

‘Towards an Outstanding Agro- Industrialized Sustainable County with High Quality of Life for Residents.’



SEPTEMBER 2020

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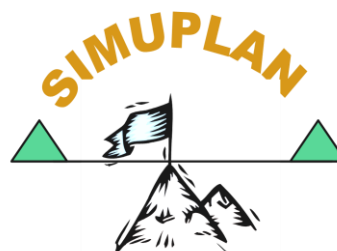
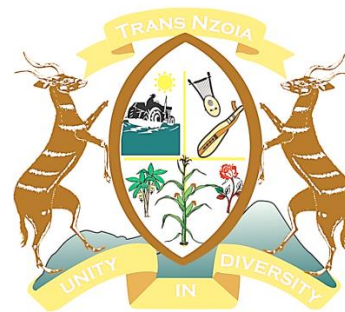
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PLAN APPROVAL AND CERTIFICATION

The Trans Nzoia County Physical and Land Use Plan (2020-2030) has been prepared and published as per the requirements of the Constitution of Kenya (2010), the Physical and Land Use Planning Act, 2019, the Urban Areas and Cities Act, 2011, the County Government Act, 2012 , the County Spatial Guidelines (2018) and the Planning Standards and Guidelines.

Prepared By:

_____ *Date:* _____
Plan. Prof. Leonard Simiyu Mulongo (Rpp0058), Director, Simuplan

Certified By:

I certify that this plan has been prepared in accordance with procedural and substantive provisions of the relevant planning statutes and in observance of all requisite procedures and standards.

_____ *Date:* _____
County Director of Physical Planning, Trans-Nzoia

Adopted By:

This plan is developed by the County Executive Committee pursuant to Section 110(3) of the County Governments Act 2012 and is hereby adopted and recommended for approval by the County Assembly of Trans-Nzoia

_____ Date: _____

CECM-Physical Planning, Housing and Urban Development

Approved By:

Pursuant to the legislative authority granted in Article 185(4) of the Constitution of Kenya (2010) and function designated in Section 8(1) e of the County Governments Act (2012), the Trans-Nzoia County Assembly hereby approves of this plan.

_____ ***Date:*** _____
Clerk to the County Assembly of Trans-Nzoia ***Hansard No.***

Endorsed By:

The County endorses this plan, as approved, and commits its effort and resources towards the realization of envisaged outcomes, and for the benefit of the People of Trans -Nzoia County

_____ ***Date:*** _____
H.E. The Governor, Trans-Nzoia

FOREWORD

This spatial plan comes at a time when the County is seeking to establish an economically, physically, environmentally and socially integrated system that can contribute in transforming the County's full development potential for sustainable growth.

The overall purpose for preparation of Trans Nzoia County Physical and Land Use Plan is to evaluate the County's physical, infrastructural and human resources. It is aimed at establishing their asset values and potentials, and inherent weaknesses that may limit possibilities for effective exploitation in execution of on-going development projects. The plan assesses the County's territorial positioning; functional integration and connectivity within Kenya's North Rift region and beyond Kenya; as well as examines how the fore mentioned serve to enhance or exhibit the County's competitiveness during and post the Plan period (2020-2030).

With a rich geological structure comprising of fertile soils and rich ecological potential, the County will remain as Kenya's Grain Basket especially in the production of maize, wheat, sunflower and recently sugar cane.

The County Physical and Land Use Plan provides a spatial framework to effectively anchor the County's development agenda and guide the socio-economic pursuits of the people. In pursuit of their development agenda, the people of Trans-Nzoia will separately and jointly be guided by three base questions; What do I have? What do I want? And how will I get what I want?

The Plan provides more certainty about; where development will occur; what it will be like; when it will happen; why it will happen; how the cost will be met; by who? And goes a long way in enabling the County to achieve aspirations of Kenya's Vision 2030 as illustrated in the County's Spatial Plan Vision.

In order to realize the County's Vision as an outstanding agro-industrialized sustainable County with high quality of life for residents, my Government will undertake: environmental protection and conservation of vulnerable places; development and optimization of County land potentials; exploration and sustainable exploitation of natural resources; diversification of agricultural produce. Others will include: adoption of sustainable and economically viable farming practices and techniques and improved marketing and enhancement of value addition industrialization as mandated and obligated by Section 102, 104 and 106 of the County Government Act 2012.

The key principles to guide the plan at implementation will include; dialogue, inclusiveness and civic engagement from the grass root.

To this end, the County Physical and Land Use Plan shall be oriented to Local conditions, knowledge and strategies so as to ensure real, purposeful and meaningful public participation as provided for under article 10(2) of the Constitution.

Let us journey together to realize the prosperity for our great County and Country.

.....
Governor, Trans Nzoia County

.....
Date

ACKNOWLEDGEMENT

In the course of preparing this County Physical and Land Use Plan (2020-2030), we received numerous and invaluable assistance and feedback from various stakeholders. Constraints of time and space do not allow us to mention them all: hence, we take this opportunity to thank them all for their contribution.

Sincere appreciation to the County Government of Trans-Nzoia for believing in our ability to deliver on the given assignment. We are especially indebted to: Christine Tanguli (CEC- Ministry of Lands, Housing, Physical Planning & Urban Development): Susan Ngera (CO- Ministry Of Lands, Housing, Physical Planning & Urban Development): Beatrice .W. Wangila (County Planner-Ministry of Lands Housing & Urban Development): John Sitienei (County Planner): Edith Barasa (County Planner): James Abuya (County Planner) and Kenneth Langat (County Planner). Much gratitude is due to the staff at Simuplan for their tireless effort in preparing this plan. The team players: Pln. Wasike Nalyanya (Project Physical Planner): Pln. Emmily Bakhita Cheptoo Limo (Project Physical Planner): Pln. Purity Mideva Embanga (Project Physical Planner): Dr. Patrick Kere Maelo (Project Environmentalist): Dr. Pacifica Chepkosgei Mining (Project Sociologist): Jimmy Sichangi (Project Digital Mapping Expert): Boniface Wanyama (Project Surveyor): Eng. Kipsang Nyolmo (Project Infrastructural Engineer): Dedan Onganya (Project Housing Expert): Patrick Kubuon(Project Economist): Elijah Kandie (Project GIS Expert) and Emerald Awuor(Assistant Surveyor).

Special thanks to the residents of Trans-Nzoia County for the useful comments that provided valuable input for the plan.

Last but not least, sincere gratitude to the Almighty God the giver of all life for making us robust individuals to undertake this task.

Executive Summary

Faced with the challenge of transforming the available resources into goods and services for sustainable growth, Trans-Nzoia County Government commissioned Simuplan Consultants to prepare a GIS –Based County Physical and Land Use Plan covering the period 2020 – 2030. The exercise was undertaken in line with section 102, 104 and 106 of the County Government Act, 2012.

The plan preparation process entailed Aerial Mapping of the County and Household Surveys out of which the County’s Strength, Opportunities, Weaknesses and Threats were identified. From the systematic analysis, together with consultative stakeholder meetings at Sub County and County Levels, numerous proposals and action plans for both short and long term were derived.

The County Physical and Land Use Plan is structured in Nine Chapters each playing an instrumental role towards answering four key questions namely: Where are we now? Where do we want to go?, How do we go there? and Have we arrived?

Chapter One, Two and Three provide the Introduction and outlines the meaning, scope and purpose of spatial planning, methodological approaches adopted, the rationale for preparing the spatial plan, strategic direction and Constitutional, legal and policy basis. Chapter Four and Five deal with the Situational Analysis of the planning area and indicates location, resource endowment, land use patterns and practices, sectors policies and plans and synthesizes emerging planning issues. Chapter Six focuses on Development alternatives while Chapter Seven Plan Proposals and Strategies. Chapters Eight and Nine covers Implementation Framework and Capital Investment Plan.

In conclusion, each of the above chapters plays an instrumental role towards laying the foundation in fulfilling the County’s Development desires as pointed out in its Vision

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CHAPTER 1.0 INTRODUCTION

1.1 Overview

This chapter examines the concept of spatial planning, problem statement, justifications for County Spatial Planning, purpose and objectives, planning methodology, and expected deliverables.

1.2 Concept of Spatial Planning

These are methods and approaches used by the public and private sector to influence the distribution of people and activities in available spaces at various scales. It is also viewed as the coordination of practices and policies affecting spatial organization synonymous with urban planning practices.

Early usage of the concept dates back to the European Regional/Spatial Planning Charter (often called the 'Torremolinos Charter'), adopted in 1983 by the European Conference of Ministers responsible for Regional Planning (CEMAT). During the conference, it was determined that the main objective of regional planning was basically to provide the geographical expression to the economic, social, cultural and ecological policies of society.

Over time, various planning systems have emerged globally with the form basically attributed to the systems of governance prevailing in the given state. In Africa, most countries after independence borrowed a lot from their colonial masters. Kenya for instance adopted what came to be referred to as African Socialism as per Sessional paper number 10 of 1965. It advocated Centralized system of governance with decisions emanating from the top otherwise referred to as Top Down approach to planning. This system however had numerous challenges especially in examining the actual issues affecting the local communities in totality. After the promulgation of the Kenyan Constitution on 27th August 2010, the system of planning also changed and was tailored along decentralized (devolved) system of governance. As an approach of governance, it has tremendously influenced numerous decisions including spatial planning; with the most notable being making planning a people-centered agenda.

1.3 Mandate of National and County Governments

The constitution appreciates that spatial planning function is a concurrent function of both the national and County governments with each system playing a distinctive role in the process. As

stated clearly in Chapter Eleven of the Constitution, the mandate of the National Government in spatial planning includes: formulation of spatial planning policies, strategies and guidelines applicable throughout the country; preparation of National Spatial Plan; coordination of the preparation of regional/inter County spatial plans; undertaking research on spatial planning matters of national importance and offering capacity building and technical support to the County governments.

Similarly, under Part 11 Article 8 of the Fourth Schedule of the Constitution County governments are charged with the responsibility of County planning and development. In undertaking this mandate, the County governments perform the functions of; formulating County specific policies, strategies and Guidelines; preparation of County spatial plans and urban spatial plans; implementation of the plans; undertaking of research on spatial planning within their area of jurisdiction and participating in the preparation of regional spatial development plans. This responsibility is further emphasised by the Urban Areas and Cities Act, 2011 and the County Government Act, 2012.

Consequently, this exercise of preparing County Physical and Land Use Development Plan for Trans Nzoia is in line with the above stated mandate.

1.4 Linkages with other Spatial Plans

Since planning system in Kenya today is divided into two levels, namely National and County, this County Physical and Land Use Development Plan therefore has been prepared in cognizance of the various plans existing at the respective levels as clearly illustrated below.

National level plans comprised of:-

- Medium-Term Plans (MTPs)
- The National spatial plan (NSP) and
- Sectoral policies.

Although MTPs are a series of successive five year economic plan meant for implementing the Flagship Projects identified under Vision 2030 as well as other key policies and programmes at the national level, this plan has synchronized the various MTPs whose implementation positively

impacts on Trans Nzoia County. (Infrastructure development, food security, Housing and industrialization).

Equally, while NSP outlines strategies and policies relating to the use of land at the national scale including grounding of the flagship projects of vision 2030 and the coordination of sectoral policies and plans, this plan has integrated various policies conceived at the national level especially those related to water tower and forest conservation affecting major ecosystems located within the County (Mt. Elgon and Cherangany Hills).

At the County level, instrumental plans comprise:-

- County Integrated Development Plan (CIDP),
- County Physical and Land Use Development Plan (CSP) and
- County specific sectoral policies and plans

The CIDP is a counterpart plan of the MTP at the County level. It is meant to implement projects identified in the County Physical and Land Use Development Plan. The projects may be identified in this plan and County sectoral plans. In relation to the undertaking of the spatial planning exercise for the County, the CIDP 2013-2018 and CIDP 2018-2022 for Trans Nzoia County laid a foundation especially in articulating key areas required for the growth of the County.

In the absence of County Physical and Land Use Development Plan for Trans Nzoia, the completion of this plan will add value as a counterpart of the National Spatial plan especially in outlining strategies and policies relating to the use of land within the County including grounding of the projects identified under the NSP and the coordination of the County sectoral policies and plans. Low level plans such as Integrated Urban Development Plans, Local Physical Development Plans and Urban Renewal/Regeneration Plans shall benefit from the spatial plan.

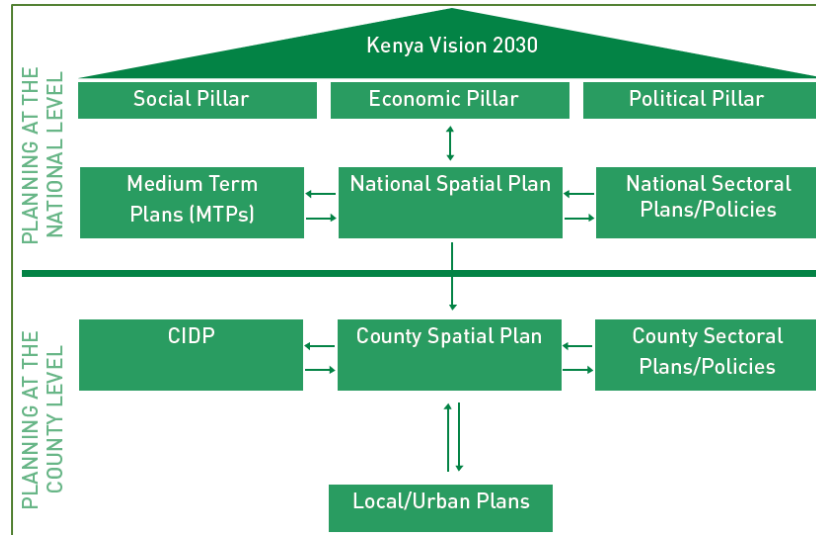


Figure 1: Linkage with other plans
(Source: County Spatial Planning Guidelines, 2018)

1.5 Problem Statement

Trans-Nzoia County in resemblance to other counties in Kenya experiences the challenge of rapid urbanization and modernization including: Rapid population increase leading to reduction of agricultural land; high rate of unemployment and poverty levels; under-performing economy in terms of Agriculture, tourism and industry etc.; unpredictable climatic conditions; poor infrastructure to harness the County's locational advantage; under exploited water resources and pollution the water bodies; poor road conditions; inadequate infrastructure in terms of capacity, distribution and quality; environmental degradation and depletion of wetlands and forest; urban sprawl, emergence of informal settlements among others.

It is important to have a blue print to guide growth and development; without which development will become unbalanced and haphazard. Trans-Nzoia County Government presently lacks an up-to date land use information. With the preparation of the plan, such data will be made available and go a long way in informing development decisions, formulation of financial proposals, prioritizing development and informing preparation of lower level plans.

1.6 Justification for the Plan

The preparation of the County Physical and Land Use Development Plan is anchored on the Constitution of Kenya, the Physical Planning and land Use Development Act, No. 13 of 2019 and the County Government Act 2012. These Acts provide for the establishment of devolved system of planning and also preparation of County Physical and Land Use Development Plan.

The preparation of this plan was also motivated by the need to address the above mention challenges in section 1.5 facing Trans Nzoia County.

1.7 Scope of the plan

In defining the scope for this assignment, three issues were examined: the geographical space, the planning horizon and the expected deliverable.

In terms of the geographical space and extent; the plan is confined within Trans-Nzoia County as per the boundaries obtained from the Independent Electoral and Boundaries Commission. The area covers approximately 2,486 square kilometers that includes Cherangany, Saboti, Endebess, Kiminini and Kwanza sub-counties.

The planning period is a ten year (2020-2030) blue print meant to guide growth and development of the County. The plan is expected to have five year mid-term reviews to take into account any arising issues and is therefore not a static document.

This assignment was meant to deliver a County Physical and Land Use Development Plan that constitutes detailed proposals and strategies set to achieve pre-determined goals and objectives packaged in the form of a detailed planning report and maps that portrays the vision of the people of Trans-Nzoia and that is prepared in accordance with the laid down rules, regulations, principles and processes.

1.8 Objectives of the County Physical and Land Use Development Plan

The exercise was guided by the following objectives;

- i. To identify the spatial distribution of the resources within the County, their level of utilization and potential;
- ii. To assess the existing infrastructure, their current conditions, capacity and projected demand;
- iii. To identify fragile ecosystems and suggest intervention measures for their protection and conservation;
- iv. To investigate human settlement trends and propose an appropriate hierarchy or urban centers that will spur rural development;
- v. To assess capacity of the existing institutions and organizations thus suggest strategies to enhance their performance;
- vi. To suggest an integrated spatial framework that will guide the sustainable utilization of the regional resource and
- vii. Bring services closer to the people;
- viii. Spur rural-urban inter-linkages and hasten economic growth and development;
- ix. Suggest priority areas for intervention.

1.9 Purpose of the Plan

Once implemented, the Spatial Plan will:

- i. Provide an overall spatial framework for the County to guide development
- ii. Interpret and localize national and regional policies and strategies
- iii. Guide rural development and settlement
- iv. Provide a basis for infrastructure and services delivery
- v. Guide use and management of natural resources
- vi. Enhance environmental protection and conservation
- vii. Identify opportunities for job creation and employment
- viii. Revitalize industries, trade and commerce to spur economic development
- ix. Improve transport and communication networks and linkages
- x. Identify and develop and guide urban systems in the County.

1.10 Guiding Principles

The following principles were observed during the exercise:

- Environmental sustainability;
- Balanced County development
- Sustainable development
- Livability and promotion of ecological integrity;
- Effective public participation;
- Urban containment/compact towns;
- Smart and green urban growth;
- Promotion of integrated transportation network;

1.11 Planning Approach

The County spatial planning process was participatory and it adopted the bottom up approach supplemented by GIS. The process involved experts from different disciplines and representatives from key sectors of development. Consultative meetings were held at various intervals in compliance with constitutional, statutory and regulatory requirements on public participation.

1.12 Methodology

This section outlines the stages in the County spatial planning process and methods applied in data collection, analysis and presentation. The process comprised of planning and survey components as outlined in the sections below.

1.12.1 Data sources

Primary data was sourced from Focus Group Discussions (FGD), interviews with key informants in Trans-Nzoia County, field observations& photography, field surveys and issuance of semi-structured questionnaires to residents to collect their views on the plan. Aerial imaging also served as a vital source for primary spatial data.

The planning team held various consultation meetings with relevant stakeholders to develop consensus and sensitize them on the process of preparing the County Physical and Land Use Development Plan. The issues that were considered included; household characteristics, socio-

economic patterns, land uses, transport and infrastructural provisions, essential amenities, the challenges and emerging issues.

On the other hand, secondary data was obtained by reviewing existing literature and documents such as; County Integrated Development Plan, existing plans, and any other relevant published and unpublished material related to the County.

1.12.2 Data collection Techniques

Different methods were applied to collect both qualitative (descriptive) and quantitative (numerical) data for the exercise. The figure below shows the data collection techniques that were used to collect data.



Figure 2: Data collection techniques
(Source: Simuplan, 2019)

Sampling method was used to determine the representative group from the Trans Nzoia population that actively participated in the County planning process. In this case, stratified and random sampling techniques were employed. The planning area was divided using the existing wards (strata) and proportionate population (respondents) were randomly selected from each ward. The respondents contributed their views in the exercise by providing specific information about the developmental aspects within their areas. These views collected from the proportionate population were assumed to represent the views of the entire County.

Primary Data Collection

The ward administrator for Cheraganyi, Endebess, Kiminini, Kwanza and Saboti were some of the identified key informants. They briefed the consulting team on their areas of jurisdiction when undertaking the exercise. Other methods used to collect primary data include: Field observation, photography, measurements and administration of household questionnaires.



Plate 1: Focus Group Discussions with residents of Endebess sub-County
(Source: Simuplan's Field work, 2018)



Plate 2: Focus Group Discussions with residents of Saboti sub-County
(Source: Simuplan's Field work, 2018)

Primary spatial data was acquired through aerial photography which entailed mounting of high resolution camera into the aircraft and flying over the planning area i.e. Trans Nzoia County. A series of raw aerial photos were taken using the flight lines prepared. The aerial photos were then ortho-rectified to produce 15cm (GSD) resolution imagery which was mosaic ked to produce the final Imagery of the County.



Plate 4: Project Digital Mapping Expert and pilot explaining to officials of Trans-Nzoia County Government the process involved in generating aerial photographs
(Source: Simuplan, 2019)



Plate 3: Speaker of Trans-Nzoia County Assembly preparing to board the aircraft used in capturing aerial photographs
(Source: Simuplan, 2019)



Plate 5: Process of acquiring a Series of raw aerial images

Source: <https://www.sanborn.com/oblique-imagery-operating-principles/>

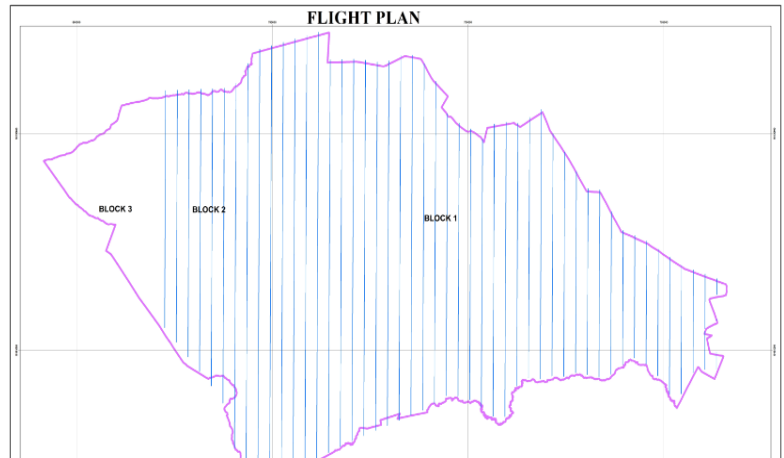


Figure 3: Flight Plan
(Source: Simuplan, 2019)

Secondary Data Collection

Secondary data was collected through review of literatures and documents. This involved analysis of experts' opinions on the subject matter through materials sourced from books and the internet. The use of legislation and other planning guidelines, for example the Physical Planning Handbook, The Physical and Land Use Development Plan No. 13 of 2019, The County Government Act 2012 were also served as basis for the preparation of the Trans-Nzoia County Physical and Land Use Development Plan.

Secondary survey data was collected through digitization of existing RIM maps and PDPs that were obtained from the client.

1.12.3 Data Analysis and Presentation

Both qualitative and quantitative data were analyzed appropriately. Qualitative data gotten from interviews, Focused Group Discussions, field notes and reports were thematically transcribed, coded, categorized and summarized. It also entailed sorting and editing of photographs.

Quantitative data was managed through SPSS Version 21.0 and Excel spreadsheets (Office 2013). The analysis was majorly descriptive involving representing data through counts and percentages; with the results presented in the form of graphs, charts and tables.

Spatial Data analysis was done using GIS software version 10.5. This entailed digitization of the County aerial image to extract spatial data such as roads, forests, water bodies, agricultural lands among many other spatial features. It also involved entry of attributes in the attributes data and finally production of thematic maps representing various aspects of the County such as the existing land use, roads, industries, urban centers etc.

1.12.4 Planning Process

The process was based on existent legal, policy and institutional frameworks. The planning phases comprised of specific activities as highlighted in the figure below:

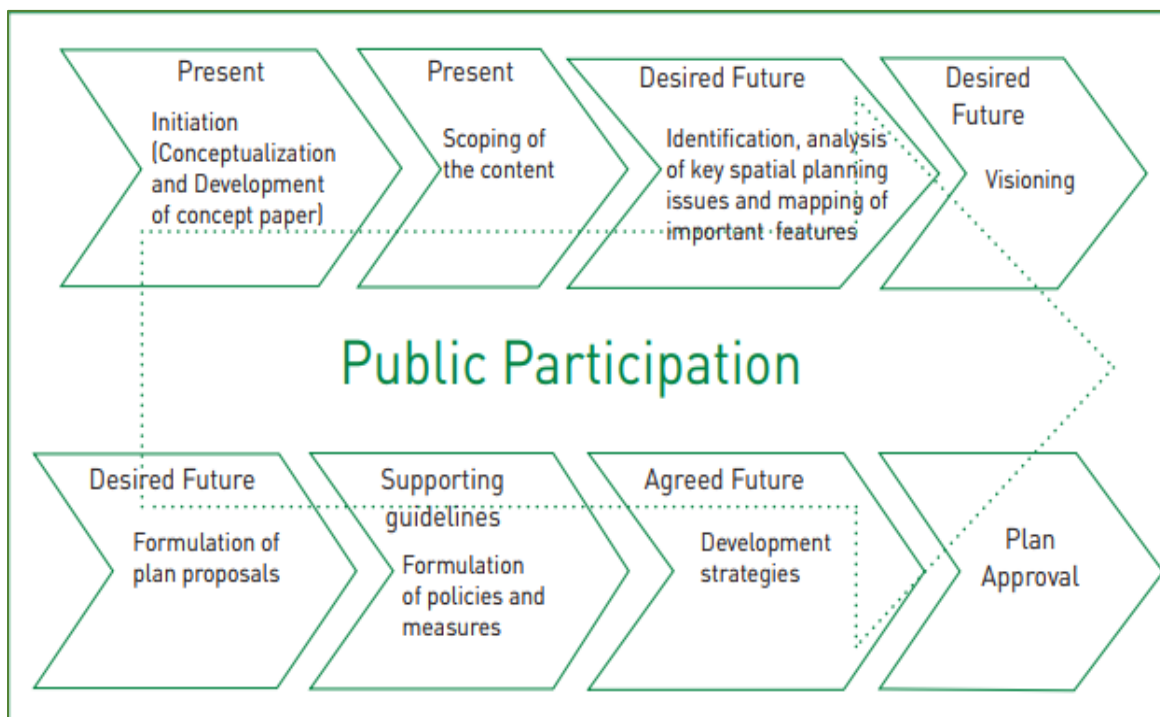


Figure 4: County Planning Process
(Source: COG County Spatial Guidelines, 2018)

a. Step One: Initiation

This step entailed defining the scope of works, interpreting the terms of reference and developing resource mobilization strategies. The following activities were undertaken at this stage;

- i. Scoping
- ii. Needs Assessment
- iii. Reconnaissance survey
- iv. Developing a data needs matrix

- v. Issuing notices-Intention to Plan
- vi. Stakeholder mapping

At the end of this stage, an inception report was submitted to the County government which basically outlined a blue print on how the consultant intended to carry out the assignment.

b. Step Two: Mapping, Identification & Analysis of key Planning issues

This step involved collection and analysis of both spatial and socio-economic data with the aim of establishing the key planning issues affecting the County. The analyzed data was presented in the form of photo-plates, graphs, pie-charts, reports and maps.

Delineation of the planning area was done by digital mapping that involved collection of data i.e. Aerial image, RIM, DEM was compiled and formatted for a virtual view. Detailed maps with accurate representation of a particular area detailing roads, terrain and land uses. The planning area was confined to the boundaries of Trans-Nzoia County as per the provisions from the Independent Electoral & Boundaries Commission.

c. Step Three: Visioning and Objective setting

The plan preparation process adopted a participatory approach that allowed various stakeholders to give their views and suggestions. Residents of Trans-Nzoia County envisioned a County that is well planned with adequate infrastructural amenities that enhance livability. The Trans-Nzoia County Physical and Land Use Development Plan sought to answer four planning questions as depicted in the figure below:



Figure 5: Strategic Planning Process

(Source: <https://www.pinterest.com/pin/514536326147554390>)

d. Step Four: Formulation of development scenarios/alternatives

This involved developing of scenarios of possible future development alternatives for the County based on the findings and conclusions from the situational analysis and the visioning phase. The outputs from this stage were presented in a spatial context and the desired outcomes, strategies and programs outlined.

e. Steps Five, Six & Seven

These steps involved developing strategies, policies and measures to address the challenges, and harness opportunities in order to achieve the stated plan objectives and vision of the County and also representing proposals (strategies, policies and measures) on maps and text describing the desired spatial structure.

f. Step 8: Compilation and packaging of the draft County Physical and Land Use Development Plan.

The final output of the CSP will be a planning report and a set of thematic maps and structural plan depicting the desired spatial structure of Trans Nzoia County. The draft plan will then be presented to the stakeholders for validation before being presented to the County assembly for approval. The plan will then be circulated widely for comments from the public.

1.13 Stakeholder Involvement and Consultation

The Constitution of Kenya (2010) in article 10, 27, 33 and 69 provides for mandatory public participation in all public affairs. Part VIII of the County Government Act provides for Citizen Participation in the County Planning process. Section 115 of the County Government Act states that public participation in the County planning processes shall be mandatory and be facilitated through provision to the public of clear and unambiguous information on any matter under consideration in the planning process, including: Clear strategic environmental assessments; Expected development outcomes; Development options and their cost implications.

Stakeholder participation in physical planning provides a platform for identifying insights and information about the community needs enhances public understanding of the project and builds consensus among the key stakeholders in the project.

Stakeholder meetings were held in each phase of the planning process. The first stakeholder meeting involved the County officials together with the planning team at the onset of the project where the consultant presented the project inception report. This meeting was meant to inform the client i.e. Trans Nzoia County government on how the consultant intended to carry out the assignment and the expected project deliverables.

The second stakeholder meetings were held in various wards in the County to engage the residents and raise awareness of the County planning process. The meeting provided the residents with an opportunity to identify planning issues in their respective wards. The meetings were organized in collaboration with the various ward administrators and area chiefs with support from the County physical planning officers.

The third stakeholder meetings were held in various sub-counties where the consultant presented the situational analysis report in each sub-County. A separate situational analysis stakeholder meeting was also held at the County headquarters where the planning technical committee and various County officials participated. Comments and views from these meetings provided valuable insights in filling in information gaps as well as enriching and supporting the County spatial planning process.

1st Stakeholder Meetings in different Sub-Counties-Sensitization and data collection



Plate 6: 1st Stakeholder Meetings in different sib-counties
(Source: Simuplan, 2019)

2nd Stakeholder Meetings at County Headquarters and Sub-County Headquarters- Situational Analysis



Plate 7: Presentation of situational analysis report to County officials and respective sub-County administrators
(Source: Simuplan, 2019)

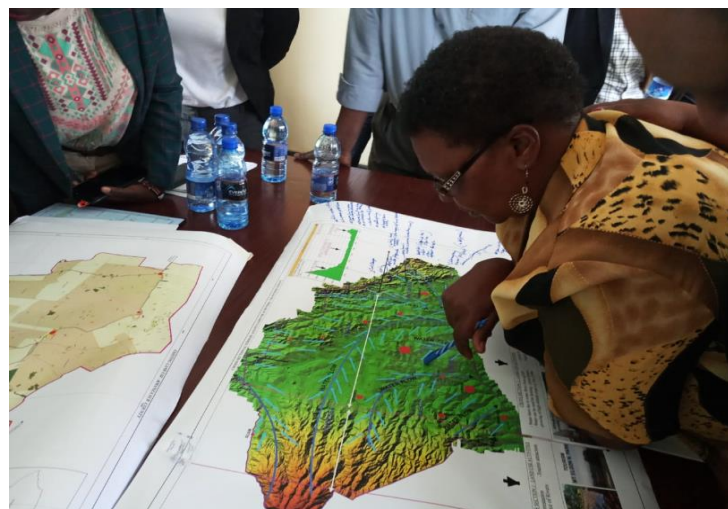


Plate 9: A County official studying the DEM map for Trans Nzoia County
(Source: Simuplan, 2019)



Plate 8: Assistant County Commissioner & County Director, Physical Planning in the County Physical and Development Plan situational analysis forum
(Source: Simuplan, 2019)



Plate 10: Cherangany sub-County residents engaging the consultant during the public participation forum
(Source: Simuplan, 2019)



Plate 11: Consultant engaging the Cherangany sub-County residents during the stakeholders' meeting
(Source: Simuplan, 2019)



Plate 13: Consultant presenting the CSP at Kwanza sub-County at sub-County headquarters
(Source: Simuplan, 2019)



Plate 12: Kwanza sub-County residents studying the existing land use map
(Source: Simuplan, 2019)



Plate 14: MCA addressing the Endebess residents during the stakeholder's forum
(Source: Simuplan, 2019)



Plate 15: Endebess Sub-County officials participating in the forum
(Source: Simuplan, 2019)



Plate 17: Saboti County officials contributing in stakeholders' forum
(Source: Simuplan, 2019)



Plate 16: Water officer in Saboti Sub-County addressing water related issues during public participation forum
(Source: Simuplan, 2019)



Plate 18: Consultant engaging Kiminini Sub-County residents during stakeholders meeting
(Source: Simuplan, 2019)

2nd Stakeholder Meetings at Kitale Museum- Validation workshop





1.14 Project Deliverables

At the end of the initiation stage and step 3 which involved identification of key planning issues and features, the consultant submitted the inception report and situational analysis report respectively to the County. The final output of this exercise is a spatial framework for Trans-Nzoia County to enhance efficient, effective and rational use of the County space for the period 2020-2030. This will be presented in the form of:

- i. Thematic maps
- ii. Preferred County land use framework
- iii. Scientifically researched detailed planning report
- iv. Detailed implementation matrix
- v. GIS Data Base
- vi. GIS Lab

CHAPTER 2.0 LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK

Overview

This plan has been prepared in harmony with the prevailing legal, policy and institutional frameworks as discussed below.

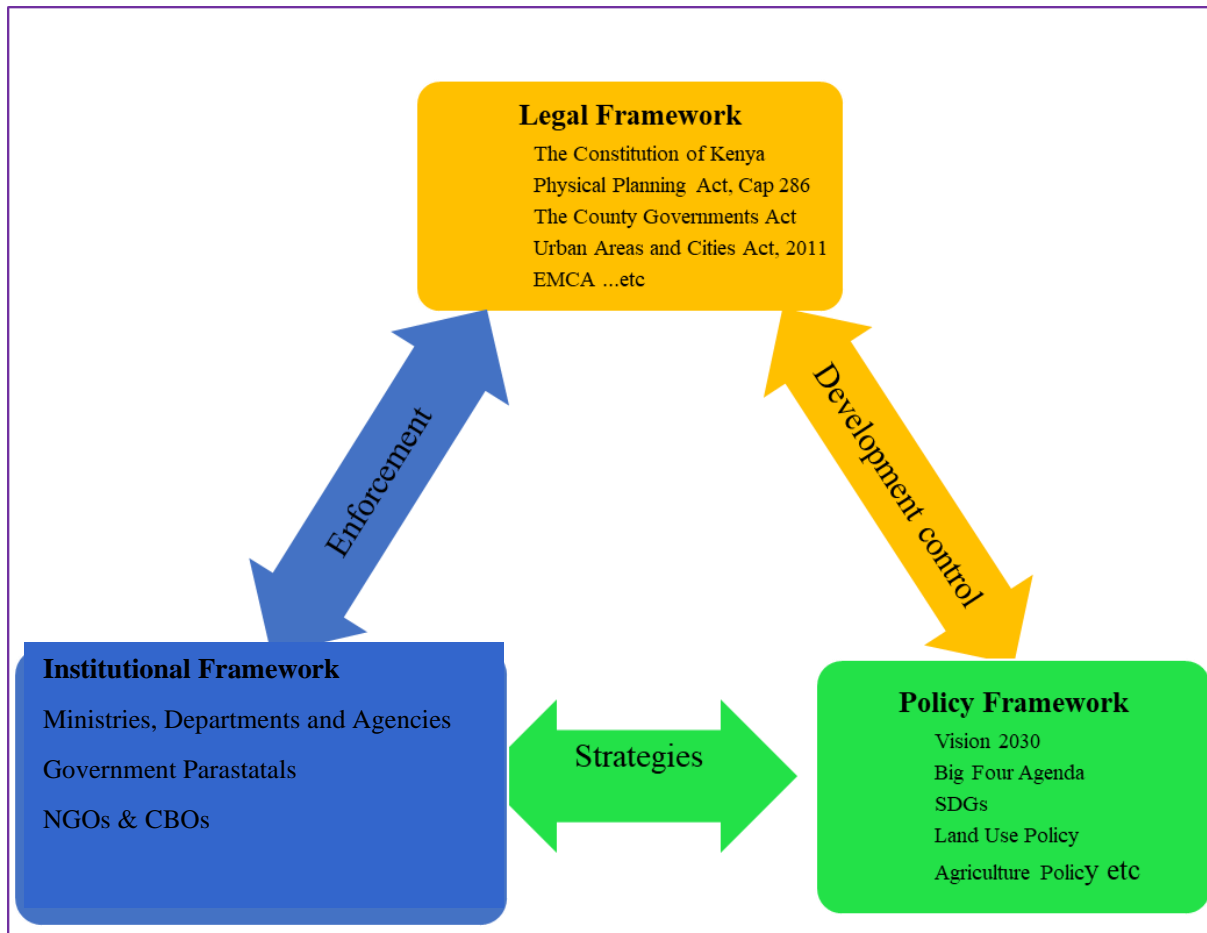


Figure 6: Reference framework
(Source: Simuplan, 2019)

2.1 Legal Framework

2.1.1 The Constitution of Kenya (2010)

The Constitution stipulates that every person has the right to accessible and adequate housing, and to reasonable standards of sanitation and to clean and safe water in adequate quantities and to social security.

Chapter five of the constitution covers the section of land and the environment. Section 60 (1) of the Constitution emphasizes that land should be held, used and managed in a manner that is equitable, efficient, productive and sustainable.

Subsection 67(h) gives mandate to the National Land Commission to have oversight responsibility over land use planning throughout the country (GOK, 2010).

In section 66(i), the constitution provides that the state may regulate the use of any land or any interest in or right over any land in the interest of defense, public safety, public order, public morality, public health or land use planning.

In section 69 (i) the state shall ensure to achieve and maintain a tree cover of at least 10% of the land area in Kenya. Every person has a duty to cooperate with state organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources. The state shall ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources and ensure equitable sharing of accruing benefits. This section also encourages public participation in the management, protection and conservation of the environment.

2.1.2 The Physical and Land Use Planning Act, No.13 of 2019

This is an Act of Parliament that makes provision for the planning, use, regulation and development of land and for connected purposes.

Section 3 of the Act provides for the objects of this act are to provide for the principles, procedures and standards for the preparation and implementation of physical and land use development plans at the national, County, urban, rural and cities level

- the administration and management of physical and land use planning in Kenya;
- the procedures and standards for development control and the regulation of physical planning and land use;
- a framework for the co-ordination of physical and land use planning by County governments;
- a mechanism for dispute resolution with respect physical and land use planning;
- a framework for equitable and sustainable use, planning and management of land;
- the functions of and the relationship between planning authorities;

- a robust, comprehensive and responsive system of physical and land use planning and regulation; and
- a framework to ensure that investments in property benefit local communities and their

Economies.

Section 14 of the Act provides for the establishment of a County Physical and Land Use Planning Consultative Forum. The main functions of the forum include provision of a consultative forum on County, inter-County and land use development plans, promotion of effective coordination and integration of physical and land use development and sector planning and also provide advice on the mobilization of adequate resources for the preparation and implementation of physical and land use development plans and strategies.

Section 36 of the Act provides for the preparation of County Physical and Land Use Development Plan every 10 years by each County in conformity to the National Spatial Plan and any other relevant Inter-County Spatial Plan.

Section 37 deals with the objects of the County Physical and Land Use Development Plans which include:

- to provide an overall physical and land use development framework for the County;
- to guide rural development and settlement;
- to provide a basis for infrastructure and services delivery;
- to guide the use and management of natural resources;
- to enhance environmental protection and conservation;
- to identify the proper zones for industrial, commercial, residential and social developments;
- to improve transport and communication networks and linkages;
- to promote the safeguarding of national security; and
- any other purposes that may be determined by the planning authority.

Section 39 lists the contents of the County Physical and Land Use Development Plan while section 40 provides for public participation in the preparation of the County Physical and Land Use Development Plan. It states that stakeholder's forums should be held in each ward in the County for effective public participation.

2.1.3 The County Government Act (2012)

The Act states that a County Government shall be responsible for planning and development of its County. The principles and objectives of County planning set out in Part XI of this Act are: facilitation of the development of a well-balanced system of settlements and ensuring productive use of scarce land, water and other resources for economic, social, ecological and other functions across a County; and the achievement and maintenance of a tree cover of at least ten per cent of the land. The County Government act provides for the decentralization of services to both urban and non-urban areas created by Urban Areas and Cities Act.

Part XI, Sub section 110 (2e and j) of the Act, the County Physical and Land Use Development Plan shall indicate desired or undesired utilization of space in a particular area and also indicate the areas designated for conservation and recreation.

2.1.4 Urban Areas and Cities Act (Amended 2019)

This is an Act of Parliament that gives effect to Article 184 of the Constitution; to provide for the classification, governance and management of urban areas and cities; to provide for the criteria of establishing urban areas, to provide for the principle of governance and participation of residents and for connected purpose.

Part II, Section of the Act establishes the criteria of establishing urban areas as well as the principle of governance and management (Part III, Section 11). Additionally, the Act provides that every city and municipality established under this Act shall operate within the framework of integrated development planning (Part V).

2.1.5 Land Act No.6 of 2012

The preamble to the Land Act provides that the purpose of the Land Act is to give effect to Article 68 of the Constitution i.e. revise, consolidate and rationalize land laws; provide for the sustainable administration and management of land and land-based resources and for connected purposes. The Land Act is the substantive law governing land in Kenya. It provides for the legal regime that governs; the administration and management of public land and private land; contracts over land, leases, charges, compulsory acquisition, easements and related rights.

Section 4 of the Act provides the values and principles that guide any land transactions which include; equitable access to land, sustainable and productive management of land resources,

participation, accountability and democratic decision making within communities, the public and the Government among others.

Section 5 highlights the types of tenure which are in consistent with the new constitution. Further, section 7 of Land Act explains the process of land and title acquisition.

Section 9 of the Land Act provides that any land may be converted from one category to another for example from public land to private land. Any substantial transaction involving the conversion of public land to private land shall require the approval of the National Assembly or County assembly as the case may be.

2.1.6 Environmental Management and Coordination Act, 1999 Amended 2015

The act was enacted to promote sustainable development, and this project observes the requirement as specified in the law. Section 3 of this Act stipulates that every person in Kenya is entitled to a clean and healthy environment and has the duty to safeguard and enhance the environment.

Under section 42 of this Act, no person shall without the permission of the Director general given after an Environmental Impact Assessment, in relation to a river or wetland in Kenya; erect, reconstruct, place, alter, extend, remove or demolish any structure or part of any structure in, or under a river or wetland; excavate, drill, tunnel, or disturb the river or wetland; deposit any substance in a river or wetland or in, on, or under its bed, if that substance would or is likely to have adverse environmental effects on the river or wetland; direct or block any river or wetland from its natural and normal course; or drain any river or wetland. It also states that the Minister may, by notice in the Gazette, declare wetland or river bank to be a protected area and impose such restrictions as he considers necessary, to protect the wetland or river bank from environmental degradation. In declaring a wetland or river bank a protected area, the Minister shall take into consideration the geographical size of the wetland or river bank and the interests of the communities' resident around the wetland or river bank concerned.

Under section 42 ,subsection (3) of the act, the Minister may by notice in the Gazette, issue general and specific orders, regulations or standards for the management of river banks, wetlands and such orders, regulations or standards may include management, protection, or conservation measures in respect of any area at risk of environmental degradation and shall provide for the development of an overall environmental management plan for a river, wetland or taking into account the relevant

sectoral interests; contingency plans for the prevention and control of all deliberate and accidental discharge of pollutants into the rivers and plans for the protection of wetlands.

Section 58 of the Act requires that every development likely to have an impact on the environment to undertake an Environmental Impact Assessment that should be submitted to National Environmental Management Authority before it is undertaken, regardless of other licenses. According to the Second Schedule of the Act any activity out of character with its surrounding, or that leading to major changes in land use, as well as any structure of a scale not in keeping with its surrounding; must undergo an Environmental Impact Assessment. In addition, the need for environmental impact assessment should be seen in the context of the precautionary principle. The purpose of such an assessment is to assess the impact of proposed development activities and ensure that any likely adverse impacts on the environment can be dealt with.

2.1.7 The Occupational Safety and Health Act (2007)

The Act makes provision for the health, safety and welfare of persons employed in factories and other places of work. The provisions require that all practicable measures be taken to protect employees from dust fumes or impurities originating from any hazardous and non- hazardous wastes, which may arise at a project site.

Under section 6 of this act, every occupier is obliged to ensure safety, health and welfare of all persons working in his workplace. The occupier shall achieve this objective by preparing and as often as may be appropriate, revising a written statement of his general policy with respect to the safety and health at work of his employees and the organization and arrangements for the time being in force for carrying out that policy (Section 7). He is also required to establish a safety and health committee at the workplace in a situation where the number of employees exceeds twenty (section 9) and to cause a thorough safety and health audit of his workplace to be carried out at least once in every period of twelve months by a registered safety and health Advisor (Section 11). In addition, any accident, dangerous occurrence, or occupational poisoning which has occurred at the workplace needs to be reported to the occupational safety and health officer of the respective area by an employer or self-employed person (section 21).

2.1.8 National Land Commission Act (2012)

The Act gives effect to the objectives and principles of devolved government in land management and administration. The main purpose of the Act is to provide for the management and administration of land in accordance with the principles of land policy set out in Article 60 of the Constitution and the national land policy and also act as a linkage between the Commission, County governments and other institutions dealing with land and land related resources.

2.1.9 Forest conservation and Management Act, 2016

An Act of Parliament to give effect to Article 69 of the Constitution with regard to forest resources; to provide for the development and sustainable management, including conservation and rational utilization of all forest resources for the socioeconomic development of the country and for connected purposes.

This Act makes provision for the conservation and management of public, community and private forests and areas of forest land that require special protection, defines the rights in forests and prescribes rules for the use of forest land. It also makes provision for community participation of forest lands by community forest association, the trade in forest products, the protection of indigenous forests and the protection of water resources.

2.1.10 Water Act, 2016

This is an Act of Parliament to provide for the regulation, management and development of water resources, water and sewerage services; and for other connected purposes.

The main purpose of the Act is to align the water sector with the Constitution's primary objective of devolution. The act recognizes that water related functions are a shared responsibility between the national government and the County government. It also gives priority to use of abstracted water for domestic purposes over irrigation and other uses.

2.2 Policy Framework

2.2.1 Overview

The County spatial planning process will be informed by several sectoral policies both global and local. These policies assisted in coming up with policies and strategies targeting key sectors for development.

The plan utilizes both global and local policies each with a specific goal to be achieved.

2.2.2 Sustainable Development Goals

In 2015, the world agreed a new set of global goals to eradicate extreme poverty and achieve sustainable development. The Sustainable Development Goals identifies seventeen areas as depicted below;



Figure 7: Sustainable Development Goals areas of focus
(Source: UNDP, 2015)

The Sustainable Development Goals are universal; meaning they are equally applicable to all countries with challenging targets for rich countries as well as poor ones. They can be used to advocate for more equitable development based on tackling the root causes of poverty and unsustainable development.

The goals have also adopted an integrated approach that includes social, economic and environmental dimensions. They attempt to balance the three dimensions across such a broad range of issues. The effort to move beyond single issues is not perfect and there are contradictions between some of the goals and targets.

The goals were arrived at by adopting a participatory approach. The process to create the Sustainable Development Goals has been much more open, with national dialogues and thematic consultations involving many people around the world with every government at the United Nations signing up to implement them. This stronger sense of ownership should make them a more effective tool for change over the next 15 years.

2.2.3 Vision 2030

The Kenya Vision 2030 has three pillars i.e. the economic, social and political pillars aimed at making Kenya a “globally competitive and prosperous country with a high quality of life by 2030.” It aims at transforming Kenya into “a newly industrializing, middle income country providing a high quality of life to all its citizens in a clean and secure environment”.

According to Vision 2030, the country should aspire to be interconnected through a network of roads, railways, ports, airports, waterways, and telecommunications and provide water and modern sanitation facilities to the residents. By 2030, it should become impossible to refer to any region of the country as “remote”.

On land reforms, it emphasizes on respect for property rights to land, whether owned by communities, individuals or companies as an important driver of rapid economic transformation everywhere. The transformation expected under Vision 2030 is dependent on the national land use policy. The policy facilitates the process of land administration, the computerization of land registries, the establishment of a National Spatial Data Infrastructure in order to track land use patterns, and the introduction of an enhanced legal framework for faster resolution of land disputes

Under the social pillar, on the Environment the country aims to be a nation that has a clean, secure and sustainable environment by 2030. This will be achieved through:

- (i) promoting environmental conservation to better support the economic pillar’s aspirations;
- (ii) improving pollution and waste management through the application of the right economic incentives;
- (iii) and commissioning of public-private partnerships (PPPs) for improved efficiency in water and sanitation delivery.

On housing and urbanization, with the current demographics, we must plan for high quality livelihoods. The 2030 vision for housing and urbanization is “an adequately and decently-housed nation in a sustainable environment.” This will be attained through:

- (i) better development of and access to affordable and adequate housing;
- (ii) enhanced access to adequate finance for developers and buyers;
- (iii) pursuit of targeted key reforms to unlock the potential of the housing sector;
- (iv) Initiation of a nationwide urban planning and development campaign, starting with Kenya’s major cities and towns.

2.2.4 The National Spatial Plan (2015-2045)

Land Use Patterns

The land use pattern in Kenya is mainly determined by economic, institutional and physical structures hence it can be classified as:

- i. Agricultural
- ii. Built up areas
- iii. Conservation

They are uneven across the country due to climatic conditions such as temperature, rainfall, humidity, slope, and other physical features as well as the level of development and technology.

Reason for changes in land use patterns also include;

- i. Increasing population
- ii. Rising demand for food and other cash crops
- iii. Increasing urbanization
- iv. Rising standards of living

The preparation of the Trans Nzoia County Physical and Land Use Development Plan is in line with the provisions and strategies of the NSP since it serves as a guide for development planning by the counties as they discharge their responsibility of preparing county and local physical and land use development plans.

2.2.5 National Land Policy, Sessional Paper no. 3 of 2009

The policy was formulated with the aim of guiding the country towards efficient, sustainable and equitable use of land for prosperity and posterity. This was to be achieved by providing an overall

framework and defining key measures required to address critical issues of land administration, access to land, land use planning, restitution of historical injustices, environmental degradation, proliferation of informal settlements, land conflicts, outdated legal framework and information management.. The policy recognizes the need for tenure security for all Kenyans. The policy was used to come up with strategies to address the land problems facing Trans Nzoia County.

2.2.6 National Land Use Policy, No. 1 of 2017

The principle objective of the NLUP is to provide legal, administrative, institutional and technological framework for optimal utilization and productivity of land and land related resources in a sustainable and desirable manner at National, County and Sub-county and other local levels.

The Policy is cognizant of the land use issues in Kenya which include:-rapid urbanization, inadequate land use planning; unsustainable agricultural and industrial production methods, poor environmental management, poor cultural practices, inappropriate ecosystem protection and management are commonplace and require appropriate policy responses.

It also provides key measures to ensure efficient, productive and sustainable use of land. The measures formed a basis for coming up with the strategies for addressing the land use problems in the County.

2.2.7 National Housing policy-Sessional paper No. 3 of 2004

This housing policy was drawn from a range of formal documents in the form of legal statutes, written policies, and international agreements relevant to the housing sector. Article 43 (1) of the Constitution of Kenya states that every Kenyan has the right to accessible and adequate housing and to reasonable standards of sanitation. One of the objectives of Vision 2030 is to provide for adequate and decent housing for all Kenyans. This document formed the basis for the need for the housing policy.

The National Housing Policy contained in Sessional Paper no. 3 of 2004 established the goals that were reflected in both the Vision 2030 and the constitution by emphasizing the need for decent and affordable housing for all Kenyans.

It also confirmed the existence of housing policy institutions such as the national Housing Corporation, the Ministry of lands and settlement the implementation of Kenya's Housing Policy

culminated in the formation of the Housing Development Fund to be funded through budget allocation and which is managed under the National Housing Corporation (NHC).

The policy identifies poverty and low levels of income as the main obstacle to access to affordable and quality housing for the Kenyan citizens. The main purpose of the policy is to achieve a state where all Kenyan households live in decent shelters whether privately or publicly owned. It also recognizes the deficit especially in urban areas in the number of housing units required to cater to the needs of the public. In general, the policy acknowledges inadequacy of decent housing units and inaccessibility as the main challenges. Therefore the primary focus of the policy is to expand the availability of housing and ensure that Kenya have decent dwelling units.

2.2.8 Big Four Agenda

It is a four-point agenda by President Uhuru Kenyatta, outlining what he will be focusing on in his last presidential term to improve the living standards of Kenyans, grow the economy and leave a lasting legacy. The Big Four Agenda items are: Food security, manufacturing (mainly focusing on job creation in this area), affordable universal health care and affordable housing.

The preparation of the Physical and Land Use Development plan touched on all the four items of the Agenda. The plan is a positive step towards realization of the goals stated in the agenda.

2.3 Institutions

According to the County Governments Act 2012, the County planning unit is responsible for: coordinating integrated development planning within the County; ensuring integrated planning within the County; ensuring linkages between County plans and the national planning framework; and ensuring meaningful engagement of citizens in the planning process;

The designated planning authority in the County is responsible for organization and effective implementation of any development within the County.

2.3.1 Trans-Nzoia County Government

Trans-Nzoia County falls within the jurisdiction of Trans-Nzoia County Government. Trans-Nzoia County Government funds the process of preparation of this County Physical and Land Use Development Plan and they are at the main core in implementing the resultant proposals. The County Officials namely: - the County Executive Member and Chief Officer for Lands, Housing, Physical Planning and Urban Development, County physical planners and sub-County administrators.

2.3.2 Physical Planning Institutions

Part II Section 6 of the Physical and Land Use Planning Act, 2019 provides for the establishment of the National Physical and Land Use Consultative Forum comprising of the Cabinet Secretary in charge of Physical and Land Use Planning, the Director General Physical and Land Use Planning, the Chairperson NLC, the Cabinet Secretaries in charge of Economic Planning, Environment, Roads and infrastructure, Social and Community Development, Culture and Defence, Member KIP, ISK, AAK, KPSA, registered associating, National Council for Persons with Disability among others.

The County Director of Physical Planning is responsible for a number of functions one such being the preparation of Local Physical and Land Use Development Plans.

The Urban Areas and Cities Act, 2011 of the laws of Kenya, defines the functions of this institution which are to;

- Prohibit or control the use and development of land and buildings within its area.
- Control or prohibit plot subdivision.
- Consider and approve developments among others.

2.3.3 National Environment Management Authority (NEMA)

It was established in 2002 as the supreme regulatory and advisory body on environmental management in Kenya. NEMA is required to coordinate and supervise the various environmental management activities being undertaken by statutory organs with a view to promoting their integration into development policies, programmes, plans and projects that provide sustainable

development and a safe and healthy environment to all Kenyans. The key functions of NEMA through the National Environment Council include: responsibility for policy formulation and direction for the purposes of the Act; setting national goals and objectives and determining policies and priorities for the protection of the environment; promotion of cooperation among public departments, local authorities, private sector, non-governmental organizations and such other organizations engaged in environmental protection programmes; and perform such other functions as are assigned by the Act. NEMA will remain in charge of co-ordinating all activities related to environmental management in the project area, such as enforcement of environmental impact assessments, as well as environmental audits.

2.3.4 National Land Commission

The National Land Commission of Kenya is an independent government commission whose establishment was provided for by the Constitution of Kenya Chapter 5, section 67. It was officially established under The National Land Commission Act, 2012.

The Commission derives its mandate from the Constitution of Kenya 2010, the National Land Policy (2009) and acts of Parliament, namely the National Land Commission (NLC) Act, the Land Act and the Land Registration Act, all of 2012.

The Commission is charged amongst other things to manage public land on behalf of the National and County governments, initiate investigations into present or historical land injustices and recommend appropriate redress, and monitor and have oversight responsibilities over land use planning throughout the country.

2.3.5 Kenya Rural Roads Authority

KeRRA is a State Corporation within the State Department of Infrastructure under the Ministry of Transport, Infrastructure, and Housing and Urban Development and established through the Kenya Roads Act, 2007. The Authority's main mandate is to develop, construct and maintain the rural road network in the country as per the Kenya Roads Act, 2007.

The main functions and duties of KeRRA include:

- Constructing, upgrading, rehabilitating and maintaining rural roads.
- Controlling reserves for rural roads and access to roadside developments.
- Implementing road policies in relation to rural roads.

- Ensuring adherence by motorists to the rules and guidelines on axle load control prescribed under the Traffic Act or any other existing regulations.
- Ensuring that the quality of road works is in accordance with such standards as may be defined by the Ministry responsible for Transport and Infrastructure, overseeing the management of traffic on rural roads and issues related to road safety.
- Collecting and collating data related to the use of rural roads as may be necessary for efficient forward planning.
- Monitoring and evaluating the use of rural roads, planning the development and maintenance of rural roads, liaising and co-coordinating with other Authorities in planning and operations in respect of roads, preparing road work programs for all rural roads, advising the Cabinet Secretary on all issues relating to rural roads; and performing other functions related to rural roads as may be directed by the Cabinet Secretary.

2.4 Summary

The above legal statutes, policies and institutions will play a huge role during the implementation of this plan. However, effective realization of the County Physical and Land Use Development Plan will only be achieved if there is transparency and accountability in the concerned institutions. Some of the issues that need to be taken under consideration include: Duplication of roles in the County and national governments; low capacity building; mismanagement of public funds; inadequacy in project implementing capacity and political interference in development. The presence of unfavorable policies also affect the effective functioning of various sectors such as agriculture, transport, industry and environment among many others. The Trans Nzoia County Government has also not formulated or implemented some of the key policies required for sustainable development of the County.

CHAPTER 3.0 BACKGROUND OF THE PLANNING AREA

3.1 History of Trans Nzoia County

The County is one of the 47 counties established after the promulgation of the Kenya Constitution under article 6(1) on the 27th August 2010. It was later operationalized in March 2013 after the country's general election where the residents elected their first governor.

Prior to the promulgation, the County was administered as Trans Nzoia District under the Provincial Administration system as established by the British colonial government in the early 20th century.

3.2 Physical Setting

This chapter outlines the location and physical characteristics in terms of of the County and how they influence the spatial structure of the County.

3.2.1 Location and Size

3.2.1.1 National Setting

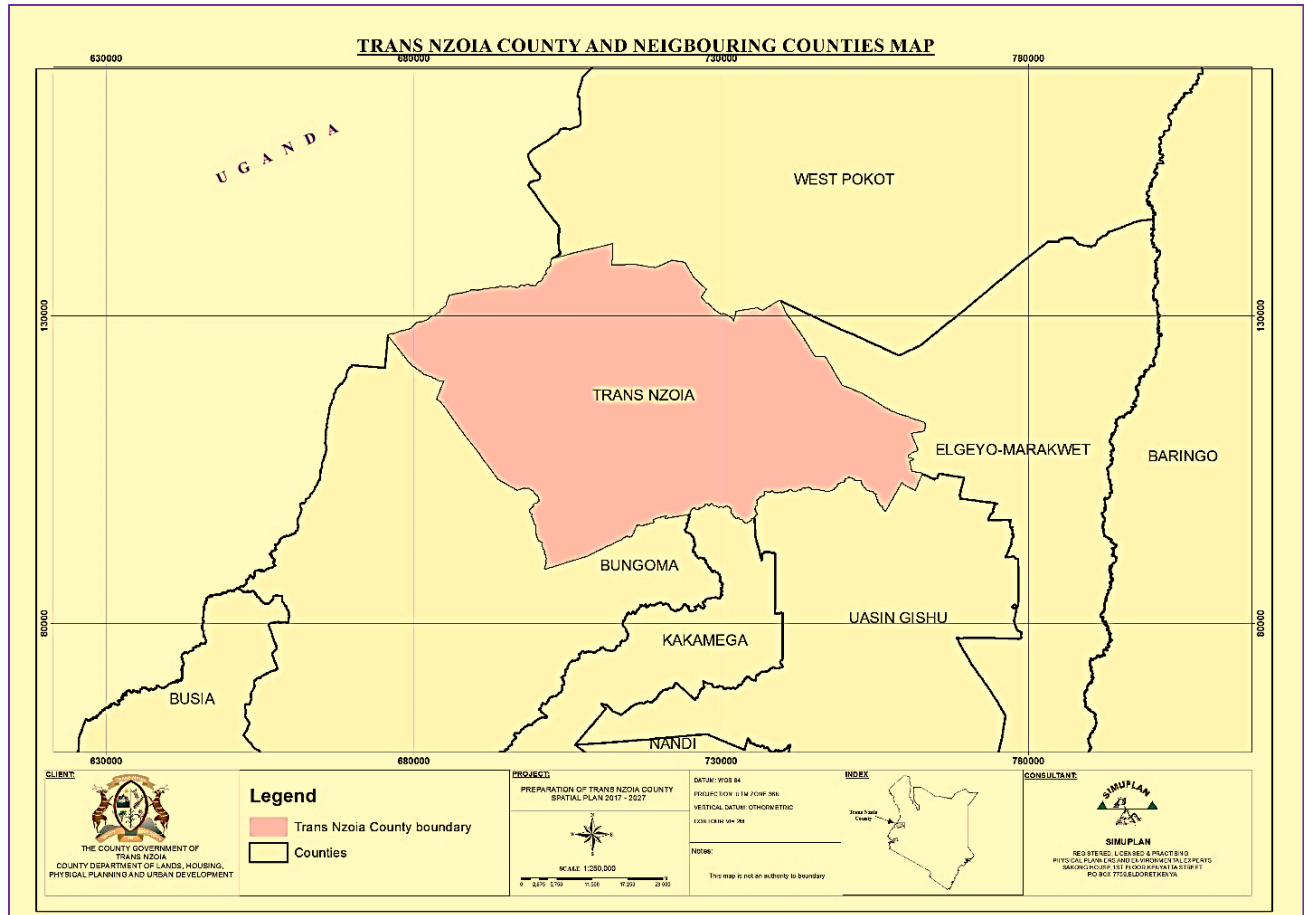
From the National context, the County is located in the North Rift of the former Rift Valley province. It lies within (Universal Transverse Mercator) UTM Zone 36 and North of the equator. It measures approximately 2486 Square kilometers and ranked as number 37 in Kenya in terms of size in relation to other 46 Counties.

3.2.1.2 Regional Setting

The County is located approximately 380Km West of Nairobi. It lies between Mt. Elgon and Cherangany Hills approximately between latitudes $00^{\circ} 52'$ and $10^{\circ} 18'$ north of the equator and longitudes $340^{\circ} 38'$ and $350^{\circ} 23'$ east of the great Meridian. The County borders the Republic of Uganda to the North West, Bungoma to the West and South West, Kakamega and Uasin Gishu to the South East, Elgeyo Markwet to the East and West Pokot to the North as shown in the map below:



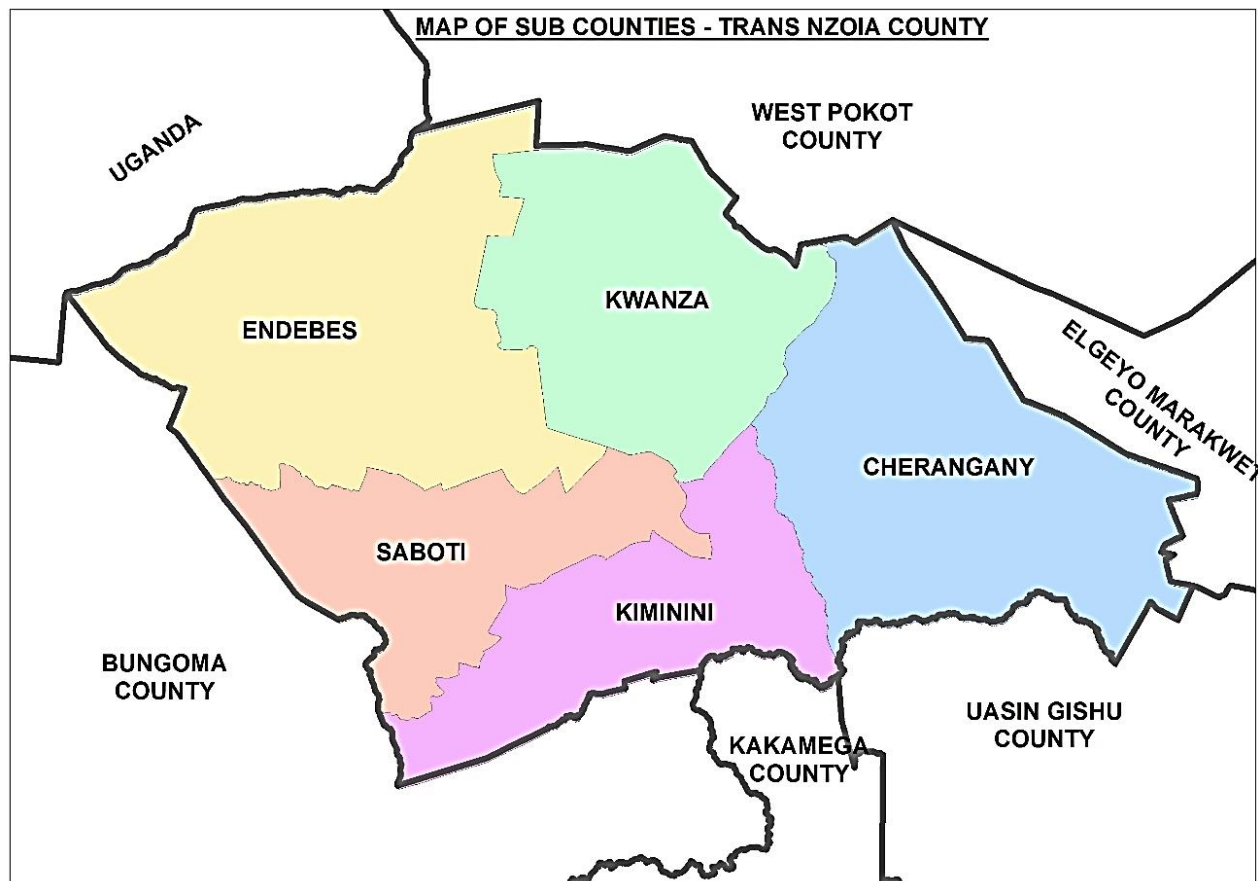
**Map 1: National setting
 (Source: Simuplan, 2019)**



**Map 2: Regional setting
(Source: Simuplan, 2019)**

3.2.1.3 Administrative Setting

Administratively, the County is divided into five Sub Counties namely; Kwanza, Endebess, Saboti, Kiminini and Cherangany as shown in the map below.



Map 3: Administrative setting
(Source: Simuplan, 2019)

The sub-counties are further divided into a total of 25 wards as shown in the table below. Each of these sub counties has their own unique characteristics in terms of size, number of wards and physical features. For example, Cherangany Sub County has the highest number of wards while Endebess is the largest in terms of area (size). Other variations in the sub-counties are discussed in the subsequent sections of this report.

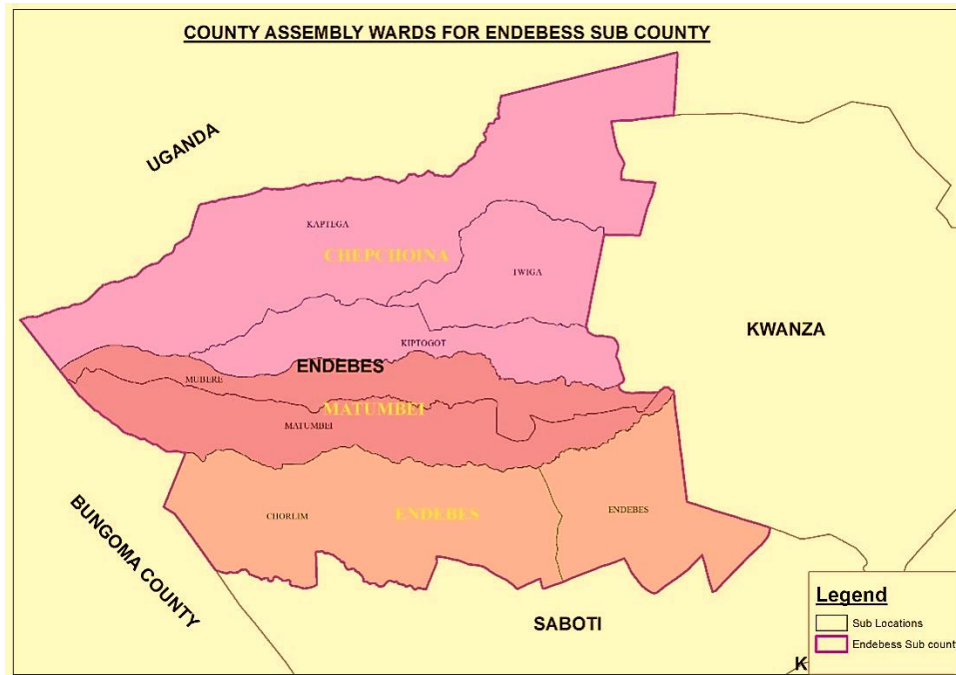
Table 1: Trans Nzoia Sub-Counties and wards

Administrative Units by Sub County	Area (km2)	Wards
Kiminini	366.1	6
Saboti	349.9	5
Cherangany	627.9	7
Endebess	676.9	3
Kwanza	465.2	4
Total	2486.0	25

(Source: Simuplan, 2019)

3.2.2 Endebess Sub-County

With an approximate area of 676.9Km², Endebess is the largest sub-County but the least populated with a population of 91,192 as per 2009 population census. The population is set to increase to 161,614 by the year 2027. It has three wards namely: Endebess, Matumbei and Chepchoina.



Map 4: Wards within Endebess sub-County
(Source: Simuplan, 2019)

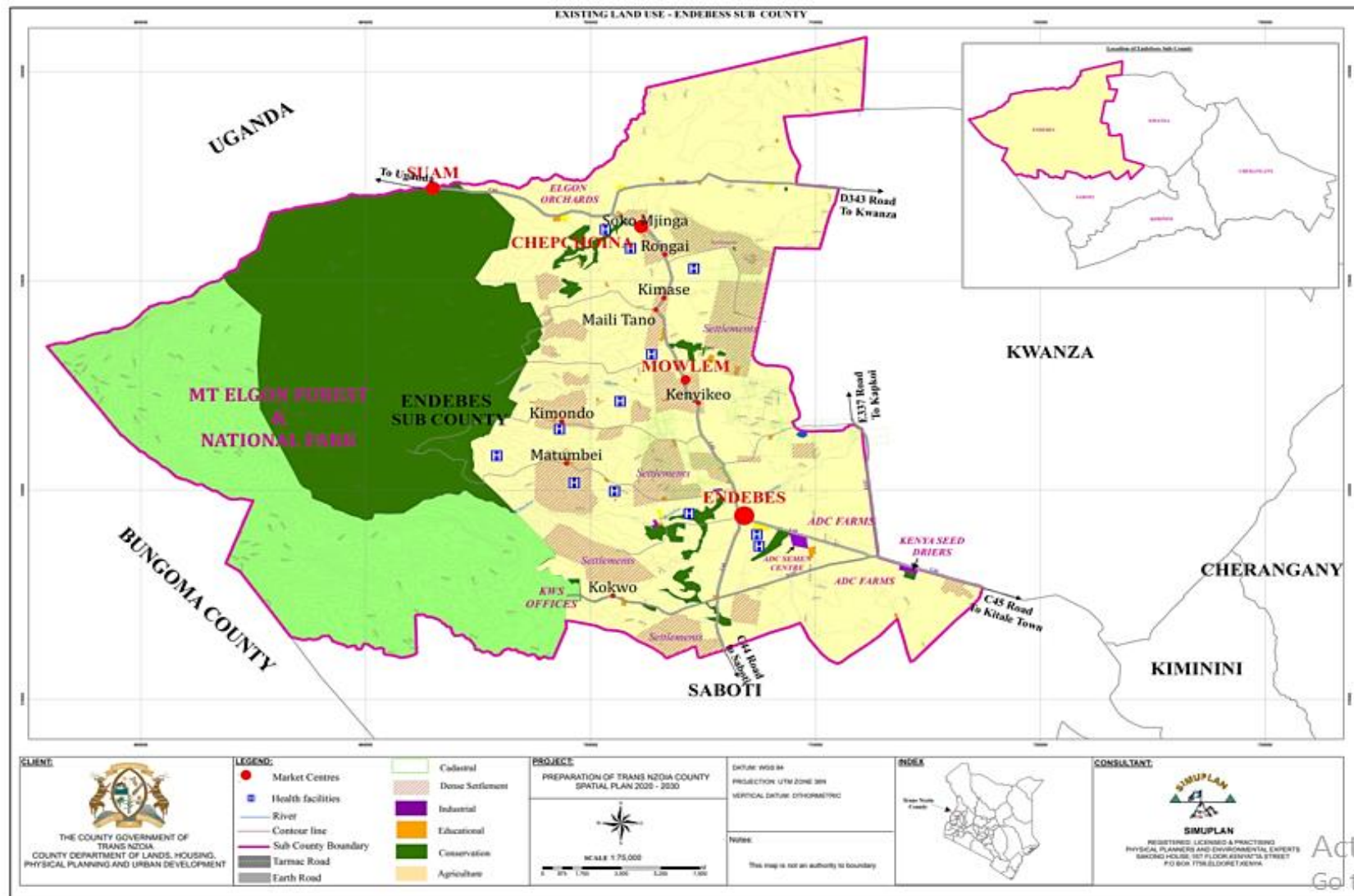


Plate 19: Mt. Elgon National Park
(Source: Simuplan, 2019)

The Sub-County is home to Mt. Elgon famous for features such as Elgon Forest and National Park. Together with Koitobos River, they form key natural resources in the County out of which dominant land uses such as recreational & agriculture are grounded. Agriculture wise, large farms belonging to ADC namely; Ole Katongo, Katuke and Chepchoina exist.

Other notable land uses in the sub County include Mt.Elgon Orchards, Kenya Seed Company and ADC Semen Center. Endebess, Suam, Chepchoina

and Mowlem centres are the major urban centres found in the sub-County.

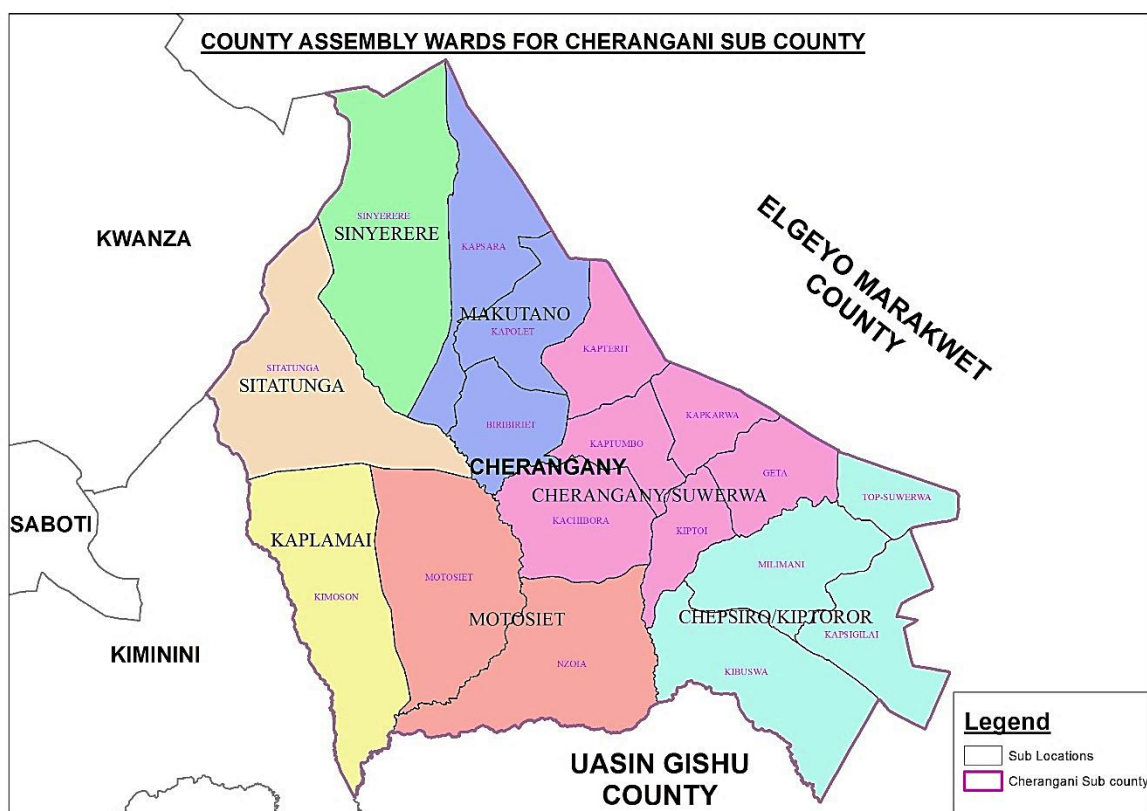


Map 5: Existing Land Use for Endebess Sub-County
(Source: Simuplan, 2019)

3.2.3 Cherangany Sub-County

This is the second largest sub-County in terms of land mass after Endebess covering a total surface area of approximately 627.9 km². It is also the second most populous sub-County after Kiminini with an estimated population size of 265,000 in 2018 (TCIDP). This population is expected to increase to 352,320 by the year 2027.

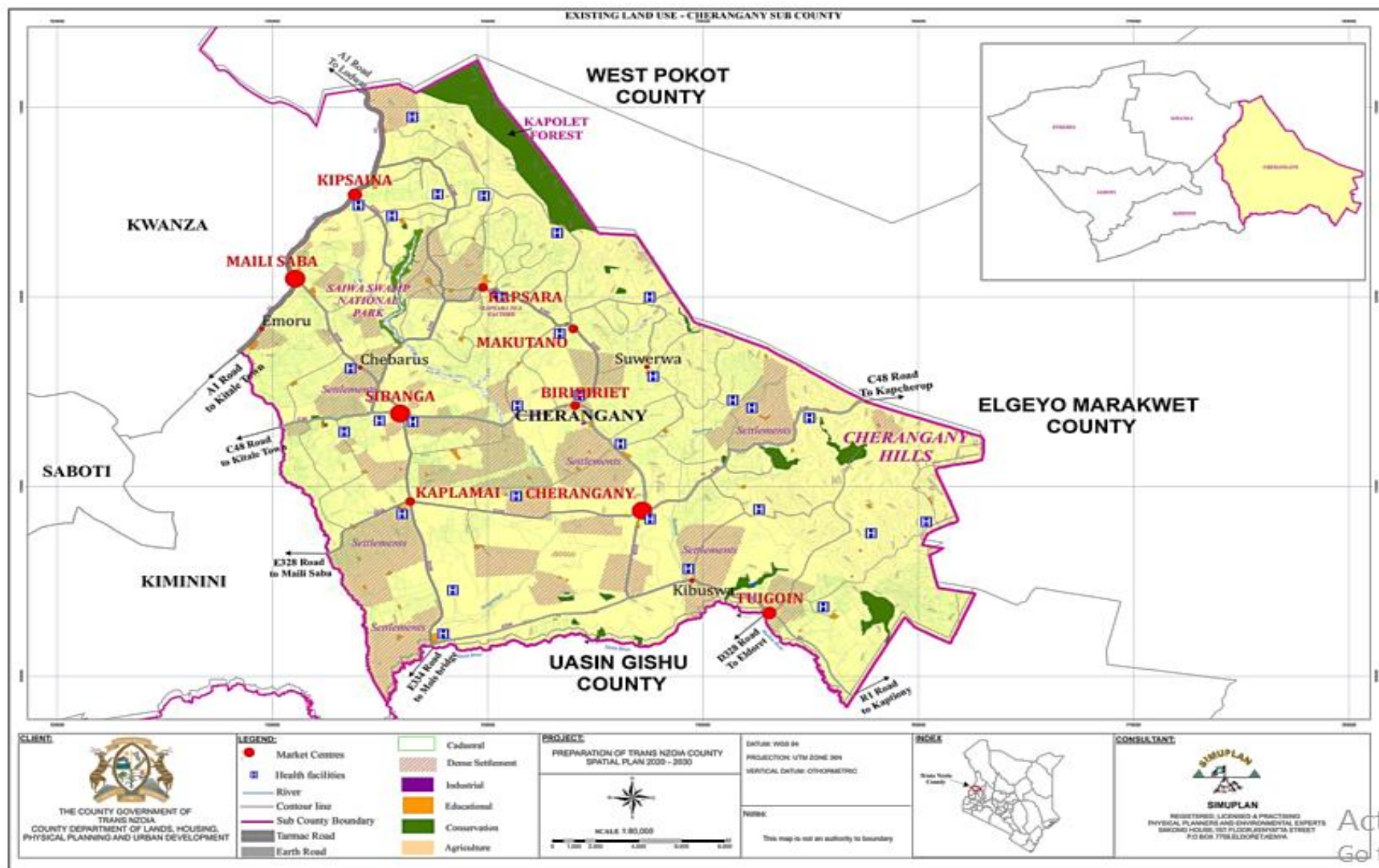
The sub-County is divided into seven electoral wards namely; Motosiet, Situnga, Kaplamai, Makutano, Sinyereri, Cherangany and Suwerwa with Cherangany/Suwerwa as the most populated ward is Makutano ward as the least populated.



Map 6: Wards within Cherangany Sub-County

Source: Simuplan, 2019

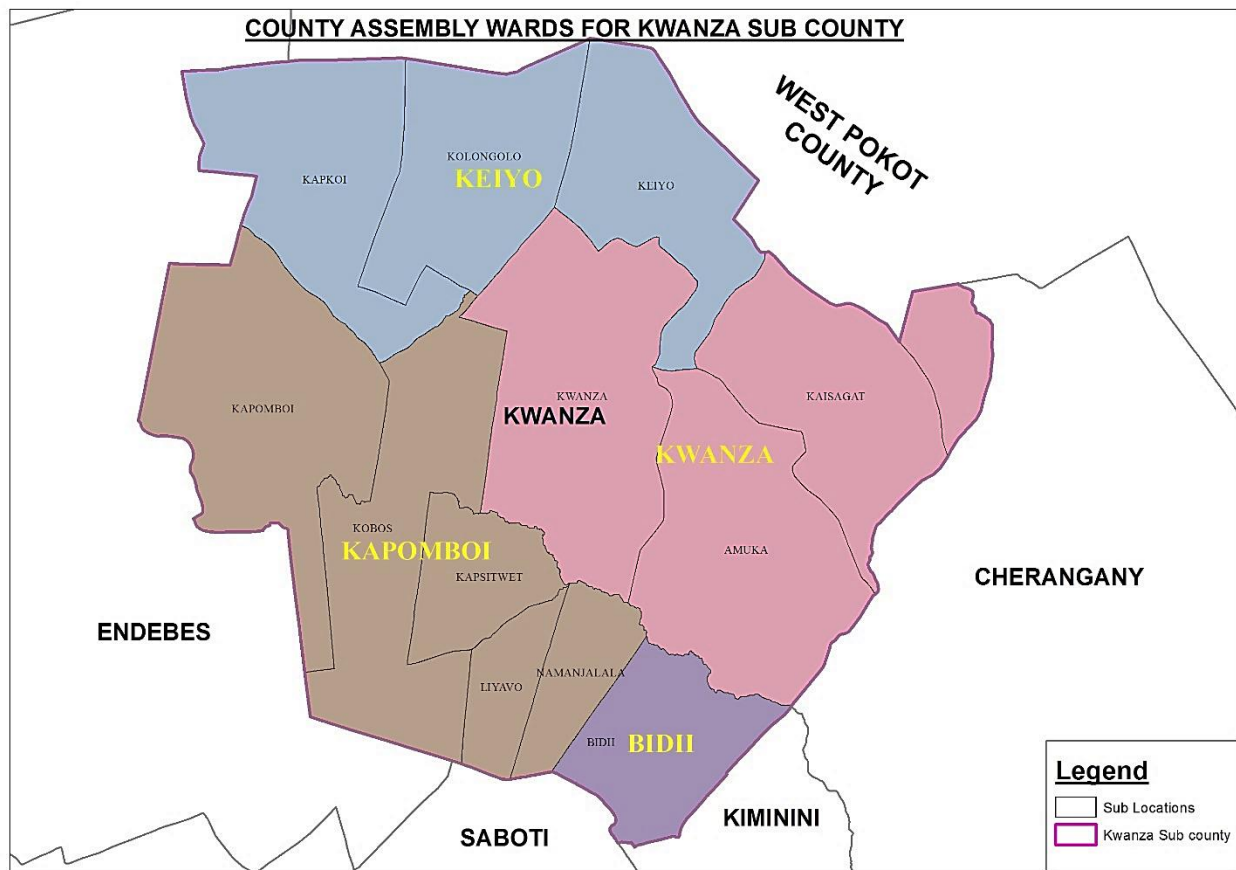
Major natural resources in the sub-County include Cherangany Hills, Kapolet forest, Saiwa Swamp National Park, River Nzoia and other smaller tributaries. Major centers are in the sub-County are Cherangany, Sibanga and Maili Saba. Other notable commercial nodes are Tuigoin and Kipsaina. Kapsara tea factory and Cherangany Dairy group are also located within the sub-County.



Map 7: Existing Land Use for Cherangany Sub-County
Source: Simuplan, 2019

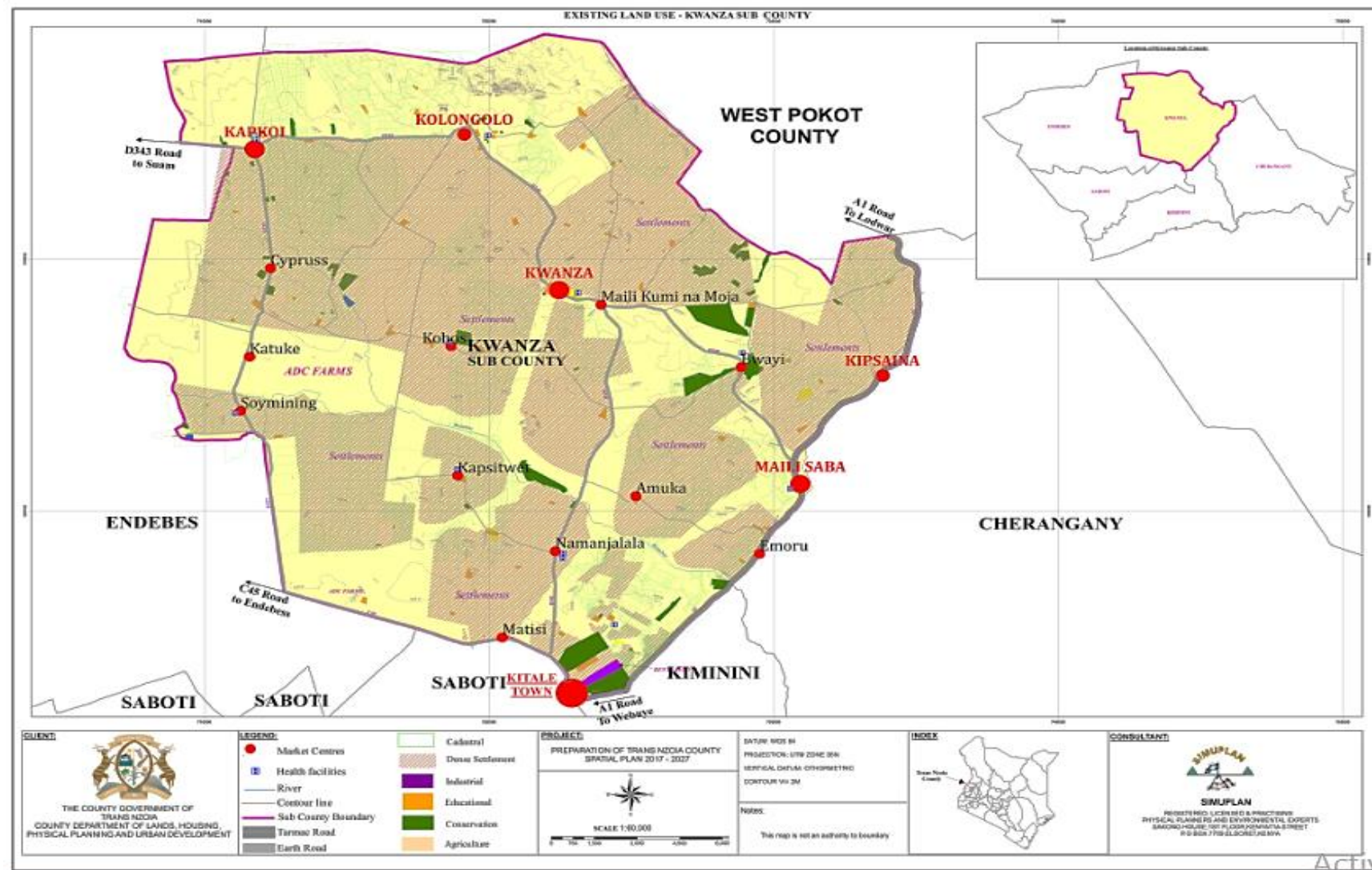
3.2.4 Kwanza Sub-County

It covers an area of approximately 465.2 km² and is divided into four administrative wards namely: Kwanza, Keiyo, Bidii and Kampomboi. According to the 2009 population census, the sub-County had a population of 166,524 persons. This population is expected to increase to 300,618 persons by the year 2027. The most populated ward is Kapomboi while the least populated ward is Bidii. The sub-County has the highest forest cover in the County due to the presence of Suam, Kimothon and Kiptogot Forests.



Map 8: Wards within Kwanza Sub-County
(Source: Simuplan, 2019)

Just like Endebeess, the sub-County is characterized by large farms belonging to ADC. In addition, it also has the largest amount of land size under cash crop production in the County. Major centres in the sub-County are Kwanza, Kapkoi and Maili Saba, Kolongolo and Kipsaina.



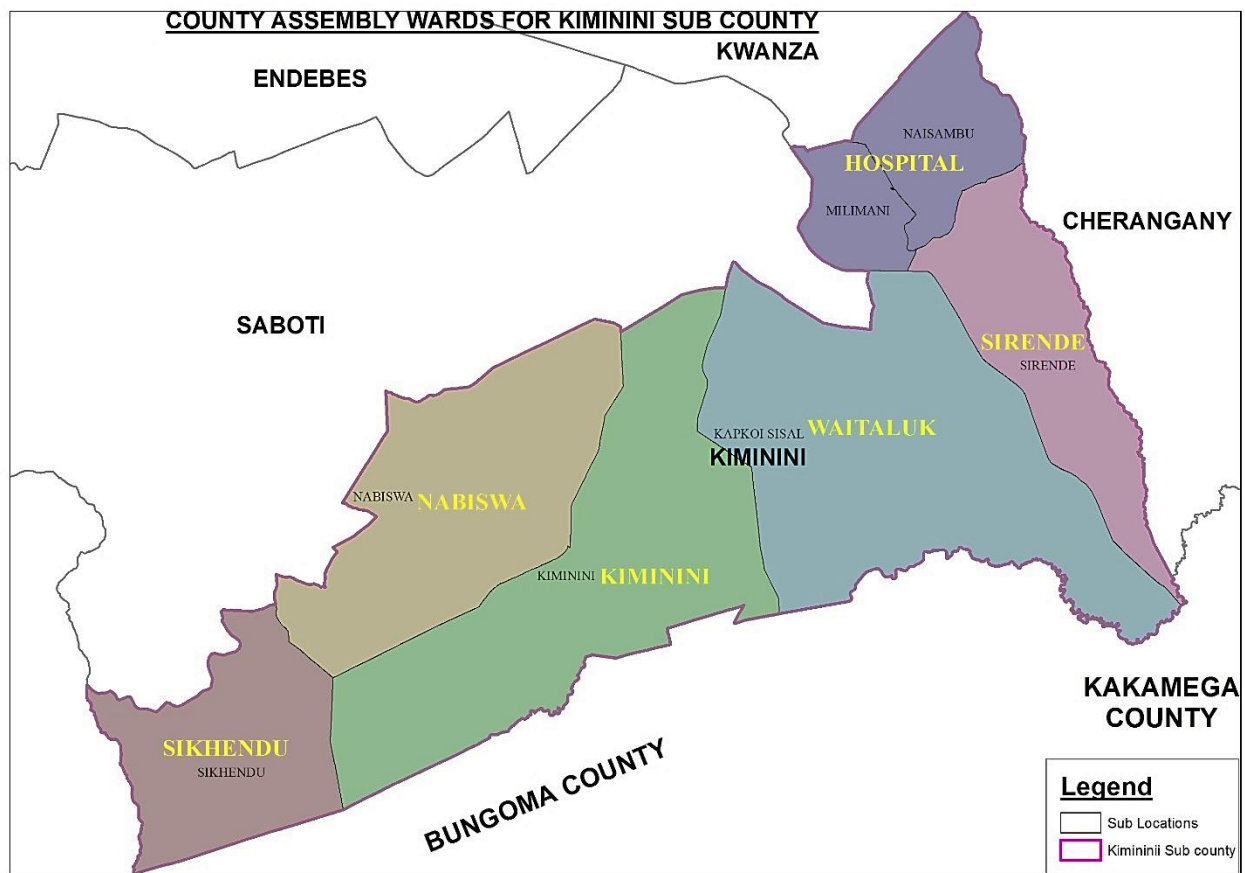
Map 9: Existing Land use for Kwanza Sub-County
(Source: Simuplan, 2019)

3.2.5 Kiminini Sub-County

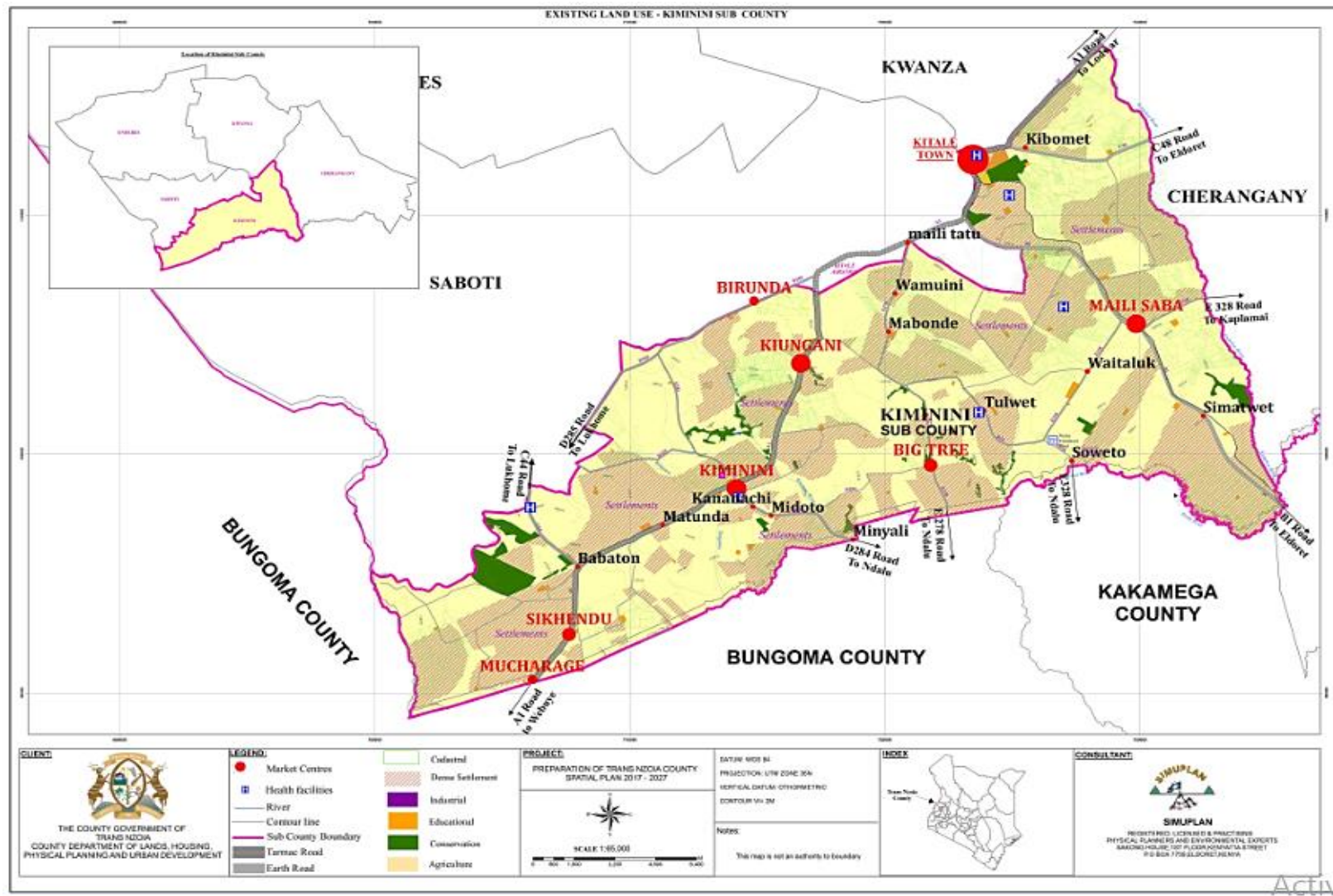
Kiminini is the 2nd smallest sub-County after Saboti in terms of land mass. It covers an area of approximately 395.3 km². Although it is small in size, it has the highest number of wards after Cherangany sub-County. It is divided into 6 wards namely: Kiminini, Waitaluk, Hospital, Sirende, Sikhendu & Nabiswa. It is also the most populous constituency.

According to the 2009 population census, the sub-County had a population of 199,386. This population is projected to increase to 359,925 by the year 2027. The most populated ward is Waitaluk while the least populated ward is Sirende.

Major centres in the sub-County include; Maili Saba, Kiungani and Kiminini. Other notable commercial nodes are Sikhendu and Big Tree among others.

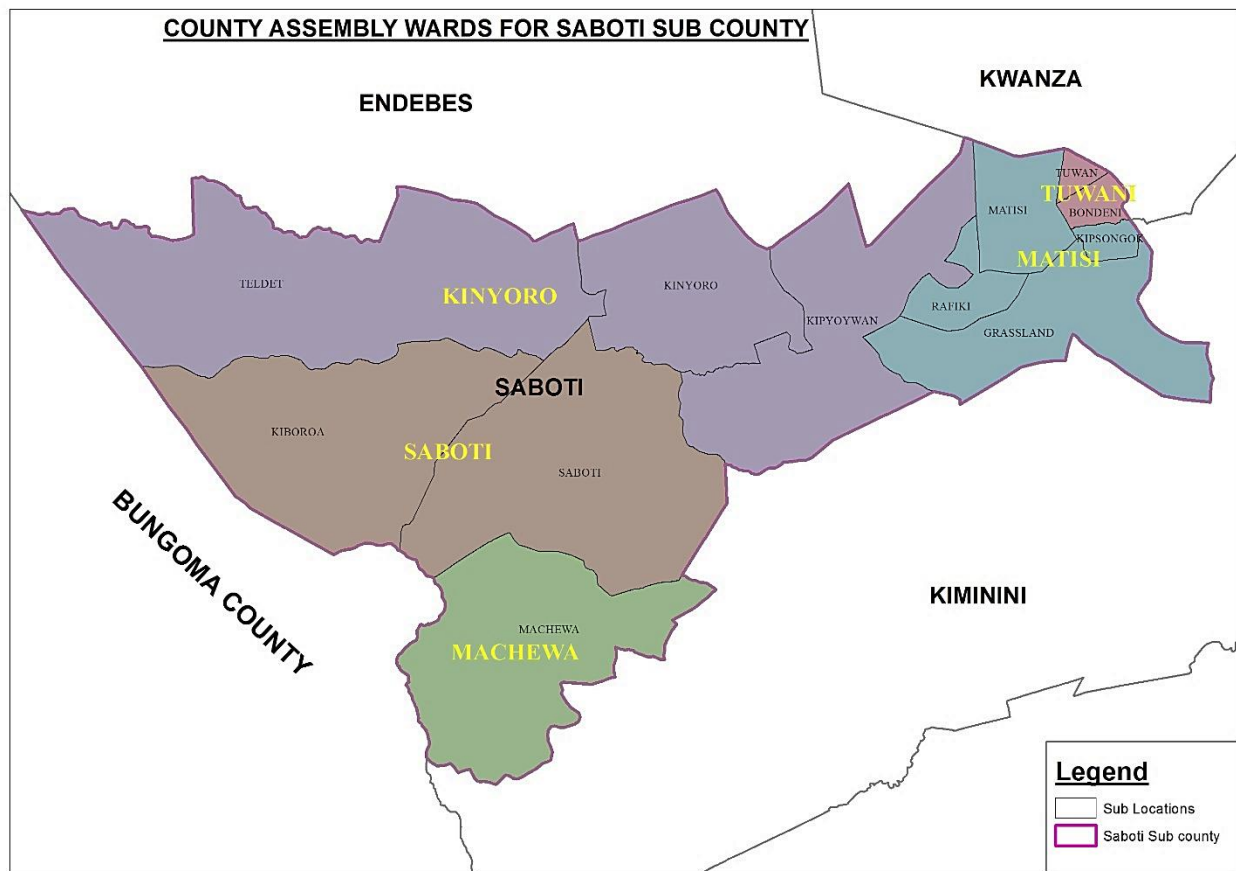


Map 10: Wards within Kiminini Sub-County
(Source: Simuplan, 2019)



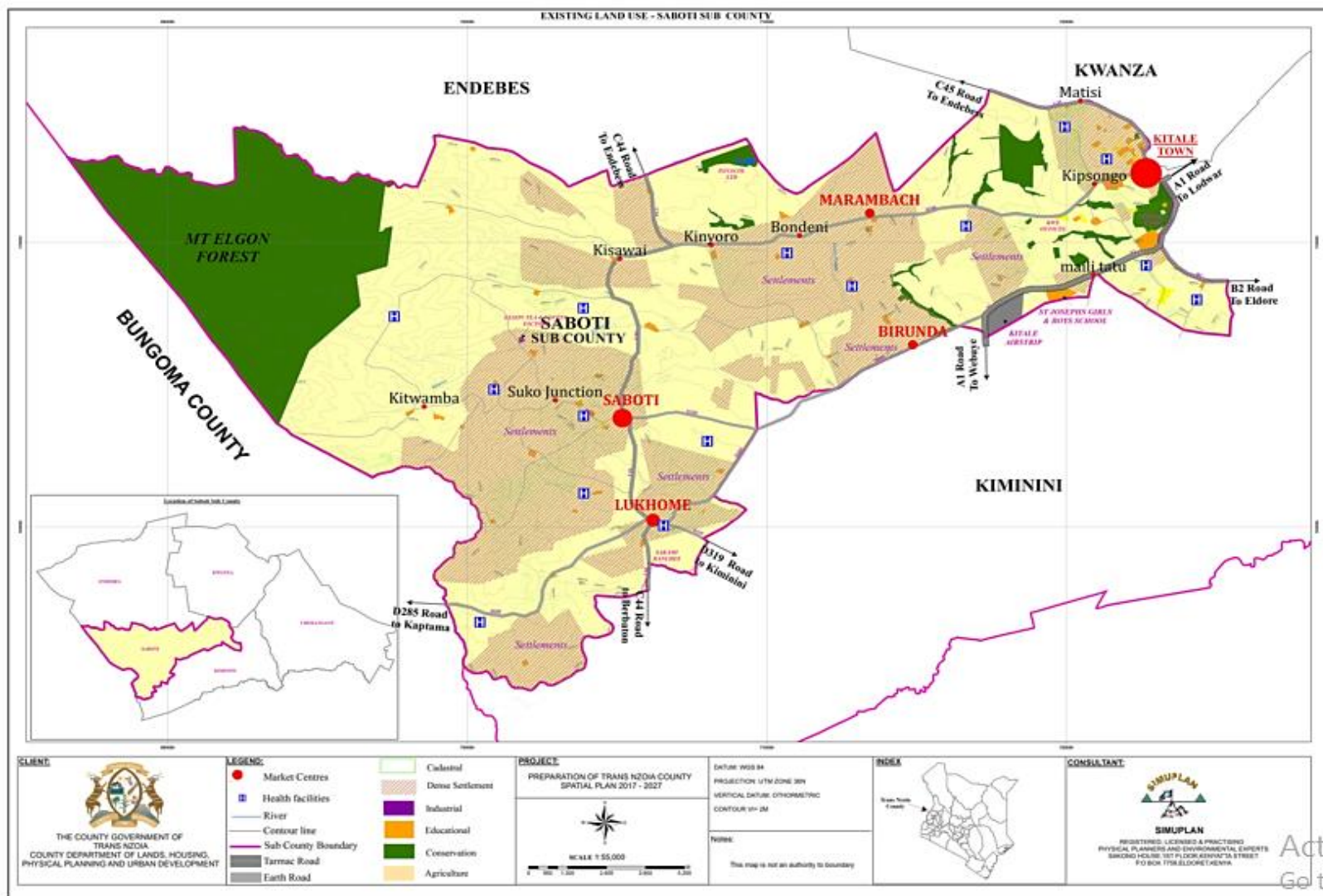
3.2.6 Saboti Sub-County

Saboti sub-County has the smallest surface area of the five sub-counties. It has a total surface area of approximately 349.9 km² but it has the third highest number of administrative wards. The sub-County is made up of five wards namely: Kinyoro, Matisi, Tuwani, Saboti and Machewa. According to 2009 population census, the sub-County had a population of 166,482 persons. This population is projected to increase to 300,528 by the year 2027. The most populated ward is Matisi while the least populated ward is Machewa.



Map 12: Wards within Saboti Sub-County
(Source: Simuplan, 2019)

Major centers in the sub-County include; Saboti, Lukhome, Masambachi and Birunda. Other notable commercial nodes are Kisawai, Kinyoro, Matisi among others.



Map 13: Existing land use for Saboti Sub-County
Source: Simuplan, 2019

3.3 Structuring Elements

The County spatial planning process involved comprehensive study of the existing spatial structure to better understand the distribution of natural resources and human activities in Trans Nzoia County. This involved categorization of the County spaces in specific structuring elements. Each element is interpreted as an independent entity with distinctive characteristics. The structuring elements are categorized in five groups:

- Physical structure- Topography, Wetlands, Forests, rivers and streams
- Human settlement structure
- Transport structure
- Heritage structure
- Land ownership
- Vast agricultural land

3.3.1 Physical structure

3.3.1.1.1 Topography

Mt. Elgon (above 4000m above sea level) stands out as a key landmark feature for the Western



Kenya Counties, Trans Nzoia County being one of them. The undulations rise of the mountain from Endebess and Saboti forms an interesting space for mountain climbers and tourists. The eastern side of the County is the Cherangany hills which defines the eastern side boundary of the County after a long stretch of flat terrain from foot slopes of Mt. Elgon.



The steeper slopes of this Mountain and hills also dictate the type of crops grown in those areas which can appropriately check on soil erosions due to massive water flow

Plate 21: Tea growing in steep slopes of Mt. Elgon
(Source: Trans-Nzoia County Gallery)

downstream.

Terrains tend to define human settlement and Urbanization within Trans Nzoia County. Areas relatively flat are highly settled by people compared to steeper slopes; case in point is the Endebess subCounty that hosts Mt. Elgon and it is the least populated sub-County. Areas from Kitale Municipality towards foot slopes of Mt. Elgon and Cherangany hills is observed to have been highly inhabited.

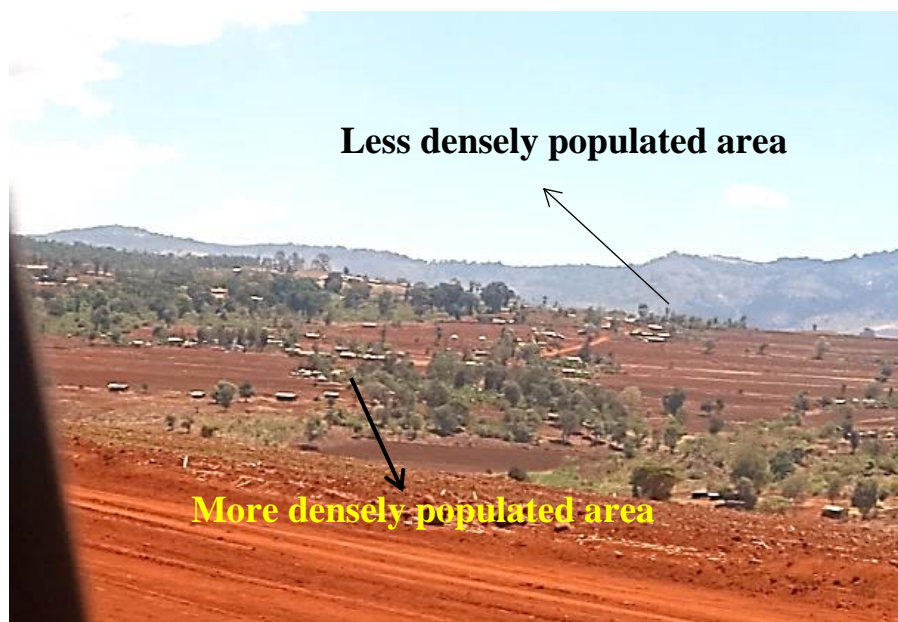


Plate 22: Cherangany settlements
(Source: Simuplan fieldwork, 2018)

The road designs on slopes of Mt. Elgon and Cherangany Hills are defined by the existing terrain hence have winding design. It poses difficulties in transportation especially during the rainy season when the roads are impassable.



Plate 23: Winding road at Kapolet forest in Cherangany Sub-County
(Source: Simuplan Fieldwork, 2018)

The undulating terrain also forms various watershed sections within the County as most of the waters flow from the Mt. Elgon and Cherangany Hills towards Nzoia River in the southern part of the County and eventually past the County boundaries.

3.3.1.2 Hydrological structure

Understanding the hydrological structure of the County is important as some of the key development proposals have to be made in consideration of the hydrological structure of the County. There are three main rivers exists in Trans Nzoia County namely; Ewaso-Rongai with its tributaries being Kabeyan, Kissawai, Kipkulkul, Tongaren, Kabuyefwe and Machinjoni. Noigamaget River with its tributaries as Kapolet and Sinyereri while Sabwani River has Kiptogot, Mubere, Kaibei, Kimothon and Chepchoina as its tributaries. These three rivers are the major tributaries of river Nzoia located on the southern part of the County which drains into Lake Victoria. The hydrology of the County also includes other surface and underground water sources notably dams, springs and swamps scattered throughout the County.

These rivers traverse the County eventually draining into River Nzoia at the southern part of the County. The entire landscape along the rivers have gradually been changed over time through agricultural practices. It was observed that the poor agricultural practices along the rivers have often resulted in flooding in some parts of the County such as Namanjalala area.



3.3.1.3 Geology and soil structure

The geological structure defines the County into sections for instance the Basalt rock along Saboti, Lukhome and Chepchoina areas apporions certain common activities in those areas i.e. Quarrying (Building materials).



Plate 24: Quarrying activities along Lukhome and Saboti areas
(Source: Simuplan, 2019)



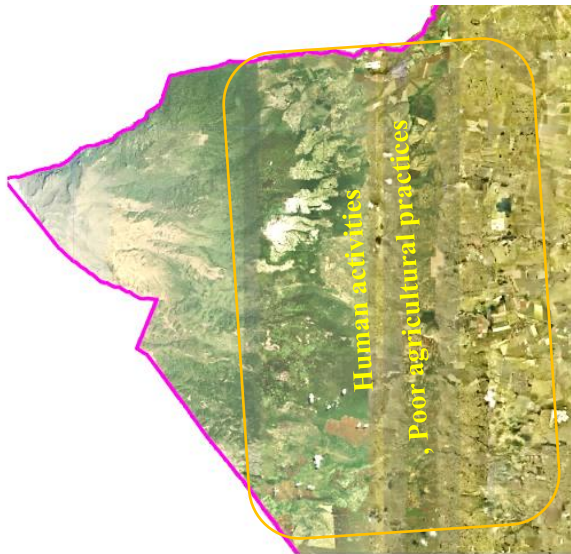
Plate 25: Flourishing agricultural activities due to deep fertile soils in Trans Nzoia
(Source: Simuplan, 2019)

A large proportion of the County has Nitosols and Ferrasols soils that have high agricultural potential. Deep fertile soils as a result of deposits from upper mountain makes agricultural activities within the County flourish consolidating the County's function as the "bread basket" of the nation.

Any development proposals made therefore, should take cognizant of the fact that the County has rich soils, and vast fertile agricultural land that should be protected.

3.3.2 Forests and wildlife habitats

Trans Nzoia County is one of the top forested counties in the County with its forest cover at 17%. Mt. Elgon and Cherannngany Hills have the largest natural forest cover in the County. Other forests



found in the County include; Kapolet Forest, Kapolet Trust Land Forest, Saboti Forest Sosio Forest, Kitale Township Forest, Kitalale Forest, Suam Forest, Kimothon Forest and Kiptogot Forest

Mt. Elgon forest defines the County's boundary on the Northern Eastern side while Kapolet forest defines the Western boundary. These forests are gazetted and developments are restricted within these forests.

However, the forest landscape in the County is slowly changing due to pressure from human activities. This is evident in the reduction of the Mt. Elgon forest over time as shown in the picture.

Ecosystems found in protected areas in the County, such as natural forests, and wetlands are susceptible to conversion into agricultural land and settlements despite being critical for ecological purposes.

Mt. Elgon and Cherangany Hills are unique natural features in the County as they serve as major land marks and are also key water resources in the County. They define the land uses found on the North Eastern and western parts of the County respectively. Therefore all efforts should be made to preserve and protect these forests.

3.3.3 Wildlife habitats

The County is home to a wide variety of wildlife species including the famous Sitatunga Antelope elephants, buffalos, waterbucks, primates, leopards, among other wildlife species. The main wildlife conservation areas include Mt. Elgon and Saiwa Swamp National Parks, and Kitale Nature Conservancy popularly known as *kwa Ndura*, a private, licensed game sanctuary. These wildlife habitats uniquely identify with the County's physiographic profile especially the Sitatunga Antelope in Saiwa Swamp. The Sitatunga antelope

and the De brazza monkeys are unique wildlife species that promote the identity of the County as thriving tourist destination.

However, these habitats are threatened by encroachment of man from the surrounding villages, poaching, lack of conservation measures and human-wild-life conflicts.

Land uses should take in consideration the location of these wildlife habitats and provide a solution where man and animal can co-exist in peace. This will involve mapping out these areas and fencing them and also mapping the migration corridors to reduce the human-wildlife conflicts. The proposed land uses adjacent to these areas should also be compatible with the wildlife habitat areas.

3.3.4 Human Settlement Structure

The human settlement structure describes the distribution of population in the County. From the existing spatial structure, two distinctive human settlements can be seen i.e. the rural and urban human settlements. These settlements patterns are largely influenced by transportation routes and agro ecological zones.

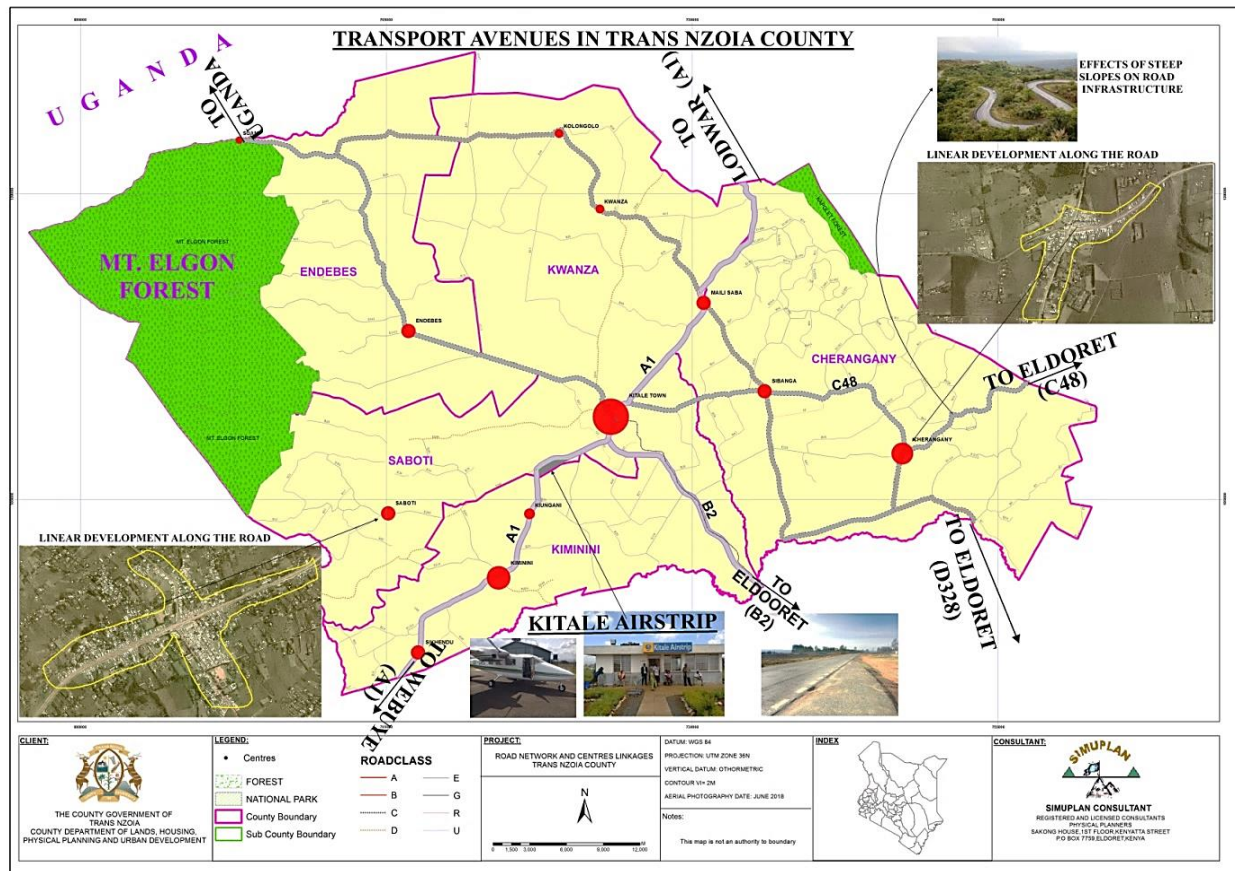
The settlements in the County are predominantly rural. The County is characterized by dispersed rural settlements. Most of the settlements are characterized by scattered residential developments containing small to large farms with rural centers located in close proximity to the settlements. The rural settlements form the second largest land use in the County with the first being agriculture.

Most of the urban settlements follow linear form of developments. Developments follow major transport route in the centers. High density settlements are located within Kitale and Kiminini centers with Kitale town accommodating the largest share of urban population. Understanding the growth patterns of urban settlements is important in assessing the trajectory direction to which the areas of influence will take in future.

3.3.5 Transport structure

Transport System in the County is by Road, Air and Rail. Apart from Eldoret-Kitale Railway that is dormant, the Road transport corridor comprising of Webuye-Kitale-Kapenguria road (A1), Kitale-Eldoret road (B2), Kitale-Endebess road (C13) and Kitale-Cherangany Road (C48) has remained active connecting the County with its respective neighborhood.

In addition to the Road network is Kitale Airstrip with daily flights to Lodwar and Jomo Kenyatta International Airport for onward connectivity. Below is a figure detailing major transport system.



Map 15 : Transport structuring elements
 (Source: Simuplan, 2019)

These roads contribute to the linear development pattern of urban development in the County. The future growth of urban centers in the County is expected to be greatly influenced by transport corridors hence measures should be taken to mitigate the impact of linear development in the urban areas. Such growth patterns have the potential of creating chaos along the transport routes among the encroachment, traffic jams and also increased rate of accidents along the roads. It also prevents a compact and efficient utilization of available land s resources will be stretched along the roads leaving the inner parts of the centers to lack basic infrastructural utilities. The roads also provide a means through which different parts of the County are connected.

The airstrip is located along the Kitale-Webuye highway in Kiminini sub-County as shown in the map. It greatly influences the type/use and density of land uses that are located close to it.

Incompatible land uses are restricted in the airstrip zone. It has also influenced the spatial structure of Kiminini town.

3.3.6 Vast agricultural land

As the bread basket of the Nation, the County has enormous land under agricultural production with maize as the predominant crop. The County is characterized by large tracts of agricultural land usually with long stretches of maize fields during the maize planting seasons.

Most of the agricultural zones tend to be demarcated based on ecological and soil types found in different parts of the County. A major concern is that although these areas of high agricultural potential have been identified, protection of these areas from conversion to other land uses is a challenge since the parcels are mostly under private ownership.

During field survey, it was noted that majority of residents especially those close to urban areas have a perception that residential and other land uses provide higher returns on investment than agricultural land. Other factors noted included the lack of finance and skills for commercial agriculture; the subdivision of agricultural land into parcels below the critical size for commercial agricultural purposes and difficulties in the process of consolidating land parcels for commercial agricultural production.



Plate 26: Maize fields as part of the Trans Nzoia landscape
(Source: Simuplan fieldwork, 2018)

3.3.7 Land ownership



**Plate 27: Chepchoina informal settlement in ADC farm
(Source: Trans-Nzoia County Gallery)**

Various institutions in the County such as ADC, KARI, GK Prison, Kenya Forest Service etc. own huge chunks of land in the County. Most of the land has not been developed providing opportunities for land grabbing and development of squatter settlements. This has resulted in the mushrooming of informal settlements throughout the County as individuals are unwilling to build permanent structures fearing eviction.

3.4 Physiographic Characteristics

3.4.1 Overview

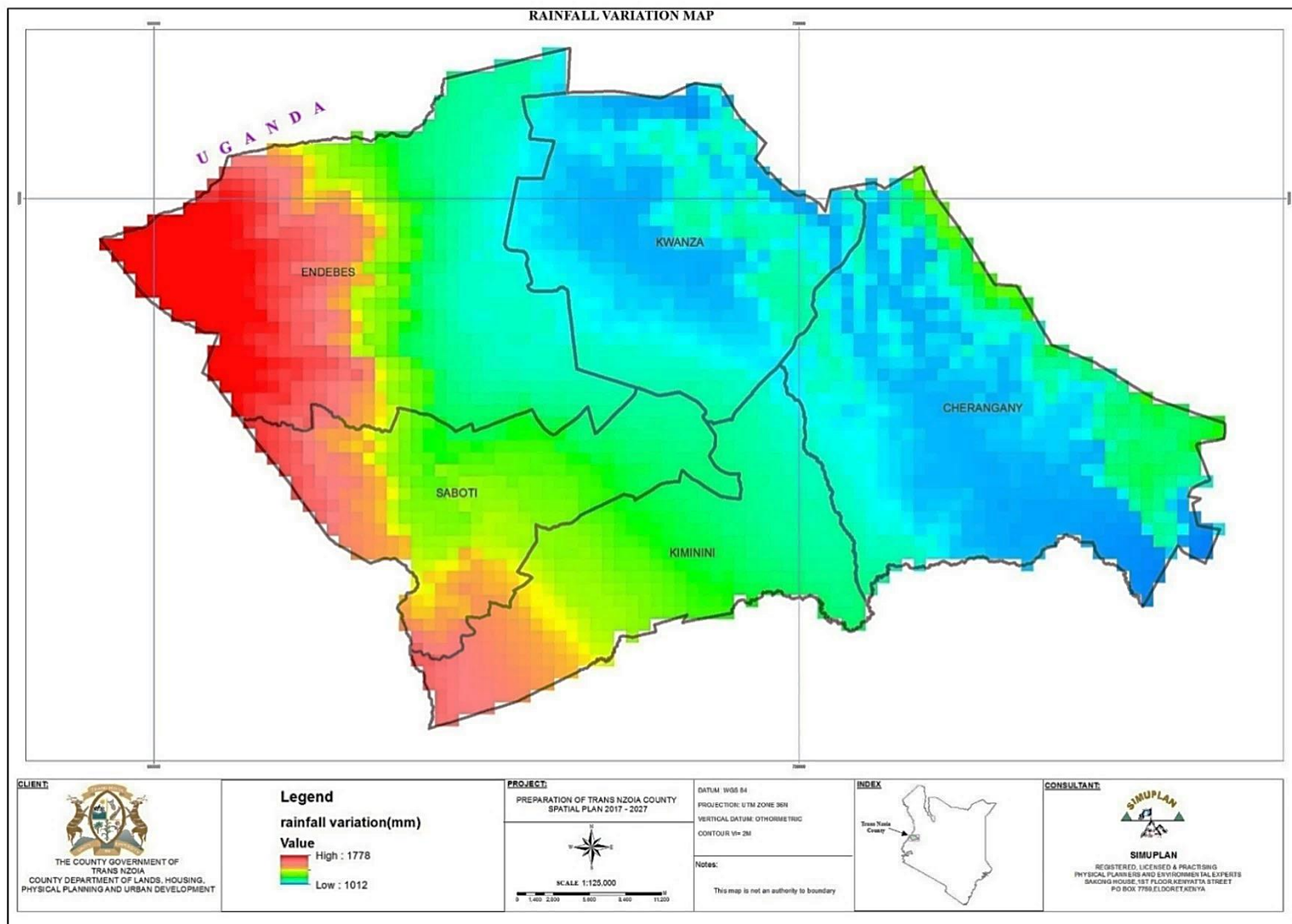
Trans Nzoia County is one of the few counties in Kenya that is well endowed with potential in terms of the physical and biological environment. This is important as natural capital for growth and development of the County. Various factors contribute the physiography of the County. These factors include: topography and drainage, geology and soils, climate and natural resources. Different areas within the County have different characteristics which influence land use within areas in the County. This section covers the physiographic characteristics of the County and how they relate to county spatial planning.

3.4.2 Climate

3.4.2.1 Rainfall

Rainfall distribution within the County varies from one area to another. The annual amount of rainfall received within the County varies from 1000mm-1778mm. The Mt. Elgon forest area receives the highest amount of rainfall between 1542mm-1778mm. Kapolet forest and areas surrounding the Mt. Elgon forest receive the second highest amount of rainfall annually. It varies between 1232mm- 1542mm. The western parts of Endebess, Kiminini and Saboti counties receive the highest amount of rainfall annual as they are closer to Mt. Elgon forest. The eastern parts of Endebess. Kiminini and Saboti Counties receive low amounts of rainfall between 1012mm-1232mm. Cherangany and Kwanza sub-counties have most areas receiving the least amount of rainfall annually between 1012mm-1232mm as compared to the other counties. The western side of Cherangany sub-County receives moderate rainfall between 1232mm-1252mm.

The County annual rainfall is distributed into three seasons. The long rainfall season-between March and April, the intermediate rainfall season-between the months of June, July and August and finally the short rainfall season-between October, November and December. This rainfall seasons are important for agricultural purposes. The long and intermediate rainfall seasons are more suitable for agricultural activities to be undertaken. Even so, there has been an increase in drought spells and flooding which severely affect the livelihood of the people within the County.



**Map 16: Rainfall distribution
(Source: Simuplan, 2019)**

3.4.2.2 Temperature

The County experiences a cool and temperate climate therefore the temperatures aren't very high. The mean maximum daytime temperatures range between 23.4°C-28.4°C. The mean minimum night time temperatures range between 10.0°C-13.5°C. There are those months that may experience extreme temperatures such the month January and February. January records an extreme minimum temperature of about 6.5°C while February records an extreme maximum temperature of about 34.2°C. The average temperature is approximately 18.6°C.

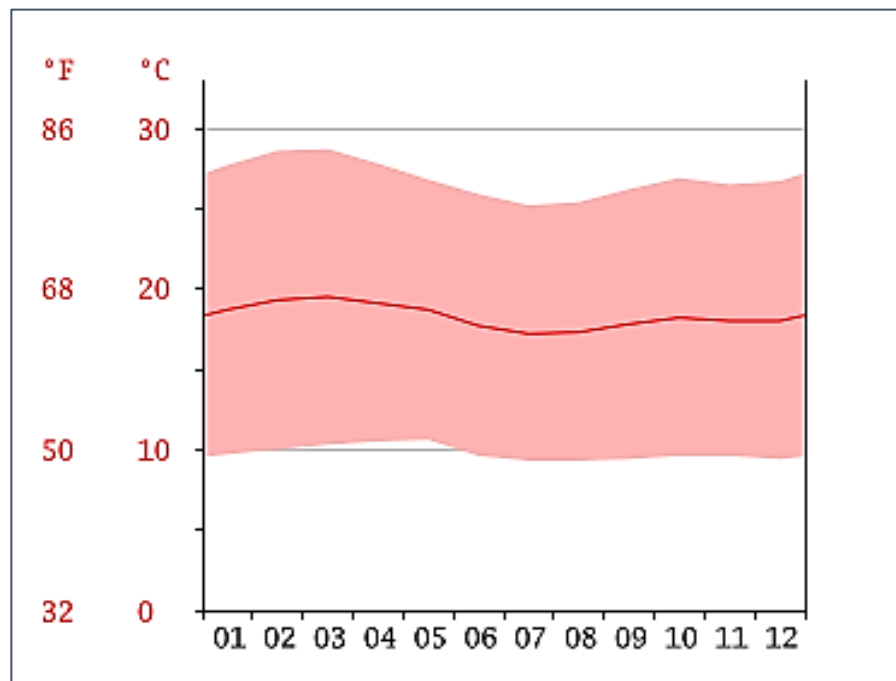
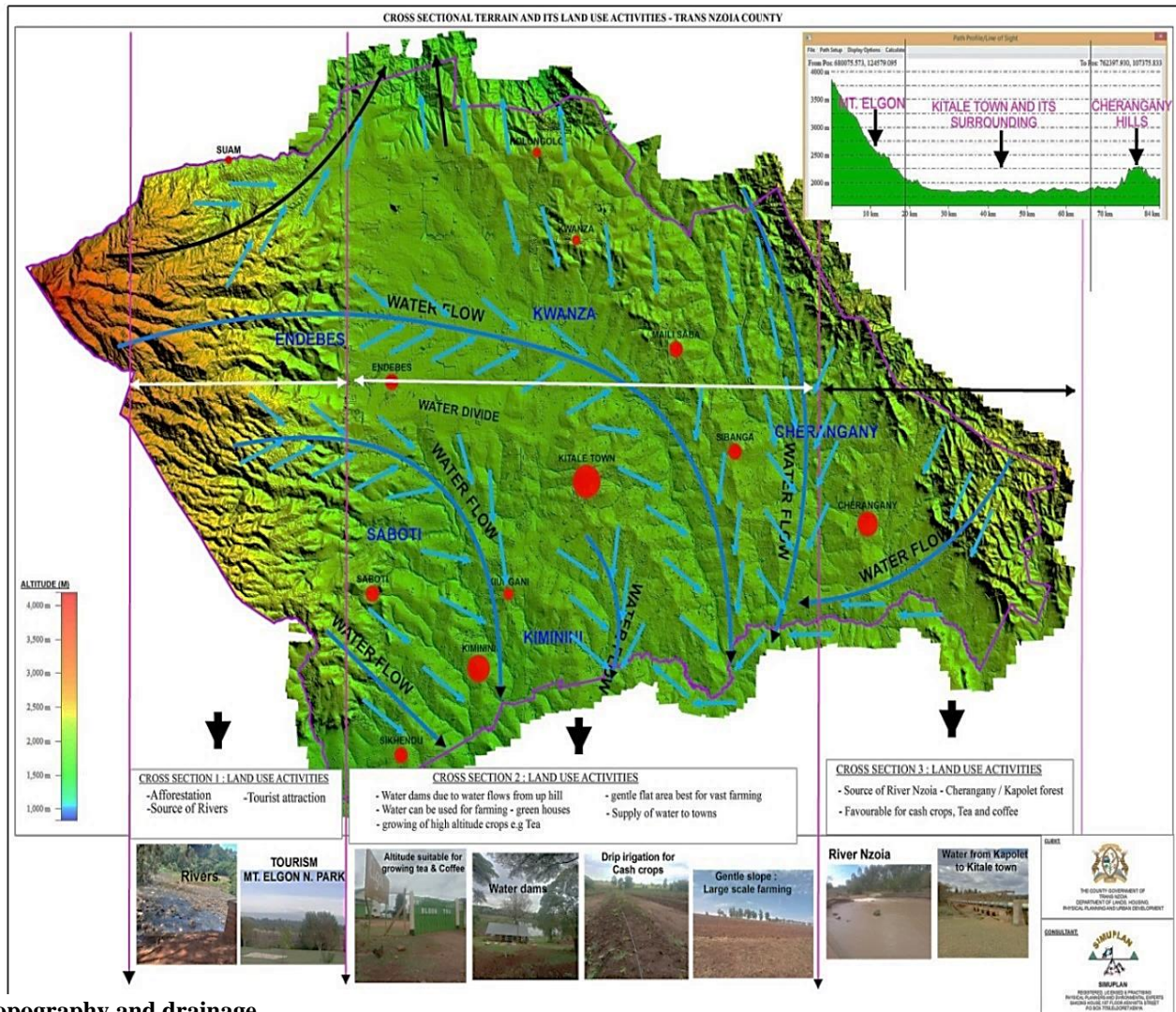


Figure 8: Trans Nzoia County annual temperatures
(Source: <https://en.climate-data.org/africa/kenya/trans-nzoia-1676/>)

3.4.3 Topography and Drainage



The County has a terrain that varies in different areas. The County has gentle rising slopes towards Mt Elgon as well as Cherangany hills. The area around Kitala town is generally flat with gently undulations rising steadily towards Mt. Elgon and Cherangany hills. The terrain altitude varies approximately from 1000m to 4300m above sea level. The highest altitude is at Mt. Elgon while the lowest altitude varies within Kwanza and Kiminini sub counties. The altitude within the area influences the direction of water flow within the County. Most of the waters flow from the Mt. Elgon and Cherangany areas towards the southern part of the County and past the County boundaries.

Map 17: Topography and drainage
(Source: Simuplan, 2019)

The variation of terrain in the area affects different land use activities differently. Transport is grossly affected towards the areas that are steep such as the Mt. Elgon areas and Cherangany hills. The variation in altitude could be divided into three cross sections for different land use activities. The cross sections are as shown in the DEM map above.



Plate 28: Mt. Elgon
(Source: watertowers.go.ke)

Cross section 1 (above) is approximately between altitudes 2500m to 4300m. This covers the areas around Mt. Elgon and the boundary towards West Pokot. The area is majorly covered by high vegetation mostly natural, Mt. Elgon forest. It is a major source of rivers as well as a tourist attraction due to the presence of Mt. Elgon and the National park. Some of the slopping areas have been put to farming as shown in the image below.

Cross section 2 (above) is approximately between altitudes 1500m to 2000m above sea level. The region includes the Endebess Plains stretching east of the Kitale Plains below the slopes of there is a considerable that is put under other land use towns such as Kitale flow from uphill.



Plate 29: Endebess
(Source: Fieldwork, 2018)

and further towards the areas Cherang'any Hills. In this area amount of gently sloping land farming. The area is also put into activities including presence of town, water dams due to water Below is an image of a water



Cross section 3 (above) is approximately between altitudes 1800m-2400m above sea level. This area mainly covers Cherangany hills and the slope of Mt. Elgon. This area includes Cherangany/ Kapolet forest and it is the source of a major river, River Nzoia.

It constitutes 34% of the County in terms of size. The area supports both agricultural and livestock activities. This region is highly fertile and support farming activities. Various types of cash crops are grown within the region such as pyrethrum, wheat, tea, coffee and horticultural crops.

3.4.4 Hydrology

The natural surface water resources within the County include rivers and swamps. There are two swamps in the County which include the Saiwa swamp and Sabwani swamp.

There are three main rivers in Trans Nzoia County namely; **Ewaso-Rongai** which has several tributaries that include Kabeyan, Kissawai, Kipkulkul, Tongaren, Kabuyefwe and Machinjoni. **Noigamaget River** also has several tributaries which include Kapolet and Sinyereri while **Sabwani River** has Kiptogot, Mubere, Kaibei, Kimothon and Chepchoina as its tributaries. These three rivers are the major tributaries of river Nzoia which drains into Lake Victoria while Suam River drains into Lake Turkana. Given that most rivers are seasonal, flooding tend to be experienced during heavy rains in parts Namanjalala and Endebess. The flooding is mainly caused by vegetation cover depletion

The water from the rivers is utilized for domestic consumption, small scale irrigation and also have potential for hydroelectric power generation to support rural electrification, industrialization and fisheries. These activities could be a mitigation towards floods in the County. River Nzoia catchments and its tributaries are however threatened by encroachment, agriculture and other human activities.

3.4.5 Vegetation cover

3.4.5.1 Forests

The County has various forests with the largest forest cover being at Mt. Elgon and Cherangany hills. Other forests in the County include: Kitale township forest, Kapolet forest, Saboti forest, Kitalale forest, Suam forest, Kimonthom forest and Kiptogot forest. The total area of gazetted forest in the County is 45, 454.37 ha and the area of non gazetted forest is 252.53 hectares. Mt. Elgon, Kapolet and Sikhendu are the only gazzetted forests in the County. The County also has several undocumented forest areas under private and institutional ownership including the Mount Elgon National Park. These forest are mainly natural (indigenous forests), plantation forests, bamboo, moorland and grass.

The County has over 17% of the total County surface area forest cover as compared to the country which has a cover of 1.7 percent (Kenya National Climate Change Strategy 2010). This places the County at an enviable position in Kenya as one of the top 10 forested counties. However, the forests have been facing intense pressure due to human activities mainly encroachment and agricultural expansion. A good example is the Kitalale forest which is mostly settled although still considered as a forest in the County. These forests are critical to the climatic conditions of the territorial boundaries of the County and beyond as they are the water catchments for Lakes Turkana and Victoria.

3.4.5.2 Wetlands

Wetlands are areas of land that are permanently or occasionally waterlogged with fresh, saline, brackish or marine waters, including both natural and man-made areas that support characteristic plants and animals. As unique ecosystems they are highly valued for the benefits they provide which include flood control, prevention of soil erosion, water purification and nutrient and toxic retention. They mitigate climate change and are habitats of key biodiversity. The wetlands provide a number of economic benefits such as leisure, amusement, tourism opportunities, water supply, timber production and agriculture.

Major swamps observed in the County include Saiwa, Sabwani and Kitale nature conservancy. Notable wetlands identified were Sinyereri/Kipsaina wetland, Kapolet, Chepkaitit, Chepchoina, Mubere, Kiptogot, Machinjoni and Namanjalala, Rafiki farm, Matisi, Miti Jambazi in Kibomet, , and Moiwet.

Most of the wetlands are under agricultural land use and residential (settlement) land uses. Some are used as grazing grounds for livestock, brick making rounds, water abstraction as well as recreation purposes. A good example is the Kitale Nature conservancy and the Rafiki farm.



Plate 31: Grazing in wetlands



Plate 32: Miti Jambazi wetland

(Source: na.unep.net)

Encroachment for crop agriculture is the most common pressure facing all the wetland within the County. The wetlands also experience pollution from both domestic and industrial effluents. Some of the wetlands are also been converted to residential land uses.

Wetlands are important in maintaining the ecosystem balance therefore should be conserved in their natural state. The Kitale Nature Conservancy is one of the best conserved wetlands in the County.

3.4.6 Geology and soils

3.4.6.1 Geology

The geology of the County is majorly composed of pyroclastic and gneiss rocks. Fluvial soils are found along the rivers in the County.

A huge portion of Endebess sub-County especially the areas around Mt. Elgon and parts of Saboti County have pyroclastic rocks. This is mainly due to the volcanic activity at Mt. Elgon. Pyroclastic rocks are sedimentary rocks composed primarily of volcanic material. These rocks are formed through accumulation of broken materials generated from explosive magma and/ solid rocks during volcanic eruptions. Most of rocks are formed when the volcanic activity occurs at the crust of Mt. Elgon.



Plate 33: Basalt rocks mined in Saboti Sub-County for construction purposes
(Source: Simuplan, 2019)

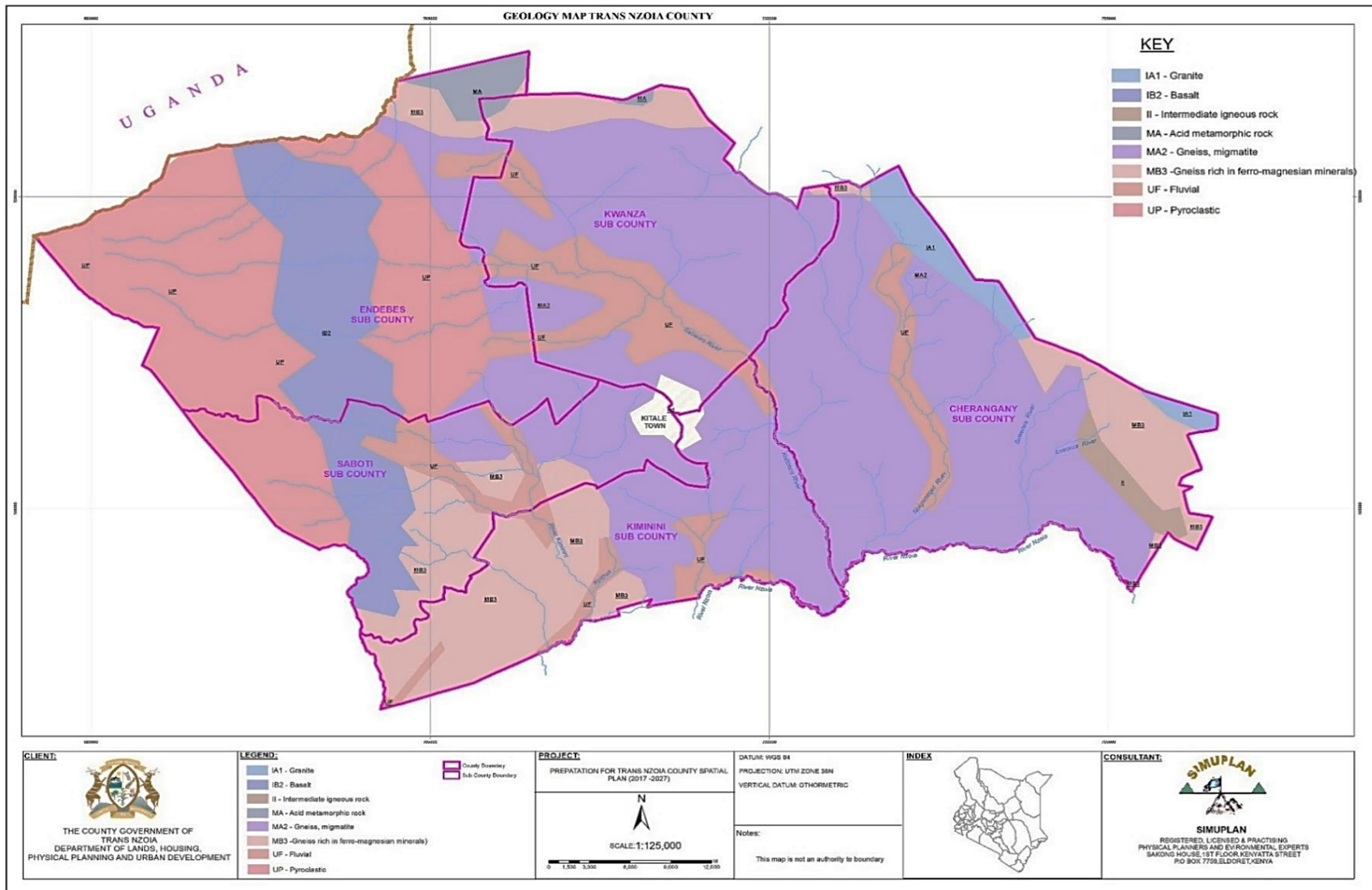
Endebess and Saboti sub-counties also have basalt rocks which form a belt around the pyroclastic rocks found in Mt. Elgon area. Basalt is a mafic extrusive igneous rock formed from the rapid cooling of magnesium-rich and iron-rich lava exposed at or very near the surface of the earth. It is the most

common igneous rock within mountainous areas. It is found within these areas as a result of volcanic activities within Mt. Elgon and Cherangany hills. The basalt rocks contain both coarse and fine aggregates that may be used in the construction industry.

A large portion is found in Kiminini, Cherangany and Kwanza Sub-counties is covered by Gneiss rocks. These are common and widely distributed type of metamorphic rocks. They are formed by high temperature and high metamorphic process acting on formations composed of igneous or sedimentary rocks. In most of these rocks, the degree of deformation is intense and is of high metamorphic grades. They were thus referred to as the basement system rocks, due to high degree of metamorphism and deformation

Granite rocks area found within the Cherangany hills are. These are light-colored igneous rocks with grains large enough to be visible with the unaided eye. It is formed by the slow crystallization of magma below Earth's surface. Granite is composed mainly of quartz and feldspar with minor amounts of mica, amphiboles, and other minerals. This mineral composition usually gives granite a red, pink, gray, or white color with dark mineral grains visible throughout the rock. This type of rock is well known as a construction stone.

Fluvial rocks are found in along the rivers and streams in the County. The rocks are formed when the rivers carry and deposit solid particles or sediments of rocks from its bed. The map below shows the geological distribution within Trans Nzoia County.



Map 18: Geology distribution in the County
(Source: Simuplan, 2019)

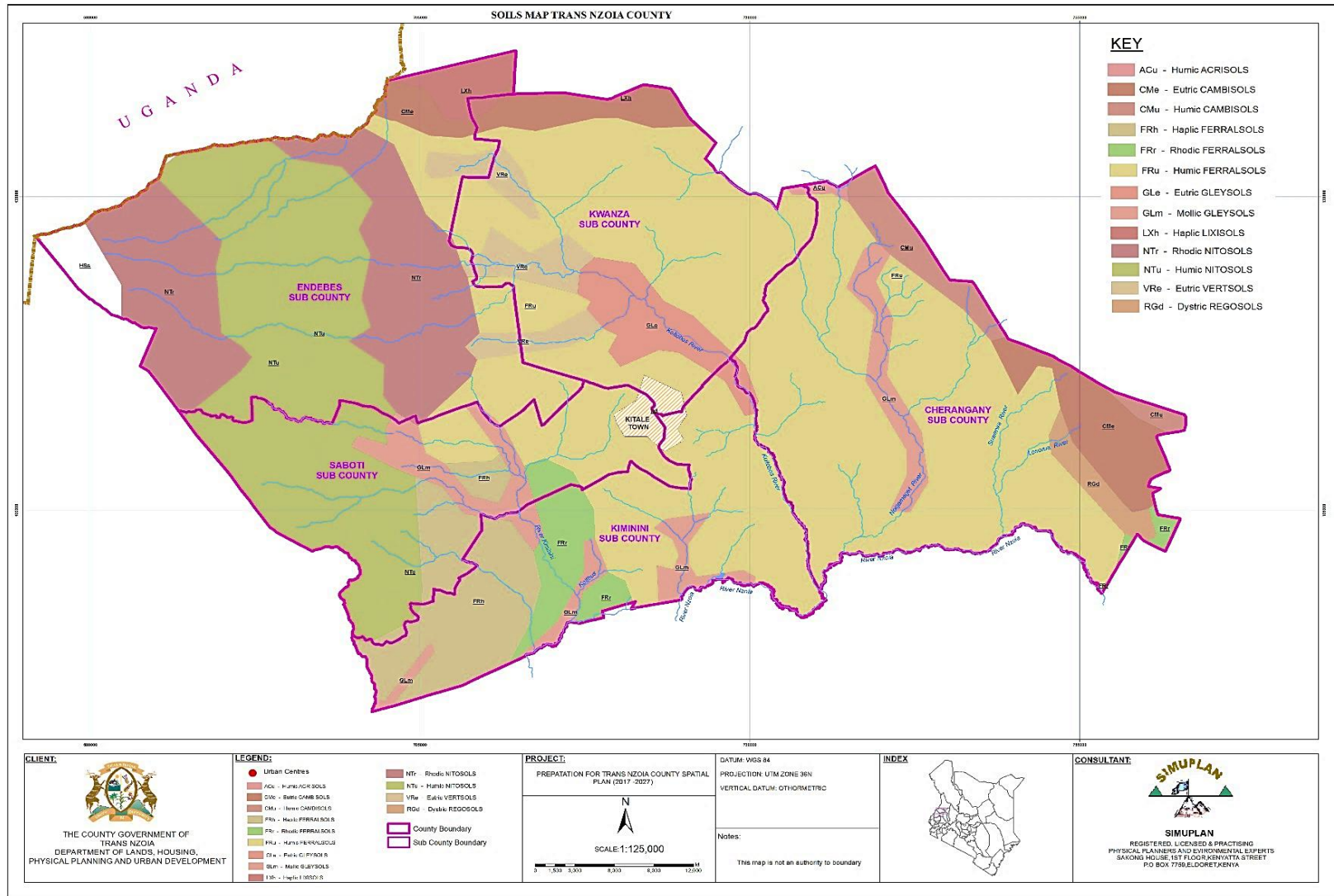
3.4.6.2 Soils

Major soils in the County include: nitosols and ferrasols. A large fraction of Kwanza and Cherangany sub-counties have humic ferrasols. These soils are strongly weathered, strongly leached and have an indistinct soil horizon differentiation. The color of the soil is widely variable from dark red to brown. They are friable, highly porous and permeable. The structure of these soil is weakly cohesive massive sub-angular blocky and it is characteristically stable. Because of the presence of residual metal oxides in the soils and the leaching of mineral nutrients, these soils have low fertility and require additions of lime and fertilizer if they are to be used for agriculture. Addition of manure or fertilizer is necessary for optimum crop yields. The soils have excellent capacity to hold moisture since they are deep and porous and have high clay content. Although they are not highly eroded, soil conservation measures are necessary.

Endebess and parts of Saboti sub-counties have both Rhodic and Humic Nitosols. Nitosols are very deep more than 150 cm deep and are often found in the Upper Midland Zone in this case Endebess and Saboti sub-counties. These soils have a clay texture and show gradual to diffuse soil horizon boundaries. The color is often dark red, dusky red or dark reddish brown. These soils have favorable moisture capacity and aeration. They have marked structural stability which allows cultivation even on moderately steep gradients. The chemical properties of these soils vary widely and the organic matter content, cation exchange capacity (CEC) and percentage base saturation range from low to high. The soils are known to have a high degree of phosphorus sorption. These soils require fertilizer or manure for optimal crop yields and it is one of the best agricultural soils in the County. The soils are ideal for tea and coffee plantations.

Eutric vertisols and Gleysols are found in wetland areas and have high clay content. They were noted along Koitobos and Kiminini rivers. Gleysols are poor drained mineral soils which are water logged. They are found in swampy and marshy areas.

Vertisols, on the other hand, are dark cracking soils popular known as black cotton soil. Their most distinct feature is their ability to expand and contract with changes in their moisture content. During dry seasons, they shrink resulting in large cracks. Their chemical composition is high with the exception of nitrogen and phosphorous. Because they are extremely sticky when wet and hard when dry, their workability is very poor.



Map 19: Trans Nzoia Soils Map
(Source : Simuplan, 2019)

3.4.7 Minerals

Trans Nzoia County has not been left out though mining activities within the County are still very minimal. Traces of graphite have been detected at Cherangany hills. Other minerals reported are asbestos and vermiculite. These and more elements require further study before explorations.

However, quarrying for building stones and sand harvesting are carried out in Machewa, Saboti and Chepchoina wards. Sand harvesting is done in river Nzoia and in Keiyo ward in the areas neighboring West Pokot County. Derelict quarries are a major environmental concern in the County. Some of the quarries have been known to collapse causing resulting in series fatalities.



Plate 34: Quarrying in Saboti sub-County in Lukhome area
(Source: Simuplan Fieldwork, 2019)

3.5 Population and Demography

This section provides information on the County's population size, composition, density, distribution, population projections and the demographic dividends. It also covers the Human development index (HDI) for the County. This report is based on the recently concluded 2019 population census.

Population structure

The population of the county has continued to grow as shown in the table below.

Table 2: Trans Nzoia County Population growth

1979	1989	1999	2009	2019
259,503	393,682	575,662	818,757	990,341

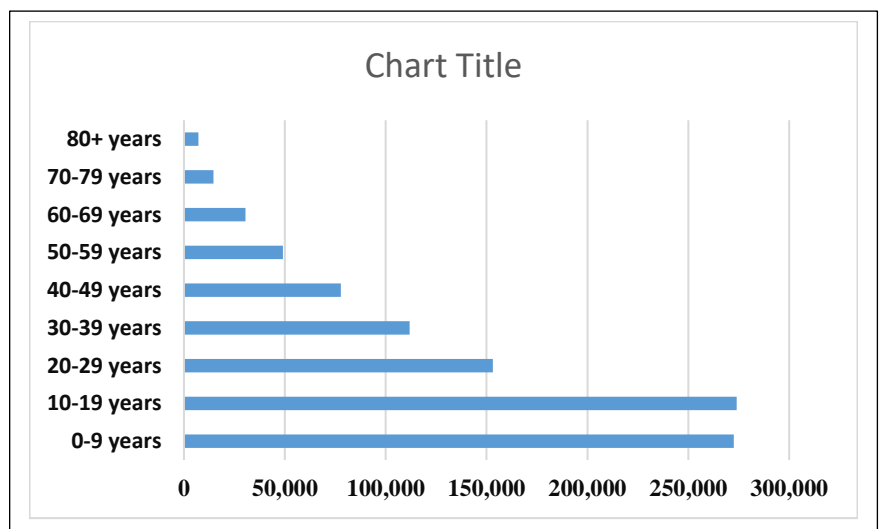
Source: KNBS website

According to the 2019 population census, Trans-Nzoia County had a population of 990,341 Persons of which 489,107 were males, 501,206 were females and 28 were intersex. Using the County inter-censal growth average of 1.92%, the projected population for the county in the year 2030 is expected to be 1,223,229 persons with the male population at 604,126 and the female at 619,070.

A large portion of the County population is 0-19 years and below as show in the population table and pyramid below. The population structure is predicted to remain the same by the year 2030.

Table 3: Population Age distribution

Age Distribution (C 2019)	
0-9 years	272,480
10-19 years	273,892
20-29 years	153,057
30-39 years	111,848
40-49 years	77,746
50-59 years	49,031
60-69 years	30,566
70-79 years	14,556
80+ years	7,133



(Source - KNBS 2019)

The table above indicates that the highest proportion of the population in Trans Nzoia County are persons between the ages 15-64 years that accounts for 53.9 of the current population. Children between the age of 0-14 years form 42.6% of the population while persons of ages 65 and above form the remaining 3.5%. The large youthful population translates to the availability of adequate labor force to boost the economy of the County.

3.5.1 Population projections per sub-counties

Kiminini and Cherangany sub-County had at highest population according to the 2019 population census while Endebess sub-County was the least populated. The table below shows distribution per Sub County as per the 2019 population census as well as the projections by the year 2030.

Sub-County	2019	2030
Kiminini	242,823	249,968
Saboti	202, 377	283,516
Kwanza	203,821	251,752
Endebess	111,782	138,069
Cherangany	229,538	299,926

Table 4: Population projection per sub-County
(Source: Kenya National Bureau Statistics, 2019)

3.5.2 Population Projections by Urban Centers

From the 2019 population Census, it was noted that the 82% of the total population is rural while only 18% is urban. This indicates that the level of urbanization in the County is very low and stimulus programs need to be put in place to facilitate urbanization throughout the county in a sustainable manner.

In line with the Urban Areas and Cities Act, 2011 Trans Nzoia County has two main urban centres namely Kitale and Kiminini towns. According to the 2019 Population Census, Kitale town population stood at 162,174 persons. This is an increment of 5.16% from the 2009 population census of 98,071 persons.

Kiminini town on the other hand is urbanizing at a high rate as indicated by the high population increase in the 2019 Census. The town has a population of 5,523 in the 2009 Population Census which has since increased to 16,560 persons. This is an increment of 11.61% which has surpassed

the country's growth rate of 2.2% by 10.41%. This shows that the town is growing at a fast pace and proper planning is required to steer this growth in the right direction.

3.5.3 Population density and distribution

Trans Nzoia County is among top fifteen densely populated counties in the country. From the 2019 Population census, the County had an average household size of 4 persons while the population density stood at 397 persons per square kilometer. This is expected to increase to 491 persons by square kilometers by the year 2030. The population density per Sub County is as shown in the table below:

Sub-County	Area (Sq. Km)	2019	Density	2030	Density
Kimini	395.3	242,823	614	249,968	633
Saboti	323.6	202,377	626	283,516	877
Kwanza	446.9	203,821	457	251,752	564
Endebess	680	111,782	165	138,069	203
Cherangany	629.8	229,538	367	299,926	476

From the above table, Saboti Sub-County has the highest population density. This is mainly due to the fact that it has high population with the lowest land size at 323 Km². Endebess being the largest sub-County in terms of size with the least population has the lowest population density. Population density determines the distribution of infrastructure and services in the sub County. Areas with low population density require strategic distribution of basic facilities and infrastructure and services to ensure maximum accessibility.

3.5.4 The people, Religion and Traditional Culture

The County has cosmopolitan population, with Luhya, Kalenjin, Sabaot and Kikuyu being the main resident communities. Historically, the County was inhabited by the Bukusu and Kalenjin people. After independence many of the farms vacated by white settlers were bought by individuals from other ethnic groups in Kenya. Kitale, its capital town, is now more cosmopolitan with inhabitants from other tribes in Kenya occupying almost 15% of her population.

Majority of people living in Trans Nzoia County are Christians. Prominent churches in the County include Anglican (A.C.K.), Roman Catholic and Presbyterians. There are numerous evangelical churches among them the Deliverance, A.G.C, P.E.F.A, Full Gospel and Assemblies of God. Other faiths such as Islam and Hinduism are also professed especially in major towns.

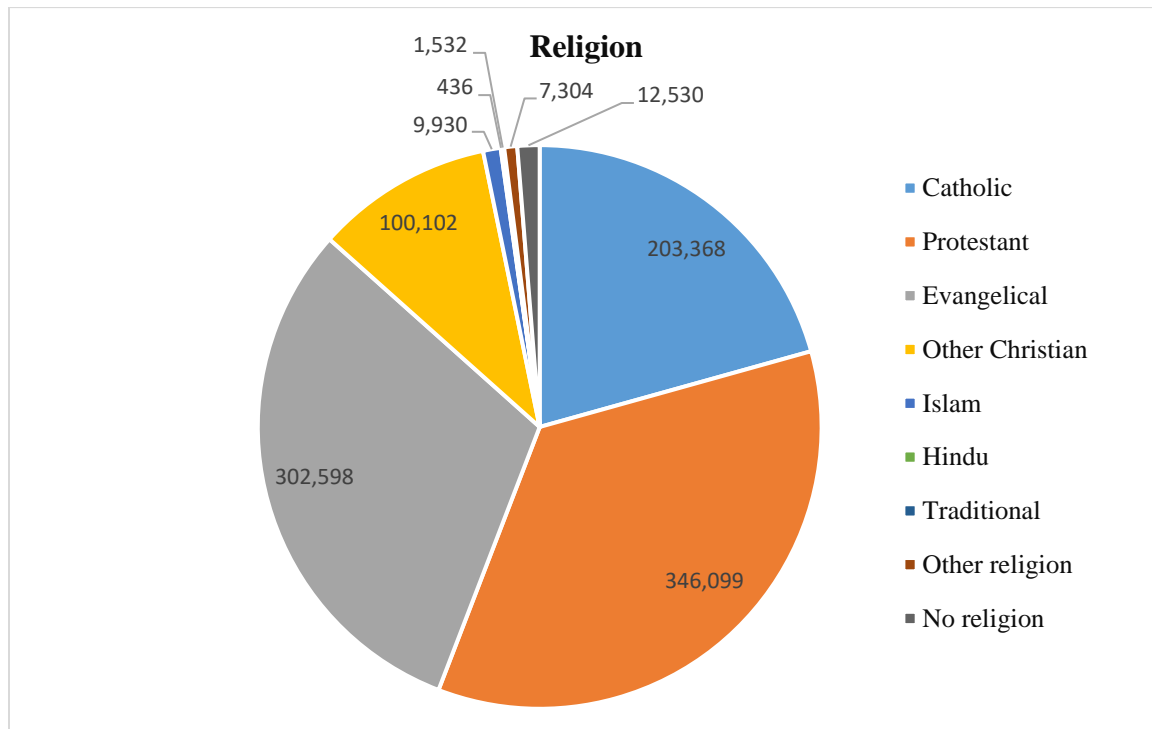


Figure 9: Religion distribution
Source: KNBS 2019

In general, the County has many cultural distinctions and differences in ways of life among the individuals and communities within depending on their present and past ethnic identity, association and patronage. This factor constitutes a resource of great tourism potential for the County, but it has not been developed or exploited from this positive angle. The main reason is the scarcity of awareness and knowledge of tourism related business and of proper organization for promotion and marketing of cultural products at community and regional levels.



Plate 35 : Boys from Bukusu tribe participate in a circumcision ritual ceremony
(Source: Trans-Nzoia County Gallery)



Plate 36: Men drinking the Luhya traditional Busaa drink Plate 37: Group of women performing the traditional Esukuti dance
(Source: <https://urbwise.com/2019/09/11/how-the-luhyas-brew-busaa-drink/5035/>)

CHAPTER 4.0 SITUATIONAL ANALYSIS

4.1 Overview

This chapter provides a detailed examination of Trans-Nzoia County otherwise referred to as situational analysis with a basis of ascertaining the key aspects that systematically outlines the strength, weaknesses, opportunities as well threats to be considered in preparing the Spatial Plan. Areas of focus include: - urbanization & urban development, land and land use, housing& human settlement, economy & livelihoods, transport & communication, infrastructure & utilities, social infrastructure, environmental & natural resources and governance.

4.2 Land and Land Use

4.2.1 Land Tenure

According to the Kenya Constitution 2010, land is categorized into public, private and community land. Private land is land that is owned by individuals, registered groups, companies or organizations while public land is land owned by public institutions. Community land on the other hand is land that is held by communities identified on the basis of ethnicity, culture or similar community of interest.

The County was originally started as a settler farming district around 1910 where the boar settlers were allocated 2000-3000 acre farms. In 1912 the first land survey of the district was conducted but by then forest land had already been gazetted. After the survey, 50 first farms were auctioned and sold in 1913 while 20 remained unsold. By 1914, all the farms had been sold and 120 more farms were auctioned. The whole of Trans Nzoia County was part of the ‘white highlands’.

Allocation of farms to white settlers often resulted in the displacement of the local community (El Gonyi). The original people were very few and also pastoralists making the area look uninhabited to the colonialists. As a result the local people became workers on the farms and started squatting on the farms owned by the white settlers. The work on the white farms attracted individuals from outside Trans Nzoia District. Land within the towns was either crown land or freehold.

Trans Nzoia District was also one of the highland areas where Ex-soldier settlement schemes were established after World War I and World War II. Each British soldier taking part in the war was eligible for a piece of land. The land near Kitale totalling 28000 acres was earmarked for this

purpose. After World War 1, a total of three schemes existed totaling 72000 acres of land. A second phase happened after World War II totalling 25000 acres of land affecting both Trans Nzoia and Uasin Gishu District.

In 1960, the Order in Council terminated the Highlands Order in Council which had prohibited all non-Europeans from owning land or farming in Kenya Highlands. In the Sessional Paper of the Kenya Colony and Protectorate Council 1959/60 (No. 6), prohibitions against transfer of freehold land between parties of different races were withdrawn.

After independence, the number of white settlers in the district dropped quite significantly and most of the white farms were disposed off through five methods:

- Kenyan individuals bought whole farms
- Cooperatives bought them collectively and divided them amongst its members
- Government bought them (Some of this land is now ADC farms, the rest have been given for settlement schemes i.e. for small-holder agricultural land)
- SFT (Settlement Funds Trustee) bought them between individuals for small-scale farming
- The Government bought them for forestation purposes.

Currently, land in the County is predominantly held privately under leasehold and freehold tenure system while in some parts of the urban areas it is held on temporary basis under Temporary occupation Licenses (TOLs).

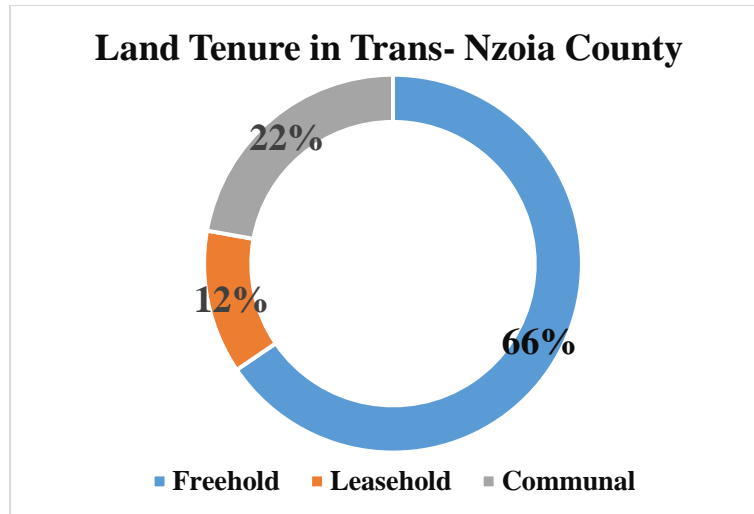


Figure 10: Land Tenure system
(Source: Simuplan Fieldwork, 2018)

Land tenure systems are as follows:

- Free hold land – Absolute ownership
- Leasehold – the leases are for a period ranging from 33, 66, 99 and 999 years.
- Temporary occupational licenses – these licenses are for up to 9 months and no permanent structures may be put up on the land parcels and are normally in urban areas.

The County still characterized by large pieces of farmland belong to ADC (Agricultural Development Corporation). ADC is a parastatal that has operated in the County since 1965 when the government bought large tracts of land from the white settlers after independence. Over the years, some of the ADC farms have been subdivided for small scale agriculture while the remaining farms were set aside for seed production as per the Parliament Act in 1987.

Currently the County has about eight ADC farms and covering approximately 15797.23 Ha in total. These farms are located mainly in Endebess and Kwanza Sub-Counties and concentrate on seed production together with Kenya Seed Company and livestock breeding. While some of the farm employees working in the ADC farms are usually given small pieces of land, the casual laborers often end up as squatters living in ADC farms.



Plate 38: ADC Semen Center and Kenya Seed Company in Endebess Sub- County
(Source: Simuplan, 2019)

Although most of the land tenure issues in the County have been settled with the recent titling program, there still exist instances of land conflicts with the major contributing factor being the lack of a comprehensive inventory by the County of all the land as per various categories and their sizes. Uncertainty and conflicts also exist with regards to the claims to land titles especially in cases where there is a discrepancy between the land register and actual pattern, sizes, access or use on the ground.

Other land tenure issues in the County include subdivision of land by squatters living in the ADC farms or other public and or community land among their children as inheritance and numerous land sales, subdivisions and successions that go unrecorded resulting in individuals living on land titled to another person in most cases a deceased person.

4.2.2 Mean Land Holding Size

Small scale farmers on average have 0.607 Hectares of land while the large scale farmers hold an average of 12.15 Hectares. The increased sub division of land, due to land inheritance, has considerably reduced the mean holding size of land for small scale farmers. In addition most of the land in the County is acquired through cooperative societies and with the subsequent sub division to members into smaller units, this has greatly reduces the mean holding size.

4.2.3 Possession of Land Ownership Documents

Majority of the residents of Trans-Nzoia County at 79.85% possess ownership documentation to their property. The remaining 20.16% of the residents do not have ownership documentation. This is due to the enhanced land titling program which aimed at ensuring that all the land in the country is registered. 88,000 land title deeds were prepared and submitted to Nairobi of which 15,000 were

completed. The County government also facilitated the processing of 6879 titles which greatly improved the number of individuals with title deeds.



Plate 39: Residents receiving land title deeds
(Source: Trans Nzoia County Gallery)

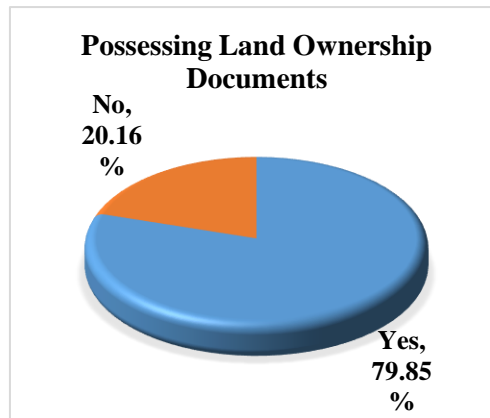


Chart 1: Possessing Ownership Documentation
(Source: Simuplan fieldwork, 2018)

4.2.4 Landlessness

Landlessness in the County is evidenced by the presence of squatter and informal settlements who have settled on public land. The instances of Landlessness in Trans Nzoia County have risen in the last 7 years. This can be attributed to internal displacement of persons during the 1992 clashes and the 2007 post elections violence as wells as evictions from Saboti, Kapolet and Mt. Elgon forests. The areas affected by the displacement include; Kiborooa in Trans Nzoia West Sub-County; Salama, Balale and parts of Chepchoina in Kwanza Sub County.

4.2.5 Land Use

Land practices vary considerably throughout the County. Land use in the County can be categorized into major categories such as wetlands, industrial land, and commercial, residential (settlements), recreational, public purpose, educational, infrastructure and utilities, transport, agriculture (farm lands) and undeveloped land. Other land uses include forests, rivers, shrubs, grassland, rural and urban areas.

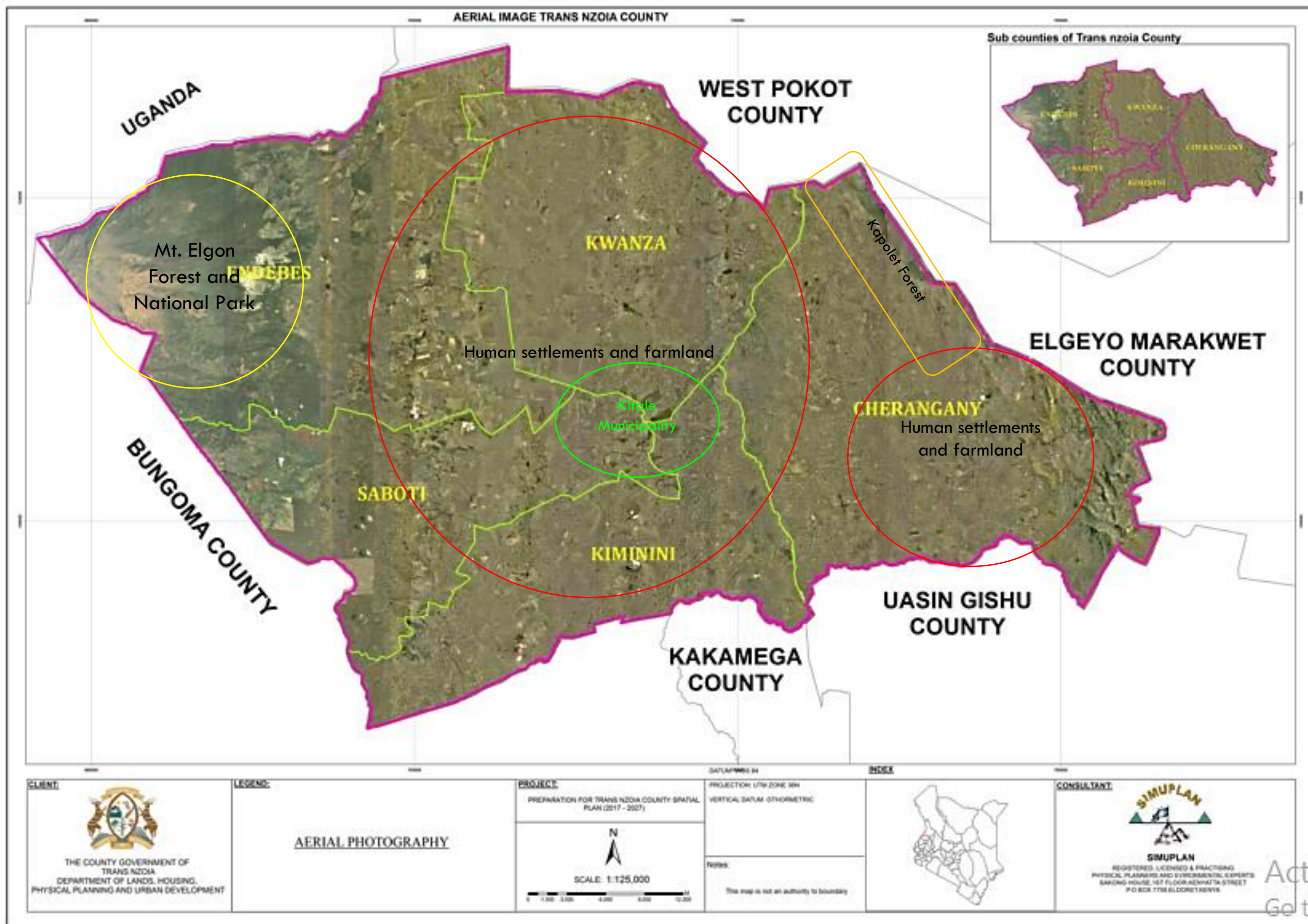
Table 5: Existing Land Use

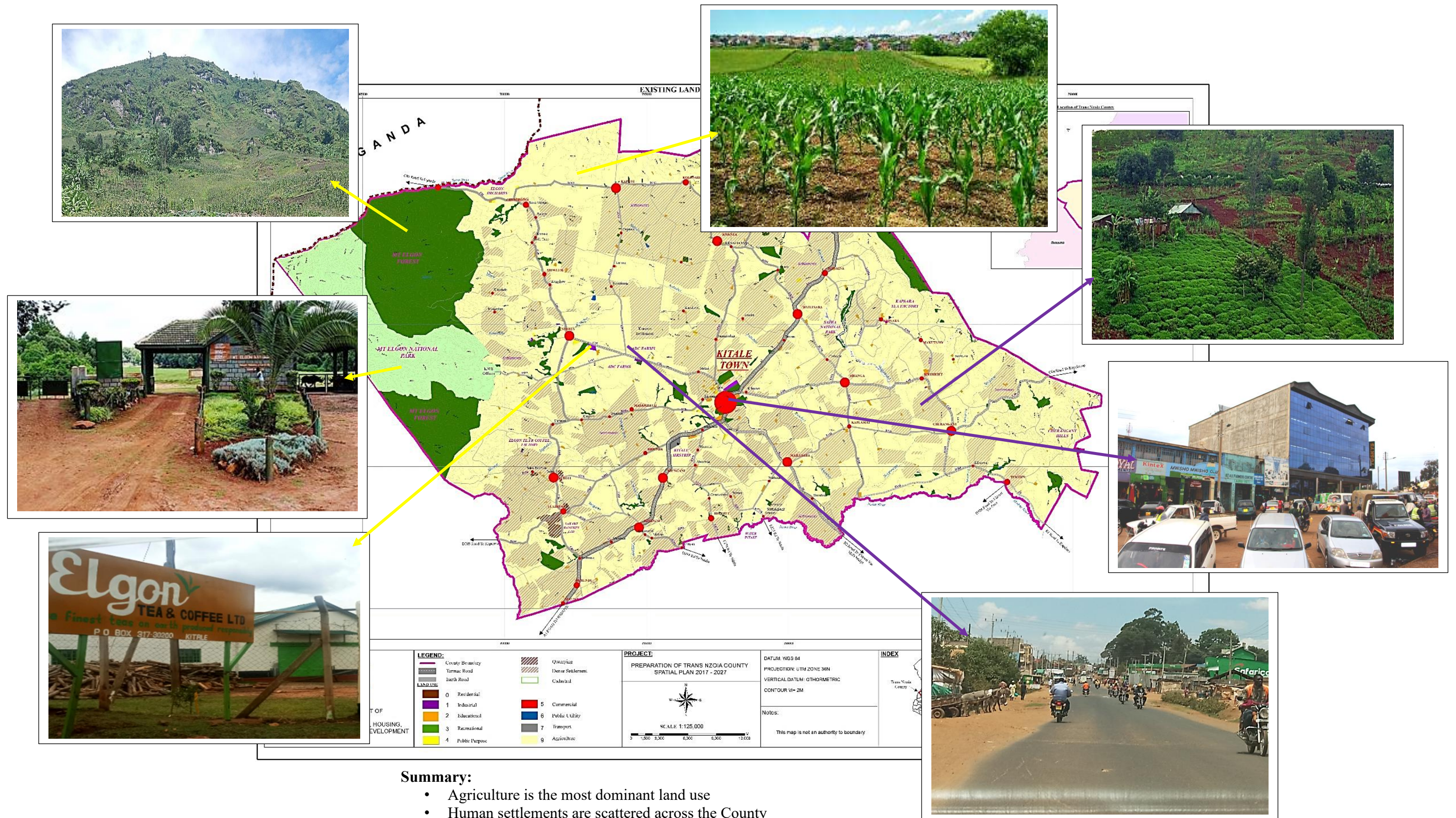
Existing Land Use Structure		
Land use type	Area Ha	Total percentage
Rural areas	72889.2	29%
Forests (Natural Vegetation)	42151.1	17%
Transport (Roads)	3099.15	1%
Urban areas	5854.48	2%
Wetlands	3124.22	1%
Agriculture	121479.5	49%
Total Area-Trans-Nzoia County	248597.65 Ha	100%

(Source: Simuplan, 2019)

From the table above, agriculture is the dominant land use characterized by large farms especially in Endebess and Kwanza sub-counties. The rural areas are characterized by farmlands and human settlements scattered throughout the County. The County tree cover percentage is at 17% which is 7% higher than the required standard. This is due to the fact that the forests are protected in the County and also most of the farmers in the County are encouraged to plant trees on their farms. Notable forests in the County include Mt. Elgon Forest and Kapolet forests.

Majority of the population live in the rural areas hence the small percentage allocated for urban areas. The map below shows the distribution of various land uses in the County.





Human Settlements-These comprises of built environment for both residential and commercial land uses. High density residential settlements found around Kitale and Kiminini town centres. Commercial centers are found along major transport routes resulting to linear form of development along the routes.

Transport –This includes land under roads (tarmac, earth, murram), airstrips and railway in Trans Nzoia County. Majority of the roads are in good condition and a number are being upgraded to better serve the residents. Transport covers approximately 1% of the total land size in the County.



Plate 40: Kitale Airstrip
(Source: Simuplan, 2018)

Water bodies-Major water bodies in the County include River Nzoia and Suam River which have numerous tributaries. The tributaries from River Nzoia include Sabwani, Ewaso Rongai and Noigamet, which flow into Lake Victoria while Suam River drains into Lake Turkana through Turkwel.

Agricultural lands-This is the most dominant land use in the County characterized by large farms belonging to ADC especially in Endebess (Ole Katongo & Katuke) and Kwanza sub-counties. Agriculture is also practiced at homesteads where individuals build houses small part of their farms while the rest is used for agricultural activities. Land under agriculture in the County is gradually getting fragmented due to unregulated sub-division of land and also the increasing population which has increased the demand for housing.

Industrial land use-these includes land that currently hosts industries in the County. Major industrial activities are Jua Kali and agro-based activities. Some of the industries present in the

County include; Kenya Seed Company Limited, Mt. Elgon Orchards, Kapsara Tea Factory, Cherangany Dairy Group etc. The County has approximately 49 industries. The County lacks a designated industrial park.



Plate 41: Industrial use in Trans Nzoia County
(Source: Simuplan, 2018)

Vegetation Cover- these include forested areas, parks, shrubs, wetlands and conservation areas. The current vegetation cover in the County is at 18% with a total area of 45,275.32Ha gazette forest and 252.53Ha as non-gazetted forest. Gazetted forests in the County include Mt. Elgon Forest, Kitale town forest, Kapolet forest and Sikhendu forest. The Mt. Elgon Forest, Kitale Town Forest and Kapolet Forest Reserves are both indigenous and plantation Forests while Sikhendu Forest Reserve is a plantation forest. The County also has two National Parks namely Mt. Elgon National Park covering an area of 19200 ha and Saiwa Swamp National Park known for the famous *Sitatunga Antelope* which covers an area of 290 Ha.

Although the vegetation cover is adequate at the moment, care should be taken to maintain the existing coverage. Environmental degradation due to encroachment on Mt. Elgon, poor farming practices, destruction of forests, unplanned settlements and natural disasters such as flooding and mudslides especially in areas around the hilly mountain tops have continued to affect the County tree cover. This has resulted in decreased forest cover, soil erosion, reduced agricultural productivity, loss of biodiversity, silting of dams, landslides and flooding and erratic rainfall patterns.



Plate 42: Farming at the foot of Mt. Elgon **Plate 43: Landslide in Mt. Elgon region**
(Source: Simuplan, 2019)

Commercial land use- Urban centers are located along major transport routes in the County. Kitale and Kiminini are the major urban centers in the County with Kitale serving as the County headquarters. Most of the centers exhibit a linear form of development at the center as while sparsely populated areas are found at the hinterlands.

Recreational land use-Trans Nzoia County is endowed with rich tourism attraction features. It forms part of the eastern tourism circuit, a key marketing focus for the Kenya Tourism Boards. The County is home to the second tallest mountain in Kenya, Mt. Elgon that is shared with Bungoma County and the Republic of Uganda. It is a unique resource for recreation as well as environmental and wildlife conservation.



Plate 44: Recreational land use
(Source: Trans-Nzoia County Gallery)

The landscape is endowed with exceptionally high diversity of animals and plants of renowned global importance. The area was declared a World Heritage site by United Nations Education, Cultural and Scientific Organization (UNESCO) in 2003. Efforts both now and in the future need to ensure its special designation is protected, conserved and monitored.

The Mt. Elgon has an ecosystem that has allowed development of a national park. The Mt. Elgon National Park is bisected by the border of Kenya and Uganda. The Kenyan part of the park was gazetted in 1968 and covers approximately 192 square kilometers.



Plate 45: Mt. Elgon National Park
(Source: Simuplan, 2019)

The park is endowed with different types of wild animals such as antelopes, leopards and monkeys. The park has three caves open to the public which include the Kitum, Making'eny and Chenyali Caves. Of the 3 caves, Kitum is the most famous. The cave which extends some 600 feet into the mountain has walls covered in salt. For decades, animals have travelled into the cave in the dead of night to use it as a giant salt lick.

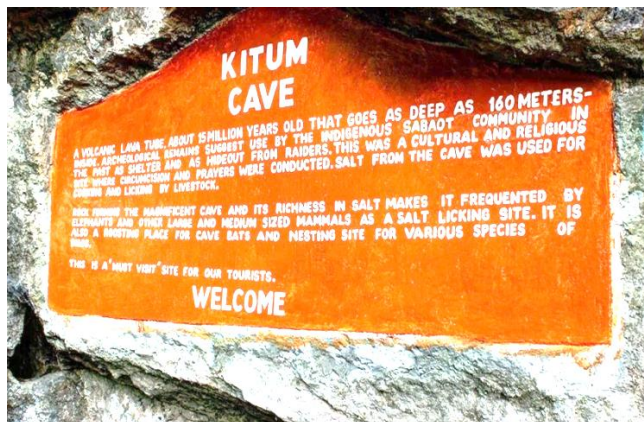


Plate 46: Kitum Cave
(Source: <https://www.wondermondo.com/kitum-cave/>)



Plate 47: Saiwa Swamp
(Source: Simuplan, 2019)

Another recreational feature in the County is the Saiwa Swamp National Park. It is the smallest national park in Kenya and covers an area of approximately 2.9Km². It was established in 1974 specifically to protect the habitat and preservation of the rare *Sitatunga*, an aquatic antelope. The park protects a swamp fed by the Saiwa River, which provides shelter for a viable population of the rare sitatunga antelope.



Plate 48: Saiwa Swamp vegetation
(Source: kws.go.ke)

The vegetation in the park is characterized by a mixture of forest and swamp habitat with tall bushes and reeds along its marshy edge. There are tree platforms overlooking the park from which visitors can view the *Sitatunga* antelope. The park also hosts other animals including the black and white Colobus monkeys, otters, genet cats, mongooses, bushbucks and De Brazzas monkeys. Due to its small size, it is not as popular as other national parks in the country.



Plate 49: Sitatunga Antelope
(Source: kws.go.ke)



Plate 50: Platform overlooking the swamp

Other recreational facilities which are also tourist attractions in the County include; the Kitale museum, Kitale Nature and conservancy, Treasures of Africa museum, Agro-forestry, agro-tourism, cultural and sports tourism, historical sites and sceneries which include caves and mountain escarpment. The County also has a stadium within Kitale town.



Plate 51: Kitale Nature Conservancy
(Source: Kenya Tourism Board)

The County also has luxurious hotels within it that offer recreational activities. Some of these hotels include Aturukan, Skynest, Vision gate, Kitale club among others. Kitale has a golf club that is one of the 36 golf courses in Kenya. Other than being a green space it serves people of different age groups for various recreational activities because of the numerous facilities it has.

In general, the County's recreational facilities are not adequate to accommodate the County's population. There's need to allocate more land as well as expand and upgrade these facilities.

4.2.6 Change of Land Cover

The County has a rapidly changing landscape. Subdivision of agricultural land is rapidly occurring in the rural areas of the County reducing the size of agricultural as more houses are constructed to accommodate the increasing population.

Encroachment on Mt. Elgon as well as poor farming practices and other climatic factors are slowly but surely reducing the forest cover in the County. Demand for land for grazing and agriculture has made farmers to encroach on ecological sensitive and conservation areas.

The demand for land for housing especially around the major urban areas i.e. Kiminini and Kitale has put a lot of pressure on available land. There's evidence of urban sprawl in these centers due to the uncontrolled expansion. The towns are expanding in linear form along the major transport routes.

4.3 Housing and Human Settlement

4.3.1 Overview

A settlement is defined as a community in which people live. The complexity of a settlement can range from a small number of dwellings grouped together to the largest of cities with surrounding urbanized areas. Settlements are influenced by social and cultural values and aspirations of a people, emerging technologies and economic systems among other aspects.

Human settlements can be categorized as either rural or urban i.e. dispersed or nucleated and are characterized by a mosaic of built and natural spaces for economic and social activities. Rural settlements are homogenous, sparsely populated, and practice agriculture as the most predominant economic activity. Urban settlements on the other hand are heterogeneous, densely populated, and primarily contain non-agricultural aspects of the economy such as commerce, industry and services.

Analysis of human settlement patterns in a region is critical for planning purposes. The pattern of human settlement in a region is influenced by a number of factors most important being population dynamics of the area. Other factors influencing human settlement include soil fertility, availability of productive resources, other natural resources and general production capacity, level of economic development e.g. location of industry and urbanization among others.

Urban and rural settlements have a symbiotic relationship and their linkages in sustaining each other's economy and function cannot be overlooked.

4.3.2 Patterns and Trends of Settlement

4.3.2.1 Trends of Settlement

Human settlement pattern in Trans-Nzoia County is predominantly rural with a concentration of people in existing urban areas; with other people being settled in the remaining sub-County headquarters of Kiminini, Saboti, Endebess, Kwanza and Cherangany. The settlement pattern is influenced by a number of factors including transport and communication routes as well as agro ecological zones.

Zone II in the agro ecological scale is the Medium Potential Zone and which forms the highest fraction in terms of land mass in Trans-Nzoia County is characterized by high population density. This zone makes engagement in agricultural activities a profitable endeavor and it thus attracts a considerable number of persons.

Urban settlements for example Kitale, Sibanga, Kiminini, Big Tree, Maili Saba, Kolongolo among others are characterized by high population densities, variety of goods and services, and easier access to improved infrastructure and utilities. Improvements in transport and communications routes have also attracted population along them with commercial nodes like Coast, Endebess, Kwanza and Kiminini emerging. This form of linear development calls for planning intervention to curtail excessive urban sprawl.

Rural settlements are also evident in the County. They mainly engage in agriculture and are characterized by poor infrastructural services, limited variety of goods and services and a homogeneous land use. Other challenges facing rural settlements include high illiteracy levels and unemployment. Thus, it is important to address these needs in the development of the County.

4.3.2.2 Patterns of Settlement

Settlement patterns refer to arrangement of populations and their settlement in various shapes and sizes. Settlements are determined by population distribution which is the arrangement or spread of people in a given area. They are either scattered/dispersed, linear and or clustered/nucleated. Settlements in Trans-Nzoia County exhibit all these three types of settlement patterns.

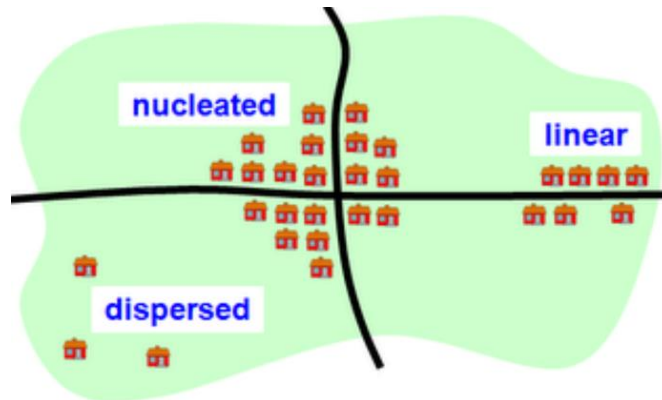


Figure 11: Types of Human Settlement Patterns
 (Source: <https://study.com/academy/lesson/human-settlements-definition-functions.html>)

4.3.2.3 Linear Settlements

Linear settlements occur when people settle and build a long line which may be a transportation route, river, or canal. In other instances, such settlements emerge due to physical restrictions, such as coastlines, mountains, hills or valleys. Linear settlements may have no obvious centre, such as a road junction. They are long and narrow shaped.



Examples of linear settlement patterns within Trans-Nzoia County are numerous. Most of these settlements are defined by transportation routes. On the left is a settlement after Lessos that is accessible off the Kwanza-Kapenguria road. The settlement is confined along this road.

Map 20: Linear settlement pattern in Kwanza, (Source: Simuplan, 2019)



On the left is a settlement near Kachibora in Cherangany Sub-County. Development here is also confined along the Kitale-Cheranganyi road.

Map 21: Linear settlement pattern in Cherangany Sub-County (Source: Simuplan, 2019)

settlement pattern depicted in the aerial settlement is also transportation route i.e. centre, Kiungani and



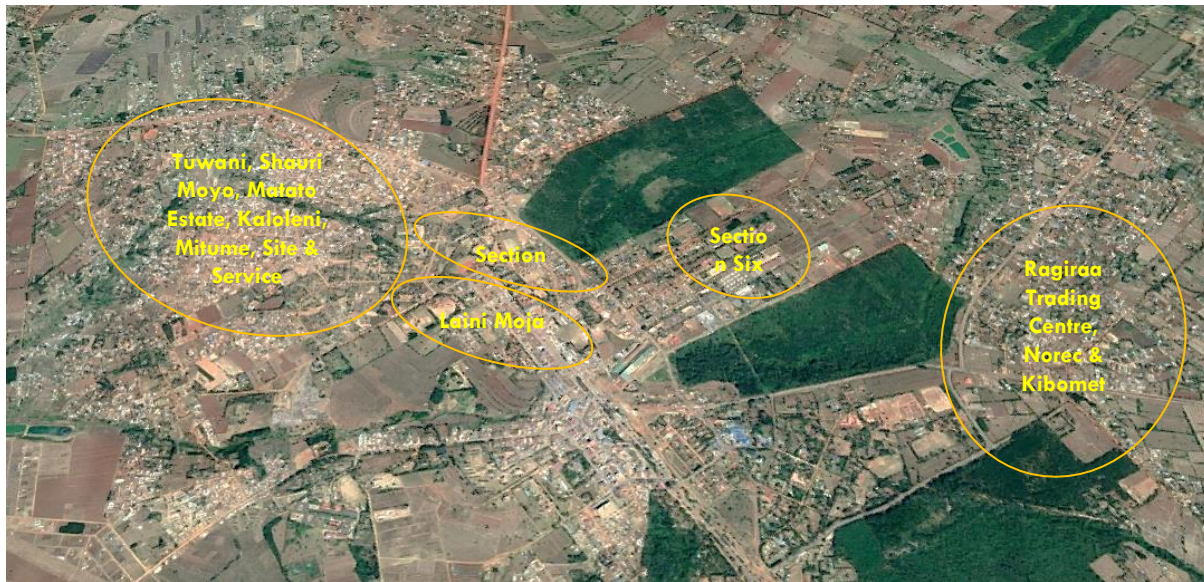
Other instances of linear include Endeless town as image below right. The structured by the existing major Kitale-Suam road. Barbaton

Map 22: Linear settlement pattern in Endeless, (Source: Simuplan, 2019)

Birunda centres are also centres with similar settlement patterns.

4.3.2.4 Nucleated Settlements

These are settlements in which houses and other buildings are laid out closely together to access a certain place or resource in a clustered manner. They are also referred to as nucleated settlements. In Trans-Nzoia County, Kitale Town exhibits this characteristic settlement pattern. Various residential and commercial settlements surround its urban core. These settlements are brought together by existing supporting infrastructural amenities including electricity, access roads, sewer line, piped water, security lights, and storm water drainage among others. Some of the surrounding settlements forming nucleated patterns include Tuwani, Shauri Moyo, Matato Estate, Kaloleni, Mitume, Site & Service, Section 19, Section Six, Laini Moja, Ragira Trading Centre, Norec and Kibomet among others.



Map 23: Nucleated settlement pattern in Kitale town (Source: Simuplan, 2019)

Other forms of nucleated settlements occur at road intersections. Settlements confine themselves to this common area and grow around it. An example of such a settlement in Trans-Nzoia County is Sibanga as depicted by the aerial image on the right. Other areas with similar settlement characteristics include Maili Saba, Mwaita Centre, Kipkeikei and Kachibora among others.



Map 24: Nucleated settlement pattern in Sibanga (Source: Simuplan, 2019)

4.3.2.5 Dispersed Settlements

Scattered settlements are also referred to as dispersed settlements. It occurs when several types of buildings are spaced far apart such that they don't really follow a certain pattern. Such settlements are most common in agricultural areas where farmlands dominate the landscape.



The County is the country's grain basket and such dispersed settlement patterns are evident in the agriculturally rich lands that are predominantly rural such as Kwanza and Saboti. These areas are characterized by large tracts of land resulting therefore in a dispersed nature of human settlement.

Map 25: Scattered settlement pattern in Kwanza sub-County
(Source: Simuplan, 2019)

4.3.2.6 Informal settlements

The County is also characterized by various informal settlements. These are areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally. It also refers to unplanned settlements and areas where housing is not in compliance with current planning and building regulations/ authorized housing. Some of the glaring informal settlements in the County include Tuwan, Kipsongo, Mitume, Shimo la Tewa, Bosnia, Kisumu Ndogo, Shanti, Umoja (Mitume), Forkland (Matisi), Matopeni (Kwa-muthoni) and Chepchoina. Kipsongo informal settlement in Kitale Town accommodates the largest number of slum dwellers in the County. Necessary action needs to be undertaken to prevent emergence of other informal settlements to the detriment of the environment and progressive development interventions. In addition, there are incidences of informal settlements with slum dwellers and squatter settlers.



Plate 52: Chepchoina Informal settlement
(Source: Simuplan fieldwork, 2019)

4.3.3 Housing

Housing, which is one of the basic requirements for growth and development of the economy is classified in terms of roofing, walling and flooring materials. The housing types therefore fall into permanent or semi-permanent category. Permanent buildings are constructed using materials that have a lifespan of two decades and beyond such as tiles, iron sheets, ballast, cement, wood and iron bars while semi-permanent structures are constructed using materials that cannot maintain stability for more than a decade such as clay, wood, mud or grass. Housing can also be classified in terms of physical location i.e. in an urban or a rural setting.

4.3.3.1 Roofing

The main materials used for roofing in Trans-Nzoia County are corrugated iron sheets and grass. Corrugated iron sheet is the most common roofing material at 84% of the houses while the grass thatched or makuti roof houses constitute 15%. Tile roofed houses are about 1%.

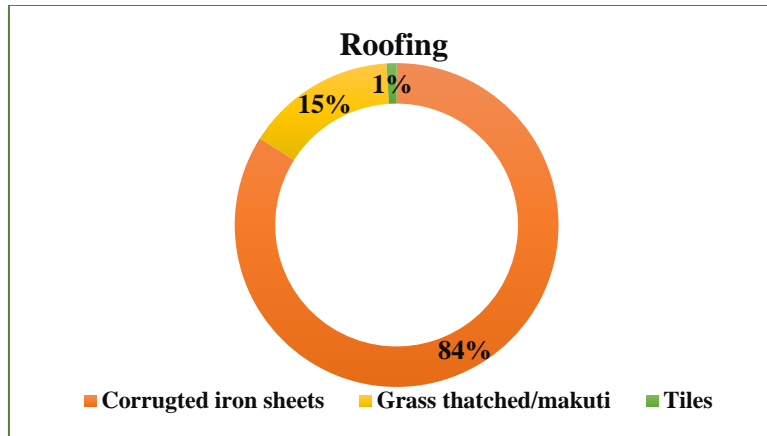


Figure 12: Roofing materials
(Source: Simuplan, 2019)

4.3.3.2 Walling

The most dominant walling material used in housing is mud & wood accounting for 68.1%, brick & or block accounting for 15.8%, mud & cement accounting for 12.9% and stone accounting for 1.4% of the dwelling units in the County. Other types of walling material used in the County include wood only, corrugated iron sheet, grass straw, tin and others.

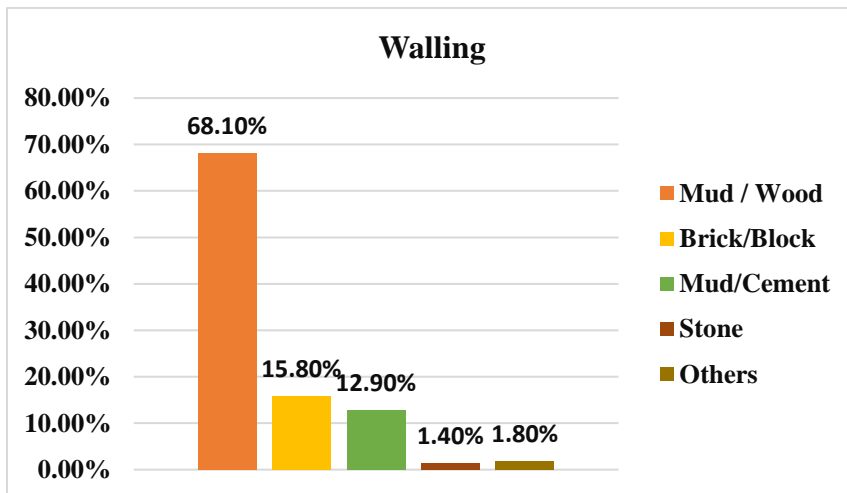


Figure 13: Walling materials
(Source: Simuplan, 2019)

4.3.3.3 Flooring

The main types of flooring materials used by households in the County include earth that accounts for 72.9% and cement which accounts for 25.8% of the dwelling units. Other types of flooring include tiles, wood and others.

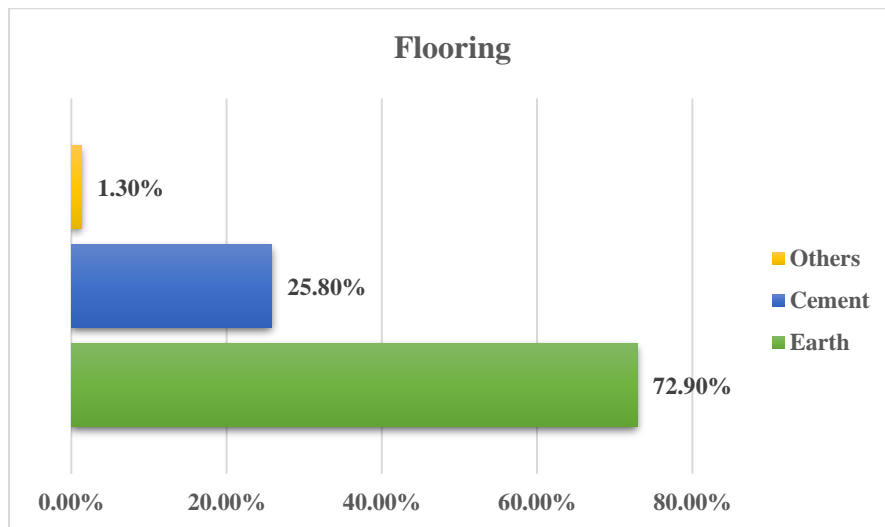


Figure 14: Flooring materials
(Source: Simuplan, 2019)

The usage of the above materials for roofing, walling and flooring also differs between urban and rural areas. The use of corrugated iron sheets as the main roofing materials is preferred by both the urban and rural households. A mixture of mud & wood is the predominant walling material for both the rural and urban households. On the other hand, earth is the predominant floor material used for rural housing while in the urban areas cement is the most preferred for floor material. There is need for the County government to invest in research for appropriate housing technology to ensure affordability and appropriateness in the construction of dwelling units.

In terms of ownership of dwelling units, 68.8% of the households in the County are owner occupied while 31.2% of the residents live in rented housing units. In addition, there are 1145 National Government houses and 1052 County Government houses in the County: according to the 2009 Housing and Population Census.



Plate 53: Housing types based on construction materials
(Source: Simuplan Fieldwork, 2019)

4.4 Urbanization and Urban Development

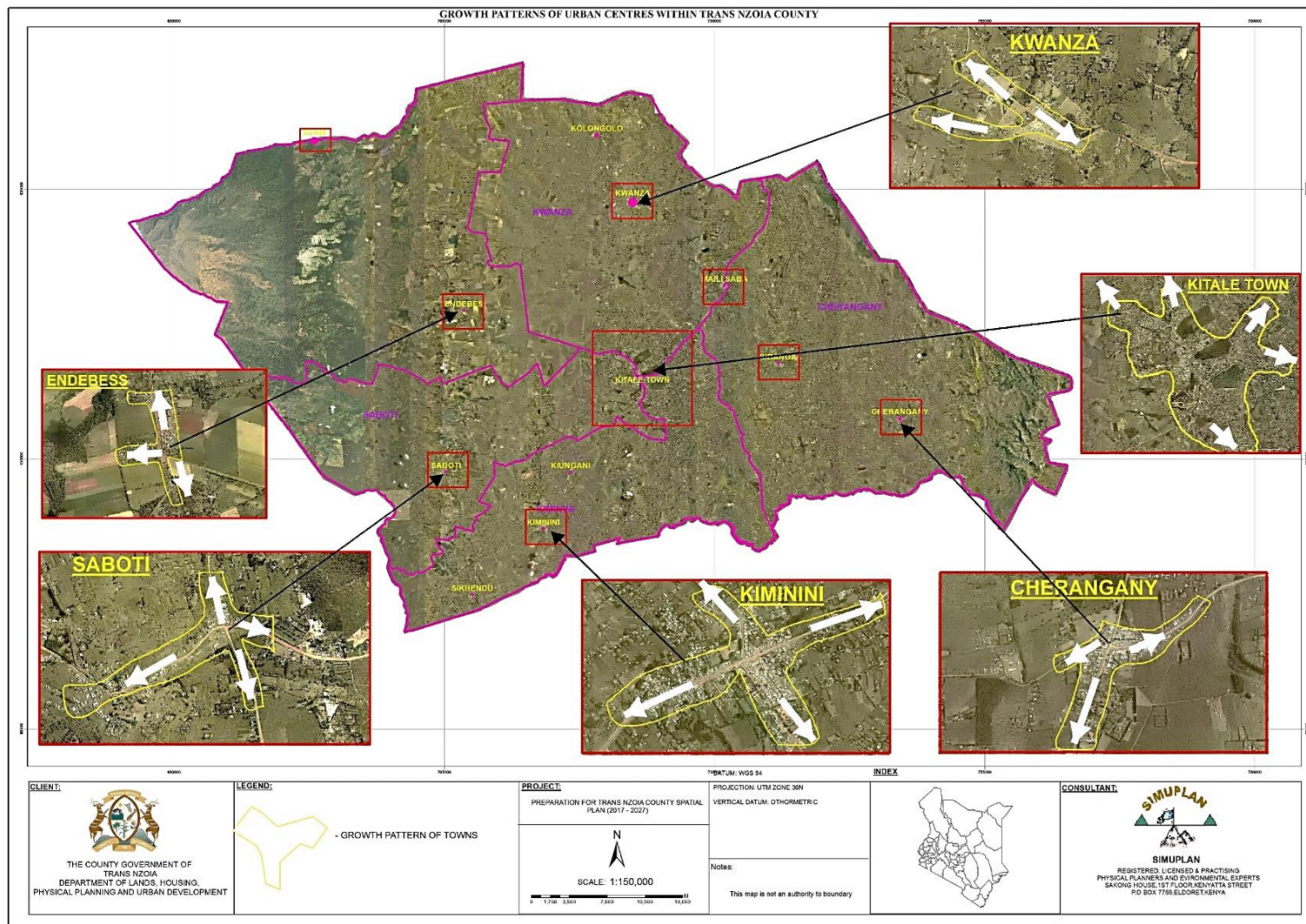
Urbanization is a global dynamic process that involves the growth of the urban portion of the country's entire population. According to the UN, urban areas can be defined as localities with a population of 2000 or more and rural areas are localities with a population of less than 2000 and sparsely populated areas. (World Urbanization Prospects, 2003).

Urbanization in the County is a growing planning concern. Over the recent years, there has been a steady growth in the urban settlements in the County as a result of natural population growth, in-migration to major urban centers including Kitale and Kiminini and urban sprawl. The increase in urban population has seen the number of centers grow to the current level of 169 centers. Most of these centers are unplanned resulting in poor provision of infrastructure and services, incompatibility of land uses and mushrooming of informal settlements. Some of the informal settlements include; Tuwan, Kipsongo, Mitume and Chepchoina. These settlements require urgent attention in terms of plan preparation and regularizing and securing land rights. Another factor contributing to the rapid urbanization in the County is the poor performance of the agricultural sector and rural development. This has forced a number of the small trading center's to urbanize at a faster rate as the residents in the rural centers' begin to rely more on urban based activities for their livelihood leading to demand for more urban basic and infrastructural services.

Major planning problems resulting from urbanization in the County include:

- Lack of spatial order in planning
- Environmental degradation
- Unplanned and uncoordinated development and expansion initiatives of urban centers in the County
- Inadequate infrastructural services and utilities
- The lack of data and records to facilitate development control
- Lack of land ownership documents especially in the informal settlements

The preparation of the County Physical and Land Use Development Plan is a step in the right direction to address the planning issues stated above.



**Map 26: Direction of growth for urban centers
(Source: Simuplan, 2019)**

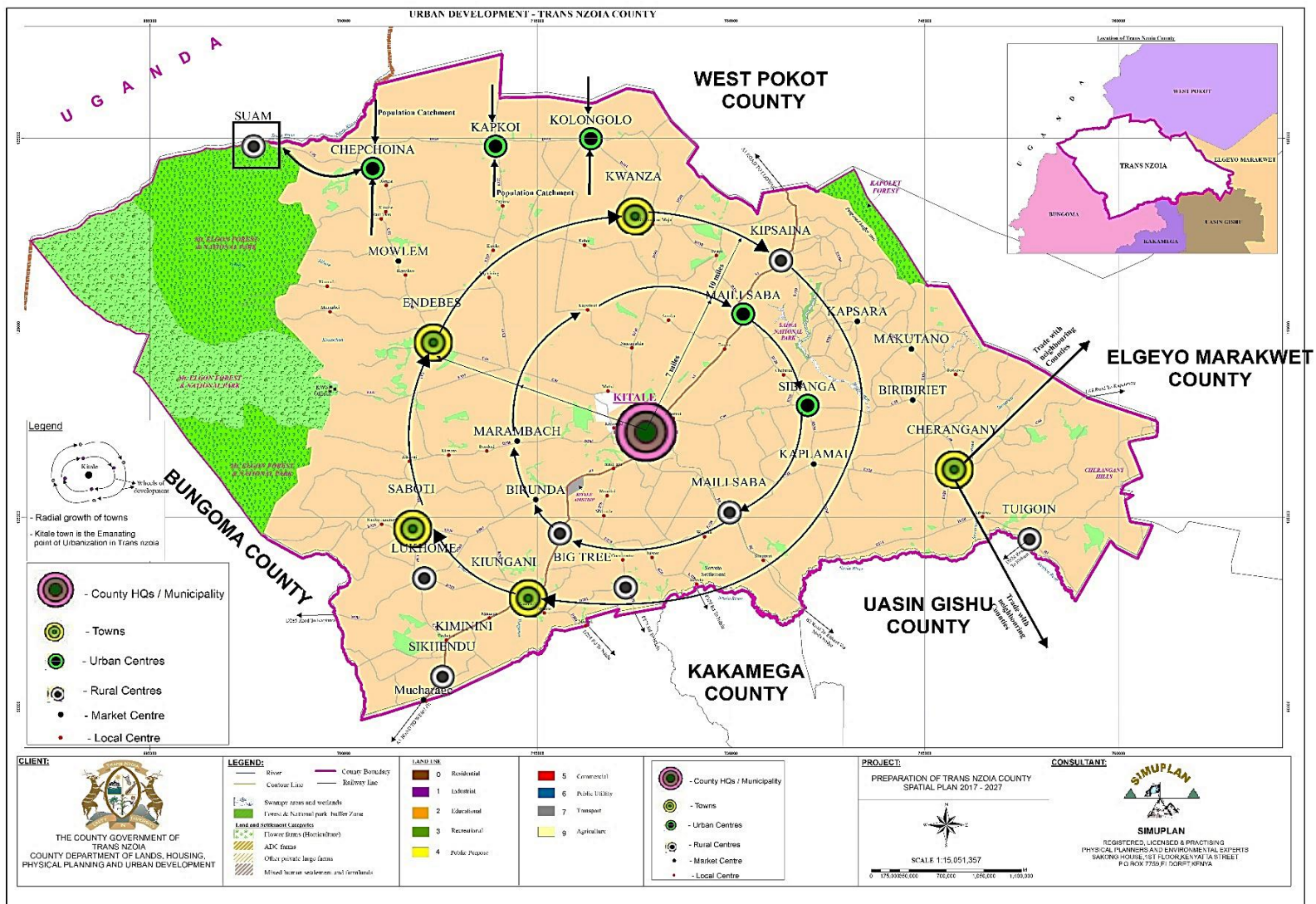
4.4.1 Urban development

Urban centers act as focus points for the surrounding areas by providing goods and services. Within Trans Nzoia County there are about 169 market trading centers in the County. The most dominant urban centers are Kitale that serves at the County headquarters and Kiminini town. Other centers include Cherangany, Kwanza, Endebess, Saboti which serve as sub-County headquarters together with Kiminini. Other market centres include Kachibora, Gitwamba, Maili Saba, Sikhendu, Mucharage, Sibanga, Kolongolo, Suam and Kesogon.



Plate 54: Aerial view of Kitale town
(Source: <https://youtu.be/PTghogQGkDE>)

The map below indicates the hierarchy of centers and flow of services and goods in the County. Kitale town serves as a major focal (high order town) point for service provision in the County. The development of markets and urban centers has led to an influx of people and increase in economic activities. The centers are accessed according to the demand of order of goods. Principles of range and threshold apply when forming the hierarchy of centers.



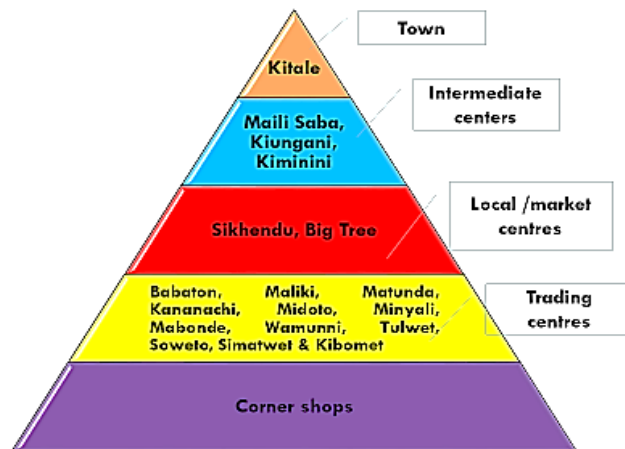
Hierarchy of centers in Cherangany sub-county



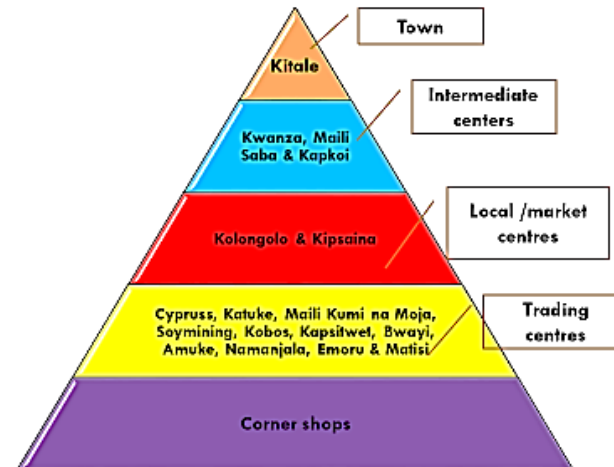
Hierarchy of centers in Endebess sub-county



Hierarchy of centers in Kiminini sub-county



Hierarchy of centers in Kwanza sub-county



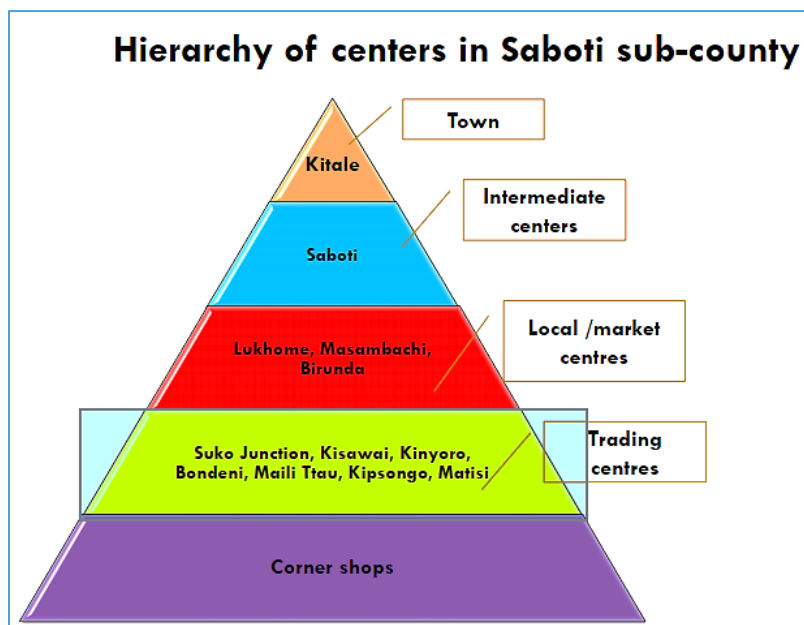


Figure 15: Hierarchy of centers per sub-County
(Source: Simuplan, 2019)

From the above figure, Kitale town is at the highest point of order in hierarchy. It serves as the county headquarters. The sub-County headquarters namely Saboti, Cherangany, Kwanza, Kiminini and Endebess fall at the second rank below Kitale town although Kiminini town is slightly higher than the other sub-County headquarters.

4.4.2 Linkages

4.4.2.1 Internal Linkages

Areas within the same locality are arranged in a hierarchical manner. Each of the areas at a different hierarchy has a different order of goods and services. Those high in the hierarchy offer higher order goods than those below them. There are also areas that act as production points while other forms the consumer group. In the County there are centers that have differing hierarchies and hence offer different goods and services. These areas interrelate to each other forming the internal linkages. These linkages are as follows:

4.4.2.1.1 Internal flow of Goods

In the County the different localities produce goods while others consume. As it was established during the field survey, most people buy consumer goods from the local and market centres in

their locality. However, with regards to most farm machinery and tools, the local residents acquire these from urban areas such as Kitale and Kiminini towns. During field survey, majority of the local residents indicated that they acquire light farm tools from Kitale town. The local residents however prefer to sell their produce near their homes with a few engaging brokers in getting markets for their produce especially maize.

4.4.2.1.2 Internal Flow of Services

The different localities in the County have differing levels of services. Most of the residents get most of the public services such as primary schools, secondary schools, dispensaries and police posts at their local centers. However high order facilities such as tertiary institution, police stations, hospitals are found in higher order centers such as Kitale, Kiminini, Cherangany, Kwanza and Endebess.

4.4.2.2 External Linkages

Different areas have differing needs, some areas acts as production points; others provide a market for goods and services while others offer labor. Due to these different aspects there forms an external linkage between different areas. External linkages link the County to those other areas outside its boundary.

4.4.2.2.1 External flow of Labor

People tend to be attracted to areas which offer employment opportunities and leave those with none. The residents of the County move to neighboring towns such as Eldoret, Bungoma, and Nairobi, Kampala among many others in search of employment. There also in-migration into the County especially in the major urban centres i.e. Kitale and Kiminini in search of employment. This has resulted in high population growth rate in these urban centres. A few of the residents indicated that they moved into the County because they had bought land in the County.

4.4.2.2.2 External Flow of Services

People seek high order services such as medical and higher education from high order towns. The residents of Trans Nzoia seek these services from Eldoret, Nakuru and Nairobi. One of the main reasons for migration away from the County is the search for higher education. This is mainly among the youthful population.

4.4.2.2.3 External Flow of Goods

Most of the high order goods such as farm machinery are not found in towns within County, thus people source them from other towns such as Eldoret and Nairobi. Trans Nzoia County is the breadbasket of Kenya from its wealth in maize production. The County is also strategically placed forming strong linkages with neighboring counties. The County supplies maize neighboring counties of West Pokot, Bungoma, Uasin Gishu and also the Republic of Uganda.

During field survey, it was established that majority of business owners get their stock within the County. The County is well linked with the neighboring counties facilitating easier transfer of goods and services. One of the major nodes of trading in the County is the Suam Border which links the County to the Republic of Uganda. Movement of goods through this border is currently very limited due to inadequate infrastructure. The border needs to be developed to realize its optimal potential.

4.5 Economy and Livelihoods

4.5.1 Overview

A livelihood is a means of making a living. It encompasses people's capabilities, assets, income and activities required to secure the necessities of life. A sustainable livelihood enables people to cope with and recover from shocks and stresses (such as natural disasters and economic or social upheavals) and enhance their well-being and that of future generations without undermining the natural environment or resource base.

The livelihoods of most of the residents of Trans-Nzoia County depend on natural resources that are highly vulnerable to environmental degradation and the effects of climate change.

4.5.2 Agriculture

Agriculture is the backbone of the economy of Trans-Nzoia County with approximately 77.8% of the residents engaging in some form of it (Simuplan, 2018). Majority of the residents practice mixed farming of crop growing and animal rearing at both large and small scale. Large scale farms are owned by individuals (the Chesoni's, the Tulienge's, The Lunani's and the Choge's among others), private enterprises (Mt. Elgon Orchards, Panocal International Limited, Sakami Ranches

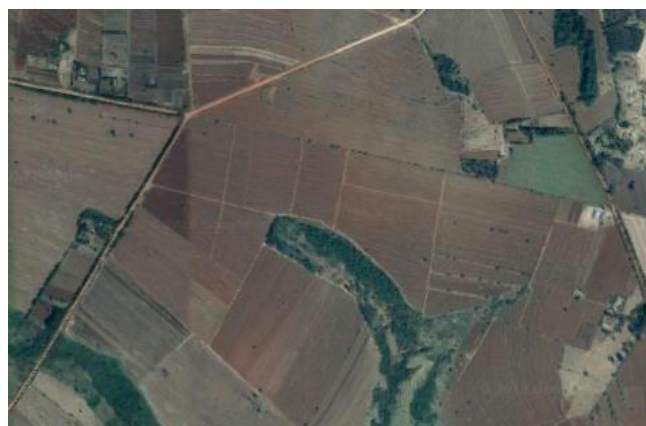


Plate 55: Large private farms in Kwanza sub-County
(Source: Simuplan, 2018)

among others) and or the Government (Agricultural Development Co-corporation and Kenya Seed) Outputs from this sector are used as raw materials to run agro based industries and primarily for household consumption with any surplus sold through local arrangements.

The main crops produced include maize, beans, potatoes, bananas, wheat, coffee, and Tea.



Plate 56: Maize farming in Kwanza
(Source: Simuplan fieldwork 2019)



Plate 57: Sugarcane farming in Saboti

Horticultural crops and fruits have also gained prominence in the recent past and are being undertaken by large farms and enterprises including Mt. Elgon Orchards in Endebess Sub-County and Panocal International Limited in Saboti Sub-County.



Plate 58: Mt. Egon Orchards Greenhouses
(Source: Simuplan fieldwork 2019)



Plate 59: Animal keeping in Cherangany
Source: (Simuplan fieldwork 2019)

Livestock kept is mainly for milk and meat production. The milk industry is dominated by small scale producers who account for approximately 70% of the dairy industry's output. Beef production in the County is still a minor activity.

Apiary, rabbit keeping, pig rearing and poultry farming are also practiced. Fisheries are also a newly emerging concept that has a lot of potential. The sub-sector has received support from the national government that has made considerable efforts of

promoting fishing under the Economic Stimulus Programme since 2009 and the National Fish Farming Enterprise Productivity Program (FFEPP) which is a Vision 2030 flag ship programme being implemented in Trans-Nzoia County (Ministry of Agriculture, Livestock, Fisheries & Crop Management). The County Department of Agriculture, Livestock and Fisheries which is responsible for implementation of national policies at the County level has been instrumental in advocating for sustainable agriculture and proper management of livestock and fisheries for food security and economic development. The department works closely with other agricultural agencies to provide complementary strategy and support to reduce poverty, food insecurity and enhance environmental management in line with national policy.

4.5.2.1 Mechanized Agriculture

Mechanization in agriculture is a process that entails automating agricultural activities and work with an aim of greatly increasing farm worker productivity. This invention has replaced many farm jobs initially carried out by manual labour and by working animals such as oxen. Most large scale farmers in Trans-Nzoia County engage in mechanized agriculture through the use of tractors, trucks, combine harvesters, countless types of farm implements, airplanes and helicopters (for aerial application), and other vehicles.



Plate 60: Tractor at Panocal International LTD
(Source: Simuplan fieldwork 2019)

Panocal International Limited is one such enterprise that has embraced mechanization in agriculture through the use of tractors and modern pivot irrigation systems. In other areas of the County, some farmers also practice precision agriculture by using computers in conjunction with satellite imagery and satellite navigation (GPS guidance) to increase yields.

Mechanization

was one of the large factors responsible for urbanization and industrial economies. Besides improving production efficiency, mechanization encourages large scale production and sometimes can improve the quality of farm produce. On the other hand, it can displace unskilled farm labour and can



cause environmental degradation (such as pollution, deforestation, and soil erosion), especially if it is applied short-sightedly rather than holistically.

Despite being a major source of income for majority of the residents of Trans-Nzoia County, the agricultural sector is facing numerous challenges;

- Poor infrastructural development affects transportation of farm produce to markets or value addition centres resulting in unimaginable losses. Most of the roads in the rich agricultural area are seasonal and thus impassable during the rainy season.
- Few value addition centres in the County which force farmers to transport their produce to other areas for processing making them incur high transportation costs in the process. For instance sugarcane produced in the County is transported to Kakamega County for processing at West Farmers Sugar Company.
- Some of the value addition industries available are inadequate in their capacity to produce finished products that are ready for consumption. For instance the existing Tea and Coffee industries only undertake pulping and do not produce the finished product.
- Farmers also experience overexploitation particularly during overproduction. The forces of demand and supply in some instances further perpetuates the vicious cycle of poverty.
- The agricultural sector is also characterised by middle men who influence the chain of command as well as pricing of goods and services. Without them, the process will be cheaper and still allow farmers to make a higher profit margin.

4.5.3 Employment

According to the 2009 Housing and Population Census, 80% of the County's workforce was engaged in the agricultural sector either formally or informally. Currently employment in the County falls under two main categories: formal employment and self employment.

4.5.3.1 Formal Sector

This sector encompasses all jobs with normal working hours and regular wages and are recognized as income sources on which taxes must be paid. About 22.9% of the total wage earners in the County are estimated to be in the formal sector. They include those employed in government institutions and facilities and some private enterprises.

Agriculture provides opportunities for quite a number of workers with peak periods of employment observed during planting, weeding and harvesting seasons and very little demand when the crops are growing. Such labour is very common in Trans-Nzoia County. It is seasonal and tends to vary with crop production cycles.

The horticultural sector which has steady crop production throughout the year is slowly gaining prominence in the County. Panocal International Limited is a horticultural enterprise that employs a considerable number of casual workers enabling it to run for twenty four hours. This source of employment should be encouraged as it has significant potential.



Plate 62: Workers at Panocal International Limited
(Source: Simuplan fieldwork 2019)



Plate 63: Sakami Ranches
(Source: Simuplan fieldwork 2019)

Sakami Ranches Limited which is situated in Kiminini and Saboti sub-counties is also an agricultural based enterprise that provides employment to quite a number of workers. The ranch engages in coffee, macadamia, avocado, dairy, and vegetable production. It is also known for the practice of animal husbandry. Sakami Coffee is a trademark for coffee produced in Trans Nzoia County on the slopes of Mt. Elgon, at an altitude of 1800 meters.

Other private individuals with large farms engage local community labour throughout the crop production cycle which comprises of farm preparation, planting, weeding, harvesting and storage.



Plate 64: Farm preparation and weeding
(Source: <https://dontlosetheplot.tv/en/agri-info/crops/squash/land-preparation-planting/>)



Plate 65: Crop harvesting
(Source: https://commons.wikimedia.org/wiki/File:Crop_Harvesting_Machine_2.JPG)

4.5.3.2 Self employment

In the concept of self employment, a self-employed individual does not work for a specific employer who pays them a consistent salary or wage. Self-employed individuals, or independent contractors, earn income by contracting with a trade or business directly. In most cases, the employer will not withhold taxes, so, this becomes the responsibility of the self-employed individual.

Self-employed workforce are found in hawking, professional occupations (lawyers, doctors, auditors, surveyors, engineers, physical planners, human resource professionals, accountants among many others), retail and wholesale trade as well as the Jua Kali or the informal sector.

A fast growing industry in terms of self-employment in Trans-Nzoia County is the ‘boda boda’ transporters. It is an important source of employment which requires low capital and is spread across the County; in both urban and rural areas. The ‘boda boda’ industry has been able to absorb several young people who were hitherto previously not engaged in gainful employment.



Plate 66: ‘Boda Boda Transporters in Kitale town
(Source: Simuplan, 2019)

The Jua Kali or the informal sector; which is also referred to as the grey economy is that part of an economy that is neither taxed nor monitored by any form of government. It makes up for a significant portion of the economies in developing countries but it is often stigmatized as troublesome and unmanageable. The informal sector provides critical economic opportunities for the poor and has been expanding rapidly. Unlike the formal economy, activities of the informal economy are not included in a country's gross national product (GNP) or the gross domestic product (GDP).

The Juakali sector has most of its activities carried out in the open air or open sheds and are mostly concentrated in urban areas because there is a large market for their goods and services. They are usually of different sizes, rely on locally available raw materials, use readily available unskilled labour and require little capital to start. Jua kali artisans are dealers in metal fabrication, welding, bicycle repairs, motor cycle repairs, woodworking and furniture making, tailoring and cloth making, pottery among others.



Plate 67: Jua Kali Sector
(Source: Trans-Nzoia County Gallery)

In Trans-Nzoia County, the self-employed account for 65% of the total wage earners. Of this percentage, about 44.87% of them are male while 55.13% are female. The sectors that the women generally are engaged in include but not limited to: beauty industry, cosmetics, fashion, clothing, house management and hospitality.

Construction of a modern wholesale and retail market, construction of Kitale business centre, revival of the Jua Kali sector and provision of business financing to micro and small enterprises are some of the County's broad priorities during the implementation year 2019/2020 according to the Trans-Nzoia County Annual Development Plan 2019/2020.



Small and medium scale trade is also notable in the County. On numerous occasions, such investment opportunities seem to follow direction of urban growth and development with these traders being confined to commercial nodes. Through trading, they are able to generate livelihood from profitable transactions and thereby sustain their day to day living.

Plate 68: Kaplamai commercial centre
(Source: Simuplan fieldwork 2019)

4.5.4 Trade, Commerce & Industry

4.5.4.1 Trade & Markets

Trade involves the transfer of goods or services from one person or entity to another, often in exchange for money. Markets on the other hand facilitate this exchange. They play an important role in the development of an area and as a source of livelihood by providing opportunities for parties to engage in exchange through the many varieties of systems, institutions, procedures, social relations and infrastructure. Markets emerge more or less spontaneously or may be constructed deliberately by human interaction in order to enable the exchange of rights of services and goods. They generally supplant gift economies and are often held in place through rules and customs, such as a booth fee, competitive pricing, and source of goods for sale (local produce or stock registration).

In Trans-Nzoia County, records from the County Department of Finance and Economic Planning indicate that there are about one hundred and sixty nine (169) markets within Trans-Nzoia. Out of



Plate 69: One of the built markets in Kwanza-Sub-County
(Source: Simuplan fieldwork 2019)

these, only twenty three (23) of them have built market infrastructure including the major markets at Endebess, Kwanza, Sibanga, Kachibora, Sikhendu, and Gitwamba, medium markets at Mitume and Kapkoi and small markets at Tuigoin, Makutano,

Kesogon, Chepchoina, Lukhome, Big Tree, Toll Station, Zea, Kologei, Motosiet, Bikeke, Wamuini, Sitatunga, Kinyoro, and Kimila. These market centres have varying market days as tabulated in the table below;

Market Centres and Selected Market Days

Sub-County	Market Centre	Market Day
Cherangany	Tuigoin	Thursday
	Maili Nane (Sibanga)	Friday
	Kipkeikei	Wednesday
	Mwaita	Thursday
	Bonde	Wednesday
	Kaplamai	Wednesday
	Cheptobot	Friday
	Kachibora	Tuesday
	Kapsirowa	Saturday
	Kapsara	Tuesday
	Kipsaina	Friday
	Sinoko	Saturday
	Makutano Ngozi	Sunday
	Suwerwa	Sunday/Monday
	Kapkarwa	Monday/Thursday
Endebess	Molem	Wednesday/Sunday
	Endebess	Saturday
	Kimondo	Thursday
	Chepchoina	Sunday
	Kolongei	Monday
	Namwichuli	Thursday
	Matumbei	Thursday
	Kokwo	Tuesday
	Villa	Friday
	Tobo	Tuesday
Saboti	Saboti	Monday
	Kinyoro	Tuesday
	Lukhome	Wednesday
	Muroki	Thursday
	Kisawai	Thursday
	Matisi	Friday
	Birunda	Saturday
	Kapretwa	Saturday
	Gitwamba	Sunday
	Marambach	Friday
	Rafiki	Thursday
	Big Tree	Wednesday
	Toll Station	Thursday

Kiminini	Sikhendu (Market Day & Livestock Auction Day)	Monday
	Kiminini	Sunday
	Kiungani	Wednesday
Kwanza	Koboss	Monday
	Mali Saba (Kapenguria Road)	Monday
	Kwanza centre (Market Day & Livestock Auction)	Wednesday
	Emoru	Wednesday
	Mutua	Wednesday
	Kesogon	Thursday
	Kapomboi	Thursday
	Umoja Centre	Thursday
	Kapkoi	Friday
	Marinda	Saturday
	Kolongolo	Saturday

Table 6: Market Centres and Selected Market Days
(Source: County Department of Finance & Economic Planning, Trans-Nzoia County)

These markets form part of the process by which prices of goods and services are established. They facilitate trade and enable the distribution and resource allocation in a society and it's through them that trade-able items are evaluated and priced. Markets provide an opportunity for traders to display their goods and services and make them available to potential buyers. Traders are therefore able to make profits through the various exchanges and thus provide them with the ability to meet their daily needs.



Plate 70: Open air market in Kiminini
Source: Simuplan, 2019



Plate 71: Small scale fruit and vegetable vending in Cherangany
Source: Simuplan fieldwork 2019

4.5.5 Industry

Industries are sectors of the economy that produce goods and or related services. They can be primary, secondary, tertiary or quaternary. Primary industries extract raw materials (which are natural products) from the land or sea e.g. oil, iron ore, timber, fish. Mining, quarrying, fishing, forestry, and farming are all example of primary industries. Secondary Industries which are sometimes referred to as manufacturing industry) involve the manufacture of raw materials, into another product by manual labour or machines. They often use assembly lines e.g. a car factory. Tertiary Industries which are sometimes referred to as Services industry do not produce a raw material nor make a product but instead they provide services to other people and industries. They include doctors, dentists, refuse collection and banks. Quaternary Industries involve the use of high tech industries with people who work for these companies often being highly qualified within their field of work. Research and development companies are the most common types of businesses in this sector. Trans-Nzoia County is characterized by primary, secondary and tertiary industries all of which play a role in acting as a source of livelihood of its residents.

4.5.6 Primary Industries

4.5.6.1 Agriculture

The primary industry within the County revolves around agriculture with most of the local community engaging in some form of it. Large scale farms and enterprises have commercialized agriculture and often sell their produce to the government or other agro-based enterprises in the County and beyond. Small scale farmers usually practice subsistence farming where farmers channel most of their produce to sustaining their households. Any surplus is then sold to purchase what they don't produce or is converted to savings.

4.5.6.2 Quarrying

Quarrying is the process of removing rock, sand, gravel or other minerals from the ground in order to use them to produce materials for construction or other uses. The geology and soil of Trans-Nzoia County is largely influenced by the volcanic history of Mt. Elgon making pyroclastic rocks to be common in most areas. The underlying rock in Trans-Nzoia County together with the volcanic history surrounding Mt. Elgon makes quarrying a profitable endeavor; with major quarrying witnessed in areas around Lukhome in Saboti Sub-County. This area is characterized by mainly basalt rocks which usually form a belt around the pyroclastic rocks found in Mt. Elgon area. They are mafic extrusive igneous rocks formed from the rapid cooling of magnesium-rich and iron-rich lava exposed at or very near the surface of the earth and it is the most common igneous rock in hilly areas. The basalt rocks contain both coarse and fine aggregates that may be used in the construction industry. Very little is documented on quarrying in this area.



Plate 72: Quarrying in Lukhome area
(Source: Simuplan fieldwork 2019)



Plate 73: Sourcing for livelihoods through quarrying in Lukhome
(Source: Simuplan fieldwork 2019)



Plate 74: Quarrying in Saboti Sub-County-Lukhome area
(Source: Simuplan, 2019)

Despite being a source of livelihood to quite a number of persons, many people and municipalities consider quarries to be eyesores and require various abatement methods to address problems that come with it including interruption of continuity of open space, destruction of habitats for flora and fauna, soil erosion, air and dust pollution, loss of land and deterioration of water quality. For residential homes near quarrying sites, noise hazard is a reality mainly due to blasts from heavy machinery.

Quarries are important and are needed for provision of construction materials, but they must be regulated to prevent adverse environmental impacts. It is important to therefore advocate for sustainable extraction of rock and minerals with quarry restoration programmes embedded in the entire quarrying process to prevent further detriment of the landscape.

4.5.7 Secondary Industries

4.5.7.1 Agro-Based Enterprises

Trans-Nzoia County is home to numerous small and medium agro-based enterprises and industries as well as the ‘Jua Kali’ cottage industries. However, there exists great potential for large scale industrialization. Jua Kali activities dominate small scale and informal industrial sector and their activities include metal fabrication, welding, tailoring, weaving, carpentry and juice making among many others. It is estimated that the informal industries in the County has created employment to over 30,000 persons.

Trans-Nzoia County has approximately forty nine (49) enterprises and industries, most of which are involved in value addition of agricultural produce. Once value addition has been done, the end product is supplied to the market in the hope of profit making through mass production, division of labour and automation. The market is both local i.e. within the County or beyond i.e. to other counties and even countries. Some of these industries revolve around baking, juice extraction of

various kinds, honey processing, maize seed processing, mineral water bottling, preparation of construction materials, milk cooling, coffee and tea processing, maize milling and pottery among many others. The table below indicates the firms, location and activities involved in.

Distribution of Firms by Location and Activity

Name of Enterprise	Location	Nature of Activity
Dajopen Waste Management	Kitale Town	Recycling of Plastics and polythene into posts, and organic manure
Waitaluk Honey Processors	Waitaluk	Honey Processing
Kitale Sweet and Confectioners Ltd	Kitale Town	Sweets, Biscuits, bread and Snacks
Waitaluk Cabbage Driers	Waitaluk	Drying Cabbage for Milling
Cherang'any Dairy Firm	Kachibora	Cooling Milk
Waitaluk Banana driers/Millers	Waitaluk	Drying and Milling bananas
Waitaluk Sausages	Waitaluk	Sausage Making
Kiptoror Tomato Processors	kiptoror	Processing tomato juice
Supa Loaf Bakery	Kitale Town	Making bread and other confectionaries
Coast Bakery	Kitale Town	Making bread and other confectionaries
Juice Extractions	Kitale Town	Juice Extraction
Wood Workshops	Kitale Town	wood and furniture making
Western Seed Company	Kitale town	Maize Seed Processing and Packaging
Kenya Seed Company	Kitale Town	Maize Seed Processing and Packaging
Kitale Industries	Kitale Town	Grain Processing, pillow, hardware etc.
Kenya Co-Operative Creamery	Kitale Town	Milk Cooling and dairy
Hari Bakery	Kitale Town	Bread Making
Cherang'any Water Springs	Kitale Town	Mineral Water Bottling
Kitale Building Works	Kitale Town	Bricks, Blocks, vent blocks, concrete posts, etc.
Maize Milling	Kitale Town	Maize Milling and packaging
Garages	Kitale Town	All motor works
Kapsara Tea Factory	Cherang'any	Processing and Packaging Tea
Elgon Tea Factory	Saboti	Tea processing and packaging
Supermarkets	Kitale Town	Trading
Wholesalers	Kitale Town	Trading
Financial Institutions	Kitale Town	Banking
Filling Stations	Kitale Town	Fuelling
Krishna Bakery	Kitale Town	Bread Making
Suam Supermarket Bakery	Kitale Town	Bread and Confectionaries
Khetia Supermarket	Kitale Town	Bread and Confectionaries
Tuskys Supermarket	Kitale Town	Bread and Confectionaries
Trans-mattresses Bakery	Kitale town	Bread and Confectionaries
Big Bite Bakery and confectionery	Kitale town	Bread and Confectionaries
Mwaita Dairy Cooling Plant	Mwaita	Milk Bulking
Kitale Timber Saw Mills	Kitale Town	Wood Products

Khetia Drapers	Kitale Town	Trading
Royal Maize Millers	Kitale Town	Maize Milling and Packaging
Kitale Maize Dryers	Kitale Town	Maize Drying
Nzoia Grain Marketing and processing cooperative Society Ltd	Endebess	Maize milling & packaging
Mount Elgon Bottlers	Kitale Town	Drinking water packaging and bottling
Ujirani Mwema na Amani Cottage Industry	Kitale Town	Textiles and assorted apparel
National Cereals and Produce Board	Kitale Town	Bulk Maize Storage
Kitale Grain Services	Kitale Town	Maize Products
Niinue Amka Women Group	Kwanza	Edible oil extraction from sunflower
SeedCo. Company Ltd	Kiminini	Maize Seed Processing and Packaging
Kiminini Ceramics	Kiminini	Pottery, Water filters, bricks and tiles

Table 7: Distribution of Firms by Location and Activity

Source: County Industrial Development Office, Trans-Nzoia County, 2017

These Small and Medium enterprises (SMEs) continue to create jobs and boost the country's GDP despite them face a myriad of challenges that impede their growth. This is according to the Kenya SME Finance Survey Report of 2018. SME's contribute almost 3% of the overall GDP. SMEs are hindered by inadequate capital, limited market access, poor infrastructure, inadequate knowledge and skills and rapid changes in technology. Corruption and other unfavorable regulatory environments present other bottlenecks to this vital cog of the economy.

4.6 Social Infrastructure

4.6.1 Overview

Infrastructure can broadly be defined as long-term physical assets that operate in markets with high barriers to entry and enable the provision of goods and services.

Social Infrastructure is a subset of the infrastructure sector and typically includes assets that accommodate social services. Examples of Social Infrastructure Assets include schools, universities, hospitals, prisons and community housing. Social Infrastructure does not typically extend to the provision of social services, such as the provision of teachers at a school or custodial services at a prison.

4.6.2 Education

Education is an important sector in any region since it contributes immensely to human capital as well as economic development i.e., skilled labor and entrepreneurship, and improvement of peoples well-being. At the national level, the broad objective touching on the education sector revolves around achieving 100% net primary school enrolment rate and reducing the disparity in access and quality of education. It also champions for 100% transition rate from primary to secondary through introduction of free secondary education because education levels predict levels of success and future income. Those with primary education only have a chance at higher education if they go through secondary schools.

Trans-Nzoia County has 715 ECDE Centres, 648 Primary Schools, 261 Secondary Schools, 1 National Polytechnic, 3 Technical Vocational Education and Training Centres, 2 medical Training Colleges, 30 Vocational Training Centres, 4 Private Accredited Colleges, 1 Teacher training College for P1 and 16 ECDE training Centres. In addition, the County has 8 affiliate campuses of the major universities. According to the Constitution of Kenya (2010), County Governments are responsible for vocational training and Early Childhood Development (ECDE) while the National Government is in charge of the primary, secondary and university education. This therefore calls for a close collaboration between the National and County Government for the realization of educational goals.

Some of the challenges facing the education sector within Trans-Nzoia County include:

- i. Difficulty in creating a conducive environment for academic excellence

- ii. Difficulty in providing an environment that allows graduates get employment or be self employed
- iii. Difficulty in ensuring that skills gained are put into good use and/ retained by the County for purposes of its development

4.6.2.1 Basic Education Services

4.6.2.1.1 Pre- School (Early Childhood)

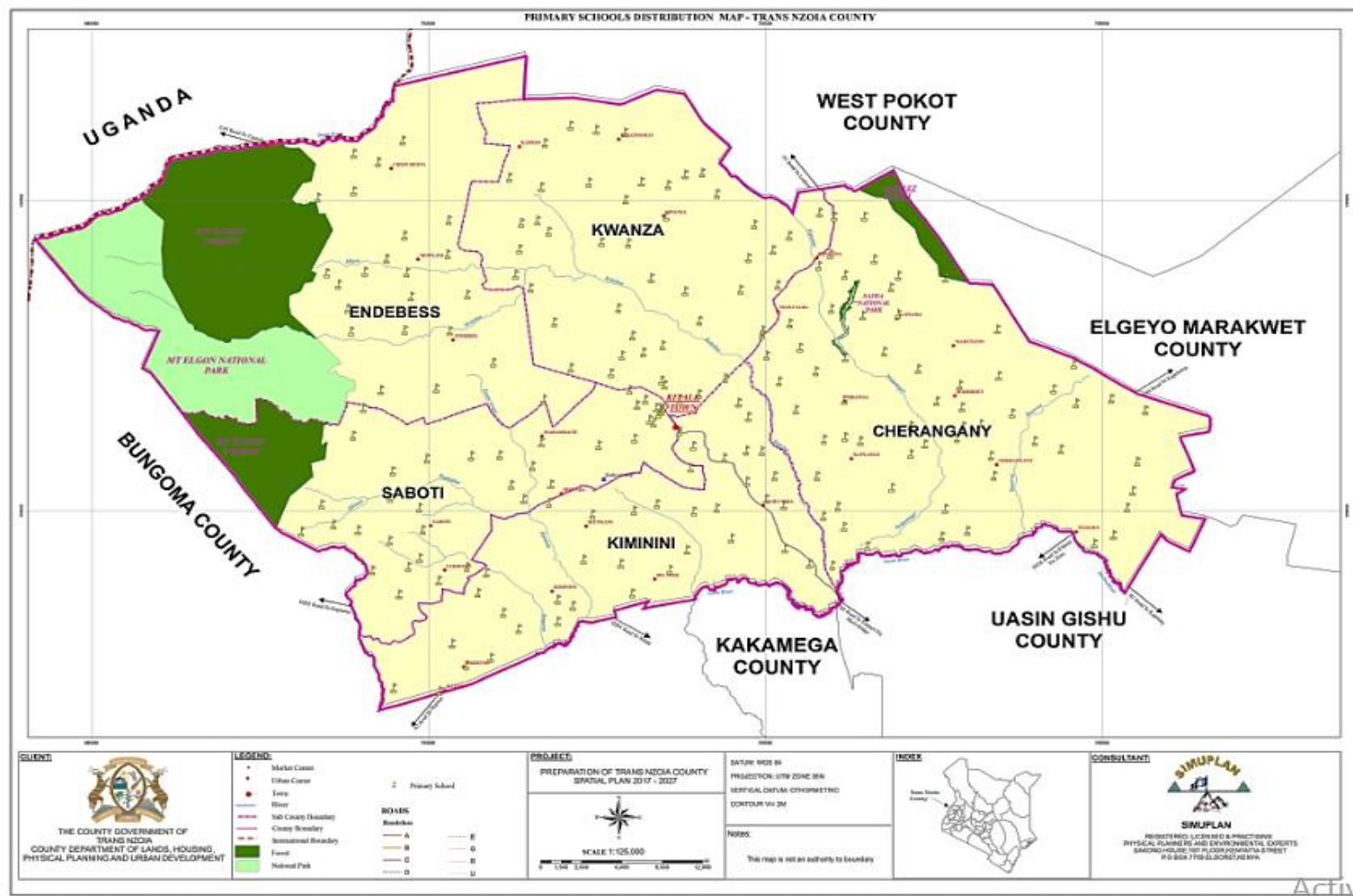
Trans Nzoia County has 715 ECDE centres; out of which 385 of them are public while 330 are private. Teachers in the ECDE centres are employed by both the County Government and by the parents. The teacher student ratio as of 2018 stood at 1:40. The average attendance remained constant at the age of 4 years with a transition rate of 65% since repetition and interviews have been discouraged.

4.6.2.1.2 Primary Education

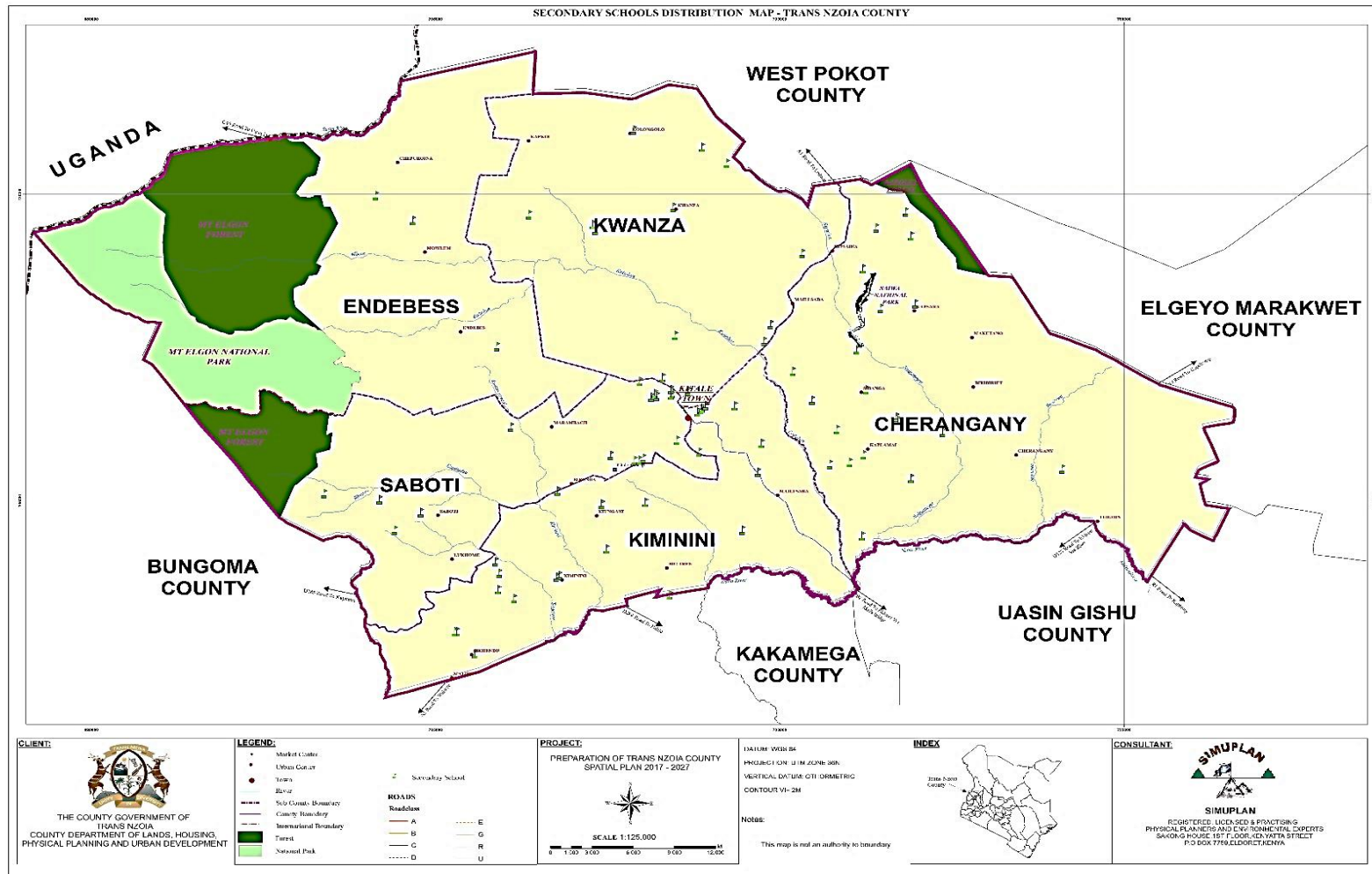
Trans Nzoia County has 645 primary schools which comprises both public and private primary schools; and a total enrolment of 227,802 pupils of which 114,326 are males and 113,476 females. The schools have teachers who are employed by both the government and by the parents with the teacher pupil ratio standing at 1:50. A few schools have good infrastructure while most of them have unsuitable and dilapidated facilities which has led to overcrowding in the few facilities available. Understaffing is also a notable problem hence the high teacher to student ratio. Transition rate currently stands at 72.45%.

4.6.2.1.3 Secondary Education

Secondary education in the County is important as it enables access to tertiary education. Even so, the transition rate from primary to secondary school is still not at 100%. Secondary schools require specialized facilities. Even so, these basic infrastructure, including classrooms, boarding facilities and laboratories are inadequate. In terms of staffing, secondary schools in the County have a total of 1752 teachers and a student enrolment totaling to 71,093. The secondary schools in the County are understaffed with the teacher to student ratio standing at 1:41.



Map 28: Primary Schools distribution in Trans Nzoia County
(Source: Simuplan, 2019)



Map 29: Secondary Schools distribution in Trans Nzoia County
(Source: Simuplan, 2019)

4.6.2.2 Tertiary Education

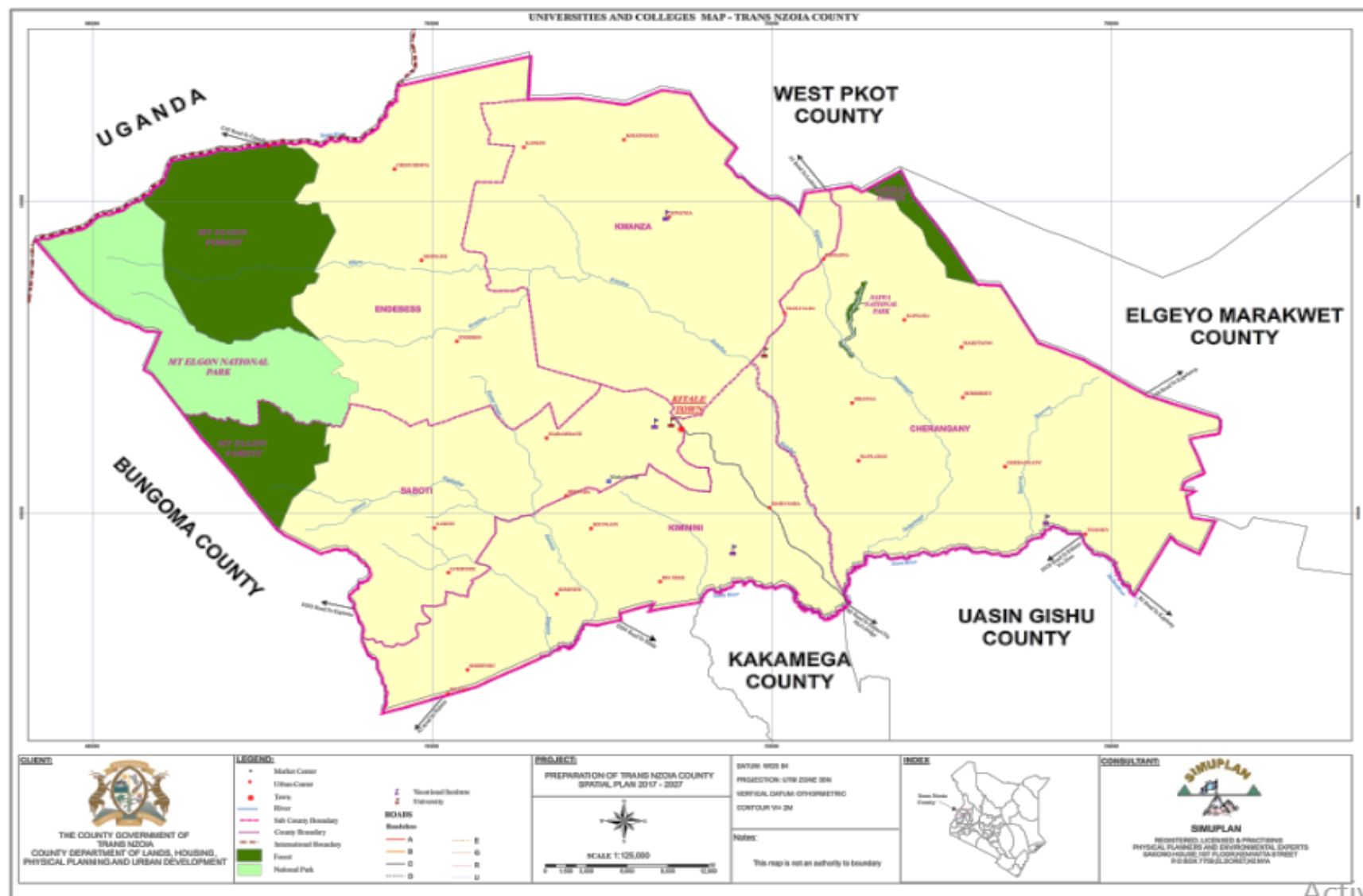
The youthful population in Trans Nzoia County requires well developed tertiary institutions for technical skill enhancement as well entrepreneurship and managerial skills. These skills are meant to promote profitable employment and guarantee future investments. There are different types of tertiary institutions as enumerated below.

Types of Tertiary Institutions in Trans-Nzoia County

Category	Number
Science & Technology Institutions	0
Other Public Colleges	0
National Polytechnics	1
Technical Vocational and Educational Institutions (Endebess, Cherengany and Kiminini)	3
Medical Training Colleges	2
Youth Polytechnics(Vocational Training Centers	30
Private Accredited Colleges	4
Teacher Training Colleges: P1	1
ECDE	16
Affiliate campuses of major universities	8

Table 8: Tertiary Institutions in Trans-Nzoia County
(Source: Trans-Nzoia County Integrated Development Plan)

The transition from KCSE to university is low in the County, thus few students obtain direct entry into Universities through the Joint Admissions board (JAB). There is no fully fledged University in the County. There are 6 Satellite Campuses in the County namely: Jomo Kenyatta University of Agriculture and Technology, Moi University, Mt. Kenya University, Kisii University, University of Nairobi, Laikipia University in Collaboration with Elgon view College, University of Eldoret in collaboration with Elgon view College and Nairobi Aviation College.



Map 30: Tertiary Educational Institutions in Trans-Nzoia County
(Source: Simuplan, 2019)

4.6.2.3 Vocational Training Centers

They are several vocational training centers that mainly constitutes of: Workshops, Library, Lecture rooms, Furniture, Sanitary facilities, Computer Labs and Administration offices. Trans Nzoia County has a total of 30 VTCs out of which 25 of them were established and constructed



Plate 75: Upcoming Technical and Vocational Education and Training (TVET) institutions
(Source: Simuplan fieldwork 2019)

by the County Government. Each ward has at least one VTC. Wards with more than one VTC are so because of the distance. With increased number of VTCs, access has greatly improved and made the enrolment to increase to 2,912. The County Government has also established one modern twin workshop in each ward. However, there is need for more workshops. The County has equipped the workshops with modern tools and equipment.

Distribution of Vocational Training Centres in

Trans-Nzoia County

Sub County	Name of VTC	Trainees Per Institution as at 2017
Saboti	Kitale	255
	Machewa	49
	Sango	52
	Muroki	154
	Matisi	67
	Mukuha	75
Kiminini	Kiminini	159
	Waitaluk	116
	Machungwa	44
	Sikhendu	78
	Chalicha	49
	Naisambu	108
	Matunda	100
Kwanza	Kwanza	81
	Koros	68
	Kapomboi	60
	Section six	62
Endebess	Andersen	236
	Mubere	126
	Cheptantan	76

	Twiga	62
Cherang'any	Makutano	142
	Kapchesir	143
	Sitatunga	73
	Sinyerere	42
	Kaplamai	185
	Turbo Munyaka	60
	Kipsingori	106
	Top-suwerwa	84
	Kapkarwa	-
Total		2912

Table 9: Distribution of Vocational Training Centres in Trans-Nzoia County
(Source: Trans-Nzoia County Integrated Development Plan)

The County has employed 107 instructors on permanent and pensionable terms to enhance training at the various VTCs. A total of 141 instructors are currently at the centres with instructor student ratio standing at 1:19 making the ration reasonable and implying that the instructors are not overworked and the students are well supervised. The transition rates at the vocational training centres is at 30% which though is still comparatively low. Both completion and retention rate at the VTCs is still low because of the perception that has been associated with the institutions. The three technical vocational and educational institutions recently established are located in Endebess, Cherengany and Kiminini. The aforementioned institutions were still under construction and yet to be operationalized.

4.6.2.4 Adult Continuing Education (ACE)

There are no ACE infrastructure in the County. Teaching and learning materials and instructors are inadequate and the learners depend on other institutions such as primary schools and ECD Centres. There are about 1340 students enrolled for this programme.

4.6.3 Health Facilities

Health is a very important component in any development process and its importance, therefore, cannot be overlooked. It determines among other things, the level of productivity of the population, living standards and, consequently, the level of development. Trans Nzoia County has eight (8) functional tier-3 public hospitals. The number of tier-2 and tier-1 public health facilities are 73 and 87 respectively. All these health facilities are generally accessible with the average distance to the

nearest health facility within urban centres being 1 Kilometre and 5 Kilometres for rural areas. Even so, there is inadequacy within these facilities and a general need for additional wards, beds and hospital equipment across all the County facilities.

Trans Nzoia County has a total of 43 registered private medical facilities distributed across the sub-counties with Kiminini having twenty (20), Cherang'any having six (6), Endebess having one (1), Kwanza having four (4) and Saboti having twelve (12). Based on tiers, there are 38 and 5 tier-2 and tier-3 private facilities respectively. The health referral system in the County is supported by 15 ambulances, 9 of which are owned by the County Government. The Kenya Red Cross Society owns 1 state-of-the-art ambulance while the rest (5) are owned by faith-based organizations and private hospitals. Maternal health outreach services are supported by two trucks donated by Beyond Zero, a campaign initiative steered by the First Lady, Mrs. Margaret Kenyatta.

Concerning staffing matters, the County has 91 doctors and 488 nurses working in the public sector. This means the provider to population ratio is 1:11,000 and 1:2,051 respectively which if compared to other counties is a good ratio. The national provider (retained) to population ratio for doctors is 1:6,150 for doctors and 1:1,210 for the nurses. Other County medical staff cadres are 398 in number. The sector has additional non-medical staff totaling to 44. Temporary employees in the sector are 464. Despite the improved staff establishment since the advent of devolution, there is still a significant shortage across all cadres.

Distribution of Public Health Facilities and Technical Health Personnel in Trans-Nzoia County

Health Facility Category	Count	Healthcare Worker Cadre	Count
1. Cherang'any Sub-County			
Tier-3 Facilities	2	Doctors (Medical Practitioners)	5
Tier-2 Facilities	16	Doctors (Pharmacists)	4
Tier-1 Facilities	48	Doctors (Dentists)	0
		Clinical Officers	20
		Nurses	92
		Pharmaceutical Technologists	4
		HRIOs	3
		Nutritionists	4
		Public Health Officers& PHTs	23
		Laboratory Technologists	17
		Rehabilitative Services (PTs/OTs/OPTs)	2
		Radiographers & Radiologists	0
		Others	5
2. Endebess Sub-County			
Tier-3 Facilities	1	Doctors (Medical Practitioners)	3
Tier-2 Facilities	12	Doctors (Pharmacists)	2

Tier-1 Facilities	24	Doctors (Dentists)	0
		Clinical Officers	11
		Nurses	45
		Pharmaceutical Technologists	2
		HRIOs	1
		Nutritionists	3
		Public Health Officers& PHTs	12
		Laboratory Technologists	7
		Rehabilitative Services (PTs/OTs/OPTs)	2
		Radiographers & Radiologists	1
		Others	5
3. Kiminini Sub-County			
Tier-3 Facilities	3	Doctors (Medical Practitioners)	59
Tier-2 Facilities	15	Doctors (Pharmacists)	14
Tier-1 Facilities	49	Doctors (Dentists)	3
		Clinical Officers	51
		Nurses	235
		Pharmaceutical Technologists	9
		HRIOs	8
		Nutritionists	7
		Public Health Officers& PHTs	30
		Laboratory Technologists	32
		Rehabilitative Services (PTs/OTs/OPTs)	14
		Radiographers & Radiologists	4
		Others	237
4. Kwanza Sub-County			
Tier-3 Facilities	1	Doctors (Medical Practitioners)	0
Tier-2 Facilities	15	Doctors (Pharmacists)	1
Tier-1 Facilities	33	Doctors (Dentists)	0
		Clinical Officers	10
		Nurses	57
		Pharmaceutical Technologists	2
		HRIOs	1
		Nutritionists	3
		Public Health Officers& PHTs	15
		Laboratory Technologists	13
		Rehabilitative Services (PTs/OTs/OPTs)	1
		Radiographers & Radiologists	0
		Others	4
5. Saboti Sub-County			
Tier-3 Facilities	1	Doctors (Medical Practitioners)	1
Tier-2 Facilities	20	Doctors (Pharmacists)	1
Tier-1 Facilities	44	Doctors (Dentists)	0
		Clinical Officers	10
		Nurses	59
		Pharmaceutical Technologists	3
		HRIOs	2

	Nutritionists	2
	Public Health Officers& PHTs	21
	Laboratory Technologists	14
	Rehabilitative Services (PTs/OTs/OPTs)	2
	Radiographers & Radiologists	0
	Others	4

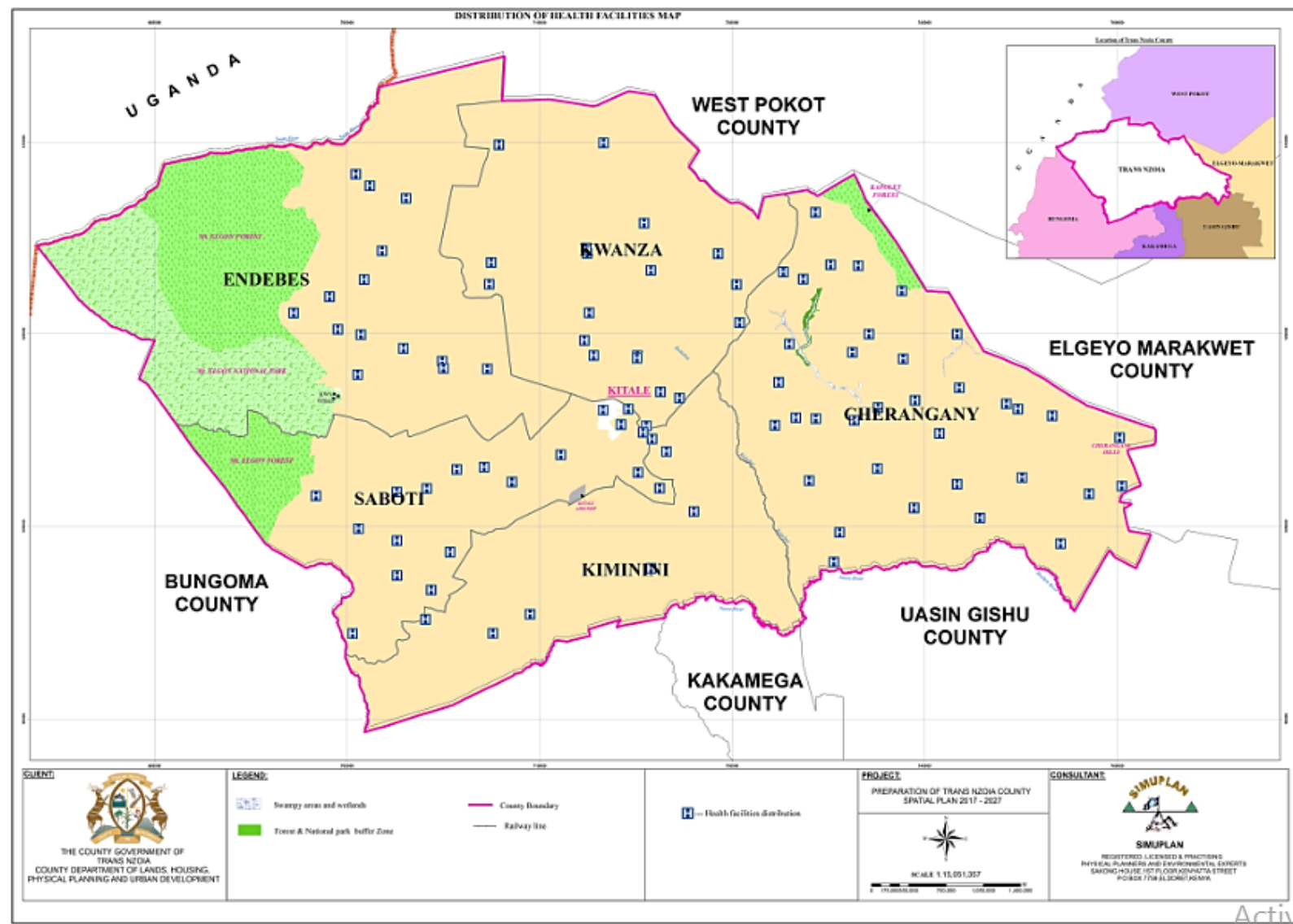
Table 10: Distribution of Public Health Facilities and Technical Health Personnel in Trans-Nzoia County
(Source: Trans-Nzoia County Integrated Development Plan)

With regard to specialized skills capacity, Trans Nzoia County still needs a lot of human resource investment and development as indicated below.

Number of specialist doctors in Trans-Nzoia County against the national tally:

Specialty	Trans Nzoia County	Kenya (National)
Obstetrics & Gynaecology	3	387
General Surgery	4	338
Internal Medicine	2	296
Paediatrics	4	295
Anaesthesia	0	139
Radiology	2	123
Ophthalmology	1	99
Orthopaedics/Trauma	1	82
Pathology	0	78
Psychiatry	0	71
Otorhinolaryngology (ENT)	0	69
Public Health	1	43
Dermatology	0	24
Family Medicine	1	17
Oncology/ Radiotherapy	0	9
Microbiology	0	6
Neurology/ Neurosurgery	0	4
Radiotherapy	0	3
Plastic Surgery	0	2
Occupational Medicine	0	1
Diabetology	0	1
Nephrology	0	1
Palliative Medicine	0	1

Table 11: Specialty Trans Nzoia County Kenya (National)
(Source: Trans-Nzoia County Integrated Development Plan)



Map 31: Spatial Distribution of Health Facilities in Trans-Nzoia County
(Source: Simuplan, 2019)

4.6.4 Public Purpose

4.6.4.1 Courts

A court is any person or institution with authority to judge or adjudicate, often as a government institution, with the authority to adjudicate legal disputes between parties and carry out the administration of justice in civil, criminal, and administrative matters in accordance with the rule of law. In both common law and civil law legal systems, courts are the central means for dispute resolution, and it is generally understood that all people have an ability to bring their claims before a court. Similarly, the rights of those accused of a crime include the right to present a defense before a court.

It is simply a place where trials and other legal cases happen, or the people present in such a place, especially the officials and those deciding if someone is guilty. Trans-Nzoia County has 8 major types of courts as summarized in the table below.

Types of Courts in Trans-Nzoia County and their numbers.

Type of Court	Number
High court	1
Land and environment court	1
Chief magistrate court	1
Senior principal magistrate court	1
Principal magistrate court	1
Deputy registrar	1
Senior residents magistrate court	1
Residents magistrate court	2

Table 12: Types of Courts in Trans-Nzoia County and their numbers
(Source: Trans-Nzoia County Integrated Development Plan)

4.6.4.2 Prisons and probation services

Prisons are an important public purpose amenity since they contribute to rehabilitation of character and security of an area. There are four prisons in Trans-Nzoia County namely: Kitale Main prison, Kitale Medium prison, Kitale women prison and Kitale Annex prison with one public prosecution office located in Kitale.

4.6.4.3 Police Stations

As outlined in Part III, section 24 of the National Police Service Act, the functions of the Kenya Police include:

- i. Provision of assistance to the public when in need
- ii. Maintenance of law and order
- iii. Preservation of peace
- iv. Protection of life and property
- v. Investigation of crimes
- vi. Collection of criminal intelligence
- vii. Prevention and deduction of crime
- viii. Apprehension of offenders
- ix. Enforcement of laws and regulations with which it is charged
- x. Performance of any other duties as may be assigned by the Inspector General in accordance with the law



Plate 76: Signboard to a Police Station in Cheranganyi Sub-County
(Source: Simuplan fieldwork 2019)

The County has a number of stations distributed across the sub-counties. During field survey, it was noted that these police stations are inadequate in some parts of the County. In some parts of the County, these facilities are dilapidated and need to be renovated. They also lack adequate infrastructure to serve the existing population.

4.6.4.4 Immigration facilities

Trans Nzoia is a border County; with Uganda being the neighboring country and Suam as the border point. There is no fully fledged immigration facility at the Suam border thus this needs to be developed to regulate immigration and trade activities. Both the County and National Government are set to gain revenue with the development of the Suam border town as it is a transit point to Northern Uganda and Southern Sudan.

4.6.4.5 Child care facilities and Institutions by sub-County

According to 2017 records, Trans-Nzoia County had a total of 4 children offices, 58 orphanages and one secured rehabilitation centre ready for construction. These are illustrated in Table below:

Category	Sub County	Total
Number of Children Offices	Cherangany	1
	Kwanza	1
	Saboti	2
	Kiminini	0
	Endebess	0
Number of Orphanages	Cherangany	8
	Kwanza	4
	Saboti	41
	Kiminini	4
	Endebess	1
Number of Rescue Centers	Cherangany	0
	Kwanza	0
	Saboti	1
	Kiminini	1
	Endebess	0
Number of Rehabilitation Facilities	Cherangany	0
	Kwanza	1
	Saboti	0
	Kiminini	0
	Endebess	0

Table 13: Child Care Facilities within Trans-Nzoia County
(Source: Children Office Trans Nzoia, 2018)

4.6.4.6 Religious Institutions

Religious institutions are the visible and organized manifestations of practices and beliefs in particular social and historical contexts. Like human emotions and attitudes, religious beliefs and practices project outward onto the social and historical plan. They create identities and representations, and determine attitudes, emotions, and behavior. These manifestations and outward projections originate from beliefs and practices, but they are also limited by historical contexts. Geographical, social, and political considerations modify attitudes and practices.

Religious institutions, then, take shape in relation to both religious impulses and contextual configurations.

These institutions play a number of functions including giving mental peace, inculcating social virtues, promoting social solidarity and welfare by teaching servitude, converting animal



Plate 77: Signboard of a Religious Institution in Cheranganyi sub-County
(Source: Simuplan fieldwork 2019)

qualities into human qualities by inculcating the spirit of self service, serving as an agent of socialization and social control, providing recreation by plating a charming role influencing the economy and political systems and strengthening self-confidence. Trans-Nzoia County has different types of religious institutions ranging from churches, mosques and temples located throughout the County.

4.6.4.7 Public Service Offices

These are offices whose existence is meant to provide service to the public. The position or occupation for those occupying these offices are established by law or by the act of a government body, for the purpose of exercising the authority of the government in the service

of the public.

These offices include office of the local administration, public hospitals and schools, state office and agencies, County Government office among many others.



Plate 78: Veterinary Offices in Kitale
(Source: Simuplan fieldwork 2019)

4.6.5 Tertiary Industry

4.6.5.1 Finance Institutions and Banking

In the last few years the country as well as Trans-Nzoia County in general has experienced an explosion in financial inclusion mostly driven by the mobile money transfer. The bank mobile money interface has greatly reduced the costs of transactions especially for small to medium money transactions. Traders can borrow bank money through mobile money without necessarily going to a banking hall. 14 banks have an established branch network in the County



including Kenya Commercial Bank, Barclays Bank of Kenya, Cooperative Bank, National Bank, Trans-National Bank, Standard Chartered Bank, Equity Bank, Family Bank, Postbank, Diamond Trust Bank, K-Rep Bank, Kenya Women Finance Trust, Oriental and Eco-Bank.

A nation-wide study conducted by the Financial Sector Deepening Trust in 2009 found out that financial inclusion has increased to the decline of financial exclusions, access to money in community led organizations has increased and that there's an increase in savings in the lowest wealth quintile. These findings provide a glimpse of the developments in the financial sector and show the shifting reality of the financial sector in Kenya. It is also encouraging to see these new developments touching on all sections of the society which will eventually have a profound effect on the development of Trans-Nzoia County.

With regards to SACCO's and Co-operatives, Trans-Nzoia County has about 234 registered cooperatives. Of these only 110 are active, 120 are dormant and four have collapsed. Most of these cooperatives are formed by employees of government departments, farmers groups, private sector organizations and transport associations. The main types of cooperative societies in the County include dairy and coffee farmers SACCOs; transport SACCOs, rural SACCOs, urban SACCOs, land purchasing SACCOs, housing, consumer and investment SACCOs. The land buying, dairy consumer, housing and investment cooperatives are spread across the entire County, the coffee cooperatives are found in the coffee producing areas of Saboti Sub-County. The transport and urban SACCOs are found mainly in the urban areas such as Kitale Town.

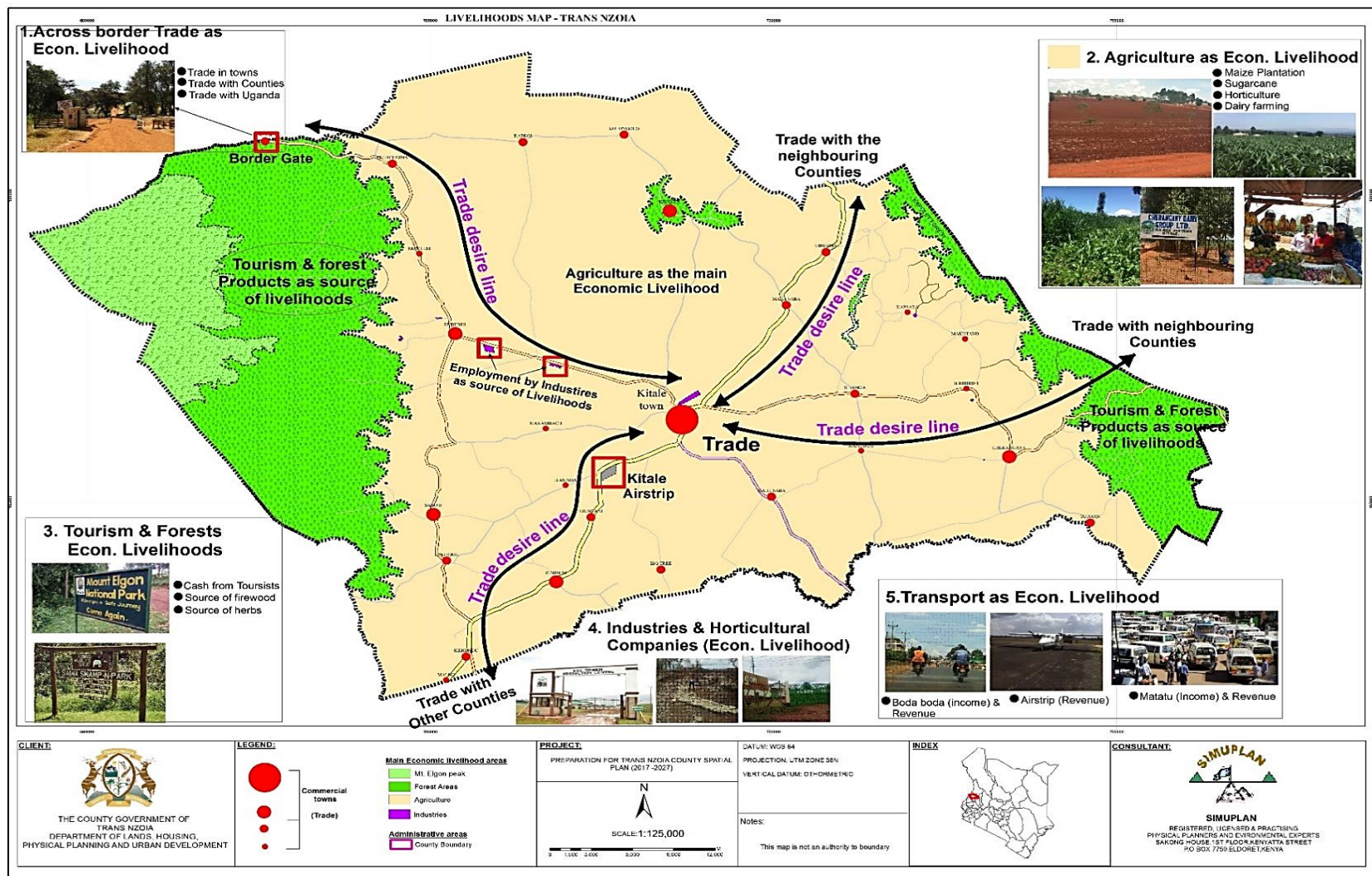
The banking and financial institutions provide employment to quite a number of persons which then becomes their main source of livelihood. These institutions also provide avenues for individuals and or groups of individuals to have access to finance which enables them to participate in various profit generating endeavours forming and thus contributing to their livelihood source.

4.6.6 Tourism industry

Tourism refers to travel for pleasure or business. It also refers to the theory and practice of touring, the business of attracting, accommodating, and entertaining tourists, and the business of operating tours. Regardless of whether the tourism is local or international, it has incoming and outgoing implication to a country and even County for this matter.

Trans-Nzoia County boasts of several tourist attraction sites, hotels and relaxation points areas which earn it revenue. These sites and recreational areas also provide numerous employment opportunities thus making them instrumental in forming a major source of livelihood for the local community.

Some of the notable tourist sites and recreational areas include luxurious hotels including Hotel Aturkan, Sirwo Resort, Mt. Elgon National Park, Kitale Museum, Saiwa National Park, Kapolet Forest, Cheranganyi Hills among many others.



Map 32: Livelihoods map in Trans Nzoia County
(Source: Simuplan, 2019)

4.7 Physical Infrastructure

4.7.1 Transport and Communication

Transport and communication are ways of overcome the barrier of physical distance. It is an effective way to connect with people with little or no regard to the distance that separates them. Transport generally involves the movement of people or goods from one place to another. Communication on the other hand entails the passing of information or data from one source to another.

The County's transport and communication networks have reached almost all areas of the County with the County enjoying road, rail and air transportation networks. The Trans-Nzoia County Transport Bill, 2015 was prepared to provide for matters relating to traffic, parking, County roads, street lighting, and public road transport, to establish the County department of transport and for connected purposes. The object and purpose of the Bill is to provide for all matters necessary to:

- a. provide for adequate, safe and efficient County transport facilities and services at a reasonable cost to the people;
- b. facilitate the planning and development of County transport facilities and transport infrastructure;
- c. give effect to, and ensure a balanced transport policy and planning

4.7.1.1 Modes of Transport

a) Road Transport

The County has a total road length of approximately 4060km which comprises both the weather and all-weather roads as well as those presently undergoing upgrading. All weather roads total to approximately 341.46 km while the weather roads total to approximately 2,953.5km.



Some of the notable tarmac roads within the County include Class A1 road to Webuye through Maliki, Sikendu, Kiminini and Kiungani, Class A1 road to Lodwar through Emoru, Kesogon Maili Saba and Kipsaina, Class B2 road to Eldoret Via Mois-bridge through Maili Saba and Simatwet centres, Class D328 road to Eldoret via Ziwa through Cheranganyi, Class C48 road to Sibanga

through Kibomet which eventually joins Class D328 road via Biribiriet and Chetangany and Class C45 road to Endebess through Matisi.

Weather roads include Class E319 road to Lukhome from Kiminini, Cass R62 & R23 road from Lukhome to Saboti, Road from Saboti to Matisi through Kisawai, Kinyoro, Bomdeni, Marambach and Kipsongo, Road from Kipsaina to Biribiriet through Saiwa National Park, Kapsara, Makutano and Suwerwa, Road from Maili Saba to Cheranganyi through Kaplamai and Road from Kungani to Kiminini through Coast centre, Big Tree, Midoto and Kananachi.



Plate 82: Road joining Class C45 road to reach Kitale Town via Matisi
Source: Simuplan fieldwork 2019

Road Status

Most of the roads within the County are in poor condition and are usually impassable during the rainy season. This is a major bottleneck to development in the County which is rich in agricultural produce. Poor roads make it difficult for farmers to access the market; especially for perishable produce. Maintenance of the existing roads is highly advocated for particularly with regards to resource allocation when prioritization development programmes in the County.



Plate 83: Endebess-Kitale Road
(Source: Simuplan fieldwork 2019)

Some of the existing all weather roads need expansion and have road shoulders constructed on them with proper road markings and signage for example the Endebess-Kitale road has no signage or proper road marking as well as road shoulders. Routine maintenance is also advised to eliminate potholes that arise due to wear and tear. The maintenance should also be extended to storm water drainage facilities to provide for proper storm water flow and reduce flooding in certain areas. There's also need for

improvement of support infrastructure like bridges by making them wider and structurally sound.

Improvement of the road networks within Trans-Nzoia County calls for the involvement of the various stakeholders in this sector including the Kenya National Highways (KeNHA) Authority, Kenya Urban Roads Authority (KURA), Kenya Rural Roads Authority (KeRRA) and the County Government depending on the Class of the road.



Plate 84: Kitale-Eldoret Road with potholes
(Source: Simuplan fieldwork 2019)



Plate 85: Structurally inadequate bridge at Kaplamai-Maili Saba Road (B2)
(Source: Simuplan fieldwork 2019)

b) Railway Transport

It is an old mode of transport and is cheaper and more reliable as compared to road transport. Trans Nzoia County boast of a 23 kilometre railway line that ends in Kitale Town from Eldoret. The railway infrastructure passes through Maili Saba and Simatwet centres before reaching its destination. For a while now, the rail transport has been dormant but there is a possibility of revival if the national plans on the revival of the railway transport will be implemented as planned. The strategic location of the County makes it key in fostering both regional and

international trade with neighbouring counties and countries. With an option for containerization, rail transport facilitates safe, uninterrupted and faster movements of bulky goods over long distance.



Plate 86: Railway line near Kitale ASK Showground
(Source: Simuplan fieldwork 2019)

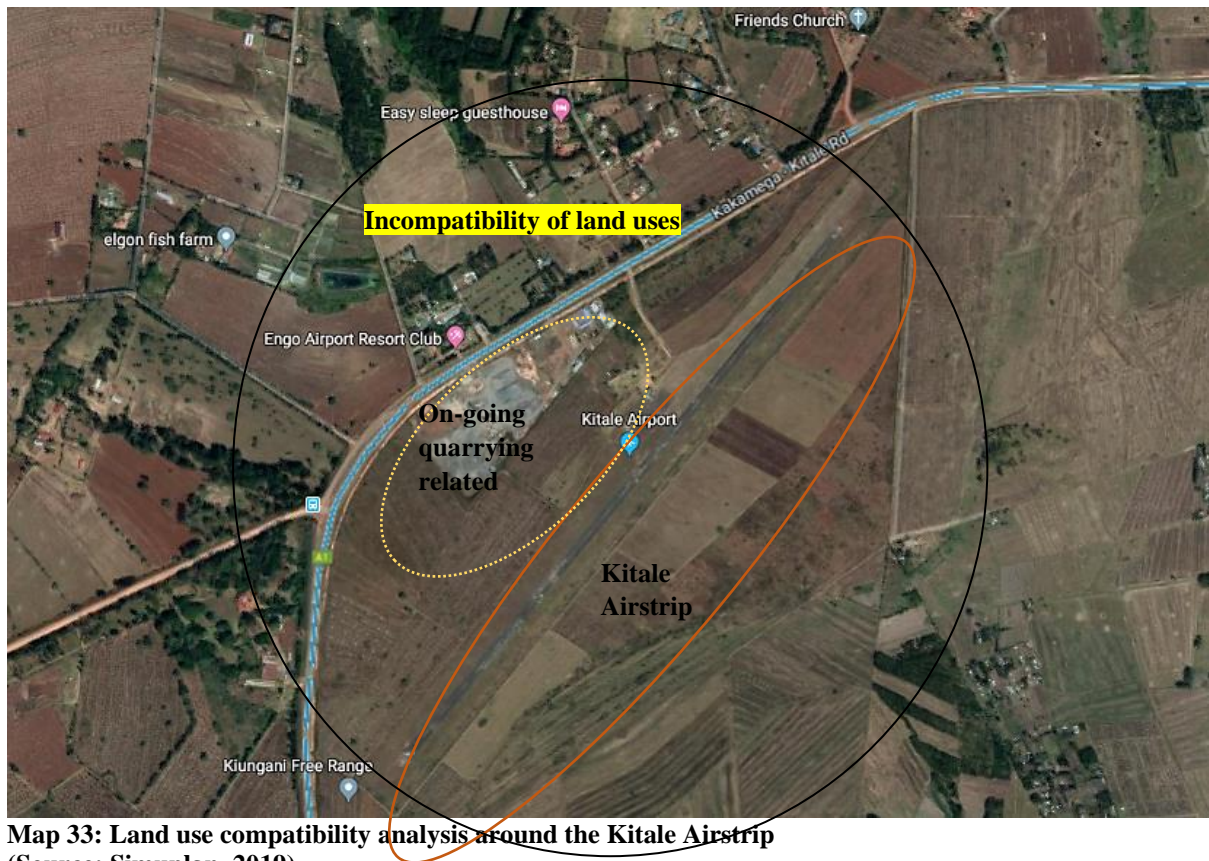
c) Air Transport

It is an advanced mode of transportation that is quick but most expensive. It is mostly used for travelling to distant places, carrying mails and transporting valuable and lighter products. Trans-Nzoia County has an air strip in Kambi Miwa that is rather dormant. Plans are underway by the National and County Government to expand the airstrip; a move expected to increase air traffic at the facility. Modernization of the airstrip will provide an opportunity for growth for particularly the horticultural sector. It will also reduce travel time for passengers.

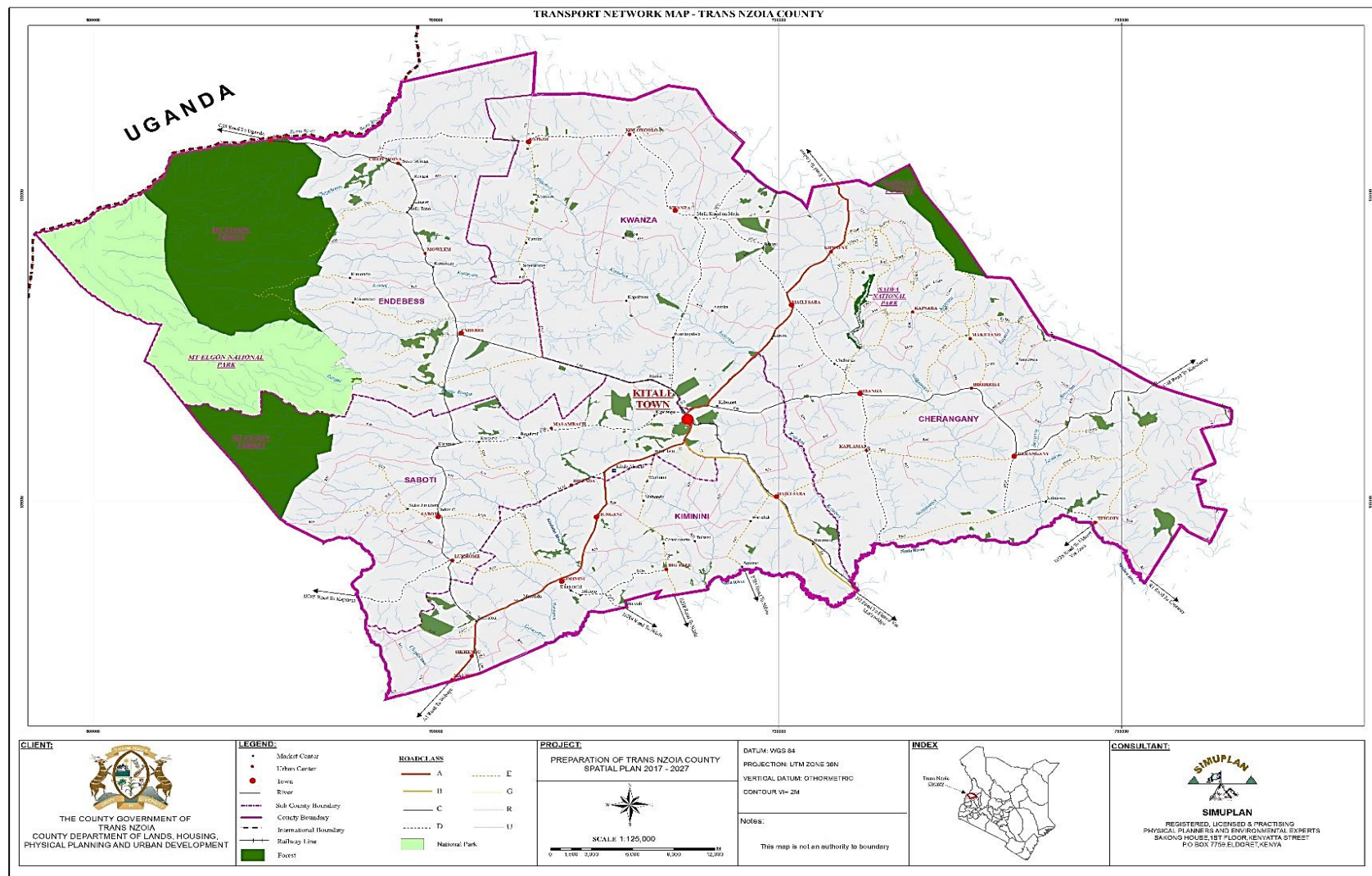
A major observation is the on-going quarrying activities within the immediate vicinity of the airstrip which possess a possible challenge to use of the facility. It is important to consider complementarity principle when assigning and allocating land uses to areas.



Plate 87: Kitale Airstrip, (Source: Simuplan, 2019)



Map 33: Land use compatibility analysis around the Kitale Airstrip
 (Source: Simuplan, 2019)



Map 34: Transport Network Map
(Source: Simuplan, 2019)

4.7.1.2 Means of Transport

Trans-Nzoia County enjoys movement of goods and services via both motorized and non-motorized means. **Motorised Transportation** means are means of transport equipped with a device that convert any form of energy into mechanical energy, especially an internal combustion engine or an arrangement of coils and magnets that converts electric current into



mechanical power. Motorized means to have motors; which is refers to something such as a machine or an engine that produces or imparts motion. Examples of such means or transport include: Automobile, Tuk Tuk, buses, aeroplane and motorbikes. Such means of transport are present in Trans-Nzoia and they facilitate movement of people and goods from one point to another.

Plate 88 : Motorbikes in Kitale town
(Source: Simuplan, 2019)

Non-Motorized Transportation (NMT) on the other hand includes walking and cycling and variants such as small-wheeled transport (skateboard, hand/animal carts) and wheelchair travel. This means of transport is also known as active transportation and human powered transportation. They provide both recreation and transportation satisfaction, and are especially important for short trips up to 7 Kms, which take up the largest share of trips in urban areas (Witting et al., 2006). In Trans-Nzoia County, use of hand carts is evident as well as bicycles.



Plate 89: Non-motorized transportation means in Kitale town
(Source: Simuplan, 2019)



Animal-driven carts
(Source: Simuplan, 2019)

Despite transport and communication being a key sector in the growth and development of the County, the sector is faced by a myriad challenges and constraints including: unplanned/congestion of bus parks and parking bays, poor road transport and communication network, inadequate staff skills and competencies, encroachment on road reserves and way leaves and lack of routine road maintenance. To improve the sector the following key strategies can be employed: construction of modern bus parks and modern parking bays; carry out regular routine maintenance of road network; and capacity building for staff and local contractors.

According to the Ministry of Transport & Infrastructure in Trans-Nzoia County, key sectoral interventions with reference to proposed programmes and projects in the sector include; upgrading of Endebess-Suam road, installation of street lights in Kitale, Kiminini and other upcoming market centres, routine maintenance of roads, procurement of equipment and machineries for road works, construction of bus parks, parking bays, walk ways and cycling lanes, construction of drainage structures and road crossings, capacity building on alternate sources of energy like biogas and solar energy and grading and gravelling of all road works.

The anticipated outputs and impacts once the sectoral programmes and projects are implemented include; Motorable roads, street lights installed in Kitale and major urban centres, procurement of a set of road works equipment for each sub County, construction of parking facilities in Kitale, kiminini, Endebess, sibanga and Kachibora, enhanced security and extended business hours as a result of street lights, well maintained road network, increased volume of road works undertaken annually and reduced congestion in Urban centres.

4.7.2 Information Communication Technology

ICT has transformed the manner in which communities work and communicate. The ownership and utilization of communication gadgets is now a measure of well-being and has greatly contributed to the reduction of the cost of doing businesses in the country as well as opening up a the County to a world of limitless opportunities. The major media channels in the County include radio, television, mobile phones, parcel services, print media among many others.

Communication is one of the major drivers of the County's economy. The County has one Huduma center located in Kitale town Post office. Overall, the County has 3 post offices and 6 sub post offices. Private couriers are also taking over the postal services in the County filling the gap in the fast delivery of parcels and letters. The County also has one television and radio station i.e. Imani Radio and Television.

According to the Kenya integrated household budget survey (KIHBS) report of 2015/2016, the main type of telephone communication is the mobile telephone and its coverage for households is 80 percent. The County is fairly covered by the three main mobile service providers namely Safaricom, Airtel and Telkom. On the other hand, the report classifies radio and television as the mostly used mass media in the County with coverage of 83.1 percent and 41.5 percent respectively. The coverage of radio and television is wider within Kitale town and the upcoming urban centers as compared to the rural areas. Further, 14.9 percent of the County residents have access to the internet and the use of computer is 9 percent. The County is connected to the fiber optic mainly within Kitale town. However the access to the fiber optic is very limited.

4.7.3 Water

4.7.3.1 Water Sources

The County has adequate fresh water supply. Improved sources of water comprise protected spring, protected well, borehole, piped into dwelling, piped and rain water collection while unimproved sources include pond, dam, lake, stream/river, unprotected spring, unprotected well, jabia, water vendor and others. Approximately 65% of the County residents use improved sources of water, with the rest relying on unimproved sources.



Plate 90: Existing improved and unimproved water sources in the County
(Source: Simuplan, 2019)

The County is home to two water towers i.e. Mt. Elgon and Cherengany Hills. These two natural features are the main water catchment areas for most of the rivers in the County and also neighboring counties. The County has three main rivers:

- Ewaso-Rongai with its tributaries being Kabeyan, Kissawai, Kipkukul, Tongaren, Kabuyefwe and Machinjoni;

- Noigamaget River with its tributaries being Kapolet and Sinyereri;
- Sabwani River has Kiptogot, Mubere, Kaibei, Kimothon and Chepchoina as its tributaries.

Other water sources include; Sosio River in Bungoma County and Nzoia River which borders Trans Nzoia and Bungoma Counties. The County also has good ground water potentials for boreholes, shallow wells and springs and other surface water sources consisting of water pans and dams. There are 65 dams, several water springs, shallow wells and wetlands for example Kipsaina, and Namanjalala.

However, there is an observed trend of reducing water levels. This is due to encroachment on fragile ecosystem, over abstraction, water catchment degradation and climate change effects. There is also inadequate development with regard to surface and ground water infrastructure.

4.7.3.2 Water Supply

The portable water sources in the County are by gravity and pumping, boreholes, developed shallow wells, protected springs and rainwater harvesting. There are 12 water supply schemes which include: (Kitale water works, Kapolet, saboti, Kiminini, Kwanza-Kolongolo, Kiboraa, Masaba, Kimondo, Endebess, suam-Orchad, Matumaini, and Chepkoiyo). The sources of the water for the schemes are River Nzoia, Kapolet Forest and Mt. Elgon.



Plate 91: Kwanza water scheme



Plate 92: Water from Kapolet water intake

(Source: Simuplan, 2019)

According to the 2009 Census, out of the 170,117 households enumerated for water use, 19,702 had piped water as their main water source, 1,119 had ponds, and 34,441 depended on

streams, 110,386 on spring/wells and boreholes. According to the survey carried out in 2013, the situation has greatly improved with the number of households connected to piped water increasing to 28,855.

The average distance to water points in the County is 1Km where, 40.6 percent of the households have access to safe sources of water while 59.4 percent of the households have access to unsafe water sources.

Table 14: Water source and accessibility as per Sub County

Sub County	Potable Water Sources	Average Accessibility (km)
Saboti	Gravity Schemes, Boreholes, shallow wells, Springs and pumping schemes	1.5
Kimini	Gravity Schemes, Boreholes, shallow wells, Springs and pumping schemes	1.5
Cherang'any	Gravity Schemes, Boreholes, shallow wells and Springs	1
Kwanza	Gravity Schemes, Boreholes, shallow wells, Springs and pumping schemes	2.5
Endebess	Gravity Schemes, Boreholes, shallow wells and Springs	2

(Source: Trans Nzoia County CIDP (2018-2022))

The water problems experienced in the County include; high water bills, irregular supply and most of the water sources are seasonal i.e. depend on the rainy season. During the dry season, water levels in the main rivers drop resulting in water rationing and also drying up of wells and boreholes.

4.7.3.3 Water management

Currently, the water management institutions are under the Lake Victoria North Water Services Board and Water Services Regulatory Board. As a measure for sustainability, the County has initiated the process of having its Water Services Provider (WSP) as well as building Public Private Partnership (PPP) for the development and management of urban, rural and community water supplies. Some of the community water resources and supplies are managed by the Water Services and Resource Users Associations.



Plate 93: Water management in Trans Nzoia County
(Source: Simuplan, 2019)

4.7.4 Waste management

4.7.4.1 Solid waste management-types of solid waste

The waste produced in the County comprises of domestic waste, refuse from commercial and industrial enterprises, waste from the farms etc. An average of 150 tons of solid waste is generated daily in the County; 70% of this waste is organic in nature therefore it can be composted to manure while the remaining 30% is inorganic including plastic material, metals and old tyres that can either be reused or recycled.

Solid waste disposal methods in the County include burning, compost pit, collection by the County government and private firms especially in the urban centers and reusing as manure in the farm gardens.



Plate 94: Solid waste being burned at Kiminini open air market
(Source: <http://symbiocitykenya.org/trans-nzoia-County/>)

The County has limited number of solid waste equipment which include 100 street litterbins, 100 dust bins 12 bulk bins/skip bins, 1 skip loader and 2 tractors for solid waste management. These facilities are not adequate to handle all the waste generated in the County. During field survey, it was observed that the street litter bins are mainly found in the major urban centers i.e. Kitale and Kiminini. Other small centers lack these facilities.



Plate 95: A skip truck lifts a bin full of waste collected from Kitale town to transport it to Machinjoni dumping site. (Source: Trans Nzoia County Government)

The County has one open dump site at Machinjoni measuring approximately 10 acres. Approximately 20% -30% of the solid waste generated is disposed of at the Machinjoni dumpsite, while the rest is collected by the private sector. Due to the dumping site close proximity to the slaughter house, there are plans to relocate it to Bidii area on the outskirts of Kitale town. The land set aside for the dumping site in Bidii area is approximately 12 acres.

It was observed that the existing dump site is far much inadequate to handle solid waste in the County. The uneven distribution solid waste collection points in the urban centers is also a major concern which should be addressed. And even though the County intends to pursue public private partnerships to handle solid waste, the spatial plan plays a huge role in coming up with the strategies for managing the solid waste.

4.7.4.2 Liquid waste disposal

The main modes of human waste disposal by households are pit latrines, main sewer, septic tanks and cess pools. Other forms of liquid waste disposal include bucket and bushes. Pit latrines account

for approximately 80% of human waste disposal in the County. The main sewer s found mostly in the main urban centers.

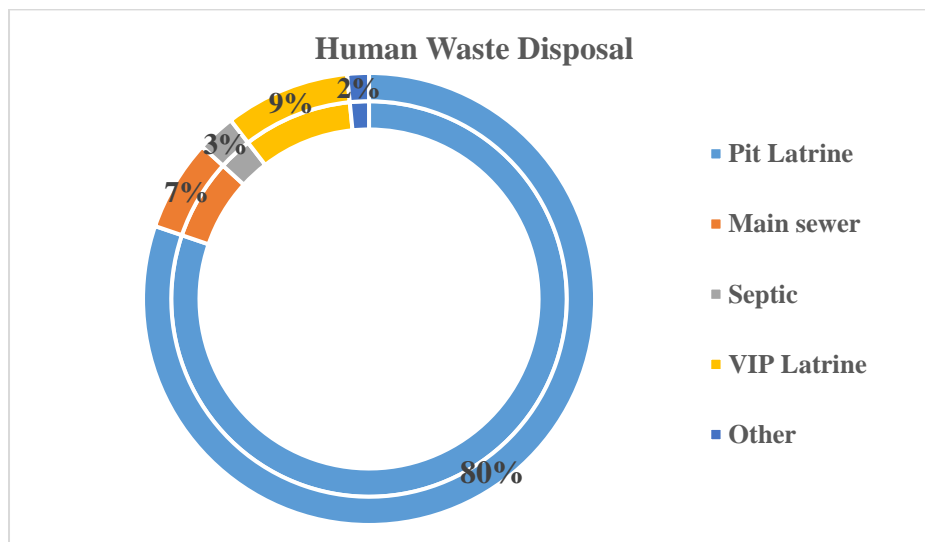


Figure 16: Main Mode of Human Waste Disposal
(Source: 2009 Kenya Population and Housing Census)

The Department of Public Health promotes sanitation and hygiene with a view to achieving Open Defecation Free zones (ODF) in the rural set ups.

4.7.4.3 Storm water drainage

Most of the formal developments in the County especially within the urban areas have some form of storm water drainage system. There are however many areas where the drainage system is inadequate or areas where the originally constructed systems cannot handle the current capacity of storm water in the County.

During field survey, it was also observed that many developers only construct drainage systems within the boundaries of their properties whereby no outfall is installed resulting in scouring below the outlets. Open drains have been constructed within the major roads in the County though clogging due to dumping of solid waste win the drains is a major challenge.

It was also observed that the existing methods of storm water drainage tend to have negative impacts on the environment especially in Endebess and Cherangany sub-counties where surface has increased due to depletion in vegetation cover.

4.7.5 Energy

4.7.5.1 Energy Access

The main sources of energy in the County are firewood, kerosene, charcoal and electricity. Access to energy however varies in different parts of the County (rural and urban access). In terms of usage, firewood and paraffin is the most preferred in the rural areas while electricity and gas are the most preferred in the urban areas for cooking and lighting respectively.

4.7.5.2 Lighting

Electricity is the main source of energy for lighting in the County at 30.7%. This can be attributed to the scale-up in the rural electrification program. Other sources of energy include paraffin, candles, generator, solar, battery lamp/torch etc. The figure below shows the level of usage of different of the sources of energy for lighting in the County.

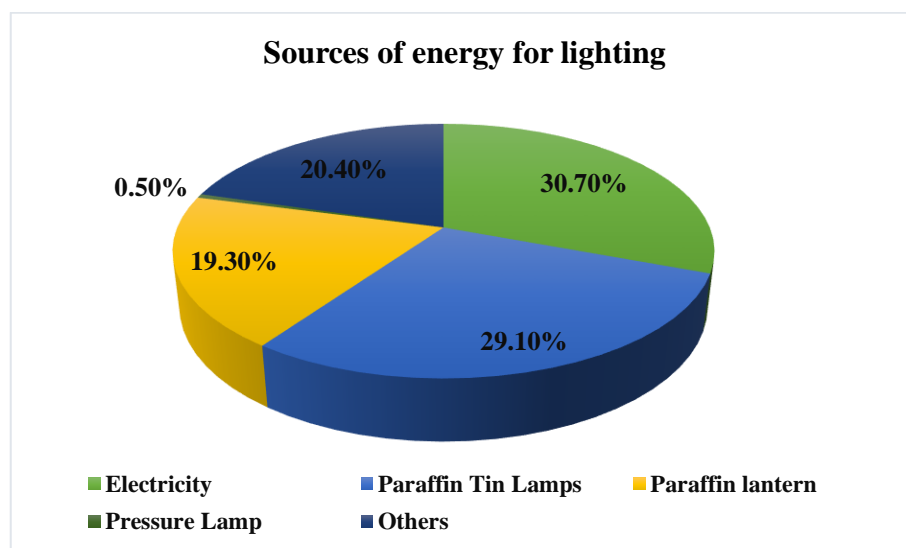


Figure 17: Sources of energy for lighting
(Source: Simuplan, fieldwork 2019)

4.7.5.3 Cooking Fuel

Most of the households interviewed use firewood for cooking while 18.4 percent use charcoal. The figure below clearly indicates that majority of the residents use non-renewable sources of energy for cooking fuel.

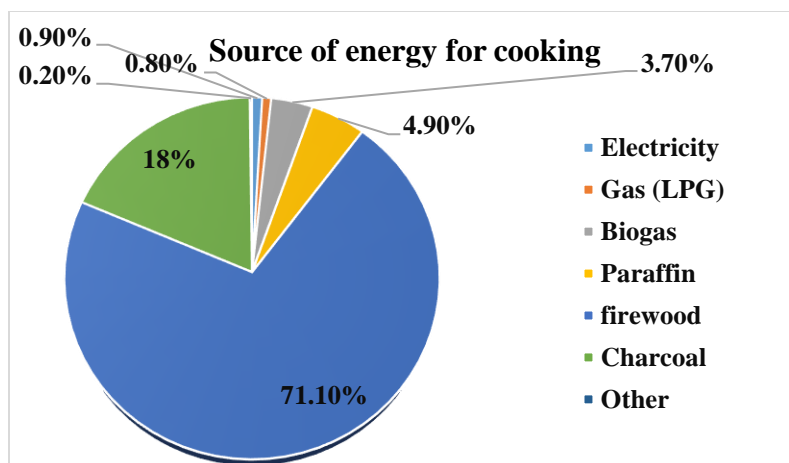


Figure 18: Source of energy for cooking
(Source: Simuplan, fieldwork 2019)

The biggest type of energy used for cooking is wood fuel yet the County intends to increase her forest cover in the foreseeable future. Illegal logging of endangered trees species for Timber and charcoal burning is a major threat facing the forests in the County. This is a development challenge that needs to be addressed before it becomes a crisis in the future.



Plate 96: Trans Nzoia residents collecting firewood from Mt. Eldon forest
(Source: https://watertowers.go.ke/wp-content/uploads/2019/05/Kenya-Water-Towers-Policy-Mt.-Elgon-Policy-30-4-2019_2.pdf)

4.7.5.4 Solar

This is the least utilized yet most abundant energy resource. The use of solar energy is limited to a few households especially within the urban and trading centers. The limited usage of solar energy is mainly due to inaccessibility of the necessary technology to the majority of the population and lack of promotion of solar energy as alternative energy source especially to electricity

4.8 Environment and Natural Resources

4.8.1 Environmental degradation

Tran-Nzoia County has experienced environmental degradation over the year resulting from poor farming practices, destruction of forests, encroachment on fragile ecosystems, over abstraction of natural resources including sand harvesting and timber logging, undisciplined solid waste disposal especially at Machinjoni dump site in Kitale town, poor sewer system, open dumping of waste on wetlands, forest and open spaces, Unplanned land uses and natural causes such as mudslides.



Plate 97: Soil erosion at Mt. Elgon
(Source: Simuplan, 2019)

This has resulted to reduced forest cover, soil erosion, reduced agricultural productivity, landslides, frequent droughts, flooding and erratic rainfall patterns.

Mt. Elgon is one of the areas affected by this phenomenon. Areas affected at the foot of Mt. Elgon include; Pango, Masaba, Kiptogot, uam and Chepchoina. Other affected areas at Cherenagny Hill include; Kapolet, Miliman and Tenden. This is mainly due to deforestation.

Degradation also occurs along the river banks, wetlands and other water catchment areas in the County. Some of the wetlands that experience



Plate 98: Poor farming practices at the foot of Mt. Elgon
(Source: Simuplan, 2019)

degradation in the County include Sinyerei/Kapsaina wetland, Kapolet, Chepkaitit, Chepchoina, Mubere, Kiptogot, Machinjoni and Namanjala wetlands. River Nzoia has some degradation in the area near Moi's Bridge. Other areas include Kitale town forest, Machinjoni open dump site and dams and water pans in Wamuini, Masaba, Weonia, Karara, Suam. The gully erosion in Kapkoi and Tuwan is as a result of environmental degradation.

4.8.2 Loss of biodiversity

Biodiversity hotspots in the County include the Mt. Elgon region, Cherangany Hills, National parks and wetlands scattered across the County. These areas harbor several forest types and regionally threatened species both plants and animals.



Plate 99: Vegetation cover in Mt. Elgon forest
(Source: Simuplan, 2019)

Between the years 1990-2016, Cherangany Hills has suffered an overall loss of 13,003 ha of forest cover, equivalent to an annual loss of 500 ha. This is in complete contrast to Mt. Elgon region which has increased its forest cover by 1697 Ha a gain of 65 Ha per annum mainly due to intensification of conservation effort.

Mt.

Elgon Water Tower is home to 37 globally threatened species of which 22 are mammals 2 insects and 13 bird species.

Cherangany is also home to large and small wildlife animals. These include elephants, buffalos, leopards, the rare and endangered Sitatunga antelope, De Brazzas monkeys among many others. Different plant species are also distributed in the forest.



Plate 100: De Brazza monkey in Cherangany Hills
(Source: <https://www.jmjunglesafaris.com/uganda-national-parks/mount-elgon-national-park/>)

Over the years, the County has suffered loss of biodiversity mainly because of encroachment on fragile ecosystem-rivers, forests, wetlands etc. and poaching of wild animals. Other causes include pests, diseases, wild fire in forests, over extraction of natural resources, environmental pollution and climate change effects. Areas largely affected include Mt. Elgon forest and National Park due to poaching and uncontrolled timber logging, Cherangany Hills due to encroachment and also uncontrolled timber logging. Encroachment on wetlands as most wetlands are being converted to residential, commercial and agricultural land uses.



**Plate 101: Plate 43: Encroachment on Cherangany Hills
Elgon forest**

(Source: https://watertowers.go.ke/wp-content/uploads/2019/05/Kenya-Water-Towers-Policy-Mt.-Elgon-Policy-30-4-2019_2.pdf)



Plate 102: Illegal timber logging on Mt.



Plate 103: Cultivation inside a wetland

(Source: https://watertowers.go.ke/wp-content/uploads/2019/05/Kenya-Water-Towers-Policy-Mt.-Elgon-Policy-30-4-2019_2.pdf)



Plate 104: Encroachment of built areas into wetlands

4.8.3 Drought

Contributing factors to drought in the County include irregular rainfall patterns and deforestation. Agricultural activities are the most affected during prolonged drought periods. This include both crop and livestock farming. Water levels have also been known to drop drastically during drought season increasing the distance covered to access water and also increasing the cost of water in the County. Droughts destroy vegetation making land more easily prone to erosion by wind and water.

4.8.4 Floods

Namanjala within Sabwani sub-catchment is the most affected by floods in the County. This is mainly due to heavy rains that cause River Sabwani that passes through the area to overflow resulting to flooding in the area. In most cases, the flooding usually causes displacement of persons, loss of property and destruction of crops.



Plate 105: Residents displaced in Namanjala region after River Sabwani overflowed due to heavy rains
(Source: <https://www.aspect.co.ke/families-in-agony-as-flooding-worsens-in-namanjalala/>)

Apart from heaving rains resulting inoverflowing rivers, other causes of flooding in the area include deforestation, poor agricultural practices,degradation of riparian resurves and broken water resorvoirs e,g, dams.

4.8.5 Deforestation

The natural Forest cover is continuously being depleted in the County mainly due to deforestation and human activities. Some of the activities include; illegal timber logging, agricultural expansion where trees are cut down to create land for agricultural activities, human population demand for more land for other uses and urbanization. Other natural causes are forest wild fires, pests and diseases.



Plate 106: Illegal timber logging in Cherangany Hills
(Source: https://watertowers.go.ke/wp-content/uploads/2019/05/Kenya-Water-Towers-Policy-Mt.-Elgon-Policy-30-4-2019_2.pdf)



Plate 107: Encroachment in Cherangany Hills

The resultant effects of deforestation include; loss of biodiversity, soil erosion, climatic change, destruction of water catchment areas, landslides, flooding among many others. Deforestation in Mt. Elgon and Cherangany Hills can be identified through appearance of clear-cut patches within the forests.

4.8.6 Land slides

The steep landscapes around the hilly areas in the County present challenges of landslides and rock falls especially around the densely settled and hilly areas of Mt. Elgon and Cherangany Hills. The areas most affected are Milimani settlement in Cherangany Hills and Kimongo in Mt. Elgon region. The main causes of landslides in the County include deforestation. Encroachment on Mt. Elgon and Cherangany Hills, poor agricultural practices and changing weather patterns.

4.8.7 Reduction in water levels

Reduction in surface water levels in the County is evidenced by drying up of springs, boreholes, dams, wells and rivers. This has resulted in water scarcity in the County characterized by water rationing and travelling long distances to access water.

This reduction in water levels is mainly due to destruction of water catchment areas, high demand for water on the limited water sources by the increasing population, encroachment on riparian reserves and climatic changes.

4.8.8 Pollution of water resources

The water resources in the County are constantly affected by increasing demand mainly due to increasing population pressure on existing resources, industrialization and changing lifestyles of the County residents.

Pollution of waters resources both surface and ground continue to increase in the County affecting the quality of water for domestic use and drinking. Uncontrolled domestic and industrial discharges are major threats to the water sources in the County.

Water pollution in the County can be considered point source and non-point source pollution. Point source pollution occur when effluent are discharged directly into water sources. These include domestic and industrial effluents, non-performing treatment plants, agricultural chemicals etc.



Plate 108: Water pollution in Sikhendu forest

(Source:

<http://documents.worldbank.org/curated/en/428181501263272420/pdf/SFG1171-V16-EA-P096367-Box405291B-PUBLIC-Disclosed-7-28-2017.pdf>)

Non-point source pollution occurs due to catchment degradation in the County which causes sediment accumulation in water. The areas mainly affected by this type of pollution include Mt. Elgon and Cherangany Hills which are the major water catchment areas in the County. The photo clearly shows the level of water pollution caused by human activities including deforestation. At the convergence of two streams in Sikhendu forest, the stream on the left

emanates from the forest while the stream on the right passes through agricultural farms upstream.

4.8.9 Unsustainable Land Use

Unsustainable land use and management practices are major causes of land degradation in the County. Agriculture is the leading cause of land degradation in the County as it comes along with land clearing, overgrazing, and cultivation on the slopes of mountains, bush burning and soil

nutrient mining. Unplanned settlements and encroachment on fragile ecosystems also further enhance land degradation.

4.8.10 Solid waste management

Poor solid waste management practices are also a major contributor of land degradation in the County. The County is characterized by inadequate solid waste management facilities both infrastructure and personnel. The Machinjoni dump site lacks a treatment plant for the wastes dumped. This has resulted in reduced aesthetic value, human and livestock health hazard.

4.8.11 Climatic change

The frequency of droughts, floods and other extreme climate events has increased over the last four decades in the County. These have resulted in disruption of physical, biological and ecological systems affecting residents economically and health wise.

The County is obligated to put in place climate change mitigation and adaptation measures aimed at addressing the effects of climate changes.

4.9 Governance

Under Constitution of Kenya 2010 National and County Governments are distinct but interdependent. The County governance and public service management comprises of the County executive committee, County assembly and public service board.

The County Executive Committee is expected to supervise the administration and delivery of services to citizens as well as conceptualize and implement policies and County legislation. The County Assembly is a legislative organ and plays an oversight role on all County Public Institutions including the urban areas and cities. The mandate of the County public service board is spelt out in Section 59 of the County Governments Act, 2012. It provides policy guidance, regulatory framework and develops institutional and human resource capacity for effective delivery of services to the public in the County.

The County governance and Public Service Management Sector is mainly responsible for coordinating and facilitating activities at the County level. It plays a key role as in coordinating the implementation of policies and also in creating an enabling environment for the promotion of economic growth. It also plays a key role in ensuring the rule of law is adhered to and that the rights of ordinary citizens are observed.

4.9.1 Role of key stakeholders in governance

Table 15: Role of Key Stakeholders in Governance

Stakeholders	Roles
National Government	Provision of security, democratic governance, and enabling environment for the private sector to thrive.
Community	Participation in public management through voting, project management and monitoring, and community security provision through collaboration with the security organs; Participate in development and monitoring of programs and projects.
Private Sector	Contribute to governance and pay taxes.
Civil Society	Instill high morals on human rights and just governance
County Assembly	Formulation and implementation of local laws (by-laws);
County Finance	Financial support for development projects and administration of services Provision of manpower
Donors	Provide funding and capacity building
Private sector	Partner in development

NGOs, CBOs, FBOs, CSOs	Provision of human technical and financial support in implementation of sector policies projects and Programmes
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(Source: TCIDP-2013-2017)

CHAPTER 5.0 EMERGING PLANNING ISSUES

5.1.1 Overview

This chapter provides a summary of sectoral emerging issues as obtained from the situational analysis of the planning area. It also provides a detailed outline of the Strengths, Weaknesses, Opportunities and Threats (SWOT); otherwise referred to as “Big stones” to be considered in developing a more sustainable and reliable spatial plan for the County. This chapter therefore,

analyses the emerging issues that aids in the development of an all-inclusive spatial plan for the County.

5.1.2 Sectoral Emerging Issues

Below are some of the emerging issues within each sector:

Physiography

- A huge population depend on natural resources for their livelihoods
- There have been increased incidences of encroachment of human settlements and agricultural activities on the County's fragile ecosystems such as Mt. Elgon forest, Kapolet forest, wetlands, riparian reserves
- Over-exploitation of the natural resources in the County for example illegal logging in Mt. Elgon forest and uncontrolled sand harvesting along major rivers.
- Presence of derelict land due to un-sustained quarrying/rock mining leading to abandoned derelict land especially in Lukhome areas (Saboti Sub-County)
- There is increased pollution of water sources in the County from agricultural activities and dumping of wasters from human settlements in the water sources in the County
- Some parts of the County are susceptible to flooding especially during heavy rainy season when rivers overflow. A good example is the Sabwani Rive which usually overflows during rainy season flooding Namanjala area.
- Due to the high rate of population growth in the County, immense pressure has been applied on the existing natural resources. If proper care is not take, these resources will not be enough to sustain the County population.

Socio-Economic

- The low investment in cultural heritage has greatly contributed to the eroding culture of the Trans Nzoia County People
- High pressure on available natural and economy resources

Population and Demography

- High population growth rate mainly due to high fertility rates and low mortality rates in the County
- Levels of poverty in the County have been on the rise; this is due to limited employment opportunities available in the County
- There has been a high rate of rural-urban migration in search of employment opportunities in the urban areas. A high number of youthful population relocate to the neighboring urban centers such as Eldoret and Nairobi in search of greener pastures
- The County has a huge labor force

Urbanization and Urban Development

- Increased informality in development at the outskirts of markets and towns
- Haphazard development due to the unplanned rapid growth of the urban centres
- No defined clearly urban growth limit leading to urban sprawl especially in major towns such as Kitale and Kimilili towns
- Linear development and settlements along main transport corridors
- Pollution and poor solid waste management in the centers developing due to urbanization

Housing and Human settlements

- Proliferation of informal settlements in towns and markets due to existence of landlessness and lack of land ownership documentation
- Concentration of settlements along transport routes
- Uncontrolled sub-division and conversion of agricultural land to residential land use due to increased population. Land is being sold or inherited to accommodate the growing population
- Encroachment of settlements on fragile ecosystem due to increased population pressure
- Inadequate basic infrastructure and services especially in the rural settlements where access to facilities such as health, water, electricity and related facilities is a challenge
- Lack of spatial plans to control the development of human settlements

Land and Land Use

- The County does not have designated land use zones

- Continuous land fragmentation in rural and urban areas resulting in low agricultural yields in the rural set-up and uncontrolled developments in the urban set-up
- Limited land (space) for expansion in the rapid growing urban centers
- Decrease of land under forests due to encroachment by human settlements and agricultural activities
- Insecurity of land tenure in some parts of the County especially in the informal settlements such as Chepchoina
- Incompatibility of land uses in some parts of the County
- Inadequate recreational facilities

Economy and Livelihoods

a) Agriculture

- This is the main employer and economic driver for Trans Nzoia County
- The County over-relies on rain fed agriculture
- The County has of favorable agro-ecological zones suitable for the farming activities in the County
- Presence of huge tracks of land especially in Endebess and Kwanza sub-counties belonging to ADC farm
- Maize is the main food crop grown in the County although recently farmers in the County are shifting to sugarcane farming due to the unfavorable maize market in the County
- Fluctuating market prices for agricultural produce especially maize
- Maize is the main cash crop in the County
- Inadequate infrastructural development which affects transportation of farm produce to markets or value addition centres resulting in unimaginable losses.
- Inadequate value addition centres in the County which force farmers to transport their produce to other areas for processing making them incur high transportation costs in the process.

- Exploitation of farmers by middlemen particularly during overproduction. The forces of demand and supply in some instances further perpetuates the vicious cycle of poverty.
- Non-existence of a marketing policy for surplus farm produce
- Influx of middlemen in the marketing sector who exploit farmers and those who practice quarrying and sand harvesting

b) Trade and Commerce

- Proliferation of informal commercial activities along major roads especially within Kitale town
- Limited/lack of capital for initiating investments
- In the urban centers, exchange of goods and services is at its peak during the market days
- The urban and market centers in the County have a high capacity to grow
- Inadequate/Lack of market infrastructure in some market centers
- Encroachment of traders on road reserves
- Majority off the micro, Small and Medium Enterprise (MSME) (69.1%) operating in the County are unlicensed.

c) Industry

- Presence of raw materials such as maize and coffee
- Presence of established industries like the Kapsara Coffee and Tea Factory
- Availability of land to establish special economic zones in the County
- Lack of an industrial park in the County though efforts are underway to establish one at Namanjalala ADC farm
- Availability of different transport modes including road and air
- Untapped water aquaculture at the slopes of Mt. Elgon
- Availability of electricity
- Availability of huge labour which can be obtained at a cheap price
- Numerous unexploited potentials in value addition industries

d) Mining

- Exploitation by middle men
- Lack of proper marketing channels
- Presence of derelict quarries especially in Saboti around Lukhome area
- Un-sustained sand harvesting along major rivers in the County

e) Employment

- High level of unemployment
- High rate of migration from the County by the youth in search of employment opportunities
- Low income levels
- Presence of huge labor force
- Lack of conducive and enabling environment for the youths to create employment/self-employment opportunities for graduates in the County

f) Tourism

- Untapped tourism potential and capacity underutilization of existing facilities
- Encroachment by human activities on tourism sites such as Mt. Elgon National Park
- Incidences of human-wildlife conflicts

Transport and Communication

- Poor road and transport networks that largely constitute of seasonal roads
- Untapped railway and air transport
- Poor road maintenance and structural shortcomings for instance inadequate street lights, absence of road shoulders and storm water drainage channels etc

Infrastructure services

a) Water

- Existence of water towers-Kapolet Forest and Mt. Elgon- in the County that support the County and the surrounding areas as well as international waters for instance River Nile
- Threat of erosion resulting in contamination of water sources

- Encroachment into water towers resulting in declining water levels

b) Energy

- Over reliance on wood fuel-Charcoal and firewood- resulting in deforestation
- High cost of LPG gas for cooking
- Frequent rationing of electric power
- High potential for use of solar power in lighting up homes

c) Drainage systems

- Inadequate storm water drainage facilities
- Ideal terrain to allow for gravitational flow

d) Waste Management

- Pollution and poor solid waste management
- Inadequate infrastructure
- Lack of adequate dumping sites
- Minimal sewerage connectivity
- The topography allows for easy flow of liquid waste

5.1.3 Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

The table below summarizes the internal and external factors influencing the growth and development of Trans-Nzoia County.

Table 16: SWOT Analysis

STRENGTHS	OPPORTUNITIES
<ul style="list-style-type: none"> • Vast fertile lands for agriculture • Cosmopolitan Community • Fairly good network to most areas within and outside the County • Presence of manufacturing and processing industries within the County • Presence of banking services • Considerable population to sustain the County's headquarters • Existence of tourism attraction sites • Conducive climate and undulating landscape terrain ideal for human settlement and agricultural activities • Strategic location with international borders to allow for bilateral trade with the Republic of Uganda and South Sudan. 	<ul style="list-style-type: none"> • Fertile lands • Knowledgeable community in involvement in public investments • Governments commitment to food security and the Big Four Agenda • Good will from political class • Conducive climatic conditions • Enhanced trade between Kenya and Uganda and Kenya and South Sudan • The County is recognized as a granary of Kenya • Opportunities for investment in the County especially for agro-based activities-Kenya Seed Company • Presence of the Kitale Airstrip that provides an alternative means of transportation • Presence of numerous tourism attraction sites that allows for tourism diversification in the country thus providing alternative tourism destination sites.

- | | |
|---|--|
| <ul style="list-style-type: none">• Presence of natural features some playing very important roles in the ecosystem | |
|---|--|

(Source: Simuplan, 2019)

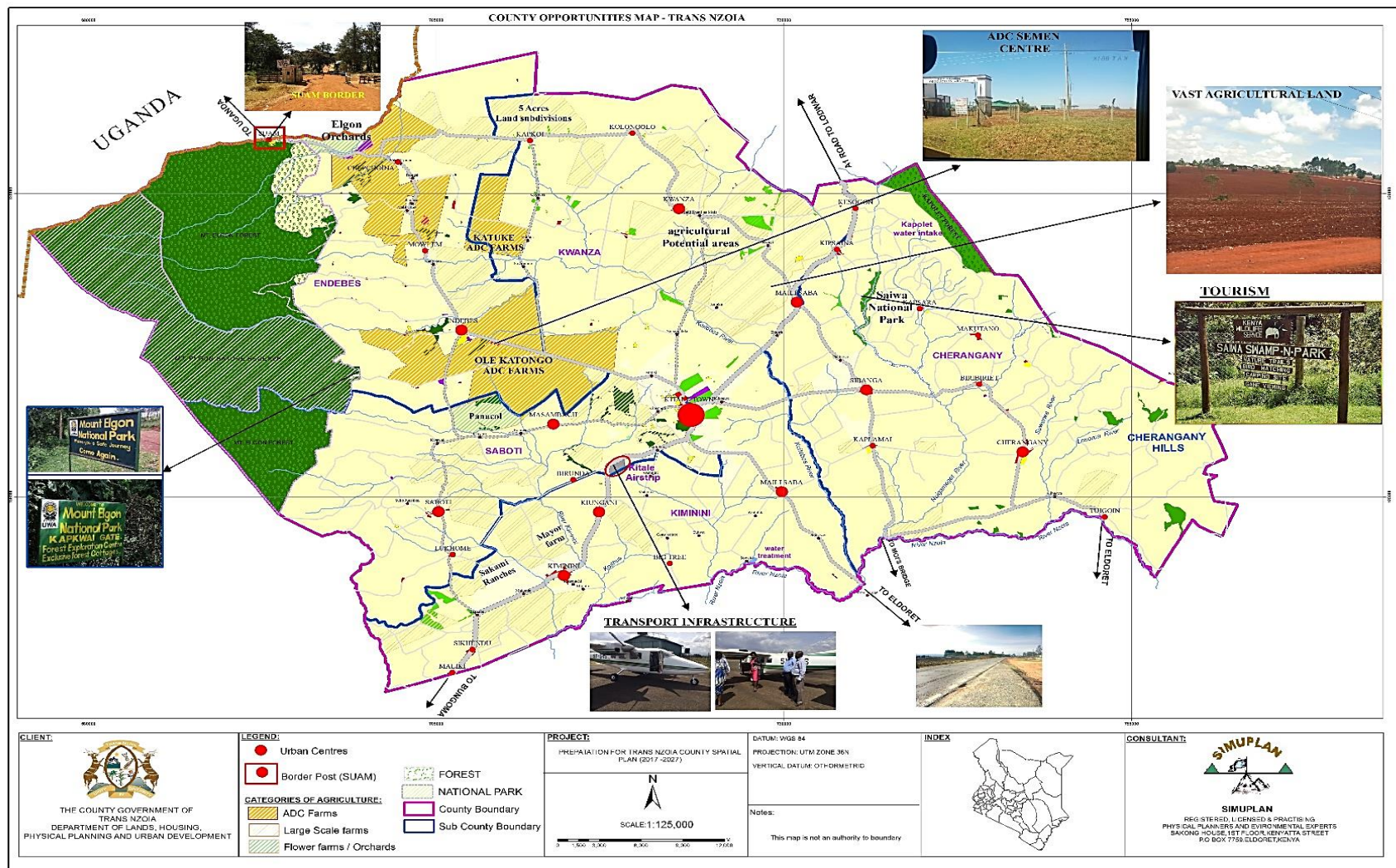


Table 17: SWOT Analysis

WEAKNESSES	THREATS
<ul style="list-style-type: none"> • Poor connectivity to all areas of the County • Environmental degradation • Inadequate social infrastructure in parts of the County • Insecurity in certain parts of the County • No ownership documentation for land owners in certain parts of the County • Inadequate physical infrastructure to all areas of the County • Lack of up-to date data and maps to even guide land use planning • Unexplored tourism potential • Inadequate institutional capacity to implement policies and laws • Paradigm shift from maize farming to sugar cane farming is a threat to the image of Trans Nzoia as the country's bread basket • Inadequate human resource • Disparities across the sub-counties in terms of level of infrastructural development, economic development, service provision, farming techniques among many others • Conflict between squatters and legitimate land owners for example ADC and Kosovo settlement • Concentration of development along major transportation routes • Excessive urban sprawl in parts of the County • Encroachment into environmentally fragile areas • White elephant projects across the County 	<ul style="list-style-type: none"> • Corruption and mismanagement of funds • Uncertainty of market forces • Lack of adequate finance • High population increase • Over fragmentation of fertile agricultural land • Conversion of arable land into human settlements • Insecurity of land tenure which hinders investment • Unfavorable Policies • Global warming resulting in unpredictable climatic patterns • High cost of production due to high cost of farm inputs • Inadequate budgetary allocations

(Source: Simuplan, 2019)

CHAPTER 6.0 : DEVELOPMENT ALTERNATIVES

6.1 Scenario Building

From the above situational analysis various scenarios emerge that can guide the County in the realization of its vision as an **outstanding agro- industrialized sustainable County with high quality of life for residents**. They scenarios include:-

- Nil Intervention Alternative
- Full Plan Implementation Alternative.

6.2 The Nil Intervention Alternative

This alternative maintains the status quo such that there will be no significant changes and yet the stakeholders will still achieve their development priorities during the planning period. The scenario implies Trans Nzoia County's spatial structure will not undergo any changes during the planning period. The impact of this alternative is that most of the aforementioned emerging situational issues affecting various sectors: housing and human settlements; environment and natural resources; economy and livelihoods; transport and communication; infrastructure and utilities and governance will not be addressed.

6.3 Full Plan Implementation Alternative

This alternative provides a comprehensive and sustainable County Physical and Land Use Development Plan geared towards implementing the County's sectoral needs. It adopts an integrated approach to development by prioritizing the needs of the County and devising appropriate strategies for their implementation.

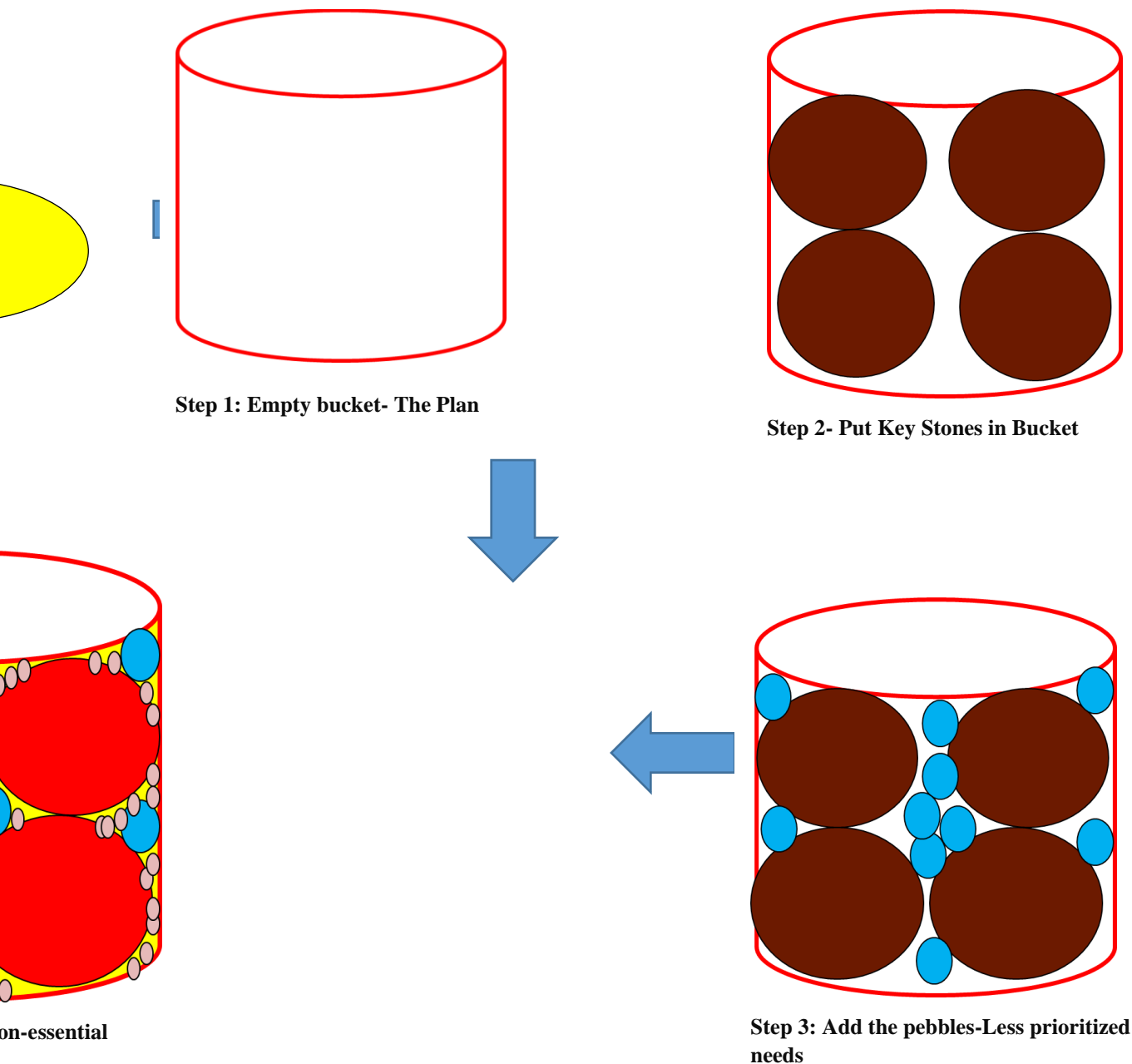
6.4 Preferred development alternative

Towards realizing the appropriate scenario for the County, the consultant through various stakeholder meetings at sub-County and County levels adopted and adapted the Big Stones Theory also known as the Pickle Jar Theory in prioritizing the County's development needs.

The Big Stones Concept enables the stakeholders to identify and systematically prioritize their needs. Once prioritized, they are able to devise appropriate implementation strategies based on short-term and long-term capacities.

As clearly demonstrated below priorities are ranked accordingly with the most pressing needs otherwise referred to as the Big Stones considered first followed by medium sized stones, pebbles and lastly sand.

In this analysis, as much as all priorities are important, their levels of significance tend to vary. The implementation of prioritized needs in most cases automatically provides solutions to less pressing needs.



In scenarios where the key stones are not given first priority as illustrated below, important elements of the plan will not be captured as all the resources would have been used in implementing the less important elements i.e. the pebbles and the sand.

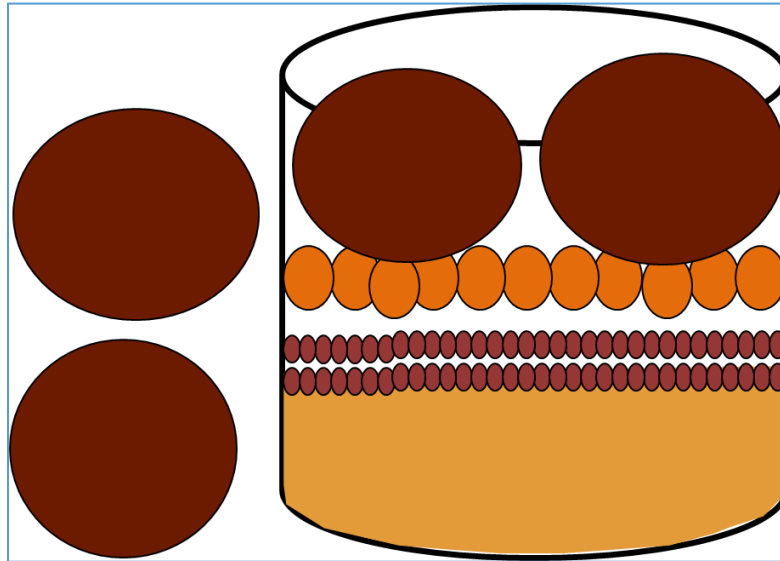


Figure 19: Key stones not prioritized
(Source: Simuplan, 2020)

The figure below therefore demonstrates a well-articulated planning process of systematic identification and prioritization of the needs where all types of stones are able to fit in the bucket.

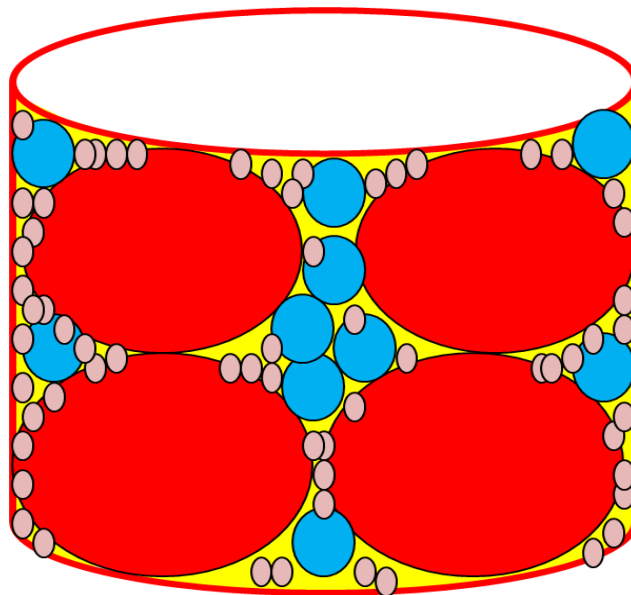


Figure 20: Well-articulated planning process
(Source: Simuplan, 2020)

The Big Stones for Trans-Nzoia County were prioritized as in the figure below.

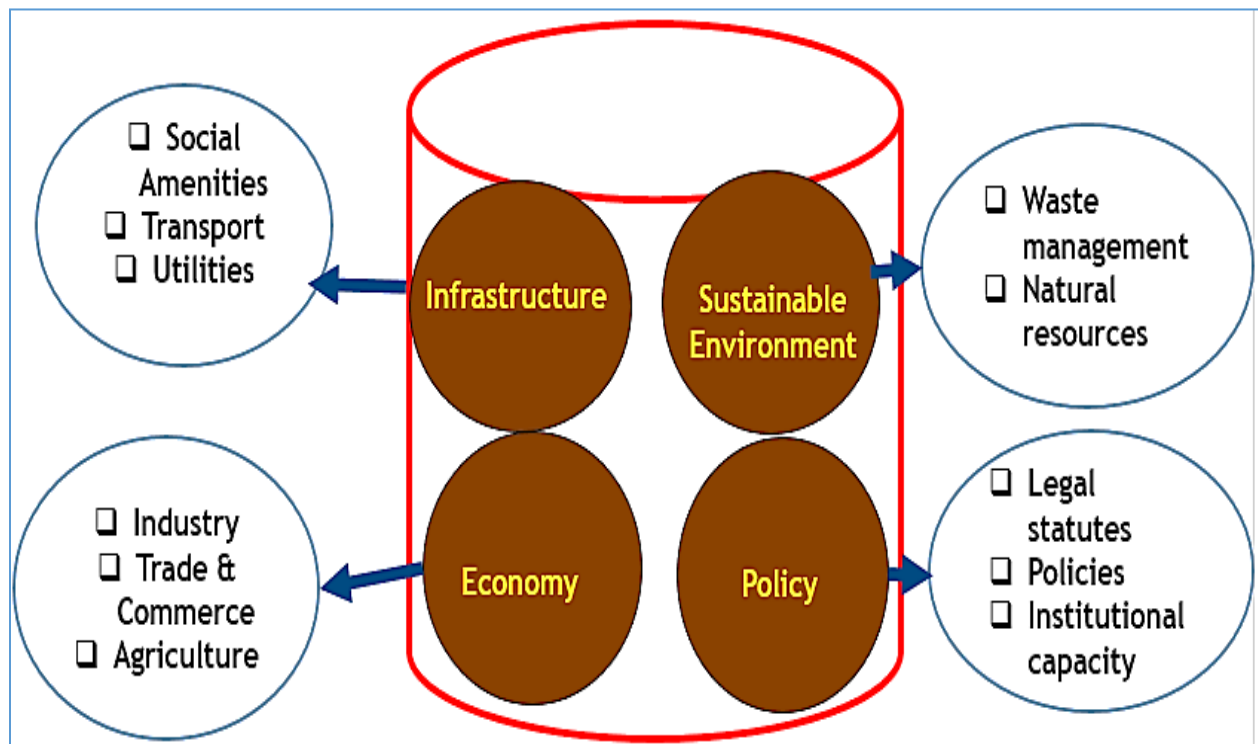


Figure 21: County Physical and Land Use Development Plan Big stones
(Source: Simuplan, 2020)

Toward realizing the above priorities, the full plan implementation alternative was preferred.

CHAPTER 7.0 PLAN PROPOSALS AND STRATEGIES

This section articulates different strategies for spatial growth and development of the County based on the issues in the aforementioned situational analysis. The strategies aim at optimizing the use of land and natural resources, promoting functional and livable human settlements, creating balanced County growth, transforming the rural areas by modernizing agriculture, providing an integrated transport network, ensuring efficient and adequate infrastructure and conserving the environment in line with the County's vision.

The proposals are as follows:

- Housing and Human Settlements
- Urban development
- Economy and Livelihoods
- Transport and Infrastructure
- Environmental and Natural Resources
- Governance

7.1 Housing and Human Settlement

Human settlement in Trans-Nzoia County comprises of both rural and urban with each depicting distinct characteristics.

Settlements in rural areas are unevenly distributed mainly depending on prevailing economic and physiographic conditions. For instance Kiminini sub-County is more densely populated as compared to Kwanza sub-County due to the nature of economic activities. Kwanza sub-County is characterized by large scale agriculture unlike Kiminini sub-County. Likewise, due to prevailing physiographic characteristic like presence of Mt. Elgon, Saboti and Endebess sub-counties are less populated. Notable planning challenges facing these settlements were identified as follows:

- Inadequate social amenities-Schools, hospitals, health facilities, recreation areas
- Poor standard infrastructure-Impassable roads
- Inhabitable structures-Parts of Endebess and Saboti sub-counties
- Environmental hazards-Mudslides, floods-Namanjalala and parts of Saboti
- Water borne diseases

Urban settlements on the other hand tend to be confined within major commercial nodes. Hierarchically we have Kitale, Kiminini, Cheranganyi, Saboti, Kwanza and Endebess comprising of formal and informal settlements. Notable planning challenges facing these settlements include:

- Mushrooming informal settlements-Tuwan, Kipsongo, Kosovo, Kinyikeu, Rongai;
- Urban sprawl/ Linear concentration of settlements;
- Encroachment into agricultural lands-Kosovo;
- Inadequate social amenities and utilities;
- Poor waste management;
- Insecurity of land tenure;
- Pollution.

Since housing and human settlement plays an instrumental role in determining development direction; particularly the interaction of human settlements and the environment, the following strategies have been proposed.

Proposed Strategies:

- i. Provide appropriate housing infrastructure to enhance efficiency and quality of life;
- ii. Enforce, harmonize and regularly review the existing legislative and regulatory instruments;
- iii. Assess the existing housing requirement in the County;
- iv. Bridge the gap between housing demand and supply
- v. Upgrade and alleviate wastage of land in informal settlement and encourage infill and mixed development
- vi. Accommodate anticipated increase in human population in particularly urban areas
- vii. Rationalize and support rural growth centres and cluster settlements to free rich agricultural lands
- viii. Provide efficient, reliable and effective transport system for human settlements
- ix. Provide basic infrastructural amenities within human settlements to promote habitable living;
- x. Promote sustainable human settlements;

- xi. Strengthen security of land tenure to provide incentive to invest and minimize threat of forceful evictions;
- xii. Develop the Physical and Land Use Development Plans to regulate land use and physical development of towns and market centres;
- xiii. Prioritize housing development to ensure adequate access to decent and affordable housing.
- xiv. Improve the management and governance of human settlements particularly in urban areas

Proposed Projects:

- i. Increasing the housing stock by: government returning to provision of rental housing schemes, promoting public-private partnership; offering incentives, tax rebates and subsidies to lower construction materials; promoting the use locally available building material and indigenous knowledge; In line with this project, construction of affordable housing in Namanjalala was identified as a priority;
- ii. Creating an inventory and upgrading of all informal settlements-The four informal settlements within Trans-Nzoia County i.e. Rongai, Kosovo, Kipsongo and Tuwani be upgraded through provision of water supply, sanitation and other basic urban services; housing improvements; and provision of land tenure security;



Plate 109: Slum upgrading programme in Kibera, Nairobi County
(Source: <https://www.flickr.com/photos/unhabitat/6943038335>)

- iii. Provision of adequate and appropriate infrastructure and utilities;
- iv. Continuation of the National Titling Programme to increase the over 15,000 titles processed and issued through the programme to enhance land tenure security;

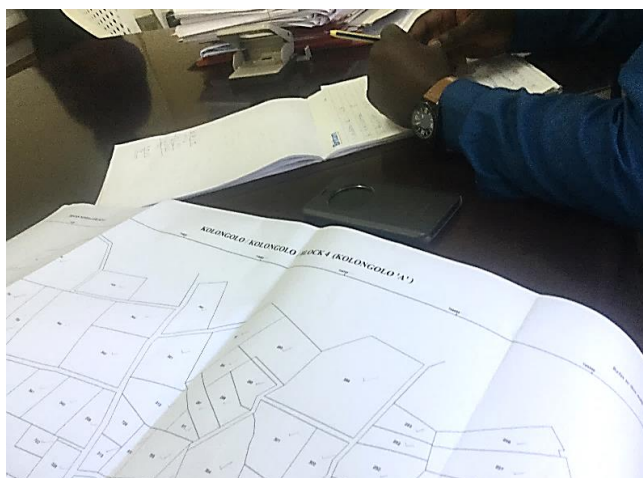


Plate 110: Titling process for Kolongolo
(Source: Simuplan, 2020)

- v. Controlling the emergence of informal settlements in major towns and market centres;
- vi. Promoting sustainable human settlements with reduced ecological footprint particularly in areas of Kapolet forest, Lukhome and Saboti centres, Suam town, Saiwa Swamp National Park, Mt. Elgon National Forest and Cheranganyi Forest. Acknowledging the relation between human settlements and the environment and natural resources i.e. borrowing from the Tatu City Concept as shown below.



Plate 111: Tatu City in Kiambu County with proximity to Tatu River
(Source: <https://www.tatucity.com/>)

- vii. Encouraging dormitory town concept with closely knit settlements particularly in areas with large farms such as Endebess and Saboti sub-counties. The concept is observed in Kapkoi, Kwanza sub-County as well as the tea farms in Kericho County. The aim of this

strategy is to facilitate provision of basic infrastructural amenities and to promote sustainable utilization of vast fertile agricultural lands;



Plate 112: Nucleated settlements - The Lipton Tea Garden in Kericho County
(Source: <http://www.minorsights.com/2014/11/kenya-tea-fields-of-kericho.html>)

- viii. Preparing and implementing zoning guidelines to ensure compatibility of land uses in human settlement areas, protection and conservation of environmentally fragile areas and provision of integrated waste management system;
- ix. Acquisition of land for the establishment and expansion of public utilities;
- x. Recruiting human resource to increase their capacity in the management of human settlements

7.2 Urban Development Strategy

With sub-County headquarters being transformed into administrative areas, urbanization problems currently being witnessed in parts of Kitale town are bound to increase. Identified urbanization challenges include:

- Mushrooming of informal settlements such as Tuwan, Kipsongo, Mitume and Chepchoina;
- Unplanned and uncoordinated development and expansion initiatives of urban centers in the County such as Saboti and Kwanza;
- Unclassified specialized urban centres-(Most centres lack functional specialization);
- Emergence of linear/ribbon development particularly in areas along A1 road;
- Inadequate and inefficient infrastructural utilities;
- Environmental degradation;
- Uncontrolled rural-urban migration;

Proposed Strategies:

- Advocate for the planning / re-planning of local, market, rural and urban centers;
- Create an enabling environment for commercial and industrial developers to activate potential development within the urban areas;
- Strengthen urban-rural linkages through provision of integrated transportation and communication system to reduce the rate of urbanization and improve the rural economy.

Proposed Projects:

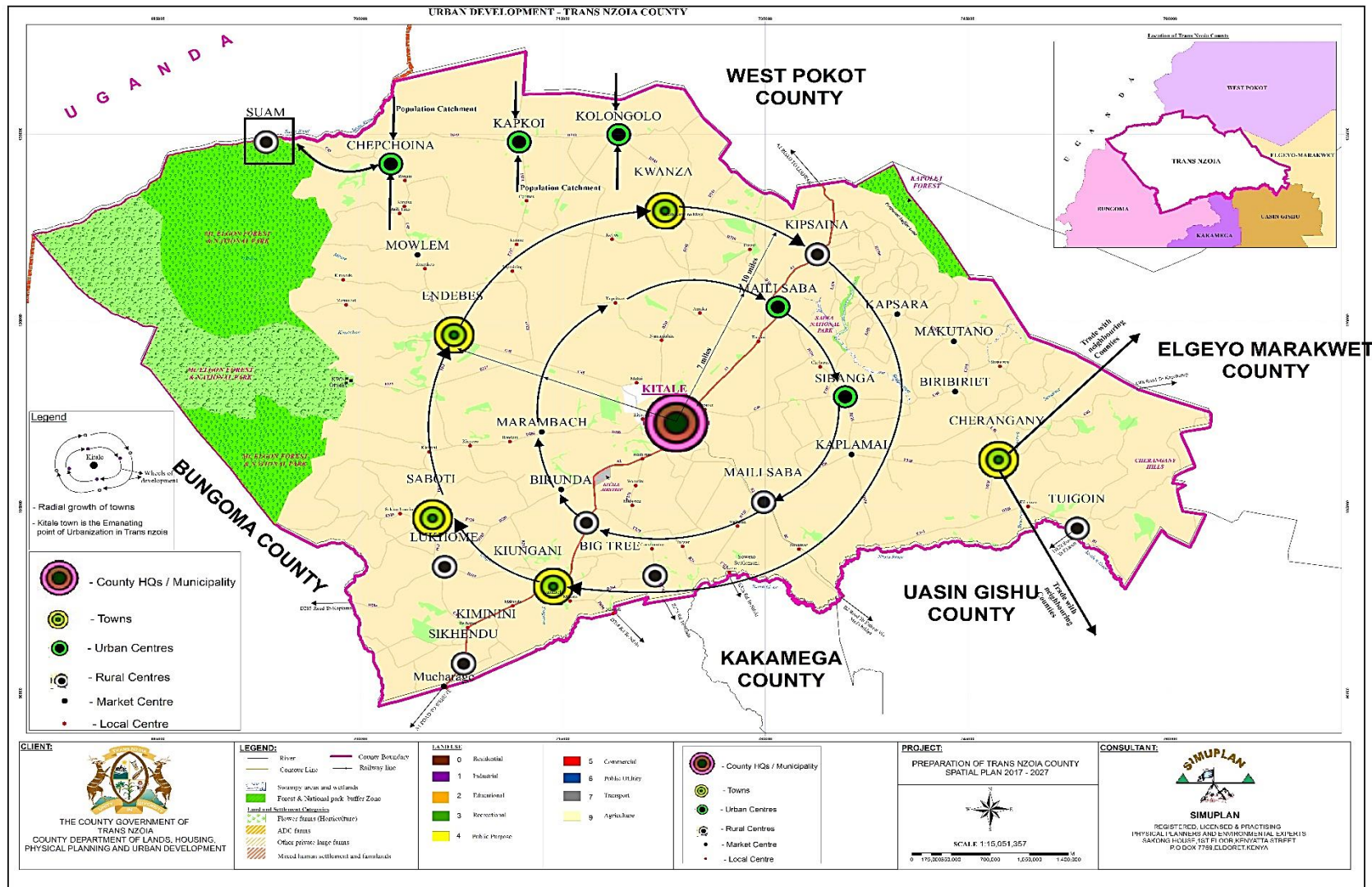
- Functional classification of all urban areas in the County;
- Delineation of urban boundaries in the County aimed at achieving urban containment;
- Preparation of Physical and Land Use Development Plans for all urban areas in the County-
 - **Phase one:** Kwanza, Cherangany, Endebess, Saboti, and Suam Border towns
 - **Phase two:** Kapkoi, Kolongolo, Chepchoina, Maili Saba (Siyoi) and sibanga towns

Table 18: Proposed Functional Classification of Urban Areas

Centres Category	Name	Services
Municipality (Population of at least 50,000)	Kitale – Existing County head quaters	Core administrative functions; Higher level infrastructure; Secondary and tertiary activities; Strong industrial base and Specialized facilities.
Towns (Population of at least 10,000)	<p>Kiminini-administrative/trade</p> <p>Cherangany-administrative/agricultural/ tourism</p> <p>Kwanza-administrative/agricultural,</p> <p>Endebess- administrative/agricultural/ tourism,</p> <p>Saboti-administrative/agricultural/ tourism/mining</p>	<p>Host sub-County headquarters; <i>These</i> towns are planned to decongest the Kitale town.</p> <p>They shall be designed with specialized facilities and planned as special packages with a focus for development</p> <p>Basic facilities and services to be provided in the towns include:</p> <p>Health facilities, library services, sports and cultural, cemeteries, waste management, child care, pre-primary education, vocational, primary & secondary educational facilities, integrated transport network, postal services, mortuary, recreational parks, veterinary and religious facilities</p>
Urban Centres	Kapkoi, Kolongolo, Chepchoina, Maili Saba (Siyoi), sibanga	<p>They serve as intermediary towns which play the role of promoting rural development in order to achieve a balanced distribution of growth and development. This shall provide functional linkages between the towns and municipalities.</p> <p>These urban centers shall be provided with basic infrastructure and services such as street lighting, health facility, abattoirs, sports/cultural centers, refuse collection, solid waste management, child care facility, pre-primary education, community center, homestays, unclassified roads, postal services, cemetery,</p>

		recreational parks, management markets, marine water, marine water front, animal control and welfare
Market Centres (Population of at least 2000)	Tuigoin, Kipsaina, Lukhome, Sikhendu, Maili Saba, Kiungani, Big tree, Gitwamba,	These centers shall cater for the rural hinterland as agro service centers in the collection and distribution of agricultural goods and services with processing, marketing, warehousing and storage facilities.
Rural Centres	Kaplamai, Makutano, Biribiriet, Birunda, Mucharage, Mowlem, marambach, kapsara	Small towns that have linkages with immediate rural hinterlands. They serve as higher order service centers having central location and potential for development within their catchment area, with relatively better services, and facilities in terms of education, health, communication, accessibility, growing socio-economic activities, and has the capacity to serve a group of villages
Local Centres	Matumbei, Kimondo, Suwerwa, Kapsitwet, Kobos, Emoru, Kibomet, Maili tatu, Wamuini, mabonde, Kananachi, Midoto, Minyali, Tulwet, Coast, Soweto, Waitaluk, Simatwet, Burbaton, Suko Junction, Kisawai, Kinyoro, Bondeni, Kibuswa, Chebarus, Amuka, Namanjalala, Soymining, Katuke, Cypruss, Maili 11, Bwayi, Rongai, Kimase, Maili tano, Kinyikeo	Lowest level of service centers and is designed to serve the needs of the people within walking distance. Some of the basic services and facilities required in a local center include a primary school, shops, a dispensary and an open air market.

(Source: Adopted and adapted from Urban Areas & Cities Act 2011 and Trans-Nzoia CIDP)



Map 38: Proposed Urban Development Strategy
(Source: Simuplan, 2020)

7.3 Social Infrastructure

7.3.1 Health

In ensuring healthy lives and sustainable well being for all residents, Trans-Nzoia County, has embarked on massive rehabilitation and upgrading of its health care system i.e. County Referral hospital, County Hospital Sub-County hospitals etc. As clearly illustrated in the situational analysis, the health system comprises mainly of level 3,2 and 1 facilities that are characterized by the following challenges:-

- Uneven distribution across the County;
- Understaffed personnel/manpower;
- Ill-equipped-medical equipment and stock;
- Structural incapability;
- Inadequate supporting infrastructure (roads, electricity and water)

Proposed Strategies:

- i. Establish a network of functional, well-equipped, accessible health structure;
- ii. Rehabilitate, expand and equip existing health facilities in line with the recommended health standards;
- iii. Strengthen outreach systems for provision of health services;
- iv. Create health awareness programmes.

Proposed Projects:

- Completion and operationalization of Trans Nzoia County Referral Hospital;
- Completion and renovation of Kitale County hospital and Mt. Elgon hospital;
- Expansion and rehabilitation of all sub-County hospitals and rural health centres;
- Construction of dispensaries in each ward;
- Installation of a reliable drug management system to track the movement of medical supplies from the County storage unit to the various health facilities;
- Establishing of mobile clinics across the County;
- Recruitment of more healthcare workers to ensure adequate service delivery;

- Provision of a good working environment for the health professionals;
- Provision of adequate resources to procure medical supplies in adequate quantities;
- Identification of suitable site and procurement of land for the establishment of medical related supporting amenities like public Mortuary, Cemetery and Crematorium in Saboti and Kwanza sub-counties.

7.3.2 Education

The sector was observed to comprise of pre-primary, primary, secondary and post secondary institutions majority that are well recognized beyond the County. However most of these institutions are characterized by the following challenges:-

- Insufficient learning facilities;
- Ill-equipped facilities;
- Inadequate supporting infrastructure (roads, electricity and water);
- Shortfall in manpower (both teaching and non-teaching staff).

Proposed Strategies:

- i. Promote a globally competitive, accessible and affordable education training and research facilities;
- ii. Rehabilitate, expand and equip existing education facilities in line with the recommended standards;
- iii. Improve education services and the learning environment across the County.

Proposed Projects:

- Construction of new educational facilities in line with the catchment;
- Completion/ rehabilitation of existing educational institutions and specialized training centres;
- Acquisition and transformation of former Moi University Campus along West-Pokot road to an Agricultural Training College;

- Establishing a modern public library in Kitale;
- Construction of adequate learning institutions for the physically challenged and visually impaired in the County;
- Transparency in allocation and usage of National and County Government bursary schemes to increase transition rates;
- Provision of modern learning equipment in all educational institutions;
- Acquisition of land for expansion of educational facilities;
- Developing and upgrading all physical infrastructure in learning institutions in the County particularly electricity, roads and water;
- Mainstreaming ICT in education;

7.3.3 Recreation

Trans-Nzoia, like any other County in Kenya, boasts of various sporting activities and rich cultural heritage. Among the recreational facilities observed were Kitale Club, Mt. Elgon National Park & Game Reserve, Saiwa Swamp National Park, Kitale Nature Conservancy (Ndura Farm), Kenyatta Stadium and Kitale National Museum.

Additionally, soft open spaces found in educational institutions play an instrumental role in the promotion of recreational sector in the County. However notable challenges are as follows:-

- Inadequate public recreation amenities such as stadia and playgrounds;
- Insufficient hotels especially in the existing national parks;
- Inadequate open spaces in urban areas;
- Poorly maintained urban soft spaces;
- Underutilized facilities;
- Poor supporting infrastructure, equipment and machinery;
- Inculturation.

7.3.3.1 Sports Recreation

Proposed Strategies:

- i. Plan, rehabilitate, expand and equip sporting infrastructure in line with recommended standards;
- ii. Create sporting awareness programmes;
- iii. Develop and implement sporting legislation policies;
- iv. Promote sporting events.

Proposed Projects:

- Renovating Kenyatta stadium to a multi-disciplinary sporting centre similar to Bukhungu Stadium in Kakamega County;



Plate 113: Renovated and modernized Bukhungu Stadium in Kakamega County
(Source: constructionreviewonline.com)

- Rehabilitating and upgrading all existing sporting facilities in the County i.e. Kiminini, Sikhendu, Tuwan, Sitatunga, Cheranganyi and Matumbei wards;
- Constructing more public sporting grounds especially at the sub-County level;
- Establishing a County sports talent centre in Kitale Municipality;
- Reducing fee rates in accessing recreational services and facilities accordingly;
- Organizing and participating in local and international tournaments.

7.3.3.2 *Nature-Based Recreation*

Proposed Strategies:

- i. Protect and conserve nature-based recreational areas
- ii. Integrate nature/environmentally friendly designs to enhance their functionality;
- iii. Create a pedestrian friendly environment in urban areas;
- iv. Beautification of existing nature based utilities

Proposed Projects:

- Reclaiming and revoking illegally acquired ownership documents for designated open spaces land;
- Acquiring land for open green spaces particularly in urban areas;
- Upgrading existing open spaces similar to Nandi Park in Eldoret



Plate 114: New Zealand Open Park
(Source: Simuplan, 2020)

- Reclaiming encroached lands set aside for nature i.e. parts of Mt. Elgon, Cherangany Hills and Saiwa Swamp;
- Tree lining of all roads in urban areas
- Equipping urban open spaces with facilities such as benches, waste bins etc;
- Using local materials for Integrating nature/environmentally friendly designs to enhance their functionality such as in Saiwa Swamp National Park;



Plate 115: Environmentally friendly designs in Saiwa Swamp National Park in Trans-Nzoia County
(Source: Safaribookings)

- Recruiting of relevant professionals-enforcement officers, environmental experts, physical planners, transport planners, land surveyors among many others;

7.4 Economy and Livelihoods

The economy and livelihood of Trans-Nzoia County is largely dependent on agro-based activities that comprise of Agriculture, Industry-Manufacturing & Mining-, Tourism and Trade and Commerce.

7.4.1 Agriculture

Apart from being the backbone of the County's economy, it is agriculture that has made Trans-Nzoia County the country's grain basket with an annual maize production of 5000 Metric Tonnes.

This role, however, is threatened by:-

- Excessive land fragmentation;
- Poor farming practices;
- Encroachment into rich agricultural lands;
- Undiversified farming techniques;
- Dependence on rain fed agriculture;
- Overreliance on maize farming;
- Minimal involvement in aquaculture;
- Inadequate value addition infrastructure;
- Weak marketing channels;
- Limited access to capital;
- Limited funds for agricultural research and development;
- Poor transport infrastructure especially in rural areas.

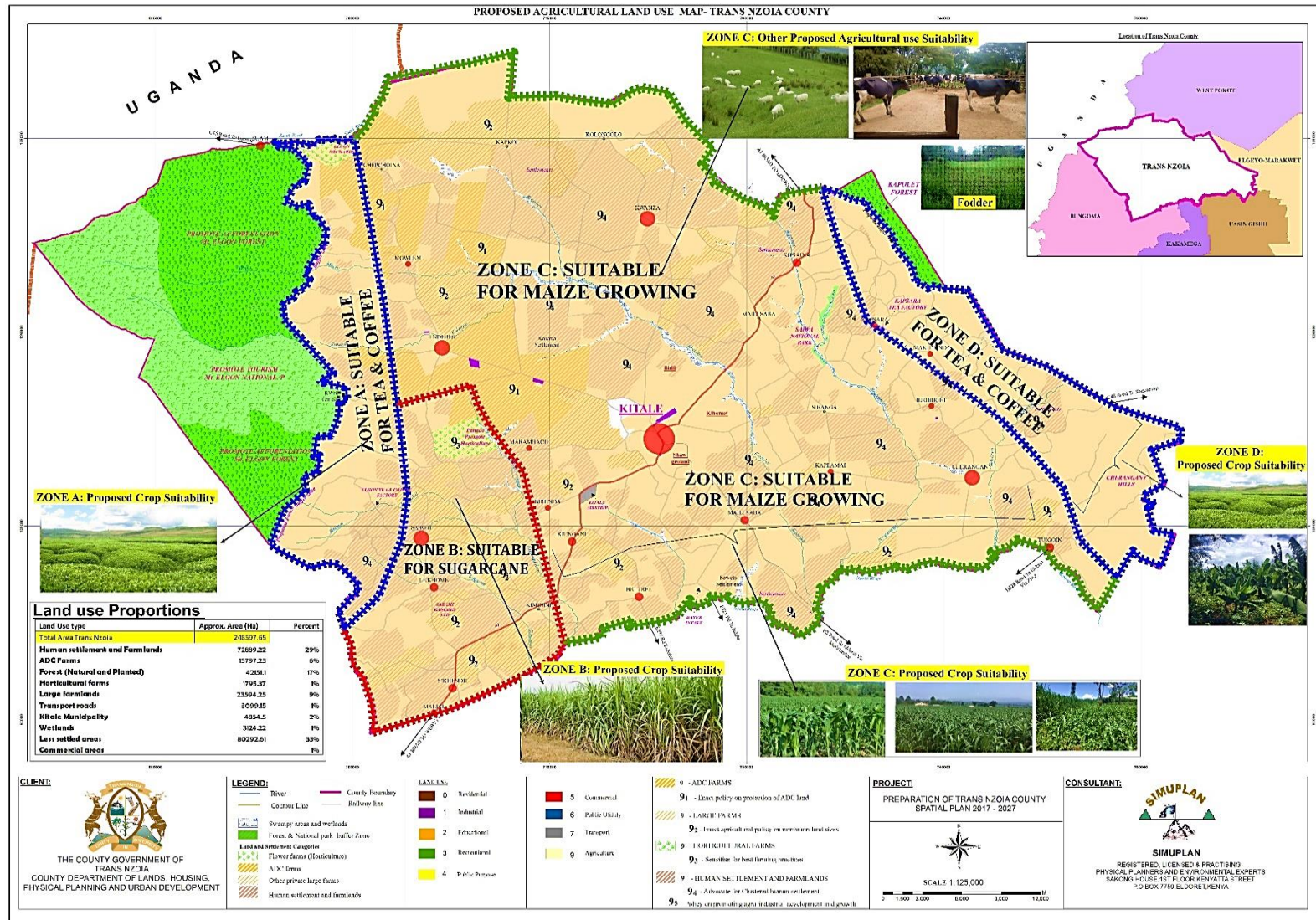
Proposed Strategies:

- i. Formulate and enforce policies to protect the vast fertile agricultural lands;
- ii. Establish and rehabilitate value addition industries and infrastructure;
- iii. Improve post-harvest management and support to farmers through subsidies on storage materials, facilities and infrastructure;

- iv. Advocate for cross-border trading and marketing strategies for agro-based products;
- v. Encourage farmers to form/join co-operatives and revitalize the inactive ones;
- vi. Promote agricultural diversification;
- vii. Provide and improve rural infrastructure;
- viii. Create awareness on best farming practices;

Proposed Projects:

- Enforcing policies on agricultural conservation, agricultural protection zoning and sub-division ordinances as indicated in the proposed plan;
- Championing for co-operatives to assist farmers in marketing and processing their farm products and for the purchase and production of farm inputs;
- Developing and improving internal access routes, cattle dips and nurseries;
- Intensification of dairy and crop farming incentives across the County;
- Construction of milk cooling plants in each sub-County;
- Construction of grain drier and storage facility in Endebess sub-County;
- Construction of sugar milling plant in Saboti sub-County;
- Rehabilitation of slaughter houses- Kiminini County Slaughter Slab and Kitale Main Slaughter House;
- Construction of irrigation schemes for small scale horticultural activities;
- Construction of Agricultural Training Colleges in all the sub-counties;
- Investing in construction of fishponds at the slopes of Mt Elgon;
- Establishing a fish hatchery and cold storage facilities in Matisi Ward;
- Setting up apiaries in Kwanza, Cheranganyi and Saboti sub-counties
- Rehabilitating and equipping the veterinary laboratories in the County.



Map 39: Agricultral Protection Zoning
(Source: Simuplan, 2020)

7.4.2 Industry

7.4.2.1 Manufacturing

As noted in the situational analysis, the manufacturing sector in the County is dependent on agro-based activities that range from dairy products, cereals and horticultural produce. Additionally, entrepreneurial manufacturing (“Jua Kali”) is well spread within the County especially in the urban centres. However, like it is witnessed across board, this sector is not well established due to the following:-

- Lack of industrial diversification;
- Absence of industrial parks in the County;
- Poor marketing linkages;
- Poor support and transportation infrastructure;
- Low adoption of modern technologies for value addition;
- Fluctuations in the market prices of agricultural goods.

Proposed Strategies:

- i. Promote cluster development strategy to focus on proximity to raw materials and markets of region specific products;
- ii. Create an enabling environment for industrial growth;
- iii. Promote diversification in industrial development;
- iv. Promote value addition in processing of local produce;
- v. Provide an integrated, efficient, reliable and sustainable transport system;
- vi. Adopt modern technologies for value addition;

Proposed Projects:

- i. Developing policies and sponsoring legislations that promote industrial growth;
- ii. Establishing milk cooling plants one in each sub County;
- iii. Developing a grain milling plant in Kitale;
- iv. Establishing a sugar milling plant in Marambach, Saboti Sub-County;

- v. Constructing cottage industries and crafts and mineral-based industries in situ
- vi. Establishing Jua Kali worksites in selected centres;
- vii. Identification of a proper location, planning and construction of an industrial park in Kwanza sub-County;
- viii. Facilitating industrial research, incubation and innovation;
- ix. Upgrading and interlinking the transportation network across the County;

7.4.2.2 Mining

Mining in the County is not that intensive. It is more pronounced in areas with history of geological transformation with major activities revolving around quarrying and sand harvesting for the construction industry.

Quarrying is dominant in areas around Mt. Elgon and Cheranganyi Hills while sand harvesting is confined to rivers.

The notable issues affecting the mining sector in Trans-Nzoia County were identified as:

- Environmental degradation;
- Unregulated quarrying;
- Traditional mining techniques;
- Unexploited mining potential;

Proposed Strategies:

- i. Devise modern ways of extraction;
- ii. Formulate appropriate rehabilitation and restoration mechanism of all mining sites;
- iii. Promote and implement mechanisms for sustainable harvesting of sand and mining activities;
- iv. Advanced exploration of mineral resources;
- v. Formulate and implement the County's mineral resources development and exploitation policy.

Proposed Projects:

- Investing in mining exploration studies;
- Ensuring Environmental Impact Assessment & Social Impact Studies are carried out on identified sites and licenses issued as appropriate;
- Offering training in TVET on the modern mining techniques;
- Educating small scale miners on appropriate environmentally friendly harvesting techniques;
- Offering subsidies on mining machinery and equipment;
- Refilling open abandoned quarries particularly those in Lukhome, Saboti, Mowlem and Chepchoina areas; by adopting forestry reclamation, holistic or integrated approaches to land restoration;
- Enforcing policies and legislations promoting sustainable mining.

7.4.3 Trade & Commerce

This sector is dominated by small scale agro-based businesses. Most of the products are consumed locally with others sold to neighbouring counties. As observed in the situational analysis, the sector seems not to be doing well because of the numerous challenges including:

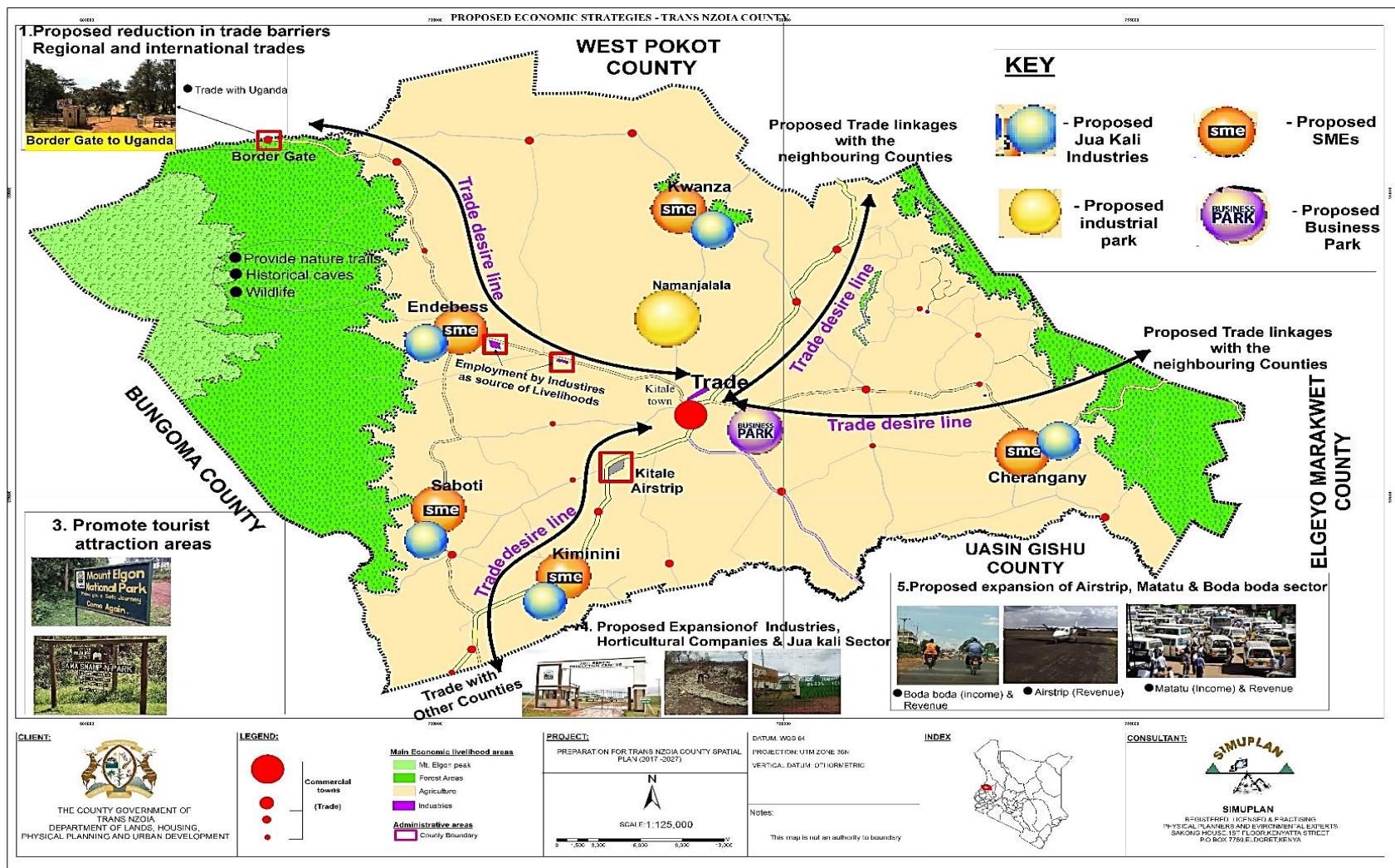
- Inadequate/lack of market infrastructure;
- Poor transport networks;
- Limited/lack of capital for initiating investments;
- Encroachment of traders on road reserves;
- Unlicensed business enterprises;
- Tiring process in obtaining business permit;
- Underutilized Suam border.

Proposed Strategies:

- i. Provide adequate trading facilities and infrastructure;
- ii. Reduce / lower interest on loans offered to businessmen;
- iii. Invest in County ICT infrastructure;
- iv. Conduct regular SME training for business owners;
- v. Enhance promotion of local entrepreneurs;
- vi. Reduce trade barriers on regional international trade like Uganda
- vii. Formulate and implement trade and commerce policy.

Proposed Projects:

- Developing incubators and Jua Kali sheds in each sub-County;
- Construction of sanitary facilities in markets;
- Completing Kitale business park;
- Constructing an industrial park/special economic zone in the County;
- Constructing new markets in Matisi, Bidii and Kapkarwa;
- Rehabilitating and completing of on-going market constructions in Gitawamba, Sibanga and Kimila
- Constructing an industrial and commercial centre at Suam Border;
- Automating business licensing and promotion of E-Commerce;
- Conducting annual trade fairs and entrepreneurial training;
- Establishing a fully-fledged immigration facility at Suam Border for enhanced cross border trade;
- Constructing maize milling and animal feed plant in Kitale, Kwanza sub-County.



Map 40: Improved Trade, Commerce and Industry Strategy
(Source: Simuplan, 2020)

7.4.4 Tourism

Tourism potential exists in the County especially with the presence of key attractions such as Saiwa Swamp National Park, Mt. Elgon National Park, Kitale Nature Conservancy, Kitale Museum and the numerous rivers that traverse the County. However, this potential has not been realized because of:-

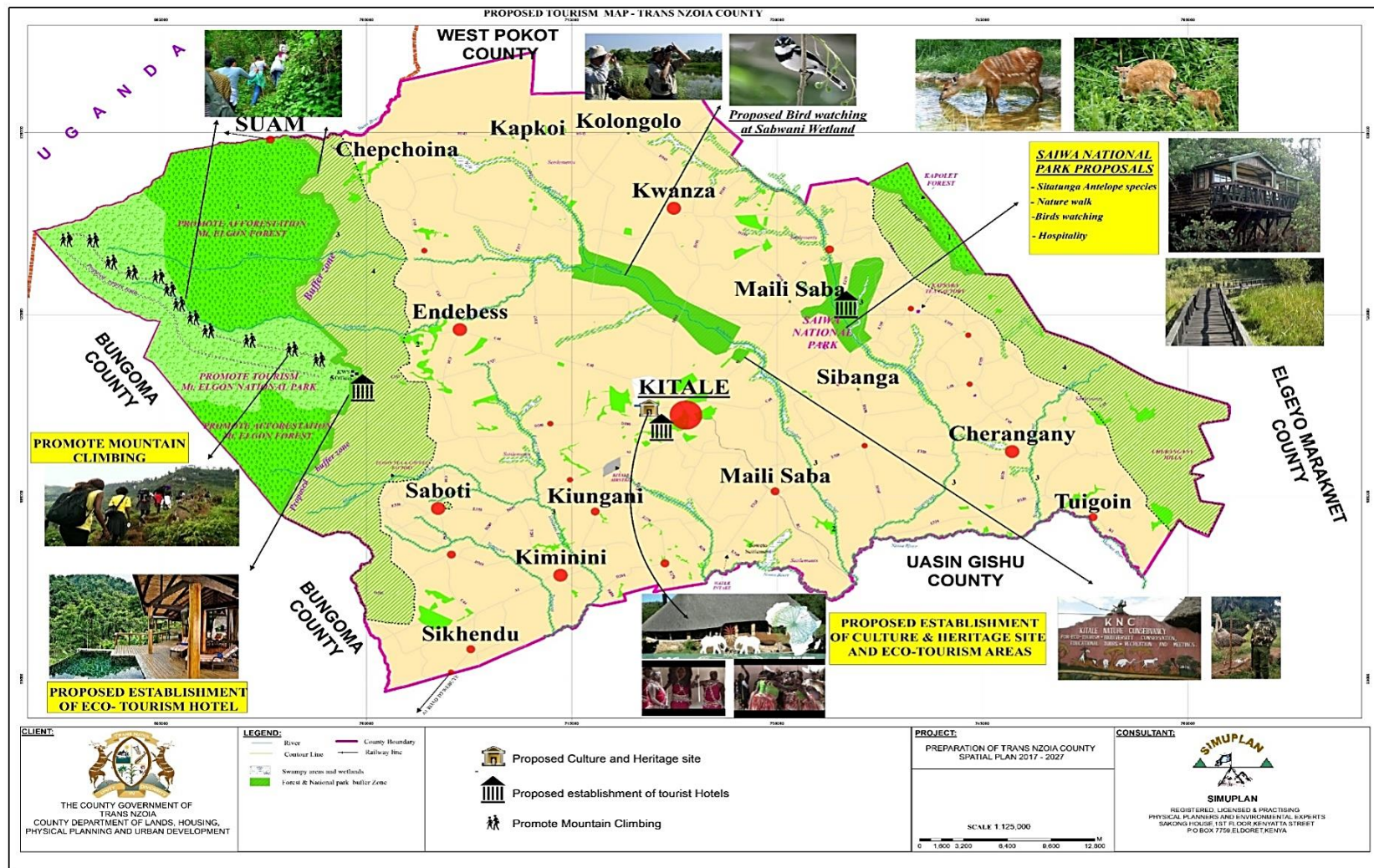
- Poor access to tourist sites /destinations;
- Low investment in tourism opportunities;
- Inadequate hospitality facilities (quality hotels);
- Poor marketing and branding strategies;
- Environmental degradation and climate change;
- Low interest in domestic tourism;
- Human-wildlife conflicts;
- Unsecured game parks and riparian reserves;
- Inculturation;
- Destruction of heritage sites

Proposed Strategies:

- i. Protect, conserve and preserve the tourist attraction areas and sites;
- ii. Promote, diversify and market tourism products;
- iii. Provide appropriate tourism infrastructure and upgrade tourism related facilities;
- iv. Promote local tourism;
- v. Exploit untapped tourism resources;
- vi. Promote and preserve cultural tourism;
- vii. Create good relations with investors.

Proposed Projects:

- Mapping out tourist attraction sites in the County;
- Rehabilitate and modernize the existing Kitale National Museum;
- Construction and maintenance of cultural centres and heritage sites;
- Investing in cultural festivals and properties;
- Branding Trans Nzoia as a tourist destination County;
- Upgrading existing tourism facilities and infrastructure;
- Opening and rehabilitation of road networks leading to tourism sites
- Formulating and implementing planning policies, regulations and standards to guide tourist specific infrastructure and facilities;
- Fencing off and establishing of buffers around tourist attraction sites;
- Controlling the spread of Elephant grass at Saiwa Swamp National park which possess a threat to the rare Sitatunga antelope;
- Reducing fee rates in accessing tourist facilities accordingly;



**Proposed Tourism Improvement Strategy Map
(Source: Simuplan, 2020)**

7.5 Physical Infrastructure

7.5.1 Transport

The County boasts of several transport systems that range from Road, Rail and Air. Most of these networks connect the County locally and internationally. For instance, the Class A1 road from Tanzania border to Southern Sudan traverses through the County. Locally, the County is served by numerous roads that range from Class B to E. Equally, the presence of Kitale airstrip has linked the County with other parts of the nation i.e. Lodwar, Eldoret and Nairobi. Although the rail system has been dormant for some time, it is equally used to link the County to other outside regions.

With the completion of the on-going road constructions i.e. Endebess - Suam road -25.5km, Maili 11 - Maili saba - Sibanga - Moi's bridge (D330) road -32.1km, Maili 11 - Kolongolo - Chepchoina (D343) road -29.8km and Namanjala - Maili kumi na moja (D341) road -14.65km the transport sector is set to improve tremendously.

However, the sector is faced by various challenges that include:

- Impassable roads;
- Poor surface road conditions;
- Encroachment on road reserves;
- Poor drainage infrastructure;
- Lack of non-motorized infrastructure;
- Unclassified roads;
- Underutilizations of key transport infrastructure like the airstrip and the railway;
- Inadequate bus terminals and parking facilities.

Proposed Strategies:

- i. Develop an efficient and reliable transport system in the rural and urban areas;
- ii. Provide functional and aesthetically pleasing public furniture at bus stops and terminals;
- iii. Develop a pedestrian-friendly (NMT) transport network along all major roads in the urban areas;
- iv. Enhancing proper traffic management;
- v. Formulate transport and safety policy;

Proposed Projects:

- Providing benches and shades at bus stops and terminals;
- Hierarchical classification of roads within the County;
- Upgrading all the roads in the County;

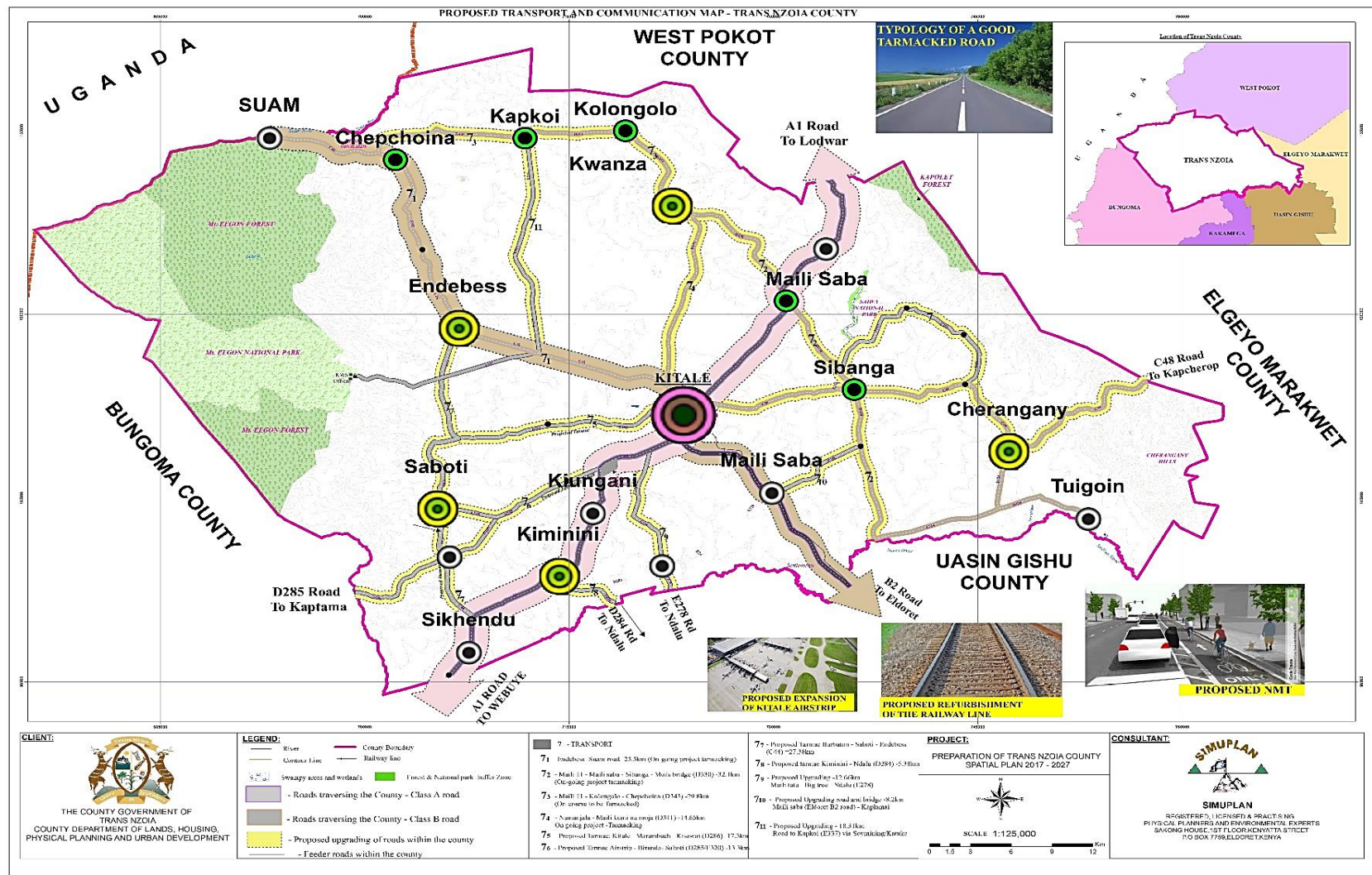
This plan recommends the:

- Tarmacking of Kitale town - Marambach - Kisawai (D286) road -17.3km
- Tarmacking of Airstrip - Birunda- Saboti (D285/E320) road -13.3km
- Tarmacking of Burbaton - Saboti - Endebess (C44) road-27.38km
- Tarmacking of Kiminini - Ndalul (D284) road -5.38km
- Upgrading of Maili tatu - Big tree - Ndalul (E278) road- 12.66Km
- Upgrading of Maili saba (Eldoret B2) – Kaplamai road
- Upgrading of road to Kapkoi (E337) via Soymining/Katuke-18.31Km
- Undertaking road development, maintenance and street lighting;
- Integrating non-motorized transport in all road designs especially in the urban areas;



Plate 116: Non-Motorized Transport in Eldoret, Uasin Gishu County
(Source: Simuplan, 2020)

- Installing environmentally friendly storm water drainages in all road designs;
- Improving/ Construction of bridges particularly in the rural areas;
- Enhancing proper traffic management;
- Modernizing the Kitale airstrip;
- Upgrading the rail infrastructure;
- Constructing/renovating bus parks and terminuses in selected urban areas;
- Protecting road and railway reserves from encroachment;
- Enforcing the transport and safety policies;
- Recruiting more staff for a sustainable management of the transport system;



Proposed Transport Networks Map
(Source: Simuplan, 2020)

7.5.2 Water

The County is dependent on two main water towers namely Mt. Elgon and Cherangany Hills from which major rivers i.e. Nzoia and Suam emanate. The gently sloping topography that characterizes the County has also played an important role in the distribution of water resources for both domestic, commercial and industrial use. Apart from rivers, other sources of water include: - springs, wells, boreholes, ponds, dams, pans and rain water harvesting.

Despite the County's rich supply, only 40% of the households can access safe water with the average distance to water points being 1Km. Given the ever increasing water demand however, the current 12 water schemes (Kitale water works, Kapolet, sabot, Kiminini, Kwanza-Kolongolo, Kiboroa, Masaba, Kimondo, Endebess, Suam-Orchad, Matumaini, and Chepkoiyo) are insufficient.

Challenges facing this sector include:

- Limited capacity of existing water supply schemes;
- Difficult terrain to facilitate efficient water reticulation;
- Water pollution through domestic and industrial discharges;
- Poor agricultural practices resulting to sedimentation and pollution of rivers;
- Encroachment into water towers and ground water recharge areas;
- Limited rain water harvesting and storage;
- Climate change effects (prolonged droughts).

Proposed Strategies:

- i. Increase water coverage and supply
- ii. Conservation and management of water resources in the County
- iii. Promote rain water harvesting and flood control management
- iv. Support and enhance effective utilization of trans-boundary water resources

Proposed projects:

- Rehabilitation & improvement of Nzoia River scheme (Installation of a solar farm within the treatment plant to reduce water pumping costs);
- Upgrading and extending existing water pipeline network in the County i.e. Kinyoro-Bondeni, Nabeki-chepchoina, Kimondo; Kachibora-Murram; kolongei-Kundos; Matisi-

Liyavo; Muroki-Lukhome; Matunda, Kiminini-Mitoto and Treatment works for Kiborora and Mt.Elgon-Khalwenge project;

- Reviving stalled community water schemes;



Plate 117: Community water points
(Source: Trans-Nzoia County & Simuplan, 2020)

- Drilling and equipping of shallow wells and boreholes in the County;



Plate 118: Borehole drilling
(Source: Simuplan, 2020)

- Constructing water pans and dams in Namanjalala;
- Erecting dykes along River Sabwani to control flooding in Namanjalala
- De-siltation and rehabilitation of dams;
- Implementing Kiptogot-Kolongolo, Sosio-Teldet and Kapolet water schemes;
- Reviewing water rates to make water affordable and accessible;
- Undertaking hydro-geological survey for underground water points;

- Initiating community programmes and campaigns promoting rain water harvesting;
- Afforestation of water catchment areas;
- Buffering rivers, springs and wetlands in the County;
- Community mobilization and sensitization on sustainable water usage;
- Enforcing regulations and policies in the development and management of Water Resources
- Improve climatic data collection for planning and flood early warning

7.5.3 Waste Management

7.5.3.1 Solid waste

Approximately 120 tonnes of waste is generated daily from domestic, industrial, commercial and agricultural activities. Most of this waste comes from the urban areas. In spite of the efforts made by the County in waste management, it still lacks the capacity to collect and effectively dispose off this waste. Notable challenges observed include:-

- Lack of designated waste collection points especially in the urban areas;
- Poor waste management strategies resulting to haphazard dumping of solid waste;
- Inadequate waste management equipment;

Proposed Strategies:

- Provide adequate waste management infrastructure;
- Create public awareness on sustainable waste management;
- Enhance modern technologies for waste management i.e. waste segregation and recovery;

Proposed Projects:

- Organizing awareness campaigns on proper solid waste management;
- Identifying and establishing strategic waste management sites in selected urban centers;
- Constructing a waste recycling park in Bidii Area to handle all waste generated in the County;



Plate 119: Hiriya Waste Recycling park in Israel

(Source: <https://inhabitat.com/tel-avivs-notorious-garbage-mountain-transforms-into-worlds-largest-recycling-park/hiriya-garbage-dump-tel-aviv/>)

- Rehabilitating Machinjoni dumping site to a recreational park;



Plate 120: Rehabilitated Kibarani dumping site in Mombasa County

(Source: <https://www.theeastafrican.co.ke/magazine/Restoring-Mombasas-lost-allure/434746-5463778-13r1qeu/index.html>)

- Providing waste segregation bins at strategic locations within urban areas;



Plate 121: Waste segregation at the source
(Source: NEMA, 2020)

- Undertaking monthly clean-ups in all urban areas i.e. Kitale, Kiminini, Kwanza, Cherangany, Endebess and Saboti;



Plate 122: Clean-up initiatives in the County
(Source: County Government of Trans Nzoia, 2020)

- Establishing of Biogas digesters in strategic locations for green energy use;
- Enhancing Private Public Partnerships in waste recovery;
- Enforcing policies and legislations on County waste management.

7.5.3.2 Liquid Waste

This form of waste comprises of storm water, domestic, commercial and industrial. While open drains are being used in storm water disposal, pit latrines, septic tanks and sewer are applied for the other three forms.

From the situational analysis, a number of challenges facing the system were observed:-

- Insufficient sewer connectivity and oxidation ponds;
- Inadequate sanitary facilities (pit latrines) in both urban and rural areas;
- Poor storm water infrastructure especially along the major transport routes;

Proposed Strategies:

- Sensitize the community on improved liquid waste management strategies;
- Improve liquid waste management infrastructure across the County;
- Encourage Public Private Partnerships in the development and management of liquid waste;

Proposed Projects:

- Mapping out suitable locations for siting of sanitary facilities;
- Rehabilitating and upgrading sewer connectivity especially in urban areas;
- Rehabilitating pit latrines and septic tanks especially in the urban areas;
- Developing new eco-friendly sewerage schemes;
- Constructing ablution blocks and exhaustible toilets in all markets;
- Constructing septic tanks and VIP/VVIP latrines in rural areas through PPP;
- Constructing storm water drainage and de-siltation of silted drainage channels along all roads in the County;
- Recruiting and staffing officers to enforce liquid waste disposal regulations;
- Organizing campaigns on improved liquid waste management options;



Plate 123: Liquid waste management initiatives in the rural areas
 (Source: <https://www.unicef.org/kenya/water-sanitation-and-hygiene>)

7.5.4 Energy

From the situational analysis, it was noted that majority of the residents use non-renewable energy sources for their needs. They include firewood, charcoal, petroleum, electricity, candles, batteries, gas and maize cobs. Limited usage of renewable energy comprising of solar and biogas was also observed.

Notable challenges include:

- Expensive and unreliable energy sources;
- Limited use of green energy sources;
- Limited electricity connectivity especially in the rural areas
- Increased health risks associated with burning wood and petroleum products

Proposed Strategies:

- Extension of electricity power supply in the rural areas;
- Use of alternative energy sources;
- Prevent encroachment on way leaves meant for energy infrastructure;
- Develop energy policy and legislations;
- Sustainable utilization of energy sources.

Proposed Projects:

- Upscaling rural electrification programmes in the County;



Plate 124: Rural electrification

(Source: <https://www.povertyactionlab.org/evaluation/demand-and-costs-rural-electrification-kenya>)

- Installing flood lights and street lights in urban areas;
- Undertaking regular maintenance of energy infrastructure;
- Providing safe power connections for all informal settlements in the County.
- Investing in green energy infrastructure;



Plate 125: Solar plant in Kitonyonyi Village, Makueni County
(Source: <https://energyfordevelopment.net/current-projects/kitonyonyi/>)

- Enforcing green energy policy and regulation in the design of buildings in the County;
- Providing incentives for installation of renewable energy sources
- Provide training on installation of green energy;

- Creating community awareness on sustainable energy use e.g. use of improved stoves with chimneys;
- Enforcing of wayleaves by-laws;
- Substituting wood fuel with cleaner fuels such as electricity and biogas;
- Encouraging agro-forestry and afforestation practices.

7.5.5 Communication and ICT

This sector has been growing favorably overtime with the existence of Huduma Centre in Kitale town; 3 post offices and 3 sub-post offices and a well-established private courier service sector. The entry of mobile service providers namely Airtel, Safaricom and Telkom has equally revolutionized the telecommunication industry.

In spite of the registered growth, the sector still experiences a number of challenges notably:-

- Increasing disparity in access to ICT services in the rural and urban areas;
- High cost of ICT services especially internet and telephone charges ;
- Poor network connectivity and coverage.

Proposed Strategies:

- Provide relevant ICT infrastructure;
- Enhance mobile connectivity throughout the County;
- Mainstream ICT in all sectors;
- Build the ICT capacity within the County.

Proposed Projects:

- Developing ICT parks in each sub County;
- Extending fibre-optic cables to Kiminini, Kwanza, Endebess, Saboti and Cherangany;
- Partnering with mobile service providers in providing relevant ICT infrastructure;
- Identifying and installing Base Transceiver Stations in areas with poor network coverage;
- Organizing ICT capacity trainings;
- Automating key operations in the County including cashless transactions and online management of resources

7.6 Natural Resource Management

Trans Nzoia County is well endowed with numerous Habitats that range from Wetlands, Forests, Rivers and Dams. Within these habitats, various species, Man and wildlife included derive their livelihoods. As clearly illustrated in the situational analysis, the County's natural resource base therefore is dependent on these habitats. In spite of the contribution derived from the County's natural resources, there are numerous challenges that require attention. Most of the challenges vary from one Resource to the other thus requiring heterogeneous strategies.

7.6.1 Forests

The County boasts of both indigenous and exotic forests. Compared to the 10% tree cover required nationally, the County's tree cover currently stands at 17%. This has been achieved by the presence of major forest covers such as Mt.Elgon, Kapolet, Sikhendu and Kitale town. Other smaller covers include: -Saboti, Sosio, Kitalale, Suam, Kimothon and Kiptogot forests.

Apart from performing various ecological functions such as carbon storage, nutrient cycling, water and air purification and maintenance of wildlife habitat, forests also provide social- cultural benefits such as recreation, traditional medicinal herbs and spiritual nourishment. Additionally, goods such as timber, food, fuel and bio-products are also sourced.

In spite of this, forests in the County face a number of challenges notably:-

- Illegal logging mainly for firewood, charcoal and timber;
- Intrusion of other land uses into forested areas especially agriculture and human settlements;
- Climate change;
- Forest fires;
- Limited awareness on the importance of forest conservation

Proposed Strategies:

- Protect forested areas;
- Encourage agro-forestry;
- Create awareness on importance of sustainable forest management;
- Promote of alternative sources of energy;
- Sustainable utilization of forest sources;
- Promote alternative livelihood improvement programs;

- Encourage Public Private Partnerships in conserving forests.

Proposed Projects:

- Providing buffer zones;



Plate 126: Tea buffer around South Nandi Forest, Nandi County
(Source: Simuplan, 2020)

- Providing free tree seedlings to farmers;
- Planting indigenous trees like *bamboo* and *Podo* in degraded forests;
- Organizing community sensitization workshops and campaigns on the importance sustainable forest management;



Plate 127: County forest conservation initiatives
(Source: Trans Nzoia County, 2020)

- Effective implementation of the Forest Conservation and Management Act, 2016 and other related policies and laws such as Charcoal Rule, 2009;

- Gazetting and demarcating forested areas to reduce encroachment;
- Revoking all land ownership documents on land within forested areas;
- Registering/recognizing the efforts of NGOs like the Green Belt Movement which have mounted campaigns on planting of trees.



Plate 128: Tree nursery
(Source: Greenbelt Movement tree planting initiatives)

7.6.2 Wetlands

The two main wetlands in the County are Saiwa and Sabwani. Others include:-Sinyereri/Kipsaina wetland, Kapolet, Chepkaitit, Chepchoina,Mubere, Kiptogot, Machinjoni, Namanjalala, Rafiki farm, Matisi, Miti Jambazi in Kibomet and Moiwet.

From these wetlands the County has realized major opportunities in form of tourism (Saiwa Swamp), small scale irrigation and recreation.

The existence of these wetlands however, is faced by numerous challenges that include:-

- Reclamation for agricultural, industrial and residential developments;
- Encroachment into wetlands;
- Excessive extraction of water from the wetlands;
- Severe climatic changes(Prolonged droughts and flooding)
- Pollution;
- Introduction of alien invasive species (Elephant grass in Saiwa Swamp);
- Ignorance on the value of wetlands.

Proposed Strategies:

- Restore and rehabilitate degraded wetlands;
- Promote sustainable extraction and utilization of goods and services derived from wetlands;
- Promote environmental friendly alternative livelihood activities in line with the wise use principle;
- Enhance public awareness on proper management of waste;
- Support and promote enforcement of relevant regulations and laws related to sustainable wetland management;

Proposed projects:

- Creating a buffer zone around all wetland ecosystems;
- Restricting reclamation and conversion of wetlands;
- Mapping, delineating and securing boundaries for all wetlands in the County;
- Implementing the wetland conservation policy (observation of riparian reserve);
- Undertaking research on appropriate utilization of wetlands;
- Initiating education training and public awareness activities on wetland resources.

7.6.3 Rivers

The County has numerous rivers that act as tributaries to Nzoia River. These rivers originate from Mt.Elgon and Cherangany hills. The presence of these rivers has ensured adequate supply of water in the County thus the promotion of agriculture, recreation and tourism.

These rivers however, face numerous challenges including:-

- Encroachment into river riparian;
- Excessive diversion of water for agricultural purposes;
- Water pollution (domestic and industrial);
- Deforestation;
- Siltation and sedimentation of rivers;
- Severe climatic conditions;

Proposed Strategies:

- Review and harmonies conflicting policies, legislations, regulations and standards governing the management of water catchment areas;

- Initiate river calming activities;
- Promote sustainable utilization of water sources;
- Encourage good farming practices along river banks;
- Rehabilitation of degraded river banks.

Proposed Projects:

- Revoking all illegally acquired ownership documents on land within river riparian;
- Constructing small dams across rivers to minimize flooding;
- Enforcing legislations, policies and regulations on water use;
- Prohibiting agricultural activities along the river banks.

7.6.4 Wildlife

The County has numerous wildlife species playing a major role in the promotion of tourism sector as already noted. Most of these species are found in major National Game Parks and Reserves, Hills and River courses. Notable species include:- Sitatunga Antelopes (Saiwa Swamp), Elephants, Buffalos, Leopards, Monkeys (Mt. Elgon and Cheranganyi hills, Kitale Forest-Monkeys), Mud Fish (Rivers), and numerous insects and birds species.

In spite of the enormous contribution from the wildlife species numerous challenges exist that can easily lead to their extinction such as:-

- Poaching;
- Human-Wildlife conflict;
- Invasive wildlife species;
- Destruction of natural habitats;
- Climate change effects;
- Diseases

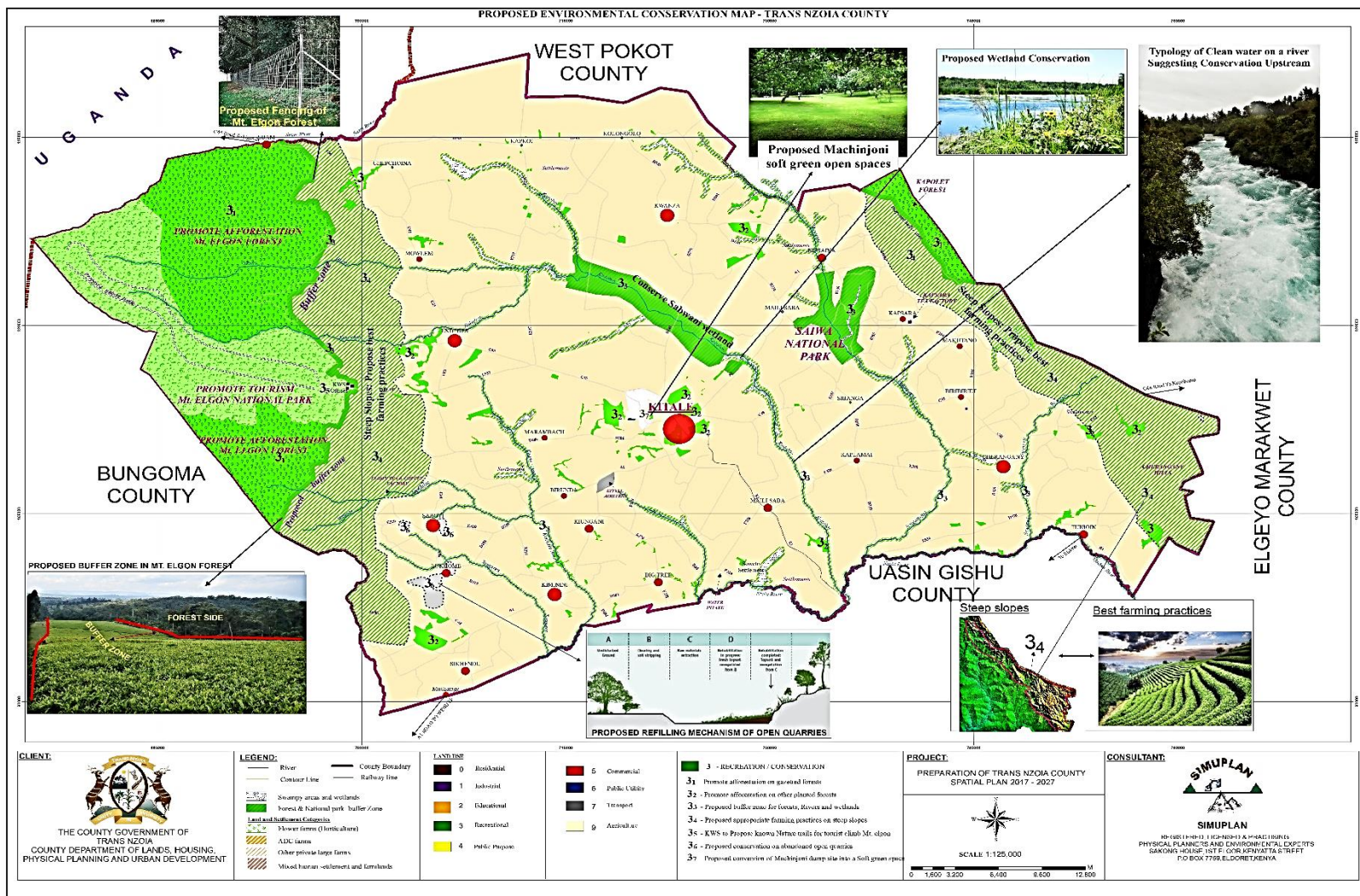
Proposed Strategies:

- Protect and conserve wildlife habitats and migratory corridors;
- Provide incentives for investment in sustainable tourism and wildlife conservation initiatives;
- Protect endangered wildlife species;

- Involve community participation in conservation activities
- Develop a strategy to contain, control and mitigate alien and invasive species.

Proposed Projects:

- Creating awareness on human wildlife co-existence; through wildlife clubs in schools and community initiatives;
- Establishing private and community based conservation areas;
- Maintaining and gazetting all natural habitats;
- Reclaiming and restoring of all encroached habitats;
- Prohibiting illegal trading on wildlife products;
- Standardization of fishing nets
- Undertaking research on alien and invasive wildlife species.



Map 41: Environmental Conservation Strategy
(Source: Simuplan, 2019)

7.7 Governance

Trans Nzoia like any other County in Kenya derives its governance from the Constitution of Kenya 2010 and the numerous legislations and policies that exist. Through these regulations and institutions, the County has been able to discharge its sectoral responsibilities as noted in the situational analysis.

Majority of the issues facing Trans Nzoia County are not different from the other Counties. They include:-

- Limited fund allocation from the National Government;
- Delays in fund disbursement;
- Disproportionate budgetary allocation across the various County Departments;
- Poor monitoring and evaluation that leads to unaccountability and misuse of funds;
- Limited public participation;
- Overlapping of roles between State and County Actors;
- Poor collaboration and coordination between the National and County Governments;
- Excessive and unskilled manpower;
- Vesting of powers on local community leaders even in areas where they lack competence;

- Bureaucracies in accessing government facilities and services;
- Low uptake of ICT in public institutions;
- Poor record keeping;
- High expectation from the communities;
- Delays in decision-making resulting from mandatory public participations requirements;
- Poor working environment-Insufficient office spaces and equipment.

Proposed Strategies:

- Increase access to government services;
- Promote Transparency and Accountability in service delivery;
- Develop a framework for public participation;
- Enhance consultations between national and County government;

- Integrate all development agencies in decision-making;
- Undertake capacity-building;
- Staff rationalization and harmonization;

Proposed Projects:

- Strengthening powers vested in development committees/partners;
- Manpower re-organization;
- Recruiting relevant professionals in their areas of expertise;
- Organizing community empowerment meetings and barazas on good governance and management;
- ICT training of all government officers;
- Automating all County Management Systems;
- Using evidences during evaluation on performance contracts;
- Rehabilitating and constructing Sub-County offices;
- Setting up of relevant urban management boards;
- Organizing inclusive and mandatory public participation meetings;

CHAPTER 8.0 IMPLEMENTATION FRAMEWORK

8.1 Overview

The implementation of the County Physical and Land Use Development Plan is a critical step towards the achieving optimal use of County space making the County an outstanding agro-industrialized sustainable County with high quality of life for residents. The framework identifies the different strategies and projects as well as actors needed to ensure adequate measures are taken for proper implementation of the plan. It provides a coordinating framework for the different sectors to operate.

In the absence of an implementation mechanism the preparation of the County Physical and Land Use Development Plan may end up being an exercise in futility. Planning without action is fruitless, whereas action without planning is aimless.

The adoption of this County Physical and Land Use Development Plan is the first step in the implementing process. Working with a range of implementation partners, the County Government of Trans Nzoia will be the lead facilitator in implementing the plan and coordinate plan monitoring and reviews among all development partners.

Challenges in implementation of the County Physical and Land Use Development Plan

The challenges facing the full implantation of this County Physical and Land Use Plan include:

- Weak institutional capacity to execute the implementation of plans in their entirety;
- A disconnect between planning and sound implementation mechanisms manifested through constraints like little budgetary support for implementation of plans;
- Little involvement of the private sector in planning and implementation hence loss of the capital and skills they are capable of contributing towards the same;
- Failure to connect spatial planning and economic planning initiatives;
- Inadequate research on issues pertinent to planning including plan implementation, prioritization and resource availability;
- Inadequate public participation and consultation in plan preparation and implementation leading to misuse of resources on projects not considered to be a priority by the intended beneficiaries;

- Insufficient Monitoring and Evaluation provisions

8.2 Opportunities in implementation of County Physical and Land Use Development Plan

Several opportunities can be exploited for the implementation of this plan. These opportunities include:

- The implementation of the devolved system of governance which decentralized the powers to prepare plans and implement them. This comes with the advantage of preparing and implementing plans which resonate with the direct needs of the people;
- Devolved funding which ensures that all regions of the country can benefit from planning initiatives;
- The presence of a willing human capital motivated to improve their lives. This enriches the aspect of participatory planning and implementation;
- A number of legal frameworks that support economy-targeted spatial plans have been passed;
- Increasing regionalization which has opened up Trans Nzoia County to numerous regional opportunities which it can take advantage of through careful planning

Table 19: Implementation Matrix

Housing and Human Settlement

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
-Inadequate physical and social infrastructure	-County wide	-Assess the existing social amenities requirement;; -Upgrade informal settlements; -Provide a framework to guide growth and development in rural and urban areas; -Provide basic infrastructure and utilities;	-Acquiring land for establishment and expansion of public utilities; -Construction of affordable housing in Namanjalala; -Construction of roads; -Increasing access to clean water; -Construction of sanitary facilities;	Short and Long term	CGTN -National Government -NEMA -WARMA -KENHA -KeRRA -KURA – Development partners	-Sustainable human settlements; -Sufficient housing units; -Adequate infrastructural amenities and utilities; - Approved framework for development control; -Security of land tenure;
-Mushrooming informal settlements	-Tuan, Kipsongo, Kosovo, Kinyikeu, Rongai;	-Slum upgrading	-Creating an inventory of all informal settlements; -Initiating slum upgrading programmes;	Short and Long term	CGTN -National Government -KISIP, -NEMA -WARMA -KENHA -KeRRA -KURA – Development partners	-Habitable living environment
-Encroachment into environmentally fragile ecosystems	-Kapolet forest, Lukhome, Saboti town, Suam river riparian, Saiwa Swamp	-Promote sustainable human settlements;	-Reclaiming encroached land on fragile ecosystems; -Revoking illegally acquired land ownership documentation on fragile ecosystems;	Short and Long term	CGTN -National Government -NEMA -WARMA -KENHA	Sound ecosystem;

	National Park, Mt. Elgon National Forest and Cherangany Forest.				- Development partners	
-Insecurity of land tenure;	-County wide	-Strengthen security of land tenure;	-Continuation of the National Titling Programme;	Short and Long term	CGTN -National Government - Development partners	Security of land tenure;
-Urban sprawl/ Linear concentration of settlements; -Encroachment into agricultural lands;	-Urban and rural areas	-Urban containment; -Densification/compact development in urban areas; -Protect rich agricultural land; -Application of Nucleated villages -Enforcement of development guidelines	-Delineation of urban limits; -Implementing dormitory town concept in rural areas; -Strictly regulating developments on high agricultural potential areas;	Short and Long term	CGTN -National Government -Development partners	-Food security;

Urban Development

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
-Unclassified specialized urban centers -Haphazard development -Uncontrolled rural-urban migration;	-Urban areas	-Advocate for the planning / re-planning of local, market, rural and urban centres; -Create an enabling environment for commercial and industrial developments; -Strengthen urban-rural linkages	-Functional classification of all urban areas in the County; -Delineation of urban boundaries in the County aimed at achieving urban containment; -Preparation of Physical and Land Use Development Plans for all urban areas in the County-	Short and Long term	CGTN -National Government -World Bank -NEMA -WARMA -KENHA -KeRRA -KURA	-Planned Specialized urban areas; -Improved accessibility

Transport

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
<ul style="list-style-type: none"> -Unclassified roads; -Poor surface road conditions; -Poor drainage infrastructure; 	<ul style="list-style-type: none"> -County wide (C44 -27.38km D286-17.3km D285/E320 - 13.3km D284-5.38km E337-14.2km) 	<ul style="list-style-type: none"> -Hierarchical classification of all roads; -Upgrade all roads in the County; 	<ul style="list-style-type: none"> --Identifying Class A, B,C,D & E roads; -Tarmacking of: (D286) road -17.3km (D285/E320) road -13.3km (C44) road-27.38km (D284) road -5.38km (E278) road- 12.66Km (Eldoret B2) (E337)-18.31Km -Undertaking routine road maintainance; -Street lighting in all urban roads; -Constructing storm water drainages in all the roads; -Improving/ Construction of bridges particularly in the rural areas; 	Short and Long term;	<ul style="list-style-type: none"> CGTN -National Government -World Bank -NEMA -KENHA -KeRRA -KURA -Development partners 	<ul style="list-style-type: none"> -Inventory of roads based on their classification; -Improved road conditions and network;
<ul style="list-style-type: none"> -Encroachment on road and railway reserves; 	<ul style="list-style-type: none"> -Urban areas 	<ul style="list-style-type: none"> -Protect road and railway reserves from encroachment; 	<ul style="list-style-type: none"> -Marking extent of road and railway reserves; -Evicting those on road and railway reserves; 	Short and long term;	<ul style="list-style-type: none"> CGTN -National Government -World Bank -KENHA, -KeRRA -KURA -Development partners 	<ul style="list-style-type: none"> -Improved road and railway transport;
<ul style="list-style-type: none"> -Inadequate non-motorized infrastructure; 	<ul style="list-style-type: none"> -Urban areas 	<ul style="list-style-type: none"> -Develop a pedestrian-friendly (NMT)transport network along all major roads in the urban areas; 	<ul style="list-style-type: none"> -Integrating non-motorized transport in all road designs especially in the urban areas; 	Short and long term;	<ul style="list-style-type: none"> CGTN -National Government -World Bank -NEMA -KENHA -KeRRA 	<ul style="list-style-type: none"> -Enhanced pedestrian safety;

					-KURA -Development partners	
Underutilizations of key transport infrastructure like the airstrip and the railway;	-	-Modernise the Kitale Airstrip to enable the facility handle commercial flights and improve the activities in the catchment area; -Remodel the railway infrastructure to enhance regional development;	- Modernizing the Kitale airstrip; -Upgrading the rail infrastructure;	Short and long term;	CGTN -National Government -World Bank -NEMA -KENHA -KeRRA -KURA -Development partners -KCAA -KRA -NOREB	-Improved rail and air transport system;
Inadequate bus terminals and parking facilities.	- Urban areas	-Provide functional and aesthetically pleasing public furniture at bus stops and terminals;	-Constructing/renovating bus parks and terminuses in selected urban areas; -Providing benches and shades at bus stops and terminals;	Short and long term;	CGTN -National Government -World Bank -NEMA -KENHA -KeRRA -KURA -Development partners	-Enhanced usability of road transport;
Chaotic transport system	-Urban areas	-Enhance proper traffic management;	-Recruiting more staff for a sustainable management of the transport system; -Enforcing transport and safety policies;	Short and long term;	CGTN -National Government -World Bank -NEMA -KENHA -KeRRA -KURA -Development partners	Improved traffic flow;

Infrastructure and Utilities

Sector	Planning Issue	Location/ Specific area	Strategies	Project /Action	Timeframe	Actors	Outcome
Energy	-Limited use of green energy sources - Expensive and unreliable energy sources; -Increased health risks associated with burning wood and petroleum products	Countywide	-Extension of electricity power supply in the rural areas; -Use of alternative energy sources; -Prevent encroachment on wayleaves meant for energy infrastructure; -Develop energy policy and legislations; -Sustainable utilization of energy sources -Encouraging agro-forestry and afforestation practices.	-Investing in green energy infrastructure; -Enforcing green energy policy and regulation in the design of buildings in the County; -Providing incentives for installation of renewable energy sources -Providing training on installation of green energy; -Creating community awareness on sustainable energy use e.g. use of improved stoves with chimneys	Long term and Short term	County Government of Trans Nzoia Private Public Partnerships	-This will cut down Operation costs on energy -Ensures sustainable use of energy as a resource -Reduced over reliance on wood fuel
	Limited electricity connectivity in the rural areas	Countywide	Extension of power supply	-Upscaling rural electrification program -Installing flood lights and street lights in urban areas; -Undertaking regular maintenance of energy infrastructure; -Providing safe power connections for all informal settlements in the County.	Long term and Short term	Energy providers in the country	Maximum electricity connectivity in the County
Water	-Limited Access to safe clean water -Inadequate water supply	County wide	-Increase water coverage and supply	-Rehabilitation & improvement of Nzoia River scheme -Upgrading and extending existing water pipeline network in the County -Reviving stalled community water schemes; -De-siltation and rehabilitation of dams;	Long term and Short term	Public-Private Partnerships CGTN Ministry of Water	Improved access to clean water

	-Flooding	Namanjalala	Flood Control management	<ul style="list-style-type: none"> -Drilling and equipping of shallow wells and boreholes in the County; -Implementing Kiptogot-Kolongolo, Sosio-Teldet and Kapolet water schemes - Reviewing water rates to make water affordable and accessible; -Constructing water pans and dams in Namanjalala; -Erecting dykes along River Sabwani to control flooding in Namanjalala -Constructing water pans and dams in Namanjalala - Improve climatic data collection for planning and flood early warning 			
	-Limited Rain Harvesting	Countywide	Promote rain water harvesting	<ul style="list-style-type: none"> - Initiating community programmes and campaigns promoting rain water harvesting 			
	<ul style="list-style-type: none"> -Pollution of water sources -Deforestation and Encroachment on Water Catchment 	Mt. Elgon and Kapolet Rivers and streams	<ul style="list-style-type: none"> -Conservation and management of water resources in the County -Support and enhance effective utilization of trans-boundary water resources 	<ul style="list-style-type: none"> -Undertaking hydro-geological survey for underground water points; -Afforestation of water catchment areas; -Buffering rivers, springs and wetlands in the County; -Community mobilization and sensitization on sustainable water usage; 			

				-Enforcing regulations and policies in the development and management of Water Resources			
Solid Waste	-Lack of designated waste collection points especially in the urban areas; -Poor waste management strategies -Inadequate waste management equipment	Countywide	-Provide adequate waste management infrastructure; -Create public awareness on sustainable waste management; -Enhance modern technologies for waste management i.e waste segregation and recovery;	-Organizing awareness campaigns on proper solid waste management; -Identifying and establishing strategic waste management sites in selected urban centers; -Constructing a waste recycling park in Bidii Area to handle all waste generated in the County; -Rehabilitating Machinjoni dumping site to a recreational park; -Providing waste segregation bins at strategic locations within urban areas; -Undertaking monthly clean-ups in all urban areas -Establishing of Biogas digesters in strategic locations for green energy use; -Enhancing Private Public Partnerships in waste recovery; -Enforcing policies and legislations on County waste management.	Long-term and short-term	Public-Private Partnerships CGTN NEMA Beneficiary Community	-Efficient solid waste management
Liquid waste	-Insufficient sewer connectivity and oxidation ponds; -Inadequate sanitary facilities (pit latrines) in both urban and rural areas;	Countywide	-Sensitize the community on improved liquid waste management strategies; -Improve liquid waste management infrastructure across the County; -Encourage Public Private Partnerships in the	-Mapping out suitable locations for siting of sanitary facilities; -Rehabilitating and upgrading sewer connectivity especially in urban areas; -Rehabilitating pit latrines and septic tanks especially in the urban areas;		NEMA CGTN NGO.s Private Sector Beneficiary Community Ministry of Transport and Public works	-Improved sanitation conditions

	-Poor storm water infrastructure		development and management of liquid waste;	-Developing new eco-friendly sewerage schemes; -Constructing ablution blocks and exhaustible toilets in all markets; -Constructing septic tanks and VIP/VVIP latrines in rural areas through PPP; -Recruiting and staffing officers to enforce liquid waste disposal regulations; -Organizing campaigns on improved liquid waste management options;			
	Poor storm water management	Countywide	-Ensure storm water management designs are incorporated in all road construction	--Constructing storm water drainage and de-siltation of silted drainage channels along all roads in the County;	Short term	<ul style="list-style-type: none"> • County Government • KURA • KeRRA • KeNHA Beneficiary community 	-Contained run offs
Communication and ICT	-Increasing disparity in access to ICT services in the rural and urban areas; -High cost of ICT services especially internet and telephone charges ; -Poor network connectivity and coverage.	Countywide	-Provide relevant ICT infrastructure; -Enhance mobile connectivity throughout the County; -Mainstream ICT in all sectors; -Build the ICT capacity within the County	-Developing ICT parks in each sub County; -Extending fibre-optic cables to Kiminini, Kwanza, Endebess, Saboti and Cherangany; -Partnering with mobile service providers in providing relevant ICT infrastructure; -Identifying and installing Base Transceiver Stations in areas with poor network coverage; -Organizing ICT capacity trainings; -Automating key operations in the County	Short-term and long term		-Improved access to internet -Improved network connectivity and coverage -Improved service delivery

Health

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
<ul style="list-style-type: none"> - Uneven distribution across the County; -Structural incapability -Inadequate health supporting amenities-public mortuary, cemetery, crematorium 	-County wide	<ul style="list-style-type: none"> -Establish a network of functional, well-equipped, accessible health structure; -Rehabilitate, expand and equip existing health facilities in line with the recommended health standards; 	<ul style="list-style-type: none"> -Completing and operationalizing Trans Nzoia County Referral Hospital; -Renovating Kitale County hospital and Mt. Elgon hospital; -Expanding and rehabilitating all sub-County hospitals and rural health centres; -Constructing dispensaries in each ward; -Identifying suitable site and procuring land for the establishment of medical related supporting amenities in Kwanza and Saboti sub-counties; 	Short and Long term	<ul style="list-style-type: none"> -CGTN -National Government -NEMA -Development partners 	<ul style="list-style-type: none"> -Efficient health care system; -Increased access to health services;
<ul style="list-style-type: none"> -Understaffed personnel/manpower; -Ill-equipped-medical equipment and stock; 	-Urban areas	<ul style="list-style-type: none"> -Enhance capacity of the health sector; 	<ul style="list-style-type: none"> -Recruiting more healthcare workers to ensure adequate service delivery; -Providing adequate resources to procure medical supplies in adequate quantities; -Installation of a reliable drug management system to track the movement of medical supplies from the County storage unit to the various health facilities; 	Short and long term	<ul style="list-style-type: none"> -CGTN -National Government -NEMA -Development partners 	<ul style="list-style-type: none"> -Adequate human resource and health equipment/stock;
<ul style="list-style-type: none"> -Limited awareness on importance of early ailment detection 	-Rural areas	<ul style="list-style-type: none"> -Strengthen outreach systems for provision of health services; -Create health awareness programmes; 	<ul style="list-style-type: none"> -Establishing mobile clinics across the County; -Organizing campaigns and free clinics; 	Short and long term	<ul style="list-style-type: none"> -CGTN -National Government -NEMA 	<ul style="list-style-type: none"> Increased awareness on early ailment detection;

					-Development partners	
-Inadequate supporting infrastructure (roads, electricity and water)	-County wide	-Provide basic infrastructure and amenities;	- Construction and improvement of all basic infrastructure and utilities across the County;	Short and long term	-CGTN -National Government -NEMA -Development partners -KENHA -KeRRA -KURA	-Improved basic supporting infrastructure;

Education

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
-Insufficient learning facilities; -Ill-equipped facilities;	-County wide	-Rehabilitate, expand and equip existing education facilities in line with the recommended standards;	-Constructing new educational facilities in line with the catchment; -Rehabilitating existing educational institutions and specialized training centres; -Acquiring and transforming former Moi University Campus along West-Pokot road to an Agricultural Training College; -Establishing a modern public library in Kitale; -Providing modern learning equipment in all educational institutions;	Short and Long term;	-CGTN -National Government -NEMA -Development partners	-Efficient education ; -Increased access to education services; -Increased transition rates and retention levels;
-Poor learning environment;	-County wide	-Improve education services and the learning environment;	-Construction of adequate learning institutions for the physically challenged and visually impaired in the County;	Short and long term;	-CGTN -National Government -NEMA -Development partners	-Improved learning environment;

			<ul style="list-style-type: none"> -Acquiring land for expansion of educational facilities; -Developing and upgrading all physical infrastructure in learning institutions in the County particularly electricity, roads and water; 			
-Uncompetitive and priced education training;	-County wide	-Promote a globally competitive, accessible and affordable education training and research facilities;	<ul style="list-style-type: none"> -Encouraging transparency in allocation and usage of National and County Government bursary schemes to increase transition rates; -Mainstreaming ICT in education; 	Short and long term	<ul style="list-style-type: none"> -CGTN -National Government -NEMA -Development partners 	-Competitive and affordable education;
-Shortfall in manpower;	-County wide	-Build the human resource capacity;	- Recruiting additional staff across the County;	Short and long term	<ul style="list-style-type: none"> -CGTN -National Government -NEMA -Development partners 	-Adequate human resource;
-Inadequate supporting infrastructure (roads, electricity and water);	-County wide	-Provide basic infrastructure and amenities;	<ul style="list-style-type: none"> -Constructing and upgrading of roads; -Extending connectivity to electricity; Constructing water points to enhance access; 	Short and long term	<ul style="list-style-type: none"> -CGTN -National Government -NEMA -Development partners -KENHA -KeRRA -KURA -KPLC 	-Enhanced connectivity to basic supporting infrastructure;

Recreation

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
- Inadequate public recreation amenities such as stadia and playgrounds;	-County wide	-Plan, rehabilitate, expand and equip sporting infrastructure in line with recommended standards;	-Renovating Kenyatta stadium to a multi-disciplinary sporting centre; -Rehabilitating and upgrading all existing sporting facilities in the County i.e. Kiminini, Sikhendu, Tuwan, Sitatunga, Cheranganyi and Matumbei wards; -Constructing more public sporting grounds especially at the sub-County level;	Short and Long term	-CGTN -National Government -NEMA -Development partners	-Improved sporting environment; -Heightened appreciation for nature based recreation;
Minimal promotion efforts of sporting activities	-County wide	-Promote sporting events.	-Organizing and participating in local and international tournaments -Reducing fee rates in accessing recreational services and facilities accordingly;	Short and long term;	-CGTN -National Government -NEMA -Development partners	-Enhanced sporting activities;
		-Create sporting awareness programmes;	-Establishing a County sports talent centre in Kitale Municipality; -Organizing campaigns on sports awareness; -Organizing education training on sports awareness;	Short and long term;	-CGTN -National Government -NEMA -Development partners	-Heightened awareness of sporting;
		-Develop sporting legislation and policies;	-Implementing sporting legislation and policies	Short and long term	-CGTN -National Government -Development partners	Acceptable framework for the sports sector;
-Poorly maintained urban soft spaces; -Inadequate open spaces in urban areas;	-Urban areas	-Identify/take an inventory of the urban soft spaces; -Protect and conserve nature-based recreational areas;	-Reclaiming and revoking illegally acquired ownership documents for designated open spaces land;	Short and long term	-CGTN -National Government -NEMA	-Adequate and well maintained open spaces;

		-Beautification of existing nature based utilities;	-Acquiring land for open green spaces particularly in urban areas; -Upgrading existing open spaces; -Equipping urban open spaces with facilities such as benches, waste bins etc;		-Development partners	
Poor supporting infrastructure, equipment and machinery; -Insufficient hotels especially in the existing national parks; -Underutilized facilities;	-County wide	-Integrate nature/environmentally friendly designs to enhance their functionality -Create a pedestrian friendly environment in urban areas;	-Using local materials for Integrating nature/environmentally friendly designs to enhance their functionality such as in Saiwa Swamp National Park; -Tree lining of all roads in urban areas;	Short and long term	-CGTN -National Government -NEMA -Development partners	Adequate recreational infrastructure and equipment;
-Encroachment into game parks and reserves	County wide	-Protect and conserve game parks and reserves	-Delineating boundaries of all game parks and reserves; -Determining level of encroachment of game parks and reserves; -Reclaiming encroached lands set aside for nature i.e. parts of Mt. Elgon, Cherangany Hills and Saiwa Swamp; -Recruiting additional staff to enforce existing legislative provisions particularly n encroachment into game parks and reserves;	Short and long term	-CGTN -National Government -NEMA -KFS -WARMA -Development partners	Secured national parks and reserves;

Economy and Livelihood

Agriculture

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
<ul style="list-style-type: none"> -Excessive land fragmentation; -Poor farming practices; -Encroachment into rich agricultural lands; -Undiversified farming techniques; -Dependence on rain fed agriculture; -Overreliance on maize farming; -Minimal involvement in aquaculture; 	-Rural areas	<ul style="list-style-type: none"> -Create awareness on best farming practices; -Formulate and enforce policies to protect the vast fertile agricultural lands; -Promote agricultural diversification; 	<ul style="list-style-type: none"> -Enforcing policies on agricultural conservation, agricultural protection zoning and sub-division ordinances as indicated in the proposed plan; -Intensification of dairy and crop farming incentives across the County; -Construction of irrigation schemes for small scale horticultural activities; -Construction of fishponds at the slopes of Mt Elgon; -Establishing a fish hatchery and cold storage facilities in Matisi Ward; -Setting up apiaries in Kwanza, Cheranganyi and Saboti sub-counties 	Short and long term	<ul style="list-style-type: none"> -CGTN -National Government -Development partners 	<ul style="list-style-type: none"> -Preservation of vast fertile agricultural land; -Regulation of land fragmentation; -Sustainable agricultural techniques; -Food security;
Poor infrastructure	Rural areas	Provide and improve rural infrastructure;	Developing and improving internal access routes, cattle dips and nurseries;	Short and long term	<ul style="list-style-type: none"> -CGTN -National Government -Development partners -KuRA -KeRRA 	-Improved infrastructure;
-Limited funds for agricultural research and development;	-County wide	-Mobilize funds for agricultural research and development	<ul style="list-style-type: none"> -Construction of Agricultural Training Colleges in all the sub-counties; -Rehabilitating and equipping the veterinary laboratories in the County. 	Short and Long term	<ul style="list-style-type: none"> -CGTN -National Government -NEMA -Development partners 	<ul style="list-style-type: none"> -Food security; -Rural development and industrialization; -Improved agricultural sector;

-Weak marketing channels; -Limited access to capital;	-Rural areas	-Encourage farmers to form/join co-operatives and revitalize the inactive ones; -Advocate for cross-border trading and marketing strategies for agro-based products;	-Championing for co-operatives to assist farmers in marketing and processing their farm products and for the purchase and production of farm inputs;	Short and long term above	-CGTN -National Government -KNCC -Development partners	-Improved marketing channels; -Enhanced access to capital;
-Inadequate value addition infrastructure;	Rural areas	-Establish and rehabilitate value addition industries and infrastructure; -Improve post-harvest management and support to farmers through subsidies on storage materials, facilities and infrastructure;	-Constructing milk cooling plants in each sub-County; -Constructing grain drier and storage facility in Endebess sub-County; -Constructing sugar milling plant in Saboti sub-County; -Rehabilitating Kiminini County Slaughter Slab and Kitale Main Slaughter House;	Short and long term	-CGTN -National Government -NEMA -Development partners	-Adequate valued addition infrastructure;

Tourism

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
-Poor access to tourist sites /destinations; -Inadequate hospitality facilities (quality hotels);	-County wide	-Provide appropriate tourism infrastructure and upgrade tourism related facilities;	-Upgrading existing tourism facilities and infrastructure; -Opening and rehabilitation of road networks leading to tourism sites; -Enforcing regulations pertaining to all aspects of tourism including specific infrastructure and facilities;	Short and Long term	-CGTN -National Government -NEMA -KuRA -KeRRA -Development partners	-Heightened awareness and appreciation of tourism; -Improved tourism sector
-Environmental degradation and climate change; -Human-wildlife conflicts; -Unsecured game parks and riparian reserves;	-County wide	-Protect, conserve and preserve the tourist attraction areas and sites;	-Controlling the spread of Elephant grass at Saiwa Swamp National park which possess a threat to the rare Sitatunga antelope; -Fencing off and establishing of buffers around tourist attraction sites;	Short and long term	-CGTN -National Government -NEMA -KTB -KFS -KTB	-Environmental conservation; -Secured tourist attraction sites;

			-		-Development partners	
-Destruction of heritage sites; -Inculturation;		-Preserve cultural tourism;	-Raising awareness through campaigns on importance of cultural tourism; -Establishment of cultural and heritage sites;	Short term	-CGTN -NEMA -KTB -National Museums -Development partners	-Cultural preservation;
-Poor marketing and branding strategies; -Low interest in domestic tourism;	County wide	-Promote, diversify and market tourism products; -Promote local tourism; Promote and preserve cultural tourism;	-Reducing fee rates in accessing tourist facilities accordingly; -Mapping out tourist attraction sites in the County; -Rehabilitating and modernizing existing Kitale National Museum; -Constructing and maintaining cultural centres and heritage sites; -Investing in cultural festivals and properties; -Branding Trans Nzoia as a tourist destination County;	Short and long term	-CGTN -National Government -KTB	-Enhanced domestic tourism; -Heightened recognition of tourist destinations in the County;
Low investment in tourism opportunities;		-Exploit untapped tourism resources; -Create good relations with investors. -Formulating and implementing planning policies, regulations and standards to guide tourist specific infrastructure and facilities and to increase opportunities in the tourism sector;		Short and long term	-CGTN -National Government -KTB -KNCC	-Increased investment in tourism opportunities;

Trade and Commerce

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
-Limited/lack of capital for initiating investments;	-County wide	-Reduce / lower interest on loans offered to businessmen; -Conduct regular SME training for business owners; -Enhance promotion of local entrepreneurs;	-Conducting annual trade fairs and entrepreneurial training;	Short and Long term	-CGTN -National Government -NEMA -KuRA -KeRRA -Development partners	-Enhanced access to capital;
-Inadequate/lack of market infrastructure; -Poor transport networks; -Encroachment of traders on road reserves;	County wide	-Provide adequate trading facilities and infrastructure;	-Developing incubators and Jua Kali sheds in each sub-County; -Constructing sanitary facilities in markets; -Completing Kitale business park; -Constructing industrial park/special economic zone in the County; -Constructing markets in Matisi, Bidii and Kapkarwa; -Rehabilitating and completing market constructions in Gitawamba, Sibanga and Kimila; -Constructing maize milling and animal feed plant in Kitale, Kwanza sub-County; -Constructing and upgrading all roads;	Short and long term	-CGTN -National Government -NEMA -KuRA -KeRRA -Development partners	-Improved market infrastructure; -Improved road transport systems;
-Unlicensed business enterprises; -Tiring process in obtaining business permit;	County wide	-Invest in County ICT infrastructure;	-Automating business licensing and promotion of E-Commerce;	Short and long term	-CGTN -National Government	-Efficiency in business operations;
-Underutilized Suam border;	Suam	-Reduce trade barriers on regional international trade like Uganda; -Formulate and implement trade and commerce policy;	-Establishing a fully-fledged immigration facility at Suam Border for enhanced cross border trade; -Constructing industrial and commercial centre at Suam Border; -implementing trade and commerce policy;	Short and long term	-CGTN -National Government -NEMA -Development partners	Improved environment for local and international trade;

Environment and Natural Resources

Sector	Planning Issue	Location/ Specific area	Strategies	Project /Action	Time frame	Actors	Outcome
Forests	-Illegal logging; -Intrusion of other land uses into forested areas; -Climate change; -Forest fires; -Limited awareness on the importance of forest conservation	Gazetted and non- gazetted forests in the County	-Protect forested areas; -Encourage agro- forestry; -Create awareness on importance of sustainable forest management; -Promote of alternative sources of energy; -Sustainable utilization of forest sources; -Promote alternative livelihood improvement programs; -Encourage Public Private Partnerships in conserving forests	-Providing buffer zones; -Providing free tree seedlings to farmers; -Planting indigenous trees like bamboo and Podo in degraded forests; -Organizing community sensitization workshops and campaigns on the importance sustainable forest management; -Effective implementation of related policies and Acts; -Gazetting and demarcating forested areas -Revoking all land ownership documents on land within forested areas; -Registering/recognizing the efforts of NGOs that have mounted afforestation campaigns	Long term and Short term	County Governmen t of Trans Nzoia Private Public Partnership s -NEMA -WARMA - Beneficiary Community	- Well Conserved forest -Employment opportunities and Cash from tea used as buffer
Wetland s	-Wetland Reclamation for -Encroachment into wetlands; -Excessive extraction of water from the wetlands; -Severe climatic changes -Pollution; - Invasion by alien invasive species (Elephant grass in Saiwa Swamp);	Swamp areas in the County	-Restore and rehabilitate degraded wetlands; -Promote sustainable extraction and utilization of wetland resources; Promote environmental friendly alternative livelihood activities in line with the wise use principle; -Enhance public awareness on proper management of waste;	-Creating a buffer zone around all wetland ecosystems; -Restricting reclamation and conversion of wetlands; -Mapping, delineating and securing boundaries for all wetlands in the County; -Implementing the wetland conservation policy (observation of riparian reserve); -Undertaking research on appropriate utilization of wetlands;	Long term and Short term	County Governmen t of Trans Nzoia Private Public Partnership s -NEMA -WARMA - Beneficiary Community	-Sound Ecosystem -Sustainable utilization of wetlands

	-Ignorance on the value of wetlands.		-Support and promote enforcement of relevant regulations and laws related to sustainable wetland management;	-Initiating education training and public awareness activities on wetland resources.			
Rivers	-Encroachment into river riparian; -Excessive diversion of water for agricultural purposes; -Water pollution (-Deforestation; -Siltation and sedimentation of rivers; -Severe climatic conditions	All Rivers in the County	-Review and harmonies conflicting policies, legislations, regulations and standards governing the management of water catchment areas; -Initiate river calming activities; -Promote sustainable utilization of water sources; -Encourage good farming practices along river banks; -Rehabilitation of degraded river banks	-Revoking all illegally acquired ownership documents on land within river riparian; -Constructing small dams across rivers to minimize flooding; -Enforcing legislations, policies and regulations on water use; -Prohibiting agricultural activities along the river banks.	Long term and Short term	Government of Trans Nzoia Private Public Partnerships -NEMA -WARMA -Beneficiary Community	
Wildlife	-Poaching; -Human-Wildlife conflict; -Invasive wildlife species; -Destruction of natural habitats; -Climate change effects; -Diseases	Mt. Elgon National Park Saiwa National Park Forests, Rivers, streams Other bio-diversity hotspots in the County	-Protect and conserve wildlife habitats and migratory corridors; -Provide incentives for investment in sustainable tourism and wildlife conservation initiatives; -Protect endangered wildlife species; -Involve community participation in conservation activities -Develop a strategy to contain, control and mitigate alien and invasive species.	-Organizing awareness campaigns ; -Establishing private and community based conservation areas; -Maintaining and gazetting all natural habitats; -Reclaiming and restoring of all encroached habitats; -Prohibiting illegal trading on wildlife products; -Standardization of fishing nets -Undertaking research on alien and invasive wildlife species.	Short term	Government of Trans Nzoia Private Public Partnerships -NEMA -WARMA -Beneficiary Community	-Increased tourism -Protected bio-diversity

Governance

Planning Issue	Location	Strategies	Projects	Timeframe	Actors	Outcome
-Poor governance	-County wide	<ul style="list-style-type: none"> -Increase access to government services; -Promote Transparency and Accountability in service delivery; -Develop a framework for public participation; -Enhance consultations between national and County government; -Integrate all development agencies in decision-making; -Undertake capacity-building; -Staff rationalization and harmonization; 	<ul style="list-style-type: none"> -Strengthening powers vested in development committees/partners; -Manpower re-organization; -Recruiting relevant professionals in their areas of expertise; -Organizing community empowerment meetings and barazas -ICT training of all government officers; -Automating all County Management Systems; -Using evidences during evaluation on performance contracts; -Rehabilitating and constructing Sub-County offices; -Setting up of relevant urban management boards; -Organizing inclusive and mandatory public participation meetings; 	Short and Long term	<ul style="list-style-type: none"> -CGTN -National Government Development partners -Beneficiary community 	<ul style="list-style-type: none"> -Satisfactory completion of development projects -Improved institutional service delivery

CHAPTER 9.0 CAPITAL INVESTMENT PLAN (CIP)

9.1 Overview

The CIP seeks to provide a practical guidance on the implementation of the proposed developments in the County Physical and Land Use Development Plan. The CIP will assist Trans Nzoia County Government in budget preparation process as well as act as a tool for sourcing development funds from the national government, development partners and other agencies.

The County Physical and Land Use Development Plan has listed several sectoral projects that address the priority needs identified by various stakeholders in consultation with the County Physical and Land Use Development Plan technical team.

The identification of capital projects for investment and development was realized through an all-inclusive participatory process, involving all key stakeholders, as well as ensuring both relevance and affordability within the County Physical and Land Use Development Plan planning period.

The planning period of the County Physical and Land Use Development Plan is 10 years with the implementation period divided into two phases each with a five year duration. The planning period is divided into short and medium terms i.e. Phase 1 (2020-2025) and Phase II (2026-2030) otherwise referred to as short term and long term respectively in this document. The CIP constitutes sectoral implantation plan for the 10 year period as well as the various activities and institutions responsible for implementation.

9.2 CIP Implementation Matrix

Housing and Human Settlements

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
Procure land for affordable housing	✓		200M	CGTN NLC -KISIP) -State Department of Urban Development (UDD) -Development Partners -CoG -Business community -State Department of Survey/National Titling Centre
Informal settlement upgrading initiatives in Tuwan, Kipsongo, Mitume, Shimo la Tewa, Bosnia, Kisumu Ndogo, Shanti, Umoja (Mitume), Forkland (Matisi), Matopeni (Kwa-muthoni) and Chepchoina		✓	147M	
Continuation of the National Titling Program	✓		30M	
Classification and Delineation of urban boundaries in the County	✓		10M	
Preparation of Physical and Land Use Development Plans for all urban areas in the County for : Kwanza, Cherangany, Endebess, Saboti, and Suam Border towns	✓		50M	
Preparation of Physical and Land Use Development Plans for all urban areas in the County for : Kolongolo, Chepchoina, Maili Saba (Siyoi) and Sibanga towns	✓		28M	
Property rating and valuation	✓		6M	

Health

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
Completion of Trans Nzoia County Referral Hospital	✓		87.5M	-Ministry of Health -CGTN -Beneficiary Community -Ministry of Water -National Government -Development Partners
Completion and renovation of Kitale County hospital and Mt. Elgon hospital;	✓		10M	
Expansion and rehabilitation of all sub-County hospitals	✓		75M	
Rehabilitation of dispensaries in each ward;	✓		87.5M	
Installation of a reliable drug management system to track the movement of medical supplies from the County storage unit to the various health facilities;	✓		18.9M	
Establishing of mobile clinics across the County;	✓		25M	
Identification of suitable site and procurement of land for the establishment of public Mortuary, Cemetery and Crematorium in Saboti and Kwanza sub-counties.	✓		30M	

Education

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
Construction and equipping ECDE Centres ;	✓		240.75M	-Ministry of Education -CGTN -Beneficiary Community -Ministry of Water -National Government -Development Partners
Upgrading existing VTCs	✓		48M	
Establishing a modern public library in Kitale;		✓	100M	
Construction of adequate learning institutions for the physically challenged and visually impaired in the County;	✓		75M	
Procuring ICT equipment and infrastructure in educational institutions	✓		75M	
Identification and acquisition of land for establishing County Public University		✓	200M	
Establishing an Educational Scholarship Fund			63M	

Recreation

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
Renovating Kenyatta stadium	✓		50M	-CGTN -Sports Federations -Mt. Elgon Trust Development -Kenya National Sports Academy -Ministry of Sports, Culture and Heritage -NEMA
Rehabilitating and upgrading all existing sporting facilities in the County i.e. Kiminini, Sikhendu, Tuwan, Sitatunga, Cheranganyi and Matumbei wards;	✓		15M	
Constructing public sporting grounds in each ward;	✓	✓	125M	
Establishing a County sports talent centre in Kitale Municipality;		✓	17M	
Acquiring land for open green spaces particularly in Kwanza, Kiminini, Endebess, sabotu and Cherangany;	✓	✓	22.5M	
Upgrading existing open space in Kitale town	✓		7.2M	
Construction of Sub-County Social Halls in Cherangany and Saboti	✓	✓	15M	
Construction of High Altitude Training Centre in Chepchoina	✓	✓	6M	
Preparation of Strategic Urban Beautification Plans	✓		8M	
Securing and beautification of open spaces	✓		6M	

Economy and Livelihoods

Agriculture and Industry

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
Construction of grain drier in Endebess ;	✓		15M	-KALRO
Rehabilitation of slaughter houses- Kiminini County Slaughter Slab	✓		4.2M	-ADC
Procure land for irrigation schemes for small scale horticultural activities;		✓	45M	-Kenya Seed Company
Establishing a fish hatchery and cold storage facilities in Matisi Ward;	✓		46.2M	-Financial Institutions
Setting up apiaries in Kwanza, Cheranganyi and Saboti sub-counties	✓		5M	-Agro-chemical Companies
Rehabilitating and equipping the veterinary laboratory in the County	✓		10M	-National Government
Construction of Agricultural Training Colleges AMS/Keiyo;		✓	50M	-Media –e.g. West FM
Procuring dairy goats and holding farm trainings	✓		1.5M	-Breeding and Genetic Resources (North Rift Association, KACRG & ADC)
Construction of fishponds		✓	2M	-Kenya Veterinary Vaccine Production Institute (KEVEVAPI)
Procurement of fish cages and fingerlings	✓		2M	-Agricultural Society of Kenya. (ASK)
Rehabilitating fishponds and dams	✓		3.5M	

Industry

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
Construction of sugar milling plant in Marambach Saboti		✓	50M	- CGTN -National Government

Construction of cottage industries & crafts and mineral based industries in situ	✓		75M	-Kenya Institute Training -Kenya Industrial Estates -Kenya Industrial Research and Development Institute -Export Processing Zones Authority -Special Economic Zones Authority -Export Promotion Council Kenya National Chamber of Commerce and Industry Kenya Bureau of Standards National Universities Kenya Industrial Property Institute
Establishing Jua Kali sheds and incubation centers	✓		35M	
Identification and Mapping of Land for an Industrial Park	✓		49M	
Construction and equipping of maize milling and animal feed plant in Kwanza	✓		30M	

Trade and Commerce

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
Constructing new markets in Matisi, Bidii and Kapkarwa;	✓		16.8M	-CGTN -Kenya Investment Authority of Business -Micro and Small Enterprises Authority - Anti-Counterfeits Authority -Business Premises Rent Tribunal - National Government Ministries -Financial Institutions -Cooperatives -Development Partners - Kenya National Chamber of Commerce and Industry
Rehabilitating and completing of on-going market constructions in Gitawamba, Sibanga and Kimila	✓		16.89M	
Constructing an industrial and commercial centre at Suam Border;	✓	✓	5.63M	
Upgrading of automated business licensing and promotion of E-Commerce;	✓		2M	
Construction and equipping of modern wholesale and retail markets	✓	✓	16.9M	
Maintainance of markets at Kitale Municipal, Kiminini, Sikhendu and Endebeess	✓		5.7M	
Constructing incubation centres in all wards	✓	✓	25M	
Organizinng workshops, tradefairs, exhibitions nad conferences for enterprenursip training	✓		12M	
Mapping of markets and trading centres	✓		85M	

Tourism

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) B- Billion M- Million	ACTORS
Mapping out tourist attraction sites in the County;	✓		5M	-CGTN -UNESCO -National museums of Kenya -KWS -Tourist hotels and lodges -KTB -National government -Kenya tours and travel agencies -Development Partners
Rehabilitate and modernize the existing Kitale National Museum;	✓		10M	
Tarmac road E337 (Off from C45 road to Mt Elgon National Park (13.8Km)	✓		1.77Billion	
Tarmac road (E339) Kipsaina to Saiwa Swamp National Park (5Km)	✓		1.06 Billion	
Constructing cultural and heritage centers		✓	30M	
Branding Trans Nzoia as a tourist destination County;	✓		10M	
Classification of Tourist Hotels, Lodges and Restaurants	✓		5M	
Identification and preservation of cultural sites, shrones and monuments	✓		5M	
Support to community council of Elders	✓		6M	
Organizing cultural festivals annually	✓		10M	

Transport

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs.) B- Billion M- Million	ACTORS
Tarmacking of Kitale town - Marambach - Kisawai (D286) road -17.3km	✓		2.3B	-CGTN -National Government -KRB -KURA -KERRA -KENHA -NEMA -KPLC -Rural Electrification Authority
Tarmacking of Airstrip - Birunda- Saboti (D285/E320) road -13.3km	✓		1.7B	
Tarmacking of Burbaton - Saboti - Endebess (C44) road-27.38km	✓		3.5B	
Tarmacking of Kiminini - Ndalul (D284) road -5.38km	✓		689M	
Upgrading of Maili tatu - Big tree - Ndalul (E278) road- 12.66Km	✓		1.68B	
Upgrading of Maili saba (Eldoret B2) – Kaplamai road (8.3Km)	✓		1.1B	
Upgrading of road to Kapkoi (E337) via Soymining/Katuke-18.31Km	✓		2.43B	
Undertaking routine maintainance on all County Roads	✓		220M	
Incorporating NMT in major transport routes	✓	✓	75M	
Upgrading and rehabilitating Kitale airstrip;		✓	125M	
Upgrading the rail infrastructure;		✓	16.8B	-KENFIB -KIHBT
Constructing/renovating bus stops and terminuses in selected urban areas;	✓		500M	
Demarcating and protecting roads and railway reserves	✓		10M	
Paving of Roads in Kitale town	✓		250M	
Building culverts, bridges and drainage channels in all wards	✓		53M	
Building parking facilities in Sub-County Headquarters	✓	✓	20M	
Undertaking fires station improvements	✓	✓	9.2M	
Installation and Maintainance of high mast floodlights and street lighting infrastructure	✓		70M	
Constructung Boda Boda sheds in each ward	✓		25M	

Water

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs.) M-Million	ACTORS
Rehabilitation & improvement of Nzoia River scheme (Installation of a solar farm within the treatment plant to reduce water pumping costs);	✓		15M	-CGTN -National Government -Ministry of water and sanitation -Ministry of environment and Forestry -Lake Victoria North water service boards -Nzoia water and sanitation company (NZOWASCO) -NEMA -Water resources authority (WRA) -Kenya wildlife services
Upgrading and extending existing water pipeline network in the County i.e Kiboraa, Masaba, Kinondo, Chepkaitit-Kibuswa, Kapkarwa-Suam, Kisawai, Marambach, Birunda, Kwanza, Simatwet. Kapkoi-Kimoson, Bikeke, Kiminini, Waitaluk, Machewa, Matisi, Tuwan, Bondeni, Hillario, Konoin, Matumaini & Kitale	✓		134M	
Implement Mosongo-Tendet-Barsombe, Sendera, Kapkoi-Suwerwa, Kaptega-Chepchoina water gravity schemes	✓		29	
Reviving stalled community water schemes;	✓		75M	
Drilling and equipping of shallow wells and boreholes in the County;	✓		92M	
Erecting dykes along River Sabwani, Construct dams and water pans in Namanjalala	✓	✓	100M	
De-siltation and rehabilitation of dams one in each sub-County;	✓		25M	
Implementing Kiptogot-Kolongolo, Sosio-Teldet and Kapolet water schemes;	✓		21.3M	
Undertaking hydro-geological survey for underground water points;	✓		12M	
Initiating community programmes and campaigns promoting rain water harvesting;	✓		9M	
Protection of water catchment areas;	✓	✓	20M	
Buffering rivers, springs and wetlands in the County;	✓	✓	60M	
Organizing community awareness campaigns on sustainable use of water resources	✓		5M	

Waste management

Solid Waste

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs.) M- Million B-Billion	ACTORS
Identifying and establishing strategic waste transfer stations ;	✓	✓	100M	-CGTN National Government -NEMA -Development Partners
Constructing a waste recycling park in Bidii Area to handle all waste generated in the County;		✓	2B	
Rehabilitating Machinjoni dumping site to a recreational park;	✓	✓	750M	
Providing waste segregation bins at strategic locations within urban areas;	✓		150M	
Undertaking monthly clean-ups in all urban areas i.e.Kitale, Kiminini, Kwanza, Cherangany, Endebess and Saboti;	✓		100M	
Establishing of Biogas digesters in strategic locations for green energy use;	✓		196.5M	
Initiating Waste segregation Pilot Schemes	✓		100M	
Provide adequate and appropriate transfer system for segregated waste	✓		150M	
Organizing sensitization campaigns on sustainable waste management	✓		185M	

Liquid Waste

Programme/Project	Short Term (1-5)Years.	Long Term (5-10 Years)	Cost (Kshs.) M-Million	ACTORS
Mapping out suitable locations for siting of sanitary facilities in urban areas;	✓		76M	-CGTN -National Government -NEMA -Development Partners
Rehabilitating and upgrading sewer connectivity especially in urban areas;	✓		20M	

Rehabilitating pit latrines and septic tanks especially in the urban areas;	✓		150M	
Constructing ablution blocks and exhaustible toilets in all markets;	✓		50M	
Acquisition of an exhauster	✓		12M	

Energy

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs.) M- Million	ACTORS
pscaling rural electrification programmes in the County;	✓	✓	250M	-Rural Electrification Authority -KPLC -CGTN -National Government -Development Partners -Energy Regulatory Commission
Identifying and Acquiring land for establishing solar farms;		✓	40M	
Organizing sensitization campaigns on sustainable use of energy resources	✓		20M	

Communication and ICT

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs.) M- Million B-Billion	ACTORS
Developing ICT parks in each sub County;		✓	15M	-National Government -CGTN -Mobile service providers -Development Partners -KPLC -NEMA
Extending fibre-optic cables to Kiminini, Kwanza, Endebess, Saboti and Cherangany;		✓	3B	
Establishing WIFI Hotspots;	✓		20M	
Identifying and installing Base Transceiver Stations in areas with poor network coverage;	✓	✓	1.1B	
Organizing ICT capacity trainings;	✓		3M	

Establishing Information Database Management System	✓		120M	- Kenya Communication Authority
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Environment and Natural Resources

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs) M-Million	Actors
County Afforestation Initiative in all wards	✓		25M	-CGTN -Beneficiary Community -National Government -NGOs/CBOs -KFS -WARMA -NEMA
Mapping, delineating and securing boundaries for all forests, wetlands and game reserves in the County	✓	✓	15M	
Purchasing coffee and Teal Seedlings for buffering MT. Elgon and Kapolet forests respectively	✓	✓	2.2M	
Provision of free tree seedlings to farmers	✓		3.2M	
Organization sensitization campaigns on afforestation projects and initiatives	✓		9M	
Provision of disaster training	✓		4M	
Reclaiming and restoring of all encroached environmentally forested, wetlands and river riparian lands				
Refilling open abandoned quarries particularly those in Lukhome, Saboti, Mowlem and Chepchoina areas	✓	✓	24M	
Riverbank protection	✓	✓	8M	

Governance

Programme/Project	Short Term (1-5)Years.	Medium Term (5-10 Years)	Cost (Kshs) M-Million	Actors
Constructing County Ultra-Modern Office Complex	✓		30M	-CGTN -Beneficiary Community -National Government -NGOs/CBOs -KFS
Completing the County Governor's residence	✓		10M	
Constructing Sub-County Administration Offices	✓		37.5M	
Restructuring and re-organizing County Government Departments	✓		9M	
Human Resource restructure and re-organization	✓		10M	

Modernizing of record management system	✓		4M	-WARMA -NEMA
Establishing and equipping County Disaster Management Unit	✓		31.8M	
Public participation and Civic education	✓		10.5M	
Coordinating and liaising among different sectors in the department	✓		12M	

9.3 Funding Options

Implementation of projects requires funds and it is the responsibility of the Trans Nzoia County Government to come up with various means to raise the funds required. One of the main objectives of a CIP is to identify potential sources for funding of the identified projects in the County Physical And Land Use Development Plan.

The main sources of funds in the County include:

- Loans from local financial institutions
- Floating infrastructure bonds for large infrastructure projects
- External funding especially to finance capital projects
- Embracing Public-Private Partnerships (PPPs) in infrastructure development and other ventures that require heavy capital outlays

9.4 Strategies for financing the proposed projects

Given the huge amount of financing required to undertake many of the proposed projects, the County Government will deploy strategies for raising the needed financial resources over and above the national government transfers and grants. The strategies will include sourcing for funds through;

- Loans from both local and international financial institutions, and issuance of bonds.
- Local Community (beneficiary) contribution either in cash or Kind.
- Grants from external donors: DFID, JAICA, SIDA, CIDA and USAID. The European Commission, World Bank, UNDP, UN-Habitat and UNICEF
- Private Public Partnerships
- Asset Financing

Apart from the above mentioned ways of improving revenue in the County, the County Physical and Land Use Plan also proposes the following strategies to develop an efficient and sustainable system that will further raise the revenue for the County:

- Capacity Building & Enhanced Revenue Administration. Due to the prevailing capacity gaps especially on the ICT skills, revenue administrators and collectors need to be

supported through regular capacity building on new and emerging trends in order to keep abreast with the new ways and systems as well as international standards.

- An up to date Valuation roll with all property information and all ratable properties within the County's boundaries should be instituted and regularly updated.
- Preparing an inventory for the County Assets.
- Enforcement of the By-Laws and Regulations to ensure that the gazette fees and charges are collected.
- Strengthening Institutional Framework by giving the institutions mandated to collect revenues legal backing to strengthen coordination, and avoid duplication of efforts.
- Integrating an e-governance platform which will allow full integration of the consolidated revenue data base and consequently linked with the Integrated Finance Management Information System (IFMIS) to enhance better revenue collection and financial management

CHAPTER 10.0 CONCLUSION AND RECOMMENDATION

This Plan addresses broad development issues in the County; mid-term horizon, identification of basic development axes, strategic gates, corridors, resources, conservation, production areas, growth nodes and critical spatial issues, investigation, synthetic analysis and determination of alternative or flexible options, programmes, plans projects and concentration on implementation processes, procedures and methods spanning the Plan period (2020 -2030).

The Plan focuses on how the County's: Assets of place, space and position; opportunities of context; strengths of the territorial structure; people's spatial practices will impact: liveability in urban and rural areas; productivity in rural areas; diversification and improvement of livelihoods; protection and conservation of environmental assets and heritage; promotion of cultural diversity and improvement in access to infrastructure and services within Trans Nzoia County and beyond.

The key aspects of governance of Trans Nzoia County Physical and Land Use Plan are; Planning, Implementation and Control. Planning is looking to the future and determining plans of action for the activities that appear to be necessary to pursue certain development proposals. Implementation entails assigning plans to the appropriate individuals, overseeing the execution of the planned activities and providing necessary motivation and leadership. Control entails measuring the performance activities in relation to those that were planned. Indeed, what is measured gets done.

The fruition of Trans Nzoia County Physical and Land Use Plan (2020-2030) will be realized through; promotion of citizen engagement in shaping, implementing and monitoring the Plan, crafting policies and laws that outline the Plan's deliverables and framework for the actualization, strengthening and aligning internal structures and systems to integrate spatial plan as part of service delivery, mobilizing partnerships with the private sector and civil society geared towards investing in the spatial plan and ensuring that public officers uphold ethical conduct in enforcing the spatial plan.

Going forward, good governance and sound public management are preconditions for the implementation of sustainable development policies in the proposed County Physical and Land Use Plan. Importantly, The Trans Nzoia County Physical and Land Use Plan must be implemented in a social and economic context which requires an understanding of the capability of both people and institutions: and especially the cognitive understanding people have of land uses in different parts of the County. Simply it is essential to align this County Physical and Land Use Development

Plan with how people have actually thought about and related, are still and will continue to relate to land in the plan period (2020-2030).

References

Cities Alliance. (2007). *Liveable cities: the benefits of urban environmental planning: a Cities Alliance study on good practices and useful tools*. Washington, D.C.

Colony and Protectorate of Kenya Annual Report 1931-1961, Nairobi: Government Printer.

County Government of Trans Nzoia, Trans Nzoia County Integrated Development Plan 2013-2017

County Government of Trans Nzoia, Trans Nzoia County Integrated Development Plan 2018-2022

CSIR Building and Construction Technology. (2000). *Guidelines for human settlement planning and design*. Pretoria.

GoK (2010), The constitution of Kenya 2010 Kenya Gazette; Government Printer, Nairobi
Kenya Vision 2030

GoK (2019), The Physical and Land Use Planning Act of 2019; Government Printer, Nairobi

GoK (2012), County Government Act Kenya Gazette; Government Printer, Nairobi

GoK (2012), The Public Health Act Cap. 242; Government Printer, Nairobi

GoK (2015), Environmental Management and Coordination Act, Government Printer, Nairobi

GoK (2006), Environmental Management and Waste Management Regulations; Government Printer, Nairobi

GoK (2012), The Penal Code (Cap 63); Government Printer, Nairobi

GoK (2007), The Occupational Safety and Health Act; Government Printer, Nairobi

GoK (2012), Wildlife Management and Conservation Act ; Government Printer, Nairobi

GoK (2012), Urban Areas and Cities Act; Government Printer, Nairobi

GoK (2012), Land Act No. 6; Government Printer, Nairobi

GoK (2016), Forest Conservation and Management Act; Government Printer, Nairobi

GoK (2016), Water Act; Government Printer, Nairobi

GoK (2013), Agriculture, Fisheries and Food Authority Act; Government Printer, Nairobi

Government of the Republic of Kenya (2007a), Kenya Vision 2030. Office of the President, Nairobi.

Human Settlements in Kenya, A Strategy for Urban and Rural Development, Physical Planning department, Ministry of Lands and Settlement, 1978

Kenya National Bureau of Statistics (KNBS) and Society for International Development (SID). (2013). *Exploring Kenya's Inequality: Pulling Apart or Pooling Together*. Nairobi: KNBS and SID.

Kenya National Bureau of Statistics (KNBS). (2010). Kenya Economic Survey 2010 Highlights. Nairobi: KNBS.

Kenya National Bureau of Statistics (KNBS). (2011). 2009 Kenya Population and Housing Census. Nairobi: KNBS

Kenya Water Towers Agency (KWTa) .2019, Policy Brief: Cherangany Hills Water Tower

Kenya Water Towers Agency (KWTa) .2019, Policy Brief: Mt.Elgon Water Tower

Langen, M. de, & Tembele, R. (2001). *Productive and liveable cities: guidelines for pedestrian and bicycle traffic in African cities*. Lisse: Balkema.

Martin, B. (1969). Public participation in regional planning. Place of publication not identified: Mit Press.

Ng'wandu, P. Y. (2008). *Challenges and prospects for a new Nile water agreement: the Nile River Basin Commission*. Nairobi, Kenya: African Centre for Technology Studies.

Olfaty, F., Mahmudi, A. M., & Morad, A. A. (2015). *Liveable cities: integrating green spaces in urban planning*. Saarbrücken: LAP LAMBERT Academic Publishing.



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