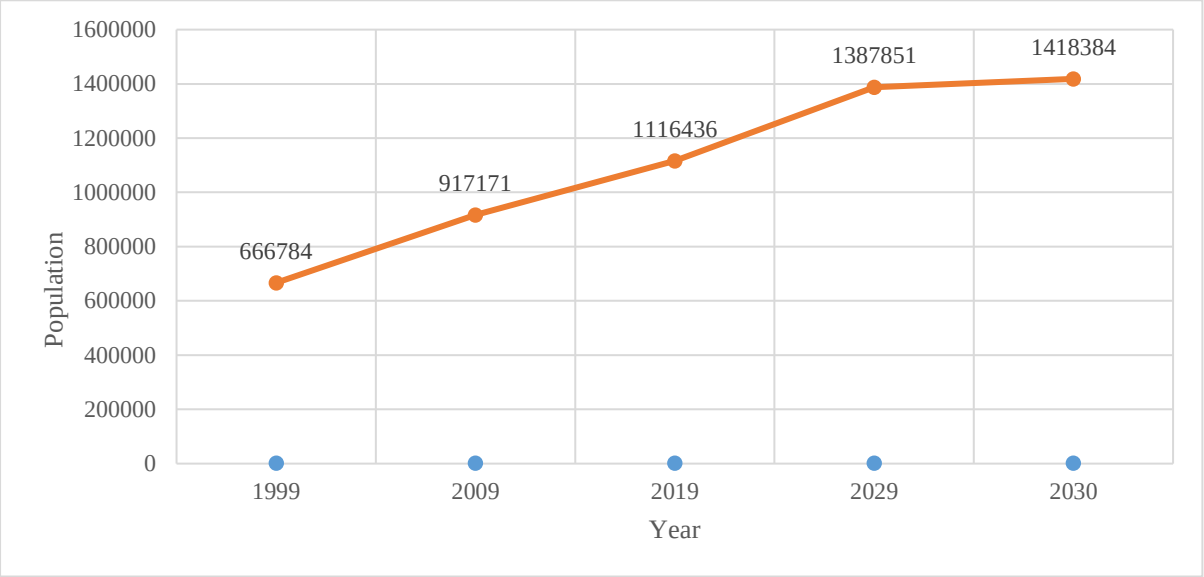
Based on the Census 2019, the total population of Migori County is estimated to be 1,116,436 With 536,187 males and 580,214 Females. The Intersex population in the County is 35 persons. The County consists of a heterogeneous population comprising several ethnic groups with the predominant ones being the Luo, Kuria, Abasuba, Kisii, Luhya, Somalis and small pockets of Indians, Arabs, and Nubians. The female dominates the population of Migori County at 52 percent against 48 percent males. The 2020 population estimates stand at 1,140,998 with 547,983 males and 593,015 females.

2.3.2 Population Trends

The comparison of the population from the 2009 and 2019 census indicates a positive population growth. The County's population in 2009 was 917,171; therefore, the County has grown at a rate of 2.2 %. The increased population is attributed to various factors, including natural population growth, cultural and push factors. High birth rates Vis-à-vis the death rates recorded annually is the primary natural factor that has contributed to population growth. On the other hand, cultural norms and values have also played a role in population growth. Low usage of birth control mechanisms and early marriages have contributed positively to population growth. Also, in-migration from neighbouring Counties such as Homa Bay, Kisii, and Tanzania in search of employment and business opportunities are the overriding factors promoting population growth. Using the Intercensal growth rate of 2.2%, the County's

population will increase to 1,272,152 and 1,418,384 in 2025 and 2030 respectively. Chart 2 shows the population trends for the county from the year 1999 to 2030.

Chart 2: Population Trends and Projections



Source: Kenya Population and Housing Census

2.3.3 Population Distribution and Density

Kuria West Sub-County is the most populated out of the eight sub-counties with a total of 186,172 while Kuria East has the least population at 113,216. Ragana Oruba has the highest population at the ward level at 53,538 whereas Ntimaru East has the least population at 15,568.

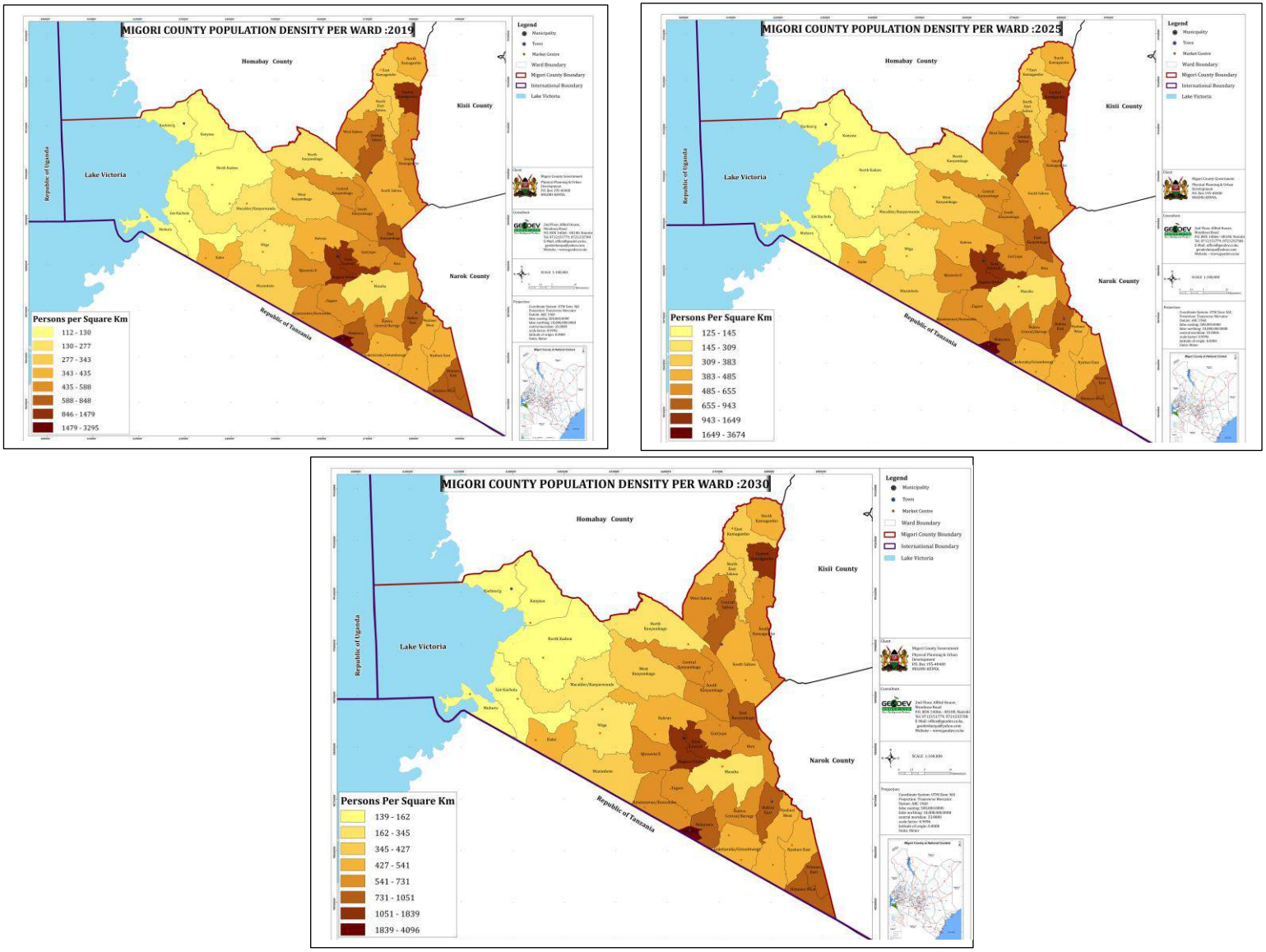
The County's population density has increased from 355 in 2009 to 427 persons per square kilometre in 2019. The population density is projected to increase to 476 and 531 persons per square kilometre in 2025 2030, respectively. Suna East Sub-County has the highest population density of 598 persons per square kilometre whereas Nyatike Sub-County has the lowest density at 260. At the ward level, the Isebania ward has the highest density at 3290 persons per square kilometre while North Kadem has the lowest density of 112 persons per square kilometre. Table 14 and map 24 shows the population distribution and density per ward in the county.

Table 12: Population Distribution per Ward

Sub-County	Ward	Area Sq. Km	Pop. 2019	Pop. Density per Sq.km	H/H Size	Pop. 2025	Pop. Density per Sq.km	H/H Size	Pop. 2030	H/H Size	Pop. Density per Sq.km
Awendo	North East Sakwa	54	18531	343	4	21116	391	4	23543	5	436
	South Sakwa	95.1	39629	417	4	45156	475	4	50347	5	529
	West Sakwa	62.8	31620	504	5	36030	574	6	40172	6	640
	Central Sakwa	43.6	27510	631	5	31347	719	6	34950	6	802
	Sub-Total	**255.5**	**117,290**	**459**		**133649**	**523**		**149012**	**5.5**	**583**
Kuria West	Bukira East	33.7	28529	847	5	32508	965	6	36245	6	1076
	Bukira Central /Ikerege	59.8	29906	500	6	34077	570	7	37994	7	635
	Isebania	7.1	23359	3290	4	26617	3749	4	29677	5	4180
	Makerero	29.7	20870	703	6	23781	801	7	26514	7	893
	Masaba	90.1	23736	263	6	27047	300	7	30156	7	335
	Tagare	54.7	28575	522	5	32561	595	6	36303	6	664
	Nyamosense /Komosoko	62.8	31197	853	6	35548	566	7	39634	7	631
	Sub-Total	**337.9**	**186,172**	**617**		**212139**	**628**		**236523**		**700**
Kuria East	Ntimaru West	33.4	27132	812	6	30916	926	7	34470	7	1032
	Ntimaru East	24.3	15568	641	6	17739	730	7	19778	7	814
	Nyabasi East	55.2	23215	421	6	26453	479	7	29494	7	534
	Nyabasi West	33.4	30957	927	6	35275	1056	7	39330	7	1178
	Gokeharaka/Getambwega	52.5	22341	427	6	25457	485	7	28383	7	541
	Sub-Total	**146.3**	**119,213**	**662**		**135840**	**929**		**151455**		**1035**
Nyatike	Kachieng`	211.8	24256	115	4	27639	130	4	30816	5	145
	Kanyasa	135.3	17016	126	5	19389	143	6	21618	6	160
	North Kadem	327.8	36751	112	5	41877	128	6	46691	6	142
	Macalder/Kanyarwanda	133.2	34374	258	5	39168	294	6	43671	6	328
	Kaler	52.8	20833	395	5	23739	450	6	26467	6	501
	Got Kachola	121.7	15875	130	4	18089	149	4	20168	5	166

	Muhuru	236.7	27057	114	4	30831	130	4	34375	5	145
	Sub-Total	**1219.3**	**176,162**	**144**		**200732**	**165**		**223806**		**184**
Rongo	North Kamagambo	45.6	19850	435	5	22619	496	6	25219	6	553
	Central Kamagambo	30.6	38326	1252	4	43672	1427	4	48692	5	1591
	East Kamagambo	65.4	22249	340	5	25352	388	6	28266	6	432
	South Kamagambo	78.8	44162	560	5	50322	639	6	56106	6	712
	Sub-Total	**220.4**	**124,587**	**565**		**141964**	**644**		**158282**		**718**
Suna East	God Jope	42.1	22343	531	5	25459	605	6	28386	6	674
	Suna Central	26.6	35305	1327	4	40229	1512	4	44853	5	1686
	Kakrao	98.3	41804	425	5	47635	485	6	53110	6	540
	Kwa	39.5	23222	588	6	26461	670	7	29503	7	747
	Sub-Total	**206.5**	**122,674**	**594**		**139784**	**677**		**155852**		**755**
Suna West	Wiga	102.9	28513	277	5	32490	316	6	36225	6	352
	Wasweta II	53.4	26066	488	5	29702	556	6	33116	6	620
	Ragana - Oruba	30.1	44560	1480	4	50775	1687	4	56612	5	1881
	Wasimbete	98.2	29751	303	6	33901	345	7	37797	7	385
	Sub-Total	**284.6**	**128,890**	**453**		**146867**	**516**		**163749**		**575**
Uriri	West Kanyamkago	112.6	36103	321	5	41139	365	6	45867	6	407
	North Kanyamkago	109.3	21789	199	5	24828	227	6	27682	6	253
	Central Kanyamkago	57.6	27232	473	5	31030	539	6	34597	6	601
	South Kanyamkago	68.9	32790	476	5	37363	542	6	41658	6	605
	East Kanyamkago	35.5	23534	663	5	26816	755	6	29899	6	842
	Sub-Total	**383.9**	**141,448**	**368**		**161177**	**420**		**179704**		**468**
TOTAL			**1,116,436**			**1,272,152**			**1,418,383**		

Source: KNBS, 2019



Map 24: Migori County Population Density Projection in `000 from 2019-2030

2.3.4 The Population Divide

The population of Migori is predominantly rural. The rural population in the county is 814,451 accounting for seventy three percent (73%) of the population. The total urban population in County is 301,985 persons which represents twenty seven percent (27%) of the total population.

Urban Population

The urban population is distributed in the various urban areas in the county as illustrated in table 13. Migori is the most populous urban area with 25% of the total urban population while Olasi has the least population with 0.01% of the urban population.

Table 13: Population in Various Urban Areas

Urban Area	Population 2018/2019	Population 2020	Urban Area	Population 2018/2019	Population 2020
Migori	71668	74606	**Gwitembe**	3912	4239
Isibania	23891	24871	**Nyankore**	3691	4000
Rongo	20688	21536	**Macalder**	3671	3978
Awendo	16815	17504	**Masangora**	3652	3958
Kehancha	22194	23104	**Opapo**	3522	3817
Sori	7020	7308	**Rapogi**	3263	3536
Suba kuria	9221	9993	**Motemorabu**	3120	3381
Muhuru Bay	4924	5126	**Ikerege**	3092	3351
Senta	7684	8327	**God Jope**	3038	3292
Kitere	6752	7317	**Nyabisawa**	2983	3233
Nyabohanse	6070	6578	**Dede**	2967	3215
Lwanda konyango	5925	6421	**Oyani**	2915	3159
Uriri	5611	6081	**Bondo Nyironge**	2839	3077
Ntimaru	5422	5876	**Mariwa**	2641	2862
Kegonga	4924	5336	**Othoch Rakuom**	2519	2730
Ogwedhi	4466	4840	**Ayego**	2500	2709
Taranganya	4185	4535	**Abuor/Kwoyo**	2446	2651
Ngukumuhando	3996	4330	**Olasi**	2123	2301
Masaba	3964	4296			

Urban Population Projection and Needs Assessment

Migori County is experiencing rapid urbanization due to the availability of infrastructure in the major urban areas in the County. Urban areas such as Migori, Rongo, Isebania, Awendo, and Uriri are leading in urbanization. The table 14 presents the population projections for major urban areas in the County.

Table 14: Population projections for Major Urban Areas

Urban Area	**Population (2020)**	**Population (2025)**	**Population (2030)**
Migori	74549	90788	110563
Isibania	24851	30265	36857
Rongo	21520	26207	31916
Awendo	17491	21301	25941
Kehancha	23086	28115	34239
Sori	7302	8893	10830
Suba kuria	9592	11681	14225
Muhuru Bay	5122	6238	7596
Senta	7993	9734	11854
Kitere	7023	8553	10416
Nyabohanse	6314	7689	9364
Lwanda konyango	6163	7506	9141
Uriri	5837	7108	8656
Ntimaru	5640	6868	8365
Kegonga	5122	6238	7596
Ogwedhi	4646	5657	6890
Taranganya	4353	5301	6456
Ngukumuhando	4157	5062	6165
Masaba	4123	5022	6115
Gwitembe	4069	4956	6035
Nyankore	3839	4676	5694
Macalder	3819	4650	5663
Masangora	3799	4626	5634
Opapo	3664	4462	5433

Urban Area	Population (2020)	Population (2025)	Population (2030)
Rapogi	3394	4134	5034
Motemorabu	3245	3952	4813
Ikerege	3216	3917	4770
God Jope	3160	3848	4687
Nyabisawa	3103	3779	4602
Dede	3086	3759	4577
Oyani	3032	3693	4497
Bondo Nyironge	2953	3596	4380
Mariwa	2747	3346	4074
Othoch Rakuom	2620	3191	3886
Ayego	2601	3167	3857
Abuor/Kwoyo	2544	3099	3773
Olasi	2208	2689	3275
Total	**301,985**	**367,764**	**447,871**

Housing Land Requirements

The urban land requirement for housing in the County is derived from the physical planning handbook on dwelling units' densities per hectare. The medium density concept is adopted for Migori urban areas. The concept adopted 32 dwelling units/households per hectare. It was used to determine the urban land requirement for residential development in each urban area for a projected population by the year 2030 in the County. From the analysis done, Migori County will require close to 2799.2 hectares (approximately 28km^2) for residential development with Migori town taking the lion share of 691 hectares and Olasi taking the least size of 20.5 Ha. The urban land requirement is shown in table 15.

Table 15: Urban Housing Land Requirement

Urban Area	Population (2030)	No of households	No of households per Ha	Land requirement (Ha)
Migori	110563	22112.6	32	691.01875
Isibania	36857	7371.4	32	230.35625
Rongo	31916	6383.2	32	199.475
Awendo	25941	5188.2	32	162.13125
Kehancha	34239	6847.8	32	213.99375

Urban Area	Population (2030)	No of households	No of households per Ha	Land requirement (Ha)
Sori	10830	2166	32	67.6875
Suba kuria	14225	2845	32	88.90625
Muhuru Bay	7596	1519.2	32	47.475
Senta	11854	2370.8	32	74.0875
Kitere	10416	2083.2	32	65.1
Nyabohanse	9364	1872.8	32	58.525
Lwanda konyango	9141	1828.2	32	57.13125
Uriri	8656	1731.2	32	54.1
Ntimaru	8365	1673	32	52.28125
Kegonga	7596	1519.2	32	47.475
Ogwedhi	6890	1378	32	43.0625
Taranganya	6456	1291.2	32	40.35
Ngukumuhando	6165	1233	32	38.53125
Masaba	6115	1223	32	38.21875
Gwitembe	6035	1207	32	37.71875
Nyankore	5694	1138.8	32	35.5875
Macalder	5663	1132.6	32	35.39375
Masangora	5634	1126.8	32	35.2125
Opapo	5433	1086.6	32	33.95625
Rapogi	5034	1006.8	32	31.4625
Motemorabu	4813	962.6	32	30.08125
Ikerege	4770	954	32	29.8125
God Jope	4687	937.4	32	29.29375
Nyabisawa	4602	920.4	32	28.7625
Dede	4577	915.4	32	28.60625
Oyani	4497	899.4	32	28.10625
Bondo Nyironge	4380	876	32	27.375
Mariwa	4074	814.8	32	25.4625
Othoch Rakuom	3886	777.2	32	24.2875
Ayego	3857	771.4	32	24.10625
Abuor/Kwoyo	3773	754.6	32	23.58125

Urban Area	Population (2030)	No of households	No of households per Ha	Land requirement (Ha)
Olasi	3275	655	32	20.46875
Total	**447869**	**89573.8**		**2799.18125**

Urban Water Demand

The water use/ demand in a household is determined by the level of access i.e., the distance to the water source and the time taken in collecting the water. The urban water demand is drawn from the water demand averages of the low, medium, and high residential areas, which is approximated to be 150 litres/person/day. With a projected urban population of 301,985, 447,871 in 2020 and 2030, the urban water demand for Migori County urban areas is shown in table 16 below;

Table 16: Water and Liquid Waste Demand for Urban Areas in Migori County

Water Demand Projection for Migori County Urban Areas for the year 2020				
Consumer Water Demand	**Total Population**	**Consumption Litres/Head/Day**	**Litres/Day**	**M^3/Day**
Total Domestic Demand	**301,985**	**1**50	**45,297,750**	**45,297.75**
Commercial and institutions	30% of total domestic water demand		13,589,325	13,589.325
Allowance for leakage	20% of the total domestic water demand		9,059,550	9,059.55
Total Water Demand			**67,946,625**	**67,946.625**
Internal usage	5% of total domestic water demand		2,264,887.5	2,264.8875
Total Water Requirement			**70,211,512.5**	**70,211.5125**
Liquid waste Demand	80% of total water demand		54,357,300	54,357.300
Water Demand Projection For 2030				
Consumer Water Demand	**Total Population**	**Consumption Litres/Head/Day**	**Litres/Day**	**M^3/Day**
Total domestic	**447,871**	150	67,180,650	67,180.65
Commercial and institutions	30% of total domestic water demand		20,154,195	20,154.195
Allowance for leakage	20% of total domestic water demand		13,436,130	13,436.13
Total Water Demand			**100,770,975**	**100,770.975**
Internal usage	5% of total domestic water demand		3,359,032.5	3,359.0325

Total Water Requirement		**104,130,007.5**	**104,130.0075**
Liquid waste Demand	**80% of total water demand**	**80,616,780**	**80,616.780**

Source; Water design manual, 2005

Urban Population by Ward.

The above urban areas were grouped into various wards to determine their respective urban population. Table 17 shows the summation of urban population per ward. Suna Central Ward has the most urban population because it hosts the County's headquarter. Other satellite towns such as Stella also contribute to the high population for Suna Central.

Table 17: Urban Population by Ward

Ward	**Urban Population 2020**	**Urban Population Projection 2030**
North East Sakwa	2544	3773
South Sakwa	2747	4074
West Sakwa	3086	4577
Central Sakwa	17491	25941
Bukira East	27439	40695
Bukira Central /Ikerege	3216	4770
Isebania	24851	36857
Makerero	-	-
Masaba	4123	6115
Tagare	13431	19920
Nyamosense /Komosoko	9559	14178
Ntimaru West	9709	14400
Ntimaru East	-	-
Nyabasi East	5122	7596
Nyabasi West	5640	8365
Gokeharaka/Getambwega	7955	11799
Kachieng`	7302	10830
Kanyasa	6163	9141

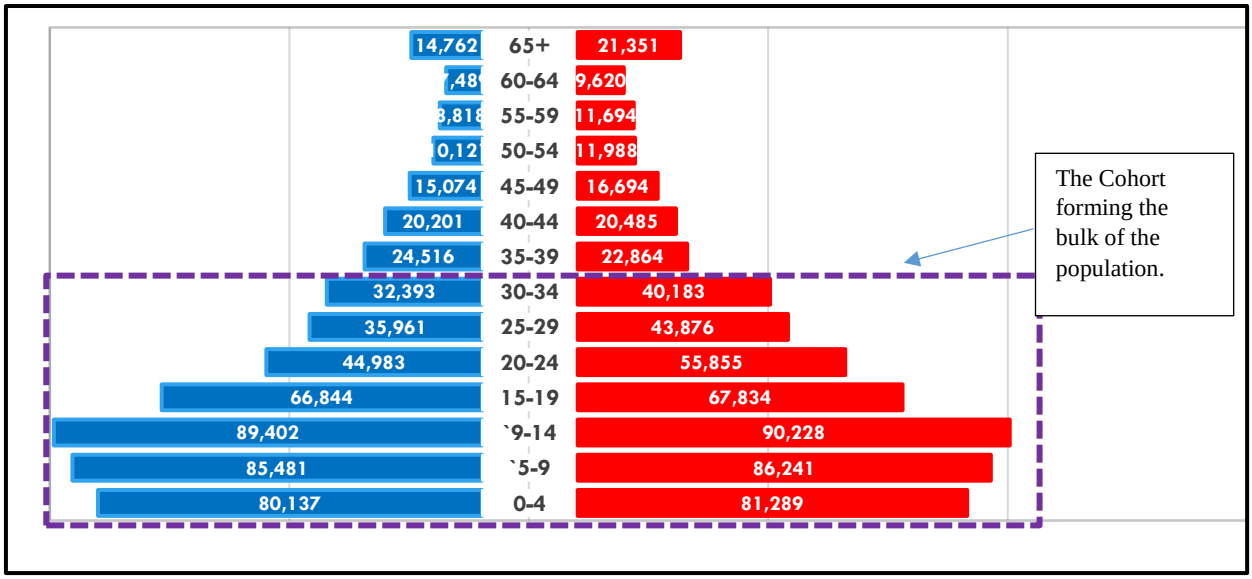
Ward	Urban Population 2020	Urban Population Projection 2030
North Kadem	2601	3857
Macalder/Kanyarwanda	3819	5663
Kaler	2208	3275
Got Kachola	2620	3886
Muhuru	9592	14225
North Kamagambo	-	-
Central Kamagambo	21520	31916
East Kamagambo	3664	5433
South Kamagambo	7023	10416
God Jope	3160	4687
Suna Central	74549	110563
Kakrao	3103	4602
Kwa	4646	6890
Wiga	-	-
Wasweta II	2953	4380
Ragana - Oruba	-	-
Wasimbete	-	-
West Kanyamkago	-	-
North Kanyamkago	3394	5034
Central Kanyamkago	5837	8656
South Kanyamkago	-	-
East Kanyamkago	3032	4497
Total	**304,101**	**451,011**

2.3.5 Population Structure and Projection

According to the Housing and population Census 2019, the bulk population falls within the bracket of 0-34 years. The age bracket accounts for 83.3 % of the total population. There is need therefore for the development of other economic sectors such as tourism, industrialization, and transportation in order. The youthful population calls for more investments in ventures that will

create more jobs. The vulnerable groups of 65 years and above account for 3% of the total population. The low population is due to a low life expectancy that stands at 63%. On the other hand, the labour force, falling within the bracket of 15-64 years, accounts for 51% of the total population. Chart 4 and table18 show the county population structure.

Chart 3: The County Population Structure



Source: KNBS Population and Housing Census, 2019

Table 18: Population Projection by Age Cohort

Baseline: 2019				2025 projections			2030 projections		
Age Cohort	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
0-4	8,0137	81,289	191,426	91,314	92,627	183,941	101,811	103,274	205,085
5-9	8,5481	86,241	171,722	97,404	98,270	195,673	108,600	109,565	218,165
10-14	8,9402	90,228	179,630	101,871	102,813	204,684	113,581	114,631	228,212
15-19	66,844	67,834	134,678	76,167	77,295	153,462	84,922	86,180	171,103
20-24	44,983	55,855	100,838	51,257	63,645	114,903	57,149	70,961	128,110
25-29	35,961	43,876	79,837	40,977	49,996	90,972	45,687	55,743	101,429
30-34	32,393	40,183	72,576	36,911	45,788	82,699	41,154	51,051	92,205
35-39	24,516	22,864	47,380	27,935	26,053	53,988	31,147	29,048	60,194
40-44	20,201	20,485	40,686	23,019	23,342	46,361	25,664	26,025	51,690
45-49	15,074	16,694	31,768	17,176	19,022	36,199	19,151	21,209	40,360
50-54	10,121	11,988	22,109	11,533	13,660	25,193	12,858	15,230	28,089
55-59	8,818	11,694	20,512	10,048	13,325	23,373	11,203	14,857	26,060
60-64	7,489	9,620	17,109	8,534	10,962	19,495	9,514	12,222	21,736
65-69	5,428	7,529	12,957	6,185	8,579	14,764	6,896	9,565	16,461
70-74	4,160	5,607	9,767	4,740	6,389	11,129	5,285	7,123	12,409
75-79	2,212	3,443	5,655	2,521	3,923	6,444	2,810	4,374	7,184
80-84	1,564	2,473	4,037	1,782	2,818	4,600	1,987	3,142	5,129
85-89	887	1,429	2,316	1,011	1,628	2,639	1,127	1,815	2,942
90-94	303	493	796	345	562	907	385	626	1,011
95-99	141	256	397	161	292	452	179	325	504
100+	67	121	188	76	138	214	85	154	239
Total	**536,182**	**580,202**	**1,146,384**	**610,967**	**661,127**	**1,272,092**	**681,195**	**737,120**	**1,418,317**

Source: Census, 2019

Table 19: Age Cohort Structure

Age Group	2019 Census			% of total population	2025 projections	2030 projections
	Male	Female	Total			
Pre School (0-5)	97,728	98,902	196,630	18	224,055	249,810
Primary School (6-13)	140,856	142,441	283,297	25	322,810	359,917
Secondary School (14-17)	59,823	59,672	119,495	11	136,162	151,813
Youth Population (15-29)	147,788	167,565	315,353	28	359,337	400,642
Female Reproductive (15-49)	239,972	267,791	507,763	45	578,584	645,091
Labour Force (15-64)	266,400	301,093	567,493	51	646,645	720,975
Aged Population (65+)	14,762	21,351	36,113	3	41,150	45,880

Source: Census 2019

2.3.6 Literacy

Migori County has a literacy level of 83% higher than the national literacy rate of 82%. The high literacy rate is because of the education sector's improvement in access to facilities and the quality of education.

2.3.7 Life expectancy

The recent research on health disparities across Kenyan Counties provided the average lifespan in Migori County to be 59 years compared to Kenya's average life expectancy of 66.7 (WHO 2018). The lower life expectancy is because of high poverty levels, the high prevalence rate of HIV and AIDS at 13.3 % (Kenya AIDS Response Progress Report, 2018), and the rising number of unemployed youths who indulge in crime to make ends meet.

2.3.8 Morbidity and Mortality

The major causes of death in the County are Malaria (53%), respiratory tract infections (16%), diarrhoea (7%), and typhoid (3.2%). These diseases are also the leading causes of infant and under-five mortality in the County. The current child mortality rates for the County (NNMR 19/1000, IMR 50/1000 live births U5MR 82/1000 live births) are among the highest in the County. Most deaths are a result of preventable and treatable illnesses.

2.3.9 Fertility

The high population growth is attributed to a high fertility rate, which is currently 5.3 children per woman, compared to a national average of 3.9 children per woman (Migori County Fact

Sheet, 2017). This number has declined from 8.8 children per woman in 1998, mostly because of the increasing demand for smaller families and modern contraception. Reducing population growth through the reduction of the number of children per woman is beneficial to the economy as fewer births increase the proportion of people of working age and output per capita. Also, smaller family sizes allow for more significant investment in children's health and education in the long term both for the family and the national and county governments. Therefore, it is necessary to address the barrier to access and use of modern family planning methods to curb the population's exponential growth.

2.3.10 Employment and Income Levels

Those under employment accounts for 36% of the total County's population and are employed in various sectors such as agriculture, NGOs`, private sector, National and County Government. The County's population below the labour force accounts for 46% of the total population.

Agriculture is the primary employer at 71% of the labour force. Most rural areas are self-employed and engage in small scale business such as selling grocery, foodstuffs, small hotels, *bodaboda (*transport service*)* services and small-scale farming. In urban areas, self-employment includes businesses like shop keeping, hotels and lodges among others.

The County's labour force is expected to increase to 632,725 and 705,455 in the years 2025 and 2030. Therefore, it is necessary for the County to partner with other key development agencies to invest in key economic sectors to create employment opportunities.

2.3.11 Marginalized and Minorities

The minority and the marginalized communities in the County face different challenges ranging from unemployment, illiteracy, political underrepresentation, early marriages and FGM, child labour, food insecurity, and poor infrastructure. The interventions spearheaded by the county government of Migori include equal employment opportunities, devolved funds, and infrastructure development by both County and national government entities.

Population Implications on Development

The Population Structure gives a divide on the implication it has to the development of the county. The county’s population is made of a youthful group composing 83% under the age of 35 years. The under 5 population calls for the development of proper health services to cater for and prevent the neonatal, infant and under five mortality which is high in the county as

compared to the national average. The school going population needs investment in the education system so as to equip this population with necessary skills and knowledge.

The youthful population which forms part of the labour force requires investment in skilled development, through creation of mid-level and higher education institutions, and job creation. The county should therefore create an investor welcoming environment so as to create job opportunities and tap into the locally available labour in the county. This population also require investment in facilities such as innovation centres, sports facilities and art centres so as to enable the youths to show case their talents, innovation and entrepreneurial skills which will create employment, income for the youth and revenue for the County. Lack of investment in this population has led to brain drain, emigration, desperations that lead to insecurity and substance abuse.

The aging population which forms part of the dependency population needs investment in the health service and homes for the old which will later improve the life expectancy levels in the county. The county also experiences a continuous population growth resulting from a high fertility rate and in-migration from neighbouring counties and Tanzania. This has resulted to increased urban population which calls for investment in health, education, physical and social services in the county especially in the urban areas.

The population divide indicates that the rural population is 73% of the total in the county. This population relies on agriculture as the main source of income. The county, therefore, needs to invest in agricultural production through farmers support programs such as provision of extension services, farm mechanization and technological adoption in farming methods. Additionally, improvement of transport systems in the rural areas, investment in agro processing industries will increase the farmer's income and generate revenue to the County as well. The rural population also need provision of services which include water supply, health education, electricity, and ICT services. The urban population is also increasing and currently accounts of 27% of the total county population.

This population requires provision of services which include housing, health, education, water, waste management, recreation facilities among others. The revitalization of urban areas and urban economy is highly required so as to create jobs for the population and generate income. Cultural practices such as polygamy, wife inheritance, lack of use of birth control measures and early marriages has resulted to increased population growth, high number of school dropouts among school going girls, and spread of diseases such as HIV and AIDS. The later

has led to increased mortality resulting to increased number of orphans leading to increased burden and agony among the old population which is left to cater for the orphans resulting to increased poverty.

2.4 Human Settlements and Urbanization

Human settlement is an integrative concept used to contemplate physical components of shelter, infrastructure and the services to which the physical elements provide support. The services in this context include education, health, culture, welfare, recreation, and nutrition. Analysing and planning human settlements aims at improving the social, economic, and environmental quality of the people and their living and working environments.

Human settlements exist in a dichotomy of rural and urban. The analysis in this report examines the human settlements in urban and rural contexts. The investigation is on the human settlement patterns, function, condition in terms of access to utility and infrastructural services, defining housing quality, and economic activities. National settlement strategies informed the criteria used in the analysis of human settlements.

2.4.1 Human Settlement Patterns in the County

The development of urban and rural settlements in Migori County is more of organic. Visually, as depicted in the map on distribution of human settlements. The settlements are widely spread all over the County's dry land leaving only the water bodies of Lake Victoria and the wider wetland areas in the lower Kuja region. In the context of effective planning, with the principle of optimal use of land and cost minimization, the current human settlement pattern is undesirable. Organic growth and development of the urban and the rural settlements in the County pay no attention to the sustainability of land use, infrastructural service provision, and food supply as far as agricultural productivity is concerned.

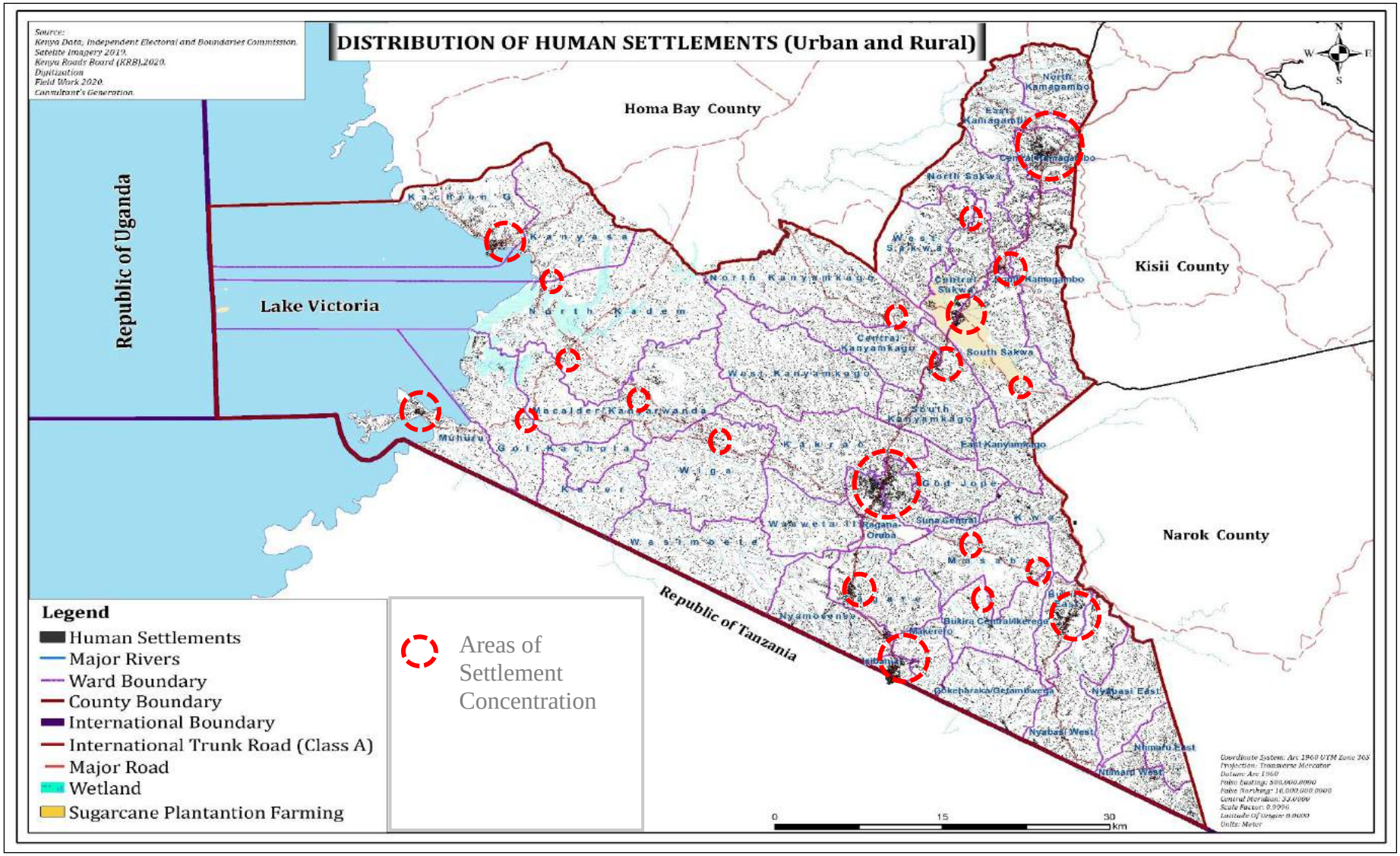
Proper management of human settlements requires effective policies to control the form and patterns in which human settlements evolve. One of the roles of spatial planning is defining the forms and functions of the human settlement to balance the trade-offs between the socio-economic well-being of the people and sustainability. Similarly, the development form and pattern of the settlements in the County require deliberate action to guide future development more desirably.

2.4.2 Factors Influencing Distribution of Human Settlements

In theoretical foundations, several factors influence the distribution of human settlements. These factors include topography, climatic conditions, and land tenure, proximity to

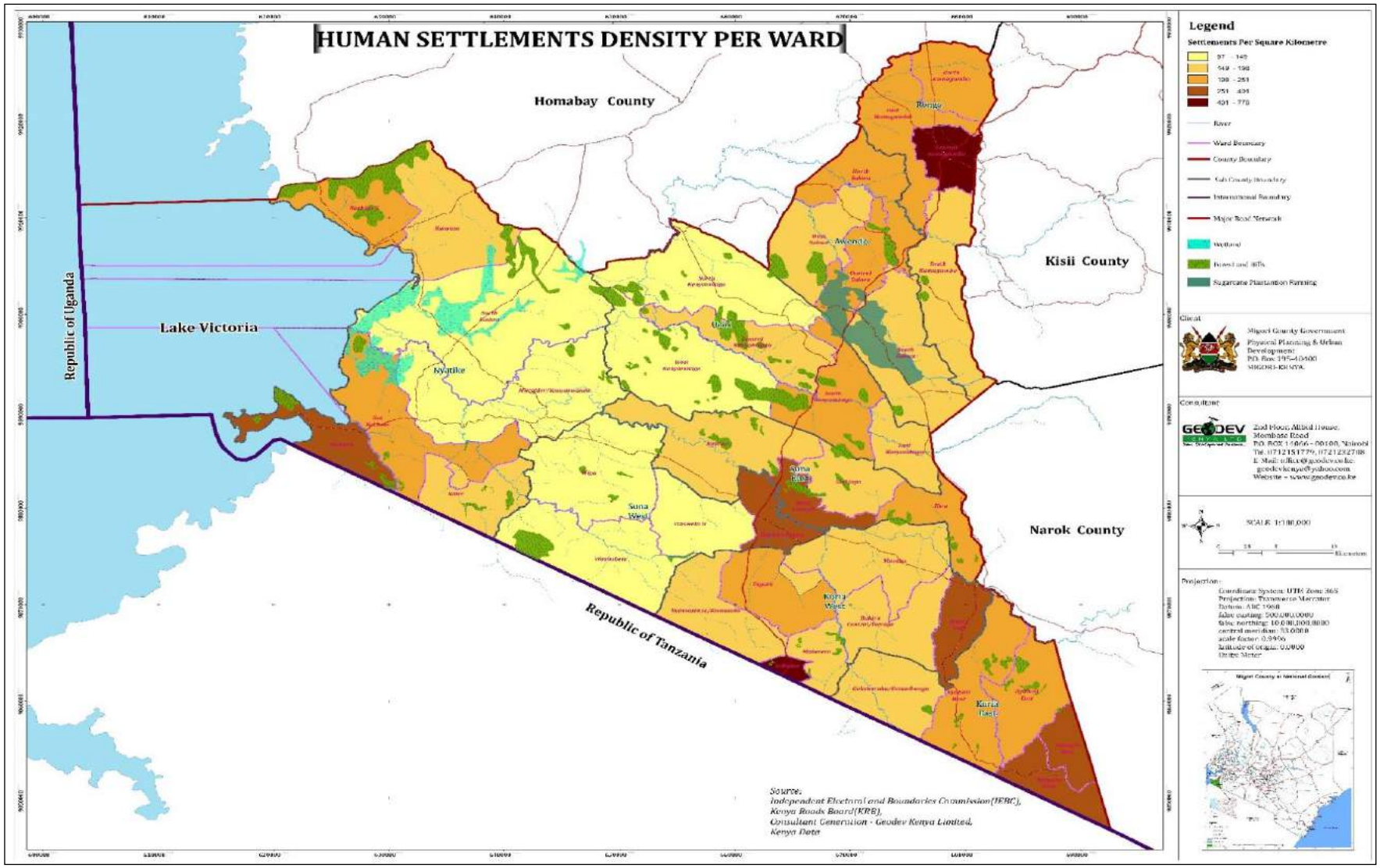
infrastructure and resources, and policy directions, among others. In the context of the assessment in Migori County, the factors above have influenced the settlement's distribution.

There is a relatively higher settlement density in Suna East and parts of Suna West, Rongo, Parts of Uriri, Awendo Kuria East and West compared to Nyatike Sub County and parts of Suna West. The factors attributed to these settlement densities include the good soils, climate, provision of infrastructure, and availability of opportunity that has been created by the existing urbanization activities along the class A1 road traversing the County to link with Tanzania.



Map 25: Distribution of Human Settlements

Source: Consultant's Edits, 2021



Map 26: Settlement Density

Source: Consultant's Edits, 2021

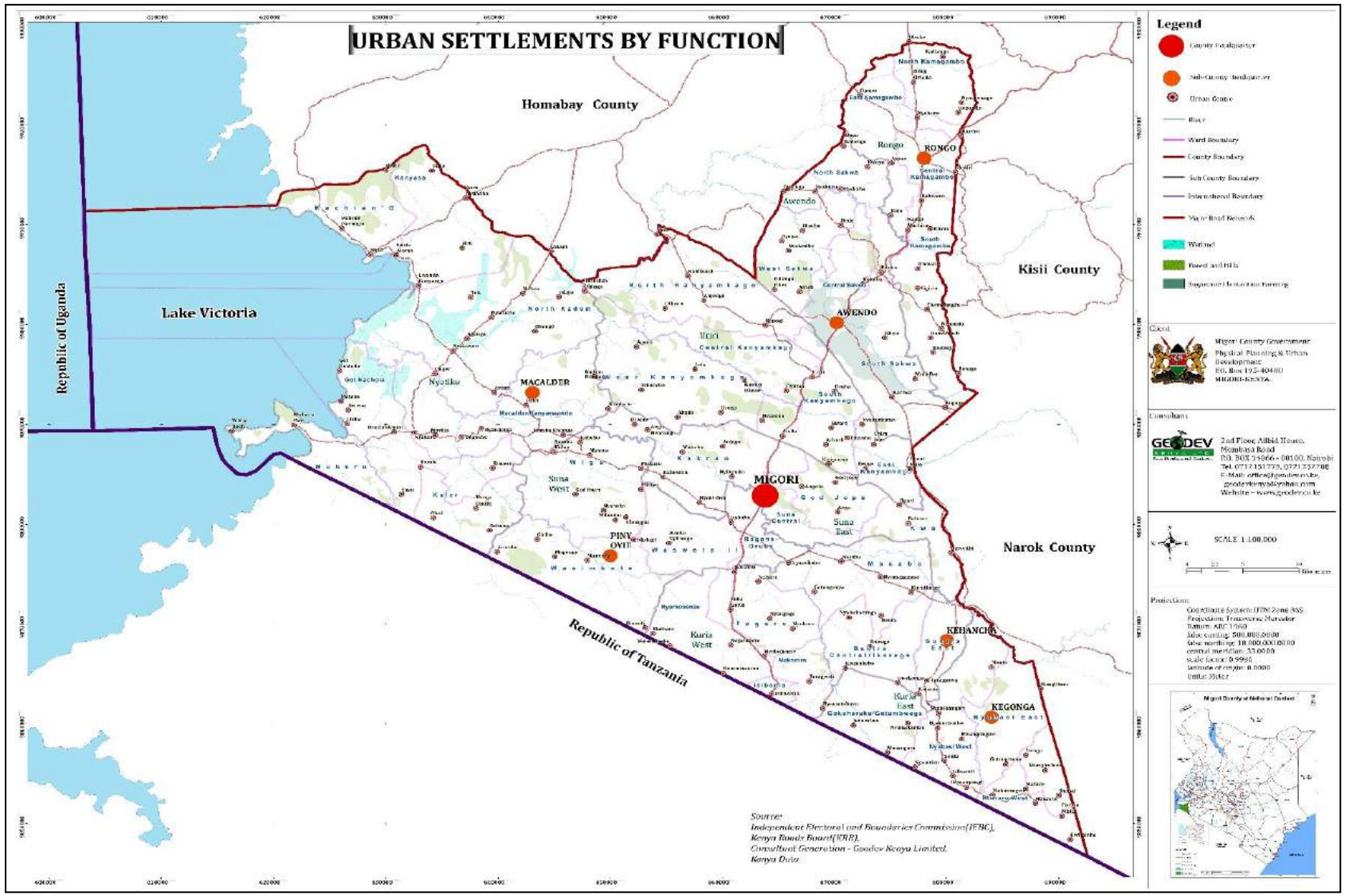
2.4.3 Urban Settlements

Migori County's urban population is 27%. This population is projected to increase to 32% by the year 2030. The urban settlement in the County includes those settlements that have a higher concentration of people per unit area. According to the Organization for Economic Co-operation and Development the urban typology of settlement is distinguished from the rural-based on the density of 300 inhabitants, per square kilometres. In the Kenyan context, the urbanization phenomenon has been defined in two distinct ways. Recognition of human settlements as urban for management and administration purposes has been defined by the Urban Areas and Cities Act 2011, and the Amendment Act 2019. The Act defined the urban areas based on population thresholds ranging from a city to a market centre level (City-250,000 and above, Municipality-50,000-249,999, Town 10,000-49,999, Market Center 2000-9,999 persons). The Act's criterion lacks clarity as it throws a dilemma of choice on the differentiation of the hinterland population and the resident population. On the other hand, the recognition of urban areas for developmental planning has been based on the hinterland and the resident population; (Urban Center; Rural Centre; Market Center and Local Center).

The analysis of Migori County's urbanization and urban settlements presents a unique case. The urban areas exist in small rural hamlets to the municipality as recognized in the UACA, 2011, and the Amendment Act 2019. The County's identified 233 urban areas ranging from the smallest centres offering lower-order function as corner shops to the county headquarters. The major urban areas that achieved the developmental resident population threshold to be classified were 37. The analysis of human settlements in Migori, therefore, borrows heavily on the concepts of the human settlement strategy of 1978 in Kenya with appropriate modification to suite the local situation and context of Migori.

Existing Function, Classification and Distribution of Urban Settlements

Currently, the existing classification of urban settlements in Migori is limited to the classification set out in the Urban Areas and Cities Act, 2011 and the Amendment Act, 2019. There only three urban areas classified in the County. These are the three municipalities of Migori, Awendo and Rongo urban areas. Furthermore, the existing assigned functions of the urban areas in the County are administration functions that include the County, Sub-County headquarters with the other urban areas lacking defined functions despite their potentials.



Map 27: Distribution of Urban Areas

Source: Consultant's Edits, 2021

Condition of the Urban Settlements within the County

Assessment of the condition of urban areas in the County focused on the availability of utility infrastructure - including public water supply, sewer/liquid waste, solid waste management, ICT and telecommunication, storm water drainage, energy (electricity) infrastructure, and transport infrastructure condition.

The study of the County conducted in 2020 established that all the urban areas lack public liquid waste management infrastructure, including sewer treatment facilities, even in the major urban areas with densities that require the installation of the sewer as the effective and healthy means of liquid waste management. This state of affairs in the urban areas on matters liquid waste management presents a public health concern. As established, over 87% of the urban areas use pit latrine as a sanitary way of observing hygiene. Public health in the County is under jeopardy, as evidenced in the County.

Well established water infrastructure is inadequate in the urban settlements. Out of the identified and assessed 240 urban areas, only 14 urban areas have installed public water supply infrastructure with a piped water network. This proportion is equivalent to approximately 0.6% of the total urban areas. However, the urban areas' assessment established that the urban areas have central community water points with borehole water supply.

It is commendable that all the urban areas are transacted by electricity power distribution lines except Migingo (an Island). However, the level of connectivity by properties and households is relatively low. According to the survey conducted, fifty-seven (57%) of the households in the urban setup are connected to power (Kenya Power Company Ltd, 2o20).

The bulk of this population connected to electricity is limited to the major urban areas that include Isebania, Migori, Kehancha, Rongo, and Awendo. An observation was made that majority of the population in other urban areas are not connected to power. The challenge was attributed to the lack of power sub-stations, transformers and high cost of power connection.

Solid waste management is an issue in the major urban areas which generate a larger quantity of solid waste such as Migori, Rongo, Awendo, Kehancha, Isebania, Kegonga, Sori, and Muhuru Bay. All these urban areas are grappling with the challenge of how to manage their waste efficiently. Except for Isebania, which has an installed sanitary landfill, there is no efficient solid waste management system in the urban areas.

Drainage infrastructure development is a general challenge in the urban areas, as revealed by the assessment. It is only in sections of Migori, and Rongo that investment is done. With the

increasing built form due to urbanization in the County, there is an increasing cover of impervious surfaces that increased surface runoff during rains. These runoff water need to be guided properly to prevent the occurrences of risks such as floods.

Transportation infrastructure in urban areas is limited. Despite the urban areas being relatively smaller in scale, there is a need for transportation infrastructure such as termini - bus stops and parking, aerodromes, piers, jetties etc. The only urban areas with bus parks include Migori, Rongo Awendo, Isebania, Kehancha, Muhuru Bay, and Sori. Those urban areas with designated bus stops are twenty-two (22) while all the rest have undesignated terminal facilities. These statistics show that only 12% of urban areas have access to public transportation services.

Internal roads that provide access to properties and activity areas are in a poor state. In approximation, about 1% of the urban roads are in paved conditions. The gravelled roads suffer the challenge of limited and untimely maintenance, which manifests potholes and road erosion.

A great challenge is faced in access to ICT and telecommunication services in the urban settlement in the County. Communication challenges in terms of mobile phone network is a challenge in the local centers without telecommunication boosters. Additionally, the ICT services are privatized. Major urban areas like Migori, Rongo, Isebania, and Kehancha lack public ICT centers. Postal services are available in urban areas that include Migori, Kehancha, Awendo, Rongo, Mariwa, Ranen, Isebania, Nyatike, Muhuru Bay, Sori, the other urban areas have to get to the listed urban areas to access postal services.

Housing

The state of housing in urban settlements is not limited to the shell as described by Doxiades (in His book *"The Science of Human Settlement-Ekistics*"). The condition is determined by the level of access to concomitant infrastructure. As described above, the infrastructural condition indicated that the condition of housing is in a sorry state. However, limited to housing the condition, there is an existing gap in the housing stock.

a) Housing Demand and Supply

Given the population size as 1,116,436 and the average household size of 4.6 (KNBS, 2019) the number of housing units required to house the population is 242,704. The number of existing housing units in the County is 238,133 units. Therefore, the County has an estimated housing gap of 4,571 dwelling units. This gap is projected to rise to 70,212 dwelling units by 2030, as summarized below.

Table 20: Housing Demand

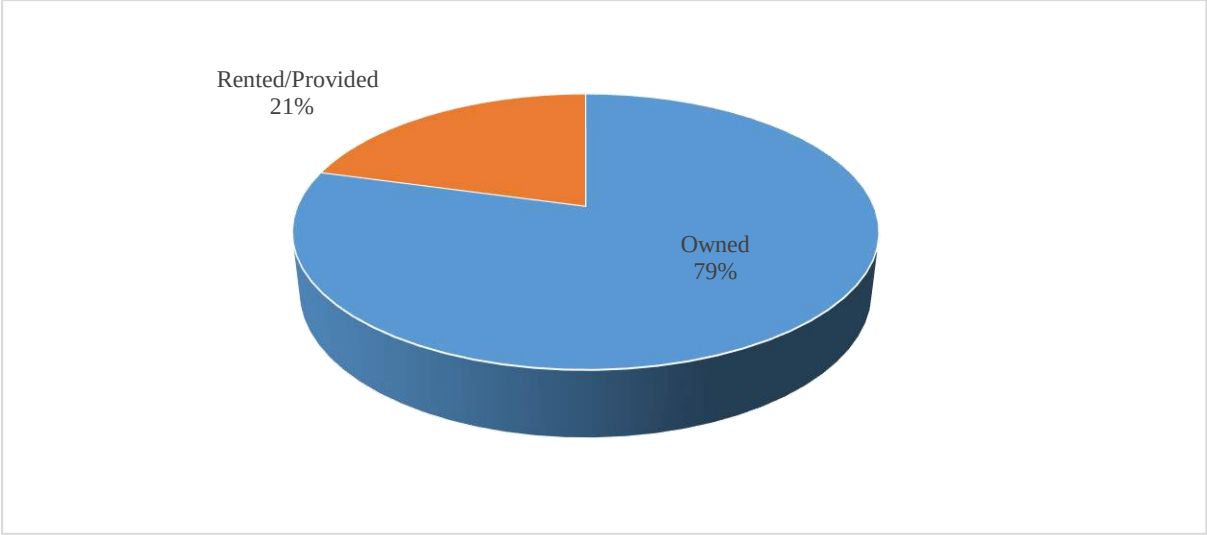
Year	Population	Housing Demand	Housing Supply	Gap
2019	1,116,436	242,704	238,133	4,571
2030	1,418,383	308,345	238,133	70,212

Source: Kenya Population and Housing Census Report, 2019; Projected by the Consultant

b) Housing Provision

According to the population census report 2019, seventy nine percent (79%) of houses are owner occupied while twenty one percent (21%) are rented. The housing providers in the County are the private investors providing ninety three percent (93%), parastatals, the County government and National government providing two percent (2%) each and NGOs providing one percent (1%) of the houses.

Chart 4: Ownership of Housing Unit



Source: KNBS Population and Housing Census, 2019

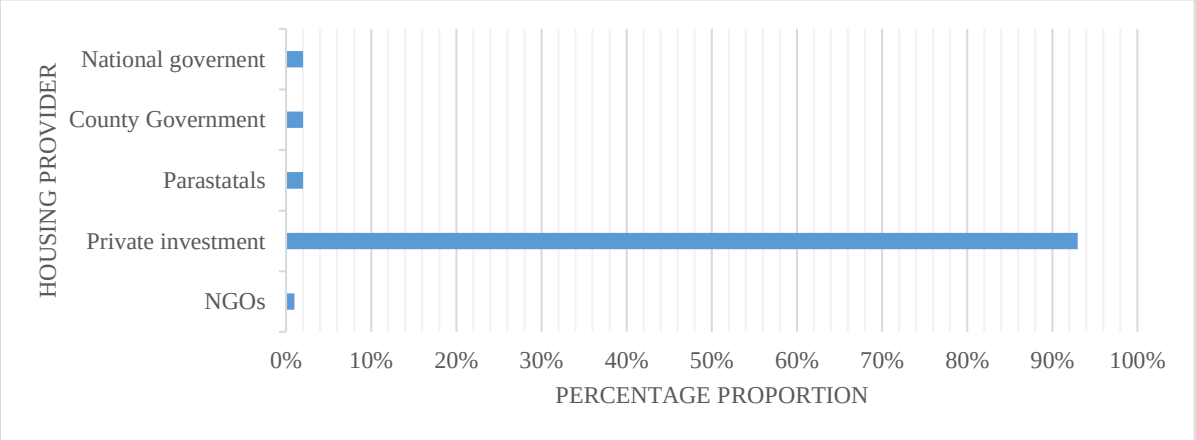


Chart 5: Housing Providers

Source: KNBS Population and Housing Census, 2019

c) Roof, Wall and Floor Materials

Iron sheets are the main roofing materials, mud, cow dung and bricks form the main walling materials while floors are mainly earthen, concrete and cement as summarized in figures 5-3, 5-4 and 5-5.

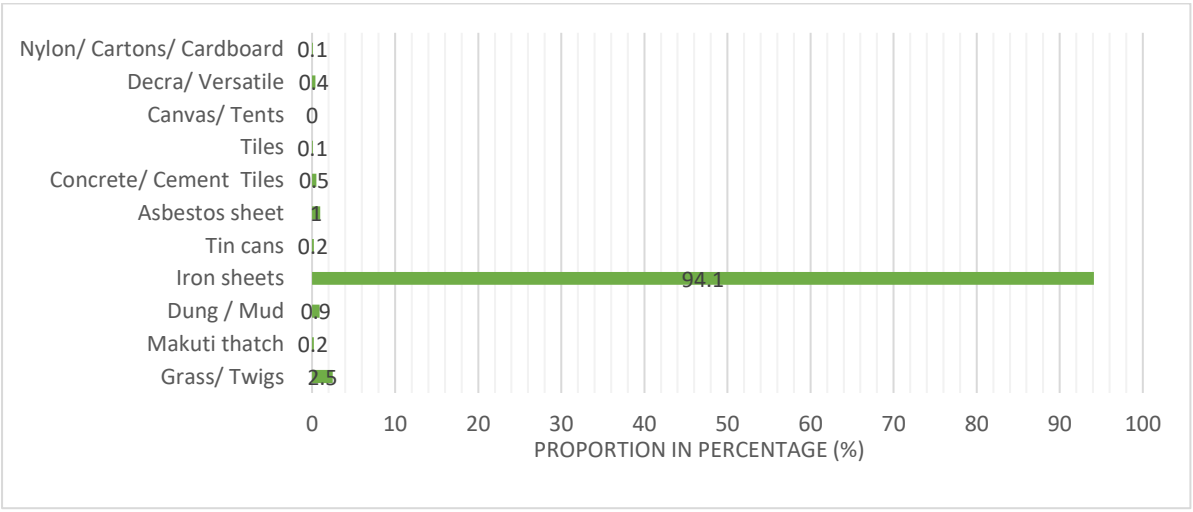


Chart 6: Common Roofing Material

Source: KNBS Population and Housing Census, 2019

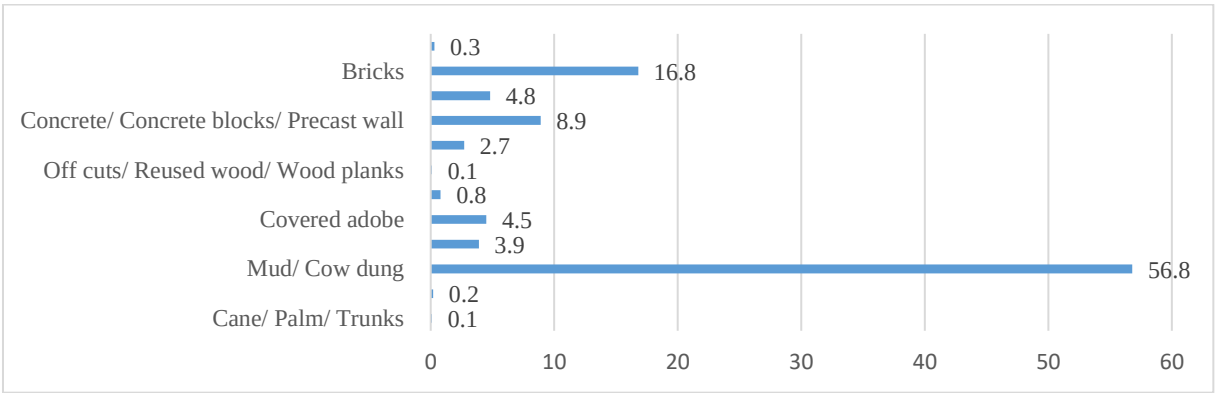


Chart 7: Common Wall Material

Source: KNBS Population and Housing Census, 2019

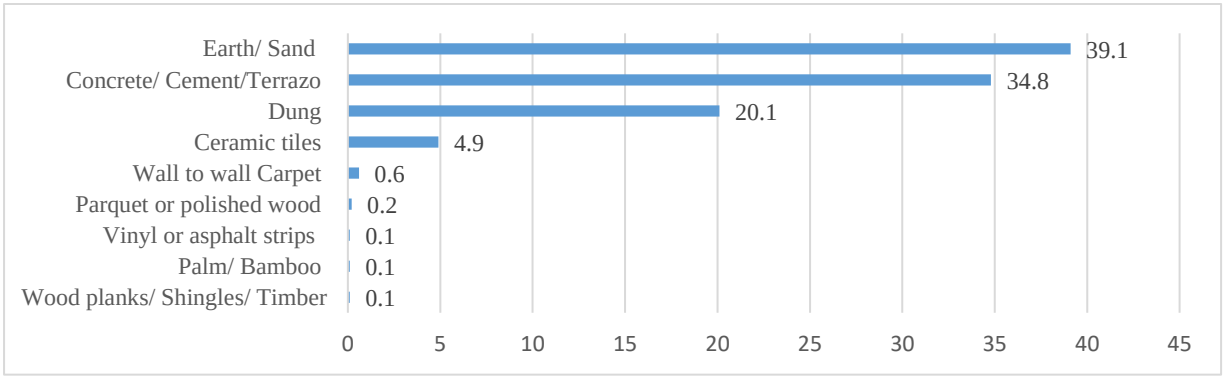
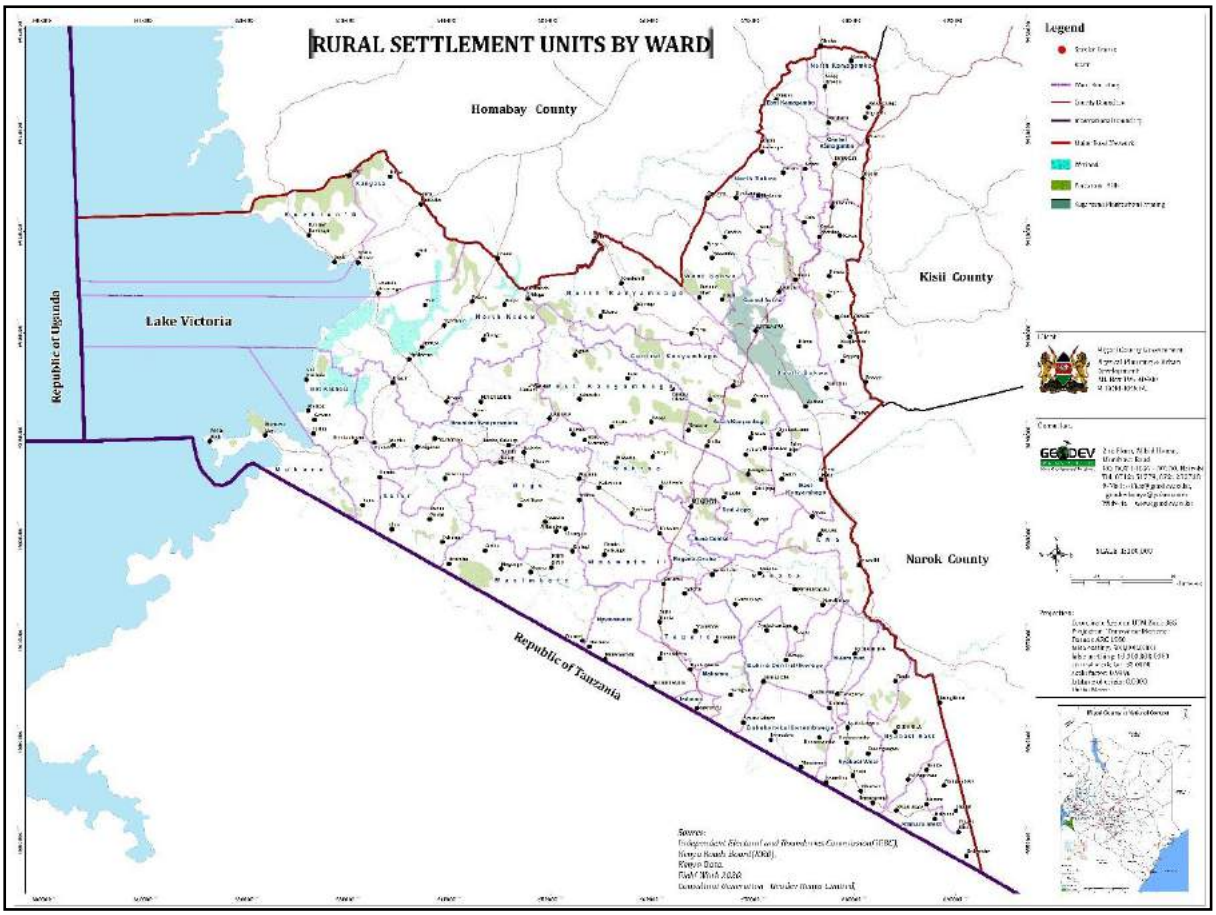


Chart 8: Common Floor Material

Source: KNBS Population and Housing Census, 2019

2.4.4 Rural Settlements

Assessment and analysis of human settlements in the County entailed establishment of the rural development units which in this case are the wards. It should be understood that the wards encapsulate the urban areas. The extent to which the wards are defined as the rural settlement units is based on the counties lowest decentralized unit upon which development decision and service provision is anchored. The scope of the rural units also accentuates the extent to which contiguity between urban and rural is minimal. In this context it is also to justify the need to enhance the urban-rural linkages. The rural settlement units are as presented in the map below;



Map 28: Rural Settlement Units

Source: Consultant's Edits, 2021

The rural settlements in the County exhibit varied patterns of minimal concentration of hamlets to dispersed homesteads as illustrated in map above. The existing rural settlement pattern has a bearing on the social provision and utility infrastructure. It is very expensive to effectively provide services to the rural population in a dispersed settlement pattern. However, opportunities exist in the development planning of the rural areas through the rural development units defined by the wards.

Rural Development

All the rural areas in the Migori County are endowed with resources as revealed by the analysis presented in annex I. The resource endowment is either in human capital, natural capital or the acquired capital that has been developed by human being. The development of these rural areas has to therefore align with their resource potential as indicated in annex I.

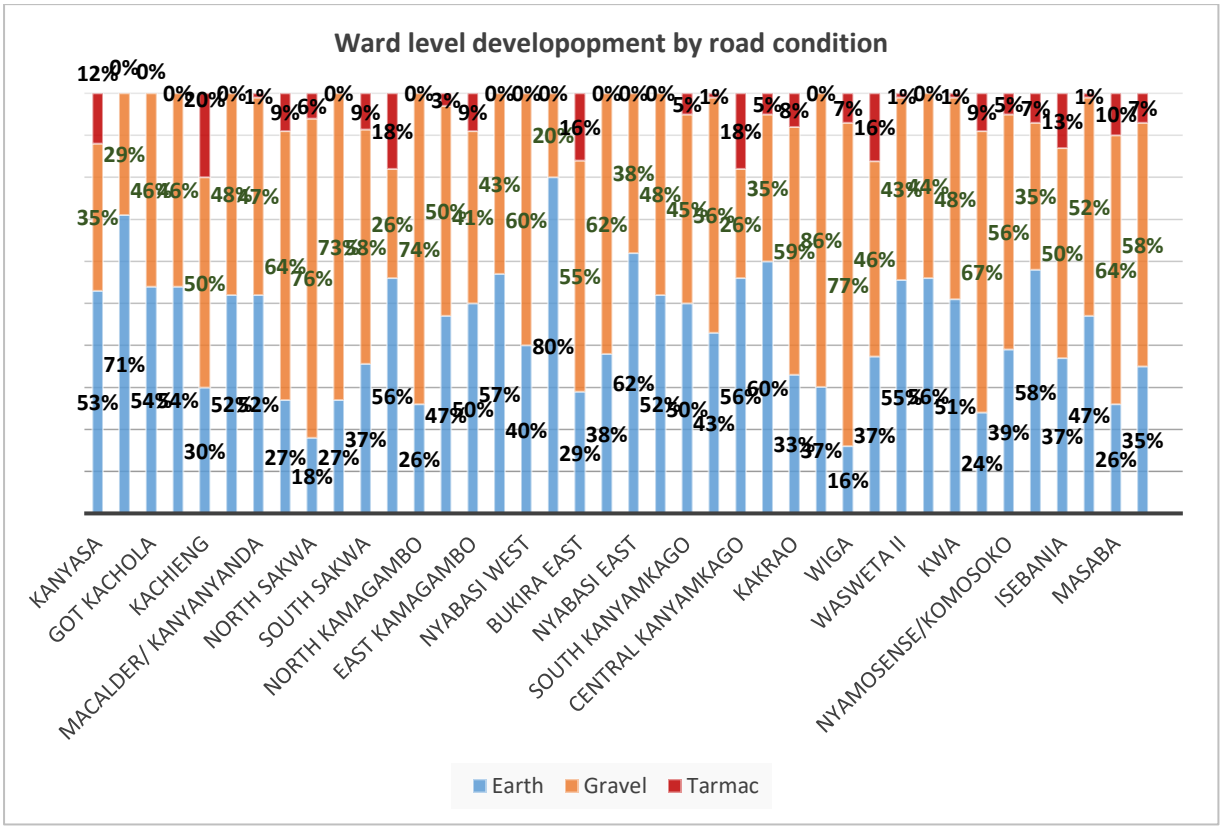
The Level of Development of Rural Areas in the County

The level of development in the rural areas was assessed by using the development in roads in the various rural units. The analysis indicates that Kachieng' has the highest length of tarmac

road while rural settlement units that include Kaler, Got Kachola, Muhuru Bay, North Kadem, West Sakwa, North Kamagambo, Ntimaru and East, West, Nyabisawa East and West, Gokeharaka/Getambage, Wasinbete, God Jope have no tarmac roads.

On the other hand, generally all the rural areas have gravel and earth roads. However, there are a number of rural areas with the highest level of earth roads. These areas include Ntimaru East and Kaler have the highest level of earth road (80% and 71% respectively).

Figure 2: Comparative Assessment of the Level of Rural Development



Source: Field survey, Geodev (K) Ltd, 2020

Rural Economic Activities

Agriculture primarily drives the rural economy of Migori. Despite agriculture being the main activity, other non-farm activities contribute to the rural economy. These activities include mining, industrialization, and off-farm employment in the retail and service sectors.

Agriculture

Agricultural practices in the County include crop cultivation and animal husbandry. Livestock keeping is cutting across all the rural settlement units (wards) in the County. On the other hand, crop cultivation has a variation on crop cultivation based on crop suitability and animal capability as informed by the region's agro-ecological potential.

The major crop production by the rural units (wards) is as discussed in the agriculture section. Sugarcane is the leading industrial crop in Rongo, Uriri, and Awendo Sub-Counties which domicile 13 rural settlement units. Tobacco as an industrial crop is currently covering 13 rural settlement units while maize is grown all over the forty rural settlement units. The coffee industry in the County is currently limited to seven (7) rural units (wards).

The County's rural units are also shifting to cultivate sweet potato, bananas, and rice, which are currently developing in rural settlements in Kuria East and West, Suna East and West. Additionally, there is small scale development in vegetables in the whole County's rural settlements.

Fish farming is currently taking place in 23% of the rural settlement units. Fish farming is highly driving the economy of the lakeshore settlements in Nyatike Sub- County.

Non-farm Activities

Non-farm activities are ancillary to the rural agricultural economy and service to the ruralites. Non-farm activities that contribute to the economy of rural settlements in the County include trade and retail activities, storage, transportation, industrialization, farm tool repair works etc.

Trade and Retail Activities

Trade and retail activities also drive the rural economy in various proportions. The production that is taking place in the farmlands in the County's rural economy has to ultimately find their way to the consumption stages that requires trading and retail activities. The retail activities in rural settlement take place in rural service centers. Within these centers, that minimal concentration of retail activities takes place to achieve a certain threshold of services to be enjoyed by the rural settlement in the catchment areas (Hinterland).

The assessment of the County's rural settlements established small scale retail activities in markets where selling and buying of vegetables, foodstuff, and the buying of lower-order goods take place. Over two hundred and thirteen (213) centers provide retail opportunities for the rural settlements in Migori County.

Storage

Storage services in rural settlements include tobacco, cereal, coffee, and fish. Migori County has National Cereal Stores strategically located in Ragana Oruba, Awendo Central, Ntimaru, and Bukira to provide cereal storage services for the produce. Fish storage services and facilities are found in the local centers in the rural settlement units along Lake Victoria.

However, there is no public investment in this subsector. It is, however, driven by the private sector.

Industrialization

Rural industrial development in the County is both at medium and small scale, including cottage industries. The established industrial activities include gold mining and crushing in the rural settlements in Nyatike, Kuria West and East, and Rongo Sub-counties. The gold mining industry is the leading employer in Nyatike Sub-county in terms of Non-farm economic activities. Sugarcane milling as a rural industrial activity is largely cottage. The residents in Rongo Sub-county rural settlements have diverted to jaggery processing from the sugarcane juice. The assessment established that individual cane processing returns are more profitable than delivering canes to the region's large sugar processing industries.

Transportation

Transportation service as a rural economy is primarily driven by motorcycles (*bodaboda*) and tractors ferrying people to the various destinations and sugarcane to the factories, respectively. The reactor led transportation is mainly supported by the South Nyanza Sugar Company, Transmara and Sukari processing factories. The *bodaboda* sector is found in all the rural settlements units in the County due to their relatively cheaper cost and convenience they offer to the rural communities.

Farm Tool Repair Works

Tools used in farms in rural areas regularly require repair and maintenance services. All the local service centres within the rural settlements offer services in farm tools repair and maintenance, depending on their complexity level. This economy provides off-farm employment in rural settlements. However, this sector is under development in the County.

Forestry

Tobacco growing regions of Kuria West and East have greatly engaged in agroforestry and planted forest development. The forest economy offers the dual benefits of environmental conservation and economic benefit. Other rural settlements in Nyatike, Rongo, Uriri, Suna East, and West are lagging backwards in terms of forestry.

Condition of Rural Settlements

The rural settlement examination looked into the basic water supply, rural electrification, sanitation, Road network and accessibility, ICT and telecommunication, health, and education services. The findings are discussed as follows

Water Supply

Efficient and effective water supply is dependent on the availability of appropriate infrastructure. The diversity of the rural settlements in the County is that there are areas that are water-stressed than others. This condition can only be alleviated through investment in water infrastructure to deliver water for the rural population.

Out of the forty (40) rural settlement units, only fourteen settlement units (14 wards) have public water supply schemes. This proportion signifies 35% access to public water supply infrastructure. Despite the availability of water supply infrastructure, the supply is inadequate, and not all the residents in the mentioned settlement units have access to the public water supply. The remaining settlements access water either through springs, shallow wells, rivers, lake, or boreholes (details are discussed in this report's water supply sector). The water sourced from the various reservoirs in its raw forms often exposes consumers to the risk of contamination since their quality is questionable and compromised. As it stands, 75% of the rural settlement units have no access to appropriate public water supply infrastructure for domestic and agricultural use. The condition is a drawback on the social and economic development of the rural settlement units.

Rural Electrification

Access to power is a determinant of the degree to which an area can develop economically and socially. All the rural settlements (100%) in the County have access to electric power distribution. Despite this opportunity, only 23% of the ruralites are connected to electricity. This proportion is relatively low and is a hindrance to small scale rural industrialization.

Sanitation

Assessment of the rural settlements reveals that over 87% of the rural settlements use pit latrines. Management of solid and liquid waste only emerges as a challenge in rural service centres with higher densities and population sizes. The existing challenge of sanitation in the rural settlement is that the pit latrines are unregulated and unstandardized. This situation exposes the rural environment and communities to public health challenges.

Road Network and Accessibility

Road condition is generally poor in rural settlements. The analysis of the rural settlements shows that 43% of the roads are in earth surface condition while 52% are in gravel condition with only 5% of the roads in tarmac. The higher proportion of the roads with earth surface condition are rural feeder roads and access roads. Additionally, rural accessibility is also hindered by the lack of bridges, culverts across rivers and streams, respectively. Such conditions hinder the movement of goods and services within and across rural settlements.

ICT and Telecommunication

Strength of the telecommunication network is higher in major rural service centres in the County. The availability of the network and the strength is weaker within the rural settlements. Additionally, access to ICT infrastructure is limited in the whole rural settlements. The residents rely on smartphones whose penetration in the rural settlements is limited with the strained network coverage.

ICT is currently taking centre stage in driving almost all activities, including farming and marketing. The current condition of access to ICT in rural settlements makes the rural settlements less competitive regionally in terms of access to information, marketing and delivery of services.

Health

Each of the rural settlements has a dispensary. The evolving challenge is on the distributive efficiency of the health facilities and the quality of health care services offered. As analysed in this report's health sector, the health service provision is undermined by factors such as inadequate staffing, lack of support treatment facilities, and drugs.

Education

Primary and secondary schools exist virtually in all the rural settlement units. The lower-level educational infrastructure, such as ECDEs, presents the challenge of lack of learning materials and lack of classroom. Higher level and technical educational institutions are inadequate, with a total lack of establishment in 92% of the settlements. The quality of life in rural settlement can only improve with education access at all levels in the County.

2.5 Infrastructure

The provision of infrastructure acts as a pull factor for other development activities. Infrastructure is, therefore, a necessity in influencing the distribution of activities and people to achieve socio-economic transformation. The analysis of the infrastructure in the County entails the assessment of the existing social and physical infrastructure and their conditions. The infrastructural services analysed include water supply, energy, sewer systems, solid waste management, drainage facilities, ICT and telecommunication, education, health, and community facilities.

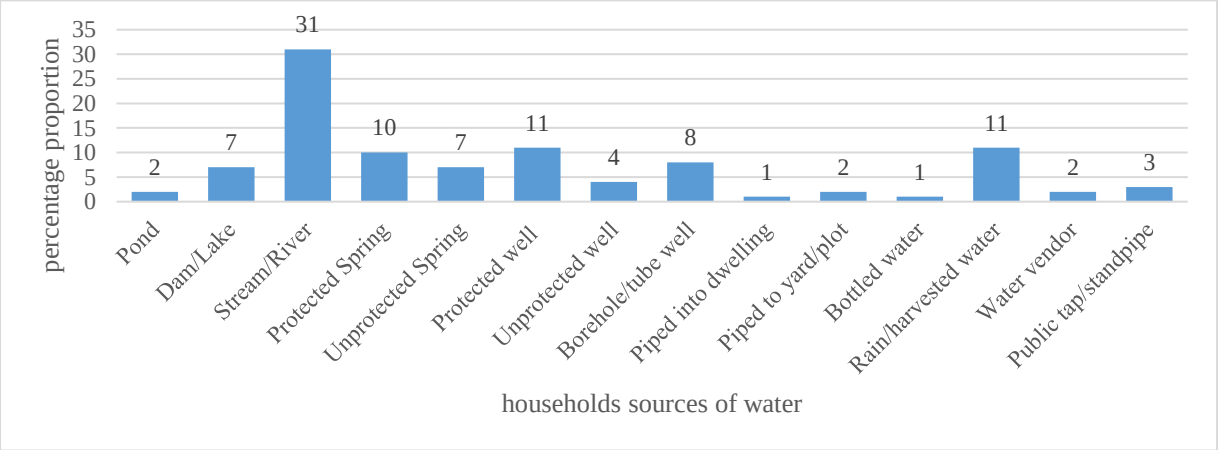
2.5.1 Water Supply

Clean and adequate water supply is a basic right as enshrined in the Constitution of Kenya, 2010. Water supply is about the infrastructure that delivers water to the population for various activities such as domestic, agricultural, and industrial use.

Sources of Water

According to the Kenya Population and Housing Census Report 2019, 31% of households in the County source their water from streams/rivers. Rainwater is used by 11% of households while 7% of households source water from dams or the lake. However, only 1% of households in the County received piped water from different water distribution schemes. Water vendors supply about 2% of households in the County. Chart 9 represents household water sources in the County.

Chart 9: Source of Water for Domestic Use



Source: KPHC, 2019

Lack of access to safe and adequate water contributes to both the high cost of living and poor health. Therefore, the level of access plays an enormous impact on society's socio and economic prosperity.

Consequently, it is essential to provide clean water at acceptable distances, i.e., 100-1000 meters, or a total of 5-30 minutes collection time from each household *(WHO and UNICEF 2000).* The level of access in the County ranges between 200-500 meters.

Existing Water Supply Infrastructure

The existing water supply infrastructure includes piped water by various supply schemes, boreholes, wells, dams, springs, and water pans. Piped water supply infrastructure covers the urban areas and their environs. Boreholes and wells are used in rural and urban areas, while dams, springs, and water pans are used primarily in rural areas. Map 29 further illustrates the distribution of water supply infrastructure in the County.

Water Demand

Water use and demand in a household are determined by the level of access, i.e., the distance to and time taken to the water source. The volume increases gradually from those using a

communal water point at a distance, communal water points at the plot level, and the household connection. The water use rate is 20L/C/day, 50L/C/day, and 100L/C/day (*WHO and UNICEF 2000).*

Rural Water Demand

Water supply in rural areas is by rural water supply schemes which serve the eight sub-counties. The schemes have scaled-down water supply to ward levels with about 64 supply schemes serving different wards. The rural water supply schemes are managed by water users' association committees, school BoMs and sub-county water officers.

Adopting the piped water connection scenario for every rural household in Migori County, each individual is expected to use 100 litres of water per day. The domestic rural water demand is estimated to be 83,901.3m^3/day, 90,438.8m^3/day, and 97,051.3m^3/day based on the projected rural population of 839,013, 904,388, and 970,513 persons in the years 2020, 2025, and 2030 respectively.

Urban Water Demand

The urban water demand is drawn from the water demand averages of low, medium, and high residential areas water use. The total urban water supply by the various schemes is 6832m^3/day. The approximate average water use is 150 litres/person/day. In the years 2020 and 2030, the County's urban water demand is 67,946.625 m^3/day and 100,770.975 m^3/day respectively. The current urban water supply gap in the County is 61,114.625m^3/day. Water in the urban areas is supplied by schemes including Migori Water and Sanitation Water Supply, Nyasare Water and Sanitation, and Muhuru Community Water, Sanitation and Hygiene supply schemes.

Water Supply Schemes

i. Migori Water and Sanitation Supply Scheme

The scheme supplies water in Migori, Awendo, Rongo, Isebania, Kehancha, Kegonga, and Uriri towns with a supply network coverage of 26%. The scheme has five water treatment plants with a capacity to supply 27,500 m^3/day.

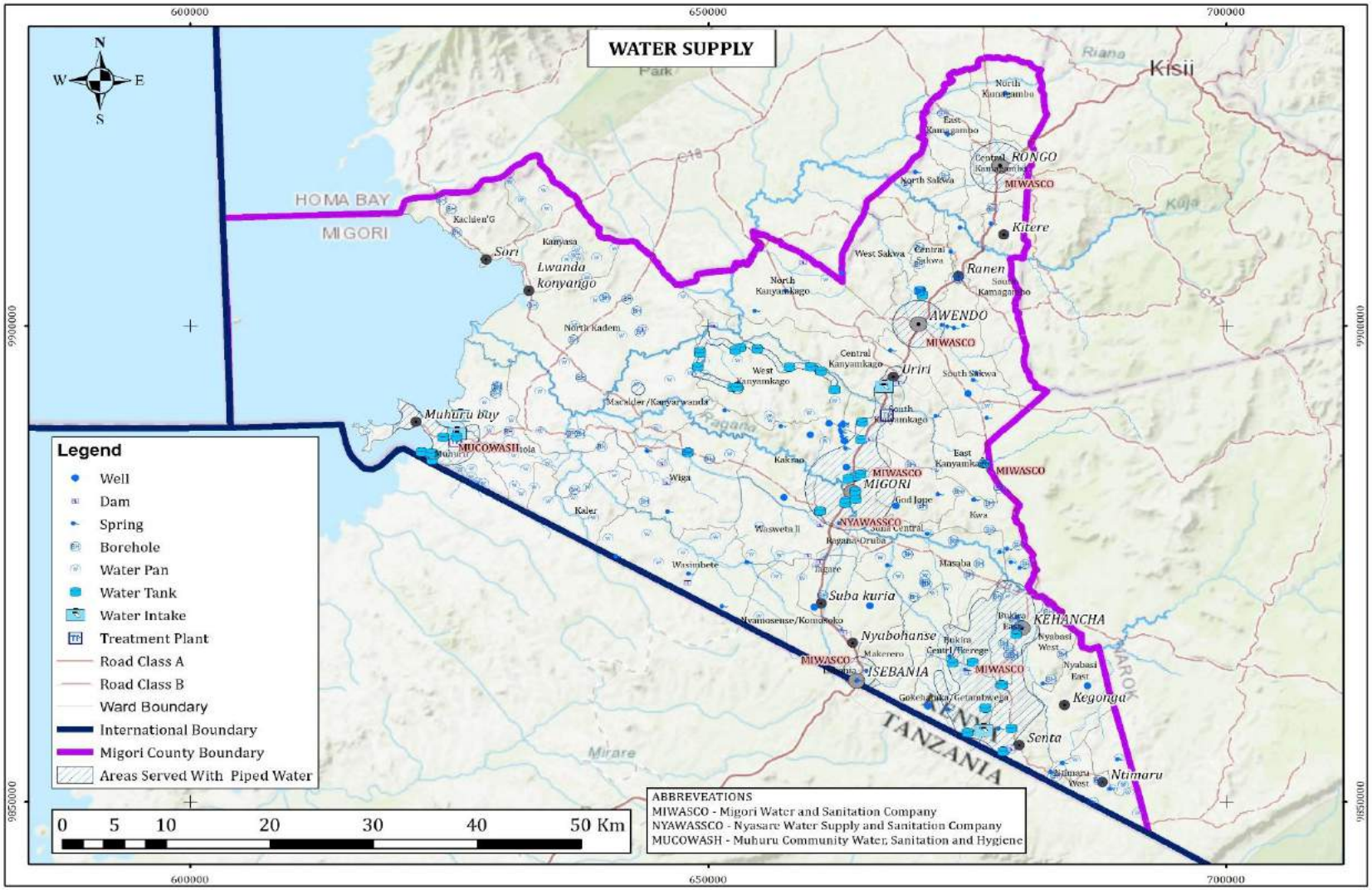
The scheme supplies about twenty percent (20%) of all water, which is equivalent to 6000m^3/day against a set urban demand of 30,000m^3/day. The scheme has an estimated supply gap of 24,000m^3/day attributed to inadequate infrastructure, inadequate funds, and poor management.

Table 21 shows water intakes and their capacities for Migori Water and Sanitation Company.

Table 21: Migori Water and Sanitation Company Water Intakes and Treatment Plants

Location	**Source**	**Capacity**
Isebania	River Hibwa	3,000m^3/day
Kehancha	Orarwe dam	250m^3/day
Awendo	R. Sare	2,000m^3/day
Rongo	River	2,000m^3/day
Migori and environs	R. Oyani, Boreholes, and springs.	20,000m^3/day
Kegonga	River	250m^3/day
Macalder	Boreholes and R. Kuja	
Ntimaru	Spring	
Total		**27,500m^3/day**

Source: Migori Water and Sanitation Company and Lake Victoria South Water Works Development Agency



Map 29: Migori County Water Supply Networks

Source: Field Survey, 2020

Nyasare Water Supply and Sanitation Scheme

The scheme serves Migori Municipality, its peri-urban areas and the adjacent rural areas covering an approximate area of 30km$^{2.}$ It serves a population of 35,951 in 3 sub-counties, which include Suna East (Kakrao and Wasweta I sub-location), Suna West (Oruba and Marindi sub-location), and Uriri (Kawere I and Kajulu II sub-location). The scheme water sources include 13 infiltration springs, one protected spring, one borehole and four hand-pumped shallow wells with a yielding capacity of 732 m^3/day, as shown in table 22.

Table 22: Nyasare Water Supply and Sanitation Company Water Sources

Source	**Intake volume**
Kogwang I spring	89m^3/day
Kogwang II spring	36m^3/day
Kotengo spring	30m^3/day
Lwanda I spring	82m^3/day
Lwanda II spring	26m^3/day
Kotoro spring	78m^3/day
Kaleo spring	25m^3/day
Kapiche spring	28m^3/day
Kadika spring	32m^3/day
Kopole spring	110m^3/day
Komondi spring	26m^3/day
Rangenya spring	20m^3/day
Kambaka spring	38m^3/day
borehole	112m^3/day
Total	**732 m^3/day**

Source: Nyasare Water Supply and Sanitation Company

The scheme's supply infrastructure includes a chlorination house, 5 plastic tanks, and one masonry tank with a storage capacity of 300m^3. The scheme has 840 individual connections, 33 communal drawing points, and 26 kiosks. The scheme estimates that the water demand in 2019 is 1,340m^3/day and expects to rise to 2,457m^3/day in 2025. The scheme supplies 732 m^3/day and have a gap of 608 m^3/day. The water supply gap is attributed to inadequate and underdeveloped water sources, inadequate infrastructure, inadequate funds to improve the dilapidated infrastructure and lay new networks and poor management due to lack of adequate and skilled staff.

Muhuru Community Water, Sanitation and Hygiene Supply Scheme

The scheme serves Muhuru ward in Nyatike Sub County including the urban centers (Muhuru, Lwanda, Winjo, and Ibencho) and the rural areas.

The company has a supply network of 11.3km and supplies $100m^3$ per day against a daily demand of $200m^3$ per day. The company has two treatment plants at Wiser Girls Secondary School and storage tanks with the following capacities as shown in table 23 below;

Table 23: Muhuru Community Water, Sanitation, and Hygiene Scheme

Intake location		**Type of facility**	**Location**	**Capacity**
Tangache beach $100m^3$	Phase 1	Treatment and storage	Muhuru east	$24m^3$
	Phase 2	Raw water Storage	Muhuru east	$100m^3$
		Treatment and storage	Muhuru east	$50m^3$
		Obolo primary storage tank	Muhuru east	$100m^3$

Source: Muhuru Community Water, Sanitation and Hygiene

The scheme was established to increase water supply services to meet the $100m^3$ demand gap. The scheme's current challenges include inadequate and aging infrastructure resulting in leakages and limited distribution and inadequate funding that limits infrastructural development, hiring of adequate staff, and quality service delivery.

Ongoing Initiatives

The ongoing initiatives with regards to water supply in the County include:

i. Implementation of the Drought Mitigation Program to avail water in schools and within the community areas.
ii. Implementation of the last mile water connectivity to ensure that residents of Migori can access water within a distance of 100 meters from their homes.
iii. Subsidization of water tariffs by MIWASCO.
iv. Construction and installation of water supply infrastructure including a new $100m^3$ water distribution tank, water kiosks, and new distribution lines to Lwanda, Ratieny, Saume and Kumoni covering 5.5km by MUCOWASH.
v. NYAWASSCO is repairing and rehabilitating dilapidated piping network and metering
vi. Increment of intake volume, Construction storage facilities and increment of coverage infrastructure by NYAWASSCO.

2.5.2 Sanitation

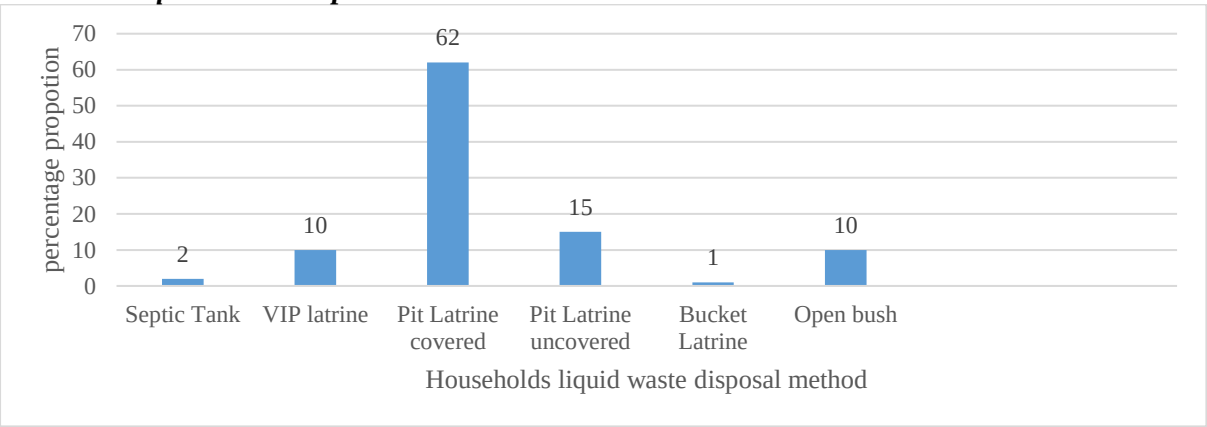
The generation of liquid and solid waste occurs both at household and commercial levels in the County. Poor waste management exposes the population to poor health and diseases since waste acts as breeding sites for disease-spreading insects, pests and bacteria.

Waste management is essential in improving the health and socio-economic well-being of the population and the County.

Liquid Waste Management

The methods of liquid waste disposal vary in rural and urban areas of the County. The primary method of liquid waste disposal in the County is pit latrines (87%). According to Kenya Population and Housing Census Report, 2019, 62% and 15% of households in the County use covered and uncovered pit latrines as the primary liquid waste disposal method. About 10% of households use VIP latrines while 10% practice open defecation. The different methods of liquid waste disposal are shown in chart 10 below;

Chart 10: Liquid Waste Disposal Methods



Source: KPHC, 2019

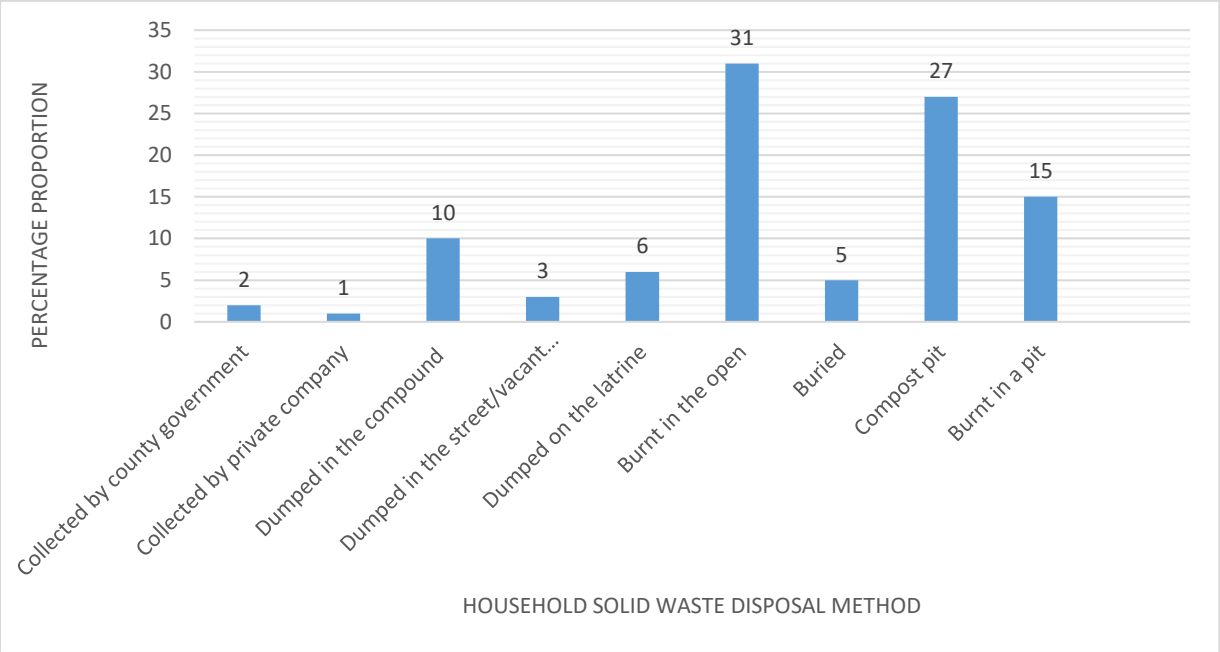
Pit latrines are in both urban and rural areas while septic tanks are only used in urban areas. The use of septic tanks establishes the need for exhauster services resulting in more financial implications for the residents and the County. The County has no public sewer or a public liquid waste management infrastructure even in the urban areas with population and densities that require the establishment of a sewer system.

However, there is an ongoing initiative to construct a proposed 8,000m^3/day waste treatment plant in Migori town to serve over 150,000 people with 67,000 connections including 15,000 households by 2040.

Solid Waste Management

Solid waste disposal methods vary from rural areas to urban areas in the County. The primary method of disposal is burning that constitutes 46% of the disposal methods. According to the Kenya Population and Housing Census Report 2019, 31% of households burn their waste in the open, 15% burn waste in a pit, while 27% dispose off waste in a compost pit. Waste collected in the County is 3% where the county government collects 2% while private companies collect 1%. The various methods of solid waste disposal are as shown in chart 11.

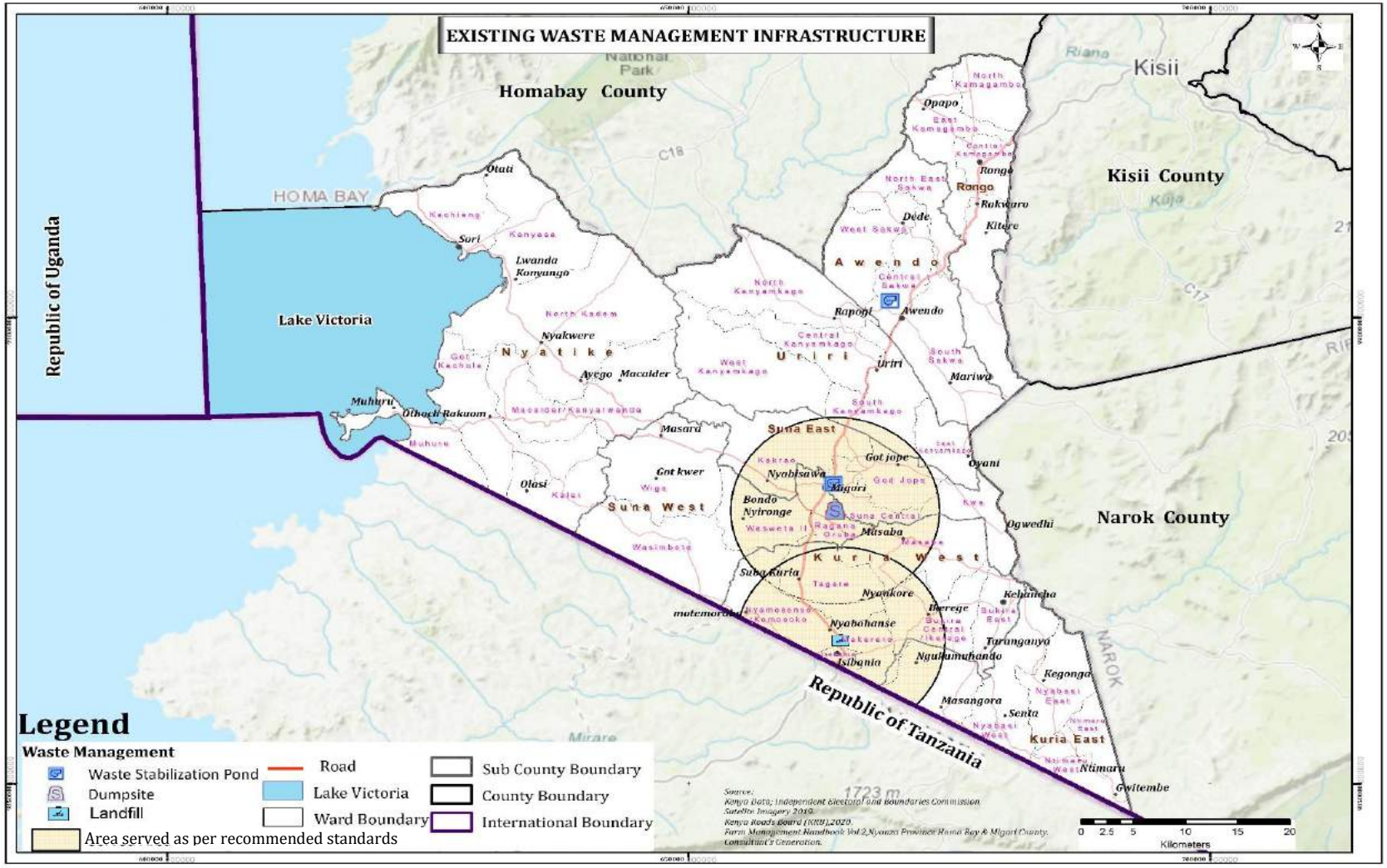
Chart 11: Solid Waste Disposal methods



Source: KPHC, 2019

Burning, burying, and disposal in compost pits are the main waste disposal methods in rural areas while dumping waste is common in urban areas. Waste collection partially takes place in all urban areas.

The County has two waste management sites namely Nkurutiange and Kiringi Bridge. Nkurutiange landfill serves Migori and Isebania town. Kiringi Bridge is a non-approved waste management facility since it does not meet the development and public health standards. Additionally, Masara urban area has a temporary waste transfer station. Generally, the waste management system in the County is inefficient and inadequate.



Map 30: Existing Waste Management Facilities

Source: Consultant's Edits, 2021

2.5.3 Storm Water Drainage

Storm water drainage facilities in the county are developed in major urban areas particularly along the paved roads which cover 19% of the roads in the County's urban areas. The urban areas include; Migori, Rongo, Awendo, Kehancha, Isebania, Uriri, and Masara. These facilities' effectiveness in the urban areas is undermined due to poor waste disposal and human encroachment. Other urban areas in the County lack storm water drains. Lack of these facilities has led to poor road conditions and environmental degradation due to increased erosion.

2.5.4 Energy Generation

The main sources of energy in the County are wood fuel, solar, electricity and petroleum products. Migori County has a high potential for hydro and solar energy production. Gogo Falls hydroelectric power station along River Kuja is the only existing power production facility. With several permanent rivers, the County can harness hydropower to serve its domestic and industrial needs.

Gogo falls power station was established in 1952 with two generators with an installed capacity of 2MW (1MW each). However, due to old and out of date generators, the current production is 1.6MW. The Kenya electricity generating company can increase Gogo power station's production capacity if the following actions shown in table 24 are taken.

Table 24: Projected Power Production at Gogo Power Station

Action	**Capacity (MW)**
Upgrade	12MW
Install a new generator	20MW
Dam and develop a new power plant	40MW

Source: Gogo Falls Power Stations

The County experiences long hours of daylight hence a great potential in solar production. Nyatike, Suna West and Uriri have the highest potential for solar energy production.

2.5.5 Electricity Supply

The County relies on the national grid for electricity supply. The use and distribution of electricity in Migori County has experienced a tremendous rise over the last decade. Since 2009 the connectivity rate has risen by over 30% in the County. In the year 2009, the number of households connected to electricity was 5%, 23% in 2015 and estimated to be around 40% in 2020.

The County's level of connectivity is low compared to the national average of 75% of the household's connection *(World Bank Development Indicators 2018)*. Electricity connection is

approximately 134,831 households (about 57% of total homes) and 89,566 commercial units and industries *(Kenya Power Company Migori, 2020).* The amount of electricity supplied in the County is approximately 298 GW per day. The supply is against an estimated household demand of 150 GW per day, commercial demand of 100 GW per day, and industrial demand of 100 GW per day. The supply gap is, therefore, 52 GW per day. Nyatike Sub County has the highest electricity connection/coverage at 17%, while Kuria East has the least coverage at 9%. The County's increase in power coverage follows Rural Electrification and Renewable Energy Corporation (REREC) and the Last Mile Connectivity program initiated by the National Government of attaining universal electricity connection in the country.

However, despite the increase in connection, 60% of households still have no access to electricity (Migori CIDP 2018-2022), and there is a need to bridge the electricity gap in the County. The distribution of electricity infrastructure in the County is shown in the map below;

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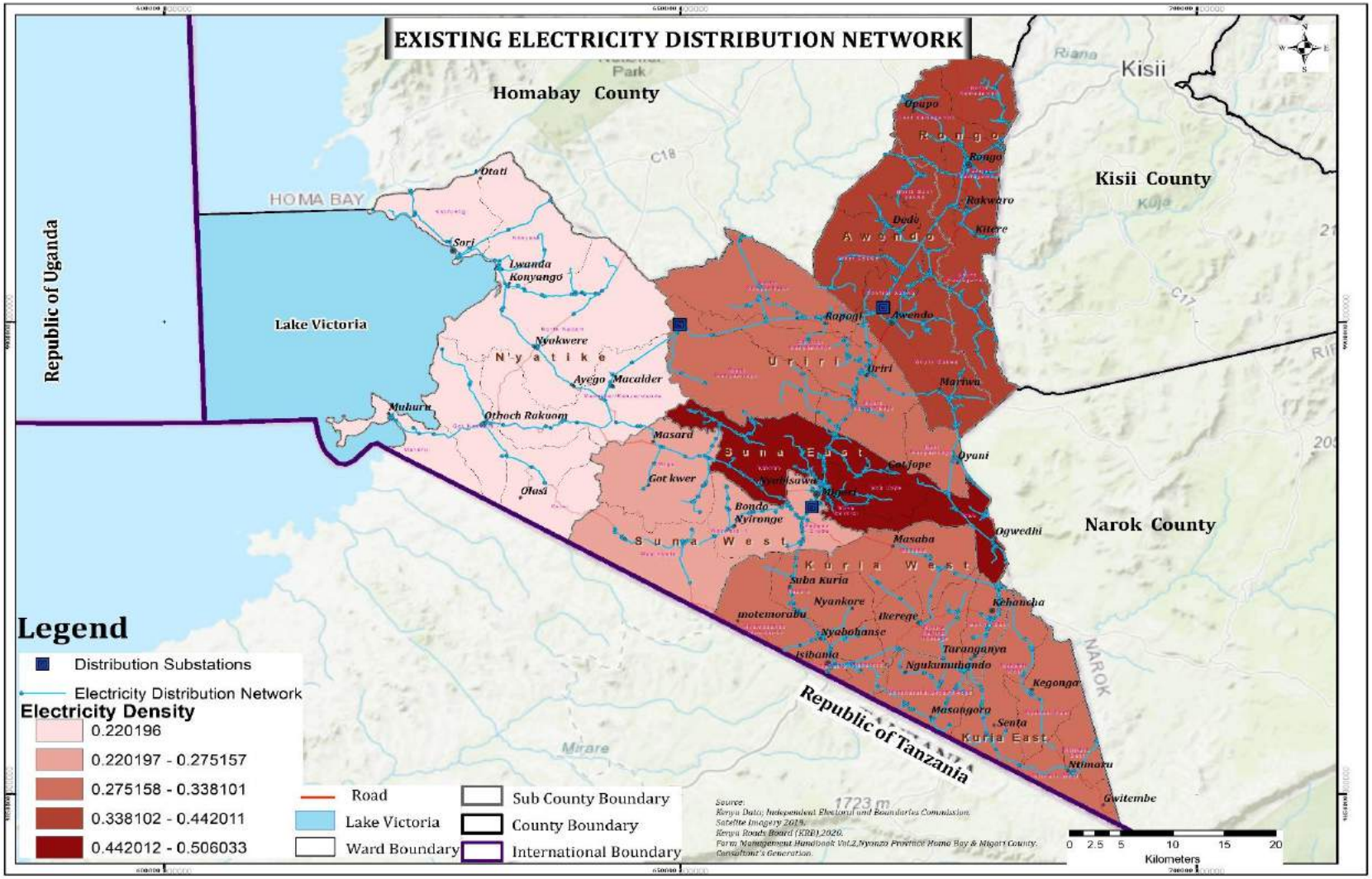


Map 31: Electricity Distribution in the County

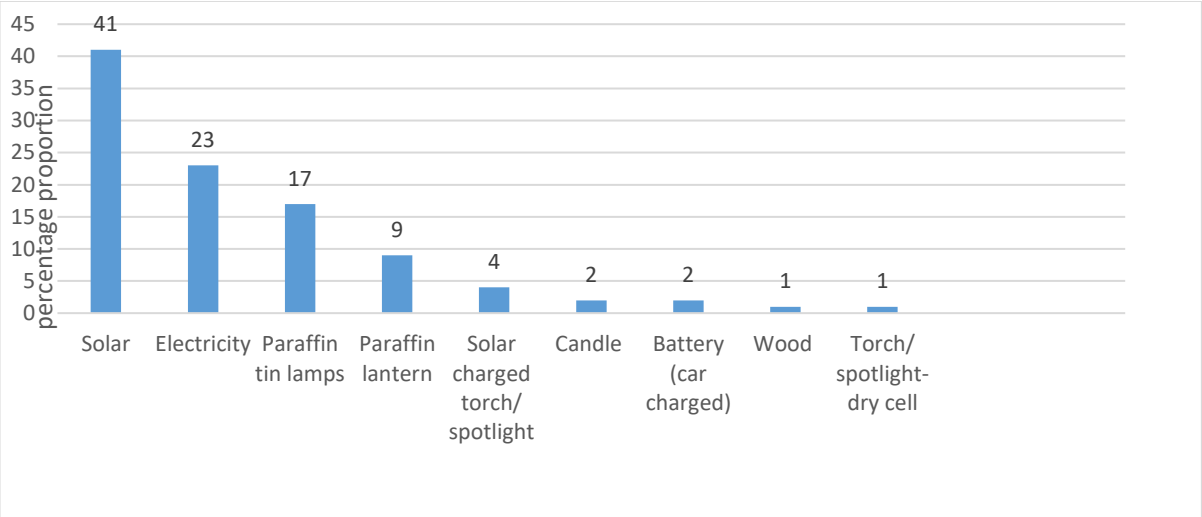
Source: Consultant's Edits, 2021

2.5.6 Lighting Energy

According to Kenya Population and Housing Census Report 2019, the primary energy sources for lighting in the County are solar 41%, electricity 23%, and paraffin lamps 26%, among other sources. The use of renewable energy (solar) for lighting indicates the high intake of clean energy and solar energy production potential. However, electricity use is still low, attributed to factors such as; high cost of connection and lack of access to electricity in the County.

Source; KPHC 2019

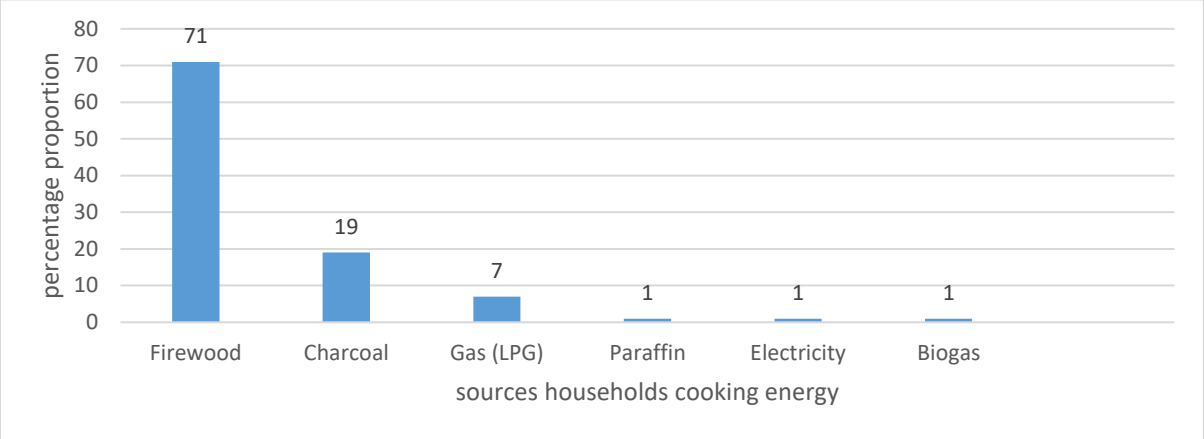
Chart 12: Lighting Energy Sources in the County



Cooking Energy

According to Kenya Population and Housing Census Report 2019, the primary energy sources for cooking are firewood 71%, charcoal 19%, LPG gas at 7%, among other sources, as indicated in figure 6.5. The use of wood fuel (90%) is mainly in rural areas. It has massive impacts on tree cover, which results in environmental degradation and increased desertification, which has a huge impact on the land's productivity. Therefore, the County needs to develop renewable energy sources such as biogas, which are not developed to mitigate tree cover loss.

Chart 13: Sources of Cooking Energy



Source; KPHC 2019

Ongoing Initiatives

The County is promoting clean, renewable energy with various projects underway to meet the demand. These projects include;

i. Installation of solar street lights and floodlights in all the urban centres, solar-powered water pumping stations, and providing solar lamps to the vulnerable and the elderly.
ii. The County is conducting a feasibility study to identify potential solar areas.
iii. Upgrading of Gogo power station.
iv. Conducting a feasibility study to assess the development impact of damming River Kuja

2.5.7 ICT and Telecommunication

ICT is becoming a major economic enabler globally. Migori County enjoys the opportunity of connection to the National Optic Fibre Backbone (NOFB) with a capability of 1000 MHZ and a speed of 40MBPS. However, the connectivity is limited to Rongo-Migori-Isebania Corridor. The Safaricom internet band also serves the County. The adoption of ICT in the County is relatively low. The County has integrated ICT, with financial transactions being carried out through the government-supported IFMIS platform. The County is currently rolling out a digital revenue management system with the infrastructure underway. Additionally, the use of the internet and smartphone is at thirteen (13%) and thirty-four (34%) percent respectively. About 62,426 (0.06%) people in the County use computers in their day to day lives while a total of 14,080 (0.01%) residents have bought or ordered goods and services online. The report also shows that 60% of the population own radios, 32% own television sets and 4% owned laptops, tablets or a desktop computer.

Mobile service providers have invested in telecommunication infrastructure in the form of GSM/BTS stations in the County to ensure a reliable mobile network. There are over 80 GSM stations in the County indicating high uptake of ICT. Further, the County has established a radio station and is in the process of creating an ICT incubation hub. It has also installed thirteen LCD screens at strategic places across the County to ensure proper and timely information dissemination.

Postal Services

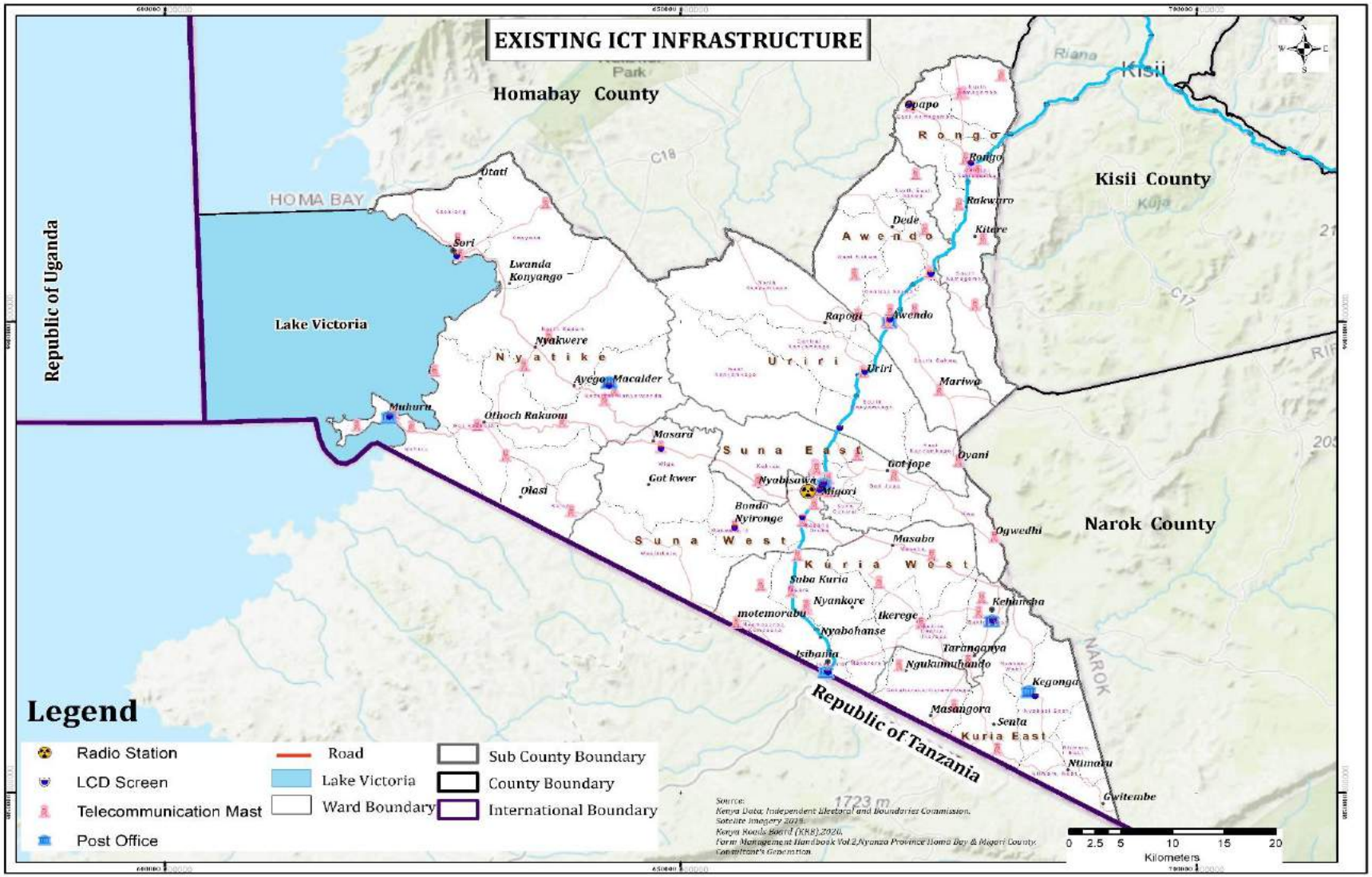
The postal corporation of Kenya operates 11 post offices in Migori County. The post offices are distributed in major urban areas across the sub-counties in the Migori. However, Uriri, Kuria East, and Suna West sub-counties do not have any post offices. The postal services face challenges such as inadequate funds and resources, staff, support infrastructure and insecurity resulting in the closure of some offices such as Kegonga and Ntimaru. Table 25 shows the postal offices in the county.

Table 25: Post offices in Migori County

S_NO.	Sub-County	Post Offices
•	Suna East	• Suna, Migori Huduma Center
•	Rongo	• Rongo
•	Awendo	• Sare, Mariwa, Ranen
•	Kuria West	• Kehancha, Isebania
•	Nyatike	• Nyatike, Muhuru Bay, Karungu

Source: Postal Corporation of Kenya

Map 32 overleaf presents the distribution of ICT infrastructure within the county.



Map 32: Distribution of ICT infrastructure in the County

Ongoing Initiatives

i. Development of a County policy on information technology infrastructure usage.
ii. Creation of a cloud hosting system for county emails and other collaboration tools
iii. Installation of ICT infrastructure and the necessary equipment to connect all county department through a wide area network.
iv. Acquisition of modern ICT equipment and county staff training on different facets of technology relative to government functions.

2.5.8 Health

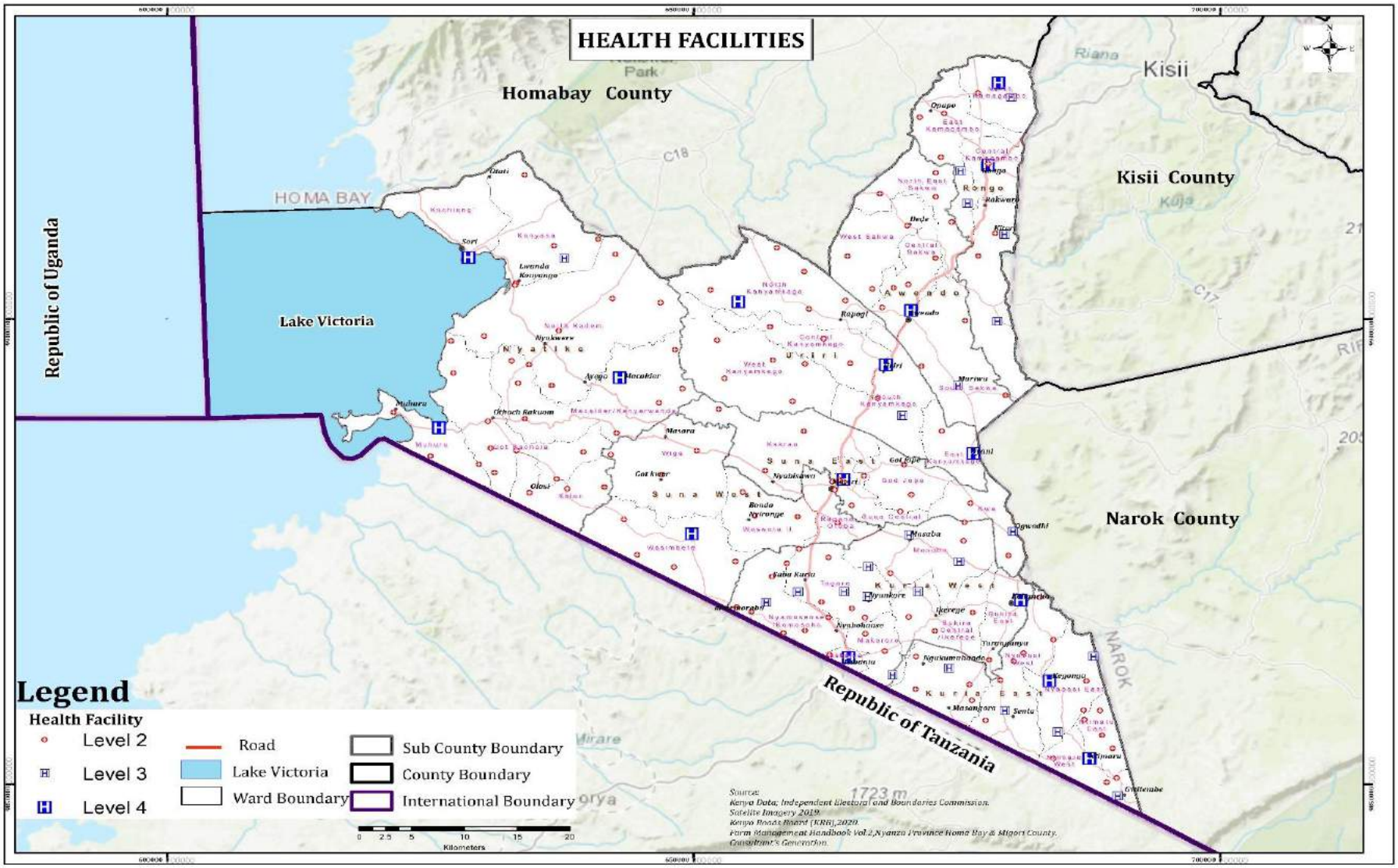
Migori County has 212 health facilities of which 126 are public and 86 are private. These facilities include a county referral (level 5), 23 sub county hospitals (level 4), 27 health centres (level 3), and 153 dispensaries (level 2). The level 4 hospitals include 12 public and 11 private hospitals. The County Referral Hospital is the primary health facility located in Migori Municipality and has a bed capacity of 219 beds. Table 26 presents the public health facilities in the county.

Table 26: Public Health Facilities in the County

Ward	County Referral (Level 5)	Sub-County Hospital (Level 4)	Health Centre (Level 3)	Dispensary (Level 2)	Total
Bukira Central/ Ikerege	-	-	1	2	3
Bukira East	-	1	-	1	2
Central Kamagambo	-	4	-	9	13
Central Kanyamkago	-	1	-	4	5
Central Sakwa	-	1	-	3	4
East Kamagambo	-	-	1	6	7
East Kanyamkago	-	1		1	2
God Jope	-	-	-	3	3
Gokeharaka/Getambwega	-	-	1	3	4
Got Kachola	-	-	-	6	6
Isebania	-	1	-	-	1
Kachieng	-	2	-	4	6
Kakrao	-	-	-	4	4
Kaler	-	-	-	5	5
Kanyasa	-	-	-	4	4
Kwa	-	-	1	1	2
Macalder/Kanyarwanda	-	1	-	6	7
Makerero	-	-	1	1	2
Masaba	-	-	2	4	6
Muhuru	-	2	-	7	9
North Kadem	-	-	-	7	7
North Kamagambo	-	1	1	-	2

North Kanyamkago	-	1	1	4	6
North Sakwa	-	-	-	5	5
Ntimaru East	-	-	-	3	3
Ntimaru West	-	1	1	4	6
Nyabasi East	-	1	3	2	6
Nyabasi West	-	-	4	5	9
Nyamosense/ Komosoko	-	-		4	4
Ragana - Oruba	-	2	1	5	8
South Kamagambo	-	-	1	2	3
South Kanyamkago	-	-	1	3	4
South Sakwa	-	-	1	2	3
Suna Central	1	2	-	7	10
Tagare	-	-	3	4	7
Wasimbete	-	-	1	5	6
Wasweta II	-	1	-	3	4
West Kanyamkago	-	-	1	9	10
West Sakwa	-	-	1	2	3
Wiga	-	-	-	3	3

Map 33 shows the distribution of public health facilities in the county.



Map 33: Distribution of Health Facilities

Medical staff

The County has a total of 914 heath personnel serving across the 212 health institutions. The staff gap analysis shown in table 26 reveals inadequacies in the numbers of medical staff. These inadequacies highlight the need for investment in both medical personnel and equipment which will enable the County to meet the health demands of the population.

Table 27: Medical Staff Numbers

Staff Cadres	Number of Staff	Required Number	Gap
Medical Specialists	5	36	31
Medical Officers	27	69	42
Dentists	2	12	10
Dental Technologists	2	14	12
Public Health Officers	65	470	405
Pharmacists	8	24	16
Pharmacy Technologists	19	222	203
Lab Technologists	20	470	450
Lab Technicians	30	420	390
Orthopedic Technologists	0	10	10
Nutritionists	12	28	16
Radiographers	2	30	28
Physiotherapists	4	32	28
Occupational Therapists	5	22	17
Plaster Technicians	2	22	20
Medical Engineering Technologists	2	22	20
Medical Engineering Technicians	2	8	6
Mortuary Attendants	2	24	22
Clinical Officers (Specialists)	8	40	32
Clinical Officers (General)	124	340	216
Nursing Staff (KRCHNs)	394	2388	1994
Nursing Staff (KECHN)	254	400	146
Community Oral Health Officers	2	25	23

Source: Migori County Health Sector Strategic and Investment Plan (2018-2023)

Medical Staff to Patient Ratios

Migori County has a doctor-patient ratio of 1:25,964 against the Kenyan ratio of 1 doctor per 10,000. The nurse-patient ratio for the County is 1:1,282 against the national ratio of 1:1,820. The County's clinical officer to patient ratio is 5,263 against a national ratio of one clinical officer for 4,762 patients (*MOH, 2015*).

The staff-patient rate shows that the County has an overstretched medical workforce spread across the 126 public health facilities. The inadequacy in staffing leads to poor productivity among the staff, and poor health among the residents resulting to reduced life expectancy and increased mortality.

Health Facilities Gap Analysis

The gap analysis done highlights the need for the County to deliver these facilities on time to adequately meet the growing population's needs. They also reflect the priority for allocating these facilities based on current demand. In general, the County requires to construct and equip a total of 51 dispensaries, 31 health centres, and five sub-county hospitals by the year 2030 to meet the demand of the growing population. The analysis done is based across the 40 wards revealed the gaps in the supply of health facilities as indicated in the table below.

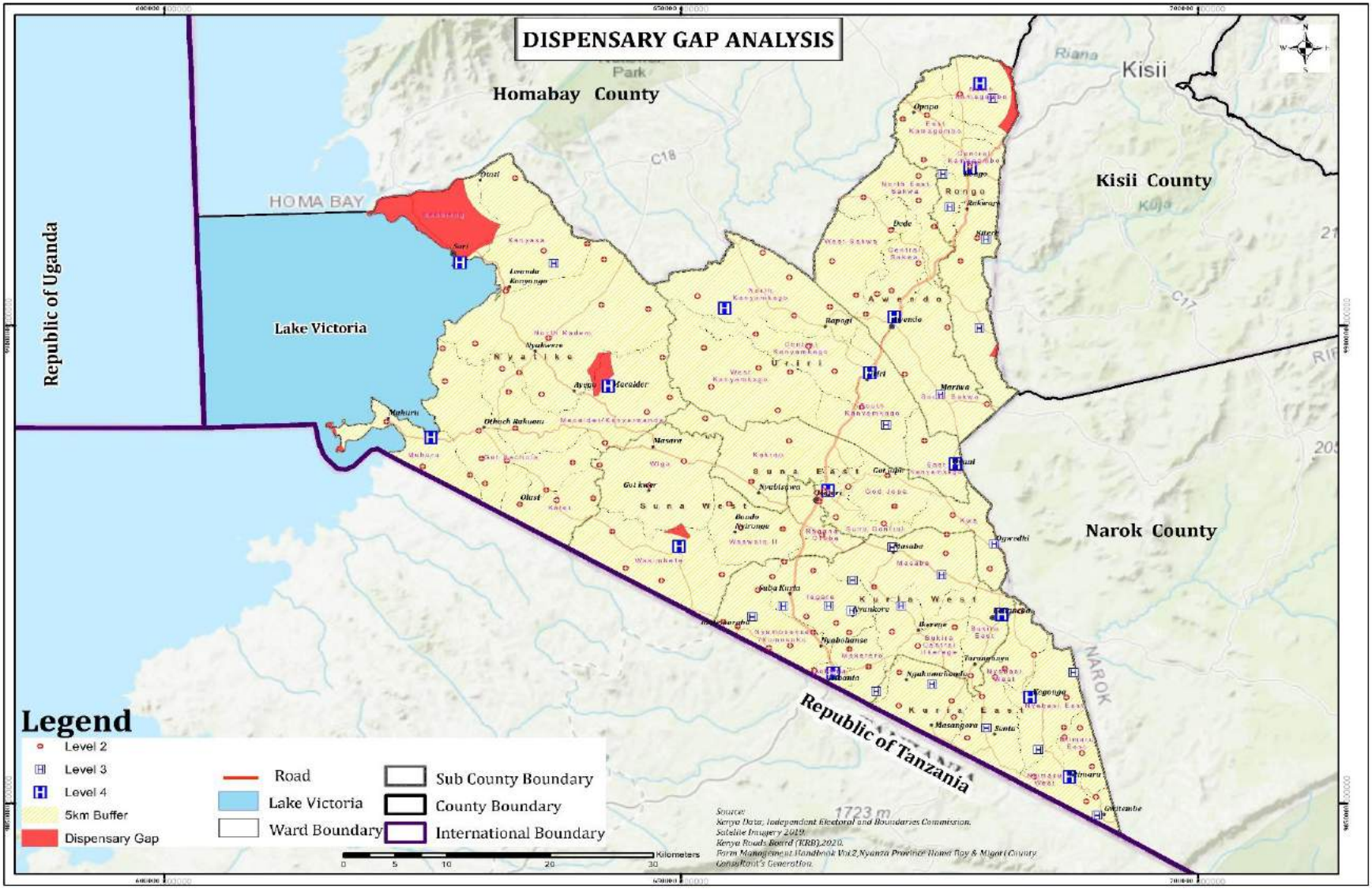
Table 28: Health Facilities Gap Analysis

Ward	2019			2030		
	Level 4	Level 3	Level 2	Level 4	Level 3	Level 2
Bukira Central /Ikerege	-	-	1	-	-	2
Bukira East	-	-	2	-	-	3
Central Kamagambo	-	-	-	-	-	-
Central Kanyamkago	-	-	-	-	-	-
Central Sakwa	-	-	-	-	-	-
East Kamagambo	-	-	-	-	-	-
East Kanyamkago	-	1	1	-	1	2
God Jope	-	-	-	-	-	-
Gokeharaka/Getambwega	-	-	-	-	-	-
Got Kachola	-	-	-	-	-	-
Isebania	-	-	-	-	-	-
Kachieng`	-	-	-	-	-	-
Kakrao	-	-	-	-	-	-
Kaler	-	-	-	-	-	-
Kanyasa	-	-	-	-	-	-
Kwa	-	-	-	-	-	2
Macalder/Kanyarwanda	-	-	-	-	-	-
Makerero	-	-	-	-	-	2
Masaba	-	-	-	-	-	-
Muhuru	-	-	-	-	-	-
North East Sakwa	-	-	-	-	-	-
North Kadem	-	-	-	-	1	-
North Kamagambo	-	-	-	-	-	-
North Kanyamkago	-	-	-	-	-	-
Ntimaru East	-	-	-	-	-	-
Ntimaru West	-	-	-	-	-	-
Nyabasi East	-	-	-	-	-	1
Nyabasi West	-	-	-	-	-	-
Nyamosense /Komosoko	-	1	-	-	1	-
Ragana - Oruba	-	-	-	-	1	1
South Kamagambo	-	-	2	-	1	4
South Kanyamkago	-	-	-	-	-	1
South Sakwa	-	-	2	-	1	3
Suna Central	-	-	-	-	-	-
Tagare	-	-	-	-	-	-
Wasimbete	-	-	-	-	-	-

Wasweta II	-	-	-	-	-	-
West Kanyamkago	-	-	-	-	1	-
West Sakwa	-	-	1	-	-	2
Wiga	-	-	-	-	-	1

Source: Consultant's Edit, 2020

In terms of distance traveled to the nearest health facility, physical planning standards recommend that the maximum distance be 5 km. A distance analysis map was prepared by buffering each of the existing health facilities with a 5 km radius circle, revealing areas where access to a health facility is more than the recommended distance. Areas identified to have health facility distribution gaps are in Kachieng', Macalder and North Kadem wards. Access to health facilities contributes to the level of utilization while distance to access impedes utilization. Location to areas of easy access can leads to overstretching of developed health facility while low access leads to underutilization of these facilities and the resources allocated. Therefore, it is imperative that the development of health facilities should be guided by the level of utilization and by ease of access. However, although population is a determinant of development in an area, lack of higher-level facilities leads to lack of high order services in the required areas. For example, Suna West sub-county lacks a public level IV hospital. The lack of this facility strains the lower-level primary health facilities while residents of this sub county have to travel long distance for such of the services needed. Therefore, there is need to identify an appropriate and suitably located health Centre in the sub county and upgrade it to a level IV hospital, equip it with the appropriate treatment equipment and hire enough and qualified medical staff for easy access to health services and for delivery of quality services. Areas in Kachieng', Macalder and North Kadem wards which have been identified to have distribution gap should be provided with health facilities within the recommended radius of 5km. The development of these facilities will help in improving the health well-being of the population in these wards.



Map 34: Dispensary Distribution Gap

Map 35: Health Centre Distribution Gap Analysis

Implication of Health Services on Development

Access to health facilities contributes to the health well-being of a population. Provision of quality and reliable health services improves the economic performance of a population which leads to sustained growth in the county. It also leads to reduced poverty and cost of living since the cost burden associated with access to health services is alleviated thus improving life expectancies and human development. It is therefore important to develop and provide quality health services for a population since it is a major contributor to the economic growth of the county considering the weight it bears on the human capital.

2.5.9 Education

Migori County has 2223 public and private education facilities distributed in the county. There are 1084 Early Childhood Education Centers (ECDEs), 792 primary schools, 298 secondary schools and 49 tertiary institutions. The distribution of public education facilities in the county is shown in table 29.

Table 29: Distribution of Public Education Facilities across the Administrative Units

Sub-County	Ward	Educational Facilities			
		ECDE	Primary	Secondary	Tertiary
Rongo	North Kamagambo	142	15	6	1
	South Kamagambo		23	10	1
	Central Kamagambo		10	9	2
	East Kamagambo		20	7	1
Awendo	North Sakwa	113	19	12	
	South Sakwa		23	8	2
	West Sakwa		18	10	2
	Central Sakwa		13	8	1
Uriri	West Kanyamkago	126	18	8	-
	South Kanyamkago		19	13	1
	East Kanyamkago		8	3	-
	North Kanyamkago		24	10	-
	Central Kanyamkago		11	3	-
Suna East	God Jope	104	16	7	1
	Kwa		12	7	1
	Suna Central		9	4	2
	Kakrao		29	11	2
Suna West	Wiga	153	20	8	1
	Wasimbete		19	4	-
	Wasweta II		14	4	1
	Ragana - Oruba		9	11	3
Kuria East	Gokeharaka/Getambwega	99	15	4	-
	Nyabasi East		14	8	-

	Ntimaru West		13	7	2
	Nyabasi West		17	6	3
	Ntimaru East		8	6	1
Kuria West	Bukira East	190	9	8	1
	Bukira Central /Ikerege		11	5	
	Nyamosense/Getambwega		14	6	-
	Isebania		6	3	-
	Makerero		12	2	2
	Masaba		16	8	2
	Tagare		15	8	2
Nyatike	Kachieng	157	15	7	1
	Macalder/Kanyarwanda `		21	10	1
	Muhuru		12	7	1
	Kanyasa		24	10	-
	Kaler		9	4	2
	North Kadem		27	11	1
	Got Kachola		18	11	1

Source: Migori Regional Education Office and County Department of Education, 2020

2.5.10 Recreation and Community Facilities

There are 16 recreation facilities in the County. The County has three stadia in Migori, Uriri, and Sony Sugar Stadium. Additionally, the County has ten playgrounds in Ragana Oruba, Bukira East, Macalder, North Kanyamkago, Nyabasi East, Suna Central, and Masaba wards. Other recreational facilities include a showground in Ragana Oruba and a social hall in Bukira East ward. There are 217 public administration offices, 28 police stations, 35 police posts, 2 law courts and prison in Migori Municipality. Other facilities include four orphanages situated in Makerero, Ragana Oruba, Suna Central, and Tagane wards and two cemeteries located in Ragana Oruba and Suna Central wards. Map 36 shows the distribution of community facilities in the county;

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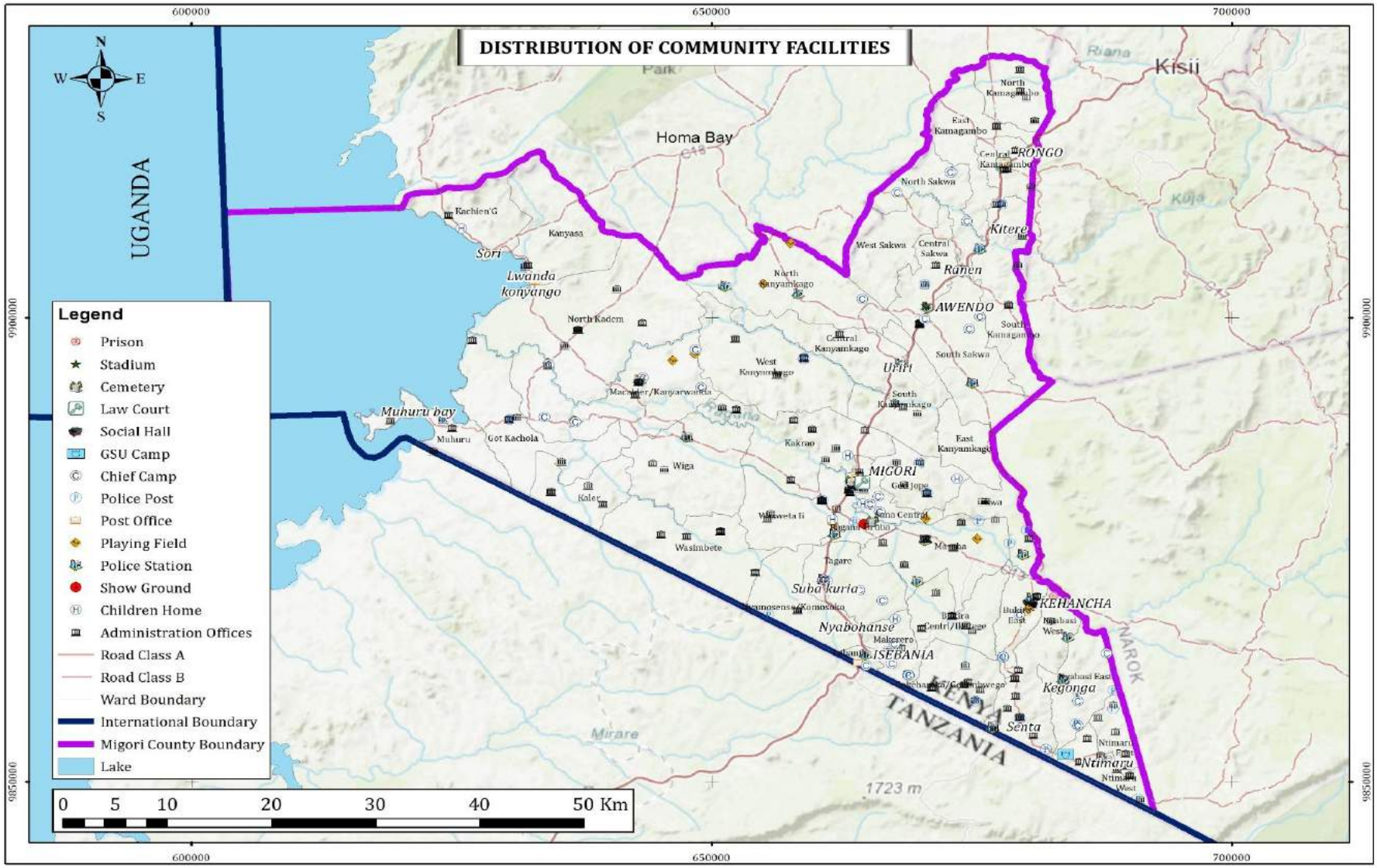


Map 36: Distribution of Community Facilities

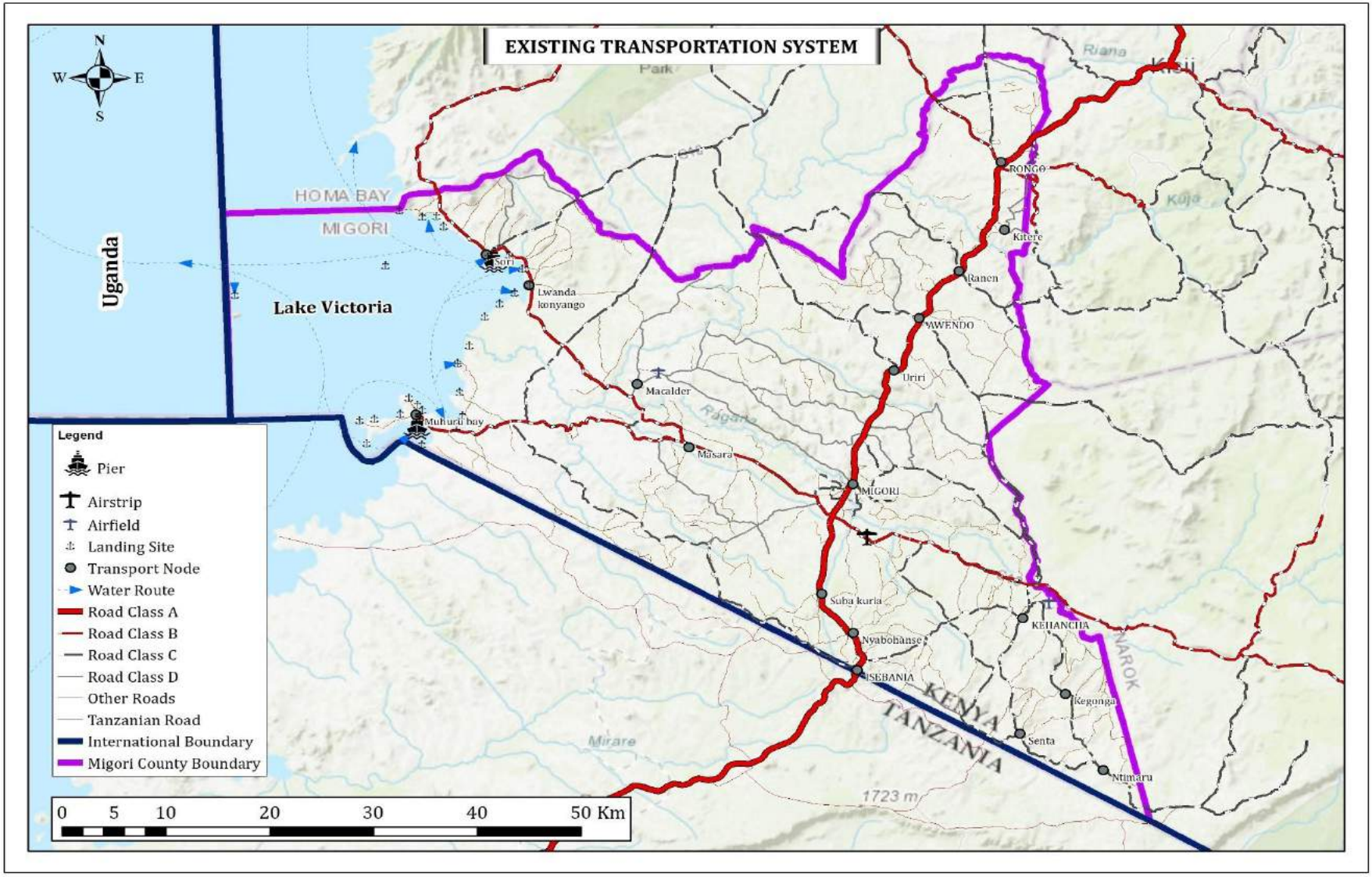
2.6 Transportation

This section analyses the different modes of transport in the county alongside the existing transport infrastructure.

2.6.1 Existing Transportation Network

Migori County is lucky to be enjoying a multi-modal transportation network system. The County is connected by water, road and air. Currently, road transport is the most used mode of transport in the County. However, the roads are of various road surface conditions. Water transport usage is limited while air transport is ineffective.

There is limited integration of different modes of transport in the county. The existing transportation system is shown in map 37 overleaf. The details on the various modes of transportation are further discussed in the preceding sub sections.



Map 37: Existing Transportation Network Map

2.6.2 Road Transport

Road transport in the County accounts for nearly 90% of both passenger and freight traffic. The entire road network in the County is 3979 km. Road classes in the county range from International Trunk Road (A) to minor roads (G). Additionally, the County has a myriad of unclassified roads in the form of tracks traversing the entire County. The lengths of the various categories and functions of the roads in the County is as presented in the table 30.

Table 30: Number of Roads by Class

Road Class	Function	General Condition	Length (KM)
A	Linking Kenya and Tanzania	Fair	67.2
B	Linking Counties within the Region	Fair	130.0
C	Linking major urban areas within the Region	Fair	349.8
D	Link rural areas to urban areas	Poor	233.8
E	Link rural areas to urban areas	Poor	710.5
F	Access	Poor	186.7
G	Access	Poor	1342.7
Unclassified	Access	Poor	958.3
Total Length	**3979**		

Source: KENHA, KURA, KERRA & County Department of Roads

Road Condition Assessment

The assessment established that approximately fifty two percent (52%) of the roads are earth, forty three percent (43%) are gravel while five percent (5%) of roads are in tarmac condition. Some areas in the County lack access to services in urban areas due to lack of bridges. The roads in major urban areas lack NMT facilities therefore impending efficient circulation in urban areas. Majority of the roads in the County are of earth surface and are impassable during rainy seasons.

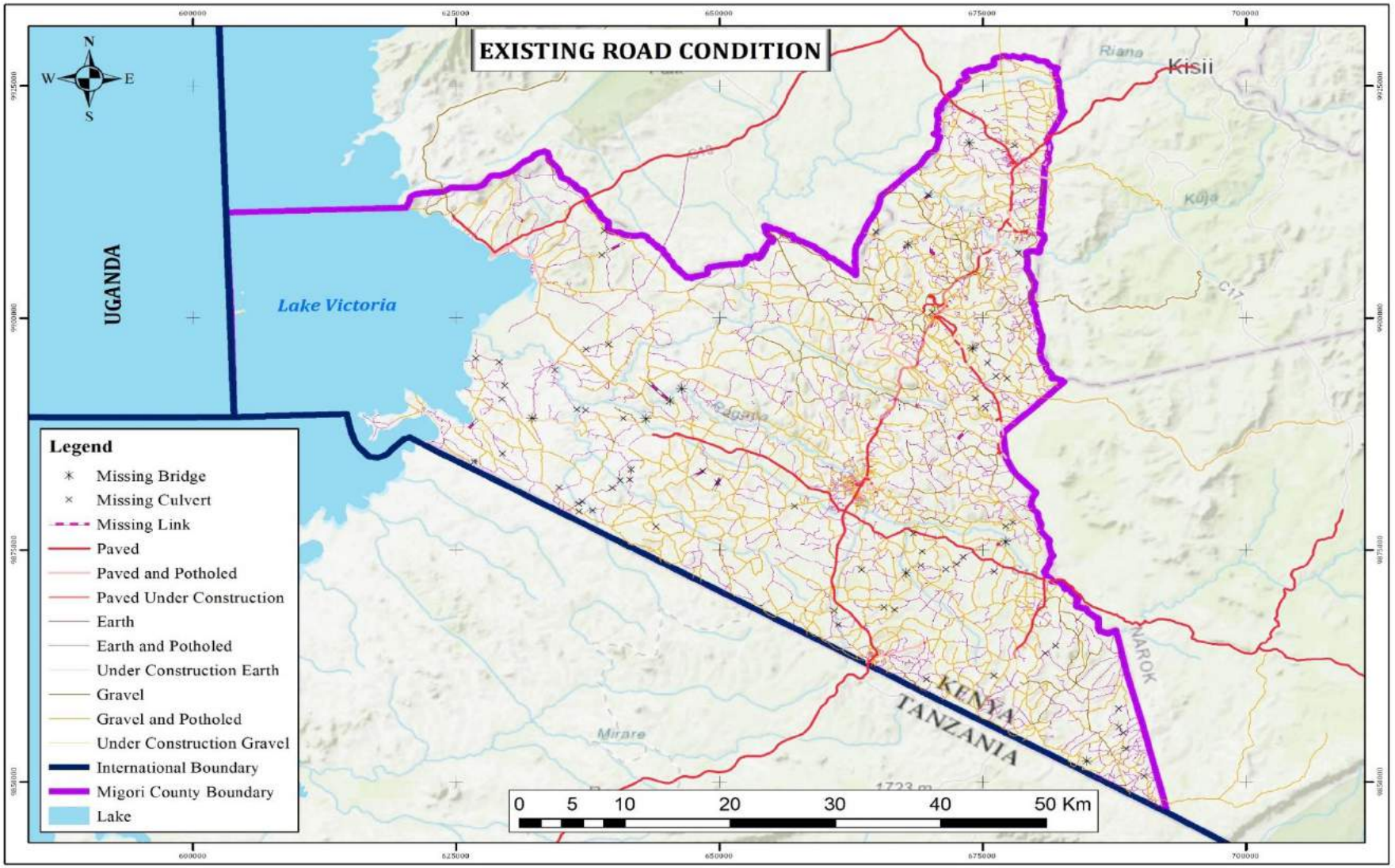
Road Surface Condition

Migori County has most of its roads, either murram or earth. Only 5% of the County roads are of bitumen standards. Categories of paved roads includes Class A road, sections of class B and class C roads, and few roads within the major urban areas of Migori, Rongo, Awendo, and Isebania Towns. There is need to improve the road surface condition by upgrading the murram roads to bitumen standards and upgrading the earth roads to bitumen standards to achieve

transportation efficiency. Plate 1 below shows the surface conditions of various roads in the County.

Source: Field Observation 2020

Map 38 presents the road surface conditions in the county.



Map 38: Road Conditions

Parking and Terminal Facilities

The County has nine terminal facilities including bus parks and bus stops of which seven are paved and the rest are not paved.

Only five terminal facilities are fully operational. They include the bus parks in Migori, Awendo, Isebania, Rongo, Kehancha and Muhuru Bay.

Table 31: Terminal Facilities in the county

Terminus	Type	Condition	Status
Migori	Bus Park	Paved	Functioning
Awendo	Bus Park	Paved	Functioning
Rongo	Bus Park	Earth	Functioning
Isebania	Bus Park	paved	Functioning
Kehancha	Bus Park	Paved	Functioning
Muhuru	Bus Park	Earth	Functioning
Ranen	Bus Stop	paved	Functioning
Sori	Bus Stop	paved	Functioning
Nyabohanse	Bus Stop	paved	Functioning

Source: Field Observation, 2020

The County has minimal designated parking spaces in all the major urban areas. Therefore, the majority of car owners park along the street and on shoulders of main roads.

Rural-Urban Connectivity

The assessment of the rural and urban interlinkages in Migori County revealed that the urban areas are fairly linked with the rural areas. The urban-rural connectivity in the County has been facilitated by improving the roads linking the urban areas to the rural areas. The most important reason for rural-urban connectivity is the movement of agricultural products and raw materials in the rural hinterland to the market and industries in the urban areas. Proper linkages of rural areas to the major urban areas will lead to increased agricultural productivity through faster access to agricultural inputs and tools, creation of more employment opportunities, economic growth and poverty reduction especially in the rural areas.

Inefficient transport system in the County is attributed to the following limitations:

i. Poor road surface conditions.
ii. Inadequate road furniture.
iii. Missing links.

iv. Inadequate public transport means.

v. Inadequate NMT facilities.

2.6.3 Water Transport

The County has four islands namely Ugingo, Mbaiyu, Pyramid and Migingo. The link between the mainland and the islands is through public water transport, facilitating the movement of goods and services from the mainland to the island and vice versa. Boats and dhows are the primary water transport means in the County. There is a pier at Muhuru bay which is non-functional. The proximity to Tanzania and Uganda creates massive opportunity for water transport development therefore playing a pivotal role in regional integration through trade and commerce.

2.6.4 Air Transport

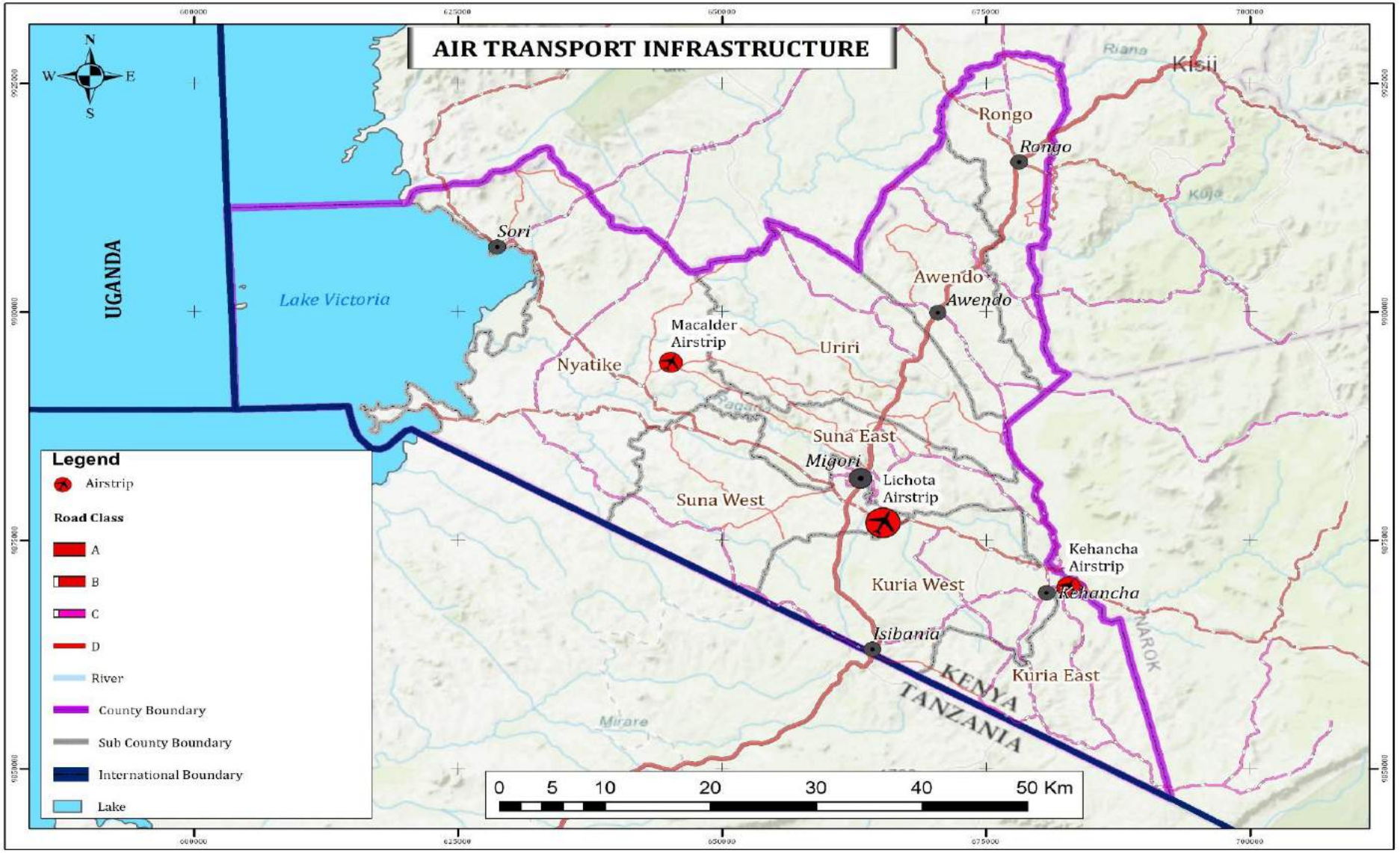
There are three airstrips in Migori County namely Lichota, Macalder, and Kehancha in Suna West, Nyatike, and Kuria West Sub-Counties respectively. Of the three, Lichota is the busiest. The airstrip's frequent users are tourists visiting Masai Mara Game Reserve, Serengeti National Park and Ruma National Park. The airstrip lacks prerequisite infrastructure but construction is ongoing to upgrade the airstrip to an airport. Therefore, the airport will play a significant role in regional transportation by facilitating the movement of goods and people from the County to other neighbouring Counties and beyond. Table 32 presents the conditions of airstrips in the county.

Table 32: Condition of Airstrips in Migori County

Airstrip	**Surface Condition**	**Status**
Lichota	Being upgraded to bitumen standards	Functional
Macalder	Earth	Non-functional
Kehancha	Earth	Non-Functional

Source: Field survey, 2020

Map 39 presents the spatial distribution of airstrips in the county.



Map 39: Distribution of Airstrips in Migori County

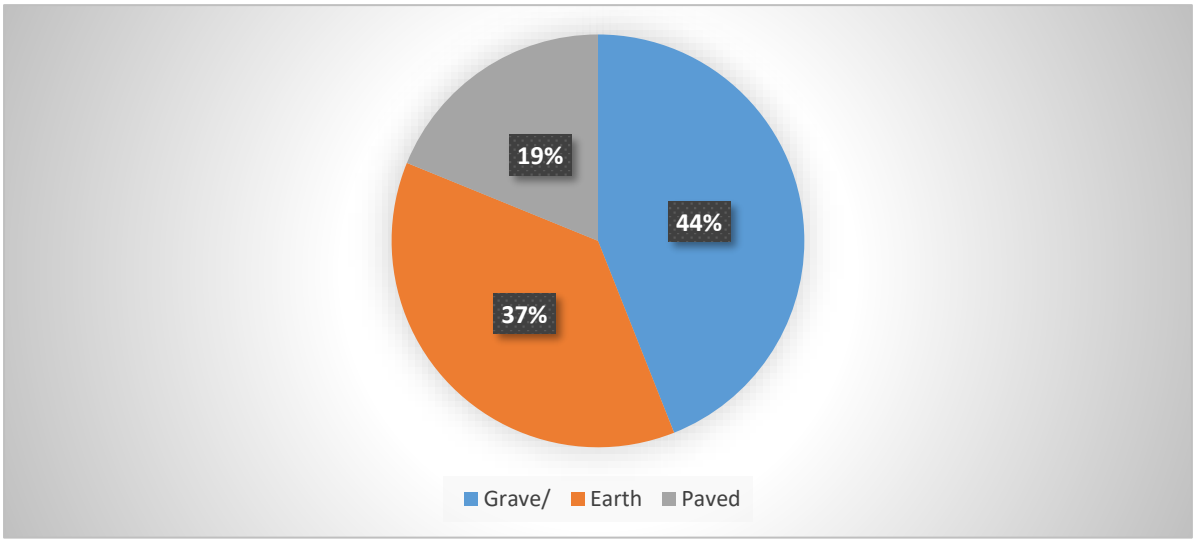
2.6.5 Urban Transportation

Various attributes such as road surface conditions, predominant transport means, and transport infrastructure availability have been used to determine urban transportation status in the urban areas.

Road Surface Conditions for Major Urban Areas

The boundaries of the towns were established using the satellite imagery and observing the extent of the built-up areas. Chart 14 illustrates the roads by surface type in each of the urban areas

Chart 14: Urban Roads Conditions



Source: Field survey, 2020

Migori Municipality has the highest percentage of paved roads while Muhuru Town has the highest share of earth roads. It is important to improve the link from Muhuru to other urban areas and local circulation by improving road surface conditions.

Transport Means in Urban Areas

Transport means in the county encompasses both motorized and non-motorized means. Motorized means in the County are categorized into both public and private means. Motorcycles are the dominant public transport means in most urban areas in the County including Migori, Awendo, Rongo, etc. They ply the routes defined by the existing road networks. The major routes within the County link the primary nodes, such as Migori, Isebania, Rongo, Awendo, Kehancha, Sori, Muhuru Bay, and Uriri. External routes link the County to Tanzania, Nairobi, Kisumu and Kisii.

Private means of transport include privately owned vehicles. Non-motorized means of transportation include walking, cycling, hand carts as well as animal transport. As much as most residents prefer walking, most urban areas in the County lack NMT facilities such as pedestrian lanes and cycle tracks. This Leeds to massive traffic congestion experienced in major urban areas such as Migori, Awendo and Isebania. Therefore, there is a need to provide adequate NMT facilities in the major urban areas to improve transport efficiency and reduce traffic congestion.

2.7 County Economy

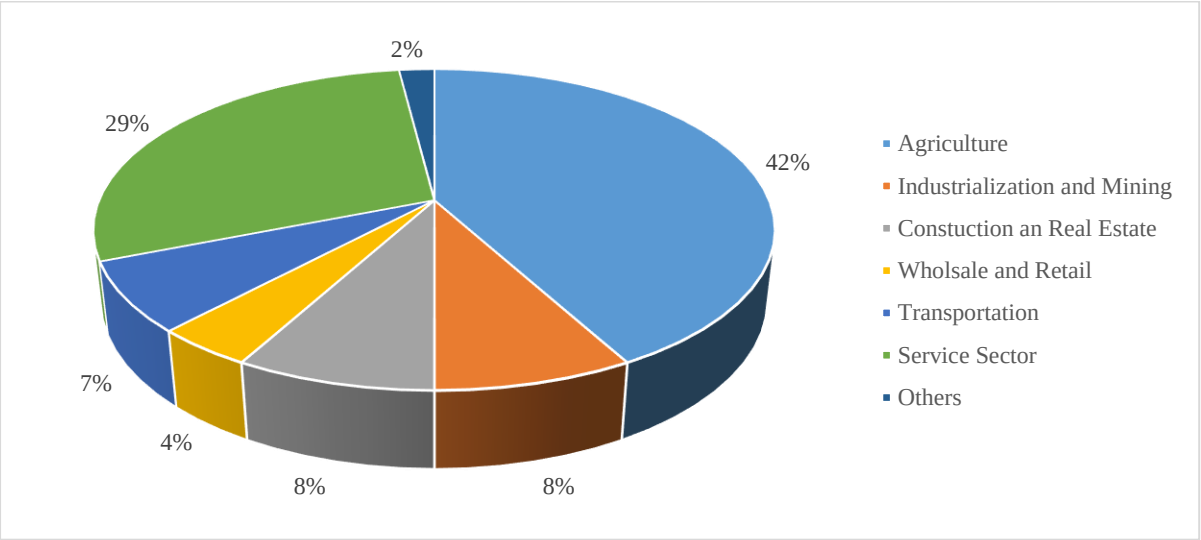
Production scales and capacities of a County are dependent on the level of exploitation of its economic base. On the other hand, exploitation of resource base is a function of skills, technology, infrastructure, policy and governance. Kenya's economic policy *(The Kenya Vision, 2030)* envisions a globally competitive country with a minimum of ten percent (10%) annual economic growth rate. This economic growth is intended to be achieved in tourism, manufacturing, wholesale and trade, business processing outsourcing (BPO), and financial services. The realistic grounding of these economic activities is realized in the counties that constitute Kenya's territory, which Migori County is part of.

Migori County is endowed with vast economic resources that are nature provided and human-created. These resources provide a robust foundation for progressive and sustained growth and development of the County.

2.7.1 Drivers of the County Economy

Major economic sectors in the County include agriculture, industrialization, mining and quarrying, building, construction and real estate, transportation, education, and tourism. Agriculture ranks as the primary contributor at 42% as presented in chart 15. The county has great potential in the lake economy, forestry, and fisheries.

Chart 15: County Economic Structure



Source: County Gross Product, 2019

The County's economic contributors' analysis illustrates that the County is a primary-level economy that deals mostly with raw materials production with limited monetary value. The situation contrasts with other levels such as secondary (manufacturing) accounting for 8%, Tertiary Level (service) 29% and Quaternary Level activities not represented in the County which have a high monetary return.

2.7.2 Agriculture

In Migori County, agriculture employs 71% of total households (Census, 2019). The agriculture analysis in Migori seeks to establish how agricultural development seeks to achieve the national policy direction. The County's agricultural analysis is structured along with the crop production and animal husbandry sub-sectors.

Crop Cultivation

Currently, the land under crop cultivation is 1992.25 $Km^{2,}$ which is approximately 62% of the total land cover. The proportion of households that undertake crop cultivation is about 67% (160,703 households) in the County (Census, 2019). The agro-potential and prevailing climatic conditions determine crop distribution in the County.

Classification of crops comprises three (3) main categories namely cereals, pulses and tubers. Among the three types of crops, the main cereals in Migori are maize, sorghum, rice, millet, while pulses include beans and groundnuts. Roots and tubers grown include cassava. Migori also has industrial crops that include tobacco and sugarcane.

The distribution of crop cultivation activities in the County is as illustrated in map 42. Maize is the main food crop grown in the County based on the production volume of 103,964 tonnes, worth Ksh 2.7 billion. In contrast, horticultural crops are the least produced crops in the County at 444 tonnes and an earning of Ksh 7.1 Million as of 2019 (*County Crop Production Unit, 2020*). The volumes and earnings of the crops for 2019 are presented in table 33. In a hypothetical scenario, the County would earn 1.7 trillion if horticultural production was 103,964.8 tonnes represented by maize volumes in 2019.

Table 33: Volume and Earning Major Crops (2019)

Crop	**The volume of production (tonnes) 2019**	**Earning in Ksh 2019**
Maize	103,964.8	2,767,108,600
Sorghum	10,080	299,903,000
Beans	25,076	2,141,434
Cassava	114,365	1,876,705
Sweet Potatoes	152,003	3,040,060
Banana	11,250	1,485,000
Horticultural Crops	444.9	7,108,200
Tobacco	-	-
Sugarcane	-	-

Source: County Crop Production Unit, 2020

Horticulture as an agricultural practice is a prospect in the agricultural sector as it presents an opportunity for high-value farming. It is an activity; that can be practiced at a small scale and bring higher returns. It is a practice that suits the current reducing trend in mean holding sizes of land in the County. Currently, 7,500 ha is under horticultural in the County. The crops produced include cabbages, capsicum and tomatoes.

Levels of Advancement in Crop Production

a. Storage

Migori County has five (5) NCPB storage facilities, which include Migori, Awendo, Ntimaru, and two in Kehancha. The warehousing facilities mainly store Maize, beans and rice with a handling capacity of fifty thousand ninety-Kilogram bags. Table 34 shows

Table 34: Storage Facilities in Migori

Ward	**Produce**	**Capacity**	**2017**
Migori	Maize, beans, rice	50,000 bags (90kgs)	1504 bags (90kgs)
Awendo			17,148 bags of DAP (50kgs), 560 bags of Sulphate Ammonia, 3,900 bags CAN,238 bags of beans (90kgs)
Ntimaru			30,000 bags of Maize (90kgs)

Bukira East (2 stores)			12,000 bags of Maize (90kgs)

Source: NCPB Migori, 2020

The five warehousing stores' installed capacity is equivalent to 22,500 Mt indicative of high storage capacity in the County. The availability of storage facilities demonstrates a potential for warehousing and logistics with the appropriate infrastructural investments. Other storage facilities in the County are owned by British American Tobacco Company located in Central and South Kamagambo and Kakrao Wards.

b. Marketing

The marketing structure of farm produce in the County is so undefined. The individual farmers look for a market for their produce. The County's current marketing support is the market infrastructure developed in the selected urban areas in the County. The industrial crops have a little advantage of marketing since institutions establish market opportunities in sugarcane, coffee and tobacco. However, there is a lot of unreliability in the tobacco market and many farmer oppressions by the sugar industries.

A very stable market exists for coffee in Kuria East and sugarcane in the existing industries in the neighbouring counties. Within the County, South Nyanza Sugar Company Ltd was undergoing many management issues that have highly impacted sugar marketing despite offering the best rates for the cane.

c. Value addition

The level of value addition is considerably low in the County despite the numerous potentials derived from agricultural produce. Significant value addition in the County exists in sugarcane supported by the existing sugarcane milling industries that include South Nyanza Sugar Company and the jaggery processing cottage industries, coffee processing factories in Kuria East, fish processing in Opapo and milk processing in Rongo and Vegetable processing in Nyatike. Tobacco processing, which is currently done at household level faces challenges like inadequacy of skills and knowledge on value addition.

Other crops cultivated in the County whose value chain has not been exploited and can be industrialized include cassava, sweet potatoes, rice and groundnuts.

These crops present opportunities for broadening the County's economic base from a dependent primary production base to secondary and tertiary economies. It is also worth mentioning that the County is establishing a potato processing plant in Kuria.

d. Farmer support

Farmer support entails various activities that make agriculture more rewarding. The support initiative includes training, marketing opportunities, subsidies on farm inputs, extension services and storage activities. Currently, the County has 100 extension officers that are significantly few to provide necessary services in the County adequately based on the required 120 officers. From stakeholder engagements, lack of training and inadequate skill to practice modern farming was a significant challenge in all wards. Additionally, the extension service officers are not facilitated adequately to offer the necessary farmer support for crop production.

Despite the identified challenges in farmer support, there are proposed and ongoing projects in the County that are geared towards farmer support. These projects include recruiting additional 20 extension officers in the financial year 2019/2020 and constructing market infrastructure in Dede, Cham giwadu, Masangora, Ogwedhi, Ranen, Suna Marindi and Sori.

e. Irrigation

The land area under active irrigation in the County is approximately 625 ha in the lower Kuja irrigation Scheme. However, the whole area that has been established to be irrigable in Nyatike alone is about 7,717 ha. Canal irrigation is the main type of irrigation which mainly relies on gravity. Additionally, irrigation practices along the lake shores extending from Karungu to Muhuru Bay are estimated to cover 25,000 acres. Although it is the cheapest for large-scale farming, canal irrigation is impossible in all County's irrigation potential areas. There is an ongoing project to establish an irrigation scheme in Lichota area with the land set aside for irrigation being approximately 50 ha.

f. Adoption of technology in crop production

The survey conducted in the County in 2020 indicates that the farmers have focused on mechanization to specific crops. Sugarcane farming, in this case, has adopted the use of tractors for farm development and transportation of the harvested canes. The rest of the crops mostly rely on manual labour to produce, harvest and to some extent, processing. Opportunities for adaptation of technology exist in the County, but various factors constraint this opportunity. The enormous technological gap has reduced the County's competitiveness and this effect has reduced efficiency in production reducing the yield of the crops.

g. Farm Inputs

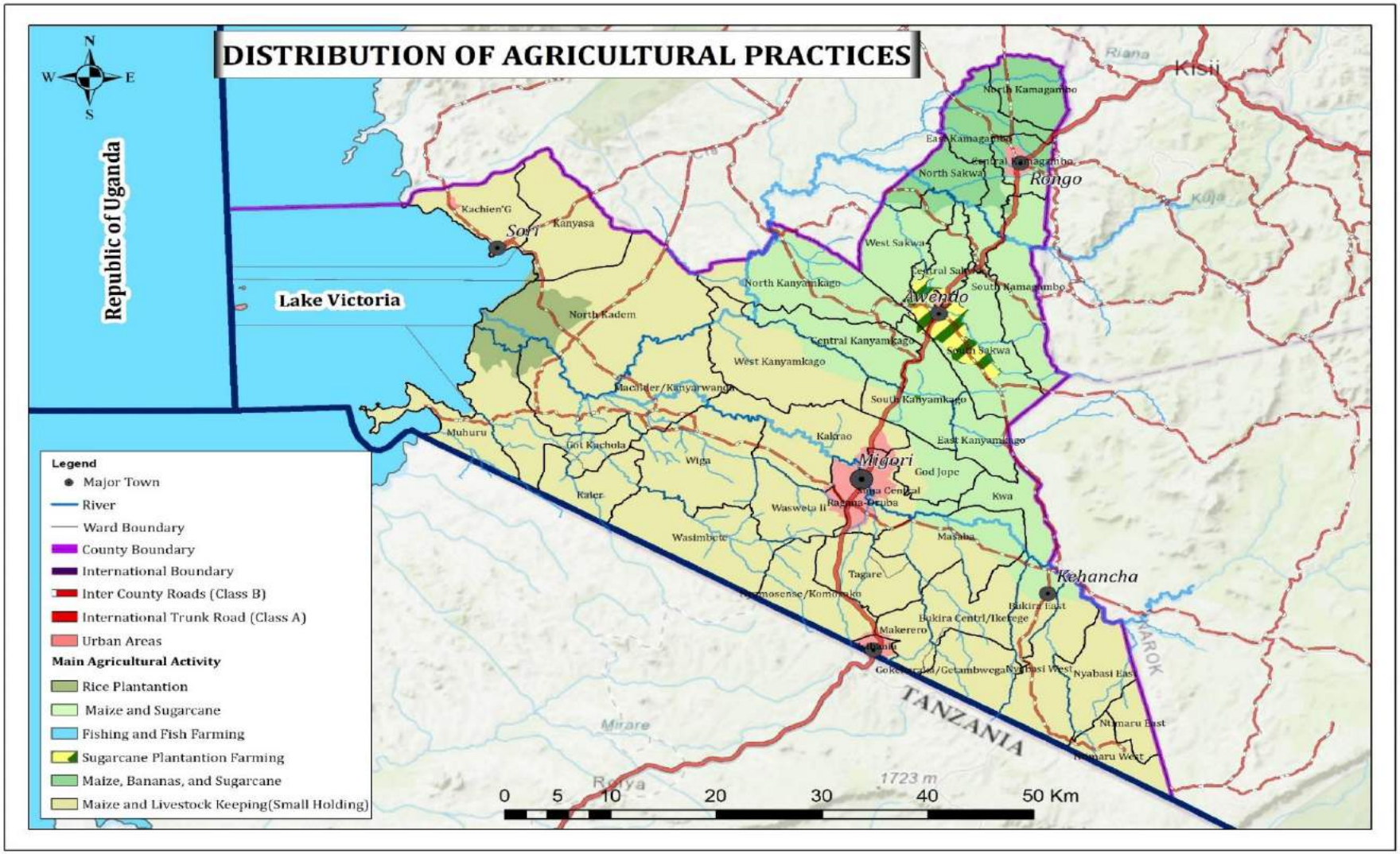
The profit margin of a farmer is dependent on the cost of farm inputs in crop cultivation. Currently, the farmers are facing an increased cost of farm inputs in the production processes.

The sugarcane farmers have to undertake farm development before planting; the farm development takes two stages and each stage costs 2500 shillings per acre.

The pesticides and herbicides' costs have increased over time with an incommensurate rise in production volumes. This phenomenon continuously eats into the returns of the farmers.

The private and public sector supplies certified seed through agro vets and County government programs. The supply of cheap and certified seeds is limited and more initiatives need to be instituted to ensure access to seeds and seedlings.

Map 40 shows the existing agricultural activities in the county.



Map 40: Existing Agricultural Activities

Livestock Production

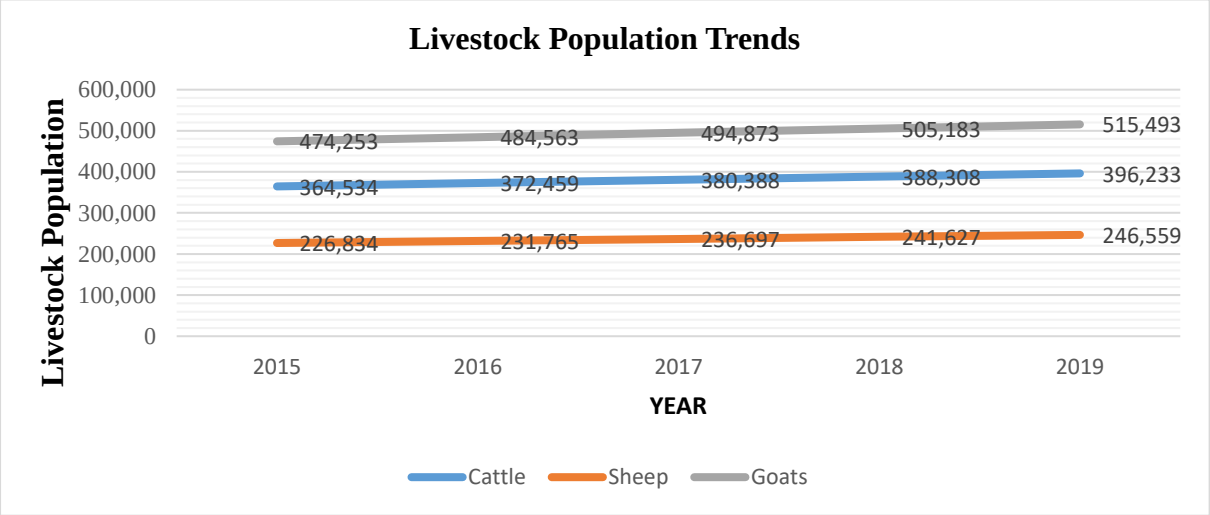
Livestock rearing in Migori County represents 47% (112,935) of households according to the Population and Housing Census report of 2019. According to Farm Management handbook, 2010, the County's agro-ecological zonation has informed that the whole County is a livestock rearing area with a variation on the livestock breeds.

The climatic diversity presents a variation in livestock carrying capacity in the County. The carrying capacity variation results in biasness in crop production in areas with high potential for crop cultivation, which also has a relatively higher carrying capacity for livestock. However, the high potential agricultural areas have a higher population density, limiting their livestock production capability. This phenomenon has made the area with a relatively low population concentration suitable for livestock keeping. Nyatike Sub-county has a higher capability for livestock keeping due to its climatic condition and population density compared to the rest of the Sub-counties.

Migori County has a blend of exotic and indigenous livestock breeds. The exotic variety includes Friesian and Ayrshire and indigenous breed includes Zebu cattle, sheep and the East African goats. Table 16 shows the current production trends in terms of livestock population for selected livestock breeds. The production trend is positive for the major livestock kept in the County.

Despite the growth in the livestock population, there is still an opportunity for other livestock types such as poultry. Additionally, the animals' population has the potential for rising since the carrying capacity is not yet achieved.

Chart 16: Livestock Population Trends



Source: County Livestock Department, 2020

Dairy farming

Dairy farming in the county is still low with the current stock at 3,210 with small scale farming taking 30% and semi-intensive farming taking 70% *(Food and Agriculture Organization (FAO, 2018).* Dairy farming is mostly practiced in Rongo, Awendo, Uriri and Kuria West sub-counties. There is under exploitation of the dairy industry despite the unlimited opportunity it presents for employment and increase in income.

Improvement in dairy farming can be improved through artificial insemination (A.I) to improve the quality of breeds that will gradually adapt to the areas' climatic conditions and boost the region's productivity.

Beef farming

Beef farming in the County is not well established. The current activity in the County is mainly the keeping of local zebus for milk production, beef and ploughing. The poor establishment of beef farming in the county is attributed to lack of specialization, lack of technological adoption and lack of concepts such as ranching in the sector. Nyatike Sub-county has a favourable climatic condition for beef farming. Currently, the production trend for the various beef products is as presented in the table 35.

Table 35: Livestock Production Volumes and Earnings

Livestock	**Production in Litre (L) and Tonnes (T)**				**Earning/Revenue (Ksh) Million (M), Billion (B)**			
	2016	2017	2018	2019	2016	2017	2018	2019
Cattle (Milk)	14,869 L	15,186 L	15,503 L	15,819 L	893 M	912 M	931 M	950 M
Sheep (Mutton)	353 T	360 T	368 T	375 T	123.3 M	126 M	128.6 M	131.2 M
Goats (Milk)	768 L	784 L	801 L	817 L	61.4 M	62.7 M	64 M	65.3 M
Cattle (Beef)	7,046 T	7,196 T	7346 T	7496 T	2.5 B	2.6 B	2.6 B	2.62 B
Goat (Chevon)	862 T	880 T	899 T	917 T	344 M	351 M	358 M	366 M

Source: County Livestock department, 2020

The production trends indicate a rise in beef production in the County. However, there is a potential for the sector to increase the production and the value chain. The opportunity presented by Nyatike Sub-county is only limited to small-scale beef farming since the land holding sizes are relatively smaller and cannot support the ranching concept of beef keeping.

Ongoing Initiatives

The following initiatives are on-going in the County:

i. The County has plans to construct 50 crush pens County wide.
ii. The county has also rolled out artificial insemination program to improve the quality of livestock produced in the County.
iii. The County is committed to completing the renovation of veterinary labs in Migori County.
iv. The county has rolled out the program for construction and renovation of cattle dips county wide.
v. The county is increasing the staff capacity in veterinary service, animal health and the support staff to boost development in livestock production sub-sector.
vi. A program on dairy cow, Sahiwal bulls, dairy goats' distribution is ongoing to improve production in the livestock sub-sector.
vii. There is a program to purchase agricultural materials and small equipment to support the farmers in the county.
viii. The County has embarked on creating fodder and pasture security program in the whole County.

Poultry

Migori County has the suitability for poultry farming. Currently, chicken is the primary type of poultry bred for eggs and meat. The population trend, volume of products, and earnings are presented in the table 36.

Table 36: Chicken Population, Volume and Earnings

Year		**2015**	**2016**	**2017**	**2018**	**2019**
Chicken Population		3,650,672	3,730,035	3,809,397	3,888,760	3,968,122
Volume	**Meat(tonnes)**		4,361	4,453	4,546	4,639
	Eggs (Crates)		1.71M	1.74M	1.78M	1.382M
Earning (KSH)	**Meat (Ksh)**	2.62B	2.62B	2.7B	2.73B	2.78B
	Egg (Ksh)		16.7M	17M	17.4M	18.1M

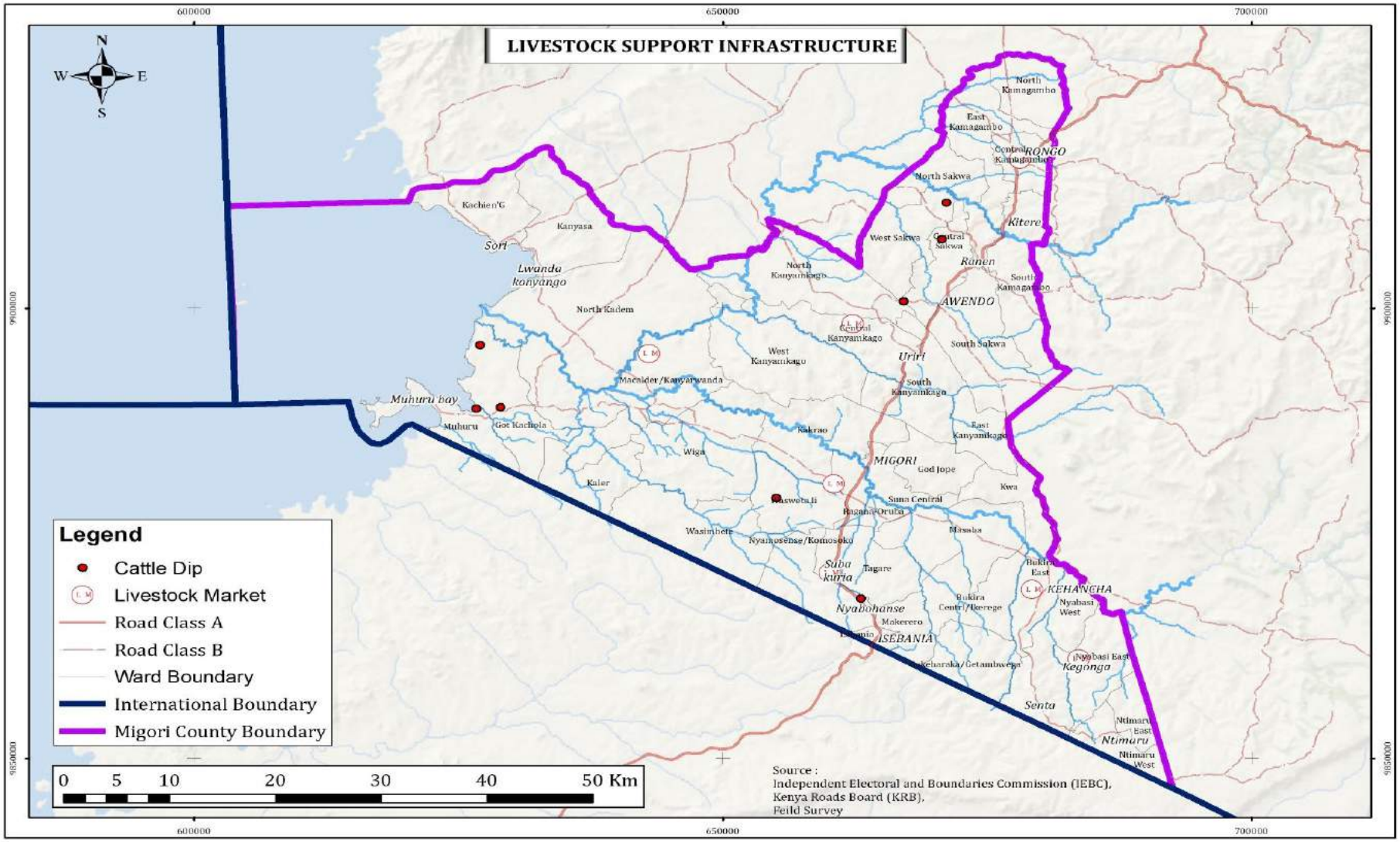
Source: County Livestock Unit, 2020

The findings indicate a constant increase in poultry production from the year 2015 to 2019. Poultry farming presents an opportunity for income with a relatively reduced income. It also provides an opportunity for diversification in other poultry birds.

Apiculture (Beekeeping)

Migori has a vast bee forage that the County has tapped by acquiring 240 Kenya Top Bar beehives and giving them to beneficiary cluster groups in Nyatike and Suna West Sub counties to diversify from traditional log hives and Langstroth *(County Government of Migori, 2018).* The hives' production capacity stands at an average of 5 to 10kgs exclusive of honey products like wax and propolis. There is a need for more investments and sensitization to encourage more beekeepers.

Map 41 presents the existing livestock infrastructure in the county.



Map 41: Livestock Infrastructure

Aquaculture (Fish Farming)

Aquaculture in Migori County remains low, accounting for 915 (0.4%) households (Census, 2019). Ponds and cages are some of the fish farming methods used. Cage farming is an emerging farming technique in Nyatike Sub-County with numerous opportunities. The sector is however underperforming

Migori County had approximately 1,550 farmers involved in Aquaculture as of the year 2018 consisting of 1,374 fish ponds and 176 fish cages. The number of fish pond and cages in the cages are presented in table 37.

Table 37: Distribution of Fish farmers, Fish Ponds and Cages per Sub-County

Sub County	Farmers No.	Active Ponds No.	Active Pond Area	Dormant Ponds No	Dormant Ponds	Cages No.	New Ponds	New Ponds Area
Awendo	192	232	69,600	79	23,700	0	0	0
Kuria East	133	111	33,300	95	28,500	0	2	240
Kuria West	193	92	27,600	154	46,150	0	0	0
Nyatike	45	50	15,000	28	8,400	176	0	0
Rongo	292	232	69,475	115	34,450	0	2	600
Suna East	172	99	29,700	174	52,200	0	3	900
Suna West	91	99	29,782	14	4,200	0	3	900
Uriri	256	262	78,600	77	23,100	0	4	1,100
Total	1,374	1,177	353,057	736	220,700	176	14	3,740

Source: Fisheries Annual Report, 2018

The production volumes from fish farming are considerably low. The reasons explaining the low production of fish in the County include low investment in fish farming, insufficient water supply to sustain fish farming year-round, low technological know-how on fish farming, high cost and inadequate availability of fish farming inputs and fish feed.

The main fish produced are tilapia and catfish. Although tilapia is the main fish farmed in cages, the production volume of caged fish (Tilapia) totalled to 1.57 Tonnes in 2018 amounting to 20% of the fish produced. Fish from ponds accounted for 452 tonnes for catfish and 14,787 tonnes for tilapia *(Fisheries Annual Report, 2018).* The production value of fish in fish ponds is presented in the table 38.

Table 38: Volume of Fish by weight and Amount (Ksh)

S/County	Wt. (Kgs)	Amount (Ksh)	% Production by Wt.
Awendo	1,901	395,550.00	11.39%
Catfish	4	800.00	
Tilapia	1,897	394,750.00	
Kuria East	1,418	311,100.00	8.49%
Tilapia	1,418	311,100.00	
Kuria West	390	78,000.00	2.34%
Tilapia	390	78,000.00	
Nyatike	3,349	510,570.00	20.06%
Catfish	342	30,380.00	
Tilapia	3,007	480,190.00	
Rongo	3,333	1,310,765.00	19.96%
Catfish	78	33,700.00	
Tilapia	3,255	1,277,065.00	
Suna East	2,050	501,790.00	12.28%
Tilapia	2,050	501,790.00	
Suna West	184	54,650.00	1.10%
Catfish	28	8,000.00	
Tilapia	156	46,650.00	
Uriri	4,071	1,165,200.00	24.38%
Tilapia	4,071	1,165,200.00	
Grand Total	16,696	4,327,625.00	100%

Source: Fisheries Annual Report, 2018

Fingerlings in the County are currently provided by the County, private commercial entities and unauthorized distributors. The shortage of adequate fingerling distributors has resulted in the spread of low stock and inadequacy of fingerlings. However, the County is currently implementing programs on the provision of quality fingerlings.

Fish farming provides an opportunity for income and employment in the County. These opportunities are identifiable in feeds manufacturing, providing technological services that support fish farming including caged fish farming. These opportunities exist in the challenges that are affecting fish farming in the County.

Ongoing Initiatives in Aquaculture

i. The County is currently supporting fish farming through fingerling supply program
ii. There is the establishment of fish feeds supply program.
iii. The county government through the fisheries sub-sector is supporting pond construction throughout the County.

iv. The County has established a pilot project on caged fish farming in Lake Victoria to increase the potential for fish production.
v. The County is planning to construct a fish hatchery in Rongo (Miyare ATC).

Factors influencing the livestock potential in the County

Market and Marketing

There are approximately seven (7) existing and 5 (five) proposed action yards in Kugitimo, Arambe, Masara, Awendo and Suna *(Migori County Annual reports, FY2019/2020).*Auction yards are inadequate and have insufficient infrastructure to support services.

Value Addition

The current level of value addition is very low. In the County, milk is generally sold in its raw for, limiting milk returns as a livestock product. Additionally, value addition to meat and meat products is limited to slaughtering and selling meat in its first level of value addition. The County's current support infrastructure for value addition includes slaughterhouses and slaughter slabs and a dairy processing plant in Rongo Sub-County.

The low levels of value addition to livestock products in the County calls for a robust framework of spatial linkages to broaden the value chain of livestock products in dairy and beef. The diversification is possible in leather processing, meat processing,and milk processing into dairy products such as ghee, cheese and yoghurt.

Technological application and adaptation

Technological application is key in boosting, achieving efficiency and increasing the profit margin in livestock production. Application of technology in livestock rearing is considerably low. The county government offers technology-based services including artificial insemination (A.I.), which is just a small portion of technology possibilities in livestock rearing. The current level of production and development of the County reflect a dependent economy at its initial stages and require injection of technology in the initial production process levels. These require investment in technology that will increase feeds production, livestock keeping and support infrastructure and technology that ensures improved quality of breeds in the region.

2.7.3 Industrialization in Migori County

The County has enormous industrial and mining potential that is available for exploitation further to improve the County's socio-economic transformation and unlock the manufacturing and processing subsectors. The industrial economy of Migori is both large-scale and Small-scale (cottage industry). The County's industrial structure includes processing, manufacturing, and cottage. Industrialization and mining contribute 8% to the County's Gross Product (County Gross Product, 2019).

Processing Industries

The dominant processing industries in the County are agro-based. The existing agro-processing industries in Migori County are both large medium and Small Scale (cottage industries). The large scale agro-processing industry in the County is Sony Sugar Company. This primary industry is relatively unstable in its operation. The rest of the agro-processing industries operate in medium to small scale production processes. Table 39 illustrates general industrial activities and status. South Nyanza Sugar Company (Sony) employs 1,940 people, approximately 0.2% directly and 25,000 indirectly (farmers) (the Republic of Kenya, 2020). The industrial activities provide revenue to the county government, spur economic activities such as metal fabrication, trade, and commerce, a scenario illustrated in Rongo Town.

Table 39: Large scale Agro-Processing Industries

Industries	Type of processing	Status
Sony Sugar	Sugar Processing	Operational
Opapo Fish processing Plant	Fish Processing	Not Operational
Midas fish processing plant	Fish Processing	Not Operational
Vegetable Processing Plant	Vegetable Processing	Operational
Sweet Potato Processing Plant	Sweet Potatoes Processing	Operational
Ende hill Water Factory	Water Packaging	Operational
Mahuntutu Coffee Plum Factory	Coffee	Periodic Operation
Bungonga Society Coffee Factory	Coffee	Not Operational
Misadhi Coffee Factory	Coffee	Periodic Operation
Nyankongo coffee collection centre	Coffee	Periodic Operation
Wangirabose coffee factory	Coffee	Periodic Operation
Gitungi coffee factory	Coffee	Periodic Operation
Kwiho/Daraja Mbili coffee factory	Coffee	Periodic Operation
ECCL	Garbage Processing	Operational
Milk Cooling	Milk Cooling	Operational

Rice milling	Rice milling	Operational
Oyani Water Bottling	Water packaging	Operational

Source: Field Survey, 2020

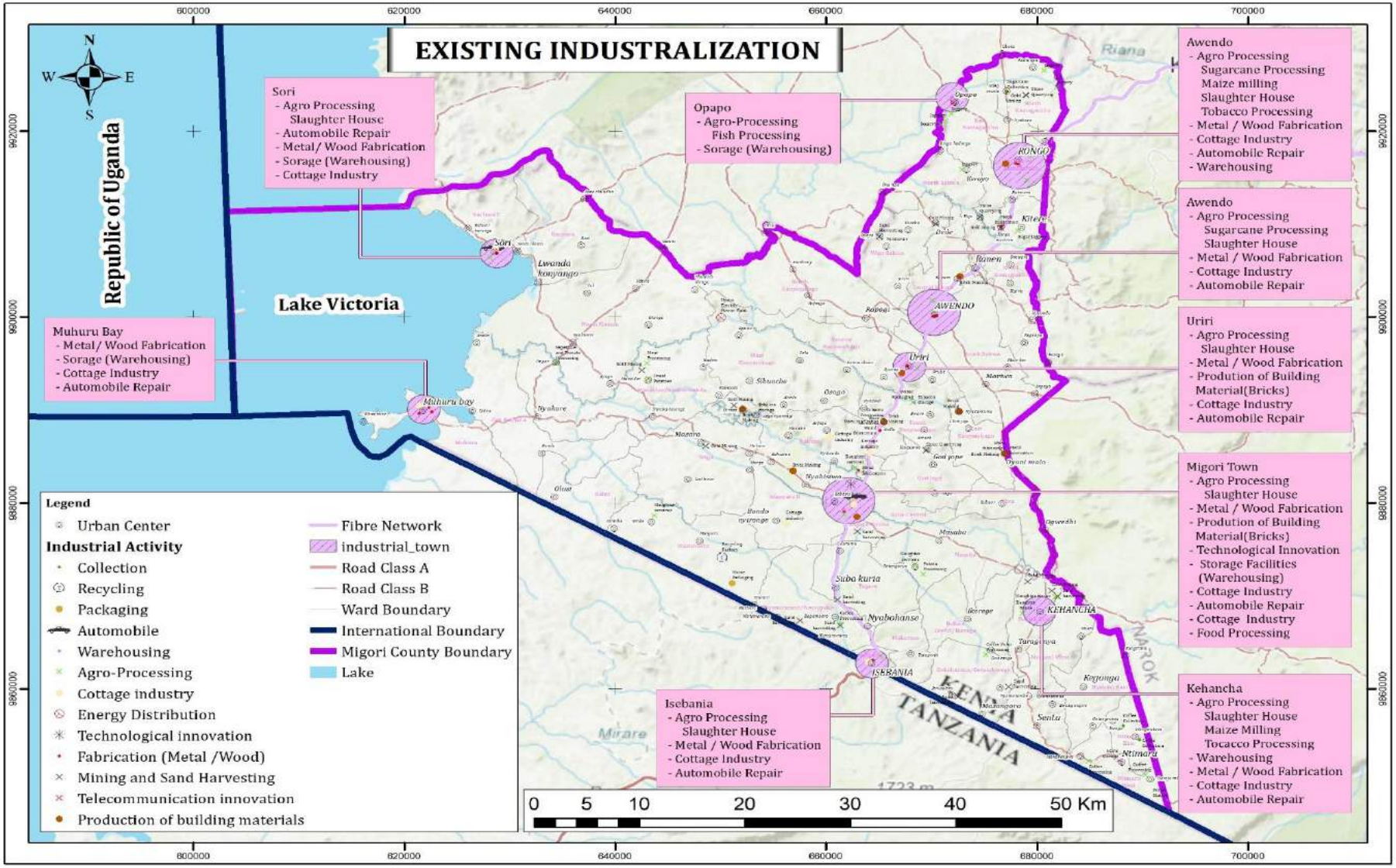
Manufacturing Industries

The manufacturing subsector of the County is highly underdeveloped. The County's existing manufacturing activities are limited to metalwork and woodwork at small scale and cottage levels. The existing situation presents limited efforts to contribute to the realization of the Kenya Vision 2030 and the Kenya Industrialization policy (2012) which identifies manufacturing as the leading sectors to drive the industrial and the general economy to a two-digit growth rate.

The County's cottage industries comprise jaggery processing (*sukari Nguru),* mat making and boat making around the lake region, ore crushing, brick making, pottery in Rongo and Awendo sub-counties, automobile repair metal and wood fabrication. Currently, there are approximately 5,000 artisans registered within the existing 200 *Jua Kali* registered associations. However, most of these associations are not operational (CIDP 2018-2022). Fabrication industries are located along roads. However, the County has been investing in *Jua kali* sites such as in Ombo. Despite these efforts, more investments in *Jua kali* sites need to provide employment and stimulate economic growth.

Opportunities exist for manufacturing presented by minerals such as iron ore yet to be exploited in the County. Despite the high industrial base regarding the cottage industry, the County remains undeveloped due to a lack of adequate capital, equipment, knowledge and skills.

Map 42 presents the existing industrial activities in the county.



Map 42: Existing Industrial Activities

Mining Activities

Migori County spans across the Archean Nyanzanian Craton area that contains metallic mineralization and precious metals. Of all the established mineral resources and industrial rocks and soils in the County, the current minerals mined in the County include gold and Copper. There is an active extraction of sand clay loam soil for brick making in the County. According to the Geological Survey of Kenya (2007), gold deposits are associated with other valuable minerals such as sericite, tourmaline, calcite, pyrite, arsenopyrite, chalcopyrite and galena. The corresponding mineral resources present an opportunity for future mining ventures.

Mining in the County is either commercial or artisanal mining. Commercial mining activities are currently conducted by Red Rock Company which has two exploration blocks with an estimated gold deposit of 1.2 million ounces (Moz) along the gold belt (Red rock, 2020). The exploration block attached to the Red rock mining company is illustrated in map 43.

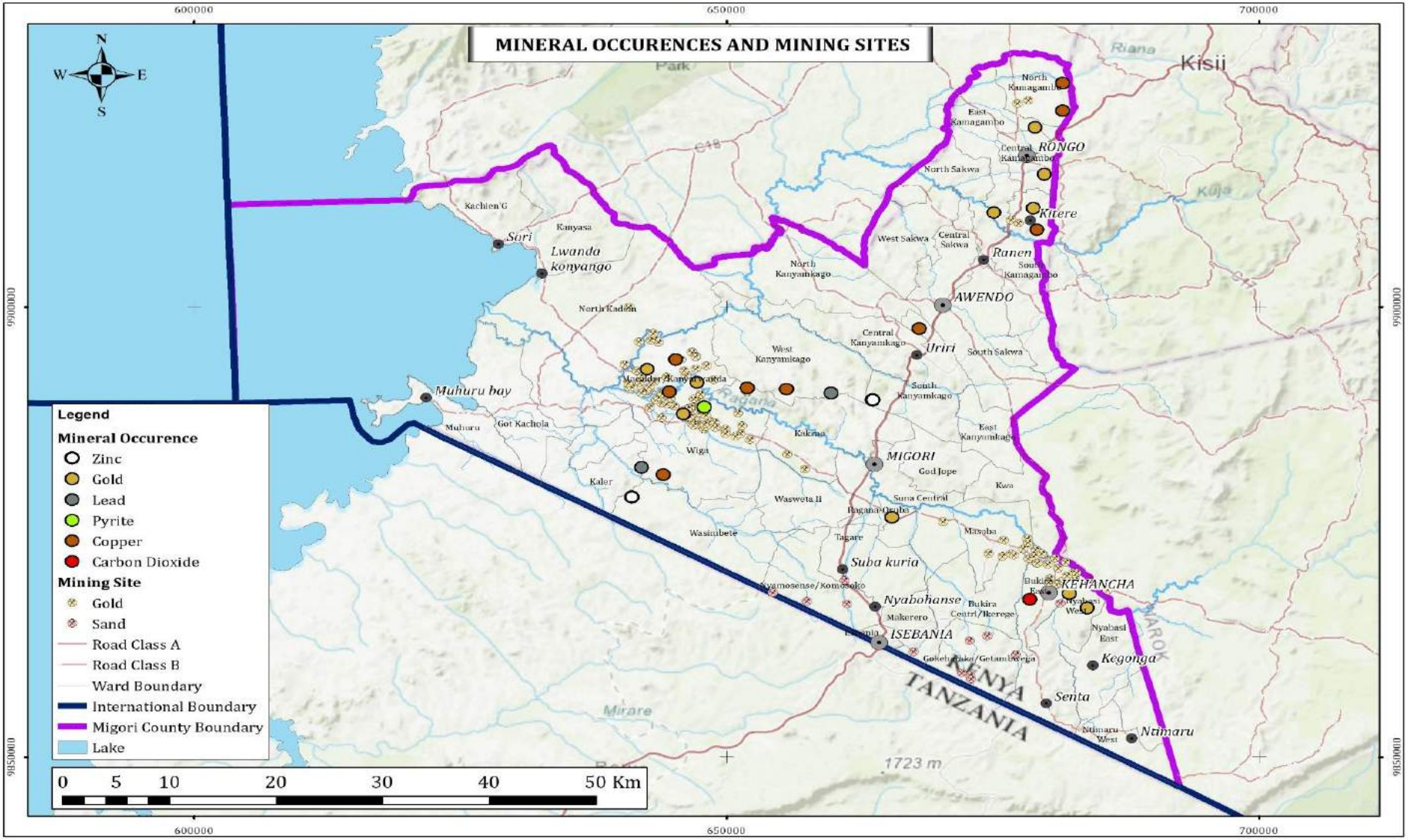
Large-scale mining activities in the County is only done by the Red rock Company. The situation is attributed to the fact that the explored mining belt faced depletion of economically viable ore. However, there is a recommendation for further mineral exploration on other significant deposits to ascertain the number of minerals and their quantities. This recommendation was based on the fact that the initial exploration was significantly superficial. The Geology Department of Kenya believes that the western region has a high gold potential.

While artisanal mining activities include minerals such as gold, sand, stones, and clay, there are unlicensed and uncontrolled challenges to meet the necessary industrial mining standards, and the output is never accounted for or recorded. Some of the inherent challenges of artisanal mining include low technology adoption, mining-related accidents, environmental degradation, and inadequate skills to manage the respective mining sites.

Contribution of Mining to the County Economy

Gold mining activities contribute 1% of the County's total economic output (Gross County Product, 2019). Gold mining activities are a significant employer in the County both directly and indirectly. Mining activities are also a significant revenue contributor to the National and County governments. The small-scale industrial activities such as metal fabrication, brick making and ballast production are stimulated and nurtured. Other economic benefits of mining in the County include stimulating investments in different sectors such as transportation and investment in trade and commerce activities.

The mining sector contributes significantly to employment in the County especially in Rongo, Awendo, Kuria West and Nyatike sub counties where mineral deposits are located. Map 43 shows the existing minerals resources and deposits in the county.



Map 43: Mineral Resources and Mining Sites

2.7.4 Trade and Commerce

According to Gross County Product, 2019, trade and commerce activities constitute an aggregate of 48% from sectors such as service (29 %), transport (7%), wholesale and retail (4%) and construction (8%). A keen dissection of this into the County's retail and commerce sector structure indicates that the GCP's bigger contribution is from the service sector. However, retail and wholesale that indicate a link to the County's primary production activities is quite low. This phenomenon points out that there is under production and limited trade on the County's primary outputs.

Retail trading is a consumer-based exchange of goods and services for a derived monetary benefit, while wholesale operates with business to a relatively large scale. Wholesale and retail activities are actively found within urban centers in the county. Furthermore, it is this subsector that drives the economy of the urban areas. Therefore, the functional classification and development of the human settlements have to tap into this opportunity for hierarch of retail services within the County. The planning has also to tap into the opportunity for trade and commerce presented by being proximate to Tanzania.

Markets

Trade and commerce in the County are also supported by the existing market infrastructure. The County's market infrastructure exists in the form of retail and wholesale markets and livestock auction yards. Despite the deficiencies in the wholesale and retail market infrastructure in the County, there are continuous plans in the annual budgets to construct markets to bridge the infrastructural gaps.

Migori County has approximately eight (8) auction yards. Based on the distribution of livestock keeping activities in the County, these market infrastructures are inadequate. However, there are efforts to enhance the number of auction yards through proposed yards such as Kugitimo auction ring in Nyambasi North, Masara Market Center located in Masara ward and Awendo auction in Awendo Town in the financial year 2019-2020. The existing facilities are inadequate and have insufficient infrastructures such as holding bays and auction rings.

Financial Services

Financial Services are provided by banks, microfinance and mobile transfer agents in the County. Banks and microfinance institutions are mostly located within the County's main urban areas, while money agents comprise bank and mobile agents distributed throughout the County. Other financial institutions include SACCOs which are sectors bound such as transportation investment, agriculture and fishing.

As a service sector, the financial service sector also creates employment for the people within the County hence a positive contribution to the economy's growth and development. However, this sector can only develop if the disposable income of the people increases. Savings is only a possibility when there is surplus income by the people. This condition implies that for this sector to continue contributing to the economy of the County, there must be consistent efforts to develop the production sectors of the economy.

Tourism

As an economy in Migori County, tourism is highly underexploited, despite the enormous potential arising from unexploited and branded tourism destinations. Further, hospitality in the County accounts for a mere 0.4% (Gross County Produce, 2019) despite lying within the South Rift and Western tourism circuit. The tourism circuits present an opportunity for investment in hospitality services.

Attraction Sites and Areas

Migori County has many tourist attractions sites and areas that range from Lake Victoria and beaches to cultural and heritage sites. The existing attraction sites and their conditions in the County are presented in table 40. The overriding challenge associated with the tourism activities in the County is that the sub sector is highly under developed. The attraction sites are neglected with very minimal activities leading to reduced economic returns to the County and its residents. As presented in table 40, the existing tourism assets and attraction areas are underutilised.

The natural landscapes provide the County with unique geographic information. Similarly, the hills and forests domicile wildlife such as baboons, rock hyraxes, and numerous bird species. On the other hand, Lake Victoria provides opportunity for nature tourism, water sporting activities as well as bird watching activities.

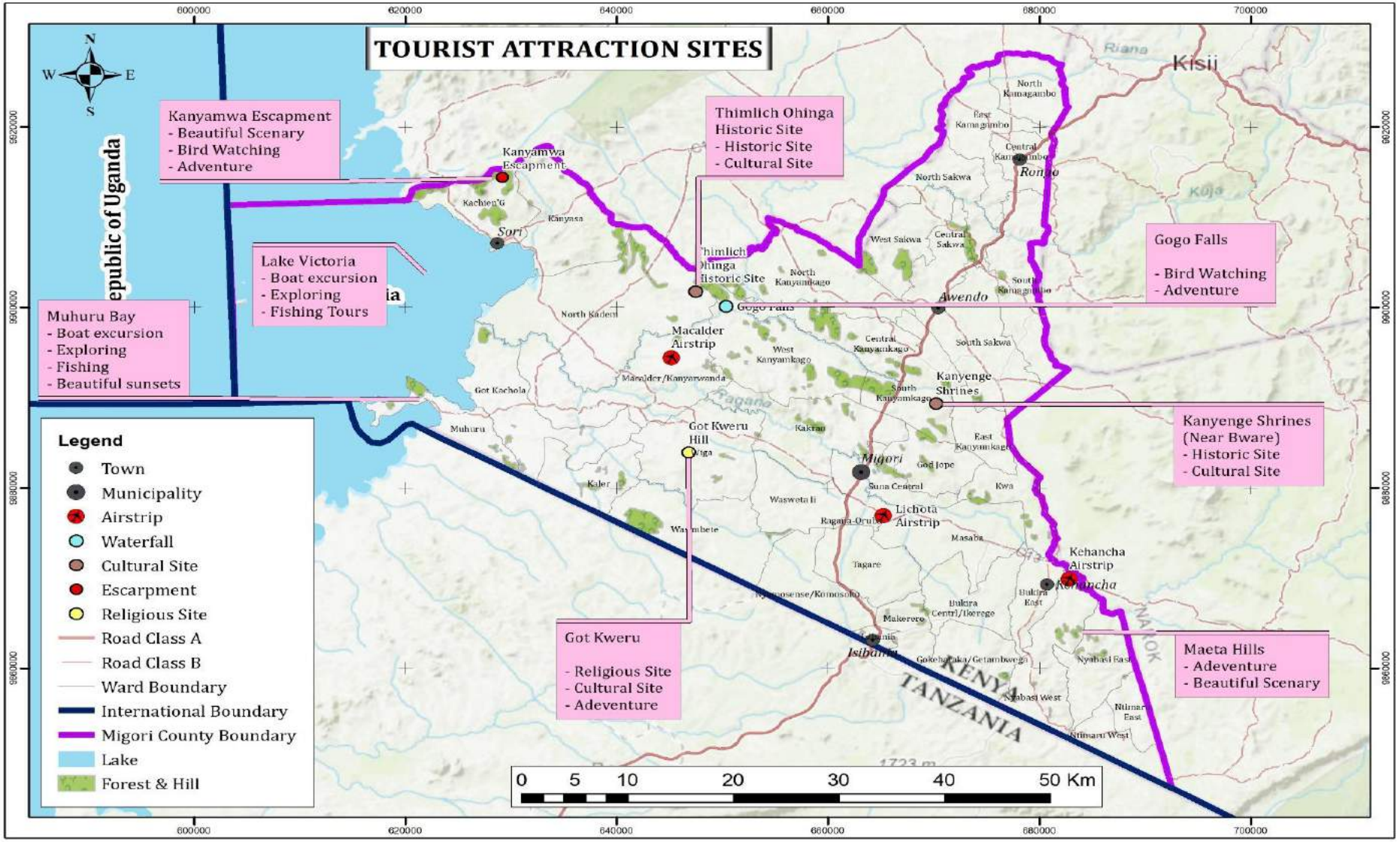
Table 40: Tourism Attraction Areas and Sites, Activities and Condition

Tourism site/area	**Description of site**	**Location**	**Current physical condition**	**Existing Activities**	**Level of utilization.**
Thim-Lich Ohinga	Culture and Heritage site	Nyatike Sub-county	Preserved	Historical and cultural tourism	Underutilized
Got Kweru	Forest, Hill, and Shrine	Nyatike Sub-county	Preserved by the community	Religious/faith tourism	Underutilized
Legio Maria Holy Got-Calvary Shrines	Hill and Shrine	Suna West.	Preserved	Pilgrimage Religious/faith tourism	Underutilized

Mugabo caves	Heritage and Historic site	Nyatike Sub-county	Preserved by the community	Historical and religious tourism Site seeing	Underutilized
Nyumba ya Mungu caves	Heritage and Historic site Sacred shrine	Nyatike Sub-county		Cultural and historical knowledge Religious tourism	Underutilized
Chinato crying stones	Scenic area and cultural knowledge	Kuria West	Preserved	Site seeing	Underutilized
Kanyenga Shrines	Shrine	South Kanyamkago	Preserved by the community	Pilgrimage	Under Utilized
Lake Victoria and the beaches	Natural open water body with culture and heritage	Nyatike Sub-county	Pollution and invasion by water hyacinth	Boat riding. Adventure	Underutilized
Islands	Natural Landscape	Nyatike	Degraded (Migingo), Intact (Ugingo)	-	Underutilized
Gogo Falls	Waterfalls and scenic Landscape	Uriri Sub-county	Conserved	Adventure	Underutilized
Sugarcane plantation	Large scale plantation agriculture	Awendo Sub-county	Reducing the size of plantations	None	Underutilized
Hills and Forests	Heritage and natural landscape	Distributed all over the County	Reducing forest vegetation cover	Adventure, hiking and birdwatching	Underexploited
Kanyamwa Escarpment	Natural	Nyatike Sub-county	Moderately impacted	Adventure and bird watching	Underutilized
Urban Areas	Built-up areas	Distributed all over the County	Relatively limited tourism facilities	Shopping	Underutilized

Source; County CIDP, 2018-2020, Lake Region Economic Blue Print, 2014

Map 44 shows the tourism attraction sites in the county.



Map 44: Tourist Attraction Sites and Areas

Tourism Facilities

Tourism facilities are key in driving the tourism industry. The hospitality facilities include hotels, restaurants and accommodation services. Currently, tourism facilities within the County are not rated or classified. However, the County has seen investment in hotels in strategic areas to offer complementary services to the tourism sector. Investment in hotels is along the beaches in Sori and Muhuru bay and major urban areas such as Migori, Rongo, Isebania and Kehancha.

The hospitality facilities can offer income and employment to the County's population while also supporting the tourism sector. The opportunity for hospitality investment exists in the identified attraction sites and areas. The specific sites include the shores of Lake Victoria, Thim Lich Ohinga, and Gogo Falls. The opportunity for hospitality lies in the urban areas that have a threshold for attracting urban based tourism activities.

Migori County is strategically located by the South Rift and Western tourism circuit which offers hospitality. The proximity of Ntimaru West to Serengeti National Park influences the establishment of hospitality facilities.

The tourism opportunities in the County have not been adequately marketed and developed to attract the possible nature of activities. Additionally, even the tour and travel services are not domiciled in the County, pointing at the sub-sectors underdevelopment.

Assessment of the Potential of the County's Economy

An outlook into the County's economy into the future necessitates the need to broaden the economic sector to economic areas that have not been developed in the County. New economic areas and additional to the existing sectors are justifiable from the assessment of the County's economy. These areas include the Lake Victoria Economy, future role of agriculture, tourism, industrialization and mining and the service sector.

Lake Victoria Economy

Similar to the concept of the blue economy, Lake Victoria offers vast economic opportunities to Migori County. The lake offers opportunities internally and externally to the County and Country opening fronts for regional and international trade.

As identified in the land and environment section, the lake and related resources include the open waters, sandy beaches and islands as convertible resources to an economic gain. The lake offers various economic activities such as fishing and open water fish farming, transportation and tourism activities.

Fishing and Open Water Fish Farming

Open water fishing is practiced in Migori's Lake Victoria's territory, which covers 543.58 Km^2. As of 2020, 3% of the households undertook fishing as an economic activity. The household proportion includes fishers and fishmongers.

The commonly used fishing methods have hindered optimal returns from the fishing industry. These methods are mainly traditional. The methods include cast nets, fence traps, ring nets, and nets. The method of fishing is synonymous with fish species. The common types of fish species are listed in table 41. Furthermore, the fishing industry is supported by infrastructures such as fish landing sites and the availability of markets and storage facilities. The County has 31 fish landing sites distributed along the shores of Lake Victoria. These fish landing sites are characterized by inadequate support infrastructure and dwindling land sized due to encroachment.

Landing sites need adequate support infrastructures such as cold storage and drying facilities to increase economic gain in fishing activities. Map 8-7 and table 41 illustrate the fishing support infrastructure distribution in the County and Lake Victoria's other economic activities.

There was also the establishment that the County's fishing activities reduced during the rainy seasons due to extreme weather conditions and the fish migration to their breeding grounds.

Table 41: Fish Species

Scientific Name	**Generic Name**
Bagrus spp	Bagrid catfish
Clarias	Catfish
Haplochromis	Tilapia
Labeo spp	Salmon fish
Lates niloticus	Nile Perch
Oreochromis niloticus	Tilapia
Protopterus aethopicus	Lungfish
Rastrionobola argentae	Omena
Synodontis	Cat Fish

Source: Annual Report, 2018

Productivity in the fishing industry

The total fish volume landed in landing sites in Migori County was 3,805 MT (metric tonnes) and totalled Ksh 654 Million. The Lates niloticus (Mbuta) is the main catch accounting for 63.84% of the total fish. The fish yield volumes and the amount in Ksh is presented in table 42.

Table 42: Species of fish, Volume and Amount (Ksh) at landing sites in 2018

Species	Name	Wt. (Kgs)	Amount (Ksh)	% Contribution by Wt.
Bagrus spp	Bagrid catfish	11	2,200.00	0.00
Clarias	Catfish	2,722	141,360.00	0.09%
Haplochromis	Tilapia	29,792	2,601,400.00	0.97%
Labeo spp	Salmon fish	9,781	2,445,250	0.32%
Lates niloticus	Nile Perch	1,969,628	504,697,287.00	63.84%
Oreochromis Niloticus	Tilapia	226,622	52,535,342.00	7.35%
Protopterus aethopicus	Lung fish	1,006	234,410.00	0.03%
Rastrionobola argentae	Omena	842,654	91,292,594.00	27.31%
Synodontis	Cat Fish	3,095	183,763.00	0.10%
Total	Bagrid catfish	3,085,311	654,133,606.00	100

Source: Fisheries Annual Report, 2018

Opportunities in the Lake Economy

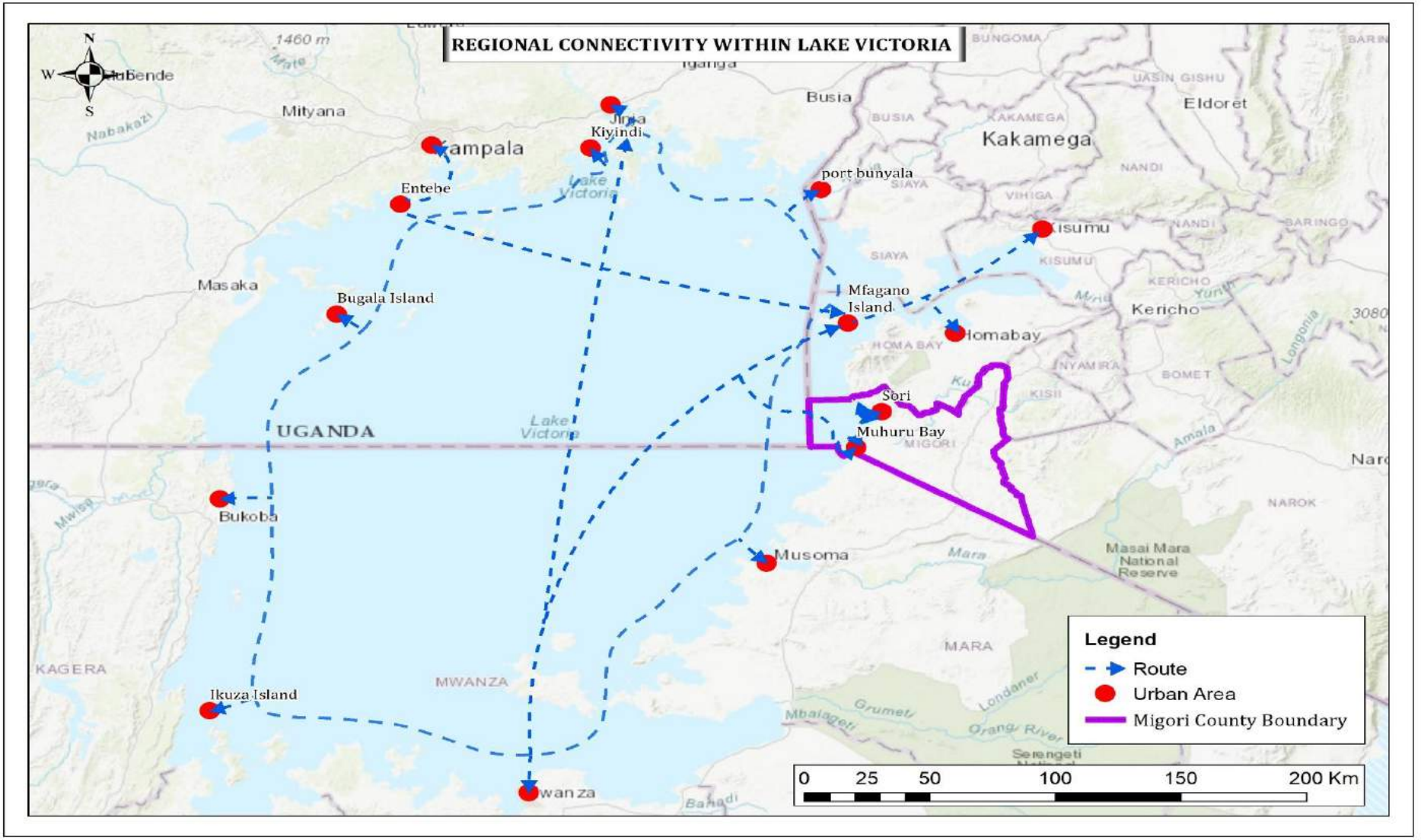
Unexploited economic opportunities in Lake Victoria include water transport, water sporting activities and building materials like papyrus reeds.

The lake connects Migori County to Tanzania, Uganda and counties such as Kisumu via Lake Victoria. Water transportation is an integral component of the County Economy.

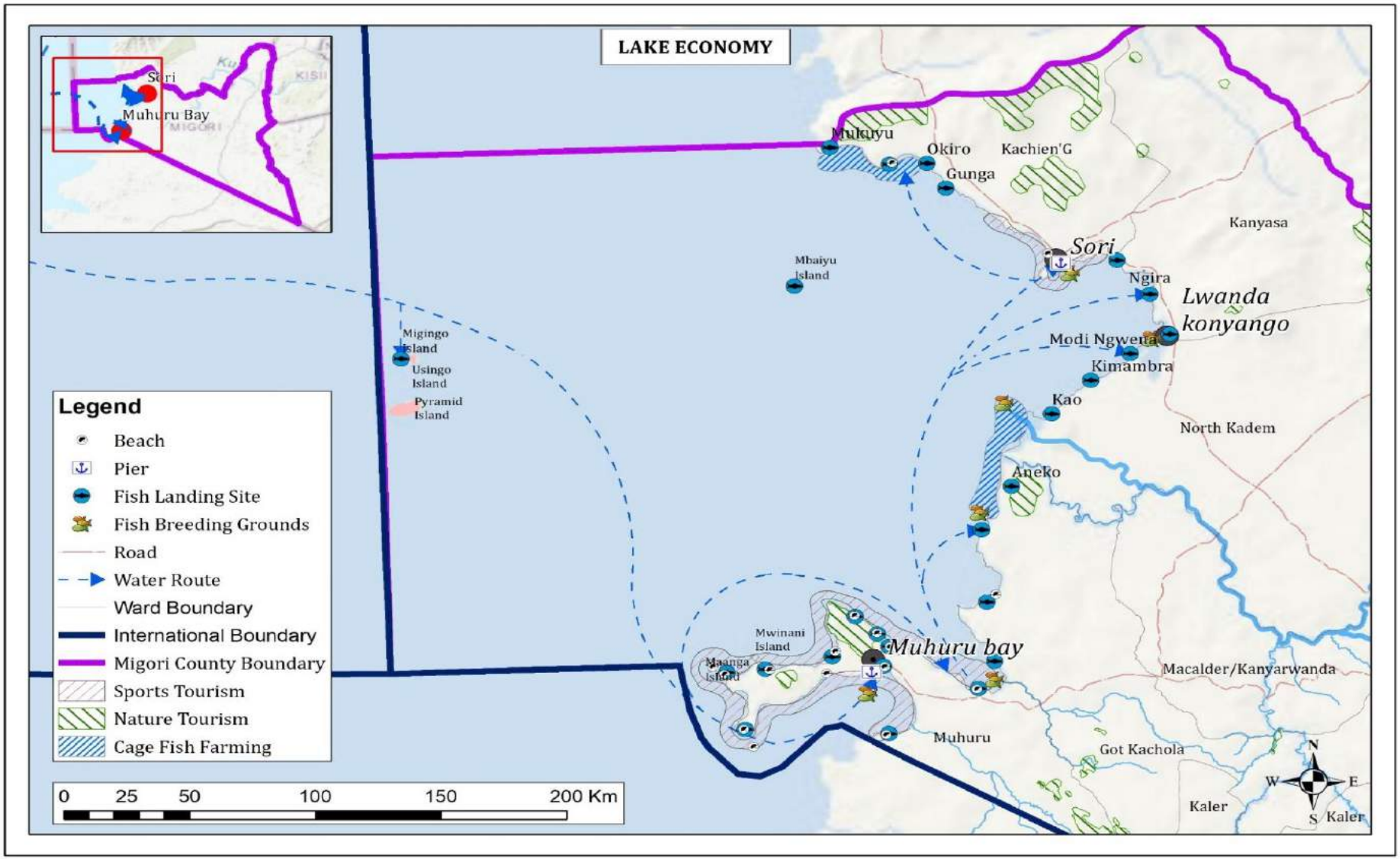
Lake Victoria presents an excellent potential for recreation. The lake is currently used for boat riding and water sporting which in the long run, translates to both leisure and income generation. Lake tourism and recreation also offer employment to both the investors and the employees that provide recreational or tourism services. However, the lake is poorly marketed for its tourism and recreation functions.

Further, beaches in the lake lack appropriate infrastructure such as roads and recreation facilities to attract tourists. Additionally, Lake Victoria has numerous vegetation such as Phragmites, Papyrus and reeds that can be exploited for basketry making.

Map 45 shows the regional connectivity within lake Victoria while map 46 gives a presentation of the lake economy.



Map 45: Regional connectivity within Lake Victoria



Map 46: Lake Economy

Existing advancements in Lake Victoria Economy Potential

Fish Value Addition: the fish value chain is underexploited in the County. The existing value addition activities in the County include storage (cold storage), sun drying, frying, and fish transportation to various market areas. These value addition activities take place at small scales. The findings from the survey of the County shows that there are initiatives to upscale fish value addition. The County has established a fish processing plant at Opapo. The fish processing plant is yet to be commissioned. The initiative will strengthen the spatial linkages and create more employment along the value chain.

Enabling infrastructure: The existing support infrastructure in fishing and transportation are not maintained and are dilapidated. The Muhuru bay pier is dysfunctional and dilapidated. The terminal facility cannot even support local transportation services. The fish landing sites are underdeveloped. Additionally, the roads connecting the lake to the land are in poor condition.

Technology: The level of technological adaptation in the lake economy is relatively low. The fishing methods are not led by updated technology.

Institutional support: Currently, there are no policies to regulate fishing activities to ensure sustainability. Additionally, there are no rescue services responsible for the established and authorized institutions such as the Kenya Maritime Authority. Furthermore, there is limited institutional support in the conservation measures to protect the Lake Victoria ecosystem. The lake is currently facing pollution challenges that are a threat to its ecosystem functionality.

The Future Role of Tourism

As identified in the assessment of the tourism attraction sites and areas, the possibilities explored as the County's future of tourism is outlined in the table 43.

Table 43: Tourism Potential

Tourism Site/Area	Location	Possible Activities
Thim-Lich Ohinga	North Kadem Ward	Historical and cultural tourism Filming and photography
Got Kweru	Wiga	Religious/faith tourism Filming and photography
Legio Maria Holy Got-Calvary Shrines	Suna West.	Pilgrimage Religious/faith tourism Hospitality Filming and photography
Mugabo caves	Muguru Bay	Historial and religious tourism Site seeing Wildlife tourism Filming and photography

Kanyanga Shrines	South Kanyamkago	Religious Tourism
Nyumba ya Mungu caves	Muhuru Bay	Cultural and historical knowledge Religious tourism
Chinato crying stones	Kuria West	Cultural and historical knowledge Site seeing
Lake Victoria and the beaches	All wards in Nyatike Sub-county	Water sports tourism (Surfing, fishing, Boat riding) Site Seeing Filming and photography
Islands	Nyatike	Adventure Nature tourism Filming and photography
Gogo Falls	West Kanyamkago	Adventure and Birdwatching Filming and photography
Sugarcane plantation	All wards in Awendo and Sub-County	Agro-Eco tourism (Research and education)
Kumoni Hill	Muhuru Bay	Wildlife tourism Site seeing and adventure
Hills and Forests	Distributed all over the County	Adventure, hiking, and birdwatching
Kanyamwa Escarpment	Kachieng and Kanyasa	Adventure and bird watching Hiking
Urban Areas	Selected all over the County	Sports, conferencing and shopping and convention and health tourism

Source: Field Survey

Future Role of Agriculture

From the assessment of the county's potential, agriculture will continue to be dominant in land mass cover. However, its preponderance in the GCP shall reduce while its productivity will increase if interventions such as modernization and use of technology including irrigation are incorporated.

Future Role of Mining and Industrialization

The Mineral base of the county is still under exploited and prospected. The mining sector, if effectively explored, has great potential in stimulating industrialization in the county. Furthermore, based on the identified broad industrial base of the County, there is a promising future in industrialization along various value chains. Industrialization if well developed and supported through a proper policy framework informed by the existing base, is likely to be a leader in the contribution to the county's GCP and employment.

Future role of the Service sector

The service sector will continue to play the tertiary and quaternary roles it plays to the economy of the county. As the economy of the county matures, the service sector is likely to be the leading contributor to the gross county product (GCP) since it is expandable beyond measure. Opportunities that are yet to be exploited include the technology and knowledge economy. However, this is in the long-term anticipation in the County.

2.8 Governance

Migori County Spatial Plan is multi-Sectoral and cuts across all development aspects. The planning, therefore, needs the networking of various sectors and actors that will include and the following the Public Sector (state actors and institutions), Private sector (Companies and parastatals), Civil society (NGOs/ FBOs/ CBOs) and the general citizen. In this context, Governance is taken to mean a process of coordinating, facilitating, regulating, and managing the County's affairs in preparing and implementing the County Spatial Plan at both vertical and horizontal levels. Governance is taken to mean a rational approach to managing the nature and level of human interactions with space.

Therefore, this section looks into the structures and processes existing or designed to enable the successful preparation and implementation of the Migori County Spatial Plan. The focus is on ensuring responsiveness of the Plan to its purpose and objectives, achieve aspirations of the people of Migori County as well as the promotion of inclusiveness and broad-based participation during preparation and implementation of the plan.

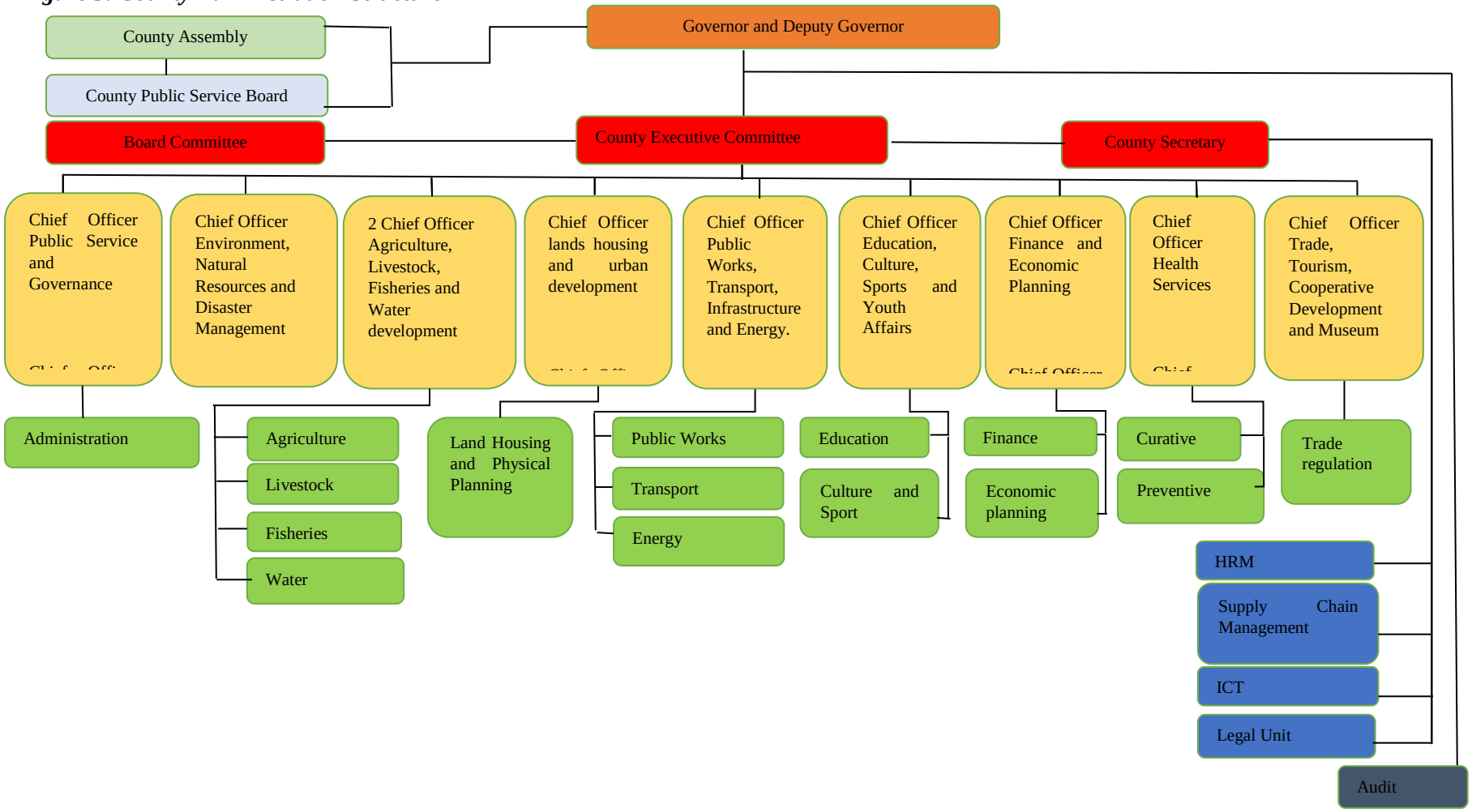
2.8.1 Institutional Framework

The key institutions in realizing this plan include the various governance and management structures that are in place to ensure the planning and implementation of the County Spatial Plan. Sustainable development is not attainable without Comprehensive County's administration and management. This underpins the functions of good governance. Good governance refers to how the government exercises power in managing a country's social, economic, and spatial resources.

It simply means; the process of decision-making and the process by which decisions are implemented. This indicates that the government is just one of the actors in governance. The concept of governance includes formal as well as informal actors involved in decision-making and implementation of decisions made, and the formal and informal structures that have been set in place to arrive at and implement the decisions.

Main institutions and actors in the preparation and implementation of this plan include the County Government of Migori, national government agencies, the public, private sector, the civil sector, and the non-government organizations, among others. Figure 3 presents the county's organisational structure.

Figure 3: County Administration Structure



Source: County Government of Migori, 2020

County Government Agencies

The county government has agencies that are required to perform various functions that supports the development and service provision to the people of Migori County.

County Planning Unit

Section 105(1) of the County Government Act, 2015, provides for establishing a County Planning Unit. The institution is entrusted with the responsibilities of coordinating integrated development planning within the County; ensuring linkages between county plans and the national planning framework; and ensuring the meaningful engagement of citizens in the planning process; ensuring the collection, collation, storage and updating of data and information suitable for the planning process; and ensuring the establishment of a GIS-based database system.

Despite being so important in the county planning, the institution was not in place by the time of conducting the situational analysis of the County.

Municipal Boards

Management of Municipality and service delivery is a mandate delegated to the Municipal Boards Subject to Article 187 (2) (a) of the Constitution, 2010. The existing municipal boards in the County include Migori, Rongo and Awendo. These Boards are established and chartered. However, their institutional capacities and semi-autonomy is undermined by the limited number of technical staff that they require to deliver all array of services as defined by the Urban Areas and Cities Act (UACA), 2011 and the Amendment Act (2019). Additionally, the budgetary allocation for this institution is undefined within the legal frameworks that are governing the financial allocation in the County.

Town and Market Committees

All the urban areas that have the qualifications of being categorized as towns with reference to the UACA, 2011 have no legally established town and market committees. Despite these institutions being instrumental and important in-service delivery in the urban areas, they are not effectively in place.

National Government Institutions and Agencies

The national government has both a direct and indirect role to play in the development of Migori in terms of policy development steering the implementation of policy and development agenda. The identified institutions are analysed as follows.

Ministry of Land and Physical Planning

This ministry is charged with the responsibility of conducting and keeping statutory records on land registry throughout the country both in rural and urban areas.

National Land Commission

A commission established in article 67 of the Constitution of Kenya, 2010 to manage land on behalf of the national and county governments. Some of its key functions, which are county planning oriented include:

- To manage public land on behalf of the national and county governments.
- Regulation of land use and property.
- To monitor and have oversight responsibilities over land use planning throughout the country.

Holistic development requires rules of conducting public affairs and steering public affairs. The national government agencies play a crucial role in steering the development of the County of Migori. Some sectors in the County are solely the mandate of the national government agencies. The national agencies and the roles are identified as follows:

Kenya National Highway Authority (KeNHA)

KeNHA is a National Government agency that is entrusted with the mandate of planning, managing, constructing, upgrading, rehabilitating and maintaining national trunk roads.

With the identified mandate, the institution has the responsibility to work with the County Government of Migori to jointly identify priority roads for development within the lifetime of the plan to create harmony in development conception and realization. However, currently, the institution has no clear framework for dealing with a joint working program and project identification.

Kenya Urban Roads Authority (KURA)

KURA is responsible for the management, development, rehabilitation and maintenance of all public roads in cities and municipalities except where these road are categorized as national roads. Based on its role, KURA has the responsibility of opening up roads, maintaining the existing roads

under its jurisdiction in the County. By the time of the preparation of this plan, it was evident that the adaptability of a smooth working framework between the institution and the County Government was not to the required capacity.

The identification of projects and development is not conducted jointly with the County. A synergistic working frame is therefore identified as necessary.

Kenya Rural Roads Authority (KeRRA)

KeRRA is mandated with the development, rehabilitation, maintenance and management of rural roads in the country as well as ensuring that the quality of road works is following established standards. This being the case, the development of the rural roads as identified in the transportation sector requires an intervention that will require the intervention of KeRRa. In this context, there is a need for a coordinated framework for inter-agency coordination between KeRRA and the County Government of Migori to ensure the realization of need-based and prioritized development.

Kenya Power Limited Company

Kenya Power owns, operates most of the electricity transmission and distribution systems in the country as well as selling electricity to the people. By the time of conducting this study, the agency was faced with the challenges of enforcement gaps in the implementation of electricity infrastructure protection. The institution faces the challenges of vandalism and theft of electricity infrastructure and facilities such as the transformers and power cables.

Kenya Airports Authority (KAA)

Kenya Airports Authority is charged with the provision and management of all airports in Kenya. The development of air transport in the County is dependent on the authority's capacity in terms of finances, equipment and qualified staff. KAA's current challenge is inadequacies in finances. The limitations in finances have a significant impact on the agency's ability to deliver its mandate in Migori County.

Kenya Forest Service (KFS)

KFS's role is to conserve, protect, and manage all public forests following the provisions of the Forest Act. KFS as identified in the survey conducted in 2020, is limited in capacity firstly by the

inadequate financial allocation to facilitate the procurement of support facilities and infrastructure that supports forest protection, conservation, and increment.

Secondly, the staffing capacity of the forest officers, the inherent lack of formal contiguity in the context community and the non-gazetted forests have hindered effective conservation activities.

Kenya Wildlife Service (KWS)

The main role of the KWS is to conserve and manage national parks, wildlife conservation areas, and sanctuaries under its jurisdiction. The inherent challenge facing this institution is the absence of an established office in the County. Despite the lack of a wildlife sanctuary in the area, there are wild animals roaming around in the County, causing human-wildlife conflict.

Water Resource Authority (WRA)

Water Resource Authority is mandated with the responsibility of safeguarding the right to clean water by ensuring that there is proper regulation of the management and use of water resources in Kenya. The effectiveness of this institution is undermined by the Limited staff capacity to oversee the activities that relate to water resource utilization, inadequate data management resources to facilitate decisions and planning on water resources and insufficient funding to enable research and development in the institution.

Water Service Providers

Water service provision in Migori County is through institutions that include Lake Victoria Service Water Works Development Authority (LVSWWDA) and Migori County Water and Sanitation Company (MIWASCO), contracted and regulated by Water Service Regulatory Board (WASRB). These institutions have the responsibility of supplying water to the population in Migori County. However, these institutions are faced with challenges including inadequate financial allocation, inadequate staffin, and limited infrastructure for water supply.

National Environment Management Authority (NEMA)

NEMA is mandated to coordinate the various environmental management activities being undertaken by the lead agencies, promote the integration of environmental considerations into development policies, plans, programmes and project, with a view of ensuring proper management

and rational utilization of environmental resources on a sustainable yield basis for the improvement of the quality of life. The roles are both managerial and conservation-related.

The roles also include examining land use patterns to determine their impact on natural resources' quality and quantity. The authority is also mandated to the implementation of waste management policies and conservation policies in the County. The capacity of NEMA to execute its mandate is lamed by the understaffing and inadequate skilled personnel and lack of harmony in the discharge of duty between the authority and the County's department in charge of the environment. Furthermore, the authority is inadequately funded to undertake regional responsibilities.

Non-State Actors

Non-state actors play an important role in promoting socio-economic development in Migori County. These institutions provide infrastructural services such as water, youth empowerment, sanitation, championing human rights, among other activities. These institutions are both local, national and international based. They face challenges such as ineffective inclusivity in decision making matters of development within the County, as well as limited access to funds specifically to the local organizations (CBOs).

2.8.2 County Finance

Steering the County's social, economic and political development is dependent on the availability of finances. The county department of finance and economic planning is tasked with pooling and managing financial resources to meet the mentioned objectives. The county has three sources of revenue which include:

National Government Share

This refers to the equitable share from the national government which is 15% or more from the national GDP. This amount is distributed to the counties through formulas generated by the commission of revenue allocation (CRA). Other funds from the national government are the national government constituency development fund (NGCDF) which are funds meant for development within the constituencies in the county. The funds allocated from the GDPs equitable share has been increasing over the years as shown in table 45.

Table 44: Equitable Share Funds

Equitable Share				
2014/2015	**2015/2016**	**2016/2017**	**2017/2018**	**2018/2019**
5,092,809,787	5,696,050,647	6,020,897,512	6,462,800,000	6,719,600,000

Source: Report of the Auditor General on the Financial Statement of the County Executive of Migori 2014/15, 2015/16, 2016/17, 2017/18, 2018/19

County Revenue Sources

The county generates its own revenue from various sources in the county including land rates, business permits, cesses, trade centre's/ market fees, approval of plans and cattle auction fees among others. However, the revenue collected in the county has been deviating from one financial year to the other. This poses question about the revenue collection parameters the county deploys in revenue collection. Therefore, the county needs to put measures and setup systems that will help in collecting revenues in the county without causing alarming disparities. The revenue collected over the last five years is as shown in the table 46;

Table 45: County Revenue

County Revenue				
2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
500,000,000	380,000,000	350,334,348	222,419,200	450,000,000

Source: Report of the Auditor General on the Financial Statement of the County Executive of Migori 2014/15, 2015/16, 2016/17, 2017/18, 2018/19

Grants and Donor Funds

Migori County receives donor funds and grants for development purposes from various agencies. These agencies include DANIDA, Sweet Potato European Union Funds, Transforming Health from World Bank and IDA (World Bank) among others. Funds received from grants and donors is shown in the table 47.

Table 46: Grants and Donor Funding

Grants, Loans and Donor Funding				
2014/2015	**2015/2016**	**2016/2017**	**2017/2018**	**2018/2019**
200,060,000	410,874,744	268,360,700	997,219,877	1,320,164,856

Source: Report of the Auditor General on the Financial Statement of the County Executive of Migori 2014/15, 2015/16, 2016/17, 2017/18, 2018/19

Other funds from the national government are the national government constituency development fund (NG-CDF) which are funds meant for development within the constituencies in the county. The county received 967,041,792 shillings in the 2019/2020 NGCDF financial year. The amount dispersed to the constituencies in the year 2019/2020 is as shown in the table 48.

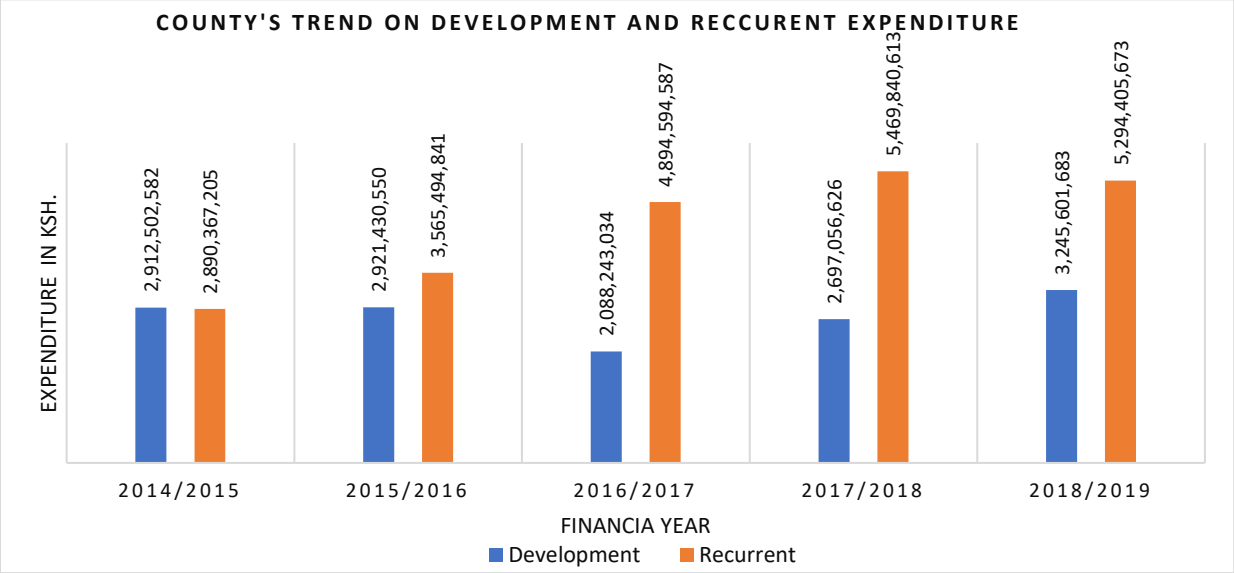
Table 47: **National Government Constituency Development Fund (NGCDF)** *Funding*

Sub County	**Amount 2019/2020**
Awendo	90,367,724
Kuria East	130,367,724
Kuria West	105,367,724
Nyatike	135,367,724
Rongo	115,367,724
Suna East	125,367,724
Suna West	127,367,724
Uriri	137,367,824

Source: The National Government Constituency Development Fund official website (https:// ngcdf.go.ke)

The County's expenditure is however skewed towards recurrent expenditure which takes much of the budget as indicated in the chart 17.

Chart 17: Trend on development and recurrent expenditure



Source: Report of the Auditor General on the Financial Statement of the County Executive of Migori 2014/15, 2015/16, 2016/17, 2017/18, 2018/19

The departmental revenue share has also been increasing over the years. However, the disaggregation of the revenue along the departments for recurrent and development expenditure results in inadequacies. More specifically, the share is used for personal emoluments and maintenance cost. The development share points out that the County's capacity to undertake high impact, transformative and capital-intensive projects is limited.

Due to this reasoning, the various county departments raised the challenge of inadequate financial capacities to procure support facilities and to hire adequate staff.

Despite the inadequacies in the financial allocation and revenue flow, there are opportunities that the County can seize and leverage on. This includes funds from the Kenya Urban Support Program and grants and donations to support institutional and infrastructural development.

Implications of Governance on Development

County Finances

The national equitable share to the county has been increasing over the years. However, most of the funds have been used on recurrent expenditures of salaries and maintenances leaving little amount for development. This affects the county’s effort in carrying out projects that would bring significant change in the county. The county therefore needs to balance the variation between

development and recurrent expenditure so as to make significant strides on the development of the county.

The revenue collection in the county has been inconsistent with amounts collected from the financial 2014/2015 to 2018/2019 varying with huge differences. This inconsistency in flow of revenue impedes the completion of development projects relying on county revenue. The county therefore needs to develop a revenue collection system which will ensure no tax evasion while ensuring a consistent flow of revenue. The county also receives other fundings such as NGCDF, grants and donor funds present an opportunity for implementation of key project in the county. These funds should fully supplement the county's development kitty.

Planning and Policy Development

Policies play an important role in defining the intent and development direction of a people in a territorial jurisdiction. The County faces a challenge of weakness in policy formulation due to political interference and bureaucracies that are embedded in interest. The need for the policies to guide development along the various facets of the County is not prioritized. This phenomenon's outcome is delayed passing of the county assembly bills.

Furthermore, all the policies the County has formulated and have not been passed in the County Assembly by the time of formulation of this plan.

Enforcement Gaps

Policies and legislations more often require enforcement for the intention to be realized. The County's capacity in terms of equipment, facility and staff is inherently inadequate to ensure effective enforcement of the County's regulations.

Land Governance

High population growth and increasing human settlements are the main causes of pressure on land, forest degradation, and land fragmentation in Migori County. For example, a high population makes families in most areas over cultivate their land to maximize crop yield as well as subdivide it for ownership amongst family members. Although the County contains fertile arable land, the nature of land holdings makes it difficult to use modern agricultural farming methods. As a result, the use of modern farming methods is marginal.

The combination of growing population and urbanization in the County and reducing land holdings means that more cropland will be converted to human settlements. On the land that is used for

farming purposes, yields will continue to decline as decreasing land holdings are over cultivated to feed growing populations.

This calls for exploitation of other means such as irrigation to augment the current rain-fed agriculture. Other proper land management practices include livestock mix, crop rotation, conservation tillage, ranching and control of expansion/sprawl of human settlements through sustainable urban development approaches.

Safety and Security

Migori County has experienced relatively peaceful co-existence with the neighbouring country, Tanzania. However, there are a few insecurity cases within Migori County especially in the Kuria sub counties which involves cattle rustling among the Kurias. To curb these cases, the government has installed security facilities such as police stations and police posts. The county has 23 police stations, 31 police posts and a General Service Unit camp. Other security issues in the county include; small crime activities and vandalism of public infrastructure facilities such as solar street lights and their batteries. Safety issues in the lake are not yet addressed with the Kenya Maritime Authority and the Kenya Coast Guard yet to establish their monitoring facilities in the county.

Ongoing Initiatives

To ensure proper governance and service delivery, the county aims at;

I. Coordinating the implementation of all development projects and laws passed by the county assembly.
II. Ensuring equitable distribution, representation and optimal utilization of available resources.
III. Overseeing the recruitment of staff, capacity building and effective public participation.

CHAPTER THREE : SYNTHESIS OF EMERGING ISSUES

3.1 Overview

This section provides the results of the analysis of the findings of the study undertaken for purposes of understanding the development situation in Migori. This would then facilitate the preparation of this County Spatial Plan for Migori County, The results of the analysis were also articulated along the nine (9) thematic areas, which were studied as presented in the previous chapter. This led to identification of emerging issues in the form of potentials opportunities & constraints as follows;

3.2 Potential, Opportunities and Constraints

Synthesis of emerging issues was undertaken along thematic and the results are as presented below;

3.2.1 Natural Resource Base

Challenges

The analysis of human settlement reveals the following major challenges in the natural resource base:

i. **Un-sustained drawing of natural resources** in the County evidenced by limited restoration initiatives after exhaustion of mines, pollution activities in Lake Victoria including introduction of invasive species threatening the ecosystem balance of the Lake and the permanent conversion of wetlands and forests into croplands.

ii. **Under exploitation of the county's natural resources**. The resources given by nature that can be used to generate electricity such as wind, solar and wind, minerals such as iron, and potential crop production capabilities are under exploited in the County.

iii. **Limited initiatives to conserve the niche resources in the county.** The existing wildlife resource in the county have no sanctuary despite being at the brink of exclusion in the county. Similarly, the community forests are encroached.

Opportunities

Enormous opportunities are presented by the existing natural resources in the County. These strategic opportunities include:

i. Mineral resources offering vast opportunities for industrialization

ii. Water resources both surface and underground offering opportunity for abstraction for agricultural, industrial and domestic use
iii. Recreation, conservation and tourism opportunities exist in Lake Victoria, forests, hills and the beautiful sceneries that exist in the County.
iv. Opportunities also exist for irrigation, crop cultivation, livestock production across the County.

Recommendations:

i. Establish a wildlife conservancies in Mugabo area and Kumoni Hills
ii. Fast tracking the gazettement of forested areas to protect them against encroachment and overexploitation.
iii. Promote agroforestry as the best agricultural practice, promote afforestation and reforestation to increase the forest cover in the County
iv. Achieve increased forest cover by providing seedlings to the residents and encouraging forestry as an economic practice. This can be achieved through agro-forestry, afforestation and re-afforestation practices.
v. Promoting the use of alternative and renewable sources of energy such as biogas and solar energy.
vi. Protect the riparian reserves and the buffers to enhance the quality of the water resources in the County.
vii. Effectively implement the National Environment Management Authority guidelines on environmental management and conservation which will see the County restore its exhausted mines and protect its environmentally sensitive areas from threats and degradation.
viii. Undertake detailed mineral exploration to establish the County's mineral value.

3.2.2 Environmentally Significant Areas (ESAs)

Implications of the Environmentally Sensitive Areas (ESA) on Development

First and foremost, the ESAs, perform critical ecological functions which have both social and economic benefits to the people of Migori County. Secondly, and more significantly to this context, the ESAs, have significant economic value based on their inherent ability to support tourism activities of various types and forms. Contrastingly, the extent and the impact of development in the County are also limited by these ESAs. The development of these ESAs has

to be encouraging sustainability and conservation. In as much as the swamps in lower Kuja area provide fertile grounds accentuated by the alluvial deposits, there are limitations in the environmental perspective that hinder crop cultivation or encroaching these spaces.

Strategic Recommendations

Based on the forgoing discussions, the following strategic recommendations are made:

i. Reforestation initiatives.
ii. Invest in environmental conservation and protection initiative.
iii. Gazette the un-gazetted forests to protect them from extinction.
iv. Undertake rehabilitation activities on degraded areas such as open mines, forests, and encroached swamps.
v. Implement the national guidelines and policies on solid and liquid waste management.
vi. Develop effective land use and land management regulations that will ensure the protection of prime agricultural land.
vii. Establish an animal sanctuary to protect the remaining life species in the County.

3.2.3 Population

Population Implications on Development

The Population Structure gives a divide on the implication it has to the development of the county. The county's population is made of a youthful group composing 83% under the age of 35 years. The under 5 population calls for the development of proper health services to cater for and prevent the neonatal, infant and under five mortality which is high in the county as compared to the national average. The school going population needs investment in the education system so as to equip this population with the proper and necessary skills which they can deploy after completing their education. The youthful population which forms part of the labour force requires investment in skilled development, through creation of mid-level and higher education institutions, and job creation. The county should therefore create an investor welcoming environment so as to create job opportunities and tap into the locally available labour in the county. This population also require investment in facilities such as innovation centres, sports facilities and art centres so as to enable the youths to show case their talents, innovation and entrepreneurial skills which will create employment, income and revenue for youth and the County respectively. Lack of investment for this population leads to brain drain, emigration, desperations that lead to insecurity and substance abuse.

The aging population which forms part of the dependency population needs investment in the health service and homes for the old which will later improve the life expectancy levels in the county (58 years) which is below the national average at 63 years.

The county also experiences a continuous population growth resulting from a high fertility rate and in-migration from neighbouring counties and from Tanzania. This has resulted to increased urban population which calls investment in health, education, physical and social services in the county especially in the urban areas.

The population divide indicates that the rural population for 73% of the total in the county. This population relays on agriculture as the main source of income. The county, therefore, needs to invest in agricultural production through farmers support programs such as provision of extension services, farm mechanization and technological adoption in farming methods, improvement of transport systems in the rural areas, investment in agro processing industries which will increase the farmer's income and generate revenue to the County as well. The rural population also need provision of services which include; water supply, health services, education, electricity, and ICT services.

The urban population is also increasing the population is accounting for 27% of the total in the County. This population requires provision of services which include; housing, health, education, water, waste management, recreation facilities among other services. The revitalization of urban areas and urban economy is highly required so as to create job for the population and generate income for the many households in urban areas.

Cultural practices such as marriage of many wives, wife inheritance, lack of use of birth control measures and early marriages has resulted to increase population growth, increased school dropouts among school going girls, and spread of pandemic diseases such as HIV and AIDS. The later has led to increased mortality and deaths resulting to increased number of orphans, leading to increased burden and agony among the old population which is left to cater for the orphans resulting to increased poverty.

Challenges

1. High population growth leading to shrinking of agricultural land as land subdivided for provision of housing and infrastructure
2. High dependency ratio of 0-14 years, therefore, leading to increased poverty as even those working is not able to meet their needs

3. High fertility rate leading to women giving birth to children they cannot provide for. This phenomenon often led to malnutrition among the 0-4 years population

Recommendations

i. Establishment of more employment opportunities for the huge labour force
ii. Improvement of health services in the County.
iii. Promotion of cultural tourism as an economic activity

3.2.4 Human Settlements

Challenges Associated with Rural Development

ii. ***Limited water supply infrastructure-*** All the rural settlement units have water resources either as underground or surface. However, the installation of infrastructure to supply the water to the people in the recommended quality is lacking.

iii. ***Limited connectivity to power supply-*** the rate of connection of power to the existing power grid is low. The challenge is attributed to the high cost of power and limited provision of transformers.

iv. ***Limited connectivity and accessibility-*** the rural settlements have inefficient transport network systems since the road surfaces are in a poor state. The poor condition is attributed to lack of timely road maintenance, missing bridges and culverts and dilapidated surface conditions of the earth and gravel roads.

v. ***Distributive inefficiency of health and education infrastructure-*** there are settlements that access health and education services beyond the minimum recommended distances.

vi. ***Limited value addition-*** the agricultural products from the settlements are mainly sold in their raw forms with very minimal value addition to them. This phenomenon has contributed to narrow rural economic diversity and a relatively lower income.

vii. ***Ineffective management of growth and development of the rural settlements-*** since there is no established strategy for the rural settlements. Their growth is organic, posing the challenge of land fragmentation and reducing rural productivity of the land.

viii. ***Inadequate investment in storage infrastructure and facilities-*** there is the limited establishment of storage infrastructure for agricultural produce. Post-harvesting handling of produce in the rural settlements is very ineffective, resulting in the existing fluctuations in agricultural produce prices since the products have to be taken to the market after harvest to prevent losses from occurring.

Emerging Issues in Human Settlement

Matters that require planning and development intervention in the County along the human settlement sector are outlined in terms of opportunities and challenges. The challenges and opportunities are as follows:

Challenges

i. Ineffective management of urban and rural settlements in terms of governance, the institutionalization of administrative functions and growth management.
ii. Limited access and provision of utility infrastructure.
iii. Quality gaps in education and health care.
iv. Narrow economic diversification in agriculture and non-farm activities
v. Limited connectivity and accessibility by the existing transportation infrastructure.
vi. Deficiencies in service infrastructure provision and the development in the economy compromise the liveability of the human settlements.

Opportunities

i. The law provides for a governance system that gives semi-autonomy to the management of urban and rural settlements.
ii. The law also provides for the planning and management of settlements through the County planning framework.
iii. There are funding opportunities for service provision in the human settlements through the County Government budget, Kenya Urban Support Program, Donor funding, and Community based resource mobilization organizations.
iv. The human settlements provide a stable foundation of industrialization in the rural-urban industrialization dichotomy.
v. The Urban Settlements provide an opportunity for effective and efficient service provision due to the agglomeration of activities that provide the various thresholds for service provision at various levels.
vi. The rural resources as aggregated in the possible economic clusters provide the opportunity to achieve a self-sufficient county that can be competitive within its conceptual, regional economy of the Lake Region Economic Bloc (LREB).

Strategic Sector Recommendations

The following recommendations shall attempt to improve the development of the human settlements in the County**.**

i. The urban settlements management to be embedded in the legal provision on the urban management boards, including municipal boards, towns, and market committees.
ii. Ensure effectiveness and semi-autonomy of the urban management institutions by establishing a separate budget for the various urban areas.
iii. Designate urban and rural settlements based on the industrial, population, and service provision potential for development purposes. The outcome will be a functional Classification of urban settlement based on their centrality.
iv. Focus rural development on the empowerment of the ruralites through water infrastructure provision, connectivity to electricity, and industrialization of agricultural products to improve income and wellbeing.
v. Focus on improving the connectivity of the rural settlements and activity areas. This can be achieved by promoting efficiency in the movement of goods and services in and out of the rural areas through road condition improvement. In return, the County will gain a positive index of the residents' economic wellbeing.
vi. Establish a program for infrastructure service delivery on an annual basis for the urban areas phasing them based on priority, urgency, and impact on human settlements development.

Waste Management Challenges

i. Inefficient and ineffective liquid and solid waste management system in the County. This challenge is attributed to limited infrastructure and funds to develop and boost waste management. Additionally, there is the general citizens' irresponsibility in waste management.

Possible Solutions

i. Preparation of a County Integrated Sanitation Masterplan to guide investment in sanitation infrastructure in the urban area.
ii. Focusing on developing sanitation infrastructure based on the prioritization that is outlined by the integrated Sanitation Master Plan.

3.2.5 County Economy

The drivers of economy include agriculture, which contributes forty two percent (42%), Service sector contribution twenty nine percent (29%), Construction and real estate contributing eight percent (8%) Transportation contributing seven percent (7%), Industrialization and mining contributing eight percent (8%) wholesale and retail contributing four percent (4%) while the other sectors contribute two percent (2%).

- ***Agriculture***

Challenges facing the agriculture sector

i. **Low agricultural production:** the production in agriculture in the County is undermined by the quality of breeds, seed certification, and the level of technological application and adoption. Additionally, the farmers largely rely on rain-fed agriculture with a high level of unreliability in the County due to climate change. The farmers also face the challenge of infestation by pests and diseases, affecting crops and livestock yield.

ii. **High cost of production:** The farmers in the County are currently affected by the high cost of farm inputs in crop cultivation and animal husbandry. The farmers also have to pay high prices for limited knowledge on preventive practices since they have to source private experts' services when encountering difficulties in production processes. This is a challenge that is fuelled by the inadequacies in the provision of extension services.

iii. **Unstable agricultural products' market:** The market for agricultural produce in the County faces various challenges that include fluctuation in cereals' prices, reducing sugarcane prices, and unreliability of the leading market that is the South Nyanza Sugar Company. Additionally, the potato and cassava tubers have an unstandardized market despite their graduation as major commercial/cash crops in the County. On the other hand, tobacco faces a huge challenge of lack of market since the leading investor (British American Tobacco) has since fled the market. The farmers are currently facing exploitation by the existing buyers (middlemen) with complaints that their profits are marginal.

iv. **Lack of value addition chain:** Apart from sugar and coffee processing, there is an exploitation of the value chain of agricultural produce in the County. Other crops produced in the County are not achieving value addition at optimum levels. This condition has been fuelled by the lack of agricultural policy on value addition in the County.

v. **Slow and low adoption of technology in production activities:** The level of technology utilization in agriculture in the County is relatively low. Low levels of technological application reduce efficiency and yield hence reducing the County's competitiveness in the region. Mechanization in agriculture is limited to farm development, mainly in the sugarcane production in the County. As it exists, the production processes are highly hard labor led.

Opportunities in Agriculture

i. There is a market opportunity for agricultural produce presented by the internal and external (regional) demands.

ii. The County has huge potential for sustained and uninterrupted livestock keeping and crop cultivation. The opportunity lies in the County's water resource potential, irrigation potential, and rainfall distribution.

iii. Farmer support opportunities exist in the current governance framework and institutional development. The County Government commits annual budgeting to boost production in agriculture. Therefore, it is investing in increasing the extension officer's capacity, providing subsidized farm inputs, and providing quality breeds and certified seeds to boost production in agriculture.

iv. Availability of a variety of crops and animals that can be exploited for industrialization

v. The whole land area within the County has the potential for supporting livestock cultivation.

vi. An opportunity exists for value addition for all the agricultural products presented by the existing industrial activities in sugarcane and storage.

- ***Industrialization***

Challenges facing Industrialization

i. Inadequate infrastructure such as roads and electricity connection to encourage industrialization.

ii. Under exploitation of industrial possibilities in the manufacturing sector.

iii. Limited access to capital by the residents to scale up small industrial ventures.

iv. Lack of industrialization policy at the County level to prescribe a framework for availing land for industrialization within the County and the industrial subsectors to be promoted within the County.

v. Lack of modern equipment such as brick making machines.

vi. Inadequate knowledge and skills in industrialization at various scales.

Opportunities in industrialization

i. Existing value chain in crop production (sugarcane, coffee, tobacco, rice, soya, cassava, maize, and horticultural crops), livestock (dairy, beef, and beef products, fishing, and fish farming), mining (gold, copper, silver, zinc, clay, diorite, sand and ballast) and cottage industries.

ii. Unexploited mineral resources such as iron and zinc.

iii. The market in the county and within the region.

iv. Availability of multi-modal transportation system including; water, air, and road

v. Existing storage infrastructure both public and private.

- ***Mining***

Challenges in mining

i. Inadequate personal protection equipment for artisan miners.

ii. Insufficient access to capital to finance investment in appropriate technology to support mining activities.

iii. Limited regard to the safety resulting in accidents and mine collapse.

iv. Low adoption of technology in mining activities.

v. An inefficient transport system that is resulting in a high cost of transportation of mining ore.

vi. Limited knowledge of mining and exploration activities.

vii. Inadequate exploration initiatives to prospect minerals in the County.

viii. Insufficient financial management knowledge among artisanal miners.

ix. Environmental degradation resulting from open pits, use of hazardous chemicals and elements such as mercury and cyanide.

x. The high number of unlicensed miners has led to loss of revenue to the County and National Governments.

xi. Ease of conducting business is hindered by lack of an artisanal mining committee and adequate infrastructure.

xii. Political interference with vested interests hindering the development in the mining sector.

Opportunities in Mining

i. Migori County spans across the Archean Nyanzanian Craton area that contains metallic mineralization where precious metals such as gold, copper, iron, silver and zinc occur naturally

ii. There is ready market both within the country and internationally for the minerals mined within Migori County that may be explored with proper strategies and promotion

iii. There has been advancements in mining and production technology that may be applied in the county to increase the revenue from mining activities

- ***Trade and commerce***

Challenges in trade and commerce

i. Inadequate market infrastructure in the County, especially for livestock auctioning yards

ii. Shortage of public land to establish trading facilities in major urban areas.

iii. Limited investment in large scale commercial activities within the County outside of the major urban areas due to various factors like high initial capital requirements, limited development of infrastructural services and the ease of conducting business in the County.

iv. Limited recognition and incorporation of informal trading activities in the development planning of the County.

v. Lack of specialized markets for fish, milk, and agricultural (fresh) produce.

vi. Poor and inadequate support infrastructure in all rural centers hinder trade and commerce.

Opportunities in Trade and Commerce

i. Trade and commerce in the County is supported by the market infrastructure that the County has installed in the urban areas.

ii. There are continuous plans in the annual budgets to construct markets to bridge the infrastructural gaps.

iii. There are eight auction yards where livestock is sold

iv. There are banks, microfinance, and mobile transfer agents which provide financial services in the county

v. There are sector bound SACCOs within the county where workers from the various sectors save and take loans for the betterment of their lives

- ***Tourism***

Challenges Facing Tourism in Migori County

i. Inadequate investment in tourism facilities and sites.

ii. Neglected and under developed tourism assets.

iii. Insufficient efforts in market tourism attraction areas in the County.

iv. Inefficient transportation system limiting the access of the existing tourism site.

v. Encroachment of tourism attraction sites and areas.

Opportunities in Tourism

i. Underdeveloped and underutilized attraction sites and areas.

ii. There are external tourism opportunities arising from the existing tourism circuits such as south rift, Mara-Serengeti, Lake Victoria and the western tourism circuit.

iii. There is an existing integrated transportation network that includes road, water, and air transport in the County.

iv. There are opportunities to protect the tourism attraction sites and areas through UNESCO and the legal provisions through gazettement of the sites for conservation and management.

v. The rich and diverse cultural practices in the County creates an opportunity for cultural tourism

- ***The Lake Economy***

Challenges in the Lake Economy

i. Declining fishing stock due to overfishing and inversion by the foreign species and use of unauthorized fishing nets.

ii. Under exploitation of the value chain attributed to limited storage, drying, and cooling facilities and equipment.

iii. Low adoption of technology in fishing equipment and fishing methods

iv. Disaster preparedness and response concerns due to the lack of rescue centers and rescue equipment/facilities.

v. The high cost of fishing equipment such as nets, navigation equipment

Opportunities in the Lake Economy

i. The lake is endowed with an array of species of fish including: Nile perch, catfish, tilapia, salmon and silver cyprinid (*locally referred to as omena*)

ii. There are 31 fish landing sites along the shores of lake Victoria which support fishing activities

iii. Lake Victoria presents an excellent potential for recreation. There is opportunity to explore activities such water transport, water sporting activities which contribute to the economy of the county

iv. Establishment of lake tourism would offer employment to both the investors and the employees that provide recreational or tourism services.

v. Lake Victoria has numerous vegetation such as Phragmites, Papyrus, and reeds that can be exploited for basketry making.

vi. The County has established a fish processing plant at Opapo which is expected to strengthen the spatial linkages and create more employment along the value chain.

3.2.7 Transport

Challenges in Transportation

i. Lack of integration of the existing transportation system in the County.

ii. Limited investment in the transportation infrastructure in the County.

iii. Neglect of the water transportation infrastructure and service.

iv. Limited provision of non-motorized transportation facilities in urban areas.

v. Poor condition of roads in the urban areas.

Opportunities in Transportation

i. Migori County is connected via air, road, and water, presenting an opportunity for seamless connectivity locally, regionally, and internationally.

ii. The road density and network in the County provides an opportunity for efficient connectivity for the whole County.

iii. Migori has both off-shore and inland transportation logistics opportunities for international level operations.

3.2.8 Infrastructure

- *Water Supply*

Challenges

i. Inadequate clean water supply attributed to low exploitation of existing water resources, inadequate water supply infrastructure, vandalism of water infrastructure, inadequate funds to maintain existing infrastructure, installing new systems, and poor management due to inadequacy in staffing both quality technical skills.
ii. Encroachment and lack of protection of water resources.

Opportunities

i. Migori has abundant water resources due to its proximity to Lake Victoria and rivers/springs which are largely unexploited.
ii. The existing water infrastructure taps into the available water resources in the county.
iii. The county has rolled out the implementation of the Drought Mitigation Program to avail water in schools which will avail water in schools within the county.
iv. Implementation of the last mile water connectivity will ensure that residents of Migori can access water within a distance of 100 meters from their homes.
v. MUCOWASH is constructing and installing water supply infrastructure, including; a new 100M3 water distribution tank, water kiosks, and new distribution lines to Luanda, Ratieny, Saume and Kumoni covering 5.5KM.
vi. NYAWASSCO is developing more water sources, constructing storage facilities to increase the coverage of distribution infrastructure.

- *Sanitation*

Challenges in sanitation

i. Inefficient and ineffective liquid and solid waste management system in the County which is attributed to limited infrastructure and funds to develop and boost waste management.
ii. There is general citizens' irresponsibility in waste management.

Opportunities in sanitation

i. The county has two waste management sites Nkurutiange and Kiringi Bridge which can be developed to meet the waste management standards to serve the need.

- *Electricity*

Challenges in electricity connection

i. Inadequate investment in hydropower generation
ii. Frequent disruption in power generation due to breaking down resulted by the old and outdated generators.
iii. Inadequate land to expand the Gogo power generation plant.
iv. Lack of studies on the development of renewable energy sources (solar and wind).

Opportunities in provision of electricity

i. There is an existing hydro-electric power station at Gogo falls along River Kuja which produces 1.6 Mega Watts and has the potential to produce upto 40 Mega Watts.
ii. The county has great potential of solar production since it experiences longer hours of daylight.
iii. Construction of a mega dam along River Kuja and development of a new power plant can maximize on the potential of energy production.
iv. The implementation of the Rural Electrification and Renewable Energy Corporation and the last mile connectivity program by the national government will increase access to electricity.
v. The county can exploit biogas as an alternative source of energy as they practice livestock keeping.

- *ICT and telecommunication*

Challenges

i. Limited access to NOFB since it only traverses one corridor of the County.
ii. Constant disruption of the internet services caused by poor maintenance of ICT infrastructure and external factors contributing to service delivery inconsistencies.

iii. Limited integration of technology in day-to-day service provision and administration

iv. Limited skills in the ICT sector among staff in the county departments.

v. Inadequate staff in the ICT, telecommunication sector, and postal offices in the County.

vi. Inadequate funding and resource allocation in the ICT and telecommunication sectors. Funding inadequacies have hindered development and service delivery in the sector.

vii. Vandalism of ICT infrastructure and insecurity in some areas has caused the closure of various post offices due to breakages and employee harassment, e.g., in Ntimaru and Kegonga

viii. Lack of support infrastructure such as water, parking space, essential facilities for the disabled, e.g., ramp and toilets in post offices.

Opportunities

i. The county is connected to the NOFB which has a speed of 40mbps and can be extended all sub county headquarters.

ii. The county is served by Safaricom internet band.

iii. The county has adopted an Integrated Financial Management System (IFMIS) platform that supports financial transactions.

iv. The county has rolled out a digital revenue management system which can facilitate efficient revenue collection.

v. The county is the process of creating an ICT incubation hub which will promote digital innovation in the county.

- *Health*

Challenges in the health sector

i. Inadequate staffing of health facilities and lack of adequate housing for medical staff.

ii. Limited land for expansion of the health facilities to meet the current requirements.

iii. Insufficient access to support utility infrastructure and services for waste water management, water supply, and electricity.

iv. Inadequacies in the equipment of the health facilities, supply of drugs, medical equipment, and lack of specialized treatment in most facilities.

Opportunities in the health sector

i. The county has 126 public health facilities that are distributed across the forty wards
ii. The county is Formulating the Migori County Health services Bill, the Community Health Services Bill, and the Environmental Health and Sanitation Bill which will guide the delivery of health services
iii. The county is implementing the Universal Health Coverage across the County which will promote the access to health care by residents of the county
iv. The county is Scaling up EMR across facilities
v. The county has developed a county nutrition strategy and is currently implementing it
vi. The county has developed and is implementing a County Adolescent, Youth, Sexual and Reproductive Health

- *Education*

Challenges in the education sector

i. Inadequate teaching and learning materials in the learning institutions.
ii. Inappropriate and inadequate equipment in the learning institutions.
iii. Lack of learning facilities for Adult Education.
iv. Limited maintenance initiatives for the learning facilities like the classrooms leading to their poor conditions.
v. Inadequate staffing capacities
vi. Limited provision of facilities for the disabled in existing facilities

Opportunities in the education sector

i. Migori County has 223 education facilities distributed across the county.

ii. There are 25 vocational training centres that provide technical courses which form an essential base for industrialization and service sector development
iii. The county has rolled out the implementation of the new curriculum [CBC]
iv. The county is implementing a Secondary education quality improvement program (SEQIP), a World Bank project in Kuria and Uriri focusing on; Infrastructure improvement, Staffing improvement, and capacity building among teachers and BOG members on management
v. The county is already Implementing the National Education Policy

- *Recreation and community facilities*

Challenges

i. There is inadequate provision of community facilities across the County.
ii. Poor condition of existing social infrastructure, e.g., Uriri Stadium

Opportunities

i. The county has 16 recreation facilities in the County which include 3 stadia .10 playgrounds, a showground, a social hall.
ii. There are 217 public administration offices, 28 police stations, 35 police posts, 2 law courts, and a prison.
iii. The recreation and community facilities are served by supporting infrastructure such as access roads

3.2.9 Governance

Challenges

i. There is no formal institutional framework in the County that shapes and enables effective citizen engagement and participation in the County's development.
ii. The poverty level in the County is approximately 46.7% which is relatively higher than the national poverty rate, which is at 45.9%.
iii. People with disabilities (PWDs) are marginalized in terms of access to employment and empowerment in the County and there is no clear framework of how they are included in employment and empowerment programs.

iv. Marginalization in the County is evident in the manner in which the minority communities like the Abasuba are not given adequate opportunity to influence and enjoy the development share of the County.

v. Flooding is prevalent in the lower Kuja area in Nyatike Sub-county and the frequent floods affect over 25 villages during rainy seasons
vi. Nyatike Sub-county and North Western parts of Uriri are prone to drought due to their climatic conditions
vii. Occurrences of landslides is common in the gold mines of Macalder due to poor excavation methods.
viii. Lake basin region within which Migori falls experience negligible magnitudes of an earthquake due to the volcanic activities that underneath.
ix. The youths are suffering from unemployment and limited empowerment
x. The County faces a challenge of weakness in policy formulation due to political interference and bureaucracies that are embedded in interest
xi. The County's capacity in terms of equipment, facility and staff is inherently inadequate to ensure effective enforcement of the County's regulations.

Opportunity

i. There is an existing legal framework on good governance
ii. There are existing institutions at the national and county government mandated to carry out various governance roles
iii. Existence of local resident association within the county
iv. Existence of local economic empowerment groups
v. Existence of IT facilities through which sensitization can be done in the county

CHAPTER FOUR : LAND OPTIMIZATION

4.1 Overview

Land optimization refers to the process of determining the most optimal use for land and land based resources. For Migori County, it was undertaken by first carrying out an analysis of the various uses of the land i.e. agriculture, human settlements, transportation, industrialization and conservation & tourism. The potentials of the different land uses were then modelled using a predetermined criteria, in order to determine a ranking of the current function/role played by their various components. A land availability assessment was then undertaken, followed by a suitability assessment for the various uses. Deliberate interventions were then made considering constraints on the land as well as the opportunities and potentials adopted from the development concept for the county.

4.2 Development Concept

Formulation of the development concept for Migori County took into consideration two major factors namely; locational advantages and national policy relating to Migori County.

i. Locational Advantages

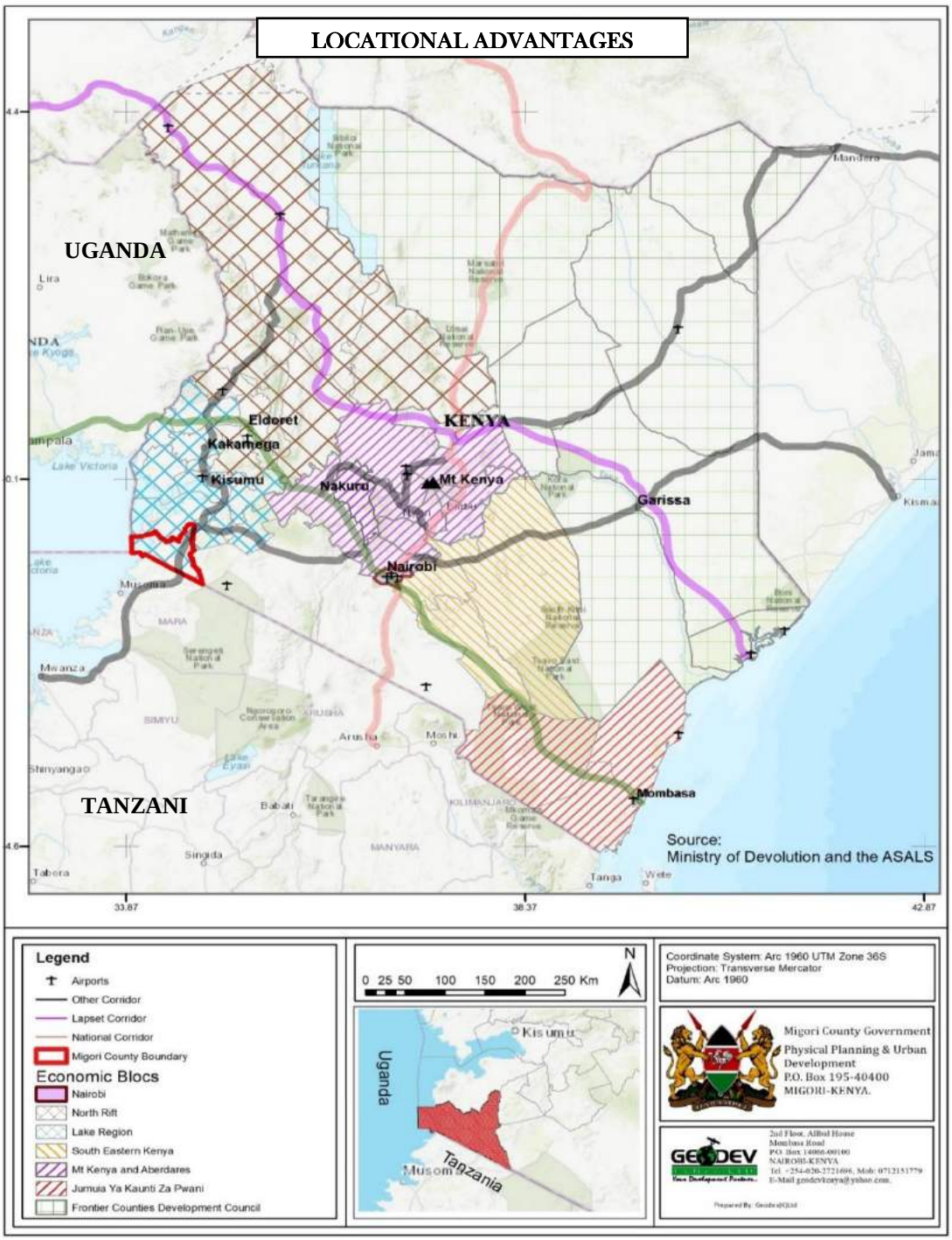
In order to efficiently and effectively optimize the land in Migori, it was a fundamental requirement to maximize on socio-economic opportunities and potentials accruing solely by virtue of its physical location. These advantages are as briefly discussed below;

a) **Proximity to Tanzania and Uganda:** Migori County has a direct link and connectivity to Uganda via Lake Victoria and Tanzania via A-1 road. The connectivity offers an opportunity for cross-border trade of goods and services. The County is directly linked to Tanzania by the A-1 road, which provides direct access to the international market for locally produced goods and services.

b) **Strategic location within the Lake Victoria, Maasai Mara and Serengeti Tourism circuits:** The tourism circuits are opportunities to leverage to develop the County's economy through tourism and hospitality.

c) **Connectivity to the National Development Corridors:** The County has direct connectivity to the conceptual, regional economic blocs that are facilitated by the connectivity to the national development corridors such as the Northern Corridor, LAPSSET, Corridor, and the international corridors such as the Great North Road. These

corridors offer unlimited opportunities for economic development through exports and imports based on the existing comparative advantages.



Map 57: Locational Advantages and Context

Source: Consultant's Edits, 2021

ii. National Policy Relating to Migori County

The National Spatial Plan (NSP) is one of the flagship projects of the Kenya Vision 2030, and also forms the basis upon which development activities in support of the vision shall be undertaken. The document is mandated to define the general trend and direction of spatial development for the country in order to achieve organized, integrated, sustainable and balanced development throughout the country. This would also help enhance better national organization and linkages.

The NSP identifies Migori as a county with immense potential in rain fed and irrigated agriculture, fishing, tourism and urbanization. These were keenly considered in formulating the development concept for the county through policies and strategies aimed at; - prioritizing the protection of rich agricultural land; the protection of water and marine resources; conservation of identified touristic sites and environmentally sensitive areas; and balanced distribution of urban & rural settlements respectively.

4.3 Agriculture

Over 42% of the residents in Migori County rely on agriculture as their main income source. This emphasizes the need to optimize agricultural productivity for more income and food security for the residents.

4.3.1 Criteria for Modelling Land for Agriculture

To identify areas most suitable for production of various crops within various zones in the county, the following variables were considered:

i. Rainfall

The distribution of rainfall within the county was studied to identify areas that received high, medium and low rainfall amounts so as to analyze which areas would be suitable for the growth of various crops depending on the specific crop rain requirements. Areas that received rainfall higher than 1300mm were referred to as high potential crop areas while areas that received rainfall between 1000mm and 1300mm were referred to as moderate potential crop areas. Areas receiving rainfall below than 1000mm were referred to as rangeland potential areas.

ii. Soils

The study of soils is important in identification of crop suitability for a zone. Areas with highly fertile soils were referred to as high potential crop areas while areas with moderately fertile soils

were referred to as moderate potential crop areas. Area whose soil fertility was low were referred to as rangelands.

iii. Agro-Ecological Zones

Agro ecological zones characteristics were the basis of the analysis for optimizing agricultural productivity in the county. Agro ecological zones characteristics were categorized as presented in table below;

Table 48: Agro Ecological Zones Characteristics

Category	AEZ	Sub-Zone	Crop Suitability
High Cropland Potential	**UM 1**	UM 1 p or l/m ^ m/	Coffee-Tea Zone with permanent cropping possibilities, dividable in a long to medium cropping season, followed by a medium to the long one
	U.M. 2	vl i or l/m ^ m i	**Good yield potential (av. 60-80 % of the optimum)** **1st rainy season**: Maize like H 6213 (best var. 2008. finger millet like Ekalakala; beans like Cuarentino2, Dolichos beans like KAT/DL-3; sweet potatoes; sunflower-like Kenya Fedha or Shaba, soya beans like Magoye; onions, spinach, tomatoes, cabbages, and kales **2nd rainy season**: Climbing beans, onions, kenaf **Whole year:** Bananas (in valleys), macadamia nuts like KRG 15, passion fruit, avocadoes, perennial castor like C-15, mountain paw paws, guavas
	U.M. 3	l/m i (m/s) i	**Good yield potential** **1st rainy season:** Maize like H 6213 (higher places), Maize like H 623 (lower places), finger millet, sorghum (lower places); beans, Dolichos beans like KAT/DL-3; sweet potatoes; sunflower-like Kenya Shaba or Fedha, soya beans like Magoye; kenaf; cabbages, kales, onions (on light soils), tomatoes, spinach **2nd rainy season**, start norm. Aug./S.: M. mat. beans like Canadian Wonder; safflor; onions (on light soils) **Whole year:** Macadamia nuts, mountain paw paws, sisal, black wattle (higher places), castor, avocadoes, passion fruit, pineapples Arabica coffee1, pyrethrum (higher places); bananas

Category	AEZ	Sub-Zone	Crop Suitability
	U.M. 4	m/l i (s/m)	**1st rainy season**: Maize like PAN 99, sorghum like ISZ 1955, finger millet; beans, chickpeas (on heavy black soils); sunflower-like Kenya Fedha or Shaba, soya beans like Magoye; kenaf, safflor; onions (on light soils) **Whole year:** Sisal, castor C-15- Fair yield Pineapples, mountain paw paws, Macadamia nuts
	LM 1	P or l/m ^ m/l	**Very good yield potential (av. > 80 % of the optimum)** **1st rainy season**, start norm. end of Feb.: Med. mat. Sorghum like ISZ 1955; m. mat. Sunflower-like Kenya Fedha or Shaba, med. mat. soya beans like Magoye **The whole year**, best planting time b. of March: Paw paws, yam beans4, guavas **Good yield potential** **1st rainy season**: Maize like PHB 30 H83 or like H 623, finger millet like Ekalakala; beans2 like Cuarentino, Dolichos beans like KAT/DL-3; yellow yams4, sweet potatoes like SPK 013; sweet pepper, kales, Chinese cabbage, spinach, cabbage, chilies, eggplants, pumpkins **2nd rainy season**: Maize like H 623, H 515, finger millet, m. mat. sorghum like ISZ 1955; beans 2, Dolichos beans; soya beans like Magoye, sunflower-like Kenya Fedha or Shaba; cabbage, kales, Chinese cabbage, spinach, and onions **Whole year:** Sugar cane, bananas (nematodes danger), Robusta coffee, cassava (on sandy soils), pigeon peas, avocadoes, tea (upper places, yields nearly 80 % of the optimum but medium to low quality)
		l/m ^ m i	**Very good yield potential** **1st rainy season**: Sorghum like ISZ 1955; sweet potatoes; sunflower-like Kenya Fedha or Shaba, soya beans like Magoye; cucumbers **Whole year**: Paw paws, yam beans 4, guavas **Good yield potential**

Category	AEZ	Sub-Zone	Crop Suitability
			1st rainy season: Maize like H 623 (60-70 %); beans, Dolichos beans like KAT/DL-3, pigeon peas (March-F.); yellow yams; sweet pepper, kales, Chinese cabbage, spinach, cabbage, chilies, eggplants, pumpkins **2nd rainy season**: Maize like H 515, sorghum; beans (~60 %), cowpeas; sweet potatoes; soya beans, sunflower-like Kenya Fedha; kales, Chinese cabbage, spinach, onions; kenaf **Whole year:** Sugar cane, bananas (nematodes danger), cassava, tea in upper places (70-80 %, but medium to low quality), Robusta coffee (~60 %)1, avocadoes
Moderate Cropland potential	**LM 2**	l/m ^ (m) i & l/m^ (m/s) I (2nd rainy season earlier maturing varieties have better chances)	**Very good yield potential** **1st rainy season**: sorghum, bulrush millet; sweet potatoes; soya beans like Magoye, sunflower-like Kenya Fedha or Shaba; sweet pepper, chilies, cucumbers, butternut **Good yield potential** **1st rainy season**: Maize like H 515 (60-70 %) and H 623 (~60 %), sorghum, finger millet; beans, Dolichos beans, pigeon peas; groundnuts like Mwitunde (rosette resistant); soya beans like Magoye; tomatoes, onions, roselle, kenaf; pumpkins **2nd rainy season**, Green grams; sunflower-like H S 345 **Whole year**: Cassava, papaws (70-80%), bananas (~60 %) on deep soils, yam beans4, sisal, guavas
	LM 3	l/m ^ (m/s) m/l ^ (s/m) l/m i (s/m)	**Good yield potential** **1st rainy season**: Maize like H 623, sorghum like E 1291 (stock feed), sorghum, finger millet; rosette resistant groundnuts like Mwitunde (in light soils), beans, cowpeas; pigeon peas var. composite, chickpeas (on heavy black soils); cotton, kenaf; soya beans like Magoye, sunflower-like Kenya Fedha or Shaba; tomatoes, onions, sweet pepper, chilies, pumpkins, butternut

Category	AEZ	Sub-Zone	Crop Suitability
			2nd rainy season: bulrush millet like Serere Comp, beans like K.K. 22, green grams; simsim; safflor (>1200 m) **Whole year:** Cassava, sisal, Mexican yam beans
		m/l i (s)	**Good yield potential** **1st rainy season**: maize like H 623 (60-70 %), sorghum (70-80 %), millets (70-80 %); beans, green grams 5 , cowpeas; groundnuts and Bambara gr. (both in light soils)4, simsim5; sweet pot.; cotton, kenaf; m. mat. Soya beans, m. mat. sunflower-like Kenya Fedha or Shaba; tomatoes, onions, chickpeas (on heavy black soils); dwarf castor 6, butternut **2nd rainy season:** Ratoon of sorghum; simsim, green grams; sweet potatoes in swampy places or valleys **Whole year**: Cassava, sisal, Mexican yam beans 4 Near swamps, additional irrigation: Rice like the new Uganda var. (lower places), bananas (on dams), Chinese cabbage (on ridges), and other vegetables
		m ^ (s) I	**Good yield potential** **1st rainy season:** Maize like H 515 or H 623, e. mat. sorghum like Serena, finger millet like Ekalakala; green grams like KS 2010, cowpeas like Emma, groundnuts (in light soils) like Mwitunde, Dolichos beans like Kat DL-3, simsim5 like Morada; sweet potatoes like Wanjugu; cotton-like BP A 75, soya beans like Magoye, sunflower-like Kenya Fedha or Shaba; chickpeas (on heavy black soils), dwarf castor7, safflor (>1200 m); tomatoes, onions, muskmelons, butternut **2nd rainy season**, Proso millet Serere 1, tomatoes **Whole year:** Cassava like KME 61, sisal Near swamps with water regulation resp. additional irrigation: Rice like the new Uganda (lower places), bananas (on dams), Chinese cabbage (on ridges), and other vegetables

Category	AEZ	Sub-Zone	Crop Suitability
		m i (s or s/vs)	**Good yield potential** **1st rainy season:** Pot. similar as in L.M. 3 m ^ (s) i **2nd rainy season**: Pot. similar as in L.M. 3 m ^ (s) less 10 % Whole year: Sisal, Jatropha **Whole year:** Cassava
Rangeland potential	**L.M. 4**	(m) i (s/ vs or vs/s)	**Good yield potential** **1st rainy season**: sorghum like IS 8193 (60-70 %), bulrush millet like Serere Comp. II, sorghum like Serena, minor millets, tepary beans4, green grams, m. mat. cowpeas, chickpeas (on heavy soils); sunflower-like Kenya Fedha (60-70%), safflor **Whole year:** Chinese cabbage and other vegetables near swamps; sisal, Jatropha
	L.M. 5	(s/m) + vu	**Good yield potential** **1st rainy season**: sorghum like Serena (60-70 %), bulrush millet (birds rejecting awned variety4), proso or foxtail millet Se 285; tepary beans4, green grams, chickpeas (on heavy black soils); soya beans like Nyala (60-70 %) **Whole year:** Buffalo gourds4 and Marama beans4 (on sandy soils), Jatropha
	L.M. 5	(s) + vu	**Good yield potential** **1st rainy season:** Sorghum like LS 8595 (~60 %), proso or foxtail millet; tepary beans (60-70 %)4, green grams (~60 %), chickpeas (on heavy black soils); sunflower (60-70%) **Whole year:** Buffalo gourds4 and Marama beans4 (on sandy soils); paw paws

iv. Irrigation Potential

An irrigation potential assessment was done to identify areas that were highly suitable, moderately suitable and unsuitable areas for irrigation. Parameters used to identify the irrigation potential in the county included slope, soil types and fertility, and proximity to surface water.

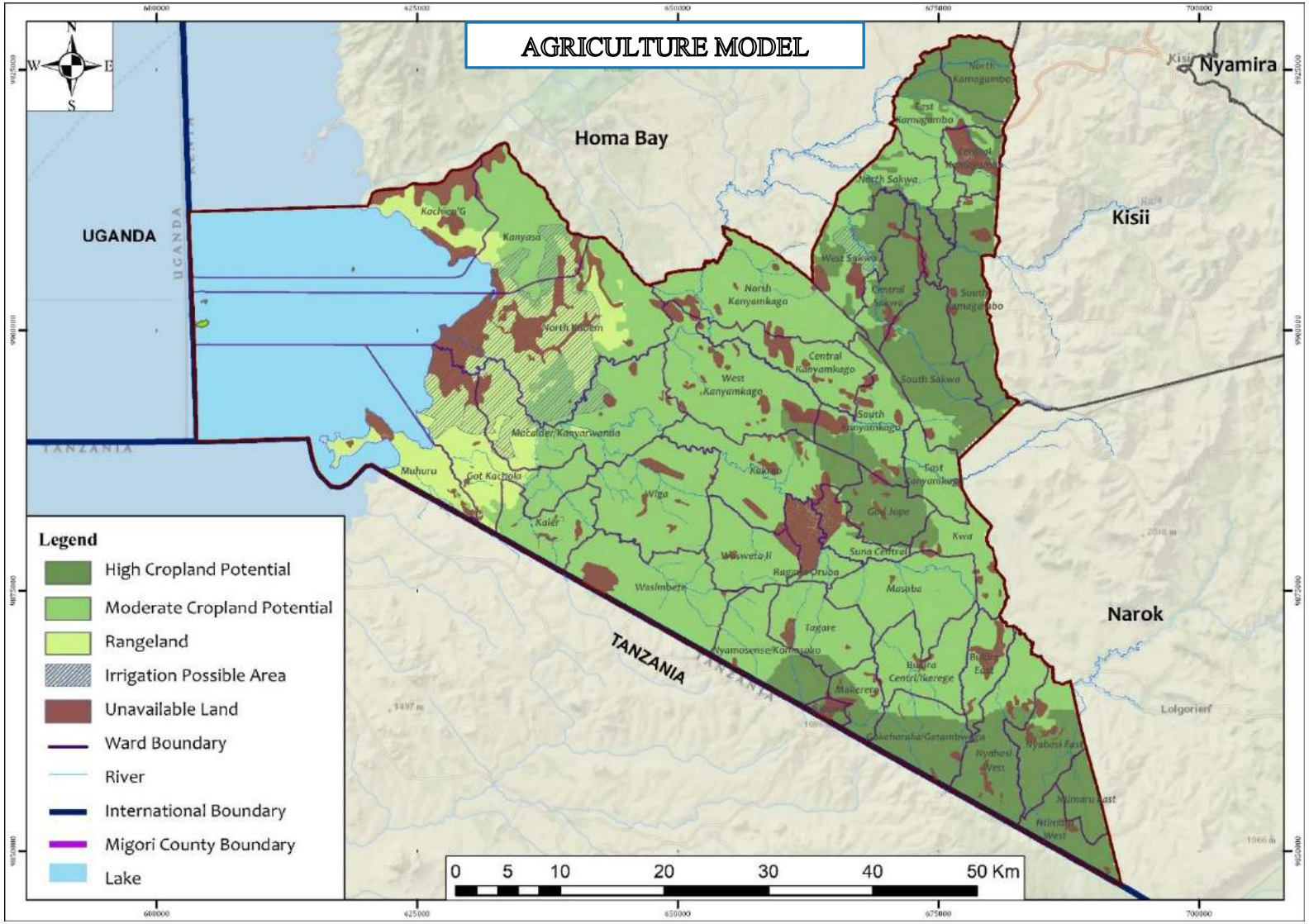
After the assessment, all irrigation possible areas were overlaid in the crop suitability map to generate the agriculture optimization model for the county.

v. Environmentally Significant Areas and the Urban Extents

Environmentally significant areas perform significant ecological functions and therefore should be protected from most human disturbance while urban areas should play little to no agricultural roles. As a result, all environmentally significant areas and urban extents were extracted to establish the exact sizes in area of the different agricultural zones.

4.3.2 The Agriculture Development Model

Consideration of the variables discussed in the subsection above led to a GIS - aided ranking of agricultural land within the county as indicated in the map presented overleaf;



Map 47: Agriculture Development Model

Source: Consultant's Edits, 2021

High Cropland Potential Area

High cropland potential areas in the county cover an area of 610.73 km^2. These areas cover wards including Ntimaru East and west, Nyabati East and West, Isibania, Makerero, Gokeharaka/Getambwega, God Jope, North Kamagambo, South Kamagambo, South and Central Sakwa and West Sakwa.

This zone has the most favourable climate for crop cultivation and dairy farming. Rainfall in this zone is above 1300mm and the soils are highly fertile. Suitable crops for growth in his zone include tea, coffee, maize, sugarcane and sunflower.

Moderate Cropland Potential

Moderate cropland areas in the county cover an area of 1304.74 km^2. This zone covers wards including Bukira East and Central, Masaba, Kwa, Suna Central, Tagare, Masaba, Suna Central, Ragana Oruba, Waswetali, Wasimbete, Nyamosense/ Komosoko, Kaler, Wiga, Macalder/Kanyarwanda, Kakrao, West, Central, North, East and South Kanyamkago, Kanyasa and Kachien'G. This zone receives rainfall between 1000mm and 1300mm and has moderately fertile soil suitable for the growth of crops including Sugarcane, maize, cotton and tobacco.

Rangeland Potential

Rangeland potential areas in the county cover an area of 197.03 km^2. This zone covers wards including Muhuru, Got Kachola, North Kadem and parts of Kanyasa and Macalder/Kayarwanda wards. This zone receives rainfall below 1000mm and has low fertile soils. Suitable activities in the zone include ranching, poultry, cotton, maize and millet farming.

Irrigation Possible Areas

Irrigation possible areas in the county cover parts of the moderate potential crop areas and rangeland potential areas. This zone covers an area of 178 km^2 and covers parts of Kanyasa, North Kadem, Macalder/Kanyarwanda, Got Kachola and West Sakwa wards. The table below presents a summary of the inventory of the different zones in agricultural model for Migori County.

Table 49: Inventory of Existing Agricultural Zones

Zone	**Size (km^2)**	**Coverage (Wards)**	**Characteristics**	**Suitable practices**
High cropland potential	610.73	Ntimaru East and west, Nyabati East and West, Isibania,	-Rainfall above 1300mm	Tea, coffee, maize, sugarcane

Zone	Size (km^2)	Coverage (Wards)	Characteristics	Suitable practices
		Makerero, Gokeharaka/Getambwega, God Jope, North Kamagambo, South Kamagambo, South and Central Sakwa and West Sakwa	-Highly fertile soils	and sunflower farming
Moderate cropland potential	1304.74	Bukira East and Central, Masaba, Kwa, Suna Central, Tagare, Masaba, Suna Central, Ragana Oruba, Waswetali, Wasimbete, Nyamosense/ Komosoko, Kaler, Wiga, Macalder/Kanyarwanda, Kakrao, West, Central, North, East and South Kanyamkago, 0Kanyasa and Kachien'G	-Rainfall between 1000mm and 1300mm -Moderately fertile soil	Sugarcane, maize, cotton and tobacco farming
Rangeland area	197.03	Muhuru, Got Kachola, North Kadem	-Rainfall below 1000mm -Low fertile soil	Livestock farming, cotton, maize and millet cultivation
Irrigation possible area	178	Kanyasa, North Kadem, Macalder/Kanyarwanda, Got Kachola, West Sakwa,	-Low gradient area -Proximate to surface water -Lowlands	-High value crops including fruits and rice
Unavailable land	295.84	-	-Environmentally sensitive areas -All urban extends	-Conservation -Urban development

4.4 Human Settlements

The Urban Areas and Cities Act, 2019 recognizes 233 potential centers in Migori County. Out of these, 37 centers have achieved the minimum population threshold required to be classified. These Urban areas offer a range of services not only to the population that resides there but also the hinterland population. An evaluation of the potential of urban areas in Migori County has been done to determine the hierarchy of urban areas hence creating a basis for promoting development.

4.4.1 Criteria for Modelling Human Settlements

The optimization for potential of human settlements in the county took consideration of the population, the service function of the human settlements, as well as the level of services provided where the larger centers offer more services while the smaller urban centers provide less services and have a smaller population.

i. Population Size (Accommodation Function)
ii. Service Function
iii. Evaluation of the potential of urban areas

Population Size (Accommodation Function)

The population of an urban area is important in measuring its hierarchy. The larger the population the higher it ranks and vice versa.

Service Function

Urban areas in Migori County offer a wide range of services to residents within the centers and those in the hinterland. These services include: accommodation, education, administration, health, transportation, telecommunication, trade and commerce and industrialization. These services either provide an economic benefit to the county and its residents or provide basic services to the population they serve.

The human settlement pattern proposed by this CSP adopts the ranking created by the Human Settlement Strategy of 1978, which sufficiently defines the hierarchy and levels of service provision that promotes regional balance of development as shown in the table below:

Table 50: Nationally Recommended Human Settlements Hierarchy

Level of Centre	Catchment Area Population	Level of Services

Local center	5,000	Primary school, shops, dispensary, public water supply, open market
Market center	15,000 (expected to have a residential population of less than 2,000)	Primary school, secondary school, health center (with family planning services), public water supply, sub-post office, police post, local bus service, airstrip, local administrative services
Rural center	40,000 (expected to have a residential population of 2,000-10,000 inhabitants)	Secondary school, health center with maternity facilities, electricity, sewerage system, full post office, banking facilities
Urban center	120,000 (expected to have a residential population in excess of 5,000)	Treated piped water supply, sewerage system, fully equipped hospital, secondary school, other specialized services

4.4.2 The Human Settlements Model

Urban areas within the county were categorized as either principle growth centers, urban growth centers or rural growth centers based on their score with regards to population and functions played. An inventory of the categorization is presented in the table below;

Table 51: Proposed Hierarchy of Human Settlement

Proposed Level of Center	**Name of Center**
Principle growth centre	Migori, Rongo, Awendo, Isebania Sori Kehancha,
Urban growth centre	Muhuru Bay, , Uriri, Opapo
Rural growth centre	Suba Kuria, Senta, Kitere Kegonga,, Nyabohanse, Lwanda Konyango, Ntimaru, Ogwedhi, Taraganya, Ngukumahando, Macalder, Ulanda, Rapogi, Motemorabu, Masara, God Jope, Dede,

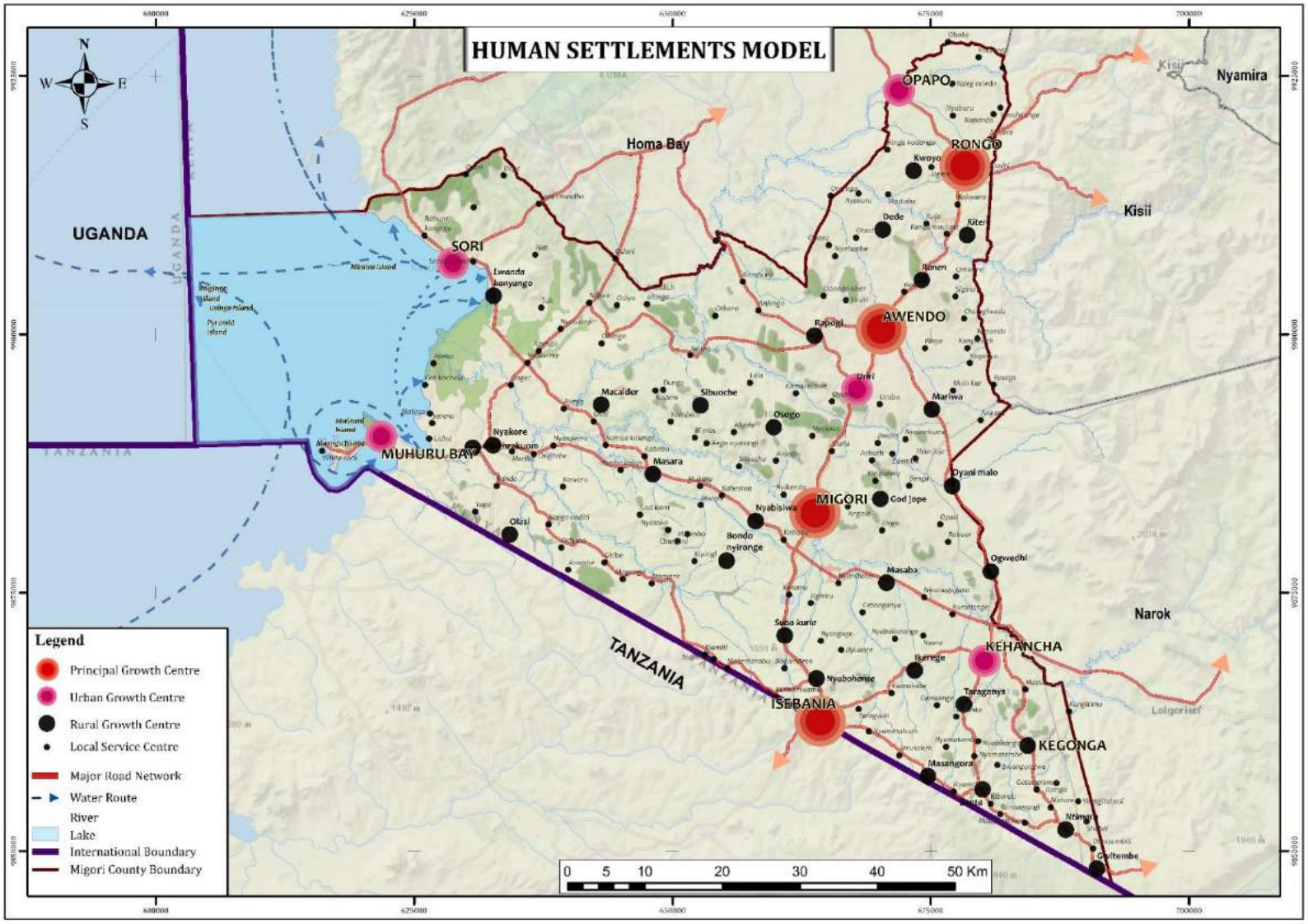
Proposed Level of Center	Name of Center
	Oyani, Bondo Nyironge, , Rakwaro, God Kweru, Mataso, Giribe, Chamgiwadu, Nyabikongori, Wangirabosi, Getonganya, Itongo, Nyankore, Olasi Osogo Nyabisawa, Mariwa , Masaba , Kwoyo, Ikerege, Nyakwere, Sibuoche, Gwitembe, Othoch Rakuom
Local center	Ndiwa , Ayego, Ranen, Nyakuru, Mukuro, Bande, , Piny Owacho, Ngere, Nyamaranya, Kamimi Olewe ,Nyametaburo, Aneko, Tagache Centre, Midida, Ombo, Magongo, Nyamagagana, Kurtiange, Kokuro, Riosiri, Kangeso, Marera, Matare, Maeta, Kibaroti, Gokeharaka, Getogorama, Stella, Kakrao, Kopanga, Kondogo, Kabau, Rabuor, Keborui, Nyabokarange, Agenga, Nyandema, Nyatambe, Kobado, Ndege Oriedo, Remenyangi, Kungitimu, Bware, Arombe, Kitabaya, Komomange, Depe, Kachola, Thmlich Ohinga, Kuja, Siruti, Kadianga, Kanga, Oyola, Daraja Mbili, Masangora, Kitachongo, Nyamongongwi, Oruba, Othoro, Thim Jope, Anjego, Manyera, Madhare, Nyasese, Kugitura, Nyanchabo, Karamu Ngisiru, Aonge Dhiang, Got Kachola, Kasili, Nyamtiro, Shabai, lela, Alra, Nyamosense, Gukipimi, Alendo, Aloma, Ochuna, Koweru Center, Serena, Opoya, Odongo Oher, Mulobar, Manyata, Ochol, Omweare, Sigiria, Makaragwe, Gosebe, Dago, Nyikendo, Chungini, Nora, Apilo Cnter, Yago, Rabuor Karungu, Namba Kodero, Nyando, Kahesron, Masawa, Arombe, Narok, Onyalo Biro, Bogembero, Akimba, Getabaka, Ngira Beach, Nyapuro Sony, Lidha, Nyatuoro, Wath Onger, Tuk, Odiyo, Nyakore, Ongoche, Namba Kalange, Ringa

Proposed Level of Center	Name of Center
	Kandogo, Rinya, Kanyimach, Anganga, Nyaburu, Bwangonge, Junction , Ahedo, Kisigunywa, Magongo, Kambunji, Oyuma, Benga, Nyakurkuma, Bi mos, Biamiti, Namba, Koloo, Milambo, Nyasoko, Thodhna, Taragwiti, Kongore, Negiwang'I, Mithika, Oling To Dwaro, Nyangere, Osiani, Okenge, Ayiego, Otati, Oodi Beach, Kombato, Akdem, Madiaba,Otoch, kogenya, Jerusalem, Kabansai, Gwekonge, Kubinto, Gogo, Achuth.

Currently, Migori Municipality enjoys primacy due to the functions it serves as well as the population it accommodates. However, the human settlement model aims to promote regional balance and therefore some centres had a low population yet a high potential and were therefore given a higher rank.

Awendo, Rongo and Isebania were promoted to principal growth centres in the proposed model of human settlement. Awendo, besides being a municipality, had a great industrial potential due to the location of Southern Nyanza Sugar Company (Sony) which employed 1,940 people directly and 25,000 farmers indirectly. Rongo, also a municipality, contributed greatly to the county economy due to the industrial activities such as metal fabrication, trade and commerce. Isebania, strategically located at the border of Kenya and Tanzania, served a higher function due to its link to external borders and rampant commercial activities. The promotion of these three-urban growth centers to principle growth centers will help ease pressure off Migori Municipality as well as tap into their development potential as recommended in the human settlement strategy of 1978.

Sori, Uriri, Muhuru Bay, Kehancha, Opapo and Kegoga were promoted to urban growth centres due to their industrial potential. The proposed model for human settlements is further illustrated in the map overleaf:



Map 48: Human Settlements Model

Source: Consultant's Edits, 2021

4.5 Transportation

Migori County has a multi-modal transport network system. The county is connected by water, road and air. The existing transport modes positions the county planning concern as functionality, condition and integration to attain efficiency in movement within and across the county. The transport network presents an opportunity for internal growth, development and external linkage. The transportation corridors present the opportunity of growing various regions across the county through the corridor development concept.

4.5.1 Criteria for Modelling Transportation

When optimizing the transport sector in Migori County, the variables considered are road class and functionality. Road class A constitute of international trunk road that links areas of international importance and cross international boundaries. Road class B constitute of national trunk roads that link areas of national importance. Road class C tend to link regional centers to each other or to Road Class A and B. Road Class are secondary roads that link locally important centers to each other or to more important centers or to higher road classes. Minor roads (Class E, G and NR) roads link minor centers as Special Purpose (Class F) link areas that are set for a strategic purpose. The Road classification scores are shown in the table below;

Road Class	**Score**
A	5
B	4
C	3
D	2
E, F, G, NR	1

In terms of functionality, the roads were weighed according to their service and administrative functions as shown in the table below;

Function (Administrative)	**Score**
County Headquarter	4
Sub county Headquarter	3
Ward Headquarter	2
Local Access road	1

4.5.2 The Transportation Model

The road classification is attained by merging the two variables to attain weights that are used for optimizing the development corridors that will facilitate the flow of goods and development in Migori County. The road classification is shown in the table below;

Classification	Weight/Score
Principal road	7 - 9
Primary road	4 - 6
Secondary road	1 - 3

Principal Development Corridor

The principal development corridor constitutes an international trunk road (Road Class A) that link centers of international importance and cross international boundaries as well as linking areas that serve major administrative functions. The principal development corridor links the Republic of Tanzania to the Republic of Sudan, through Isebania, Kisumu and Kitale. The corridor passes through Migori town, hosts the county headquarters and serves as a major transport hub in Migori County. This road can be used to facilitate the flow of goods and efficient movement within the county and external linkage to cross international boundaries.

Primary Development Corridors

The primary development corridor comprises of Road Class B and C that links the regional centers and sub county headquarters within Migori County. This includes areas like Sori, Muhuru Bay, Migori town and Kehancha. The corridor can be used to facilitate the urban to rural flow of goods and movement within the county.

Secondary Development Corridors

The secondary development corridor constitutes of minor roads that mainly serve the function of local access. The corridor knits the transport fabric at the lower level as they are linked to higher road classes to ensure accessibility within the County. The corridor can be used to facilitate accessibility within the county and ensure service provision trickles down to the lower levels.

Major Transportation Hubs

The proposed major transportation hub is Migori town and Isebania. Migori town attracts traffic since it serves as the county headquarter hence a major administrative center and houses major services such Migori County Referral Hospital in the county. Migori town has an airstrip that connects Migori County with other regional centers in Kenya. The international trunk road, Road

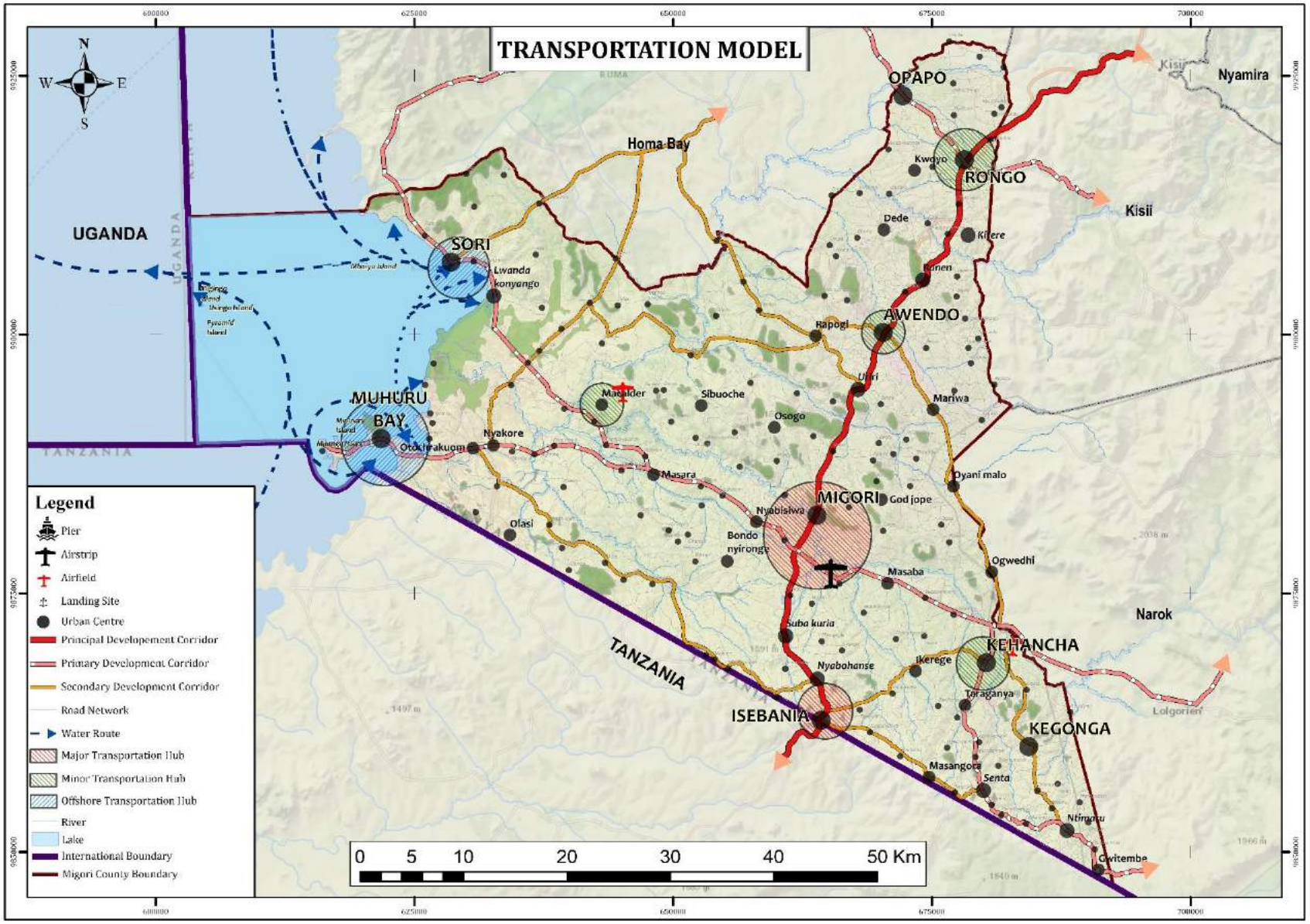
A1 trespasses through this node hence it attracts a lot of traffic to Migori town. Additionally, the proposed primary development corridor cuts across the town as it intersects the principal development corridor. Another major transportation hub is Isebania which is located on the Kenya/Tanzania boundary. The Isebania is located along the principal development corridor as it links to Tanzania hence generates a lot of traffic due to the external linkage.

Minor Transportation Hub

The proposed minor transportation hubs include Kehancha, Awendo, Rongo and Macalder. They are considered as minor hubs since they are located along the development corridors and have facilities such as airfields. Kehancha, Awendo and Rongo are centers of intersection between the development corridors hence attracts relatively high traffic in the area. Kehancha and Macalder have airfields that facilitate air transport within and outside the county.

Offshore Transportation Hub

The proposed offshore transportation hubs are Muhuru bay and Sori. They are considered as offshore transportation hubs since they are located along Lake Victoria and linked to the primary development corridor thus facilitate water transport within and outside the county.



Map 49: Transportation Model

Source: Consultant's Edits, 2021

4.6 Industrialization

An evaluation of industrial centers in Migori County has been done to determine the centers that should be promoted to serve a higher industrial function (major industrial centers) or a lower industrial function (minor industrial centers) as well as the industries to be established and promoted in each center.

4.6.1 Criteria for Modelling Industrialization

The modelling for industrial potential of urban areas within Migori County took into consideration two key factors, namely; the existing industrial clusters and the assessment of hinterland potential.

A. Existing Industrial Clusters

This began by first determining the different types of industrial activities being undertaken in the county. These were then categorized under the following clusters;

i. Manufacturing
ii. Agro processing
iii. Petrochemical
iv. Auto-assembly
v. Warehousing and logistics
vi. Clay works
vii. Energy generation
viii. Mining
ix. Quarrying
x. Carpentry
xi. Metal fabrication
xii. Recycling

Weighting of the industrial clusters was done by assigning each cluster a unit point. Hence the ranking of the existing level of industrial activity for each urban area was determined by the number of industrial clusters it fell into. The emerging pattern of industrialization was then subjected to an assessment of the hinterland potential with the help of GIS software in order to develop the model.

B. Assessment of Hinterland Potential

The assessment of hinterland potential of the urban areas, a process that was undertaken using GIS software considered the following;

i. Existing value chains in crop production (sugarcane, coffee, tobacco, rice, soya, cassava, maize, and horticultural crops), livestock production (dairy, beef, and beef products, fishing, and fish farming), mining activities (gold, copper, silver, zinc, clay, diorite, sand and ballast) and cottage industries;
ii. Unexploited farming and mineral potential of the county;
iii. Access to local and external markets

iv. Intra-county and extra-county transportation linkages

4.6.2 The Industrialization Model

The industrialization model establishes two (2) levels of industrial centers i.e., major industrial centers and minor industrial centers

i. Major Industrial Centers

The industrial development model has identified Migori, Awendo, Rongo, and Isebania as the major industrial centers in the county.

Migori Town is strategically located along the Rongo-Isebania transport corridor. Equally, its high population provides ready market for the industrial products. In Migori town the industrial development model promotes agro processing, metal fabrication, building materials production, furniture making and automobile repair.

Awendo currently hosts Sony Sugar Company which employs approximately 1940 people directly and 25000 farmers indirectly. Other industrial activities such as metal fabrication, furniture making, energy generation and recycling shall are also promoted in Awendo.

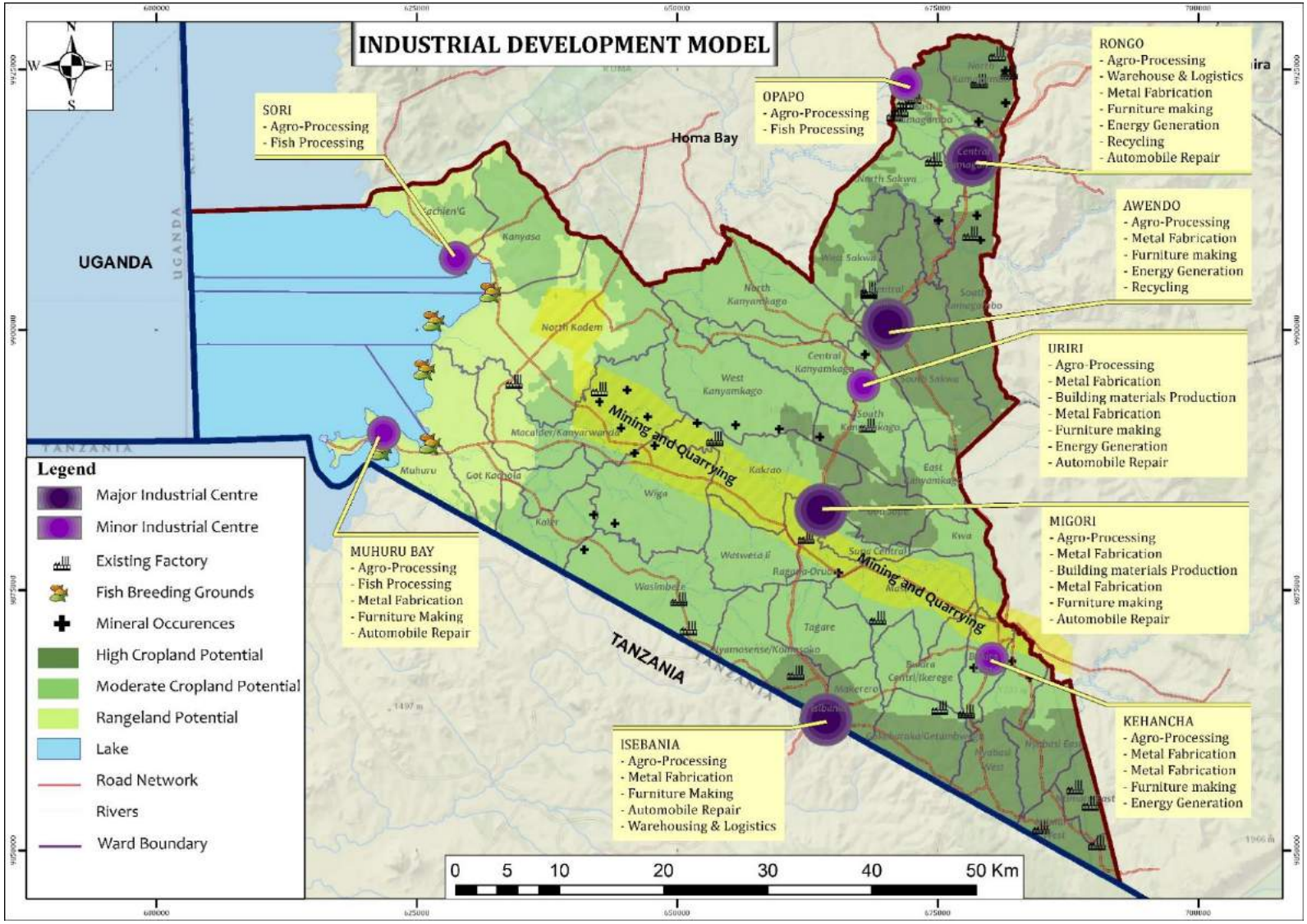
Rongo is home to an array of industrial activities including: agro processing, warehousing and logistics, metal fabrication, furniture making, energy generation, recycling and automobile repair.

Isebania is also promoted as major industrial town. Its location at the border of Kenya and Tanzania provides a great potential for international trade. This provides ready market for industrial products. The industries promoted here are agro processing, metal fabrication, furniture making, automobile repair and warehousing and logistics.

ii. Minor Industrial Centers

The industrial development model has identified Opapo, Uriri, Kehancha, Sori and Muhuru bay as minor industrial centres in Migori County. Opapo and Sori are being promoted as a fish and agro processing centres. There is an existing fish processing industry in Opapo and Sori is located at the shores of the lake where fishing is done. Muhuru bay which is also at the shore has been promoted for fish processing, basketry and mat making due to the availability of papyrus in the lake. Other industrial activities promoted in Muhuru bay are agro processing, metal fabrication and automobile repair.

Uriri and Kehancha have been promoted for agro processing, metal fabrication, building materials production, furniture making, building materials production and automobile repair.



Map 50: Industrial Development Model

Source: Consultant's Edits, 2021

4.7 ESAs

Environmentally Significant Areas (ESAs) are important to the long-term maintenance biological diversity, physical landscape features and/ or other natural processes, both locally and within a larger spatial context. These areas consist of rivers, lakes, beaches, wetland, hills, rivers and its valleys, spring, dams, and prime agricultural land. These areas also exist in Migori County and are impacted on by human activity.

4.7.1 Criteria for Environmentally Significant Areas (ESAs)

When optimizing Environmentally Significant Areas (ESAs) in Migori County, the variables considered are its functionality, naturality and the need for protection. There need to improve the general sustainability of the environment. It involves analysis of existing environmental assets that have varied level of significance and sensitivity.

Analysis of the environmentally significant areas took into account the existing environmental assets that have varied level of significance and sensitivity, which are key in the making of policies and regulations on the conservation of environmental features to keep them functional and natural as their ecological service dictates. Also, the Environmentally Significant Areas within Migori's natural systems require protection from surrounding threats to perform their ecosystem functions continuously. The table below show the environmentally significant areas, their functions and nature of threats they face;

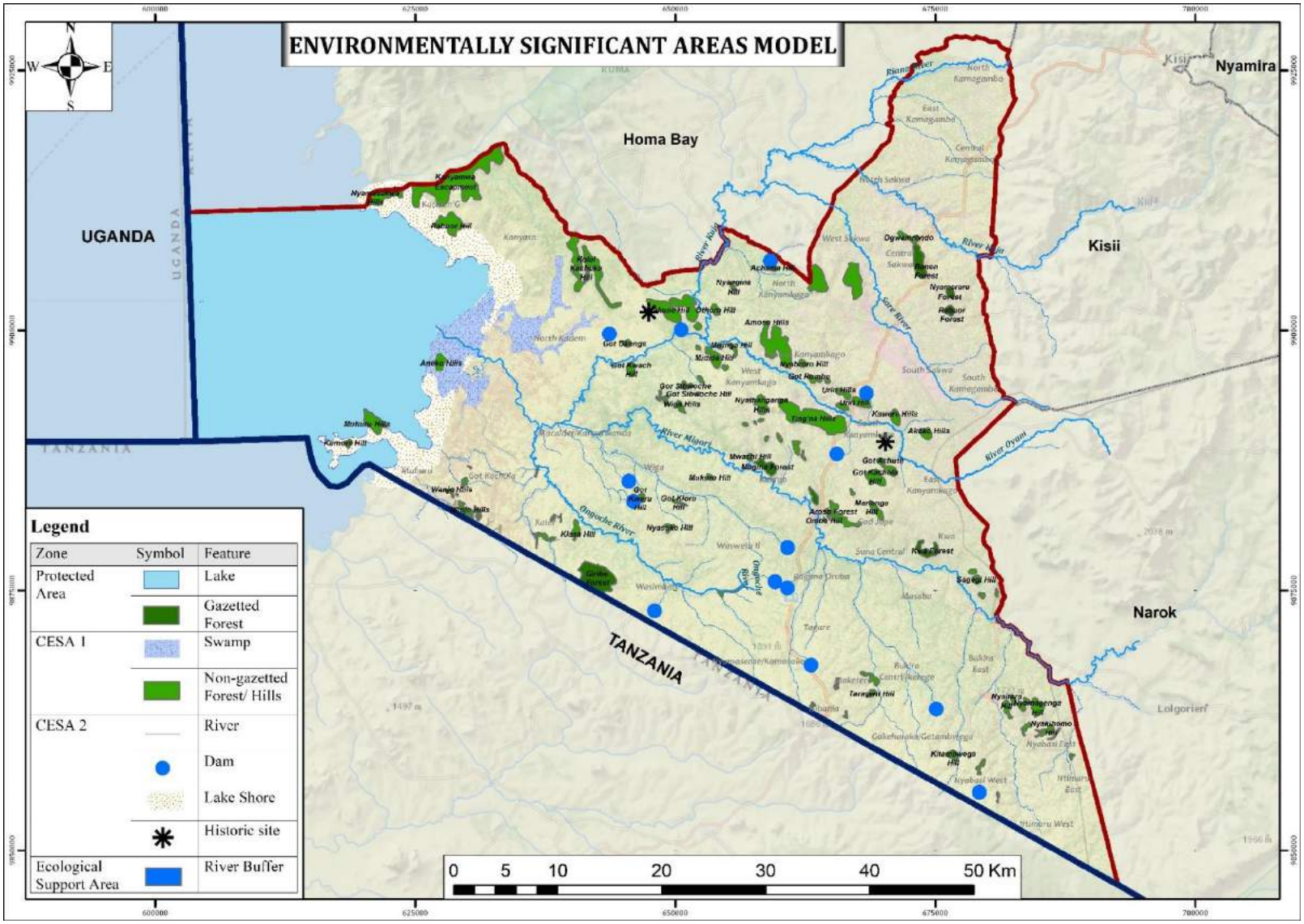
Table 52: Condition of Environmentally Significant Areas

Area	**Ecosystem services**	**Value capture/dependency**	**Threats**
Rivers and Riparian Reserves	• Water sources. • Habitat for aquatic species (both flora and fauna). • Recharging groundwater.	County-Level population	• Siltation • Encroachment of riparian reserves by human activities. • Deforestation of riparian vegetation • Pollution caused by damping of solid and liquid waste.
Springs	• Water source • Recharging surface water systems	Village level population.	• Limited conservation measures

Area	Ecosystem services	Value capture/dependency	Threats
Dams	• Source of water • Habitat to biodiversity.	Village level population.	• Siltation due to agricultural activities in adjacent landscapes. • Encroachment. • Limited conservation initiatives.
Wetlands	• Wildlife habitat; • Estuaries are breeding grounds for fish. • Purification of water; • Serving as floodplains; • Recharging aquifers. • Nutrient's cycle	Village level population.	• Encroachment by human settlement and cultivation activities; • Pollution caused by liquid and solid waste.
Lake	• Inland fishing • Water transport • Wildlife habitat • Aquaculture • Climate regulation Nutrient cycle	Supra National Population	• Pollution by waste and chemicals from farmlands. • Siltation at the shores. • Overfishing. • Infestation by foreign aquatic vegetation such as water hyacinth.
Beaches	Habitats for flora and fauna	National Level Population	• Pollution by solid waste • Destruction of vegetation.
Hills	• Home to biodiversity (flora and fauna) • Modifying climatic conditions • Source of springs and rivers	Ward level population	• Deforestation for food, biofuel, and settlement activities. • Degradation caused

Area	Ecosystem services	Value capture/dependency	Threats
Islands	• Habitat for humans and wildlife • Breeding sites for wildlife species. • Provide defense against high tides.	National level Population	• Loss of biodiversity due to human activities. • Pollution especially Migingo. • Encroachment by human settlement and activities.
Forest	• Wildlife habitats • Air purification. • Microclimate modification. • Source of steams • Source of food and medicine. • Climate regulation	National Level Population (for the Protected forests) Ward Level Population (for the Unprotected forests)	• Deforestation. • Irregular acquisition and allocation of forest land • Forest fires
Agricultural lands	• Source of food for man • Temporary home for wildlife. Atmospheric carbon balance	County-Level Population	• Encroachment by human settlement (urban development). • Reducing fertility. • Degradation by mining activities.

4.7.2 The Environmentally Significant Areas Model



Map 51: Environmentally Significant Areas Model

4.8 Tourism

Migori County has both natural and human-made resources that tourism activities. These resources include hills and forests, Lake Victoria, beaches, islands, wildlife, historical sites, and shrines. However, the high tourism potential of Migori County has not been fully exploited as the tourism resources are underutilized and underdeveloped. This implies the need for optimization by examining the state of existing resources and identifying the opportunities for optimization.

4.8.1 Criteria for Modelling Tourism

The key consideration in modelling tourism potential;

Existing Attraction Sites and Areas

The primary factor on tourism optimization is the existing attraction sites and areas. Other secondary factors that support the tourism sector include infrastructure such as roads and electricity and facilities such as hotels.

Tourism Site/Area	Description of Site	Location	Current Physical Condition	Existing Activities	Level of Utilization
Thim-Lich Ohinga	Culture and Heritage site	Nyatike Sub-county	Preserved	Historial and cultural tourism	Underutilized
Got Kweru	Forest, Hill, and Shrine	Nyatike Sub-county	Preserved by the community	Religious/faith tourism	Underutilized
Legio Maria Holy Got-Calvary Shrines	Hill and Shrine	Suna West.	Preserved	Pilgrimage Religious/faith tourism	Underutilized
Mugabo caves	Heritage and Historic site	Nyatike Sub-county	Preserved by the community	Historial and religious tourism Site seeing	Underutilized

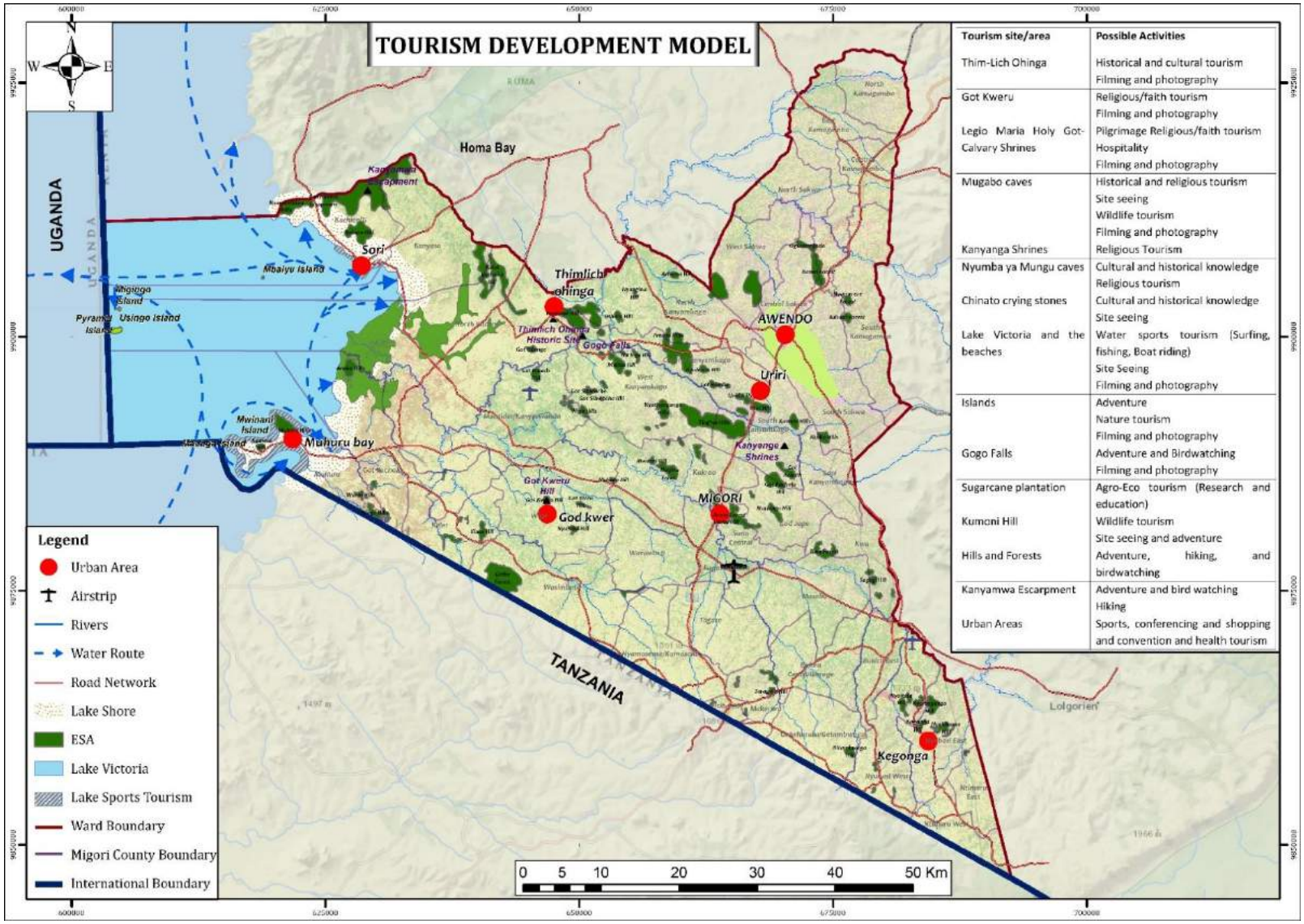
Nyumba ya Mungu caves	Heritage and Historic site Sacred shrine	Nyatike Sub-county		Cultural and historical knowledge Religious tourism	Underutilized
Chinato crying stones	Scenic area and cultural knowledge	Kuria West	Preserved	Site seeing	Underutilized
Kanyenga Shrines	Shrine	South Kanyamkago	Preserved by the community	Pilgrimage	Under Utilized
Lake Victoria and the beaches	Natural open water body with culture and heritage	Nyatike Sub-county	Pollution and invasion by water hyacinth	Boat riding. Adventure	Underutilized
Islands	Natural Landscape	Nyatike	Degraded (Migingo), Intact (Ugingo)	-	Underutilized
Gogo Falls	Waterfalls and scenic Landscape	Uriri Sub-county	Conserved	Adventure	Underutilized
Sugarcane plantation	Large scale plantation agriculture	Awendo Sub-county	Reducing the size of plantations	None	Underutilized
Hills and Forests	Heritage and natural landscape	Distributed all over the County	Reducing forest vegetation cover	Adventure, hiking and birdwatching	Underexploited
Kanyamwa Escarpment	Natural	Nyatike Sub-county	Moderately impacted	Adventure and bird watching	Underutilized
Urban Areas	Built-up areas	Distributed all over the County	Relatively limited tourism facilities	Shopping	Underutilized

4.8.2 Tourism Model

From the analysis of the existing tourism resources, the tourism potential sites are as shown in the table below;

Tourism Site/Area	Location	Possible Activities
Thim-Lich Ohinga	North Kadem Ward	Historical and cultural tourism Filming and photography
Got Kweru	Wiga	Religious/faith tourism Filming and photography
Legio Maria Holy Got-Calvary Shrines	Suna West.	Pilgrimage Religious/faith tourism Hospitality Filming and photography
Mugabo caves	Muguru Bay	Historical and religious tourism Site seeing Wildlife tourism Filming and photography
Kanyanga Shrines	South Kanyamkago	Religious Tourism
Nyumba ya Mungu caves	Muhuru Bay	Cultural and historical knowledge Religious tourism
Chinato crying stones	Kuria West	Cultural and historical knowledge Site seeing
Lake Victoria and the beaches	All wards in Nyatike Sub-county	Water sports tourism (Surfing, fishing, Boat riding) Site Seeing Filming and photography
Islands	Nyatike	Adventure Nature tourism Filming and photography
Gogo Falls	West Kanyamkago	Adventure and Birdwatching Filming and photography
Sugarcane plantation	All wards in Awendo and Sub-County	Agro-Eco tourism (Research and education)
Kumoni Hill	Muhuru Bay	Wildlife tourism Site seeing and adventure

Tourism Site/Area	Location	Possible Activities
Hills and Forests	Distributed all over the County	Adventure, hiking, and birdwatching
Kanyamwa Escarpment	Kachieng and Kanyasa	Adventure and bird watching Hiking
Urban Areas	Selected all over the County	Sports, conferencing and shopping and convention and health tourism



Tourism site/area	Possible Activities
Thim-Lich Ohinga	Historical and cultural tourism Filming and photography
Got Kweru	Religious/faith tourism Filming and photography
Legio Maria Holy Got-Calvary Shrines	Pilgrimage Religious/faith tourism Hospitality Filming and photography
Mugabo caves	Historical and religious tourism Site seeing Wildlife tourism Filming and photography
Kanyanga Shrines	Religious Tourism
Nyumba ya Mungu caves	Cultural and historical knowledge Religious tourism
Chinato crying stones	Cultural and historical knowledge Site seeing
Lake Victoria and the beaches	Water sports tourism (Surfing, fishing, Boat riding) Site Seeing Filming and photography
Islands	Adventure Nature tourism Filming and photography
Gogo Falls	Adventure and Birdwatching Filming and photography
Sugarcane plantation	Agro-Eco tourism (Research and education)
Kumoni Hill	Wildlife tourism Site seeing and adventure
Hills and Forests	Adventure, hiking, and birdwatching
Kanyamwa Escarpment	Adventure and bird watching Hiking
Urban Areas	Sports, conferencing and shopping and convention and health tourism

Map 52: Tourism Development Model

Source: Consultant's Edits, 2021

CHAPTER FIVE : COUNTY SPATIAL STRUCTURE AND LAND MANAGEMENT POLICIES

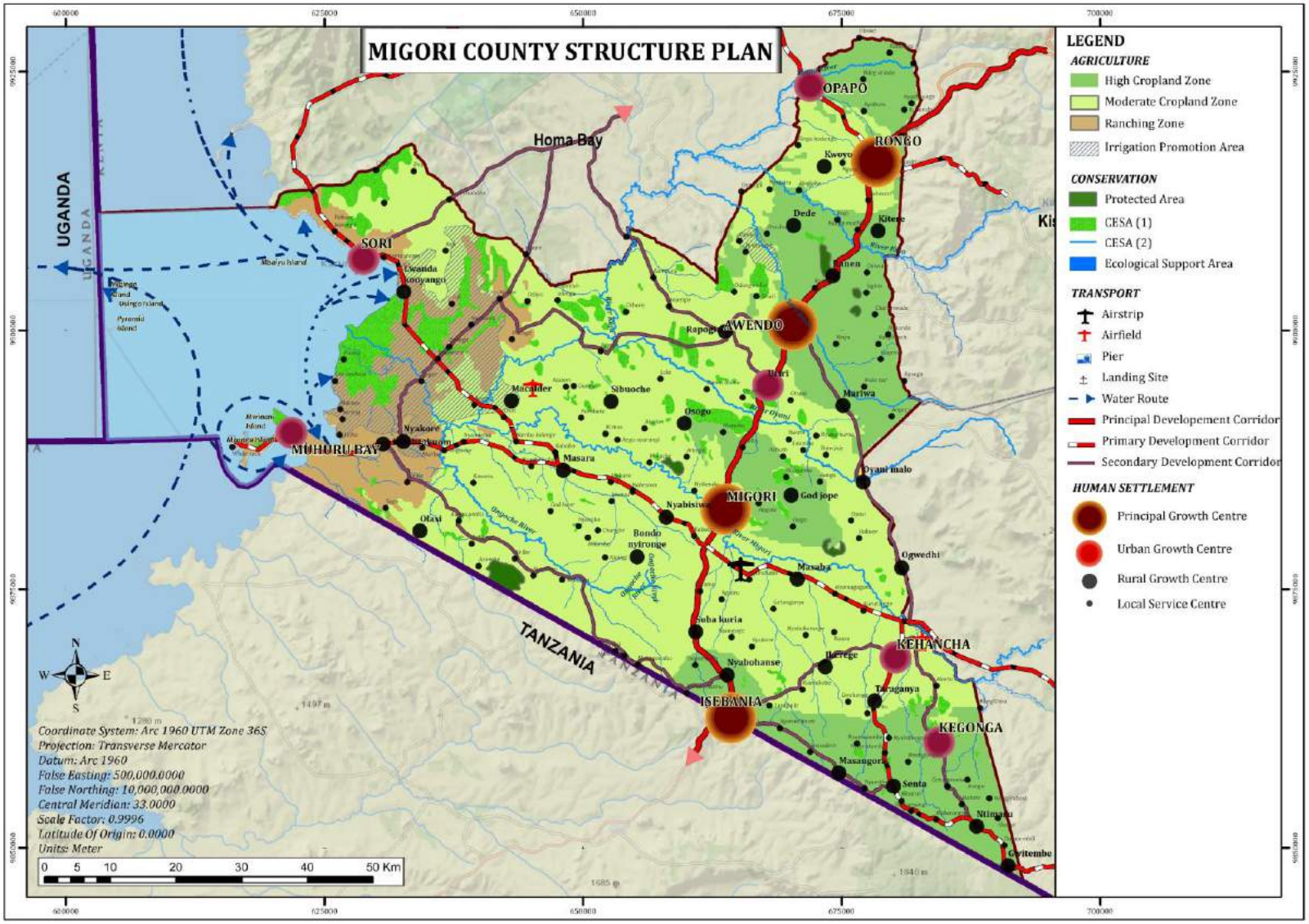
5.1 Overview

A County Spatial Structure is a culmination of the land optimization process that involved modelling for land potential as discussed in the previous chapter. This chapter hence presents the pattern of spatial development to be adopted by the county during the duration of the plan. Additionally, it provides land and land use policies through which the proposed pattern of spatial development shall be achieved along thematic areas.

5.2 Migori County Spatial Structure

The proposed Migori County Spatial Structure was obtained as a result of modelling of potential of the land along the thematic areas of agriculture, human settlements, transportation, industrialization, and tourism & conservation. It covers the entire Migori County surface and seeks to achieve an orderly, cohesive, sustainable and balanced spatial development of the county. This will in turn inform future use of land, as well as enhance linkages of activities within Migori County through;

- Clearly zoned areas for different types of agriculture
- Precise areas to be put under conservation
- Designated transportation facilities
- An organized and balanced pattern of human settlements



Map 53: Migori County Spatial Structure

Source: Consultant's Edits, 2021

5.3 Land Management Policies

Land management policies are key in guiding and influencing the use of land as per the prescribed land use activity. Policies are as well crucial as a basis to guide the formulation of strategies to achieve set goals. Proper implementation of land management policies in Migori County will be key in the achievement of objectives.

5.3.1 Agriculture

The formulation of policies and regulations to guide the use of land in the agriculture promotion zones will be key in ensuring maximum productivity from agricultural areas while ensuring sustainable use of the available resources with minimal effects on the environment.

High Cropland Potential Area

This zone has the best favorable climate for most crops including tea, coffee, maize, sugarcane and sunflower and shall only be used to grow these crops and carry out dairy farming. The following policy measures shall be applied in this area:

i. There shall be periodic training of residents on best crop production practices in this zone
ii. Modern farming practices shall be encouraged in this zone to maximize on production quantities while ensuring efficiency.
iii. Cattle farming practices in this zone shall only be done through zero grazing
iv. Subdivision of land below half an acre shall be prohibited
v. Urban sprawl into high potential cropland shall be prohibited
vi. Agroforestry and terracing shall be encouraged as a good farming practice

Moderate Cropland potential

This zone has favorable climate for the growth of crops including sugarcane, maize, cotton and tobacco. The following policy measures shall be applied in this zone:

i. Subdivision of land below half an acre shall be prohibited
ii. Good farming practices including agroforestry and terracing shall be encouraged
iii. Livestock keeping shall only be done through zero grazing and tethering
iv. There shall be periodic training of residents on best crop production practices in this zone

Rangeland potential

This zone has favorable climate for the growth of crops including cotton, maize and millet and practices including chicken rearing and livestock keeping for meat. The following policy measures shall be applied in this zone:

i. The minimum land holding size in this zone shall be 1 Acre.
ii. Existing endangered plant and animal species shall be protected
iii. There shall be establishment of common water points managed by the communities with close supervision from the local administration
iv. There shall be minimal disturbance of nature including existing indigenous trees and vegetation
v. Proper rangeland management practices shall be observed to prevent rangeland degradation and control soil erosion, deforestation, preservation of natural resources and protection of fish and wildlife.
vi. Production of wood fuel especially charcoal shall be prohibited
vii. Paddocking a livestock keeping method shall be encouraged.

Irrigation Possible Areas

Irrigation possible areas fall in both moderate potential crop areas and rangelands. Cultivation of high value crops including rice and fruits shall be encouraged. Technology shall also be incorporated to maximize crop production per unit area. The following policy measures shall be applied in all irrigation areas:

i. Irrigation shall be carried out in a manner that doesn't adversely affect the quality of both ground and underground water
ii. Irrigation water shall be extracted in a manner which shall not negatively affect the use of water for domestic purposes
iii. Irrigation water shall be used in ways consistent with existing limited water resources
iv. Proper irrigation technology shall be applied to minimize water logging and salinization
v. Appropriate irrigation management training shall be provided and irrigation extension services strengthened and developed further to improve productivity and understanding of various approaches and techniques

5.3.2 Human Settlements

Land management policies for human settlements have been formulated to ensure that urban areas in Migori County develop in the most sustainable manner without pressure on the existing services and sprawl.

Principal Growth Centers

The principal growth centers shall serve the highest functions in the county in terms of the services they offer. The following policy measures shall be applied in these centres:

i. There shall be creation and strengthening of the capacity of local governing bodies as well as definition of urban limits through preparation of local physical development plans
ii. All access roads in these centres shall be upgraded to bitumen standards to improve the movement of goods and services
iii. There shall be increment of the housing stock by planning, redevelopment of the existing housing areas and allocation of land for new housing schemes to accommodate the existing and projected population
iv. Services and infrastructure shall be provided for with similarity to the provisions of a municipality as per the Urban Areas and Cities (Amendment) Act, 2019.
v. Urban limits shall be established for all Principal growth centres

Urban Growth Centers

The following policy measures shall be applied in these centres:

i. There shall be Creation and strengthening of local urban management institutions and preparation of local physical development plans as recommended by law
ii. Access and secondary roads shall be improved to motorable standards
iii. Services and infrastructure shall be provided for with similarity to the provisions of a Town as per the Urban Areas and Cities (Amendment) Act, 2019.
iv. Urban limits shall be established for all urban growth centres

Rural Growth Centres

The following policy measures shall be applied in these centres:

i. Access and secondary roads shall be improved to motorable standards
ii. Sensitization and awareness campaigns shall be undertaken in order to help conserve agricultural land by discouraging land fragmentation.
iii. Agriculture as a rural economic stimulant shall be promoted
iv. Services and infrastructure shall be provided for with similarity to the provisions of a market centre as per the Urban Areas and Cities (Amendment) Act, 2019.
v. Urban limits shall be established for all rural growth centres

Local Centres

The following policy measures shall be applied in these centers;

i. Agriculture amongst other potential activities shall be promoted as rural economic stimulants
ii. Access and secondary roads shall be improved to motorable standards
iii. Sensitization and awareness campaigns shall be undertaken in order to help conserve agricultural land by discouraging land fragmentation.

5.3.3 Transportation

i. 60 - metre road reserve minimum shall be registered and observed for principal corridors
ii. 30 - metre road reserve minimum shall be registered and observed for primary corridors
iii. 18 - metre road reserve minimum shall be registered and observed for all secondary corridors
iv. A comprehensive road management information system shall be established for all roads in the county
v. Appropriate and efficient contracting methods shall be adhered to for construction and maintenance (performance based)
vi. Adherence to roads construction and maintenance standards shall be ensured in all road projects
vii. Additional road project funding mechanisms (Public and private joint ventures, Donor support, BOTs etc.) shall be explored
viii. Environmental and Social Impact Assessment (ESIA) shall be undertaken prior to construction and upgrading of county roads (public participation)
ix. Transport corridors shall not fragment important forest blocks and ecological corridors.
x. Transport corridors shall go around the forest blocks and ecological corridors including incorporating wildlife crossing structures such as viaducts and tunnels.

- Implementation of a transportation network may be undertaken incrementally but the overall work programme shall be consistently executed to achieve modal integration.
- Marking of the roads will be done concurrently with road construction to enhance road safety.

5.3.4 Industrialization

5.3.5 Conservation and Tourism

The land management policies for tourism help in the use of the existing tourism base which consists of both natural and human-made resources. These policies guide the use of these resources to ensure optimal utilization to generate more revenue as well as sustainability.

Urban Tourism Base

The urban tourism takes place in urban centers that are characterized with non-agricultural functions such as manufacturing, administration, trade and being a nodal point of transport. In Migori County, urban tourism is based in areas such as Awendo, Sori, Migori town, Uriri and Rongo. These areas are promoted for activities such as hotel and conferencing, recreation, sporting activities, shopping and health tourism. The following policy measures shall be applied in urban tourism:

i. The county shall ensure high quality standards of tourism products and services.
ii. The county shall enhance the uptake of MICE tourism in the Post-COVID era
iii. The county shall provide incentives for investment in tourism products and Services.
iv. The county shall ensure urban tourism areas implement integrated tourism development area plans developed through a participatory process to safeguard against uncontrolled developments.

Nature Tourism Base/Ecotourism

Nature tourism is tourism that is directly linked to the environment and involves physical features such as hills and forests. Nature tourism in Migori County is based in areas such as Aneko Hills, Got Kwach, Got Okange, Kachuku Hill and Giribe Forest. The following policy measures shall be applied in the nature tourism base;

i. The county shall establish carrying capacities for each tourism area.
ii. The county shall ensure that airstrips in designated tourism circuits are serviceable, secure and properly maintained.
iii. The county shall prepare integrated forest resource management plans to promote sustainable use of forest resources
iv. The county shall develop initiatives that promote Reforestation and Afforestation.
v. The county shall prioritize the upgrading, rehabilitation and periodic maintenance and signage for access roads to local tourist destinations.

Lake Basin Tourism

Lake Basin tourism in Migori County is based along the shores of Lake Victoria in Muhuru Bay and Sori. The following policy measures shall be applied in the lake basin tourism base;

i. The county shall develop initiatives that promote water transport.
ii. The county shall develop beach for sporting activities.
iii. The county shall promote development of buffer zones.

Island Tourism

Island tourism in Migori County is based in Ugingo and Migingo. The following policy measures shall be applied in the island tourism base;

i. The county shall promote the development of buffer zones.
ii. The county shall develop initiatives that promote water transport.
iii. The county shall ensure that tourist establishments put in place formal environmental management systems (EMS) to enable them detect and address adverse economic, environmental and social impacts.
iv. In consultation with the National Environment Management Authority (NEMA), the county government shall develop and implement tourism sector environmental impact assessment guidelines.

Protected Areas (Gazetted Forests)

i. There shall be definition of limits in the zones that surround protected areas to avoid encroachment.
ii. There shall be prohibition of development and agricultural activities in the protected areas.
iii. There shall be development initiative to promote afforestation and reforestation.
iv. The county shall develop and improve firebreaks and access roads.

Critical Ecologically Significant Areas 2 (CESA 2)

i. There shall be restriction of physical development, in terms of distance, and cultivation around forest and swamps.
ii. There shall be restriction resource harvesting from swamps and forest according to NEMA provisions.
iii. The county shall ensure refilling of open mines
iv. There shall be management of water bodies to protect the aquatic biodiversity and promote sustainability.

v. Public dams and ground water resources catering for commercial, industrial and agricultural activities shall be monitored to avoid over abstraction.

vi. There shall be regulation of fishing activities based on the allowed sizes of fish to be caught.

Ecological Support Areas

i. There shall be demarcation of riparian reserves as per the recommended environment standards.

CHAPTER SIX : SECTOR DEVELOPMENT STRATEGIES

6.1 Overview

The sector development strategies were formulated along specific thematic areas to address specific development issues relating to the respective thematic areas. The strategies are meant to guide public investment by providing a framework for coordinating county development projects and programmes in a manner that is well coordinated to avoid duplication and wastage in utilization of scarce resources. The sector strategies have been formulated along six (6) thematic areas namely; human settlement and urbanization, transportation, infrastructure and services development, environment and natural resources, county economic development, social development as discussed below;

6.2 Human Settlements and Urbanization Strategy

The human settlement strategy aims at achieving a desirable urbanization patterns in the urban areas. Additionally, the strategy aims at providing adequate and efficient services and infrastructure in all urban areas in the county. This strategy addresses the issues of the human settlement sector in Migori County which include;

- Ineffective urban management institutions and structure
- Undefined urban area limits
- Imbalance in the distribution of services in urban areas in the sub-regions of Nyatike and Kuria East
- Poor condition of roads serving urban and rural areas
- Limited housing stock and associated infrastructure

The following strategies shall be implemented in the human settlement sector;

i. Adopt the proposed hierarchy of human settlements. i.e. Principle growth centers, urban growth centers, rural growth centers and local growth centers to ensure balanced regional development
ii. Establish and build capacities of urban management institutions (municipal boards and town committees) as provided for in the Urban areas and cities (Amendment) act, 2019
iii. Establish and adopt a framework for delivery of infrastructure and services based on population needs
iv. Improve the condition of roads serving human settlements to motor able standards
v. Enhance housing provision in the county

vi. Enhance adherence to county development control policy measures.

Proposed projects/programs

i. Delineate urban boundaries
ii. Develop integrated urban development plans for all urban areas in the county
iii. specify roads
iv. Develop a county housing policy
v. Employ adequate staff and build their capacity
vi. Create awareness on existing development control measures in the county

6.3 Transportation Strategy

Migori County is faced with an inefficient transport system. This is contributed to by several factors namely under-utilization and neglect of existing transportation facilities, poor management of roads, missing bridges therefore impending efficiency narrow bridges and dilapidated conditions of both earth and gravel roads. The area has a multi modal transportation system, that includes water, air and road transport. Water and air transport have been neglected thus need for integration.

Reviving air and water transport in the county

Water and air transport are being under-utilized in Migori County. Yet they pose a great potential for the county economic development and growth. In water transport Piers in the area are being under-utilized for their greater purpose. Due to county's proximity to East African Countries such as Tanzania and Uganda create massive opportunity for water transport development, therefore playing a pivotal role in regional integration through trade and commerce. Also, the water transport connects the mainland to the island, there is need for its revival. This will improve the movement of goods. Improvement on the conditions of infrastructure involved in water transport would therefore boost the county's economy. It is proposed that the piers at Sori and Muhuru Bay be renovated.

In air transport, there are three airstrips with one being utilized. Migori is surrounded by areas with prime touristic activities, therefore there is need to revive the airstrips by renovate existing aerodromes in Kehancha and Macalder, to enable ease in movement for the locals and the tourist. This will be done by the strategies and projects;

Integrate non-motorized transport into the existing transport network

The urban population is growing with a population of about 301,955 by 2020. Main towns are expected to be more populous by 2030 with growth to be 447,871. This increases the likelihood of traffic congestion within Migori's urban centers, therefore integrating NMT i.e pedestrian lanes and cycle tracks with transit will largely facilitate ease of mobility and traffic flow within the urban by improving transport efficiency, reduce traffic congestion and achieve environmental protection through improved air quality and greenhouse gas to develop infrastructure and services. It is therefore proposed that the County government Construct NMT facilities within the CBD of all urban areas in the county.

Develop a PWDs user friendly transport system

Persons with disabilities (PWDs) have been neglected in term of proper facilities to ease their movement within the county. In order to enhance their safety, there is need to provide for them suitable means of mobility. There it is proposed that the PWDs be provided with ramps where appropriate at all road transport terminal facilities, aerodromes and piers. Also, to be provide designated parking spaces for persons with disabilities in all parking spaces existing and proposed within urban areas

Provide adequate road transport support infrastructure

Transport support infrastructure includes terminals and bus-parks. These are location where passengers and freight originate, terminate or re handled during the transportation process. They are potentially linking in transportation chains in that all spatial flow, excepting personal vehicular and pedestrian trips involve movement between terminals. Migori has nine terminal facilities, with seven paved and two earthed. Only five are fully operational, with Sori having no terminal despite potential for both regional transportation for both road and water. There is therefore need to build a terminal facility within Sori and also to encourage the use of the under-utilized terminal facilities. The earthed faced terminal facilities should be upgraded and provide necessary infrastructure for the smooth movement and accessibility. There is also the need to construct more terminal facilities and bus park in other busy and operational centres within the county.

Establish a Comprehensive Transportation Network

Secure existing and proposed NMT facilities

Non-motorized transport has significant health and environmental role. They include the pedestrian lane, variants which includes lanes for wheelchair travel and cycle track. NMT is an important part of urban mobility and therefore important in transport planning. This calls for the need to erect barriers and bollards appropriately where NMT facilities are existing or have been established.

Introduce traffic calming measures where appropriate

Traffic calming measure are normally used in urban areas and residential, where by reducing the speed and volume of traffic passing through an area by self-enforcing traffic engineering methods. It's therefore essential to construct rumble strips and speed bumps on all busy streets in urban areas, footways for pedestrians' safety and also install signs and zebra crossing.

6.4 Infrastructure and Services Development Strategy

The strategies developed below aim at ensuring that the county government of Migori efficiently provides the relevant infrastructure and services required to serve the current and projected population. Strategies have been developed for the following subthemes: water supply, sanitation, electricity, ICT and telecommunication, health, education, recreational and community facilities.

6.4.1 Water Supply

Inadequate piped water supply is a challenge in Migori County. This is especially so in urban areas where the population is high and therefore demand exceeds supply. This has been attributed to low exploitation of existing water resources, inadequate water supply infrastructure and Poor management both the sources and the infrastructure. To provide adequate potable water, the county shall adopt the following strategies:

i. Exploit the existing water resources in the county
ii. Provide adequate water supply infrastructure within the county
iii. Promote protection of water sources and infrastructure

The following projects shall be implemented pursuant to the above mentioned strategies;

i. Establish remote monitoring systems to help improve general performance through regular monitoring of the water supply infrastructure
ii. Establish a reticulation system in urban areas within the county based on the population needs
iii. Build capacity in terms of skilled and unskilled labor through staffing and providing technical training

iv. Enforcement of environmental laws and regulations to protect water sources in the county

6.4.2 Sanitation

Ineffective and inefficient liquid and solid waste management has been identified as a major issue within the county. Poor management of waste exposes residents to poor health and causes degradation of the environment. Poor waste management in the county has been attributed to Limited infrastructure and funds to develop and boost waste management as well as general citizen irresponsibility in waste management. The overall objective is to establish an effective and efficient solid and management system. To achieve this, the county shall adopt the following strategies:

i. Formulate relevant laws and policies to guide waste management in Migori County
ii. Enforce the existing policies recommended oversight authorities e.g. Department of Public health, NEMA etc.

The strategies discussed above shall be achieved through the following projects and programmes:

i. Prepare a County Integrated Sanitation Master plan to guide investment in sanitation infrastructure in the county
ii. Improve Kiringi Bridge waste management facility to meet the public health standards
iii. Establish a sewer system in major towns within the county

6.4.3 Electricity

Generally, the connection of households to electricity in the county is relatively low, estimated at only 40% in 2020. This low coverage is attributed to low levels of affordability of the population to do connections, inadequate electricity infrastructure as well as the high demand which exceeds supply. To improve the general coverage of electricity connections as well as the national government's goal of achieving universal electricity connection in the country, Migori County shall adopt the following strategies:

i. Explore alternative energy sources such as solar power to increase electricity supply and reliability.
ii. Establish policies to subsidize cost of accessing electricity.
iii. The strategies discussed above shall be achieved through the following projects and programmes:
iv. Construction of a mega-dam along River Kuja

v. Construction a new power plant at the mega dam
vi. Installation of a new generators to maximize its potential for energy production
vii. Set up a solar energy plant in the county to supplement the power supply gap
viii. Sensitization workshops on the need for infrastructure to help curb the rampant cases of vandalism

6.4.4 ICT and Telecommunication

Despite Migori being connected to the National Optic Fibre Backbone, the connection to ICT in the county still remains relatively low. The inadequate access to ICT services is as a result of Limited access to NOFB as it only traverses one corridor of the county as well as poor maintenance of ICT infrastructure. Equally, there are external factors contributing to service delivery inconsistencies which lead to constant disruption of internet services. Inadequate funding and resource allocation in the ICT and telecommunication sectors has hindered development and service delivery in the sector. The county shall therefore adopt the following strategies:

i. Increase access to internet services within the county
ii. Incorporate ICT in day to day running of county processes
iii. Capacity building to increase the level of ICT skills within the county

The following projects and programs shall be undertaken in pursuit of the strategies

i. Connecting all sub county headquarters to NOFB
ii. Develop and adopt an integrated digital data management system and service provision.
iii. Increase staffing levels within the county ICT department
iv. Roll out a training program to equip staff with relevant IT skills

6.4.5 Health

The provision of health facilities is important for the wellbeing of the population within Migori County. The delivery of health services in the county face challenges such as inadequate staffing, inadequate medical facilities e.g. Laboratories and wards, inadequate support infrastructure, equipment, drugs and lack of specialized treatment in most facilities. These challenges are attributed to by financial constraints and limited land for expansion of the health facilities to meet the current requirements;

The health service sector shall adopt the following strategies:

i. Bridge the gap in the provision of health facilities according to the recommended standards

ii. Improve the quality of service delivery in the health sector within the county.

The above mentioned strategies shall be achieved through the following proposed projects.

i. Increase staffing levels to meet the recommended medical staff to patient ratios
ii. Acquire adequate land for the establishment and possible expansion of the health facilities
iii. Provide necessary utility infrastructure in all level 4 & 5 facilities
iv. Construct a health centre in North Kadem and Kachieng' Wards
v. Provide a dispensary in Macalder Ward
vi. Construction of staff housing

6.4.6 Education

The analysis undertaken to establish the level of education services provision in the county revealed that the number of ECDE, primary and secondary facilities is adequate considering the current and projected population of the county. Furthermore, the analysis established that the level of accessibility is sufficient as the distribution of the facilities meets the recommended standards. It was however established that the challenge in the delivery of education services is the quality of infrastructure within the facilities, as well as the quality of educational services related to staffing, equipment and availability of learning materials.

The county shall hence embark on a strategy to improve the quality of service delivery in the education sector within the county, hence the following projects shall be implemented;

i. Meet the recommended teacher student ratios
ii. Incorporate PWD friendly infrastructure in all public institutions
iii. Establish an learning facility for adult education within the county

6.4.7 Recreation and Community Facilities

The provision of recreation facilities in the county is inadequate. Equally, the condition of the infrastructure remains poor. To resolve this situation, the county shall adopt the following strategies:

i. Bridge the gap in provision of recreational and community facilities to the recommended standards
ii. Improve the delivery of services offered by these facilities

These strategies shall be achieved through the following projects and programs;

i. Renovation of Uriri stadium

ii. Formulation a policy for community facility provision in urban areas in the County
iii. Establishment of an urban park in Migori Town

6.5 Environment and Natural Resources Strategy

Natural Resources

Natural resources need to be protected and conserved to ensure they are not depleted and they serve the future generations. These includes resources such as forests, rivers, hills, lakes and swamps. The human activities that revolve around these resources lead to issues such as siltation on river beds, deforestation, & encroachment on the resources, pollution and disasters such as fire outbreaks. These issues will be countered by the following strategies;

i. Enforcement of environmental laws and regulations relating to the use and protection of rivers.
ii. Promotion of the use of sustainable energy sources such as LPG, solar and biogas through provision of subsidies.
iii. Creation of awareness on good farming practices such as agroforestry and promote the same through provision of free tree seedlings to farmers.
iv. Formulation of a county policy that will ensure protection and conservation of Non-gazetted.
v. Reinstating capacity of forest management institutions to facilitate proper forest management.
vi. Enforcement of environmental laws relating to protection of riparian reserves.
vii. Enforcement of environmental laws relating to effluence discharge to water bodies.
viii. Restriction of human activities to minimize fire outbreak incidences.
ix. Preparation of a disaster management strategy to help mitigate disasters in the county.

Projects /programs

i. Enforce all environmental laws and regulations relating to the use and protection of rivers.
ii. Provide subsidies to facilitate acquisition of sustainable energy sources such as LPG, Solar and Biogas
iii. Create awareness on good farming practices such as agroforestry
iv. Establish a programme to distribute free seedlings to farmers
v. Formulate a county policy to guide the protection and conservation of non-gazzeted forests in the county

vi. Reinstate capacity of forest management institutions by providing necessary equipment and human resources

vii. Enforce all environmental laws and regulations relating to the use and protection of rivers.

viii. Enforce all environmental laws and regulations relating to effluence discharge to water bodies

ix. Develop a disaster management framework to guide disaster management operations in the county.

Energy Resources

The main energy resources in Migori County include wind, solar and wood. There is need to minimize the use of non-renewable energy sources through technology and exploitation of alternative energy sources. This is realized when there are an increased number of people using environmentally friendly energy sources such as solar, wind, LPG and biogas. To achieve this the following strategies will be implemented;

i. Invest in appropriate energy technology and infrastructure.

ii. Invest in renewable energy and provide subsidies for acquisition of the same.

Project

i. Provide subsidies to facilitate acquisition of sustainable energy sources such as LPG, Solar and Biogas

Mineral resources

There is need to ensure sustainable exploitation of the mineral resource base in Migori County. The following strategy shall be implemented;

i. Invest in the exploitation of mineral resources and enforce laws and regulations relating to the exploitation of mineral resources.

Projects /programs

ii. Enforce laws and regulations relating to the exploitation of mineral resources.

iii. Develop a county policy to guide the exploitation of mineral deposits in the county

6.6 County Economic Development Strategy

Various sectors contributing to the county's economy include agriculture, tourism, trade and transportation. To improve the County's economy, access to capital and technology are key parameters that should be considered along all sectors as strategies to increase productivity.

Agriculture

As a means to optimally utilize the agricultural potential in the county for the benefit of the economy, various issues alongside their root causes were identified in order to help in the formulation of strategies and projects. The issues identified were as follows:

- Over-reliance on rain-fed agriculture
- High cost of farm inputs such as agrochemicals and other inputs
- Limited adaptation of technology in crop production processes
- Pest and disease infestations on crops and livestock
- Poor market for farm produce
- Limited farmer support in training, extension services, marketing, and storage of produce
- Limited value addition to farm produce
- Limited capital access to promote investment in technology in production

To promote the role of agriculture in economic development for the county, the following strategies and projects were proposed:

Strategies

- Awareness creation on modern farming methods including greenhouse farming, irrigation and climate smart agriculture. Modern farming shall be used as a strategy to achieve maximum productivity while adapting to climate change.
- Establishment of a county revolving fund to support farmers and farming related initiatives in the county. This fund shall be a means of easing access to capital to the residents.
- Provision of subsidies by the government on farm inputs such agrochemicals and fertilizers. This will help in ensuring that farm inputs in the county are affordable to residents in the county.
- Awareness creation on pest and disease mitigation measures and increase provision of extension services to farmers.

- Establish proper market systems for the county through farmer associations and price regulation. This strategy shall help in preventing farmer exploitation by middle men.
- Investment in the establishment of agro-processing industries in the county based on raw materials availability. This shall aid in value addition and therefore more money in the pockets of residents.
- Establishment of a county agriculture policy to focus on farmer training, provision of extension services and marketing systems for farm produce.

Projects

- Create awareness on modern farming methods including greenhouse farming, irrigation and climate smart agriculture.
- Establish and roll out a county revolving fund to support farmers.
- Develop a policy to guide and enable the provision of extension services and subsidies on farm inputs, marketing and regulate prices for farm produce
- Revive the fish processing industry in Opapo
- Regularly provide extension services to farmers and provide subsidies for all farming inputs
- Provide incentives to farmers to encourage the establishment of cottage industries including Jaggery in Awendo, Weaving in Sori, Migori and Isibania and Pottery in Central Sakwa & Central Kamagambo
- Introduce new policies in favor of the operationalization of the South Nyanza Sugar Company Limited

Industrialization

The agro processing potential of Migori County has over the years been underutilized. To impeccably tap into the potential, issues affecting Industrialisation in the county were looked into in order to develop practical strategies and projects to undertake and revive Industrialisation in the county. The following issues were discovered:

- Inadequate infrastructure such as roads and electricity connection that has limited the establishment of small-scale industries.
- Under exploitation of the industrial potential in the agro-processing sector.
- Limited access to capital to venture into small scale industries (value addition).

- Environmental degradation due to non-rehabilitation of open pits, use of hazardous chemicals and elements such as mercury and cyanide.

To tap into the industrial potential of the county, the following strategies and projects were proposed:

Strategies;

- Allocate adequate funds towards infrastructure development to support industrialization.
- Develop a county industrialization policy to guide investment and capacity building in agro-processing amongest other forms of industrialization.
- Establish a county revolving fund to promote startups/business ventures in the county. This fund shall be a means of easing access to capital to the residents.
- Enforce laws and regulations relating to rehabilitation of pits, and release of industrial effluent. Enforcement of these laws shall ensure that the environment is not degraded and that resources are utilized in a sustainable manner.

Projects;

- Develop a county industrialization policy to guide investment and capacity building in agro-processing amongst other forms of industrialization.
- Improve infrastructure and services to encourage industrialization
- Establish and roll out county revolving fund to promote startups/business ventures in the county
- Enforce laws and regulations relating to rehabilitation of pits and release of industrial effluent into the environment.

Tourism

The county has various tourism sites and areas that have been underutilized. To efficiently utilize the existing tourism sites in the county, problems affecting the tourism sites were identified so as to help in the identification of practical solutions. Identified issues are as shown below:

- Neglected and under developed tourism sites and areas
- Insufficient efforts in marketing tourism attraction areas in the County
- Inefficient transportation system limiting the access of the existing tourism site
- Encroachment of tourism attraction sites and areas

To maximally utilize the existing tourism sites and areas as an economic sector, the following strategies and projects were formulated:

Strategies;

- Adequately invest in tourism and improve the tourism attraction sites and areas to make them more appealing and attractive
- Formulate and implement a tourism and hospitality promotion framework to guide the exploitation of tourism sites both cross border and within
- Develop cultural tourism by promoting events around cultural events to promote cultural tourism
- Embark on the marketing of the tourism sites and areas in the County through exhibitions in regional, national and international forums. This strategy shall help increase the number of tourists visiting the county.
- Create an efficient transportation network system to facilitate movement and access to tourism sites and areas
- Protect the tourism attraction sites and areas through Gazettement to prevent human encroachment and unsustainable utilization.

Projects;

- Formulate a tourism and hospitality promotion policy to guide the exploitation of tourism sites in the county
- Gazette all potential tourism attraction sites and areas
- Market the tourism sites and areas in the county regionally, nationally and internationally.
- Establish necessary infrastructure and services in all potential tourism areas.

Trade

Both formal and informal business activities contribute over 45% to the economy of Migori County. However, various issues affect trading activities in the county limiting the sector's contribution to the county's gross product. These issues include:

- Inadequate market infrastructure in the County
- Limited recognition and incorporation of informal trading activities in the development planning of the County
- Poor and inadequate support infrastructure in all rural centers hinder trade and commerce
- Inadequate capital for residents to venture into business

To promote trade as a contributor to the County's economy, the following strategies and projects are proposed:

Strategies;

- Acquire land, on need basis, for the development of market infrastructure in underserved areas
- Develop a county trade and enterprise development policy to guide and create an enabling environment that supports investment and trade in both the informal and formal sectors
- Allocate adequate funds towards improvement of infrastructure such as electricity, roads and water supply and sanitation to assist in revitalizing economic activities.
- Establish a county revolving fund to support business startups by easing access to capital

Projects;

- Acquire land and construct proper markets in select urban areas
- Develop a county trade and enterprise development policy
- Establish and roll out a county revolving fund to support business start-ups

Transportation

Transport is key in economic development as it facilitates the movement of goods and services from one place to another. On the other hand, minimizing traffic congestion on roads reduces the time taken to move goods and services. The transport sector earns the county government of Migori income mainly through parking fees. However, certain issues affect the transport sector in the county and therefore negatively impact the economy. These include:

- Inadequate parking slots in the county
- Loss of revenue from parking fees
- Traffic jams within Migori Municipality CBD
- Neglect of the water transportation infrastructure and service

To increase economic productivity through transportation, strategies and projects proposed include the following:

Strategies;

- Automate parking fees systems to minimize the loss of revenue from parking fees in the county
- Provide NMT facilities and infrastructure in major urban areas to improve safety, condition of roads and ease traffic congestion

- Adequately invest in water transportation system in Lake Victoria through machinery provision and water transport infrastructure development. Water transport can as well be taped as a tourism potential area
- Invest adequately in transport infrastructure development and develop adequate parking spaces in all urban areas in the county as a strategy to increase revenue collection through parking fees

Projects;

- Improve road surfaces conditions and expand all roads to recommended widths
- Establish adequate transport terminals including bus parkers and on street car parking facilities
- Automate parking fees collection systems in the entire county
- Construct walkways and cycle lanes in major urban areas
- Develop water transport infrastructure and establish water ways in the county

6.7 Social Development Strategy

The social development strategy addresses issues affecting the society including high poverty rates, low levels of public participation and insecurity. Additionally, it looks into distinct challenges affecting certain groups in society including the youth, people with disabilities, women and street families.

The main goal of this strategy is basically to improve the quality of life by providing solutions to these existing social development issues by proposing precise strategies and projects.

Marginalized Groups and Communities

Marginalized communities in the county include youth, women, children and PWDs. They face challenges such as unemployment, illiteracy, early and forced marriages and poor infrastructure. Minority communities such as the Abasuba are also marginalized. There is need to promote equity in distribution of resources and services to ensure that the marginalized groups are catered for in the community.

The following strategies and projects shall be implemented to achieve equity in the county;

Strategies

- Promote exploitation of agricultural and industrial potential to create employment opportunities.

- Promote the acquisition of technical skills and knowledge
- Promote access to the Youth Enterprise Development Fund
- Promote CBC education system in schools.
- Mitigate teenage pregnancies.
- Improve access to and education on contraceptives.
- Formulate an employment policy that guides the employment of PWD.
- Promote women empowerment

Projects

- Establish Youth Economic Empowerment fund.
- Establish bursary program for TVETs and vocational training.
- Introduce sex education in schools and social gathering.
- Provide PWD friendly infrastructure in all public facilities.
- Establish women empowerment and support groups.
- Establish rescue centers for street children and women.
- Establish rehabilitation centers on drug abuse.

Public participation

Effective public participation in the County has not yet been achieved. Currently, there is no formal institutional framework in the County that shapes and enables effective citizen engagement and participation in the County's development. To increase public participation in the county, there is need to establish a framework to guide public participation and ensure that the public is involved in decision making for all projects that affect their livelihoods.

Additionally, there is need to educate the public that it is their right to participate and be involved in decision making processes of all projects in the county as provided for in the constitution of Kenya, 2010.

Poverty and Insecurity

The poverty level in the County is approximately 46.7% as indicated in the Migori County CIDP, 2018-2022. The rate is relatively higher than the national poverty rate, which is at 45.9%. The high poverty levels have been associated with over reliance on agriculture, poor infrastructure and services and inadequate knowledge and skills.

Insecurity issues in the county include cattle rustling in Kuria Sub County, vandalism of public infrastructure including solar street lighting and small crime activities. Major causes of insecurity in the county include high rates of unemployment amongst the youth, low levels of income from agriculture and lack/inadequate skills and knowledge on entrepreneurship.

To improve the economic status of the residents as well as improve security, the following strategies and projects are proposed;

Strategies

- Establishment of a county revolving fund to support business startups. This shall help improve and encourage self-employment and entrepreneurship.
- Establish necessary infrastructure and services to encourage retail activities.
- Support farmers in various ways to help increase productivity in farms. This could be done through establishment of a framework to offer extension services to farmers including provision of subsidies on farm inputs and training on best farming practices and climate smart agriculture.
- Support small scale traders to improve on record keeping and management
- Establish adequate institutions in the county to increase skilled labour force in the county on matters entrepreneurship, craft and value addition

Projects

- Establish and roll out a county revolving fund to support business startups and farmers
- Establish/improve infrastructure like roads, sewer and sanitation, water supply, electricity and markets in all urban areas
- Establish adequate technical training institutes as per the population needs
- Develop a capacity building programmes for farmers and small-scale traders in the county
- Offer extension services to farmers to help improve productivity

6.8 Strategy for Mainstreaming Crosscutting Issues

CHAPTER SEVEN : WAY FOWARD

The Migori County Spatial Planning process is at an advanced stage, with the Consultant so far having managed to undertake a study, whose analysis of findings led to the development of the draft plan proposals, namely; the county spatial structure, land management policies and sector development strategies. The next steps outlined below are aimed at ensuring delivery of the project deliverables in time to meet the stipulated timelines as per the terms of reference;

i. Validation of draft plan proposals with various stakeholders including the Migori CSP planning committee, ministries, county departments and agency heads/ representatives, & local residents;
ii. Filling of data gaps identified from the analysis of findings of the study undertaken for Migori County;
iii. Improvement of the situational analysis based on gaps filled;
iv. Incorporation of comments obtained from stakeholders during the validation exercises;
v. Finalization of the project implementation strategy
vi. Preparation of a project Monitoring and Evaluation Framework
vii. Preparation of a Capital Investment Plan
viii. Compilation and submission of a 2nd Draft Plan Report
ix. Validation of the 2nd Draft Plan proposals with stakeholders
x. Incorporation of comments on the 2nd Draft Plan proposals
xi. Compilation and submission of a Final Draft Plan Report to the client