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ITEKA RYA MINISITIRI N° 005/24/10/TC RYO KU WA 22/08/2024 RISHYIRAHU IGISHUSHANYO MBONERA CY'IMIKORESHEREZE N'IMITUNGANYIRIZE BY'UBUTAKA CY'AKARERE KA HUYE Minisitiri w'Imari n'Igenamigambi; Ashingiye ku Itegeko Nshinga rya Repubulika y'u Rwanda; Ashingiye ku Itegeko n° 27/2021 ryo ku wa 10/06/2021 rigenga ubutaka, cyane cyane mu ngingo yaryo ya 59; Inama y'Abaminisitiri yateranye ku wa 11/09/2023 imaze kubisuzuma no kubyemeza; ATEGETSE: <u>Ingingo ya mbere: Ishyirwaho</u> Hashyizweho igishushanyo mbonera cy'imikoreshereze n'imitunganyirize by'ubutaka cy'Akarere ka Huye.	MINISTERIAL ORDER N° 005/24/10/TC OF 22/08/2024 ESTABLISHING LAND USE AND DEVELOPMENT MASTER PLAN OF HUYE DISTRICT The Minister of Finance and Economic Planning; Pursuant to the Constitution of the Republic of Rwanda; Pursuant to Law n° 27/2021 of 10/06/2021 governing land, especially in Article 59; After consideration and approval by the Cabinet, in its meeting of 11/09/2023; ORDERS: <u>Article One: Establishment</u> The land use and development master plan of Huye District is established.	ARRÊTÉ MINISTÉRIEL N° 005/24/10/TC DU 22/08/2024 ÉTABLISSANT LE SCHEMA DIRECTEUR D'UTILISATION ET D'AMÉNAGEMENT DES TERRES DU DISTRICT DE HUYE Le Ministre des Finances et de la Planification Économique; Vu la Constitution de la République du Rwanda ; Vu la Loi n° 27/2021 du 10/06/2021 portant régime foncier, spécialement en son article 59; Après examen et adoption par le Conseil des Ministres, en sa séance du 11/09/2023; ARRÊTE: <u>Article premier: Établissement</u> Il est établi le schéma directeur d'utilisation et d'aménagement des terres du District de Huye.
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<u>Ingingo ya 2: Ibigize igishushanyo mbonera</u> Igishushanyo mbonera cy'imikoreshereze n'imitunganyirize by'ubutaka cy'Akarere ka Huye, kigizwe n'ibi bikurikira: (a) raporo rusange y'igishushanyo mbonera cy'imikoreshereze n'imitunganyirize y'ubutaka cy'Akarere; (b) amakuru ndangahantu y'igishushanyo mbonera; (c) amabwiriza agenga ishyirwa mu bikorwa ryacyo.	<u>Article 2: Composition</u> The District land use and development master plan of Huye District is composed of the following: (a) the main report of the District land use and development master plan; (b) zoning plan; (c) zoning regulations.	<u>Article 2: Composition</u> Le schéma directeur d'utilisation et d'aménagement des terres du District de Huye est composé de ce qui suit: (a) le rapport général du schéma directeur d'utilisation et d'aménagement des terres du District; (b) le plan de zonage; (c) le règlement de zonage.
<u>Ingingo ya 3: Itangazwa</u> (1) Raporo rusange y'igishushanyo mbonera cy'imikoreshereze n'imitunganyirize y'ubutaka cy'Akarere ka Huye iri ku mugereka w'iri teka. (2) Amakuru ndangahantu y'igishushanyo mbonera cy'akarere ka Huye n'amabwiriza agenga ishyirwa mu bikorwa ryacyo bitangazwa ku rubuga rw'ikoranabuhanga rwagenwe n'urwego rufite imicungire	<u>Article 3: Publication</u> (1) The main report of the land use and development master plan of Huye District is annexed to this Order. (2) The zoning plan and zoning regulations of the land use and development master plan of Huye District are published on the website designated by the organ in charge of land use management.	<u>Article 3: Publication</u> (1) Le rapport général du schéma directeur d'utilisation et d'aménagement des terres du District de Huye est annexé au présent arrêté. (2) Le plan de zonage et le règlement de zonage du schéma directeur d'utilisation et d'aménagement des terres du District de Huye sont publiés sur le site web désigné par l'organe ayant l'utilisation et la gestion des terres dans ses attributions.

n'imikoreshereze by'ubutaka mu nshingano. <u>Ingingo ya 4: Igihe igishushanyo mbonera kimara</u> Igishushanyo mbonera cy'imikoreshereze n'imitunganyirize by'ubutaka cy'Akarere ka Huye gikurikizwa kugeza mu 2050. <u>Ingingo ya 5: Ivugururwa</u> (1) Igishushanyo mbonera cy'imikoreshereze n'imitunganyirize by'ubutaka cy'Akarere ka Huye gishobora kuvugururwa cyose nyuma y'imyaka icumi cyangwa ikindi gihe bibaye ngombwa uherye ku muni gishyiriweho. (2) Ivugururwa ry'igishushanyo mbonera cy'imikoreshereze n'imitunganyirize by'ubutaka cy'Akarere ka Huye rishobora kandi gukorwa rireba agace gato igihe bibaye ngombwa bitabangamiye iterambere ry'utundi duce kandi hakurikijwe amategeko abigenga. <u>Ingingo ya 6: Ingingo y'ururimi</u> Iri teka ryateguwe mu rurimi rw'Ikinyarwanda.	<u>Article 4: Period of validity</u> The land use and development master plan of Huye District is implemented until 2050. <u>Article 5: Revision</u> (1) The land use and development master plan of Huye District may be comprehensively reviewed after ten years or whenever considered necessary from the date of its establishment. (2) The revision of land use and development master plan of Huye District may also be done on a specific area, when considered necessary, without compromising the development of other areas in accordance with relevant laws. <u>Article 6: Language provision</u> This Order was drafted in Ikinyarwanda.	<u>Article 4: Période de validité</u> Le schéma directeur d'utilisation et d'aménagement des terres du District de Huye est mis en œuvre jusqu'en 2050. <u>Article 5: Révision</u> (1) Le schéma directeur d'utilisation et d'aménagement des terres du District de Huye peut être entièrement révisé après dix ans ou chaque fois que cela est jugé nécessaire à partir du jour de son établissement. (2) La révision du schéma directeur d'utilisation et d'aménagement des terres du District de Huye peut également être effectuée sur une zone spécifique, en cas de besoin, sans compromettre le développement des autres zones conformément à la législation en la matière. <u>Article 6: Disposition linguistique</u> Le présent arrêté a été rédigé en Ikinyarwanda.
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<u>Ingingo ya 7: Gutangira gukurikizwa</u> Iri teka ritangira gukurikizwa ku muni ritangarijweho mu Igazeti ya Leta ya Repubulika y'u Rwanda. Agaciro karyo gahera ku wa 11/09/2023.	<u>Article 7: Entry into force</u> This Order comes into force on the date of its publication in the Official Gazette of the Republic of Rwanda. It takes effect as of 11/09/2023.	<u>Article 7: Entrée en vigueur</u> Le présent arrêté entre en vigueur le jour de sa publication au Journal Officiel de la République du Rwanda. Il prend ses effets à partir du 11/09/2023.
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Kigali, 22/08/2024

(sé)

MURANGWA Yusuf

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Minister of Finance and Economic Planning

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UMUGEREKA W'ITEKA RYA MINISITIRI N° 005/24/10/TC RYO KU WA 22/08/2024 RISHYIRAHU IGISHUSHANYO MBONERA CY'IMIKORESHEREZE N'IMITUNGANYIRIZE BY'UBUTAKA CY'AKARERE KA HUYE	ANNEX TO MINISTERIAL ORDER N° 005/24/10/TC OF 22/08/2024 ESTABLISHING LAND USE AND DEVELOPMENT MASTER PLAN OF HUYE DISTRICT	ANNEXE À L'ARRÊTÉ MINISTÉRIEL N° 005/24/10/TC DU 22/08/2024 ÉTABLISSANT LE SCHÉMA DIRECTEUR D'UTILISATION ET D'AMÉNAGEMENT DES TERRES DU DISTRICT DE HUYE
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IGISHUSHANYO MBONERA CY'IMIKORESHEREZE N'IMITUNGANYIRIZE BY'UBUTAKA CY'AKARERE KA HUYE	THE LAND USE AND DEVELOPMENT MASTER PLAN OF HUYE DISTRICT	E SCHÉMA DIRECTEUR D'UTILISATION ET D'AMÉNAGEMENT DES TERRES DU DISTRICT DE HUYE
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HUYE

District Land Use Plan 2023-2050



2023

Report Title	Huye District Land Use Plan 2023 - 2050
Project title	Huye District Land Use Plan Report
Owner	Huye District
District Council Approval	24 th September 2021
Cabinet Approval	11 th September 2023

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LIST OF ACRONYMS

BPMIS:	Building Permitting Management Information system
BRT:	Bus Rapid Transit
CCP:	Continuous Compliant Planning (CCP)
DDS:	District Development Strategy
DHS:	Demographic and Health Survey,
DLUP:	District Land Use Plan
DU:	Dwelling Unit
EDPRS:	Economic Development and Poverty Reduction Strategy
EIA:	Environmental Impact Assessment
ENR:	Environment and natural resources
GDP:	Gross Domestic Product
GDP:	Gross Domestic Product
GGCRS:	Green Growth and Climate Resilient Strategy
GGGI:	Global Green Growth Institute
GIS:	Geographic Information System
GoR:	Government of Rwanda
GPS:	Geographic Positioning System
HH:	House Hold
HIC:	Higher Income Country
ICT:	Information Communication and Technology
IDP:	Integrated Development Program
LED:	Local Economic Development
LUCA:	Land Use Category
LUDP:	Local Urban Development Plan
MCC:	Milk Collection Center
MDGs:	Millennium Development Goals
NLUDMP:	National Land Use and Development Master Plan
NSTI:	National Strategic Transformation
PHC4:	Rwanda Population and Housing Census
PUSH:	Population Urbanization Settlement and Housing
RAB:	Rwanda Agriculture Board
RDB:	Rwanda Development Board
REMA:	Rwanda Environment Management Authority

RHA:	Rwanda Housing Authority
RLMUA:	Rwanda Land Management and Use Authority
RTDA:	Rwanda Transport Development Agency
SDGs:	Sustainable Development Goals
SME:	Small and Medium Enterprise
SUDS:	Sustainable Urban Drainage Systems
TTC:	Teacher Training College
TVET:	Technical and Vocational Education and Training
UMIC:	Upper Middle-Income Country
UR:	University of Rwanda
WASAC:	Water and Sanitation Corporation

EXECUTIVE SUMMARY

Huye DLUP 2023-2050 is one of the most prioritized plans that guides the district development towards efficient land use planning and management while being aligned and complying with NLUDMP 2020-2050.

It is a District spatial development plan that is structured around the following thematic areas:

- Population, Urbanization, Settlements, and Housing (PUSH).
- Spatial Economy (Employment, manufacturing, industry, mining).
- Agriculture.
- Environment and Natural Resources (land, forestry, water resource, mining resource, climate change, environment).
- Tourism and Conservation.
- Transportation
- Infrastructure - Public Utilities (Water, Energy, ICT)
- Public Services (Health, Education, Public Administration, Religious, Recreational facilities, etc)
- Implementation, Compliance, and Monitoring strategy and guidelines.

The first version of Huye DLUP that was adopted was that of 2013-2018 and Huye District Urban Development Plan 2012. After conducting an assessment and evaluation on implementation of different District land use plans by NLA jointly with key stakeholders, it was found that Huye DLUP was not in harmony with the Vision 2050, NLUDMP, NST1, the Law N° 27/2021 of 10/06/2021 Governing Land in Rwanda, the new Secondary City and satellite cities approach, Green Growth Policies, and sector databases provided by national authority custodians.

In addition, the first version of Huye DLUP 2013-2018 had been outdated as it was implementing EDPRS II and NLUDMP 2010-2020, hence the need to review it as the way to comply with the NLUDMP 2020-2050. The review and elaboration of Huye DLUP was conducted by the Huye District in close collaboration with National land Authority (NLA) and other potential stakeholders including Global Green Growth Institute (GGGI) and experts from Lantmateriet Project.

Generally, in densely populated countries like Rwanda where there is a shortage of land, land users are in permanent competitions and conflicts. Therefore, a determined solution for the allocation of land, in both short and long run, can be achieved through economic and spatial considerations. Hence, the main target of Huye DLUP 2023-2050 is to find the best land-use

balance sheet based on spatial and economic analysis as instructed by the National Land Use and Development Master Plan 2020-2050.

The total land area for Huye District is 581.5 SqKm to be allocated for various future uses including agriculture, forestry, water bodies, Swampland and buffers, settlement etc. Land allocated for agriculture use in Huye District in 2050 is 274.58 SqKm, which is 47.089 % of District land size. Residential including urban and rural settlements: 66.10 SqKm, which equals to 11.336%, Forest 130.14 SqKm which equals to 22.31%, Swamplands and Swampland buffers 45.7 SqKm making 7.8% of District land size according to District Land Use Balance sheet etc.

Huye DLUP 2023-2050 for the period 2023-2050 will encompass various land consumers, including agriculture lands, conditional agriculture in Swamplands, and grassland for livestock, forest plantations, urban areas, rural settlements, industry, roads, and airfields.

The category of settlements contains secondary land users: housing, commerce & trade, public services, and financial & business services, open spaces, parks & sports, tourism, urban farming, urban forest, industrial parks, infrastructure utilities, streets, etc. and other urban environmental constraints.

The proposed balance sheet attains equilibrium by effectively distributing resources across Natural resources, Arable lands, Built-up areas, and Roads, ensuring a balanced and sustainable approach.

Agricultural land in Huye District will continue to play a dual role for creating income and foreign currency through the export of agricultural products and in producing food for the local population.

Given the shortage of land for Huye District as the key country challenge, a central question to be asked is whether it is possible to feed the population which is expected to grow from 365,889 in 2020 to 979,500 in 2050 (30 years from now) given the limited arable land.

It is the central question that this report addresses. An affirmative answer is dependent on the following conditions:

- The existing agricultural land would be protected against scattered housing and degradation due to soil erosion and improper management along the period of 2023-2050.
- All means will be taken to improve agricultural productivity and crops' yields: farmland consolidation, irrigation projects, drainage projects, construction of terraces on hills'

slopes; instruction for farmers, agricultural education, research, and development at the regional level.

- Most of all, climate-resilient options should be implemented, such as improved bench terraces, agroforestry, improved seeds, drainage, irrigation on the hillside, and marshlands.
- The efforts for agricultural development should concentrate on the best suitable land for agriculture.

The plan guides the future Huye District settlement by the following principles:

- The main area of Huye city covering 69 Km², with an expected urban population of 302,500 by 2050 and 550,000 by 2050.
- 3 Rurban settlements were proposed for Huye District that will continue to be developed namely Arrete-Kinazi, Rusatira and Karambi as well as a part of Save/Gisagara rurban with an expected population of 73,971 by 2050 while covering 12,644 Km².
- 159 Rural settlements covering 49.12 Km², with the population of 190,000 by 2050.

S/N	Urban Rurban Areas & Rural Settlement Site	Sectors	Area (KM ²)
1	Huye City	Ngoma, Tumba, Mukura, Mbazi, Huye	59.52
2	Arrete-Kinazi	Kinazi	3.58
3	Rusatira	Rusatira, Kinazi	3.85
4	Karambi	Kigoma	1.42
5	Save (Huye part)	Ruhashya	1.11
6	Rural Settlement Sites 118	14 Sectors	49.12
	Total area		125.6

Table 1: Huye District urban-rurban settlement sites

- Future Transportation will provide the following components as guided by NLUDMP 2020-2050:
 - ✓ National Road, 22m from the center line.
 - ✓ District road class1, 12m from center line
 - ✓ District roads class2, 12 m from center line.
 - ✓ Other roads (Sector roads, Cell roads, feeder roads), 12 m from center line;

- In order to avoid settlement sprawl, no rural settlement site should be allowed in less than 2 Km from Huye Secondary City;
- Private forests of less than 0.5 Ha are not planned as forest as they can be removed at any time by their owners without asking for permission. (Article 39 of Law N° 47bis/2013 of 28/06/2013 Determining the Management and Utilization of Forests in Rwanda);
- Swamps should be protected from buildings by a buffer zone of 20 meters (Article 42 of Law N° 48/2018 of 12/08/2018 on Environment);
- Some rivers must be protected with a ten (10) meter buffer zone from the furthest reaches of successive floodwater while other rivers have to be protected with a five (5) meter buffer zone from the furthest reaches of successive floodwater.

1 INTRODUCTION

1.1 BACKGROUND OF HUYE DISTRICT LAND USE PLAN

Aligned with the Government of Rwanda’s Vision 2050, there exists an ambitious objective to propel urbanization forward while concurrently augmenting the average annual growth rates of the gross domestic product (GDP) and the GDP per capita. The realization of this vision promises Rwandan citizens a heightened quality of life, characterized by robust social protection measures, enhanced healthcare services, effective disaster risk reduction strategies, and bolstered food security initiatives. Integral to this vision is the strategic development of urban infrastructure, harmonized with efforts aimed at biodiversity conservation, thereby mitigating citizens’ vulnerability to the adverse impacts of climate change.

Aligned with Rwanda’s aspirations to elevate the economy to an upper middle-income status by 2035, targeting a GDP per Capita of \$4,035, and ultimately transitioning to a high-income economy by 2050, characterized by a GDP per Capita of \$12,476, fostering food security, and nurturing a knowledge-based economy, underscores the imperative for optimal land utilization.

Rwanda encompasses a land area of approximately 26,338 km², inclusive of water bodies. The population stood at around 13.2 million as of 2022, experiencing a growth rate of nearly 2.3 percent annually. Urbanization is on the rise at a rate of 7.5 percent, while agricultural production constitutes over 36.7 percent of export earnings.

Over the past twenty-five years, the demand for land in Rwanda has intensified, primarily due to the repatriation of Rwandan refugees from various nations. Addressing the settlement needs of this population received significant emphasis, leading to the subdivision of land and economic rehabilitation efforts. This dynamic is compounded by Rwanda’s inherently rugged terrain and rapid population expansion. Urbanization stands out as a pivotal catalyst for economic advancement, and in line with Vision 2050, the Rwandan government is committed to accelerating urban development while bolstering average annual GDP growth and per capita GDP.

Huye District approved its District Land Use Plan version 2014, and District Local Urban Development Plan (LUDP) of 2015. These tools guided land development throughout the district while implementing the National Land Use and Development Master Plan 2010-2020, vision 2020 and EDPRS II.

Since 2018, the government of Rwanda has engaged in reviewing the National Land Use and Development Master Plan 2010-2020 under which the assessment and evaluation on its implementation conducted in 2016-2017 indicated some bottlenecks that raised the urgent need

to update it. The newly reviewed and updated National Land Use and Development Master Plan 2050 that was approved by the Cabinet in July 2020 has the overall objective of finding solutions for those issues identified and generating specific guidelines for implementation and primarily to design a new and updated spatial structure for the nation. All settlements, urban, rural, big or small, including Kigali and the group of secondary cities, are part of the national spatial puzzle.

According to the directives of the NLUDMP 2020-2050, each sector, which has a spatial dimension and requirement for land allocations for the sectoral activities, is recommended to update its master plan and strategies following NLUDMP 2020-2050 guidelines. All land requirements are explicitly aligned with the national plan on the one hand and based on quantitative programs for its operations.

NLUDMP 2020-2050, further still proposes the district land use plans cluster, a new concept of District Land Use Plans. This concept has the advantage of build-in compliance by simultaneous preparation of a package of plans at the district level and Kigali City Level. The District Land Use Plan Cluster includes urban and rural zoning plans. It is detailing at the same time District level zones (DLUP) by integrating urban land use zoning (cities and rural centers) and rural zoning which includes mainly the entire Imidugudu complex, agriculture zones, forestry and infrastructures in the district.

The District Land Use Plan cluster should comply with green principles and climate resilient strategies to become a District green land use plan. Elaboration of any master plan in the district should be done as one package of Local Urban and Rural areas plans together to form integration at the district level. The product will be One District Detailed Zoning Map with zoning regulations, useful for cadastral, construction permitting systems and for further local detailed physical planning. With enforcement and smart permitting services, this type of planning will play a big role in eliminating the settlement sprawl, thus increasing consolidation.

In Huye District, as well as in all other districts, it is imperative to establish a statutory phasing of implementation for each land-use plan. The leading idea in phasing is Tiling, which prevents random or remote locations of development. Each new phase must be attached to the previous stage geometrically. A five years' phase is recommended to be used by all district land use plans and Kigali City master plan. The revision of Huye DLUP 2023-2050 has been done in the framework of aligning and complying with the NLUDMP 2020-2050.

1.2 SCOPE AND OBJECTIVE(S)

1.2.1 Scope

The scope of this assignment of elaborating, reviewing, and updating Huye DLUP focuses on the entire District, making up both urban and rural components. Huye DLUP has a planning horizon of 2023-2050, with a halfway 2035. It is elaborated for the entire District and covers all thematic areas for which land size is allocated for attainment of sectoral development; but focusing on the urbans and rural components.

1.2.2 Objective(s)

The main objective of Huye District Land Use Cluster is to implement and comply with the NLUDMP 2020-2050 enabling rational land utilization and management as well as sustainable rural development integrating the rural land use planning as a new component introduced by the updated NLUDMP 2020-2050.

The specific objectives of Huye DLUP Cluster are the following:

1. To allow incremental development of commercial and mixed-use buildings following the investment capacity of investors and developers but in respect of clear guidelines;
2. To integrate Micro-Enterprise Zones in housing areas, mixed with social infrastructure and green open spaces;
3. To ensure reduction of zones dedicated to single family housing, promotion of densification with incentives to modify building typologies and densities;
4. To facilitate vertical and horizontal incremental development, allowing phased construction of mixed use, residential or commercial buildings;
5. To promote upgrading and or redevelopment in high land value areas where land pooling approach will be effective due to cross financing mechanism;
6. To preserve more parts of Agricultural Land by encouraging land consolidation even in Rural Areas;
7. To provide for the preservation of desirable open space, historic related resources, water resources, Swamplands, forests, and other environmentally important lands
8. To facilitate adequate provisions for community utilities and facilities such as transportation, water, sewerage, schools, parks, and other public requirements.

1.3 DISTRICT DESCRIPTION

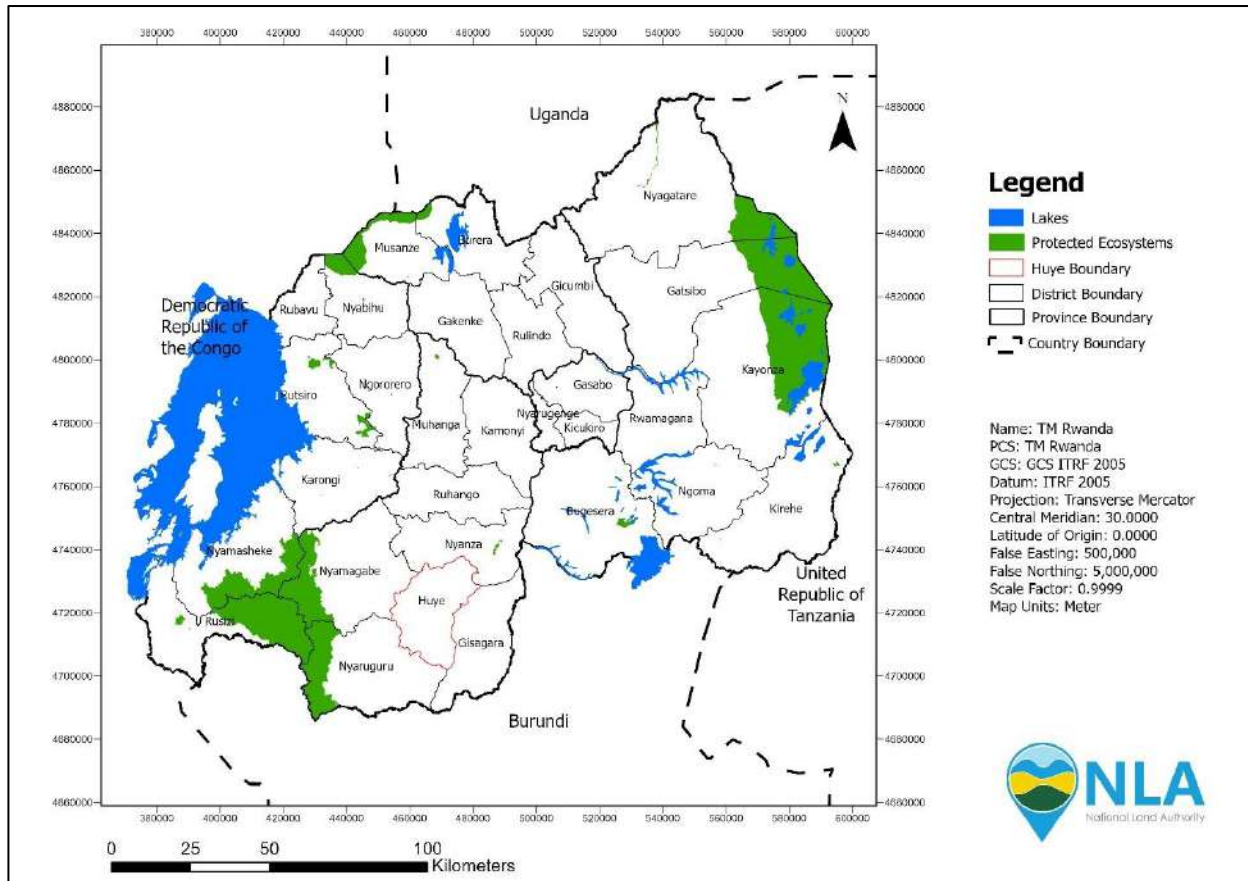
1.3.1 Geographical location of the District

Huye District is one of the eight districts comprising the Southern Province of Rwanda. The district borders four Districts; Nyanza in the North, Gisagara in the East and South, Nyaruguru in the Southwest, and Nyamagabe in the Northwest. Moreover, the District Urban Center is strategically located along Kigali-Rusizi-Bukavu/DRC and Kigali-Kanyaru-Burundi Corridors, making the district potential to serve as a transit for goods and services across the South and South-West region.

Surface Area	581.5 km ²
Number of Sectors	14
Number of Cells	77
Number of Villages	509

Table 2: Brief description of Huye District

As per the NLUDMP 2020-2050, Huye core urban area is classified among the eight secondary cities that will serve as peripheries of the country and play the role of cross-border opportunities and trade.



1.3.2 Hydrography

1.3.3 Soil and erosion

The soils of the Central plateau are better as they are composed of Kaolisol type, and fertile when the erosion has not impacted it and their humus layer has been conserved. As a consequence of topography in Rwanda, Huye District ranges in the region where erosion control is required.

1.3.4 Topography

and develops into a steep hilly and mountainous area moving towards the West and North-West. The hilly landscape of the district ranges between 1450m and 1700m. The western part comprises the high undulating mountains including the famous Huye Mountain with an altitude of more than 2000 meters.

1.3.5 Climate and Rainfall

Huye District is characterized by sub equatorial temperate climate with an average temperature fluctuating around the 20°C. Like in the rest of the country, it has four climatic seasons: long rainy season (Mid-February –May), long dry season (June-Mid September), short rainy season (Mid-September-December) and short dry season (January- Mid February). The average annual rainfall is 1160 mm.

1.3.6 Flora and Fauna

Natural vegetation has disappeared due to agricultural pressure and has been replaced by man-made vegetation dominated by food plants. The largest part of the land is under cultivation for food plants such as rice, banana, beans, maize, cassava, and coffee.

Generally, Huye District has insufficient forest cover where up to date forest is estimated to cover 10% of the district surface, while the arboretum forest around the University of Rwanda (UR) plays an important role. However, some of the existing forests require reforestation. Wild animals are found only in RAB Songa Station zone.

1.3.7 District SWOT Analysis

To perform a district land use planning, it was found relevant to identify its strengths, opportunities, weaknesses as well as the threats that are to be taken into consideration. They have been developed based on different economic sectors which are: agriculture, private sector development and youth employment, transport, energy, water and sanitation, urbanization and rural settlement, ICT, Environmental and natural resources, financial sector development, social protection, health, education, Governance, and decentralization. It finally included sport and culture as components of social development. Below is the detailed analysis:

sectors	Strengths-Weaknesses- Opportunities and Threats
Agriculture	Strengths: ▪ Favorable land and environment for agriculture and livestock ▪ Considerable production and productivity of rice, coffee, and fruits. ▪ A high quantity of milk production ▪ High production of honey ▪ Strategic Location to the regional markets. ▪ An important land reserve for agro-processing facilities in the industrial zone Weaknesses: ▪ Limited capacity in modern agriculture and livestock systems. ▪ Limited availability of improved seeds ▪ Low agriculture and livestock productivity. ▪ Lack of research, development and innovation in agriculture sector ▪ Limited access to finance for agriculture and agribusiness. Opportunities: ▪ Availability of internal and External investors in agriculture sector development ▪ Available partners and stakeholders in agriculture sector development.

	▪ Available modern equipment and technologies ▪ Availability of markets both internal and international. Threats: ▪ Climate change and irregular seasons ▪ Hillside and marshland soil erosion Fluctuations of prices for agricultural products at national and international markets
Transport	Strengths: ▪ Improved Road networks in urban and Rural areas linking Huye to other regions. ▪ Presence of Huye Regional Complex Car Park ▪ Favorable topography for green and integrated transport system ▪ Considerable demand for green transport infrastructure (High number of bicycle ownership) ▪ Improved feeder roads Weaknesses: ▪ Irregular maintenance and rehabilitation of basic infrastructure ▪ Limited integrated transport system ▪ Limited green transport infrastructure (walkways, bicycle lanes, bicycle parking lots) ▪ Inadequate coverage of public transportation system (urban and rural Sectors) ▪ Lack of a bypass road in Huye City transportation system (urban and rural Sectors) Opportunities: ▪ Presence of International roads crossing Huye District to Burundi and DRC ▪ National road (to Nyaruguru) that is in Government priority 2018/19-2023/24 ▪ Increasing demand for integrated transport in the District (Public, bicycles, motorbikes...) Threats: Natural calamities destroying roads infrastructure

Energy	Strengths: ▪ Availability of diversified sources of energy for lighting and cooking Weaknesses: ▪ Insufficient energy production ▪ High proportion use of biomass as energy for cooking ▪ Limited use of diversified and renewable sources of energy ▪ Limited access to sufficient energy for productive use ▪ Low coverage of electricity in the District Opportunities: ▪ Political will to increase energy production and supply ▪ Political commitment on scaling-up off-grid and renewable energy ▪ Increasing private sector involvement in energy production and supply ▪ Increased road networks that link energy products to consumers Threats: ▪ Environmental calamities High cost of electricity generation
Water and Sanitation	Strengths: ▪ Political will to increase energy production and supply ▪ Availability of diversified sources water. ▪ An important access to clean water with management committees. ▪ Modern landfill for wastes collection and treatment. ▪ Initiative in place for waste treatment and transformation (Organic manure). Weaknesses: ▪ Availability of diversified sources of water ▪ An important access to clean water with management committees ▪ Modern landfill for wastes collection and treatment ▪ Initiative in place for waste treatment and transformation (Organic manure)

	▪ Lack of waste water treatment/sewerage system in the town ▪ Insufficient public latrines in trading Centers and along transport highways Opportunities: ▪ Political will to increase water production and supply ▪ Clear Government Policy and programs on water and sanitation ▪ Presence of partners and donors support in water supply ▪ Interested private Sector in water and Sanitation Sector Threats: ▪ Environmental calamities High cost of water generation and supply
Urbanization and Rural Settlement	Strengths: ▪ Strategic location of Huye City in the region ▪ Potential infrastructure and services in the City ▪ Presence of urban planning and development tools ▪ Increasing rate urbanization and urban growth Weaknesses: ▪ Low proportion of urbanization ▪ Inappropriate urban planning and implementation tools ▪ Inappropriate urban growth and Inefficient use of urban land ▪ Limited number of human capital and capacity in sustainable urban planning, development and management ▪ Presence and development of informal/unplanned settlements ▪ Limited availability of affordable and social housing Opportunities: ▪ Huye identified as a Secondary City ▪ Political will for urban infrastructure development ▪ Presence of partners and donors in the city.

	▪ Increasing demand for urban infrastructure and services ▪ Initiated national fund for affordable housing development ▪ Interested private sector in affordable housing development ▪ Availability of guiding policies and tools for sustainable urban planning and development. Threats: ▪ Environmental calamities ▪ High rate of population migration from Huye City ▪ Limited number of public and private institutions in the city ▪ Urban land value speculation (High cost) High cost of construction materials
ICT	Strengths: ▪ Presence of IT service supply (4G) and telecommunication facilities ▪ High rate of IT and communication devices ▪ Increased number of internet and smart device users Weaknesses: ▪ Small coverage of IT system (Internet) and telecommunication facilities ▪ Limited financial means for infrastructure and services supply ▪ Low capacity and awareness on the use of internet and smart devices particularly among female population ▪ Low proportion of s and services in ICT sector Opportunities: ▪ Government's initiative for scaling up internet coverage ▪ Increased number of online public service provision Threats: ▪ High cost of ICT services and equipment Environmental calamities that affects ICT infrastructures.

Environment and Natural Resources	Strengths: ▪ Increasing trend in District Forest coverage ▪ Presence of staffs and committees in charge of environmental management ▪ Public awareness regarding environment and natural resources management ▪ District and private sector initiatives in natural resources management and value chain development (eg. Organic manure from wastes) ▪ Low rate of polluting elements (Car ownership, industries) Weaknesses: ▪ Low coverage of District forest and green spaces ▪ Inappropriate exploitation and management of forests ▪ High rate of use of firewood as energy for cooking ▪ High loss of biodiversity ▪ Lack of/limited environmental conservation and rehabilitation Opportunities: ▪ Existing government policies and programs for sustainable management of environment and natural resources ▪ Existing financing institutions for environmental management and protection initiatives/project ▪ Available reusable and recyclable natural resources and other resources in the District (e.g. Solid and liquid Wastes) ▪ Partnership in capacity development for environmental management Threats: ▪ Regional environmental pollutions Natural disasters (Landslides, soil erosion, floods, draughts, heavy rains, ...)
Health	Strengths: ▪ High standard Healthcare Facilities (CHUB, CARAES, Isange OSC, Health Centers, etc.) ▪ Considerable number of HHs with access to health insurance

	Weaknesses: ▪ Limited coverage of Healthcare Facilities and services ▪ Limited capacity in quality healthcare services ▪ Limited/low level of research and development in health sector ▪ Limited financial means to access healthcare services Opportunities: ▪ Government policy and programs to increase access to quality healthcare services ▪ Presence of partners in healthcare services Threats: ▪ Expensive healthcare services ▪ Economic crisis Poverty
Education	Strengths: ▪ Significant coverage of various Education facilities (Education Hub) ▪ Commitment of a big number of youth to join TVET Weaknesses: ▪ Low coverage and access to pre-primary education facilities ▪ Inappropriate education facilities ▪ Low enrolment and attendance rate in TVET especially girls ▪ Poor Quality of TVET Trainings ▪ Low level of private investment in education Opportunities: ▪ Government policies and programs to increase access to high quality education ▪ Private investment in high quality education services ▪ Availability of partners in education services. Threats: ▪ Natural calamities destroying basic infrastructure facilities of education

	External competition among schools
Sports and culture	Strengths: ▪ Availability of quality Sport facilities ▪ Annual organized sport competition ▪ Existence of cultural centers and cultural groups Weaknesses: ▪ Lack of complex fields for sports and lack of sports equipment ▪ Inexistence of talent detection and support in sports and culture sectors Opportunities: ▪ The regular international sport and cultural competitions Threats: Natural calamities

Table 3: Huye DLUP SWOT analysis

2 REGULATORY AND POLICY FRAMEWORK

Several laws, strategies, policies, guidelines, and directives documents prepared by GoR regulate land use, development, planning and management in Rwanda, such as follows.

2.1 POLICIES

- National Land Policy, June 2019, MoE

The revised Land policy of June 2019 focuses on the efficient utilization and management of land to support the national transformation goals without compromising the benefits of future generations. To achieve this objective, the policy outlines actions organized into three core pillars: land use planning, surveying, and mapping; land use management; and land administration. These pillars encompass eight thematic areas:

- (a) Land use planning, surveying, and mapping;
 - (b) Integration of land utilization across various Sectors;
 - (c) Effective land use management;
 - (d) Facilitation of private sector investment in land;
 - (e) Land registration procedures;
 - (f) Administration of land lease fees, real property taxes, and land markets;
 - (g) Ensuring land rights security and managing land disputes;
 - (h) Institutional framework and coordination mechanisms within the land sub-sector.
- National Urbanization Policy, December 2015, MININFRA;
 - National Human Settlement Policy in Rwanda, May 2009, MININFRA;
 - National Housing Policy, March 2015, RHA.

2.2 LAWS & REGULATIONS

- **Presidential Order n° 038/01 of 20/05/2022 establishing NLUDMP**

The Presidential Order n° 038/01 dated 20/05/2022, which establishes the NLUDMP, delineates a planning horizon spanning the next three decades. The Order outlines the revision process, ensuring alignment with other plans, and assigns responsible institutions for implementation, emphasizing the pivotal role of all sectors. With the NLUDMP gazetted, the focus now shifts to effectively implementing it through DLUPs and other tools, ensuring strict adherence to alignment principles between NLUDMP and DLUPs. It is against this backdrop, that Huye District revised its Land Use Plan, ensuring compliance with the directives set forth in NLUDMP 2020-2050;

- **Law n° 27/2021 dated 10/06/2021 governing land in Rwanda**

Law n° 27/2021 dated 10/06/2021 governing land in Rwanda, which regulates land affairs, contains detailed provisions concerning land use management and development, as well as the institutional framework and procedures governing the initiation, development, adoption, and establishment of land use and development plans at the district level. This legislation specifically governs land occupancy and construction activities on areas designated for human habitation. Moreover, it encompasses the planning of plots and site development to facilitate the realization of national, City of Kigali, and district land use master plans.

Huye DLUP was revised taking into consideration other laws related to land management and utilization such as:

- Law n°10/2012 of 02/05/2012 governing urban planning and building in Rwanda. Urban planning should strive for the gradual and adaptable advancement of urban centers within the context of economic and social development policies, incorporating rural planning and environmental preservation objectives;
- Law n°20/2011 of 21/06/2011 governing human habitation in Rwanda. This law governs land occupation and construction on lands reserved for human habitation;
- Ministerial Order n° 04/Cab.M/015 of 18/05/2015 determining urban planning and building in Rwanda;
- Ministerial Order N° 005/MoE/22 of 15/02/2022 determining modalities of change of land use.
- Land use plans zoning regulations edition 1, November 2022.
- Ministerial Instructions n°.001 of 23/04/2018 determining the management and use of the lands allocated for agriculture and livestock.
- Ministerial Instructions relating to the implementation of the National Grouped Settlement Program in Rural Areas (27 May 2009).

2.3 GUIDELINES

Numerous land use planning guidelines established in previous years remain pertinent and continue to inform current practices. While we can mention a few examples, it's important to note that the list includes:

- Urban Planning and Building Codes (June 2019, MININFRA);

- Land Use Planning Guidelines (December 2017, NLA);
- Land Readjustment guidelines (October 2021, NLA);

3 METHODOLOGY

3.1 CONSULTATION

The preparation of Huye DLUP was conducted by the district itself in collaboration with the support of NLA. Staff members from both parties cooperated closely throughout the entire process, facilitating the seamless exchange of necessary data between NLA and Huye District.

The elaboration of Huye DLUP was updated in the framework of alignment with the NLUDMP 2020-2050, hence the preparation of the plan was made to harmonize not only with NLUDMP but also DDS, NST1 and Vision 2050 etc. Since the work was done jointly between the two teams of NLA and Huye District, the first activity by NLA was to present the approved NLUDMP 2020-2050 by the cabinet to District Authorities, this provided awareness for District leaders, staff, and stakeholders. This activity was also a kick-off for Huye DLUP elaboration and review.

Like any other planning activities, all the work started by situational and deskwork analysis to which all staff members from both sides engaged and sorted out which data were available, methodologies to be applied, consultative meetings and investigations to be conducted, data collection steps including land survey and physical analysis, checking with boundary compliance for urban, rural and rural settlement sites, dissemination and information sharing for public awareness, draft report development and so forth the team jointly worked together on each step.

After field work the team of Huye District composed of staff from One Stop Center with different backgrounds of expertise met with the NLA team at Kigali/NLA Head Office for a period of 3 weeks for report development. Consequently, the validation meetings were organized the District Council to present the interim and final reports. The District Council, executive committee, stakeholders provided inputs and appreciated the progress work being performed until the final approval of Huye DLUP 2023-2050.

3.1.1 Consultation at Sector and District level

Various consultative meetings were held at District level that brought together different district stakeholders including representatives of sectors, cells, villages, church leaders, civil society organizations, security organs, private sector operators as well as NLA as the coordinating institution of this assignment and district organization. These meetings aimed to ensure a participatory approach, fostering discussions and agreements among all involved parties.



Figure 1: Consultation with Huye District Economic Commission

Huye District economic commission has actively participated in the DLUP elaboration by their will of being informed on what would be their further economy, and social wellbeing of their population.



Figure 2: Consultation with Huye local administration (Sector & Cell level)

The team working on this land use planning also worked with local authorities in Huye District especially on Sector and Cell level.



Figure 3: Consultations with local community.

Huye District local community, opinion leaders, civil society, private sector, and other different stakeholders were met and presented Huye DLUP as proposed for their inputs as invited to participatory planning.

3.1.2 Consultation with national stakeholders

In May 2019, the Cabinet approved the detailed guidelines for the coordination mechanism of the elaboration and validation process of land use plans, concurrently with the endorsement of the

Technical Advisory Group (TAG) responsible for ensuring the quality assurance and validation of any land use master plan. Subsequently, NLA planned a five-day retreat from 5th to 10th December 2021, held at Musanze District, Northern Province.

The retreat aimed at reviewing all five DLUP reports and spatial data including Huye District. The retreat has been attended by technical staff representatives of the TAG members nominated by different institutions which have in their responsibilities land use master plans implementation. Huye District was represented by the Director of One Stop Center. The process of DLUP elaboration and targets for 2050 and the text report as well as spatial were scrutinized by participants who provided direct inputs, comments, and recommendations for improvement of the joint NLA-District work done.



Figure 4: Consultative meetings with technical advisory group.

3.2 DATA COLLECTION

3.2.1 Spatial data collection

After conducting a comprehensive desk review to analyze existing conditions and identify priority areas, the NLA team collaborated with the District One Stop Center team to conduct on-site land surveys and physical analyses within designated priority sites, encompassing urban, rural, and rural settlements.

Primary data collection involved engaging in face-to-face conversations with local communities within the visited areas, supplemented by direct observations. Special attention was given to gathering GPS coordinates to ensure accuracy in boundary delineation and zoning compliance.

Data collected underwent analysis and interpretation utilizing Geographic Information System (GIS) tools, alongside the utilization of new satellite imagery for enhanced insights.

3.2.2 Non-spatial data collection

The non-spatial data gathered and utilized in the development of the Huye DLUP encompassed a variety of demographic statistics capturing both current and projected trends. This included the allocation of economic data pertinent to Huye, such as income generation patterns, economic activities vital for sustaining livelihoods within the community, as well as trade dynamics encompassing the movement of goods and services.

Additionally, the data collection process covered security-related information and its relevant institutions, alongside statistical data pertaining to religious affiliations and associated movements. These datasets played a pivotal role in informing the development of Huye DLUP, ensuring that the unique characteristics of each situation were thoroughly considered to guide holistic Sectoral development.

Throughout the land use planning process, partner institutions have contributed valuable collateral data, encompassing both spatial and non-spatial information, as well as updates on ongoing land development projects in the pipeline.

It is imperative for all sectoral institutions in Rwanda to align their projects with both present circumstances and prospects. To facilitate this alignment, institutions are urged to furnish available data pertinent to their projects, thereby supporting planning efforts aimed at harmonizing sectoral demands within the broader context of land use.

3.3 DATA ANALYSIS

The NLA team, alongside counterparts from Huye District, convened at the NLA head office in Kigali to conduct a comprehensive analysis and interpretation of the field-collected data. Spatial data collected underwent a careful analysis and interpretation utilizing Geographic Information System (GIS) tools, complemented by the utilization of Orthorectified satellite images.

The task of data interpretation was seamlessly integrated with the development and compilation of the report, ensuring that insights gleaned from the data were effectively translated into actionable recommendations.

3.4 REPORT COMPILATION

The development and compilation of reports based on completed data analysis. thus, the two teams from National land Authority and Huye District produced both text reports and associated maps. This step was followed by official validation of the report at different levels by the District Council held on 24th September 2022 and Technical Advisory Group (TAG) after passing through the economic commission of the District Council, the report was finally approved by the District Council.

In addition, the Technical Advisory Group, also held a 5-day retreat to validate the report. Comments, inputs, and guidelines provided were considered by the technical working group from NLA and integrated into the report. This working strategy has contributed greatly to the report improvement.

Below are different steps that have been used during the elaboration and review of Huye DLUP 2050

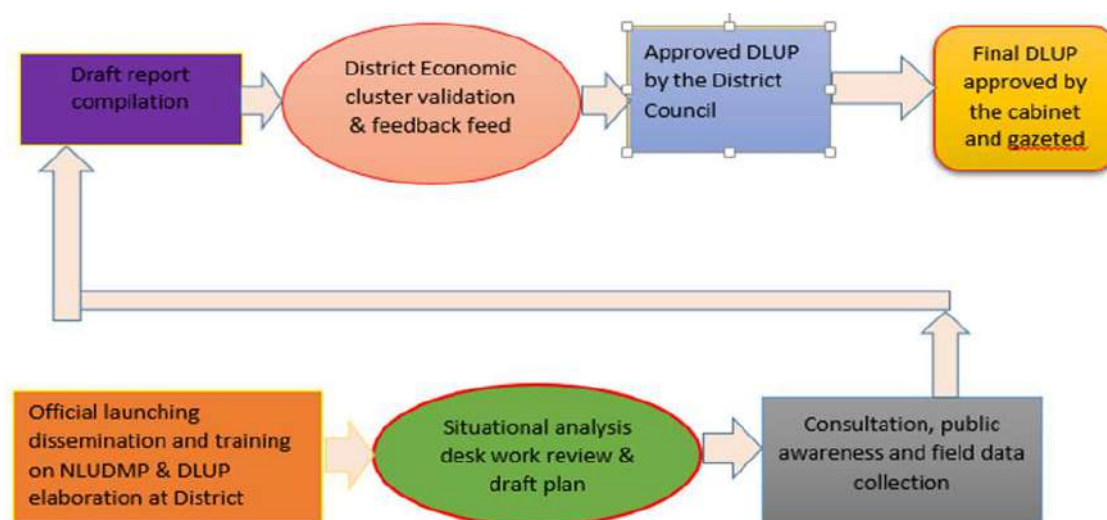


Figure 5: Planning steps used during elaboration and review of Huye DLUP 2023-2050

4 HUYE LAND USE AND DEVELOPMENT PLANNING

4.1 VISIONING AND ECONOMIC SPECIALIZATION

4.1.1 Visioning

Huye is one of the eight Secondary Cities (Phase one), and branded as the “**Knowledge, Culture and Agribusiness Hub**”, its vision is to achieve “**a strong and green economic growth that provides a high-quality livelihood and living standards to the Citizens**” through maximizing its economy.

4.1.2 Economic Specialization

Huye will be the second public service led city after Kigali. It will remain an academic hub of the country that will be driven by Hi-Tech solutions.

Huye District is at the heart of cultural Tourism; more cultural and historical sites are being developed to create a firm cultural and historical heritage corridor.

Cross border trade given their strategic location to Rwanda- Burundi border shall be equally important.

4.2 POPULATION, URBANIZATION, SETTLEMENT AND HOUSING (PUSH)

4.2.1 Population

4.2.1.1 Existing population

According to the NISR, the population of Huye District surged 328,398 from in 2012 to 381,900 in 2022. The population is predominantly rural, where 83.9 % of the total population live in rural areas in 2012 as compared to 79.1 % in 2022. Additionally, the female population is slightly higher than the male population, with females representing 51.9% of the total population in 2012, compared to 50.5% in 2022 and people aged (0-17 years) represented 44.5 % of the total population in 2012 as compared to 42.7% of the total population in 2022 and this reflecting a decrease in fertility rate over ten-years period. Private households were estimated at 77,915 in 2012 as compared to 96,037 in 2022. The population density in Huye District increased from 477 inhabitants per square kilometer in 2012 to 544 inhabitants per square kilometer in 2022. This indicates that the district has become more densely populated over the ten-year period

Sector Name	Type of Sector: Urban; Rural	2012 Census			Households per Sector year 2022	2022 Census			Households per Sector year 2022
		Counts				Counts			
		Male	Female	Total		Male	Female	Total	
Gishamvu	Rural	6,147	7,127	13,274	3,120	6,931	7,745	14,676	3,745
Huye	Rural	10,202	11,729	21,931	5,335	13,395	14,837	28,232	7,435
Karama	Rural	7,516	8,923	16,439	3,788	8,597	9,726	18,323	4,452
Kigoma	Rural+Urban	11,593	13,193	24,786	5,902	12,050	13,405	25,455	6,647
Kinazi	Rural	12,107	13,723	25,830	6,382	15,708	17,406	33,114	8,551
Maraba	Rural+Urban	11,746	12,939	24,685	5,716	12,850	13,957	26,807	6,906
Mbazi	Rural+Urban	14,560	16,641	31,201	7,682	17,049	18,758	35,807	9,375
Mukura	Rural	9,326	10,865	20,191	4,952	12,302	14,038	26,340	6,992
Ngoma	Rural	16,961	10,744	27,705	4,814	24,499	11,079	35,578	5,542
Ruhashya	Rural	10,341	11,713	22,054	5,498	11,369	12,681	24,050	6,494
Rusatira	Rural	11,798	13,373	25,171	6,182	14,211	15,631	29,842	7,934
Rwaniro	Rural	10,250	11,345	21,595	5,302	11,058	12,181	23,239	6,036
Simbi	Rural	10,355	11,782	37,029	5,366	11,053	12,231	23,284	6,051
Tumba	Rural	15,202	16,197	31,399	7,876	17,787	19,366	37,153	9877
Total		158,104	170,294	328,398	77,915	188,859	193,041	381,900	96,037

Table 4: Huye District population for the years 2012 and 2022.

4.2.1.2 Population Projections by 2035 and 2050

According to the NLUDMP projections, the total population of Huye District is estimated to reach **591,382** inhabitants by 2035 and **979,500** inhabitants by the year 2050. Of this, **346,225** inhabitants are expected to live in urban areas by 2035 and **629,500** inhabitants are expected to live in urban areas by 2050. This projection is based on the assumption that the population projection for cities, will be distributed based on recommended hierarchy and economic potentials of each city, for rurbarns, the document specifies the rurbar population and the number of rurbar settlements within each District, and the geographical distribution of the rural population is based on the assumption that it will distribute proportionally to the future agricultural lands in LUCA (Land Use Categories). In the LUCA A, population will grow by 41% due to the availability of prime lands. LUCA B remains static, and the massive change in LUCA C, where the population decreases more than a million, to 17.6% of its current population. This result indicates two main movements: first, a very profound movement of farmers from C to A searching for new agriculture opportunities. Secondary, C also appears as the primary source of urbanization, either in situ or by migrating to cities in A and B. From the above explanations, Huye is a secondary city categorized in LUCA A

Sector Name	Type of Sector: Urban; Rural	Pop 2022	HHs 2022	pop 2035	HHs 2035	Pop 2050	HHs 2050
Gishamvu	Rural	13,274	3,120	11,907	2,977	17,000	4,250
Huye	Rural+urban	21,931	5,335	63,743	5,001	108,083	7,140
Karama	Rural	16,439	3,788	14,867	3,717	21,224	5,306
Kigoma	Rural	24,786	5,902	27,669	5,163	42,242	7,371
Kinazi	Rural+urban	25,830	6,382	54,560	6,717	88,708	9,589
Maraba	Rural	24,685	5,716	21,750	5,438	31,052	7,763
Mbazi	Rural+urban	31,201	7,682	75,954	6,509	127,930	9,292
Mukura	Rural+urban	20,191	4,952	58,075	3,390	100,295	4,840
Ngoma	Rural+urban	27,705	4,814	92,288	666	166,756	951
Ruhashya	Rural	22,054	5,498	19,513	4,878	27,858	6,965
Rusatira	Rural	25,171	6,182	33,229	6,053	50,961	8,642
Rwaniro	Rural	21,595	5,302	18,855	4,714	26,919	6,730
Simbi	Rural	22,137	5,366	18,892	4,723	26,971	6,743
Tumba	Rural+urban	31,399	7,876	80,080	1,344	143,501	1,918
Total		328,398	77,915	591,382	61,289	979,500	87,500

Table 5: Huye District population growth according to NLUDMP 2020-2050 guidelines

In summarizing the presented table depicting the projected population of Huye District according to the NLUDMP 2020-2050 guidelines, it is noteworthy to observe that the subsequent figure illustrates the anticipated population distribution based on residence. Notably, the rural population constituted **83.9%** of the overall population in 2012, followed by a decline to **79.1 %** in 2022. Further projections indicate a gradual decrease to **41.5%** by the year 2035, ultimately reaching **35.7%** by 2050.

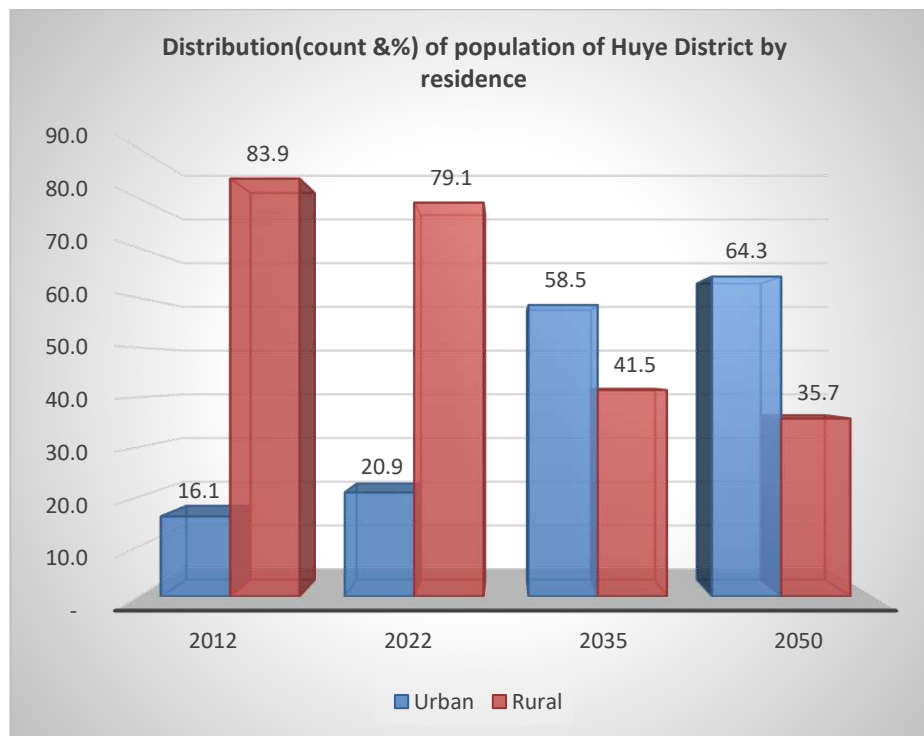


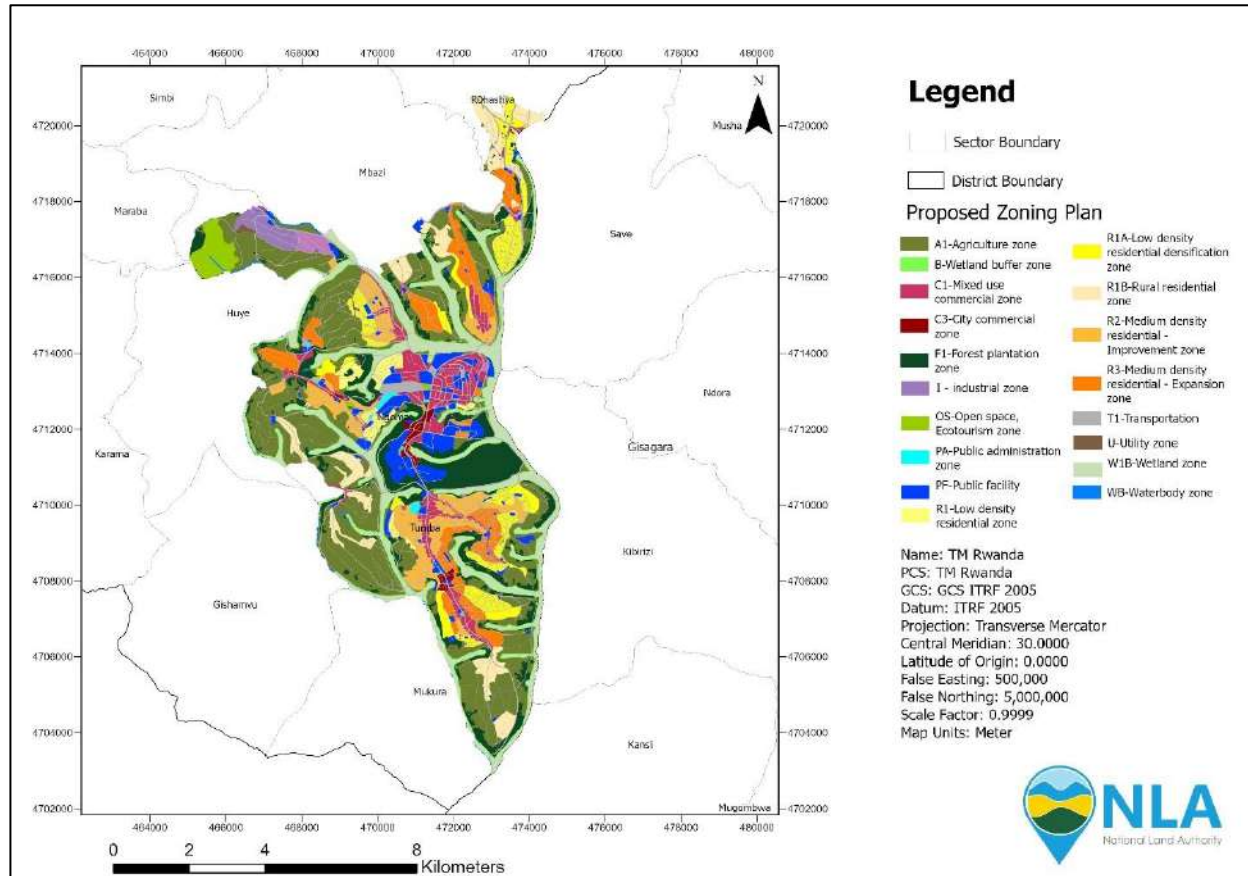
Figure 6: Change of rural population to urban in Huye District by 2035 and 2050

4.2.2 Urbanization and Settlement

Huye District urban population has been significantly increasing with an average population growth rate of 1.5%. This is due to migration factors for people coming from rural areas to search for employment and other opportunities like any other reasons contributing to the growth of cities. According to the PHC5, Huye City was a home to 79,744 people, representing 20.9 % of the entire District Population (NISR, 2022), which is still low considering the target of Vision 2050 that envisions at achieving 52.69% by 2035 and 70% by 2050 of urbanization across the Country (GoR, 2013). Therefore, to realize this level, Huye will require considerable investments in infrastructure and services with direct linkages to its emerging potentialities, vision, and strategies to attract and catalyze sustainable economic and urban growth. By 2050 the city population is expected to grow to 302,500 by 2035 with a land requirement of 38 sqkm and 550, 000 by 2050 with a land requirement of 69 Sqkm considering local physical constraints.

4.2.2.1 Huye Secondary City

Huye is one of 8 secondary cities for which local urban development plans were prepared in conformity with the NLUDMP guidelines. The Huye Secondary City Master Plan was approved by the District Council. This DLUP integrates all relevant reports and studies as well as implementation plans conducted, specific to the Huye urban city.



Map 2: Huye City master plan 2050

4.2.2.2 Rurban areas

Rurban centers are new layer types of urban settings on hierarchy of urbanization in Rwanda which are also defined as emerging centers of linkages between rural and urban areas. They will play a key role in contributing to achievement of the country's urbanization rate desired by 2050 where by 7.5M (35%) on a coverage area of 897 km² and 15.4M (70%) on a coverage area of 1447 km² as a long-term goal to be achieved by vision 2050. Rurban will also be the linkage between District major towns and rural settlement sites well developed with all desired infrastructures for the well-being of local communities.

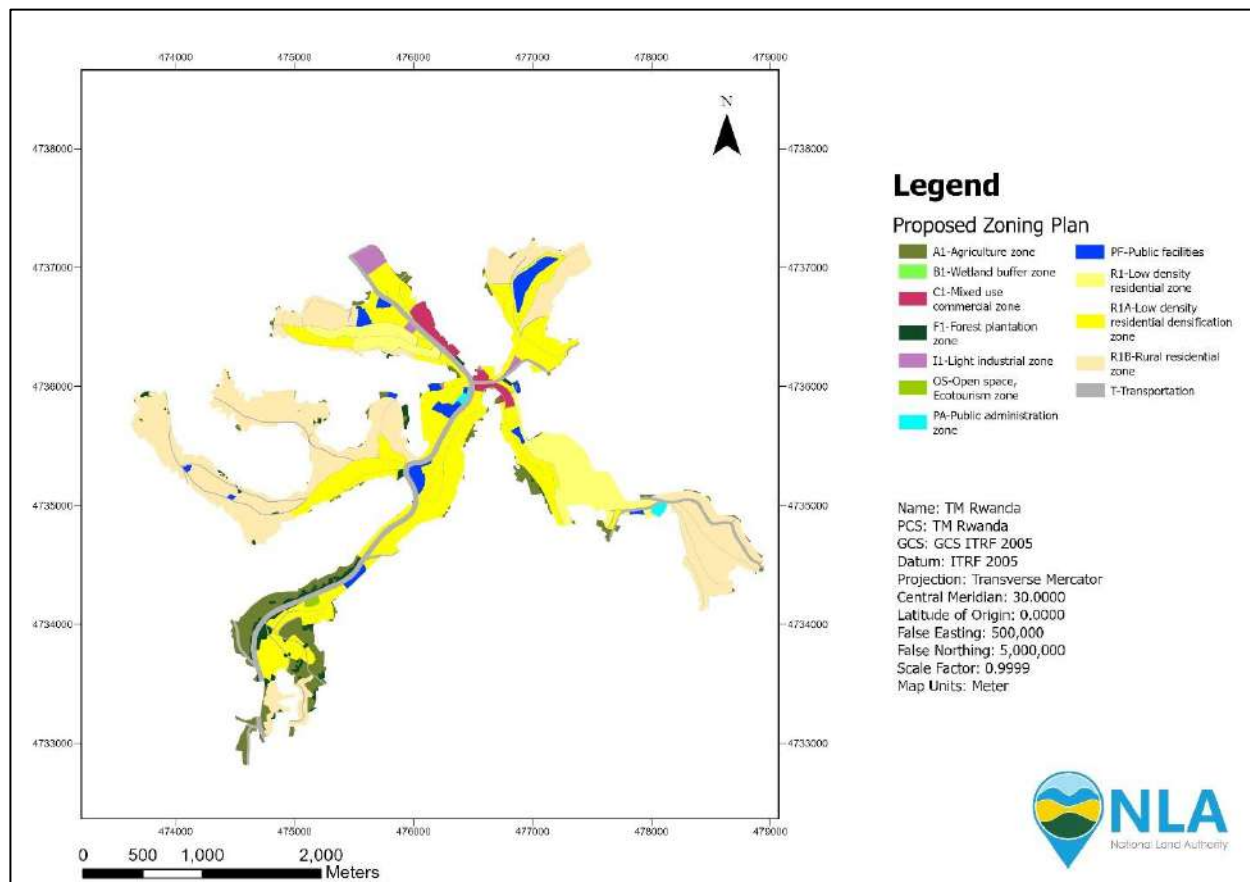
Huye District has three rurban centers namely, Arrete-Kinazi, Rusatira and Karambi.

- Planned Land Use

The above-mentioned three urban centers will be settled by 73,971 populations on an average land surface area of 8.85 Km².

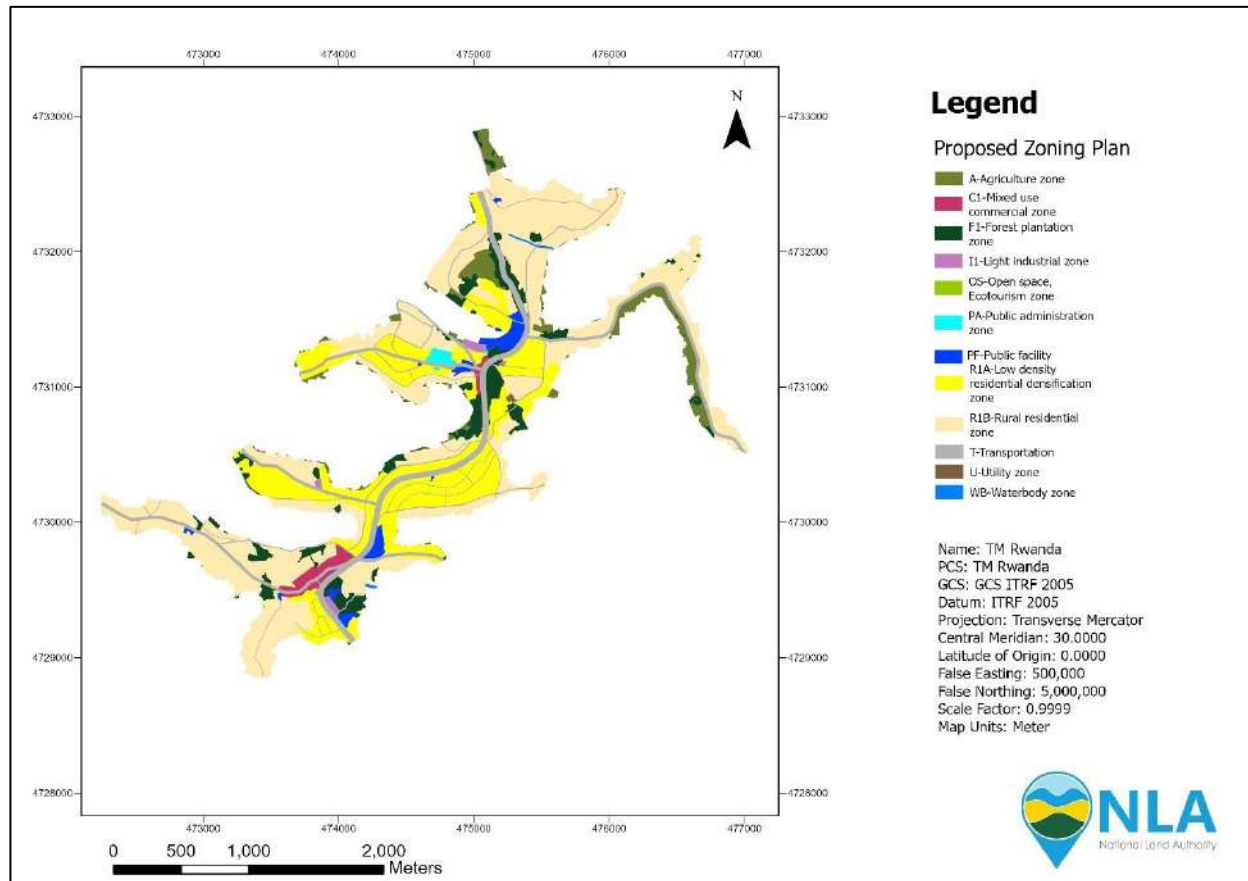
S/N	Rurbans	Sectors	Cells	Area (Km2)
1	Arrete-Kinazi	Kinazi	Gahana, Gitovu and Kabona Cells	3.58
2	Rusatira	Rusatira, Kinazi	Kabona and Buhimba Cell.	3.85
3	Karambi	Kigoma	Karambi Cell	1.42
Total				8.85

Table 3: Huye urban centers

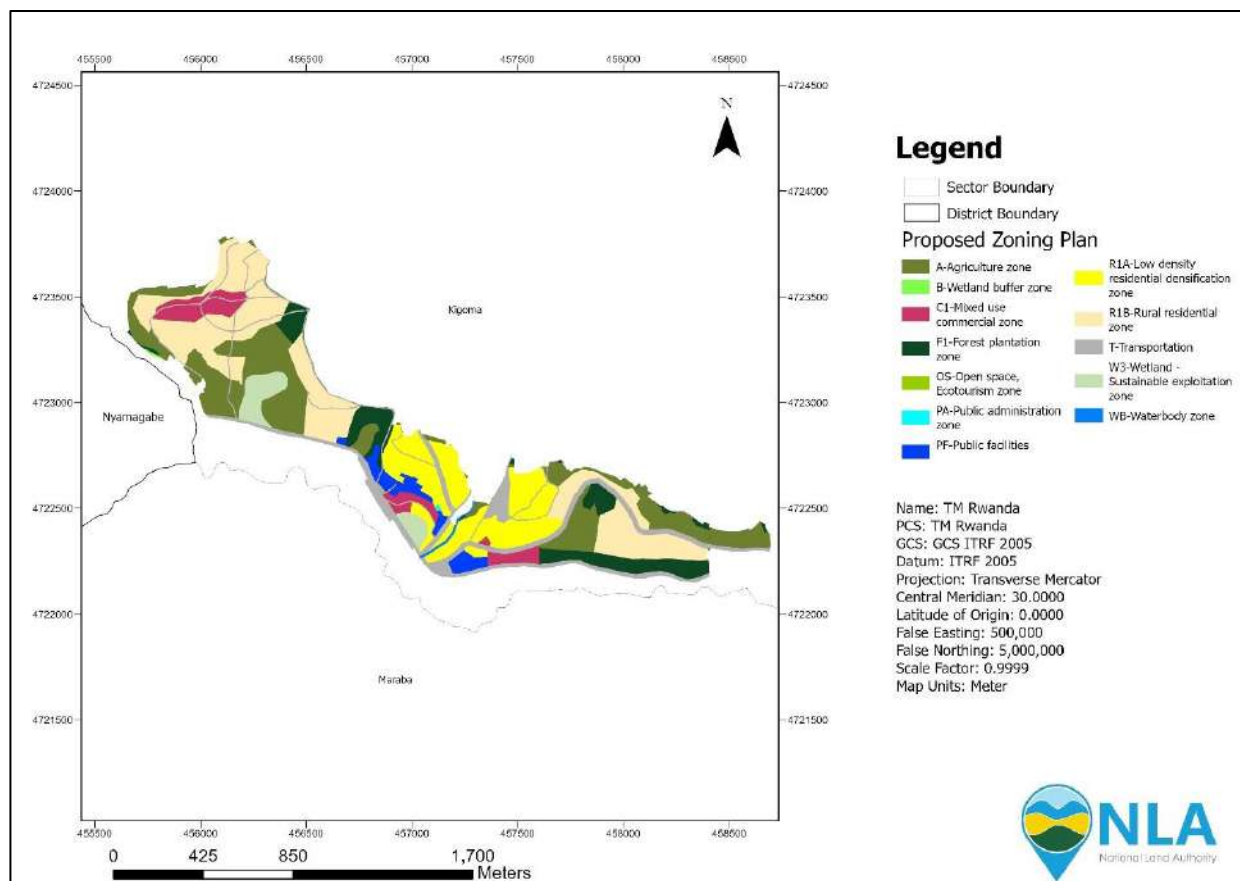


Map 3: Arreté-Kinazi urban land use plan 2050.

Arreté-Kinazi Rurban is one of Huye District potential rurbans that are expected to grow due to booming trade. The center is the stop to most tourists and travelers and known for shopping for the best milk products. The trade and geographical location of the rurban center are key potential drivers for its development.



Map 4: Land use and boundary map for Rusatira Rurban



Map 5: Karambi rural land use plan 2050- Source: NLA 2022

4.2.2.3 Rural Settlement Sites

The government of Rwanda has started a resettlement program to re-establish people in recognized residential areas, ‘imidugudu’, the aim of which is to provide improved quality of life for the population through the satisfaction of basic needs, such as employment, adequate housing, access to water and energy, a cleaned-up environment, access to basic facilities such as markets and healthcare services, as well as safety and order in public places and in households.

Many imidugudu residents have a strong disposition for living in imidugudu compared to living in scattered houses and are hopeful for better livelihoods going forward, with high expectations for employment, access to finance and basic amenities.

The rural settlements system suffers traditionally from continuous isolation of homesteads which prevents improvement in agricultural yield and inefficient supply of services and infrastructures. An audit survey that was prepared in 2019 by RHA and NLA shows in the table below how deep the problem is. Two hundreds and ten thousand (210) houses out of 570 thousand have been found out of settlement plans within the sampled districts. In 2017-18 Districts reported to the Audit

team population accommodated in rural settlement sites was 93% while the spatial analysis with current land use plans (urban and rural villages sites) Figures that among 82% of the Rwandan population living in rural area, 69.2% in 2019 were accommodated in 13,661 rural settlements. The structure of rural settlements and scattered single family homesteads in rural areas do not favor economies of scale; therefore, the transformation of rural settlement structure is the most needed in Rwanda in order to improve on efficient land use planning and to avail and protect as much agricultural land as possible and promote densification of dwelling in rural settlements. Most agricultural arable lands and other lands keep on shrinking due to 13,661 scattered rural settlements mapped on 11,000 Km². The rural population is 10,621,000 million and 2,360,000 HH. The average size of an Umudugudu in Rwanda is, therefore 80.5 Ha, containing 777 people on average, which is about 172 households.

Therefore, the following actions are proposed by the NLUDMP to address the issue of excessive rural settlement sites.

The gross land size per household is 0.46 Ha, including the house and farm, however NLUDMP proposes that this land distribution among farmers should change by 2050 where land allocation for agriculture is limited to 1,243,300 Ha. The subdivision of this area among 6,6M rural inhabitants or 1.650M HH shows an increase from the current size in 65%, 0.76 Ha per HH. However, the geographical distribution of the rural population will dramatically change. The assumption is that it will distribute proportionally to the future agricultural lands in the LUCA's (table 10 below): LUCA A population will grow by 41% due to the availability of prime lands. LUCA B remains static, and the massive change is in LUCA C, where the population decreases by more than a million, to 17.6% of its current population.

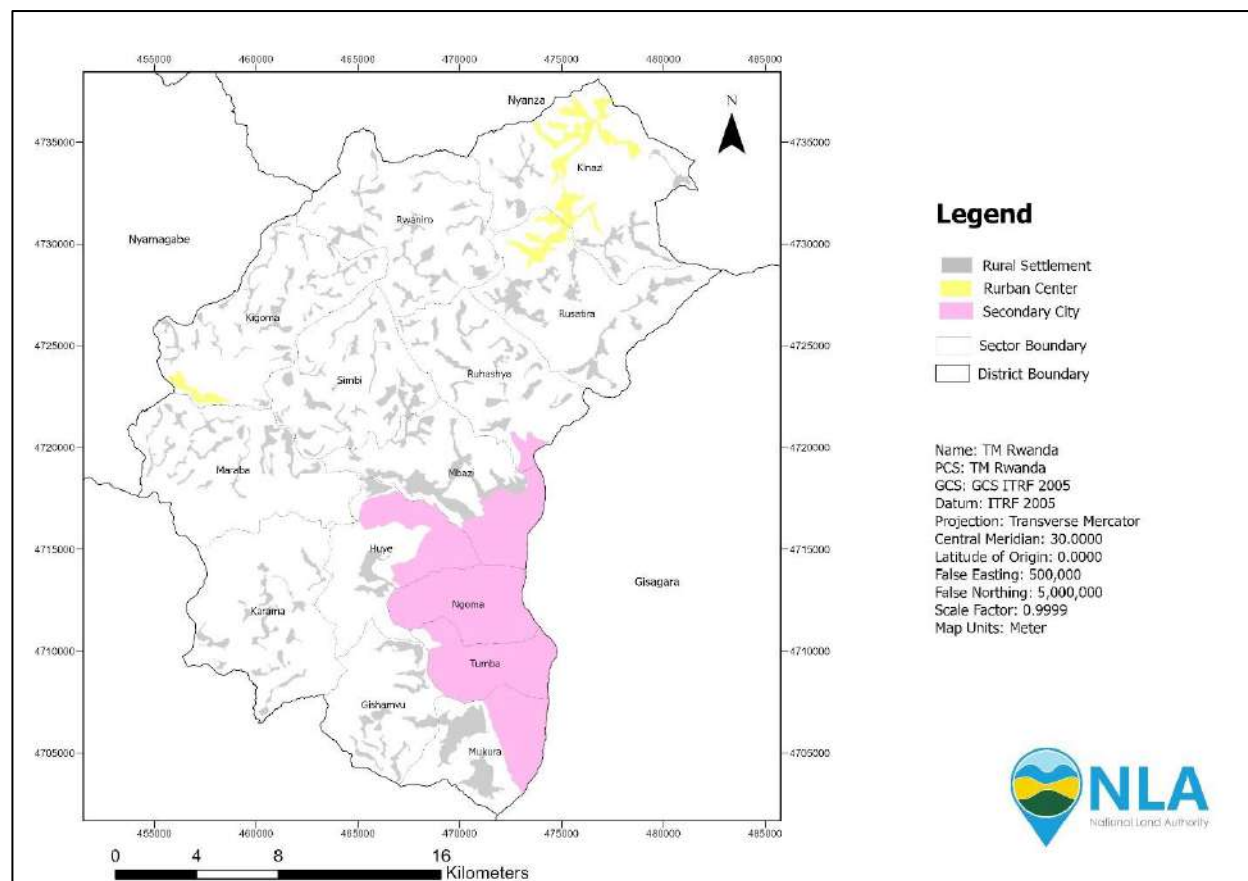
- **Existing Situation of rural settlements in Huye District**

National Land Use and Development Master Plan 2050 proposes 159 sites covering 66 sqkm after a collaboration with Huye District, NLA and RHA agreed to restructure and maintain only 118 rural settlement sites covering 37.89 sqKm emerged and reshaped for further development while complying with NLUDMP 2020-2050.

S/N	Sector	Number of Sites	Area Km ²
1	Gishamvu	6	1.9
2	Karama	11	3.89
3	Kigoma	18	4.82

4	Kinazi	5	1.8
5	Maraba	14	4
6	Mbazi	2	1.34
7	Mukura	0	0
8	Ngoma	0	0
9	Ruhashya	16	4.33
10	Huye	0	0
11	Rusatira	12	5.55
12	Rwaniro	15	5.29
13	Simbi	18	4.97
14	Tumba	0	0
	TOTAL	118	37.89

Table 6: Huye District rural settlement sites per Sector



Map 6: Map of Huye District rural settlement sites-Source: NLA, 2021

The above map indicates the number of proposed rural settlement sites in Huye District that will be used for rural settlement purposes in such a way that any settlement outside rural settlement sites is strictly prohibited.

- ***IDP model villages***

Integrated Development Approach (IDP Model village) is a new concept of rural residential planning enabling to enhance the wellbeing and social welfare as well as economic development of the local population living in scattered settlements and high-risk zones in rural areas and especially the landless/homeless people benefiting from government subsidies. It was inaugurated based on the launch of EDPRS II in 2013.

The IDP Model Village was seen as a socio-economic development tool based on four thematic areas which are: Economic transformation, rural development, productivity, and youth employment as well as accountable governance. One of the main focuses of the Rwandan Government is improving the living conditions of Rwanda's rural population. The IDP model Village is expected to be an inclusive rural settlement model providing access to clean water, electricity, Healthcare Facilities, common marketplace, smart classrooms, improved road networks, and common cowsheds.

Eleven pillars have been identified to guide effective IDP implementation:

1. Land Productivity;
2. Post-Harvest Processing and Marketing;
3. Cooperative Development;
4. Off-Farm Employment;
5. Promotion of Micro-finance and Insurance;
6. Resettlement;
7. Rehabilitating the ecosystem and Environmental Protection;
8. Social protection;
9. Promotion of ICT;
10. Energy;
11. Leadership Development.

IDP Model Village started being implemented in 2016/2017, through Joint actions between the Ministry of Defense, Ministry of Infrastructure, the Ministry of Finances and Economic Planning and the Ministry of Local Government regulated by the memorandum of understanding between above-mentioned public institutions. A total of 6,602 IDP Model Villages have been constructed in all districts countrywide.

Huye District alone has 10 IDP Model villages distributed per Sector so that 10 Sectors out of 15 Sectors have IDP model villages totaling 575 households. The map below illustrates Sectors of Huye District with or without IDP Model Villages.

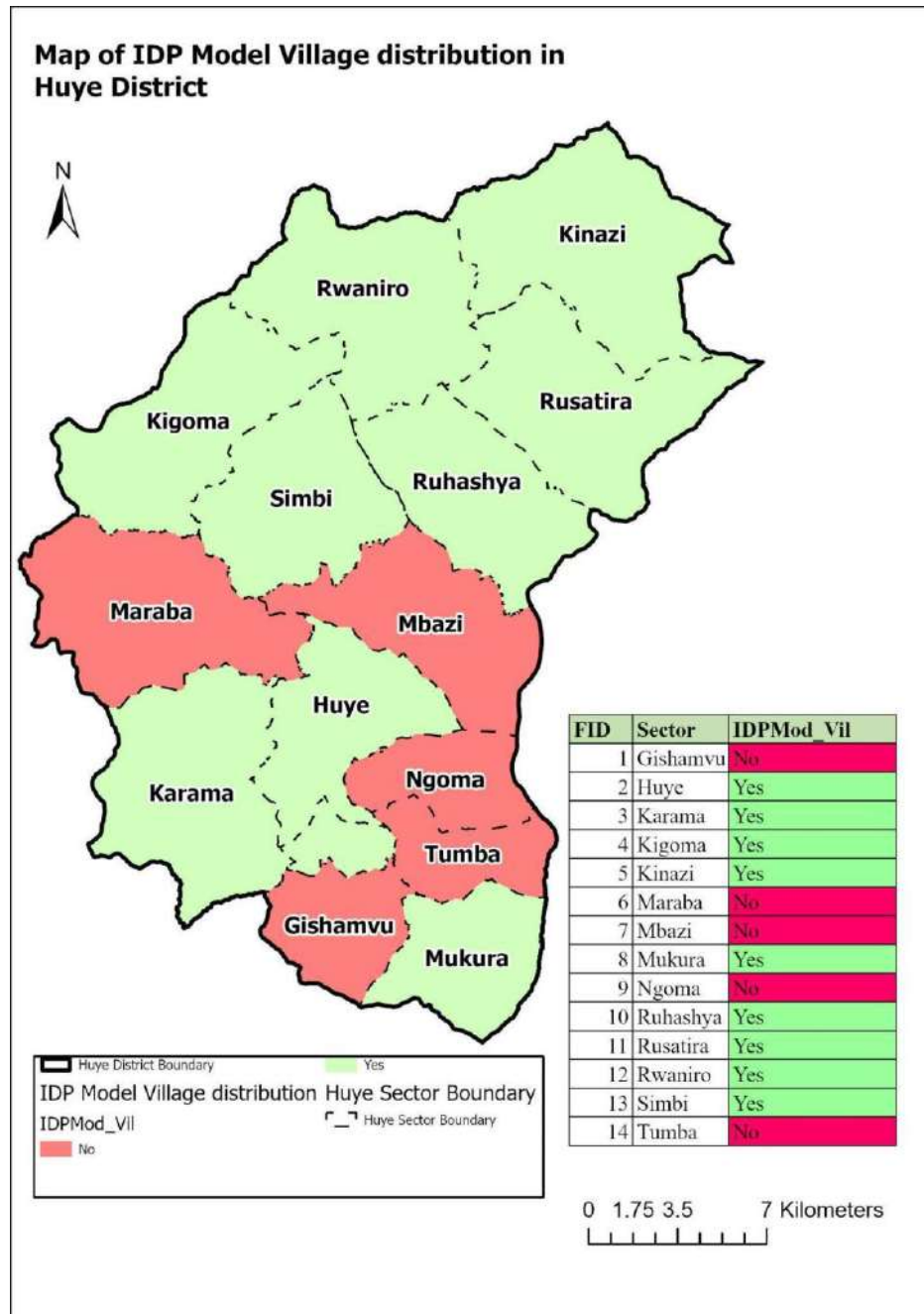


Figure 7: Spatial distribution of IDP model village in Huye District.

- Planning perspective of rural settlements in Huye District**

By 2050, the total rural settlement population in Huye District will be 350,000 where all communities in rural areas will be mandated to settle in the designated rural settlement sites. Construction of any individual house outside rural settlement site is strictly prohibited and will continue to be considered as violation of land use as per the law governing land in its article 76

which stipulates that non-compliance with the land use and development master plan will be sanctioned with strict measures and fines. The planned number of rural settlement sites is 118 with the total size of 37.89 sqkm. Rural settlement sites will be much more demanding for specifically new and smart structures, more detailed plans showing residential zones, basic infrastructures and/or key emerging socio-economic development projects.

Item	Number	Covered area (Sqkm)	Change (%)	Observation
Rural settlement sites provided by NLUDMP 2020-2050	159	66	• Number: -26% • Area: -43%	Basing on the current population trends and population projections the size and amount of rural settlement sites were reduced.
Final Rural settlement sites after revision of the DLUP.	118	37.89		
Rurban Centers provided by NLUDMP 2020-2050	3	12.6	• Number: +0% • Area: -30%	
Rurban Centers after revision of the DLUP.	3	8.79		

Table 7: Rural settlement sites and rurban centers compliance with NLUDMP

4.2.3 Urban Design

Urban Design helps to create a unique identity for the city and its public spaces and to set an example for future development of other areas within the planning area. It helps in translating the Master plan strategies into viable projects to kick - start implementation. This also helps to create an effective tool for the city authorities for branding the city. Potential investors can be enticed with the help of attractive development propositions prepared by a detailed urban design scheme.

Huye City is bestowed with architectural, cultural and heritage assets. The city attracts local, regional, and international tourists because of the National Museum and the Butare Cathedral. The city has a student population because of the University and institutional presence. The city does not have issues of traffic and congestion like most of the other secondary cities, and in a way is still sparsely developed. Through simple design regulations, the city can improve its attractive index and its unique identity. A comprehensive solution for this can be found in the Urban Design proposal in this chapter.

Huye City's demographic is mostly youth due to the presence of universities. Tourists crowd the city for the museum and Cathedral. Urban design takes this as an objective to increase urban tourism potential; the goal is to induce programs for recreation to enable interaction with the locals.

4.2.3.1 Urban design area

The Urban Design Area according to Huye Secondary City Master Plan is in the City Center covering an area of 156 ha. It is a linear site and connects all the key prominent developments in the city, including the Rwanda National Museum, The Butare Cathedral, the central business district, and the University Campus. The main spine is 3.3 km long.

The site is almost flat and is along the ridge of three large hills and is interspersed by vast Swamplands. The sites' edges slope down to the Swamplands 50 m lower. The slopes are covered by trees and forested in most cases. The Swamplands are about 100 to 150 m wide on average. The following are the urban design features which were proposed in Huye city:

a) Gateway Park

Landscape Park and aesthetic treatment of the traffic island are proposed as Huye City's gateway. The Park marks the beginning of the walking tour of the city.



Figure 8: Design efficient and pedestrian-friendly streets, Plan Efficient Green Spaces¹-Source: Huye SC master plan 2021.



Figure 9: Design efficient and pedestrian-friendly streets, Plan Efficient Green Spaces2-Source: Huye SC master plan 2021.



Figure 10: Design efficient and pedestrian-friendly streets, Plan Efficient Green Spaces3-Source: Huye SC master plan 2021-Source: Huye SC master plan 2021.

b) Sports Park and Heritage Park

Sports Park - Area - 3.5 ha and Heritage park - Area - 1 ha. With large student and tourist population presence, sports fields and playgrounds promote social interaction and improve the health of the residents. The Sports Park/ sports grounds near the stadium will attract people of all ages, residents, and tourists alike to play, communicate and interact. The heritage gardens concept was provided to bring in vernacular trees and design some formal gardens right next to the Swamplands. The Swampland trails serve as an alternative way to reach the city Centre. From the heritage garden one can see the beautiful landscape for the Swampland. The parks are proposed to include fitness equipment, playgrounds for kids, viewing decks, local art, and F&B kiosks.



Figure 11: Sports park and heritage design- Source: Huye SC master plan 2021



Figure 12: Heritage Gardens-Source: Huye SC master plan 2021

c) Market and Arab Street redevelopment

These two redevelopment projects can bring in a new flavor to the city that can be planned, discussed, and designed as per community needs. The Urban design proposes street improvement and building massing guidelines to make the development aesthetically pleasing. The street is seen as a community street with weekly farmer's markets, social events etc.



Figure 13: Huye market and Arab Street Redevelopment- Source: Huye SC master plan 2021.

d) Swampland Park development

Integrate nature and urban areas and increase recreational areas in the city. The proposed Central Park could be the biggest attraction in the city if designed and executed well. The Swampland development park will cover the area equivalent to 20 ha of land.



The wetland park proposed between the university and the Church hill is called the Central Park. The expanse of the park is beyond the wetland into the forested land. The landscape and recreational elements are recommended to be designed with minimum disturbance to the site's bio diversity and ecology. Other than passive recreation, the programmes within the central park include events like weddings, concert, educational programmes etc.

Figure 14: Integrate transport and land development.



Figure 15: Swampland Park

4.2.3.2 Green growth strategy

Promote ecosystems and biodiversity, plan sufficient green spaces, Street upgradation: includes upgrading the 6 streets in UD area to provide adequate NMT infrastructure.

Green growth strategy - car lite city, sustainable mobility city, zero emission city, walkable city, Note - Green growth strategy refers to green strategies for urban planning of secondary cities, National Roadmap for Green Secondary City Development.

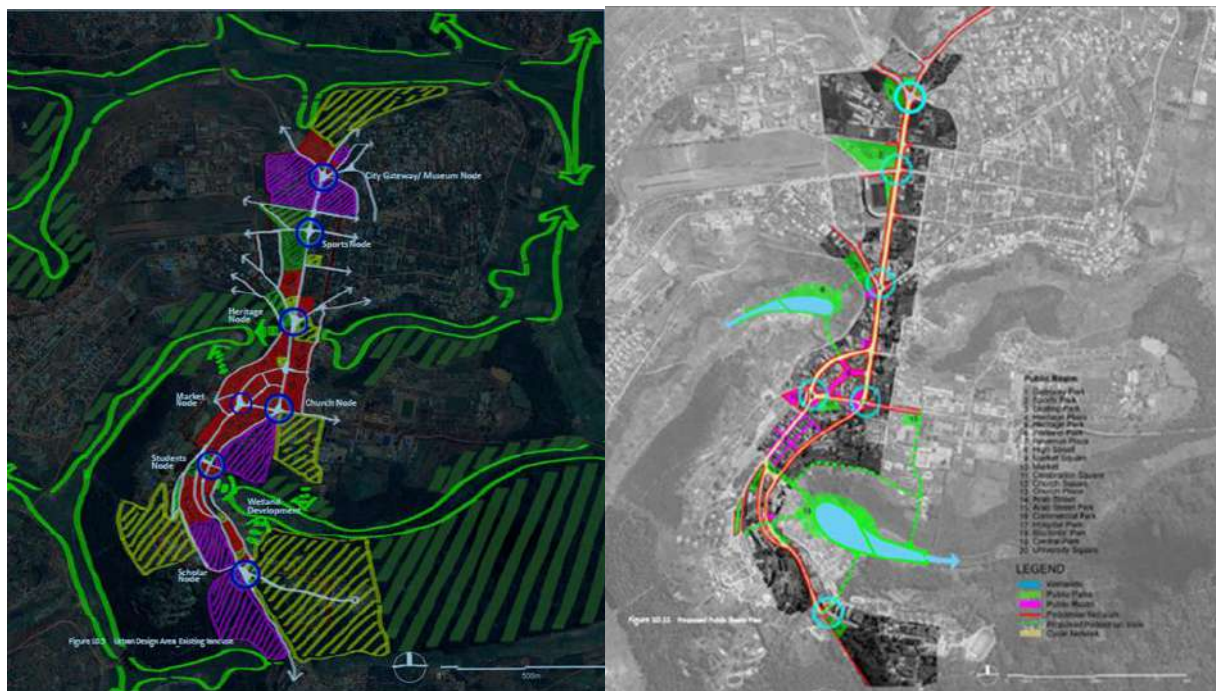


Figure 16: Huye urban design-Source: Huye SC Master Plan 2021



Figure 17: Huye urban design-Source: Huye SC Master Plan 2021

4.2.4 Housing

4.2.4.1 Existing Situation

As per EICV5 survey, the settlement in Huye is characterized by low density single house dwelling (95%). The mean floor area of the dwelling is around 41sqm (around the same size as the national mean floor area of 40sqm) and average size of household is 4.1. The Rwandan culture of farming and living on big, landed property may have led to the development of low-density single house dwelling. This is further aggravated by the lack of long-term growth plans for the district and the city. This current trend of low-density single housing developments is not sustainable in the long run and therefore requires suitable density management strategies to promote a compact living environment. Given the fact that only around 50% of the land in Huye is developable, it is not healthy for most of the land with higher density potential, to be occupied by low and medium density.

- ***Types of Housing***

Though Huye City is small it is important to avoid the creation of sprawling residential settlements which are difficult and expensive to serve with a centralized network of infrastructure. Around 9% of the housing in Huye are unplanned urban housing, unplanned clustered housing (12%) and isolated rural housing (14%)¹². With the Government's vision of cluster housing, basically to preserve the agricultural land, 64% of the housing in Huye are clustered rural housing (Imidugudu). This indicates that the rural settlement programme has been a success in terms of the government's vision of agglomeration and land consolidation for agriculture. However, the diagnostic report for Huye states that the population were not keen on living in Imidugudu due to the unavailability of socioeconomic infrastructure in such housing sites. Although many changes and improvement would be made since the diagnostic report was prepared, the new master plan will assess the gaps and propose strategies for equitable and inclusive development.

Construction materials used by most people include tree trunks with mud (39%), followed by mud bricks covered by cement (31%) for walls, clay tiles for roofing (68%) and beaten earth for flooring (59%). The usage of tree trunks at such a scale may have an environmental impact on the forest cover.

As per NISR 2022 Huye District profile, 75% of the housing are owner occupied and only around 22 % are tenant occupied in Huye District. In the rural area, owner occupancy was 79.7 % and tenant occupancy was only around 44.8%, in 2022.

4.2.4.2 Planning Perspectives

Like in other districts countrywide, the high percentage of low-density single house dwelling is challenging the visions and aspirations of densification and resource efficiency stipulated in the national directives. The national directives, including Vision 2050, NLUDMP, National Land Policy (2019), National Housing Policy (2015), National Roadmap for Green Secondary City Development (2015), advocate to create high density urban settlement, and regulate development density based on market demand. They suggest the zoning to be in support of high, appropriate housing models that ensure economic use of residential land, density mixed use developments, mixed-income approach whereby low, medium, and high-income earners should be settling together in the same neighborhood to minimize settlement segregation and developing affordable housing and real estates.

Matching Housing Types and Settlement Types						
	A+ 1 	A 2 	B 3-4 	C 5-9 	D 10-22 	
Huye Secondary City:	19%	40%	30%	7%	4%	100%
Rurban Centers: Rusatira, Arrete-Kinazi and Karambi	52%	45%	2%	1%	-	100%
Rural settlement sites	50%	50%	-	-		100%

Table 8: Housing typologies and settlement types for Huye secondary city

Respectively to the above Table, NLUDMP 2020-2050 proposed housing types and shares for Huye District are as follows: houses in A+ are one level high houses, on a lot of 500 m² for two households totalizing 24 apartments per Hectare as indicated in the housing design; houses in A are based on the same lot of 500 m² but consolidates four apartments in 2 stories and a density of 40 apartments per Hectare; B represents all houses in a typical multifamily house of up to 12 apartments in 3-4 floors on a lot of 1000 m² with a density of 48 apartments per Hectare. B and C categorization of housing will be constructed to settle a big number of the population in apartments while efficiently utilizing the scarce land. all houses in C represents a typical multifamily high rise building up to 9 floors on a lot of 2000 m² with a density of 63 apartments per Hectare; and D type-houses will be the biggest structure in the housing repertoire, rising to 22 floors on a lot of 3000 m² with a density of 90 apartments per hectare. Such housing in category

C and D as indicated above as proposed in Huye Secondary City will not only be purposely for multifamily high rising buildings, but also commercial, hotel, office, and other purposes. Mixed use and mixed incomes are highly recommended in such houses.

4.2.4.3 *Housing stock in Huye settlement areas*

The proposed housing stock was analyzed according to the high population growth maximum scenario, to calculate dwelling units required in 2050 in Huye District. By considering family planning and other government programs, the population projection of Huye District will be around 633,000 in 2050.

POPULATION PROJECTION 2050	SIZE OF HOUSEHOLD	TOTAL HOUSEHOLDS
633,371	5	126,674
Land requirement for 126,674 HHs are needed (Housing stock)		

Table 9: Population projection and possible households by 2050 in Huye District

Residential types	DU/HA	TOTAL SIZE/HA	PERCENTAGE	TOTAL DUs
R1B	40-70	3735.51	71.2	90,192
R1A	20-30	829.23	15	19,001
R3	60-90	123.32	2.3	2,913
[3] Total		5245.95		125,407

Table 10: Area size and Dwelling Unit per residential type

The Table 10 above indicates a calculated housing stock needed to accommodate the Huye District population from 2021-2050. The construction volume will be 125,407 dwelling units, requiring for the construction sector construction will have to supply an annual average of 8,360 Dwelling Units.

4.3 TRANSPORTATION

4.3.1 Existing situation of road network in Huye District

Rwanda has a very dense road network coverage, which explains the scattered nature of its human habitat, and this is very expensive to the government in terms of service provision. The existing road network of 37,896 km (44,669 Km including paths) has been analyzed, and a new road hierarchy is proposed to achieve the desired vision 2050 as demonstrated by the map below.

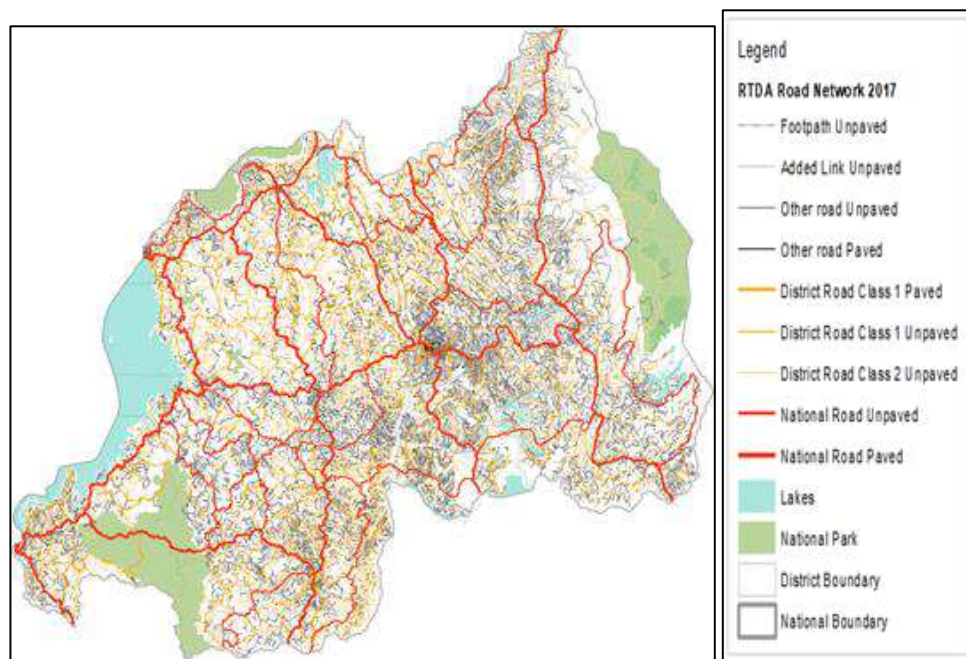


Figure 18: Map indicating the country dense road network coverage-Source: NLA data 2022.

4.3.2 Existing situation

The transport zone is established to identify and locate major transport related areas including public transport services such as car parking, BRT, airports, railway and depots associated with public transport uses, transport terminus. During Huye DLUP 2023-2050 elaboration the following road network have been identified:

- National Road
- District Road Class 1
- District Road Class 2
- Unclassified Roads

	Road category	Number of Km2	Observations
1	National Roads (NR):		
	Paved	73km completed, 23km under construction	Maintenance under Community Approach through MoU between District, RMF and RTDA
	Unpaved	74km	
2	District Road Class I/Unpaved	169.5km	
3	Unclassified road	TBD	

Table 11: Classification of Huye Districts Roads under development

4.3.3 Planning perspectives

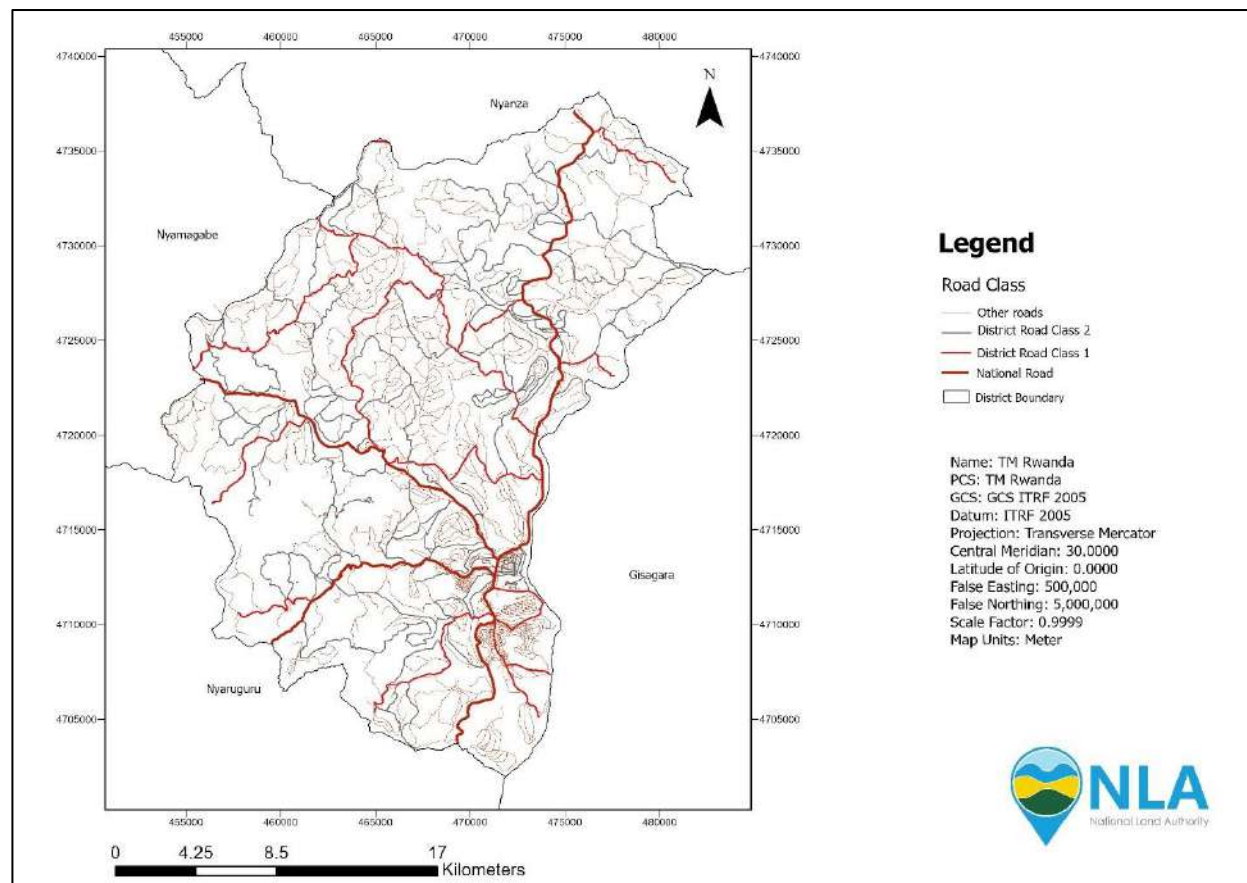
The NLUDMP recommends the following components for future land transportation by 2050:

- National Road, 22m from the center line.
- District road class1, 12m from center line
- District roads class2, 12 m from center line.
- Other roads (Sector roads, Cell roads, feeder roads), 12 m from center line;

Transportation as one of the key sectors which has a spatial dimension and requirement for land allocations for the sectorial activities, It is recommended and entitled to update its master plan and strategies following NLUDMP guidelines. The preparation of the DLUP will be implementing roads width provided following specific studies conducted and after different field analysis and consultations conducted in Huye District. Table 10 below summarizes road width network classifications that have been considered for rurbans.

Road Category		Code	Planned Width in Meters
Arterial Belt and National Road		NR	22m x 2 from center line
District road class1		DR1	22 m x 2 from center line
District roads class2		DR2	12 m x 2 from center line
Other roads	Access road	AR	6m x 2 from center line
	Servicing roads	SR	4.5m x 2 from center line

Table 12: Proposed Categories Road width per road category for 2050



Map 7: Road network in Huye District-Source: Huye District Data 2021

The figure above shows the District Roads Class II Over all Sectors in Huye District, on-going Road Classification in Huye Secondary City.

OID	Road Type	Brownfield Revised	Green Field Revised
		Width (m)	Width (m)
1	Outer ring road-National Highway	27	44

2	High Capacity Corridor-District Road Class 1	27	44
3	High Capacity Urban Roads	27	44
4	Major Arterial	27	37.5
5	Major Arterial BRT/PTC	29	53.4 (41)
6	Minor Arterial	15	27.6
7	Minor Arterial BRT/PTC	15	26.6
8	Collector	15	26
9	Collector BRT/PTC	15	26
10	Collector in rural areas-Unpopulated/ Undeveloped/ rural road	21	37
11	Local road	8m-6m	12.5m-10m-8m

Table 13: Road width per road category

4.4 PUBLIC FACILITIES AND SERVICES

4.4.1 Education facilities

As far as education is concerned, Huye secondary city has been known as a hub of education, for its intellectual capacity, whereby it has several academic institutions and a host to the largest campus of the University of Rwanda, various education institutions such as the prestigious Nyakibanda Seminary. Huye District is ranked ninth with 84.5% of individuals aged six and above having at some time attended school.

4.4.1.1 Existing situation

Education	
Number of Primary Schools	98
Number of classrooms in P.Ss	934
Number of desks in primary schools	17398
Number of secondary schools	50
Number of classrooms in S.Ss	558
Number of desks in secondary schools	9550
Number of VTCs	11

Number of VTC classrooms	73
Number of desks in VTC	536
Primary Promotion rate	76.5%
Primary repetition rate	15.9%
Primary dropout rate	7.5%
Lower secondary Promotion rate	82.3%
Lower secondary repetition rate	9.3%
Lower secondary dropout rate	8.3%
Upper secondary Promotion rate	93.5%
Upper secondary repetition rate	4.1%
Upper secondary dropout rate	2.4%
Net attendance ratio in Primary school	Male 83%, Female 90%
Net attendance ratio in Secondary school	Male 30%, Female 40%

Table 14: Huye District education and supporting infrastructures

The table above indicates the progress of education in Huye District for the last 7 years where the number of primary schools, classrooms, and number of desks for sitting arrangements has been increasing as indicated in the figures in the above table. This applies also to secondary schools and VTCs as well as classrooms and desks. The table also indicates the repetition rate and dropout rates mainly caused by environments, the role of parental care and the eagerness for students to earn their living.

% distribution of de facto male and female HHs population above 6yrs by the highest level of education attained		
No education	Male:15% Female: 20%	Male:13% Female: 19%
Primary	Male: 65% Female: 62%	Male: 71% Female: 66%
Secondary	Male: 15% Female: 15%	Male: 13% Female: 13%

Higher	Male: 5% Female: 3%	Male: 3% Female: 2%
Net attendance ratio in primary schools	Male: 83.7% ^[1] Female: 84.6%	Male: 87.1% Female: 88.2%
Net attendance in secondary schools	Male: 17.0% Female: 23.5%	Male: 21.3% Female: 25.1%
Literacy rate (%) of population aged 15 above	72.4% (EICV 4)	87.3%

Table 15: % distribution of HHs population above 6yrs by the highest education level attained

Number of primary schools	98
Number of classrooms in Primary schools	934
Number of desks in primary schools	17,398
Number of secondary schools	50
Number of classrooms in secondary schools	558
Number of desks in secondary schools	9,550
Number of TVET Centers	11
Number of TVET Classrooms	73
Number of desks in TVET Centers	536

Table 16: Number of schools at district level, classrooms, and desk at different school levels in Huye District.

By 2017 the net school attendance rate stood at 92.6% in primary schools and 23.4% in secondary schools. The existing 9 & 12 YBE is solving the school densification challenges within those primary and secondary schools in Huye including new classrooms under construction in the framework collaboration with the World Bank to have expanded classrooms as the measure for further combating and preventing Covid-19.

SN	Names	Numbers	Status 2021
1	Primary Schools	109	Good
2	Secondary Schools	47	Good
3	TVETs	6	Good
4	ECDs	113	Good
5	University	5	Good

Table 17: Status of Huye District schools.

Huye District education sector is organized from pre-nursery, nursery schools, primary schools, secondary schools, technical and vocational education and training schools, higher learning education/universities.

For primary schools Huye currently has 109 primary schools with 966 classrooms and enrolled 66,590 pupils. secondary schools are composed of 47 schools, 774 classrooms and 20,024. students, 113 ECDs 6 TVET and 5 Universities.

4.4.1.2 Planning perspectives

NLUDMP 2020-2050 guidelines on education sector

The 2050 perceptions ensure access to good quality of education in the initial years of life through increased investments in early childhood development to achieve universal pre-primary enrolment rates by 2050. Access to quality primary education will be confirmed too. All classes will reach middle-income standards for pupil/classroom and pupil/teacher ratios by 2035. Teachers will be empowered and equipped to deliver an education that provides all Rwandans with the capabilities to improve their skills and productivity continually (NLUDMP 2020-2050).

According to NLUDMP 2020-2050, the following standards and parameters have been established for nursery and primary schools:

Nursery and Primary Education by 2050:

Average class size: 35 pupils/class

Average school size: 840 pupils

Required size for a nursery school: 0.5Ha

Required size for a primary school: 1Ha

The following standards and parameters have been established for secondary, vocational, and technical education by 2050, which will support the reform of quality and quantity.

Enrolment rate will be 90%.

Average class size: 35 pupils/class

Average school size: 840 pupils

Required size for a secondary school: 1.5Ha

Required size for vocational and technical school: 2Ha

Currently, the percentage of children of school age in Huye District will be used as a standard at the district level. Thus, 7.12% are in pre-primary, 14.2% in primary and 14.2 % in secondary school and existing number of classrooms include 386 in Nursery, 1572 in primary school and 839 in Secondary. These percentages will be applied to the total population year by year and considering the standard of 840 children per school (NLUDMP 2020-2050), the calculation of schools needed to accommodate all school-age children to implement the Education for all policy.

Determination of number of schools needed

The number of schools is determined by the following formula

$$N_s = \frac{P_1 * S(6-11)}{Q_s} \quad \text{Where,}$$

N_s : Number of Schools are needed

$S(6-11)$: Percentage of the population who aged 6-11 years group/depends age group

Q_s : Standard number of students for a level school (ECD, Nursery, Primary, Secondary, Tertiary)

P_1 : Present total Population

Determination of number of Nursery schools needed.

Description	2022	2025	2030	2035	2040	2045	2050
Total Population	381,900	422,452	499,831	591,383	699,703	827,864	979,500

Percentage of Babies in Nursery	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%
Nursery (3-5)	27191	30079	35588	42106	49819	58944	69740
Planned school	32	36	42	50	59	70	83
Planned Classrooms	777	859	1017	1203	1423	1684	1993
Required Classrooms	391	473	631	817	1037	1298	1607
Required Schools	16	20	26	34	43	54	67

Table 18: the required number of schools in the District

From the table above, it shows that by considering the required number of schools in the District there is more schools needed. Currently, however, by considering the number of classrooms in existing schools and the current number of students, the current demand of classrooms is 817 classrooms by the year 2023-2035. By 2035-2050-; 1607 classrooms are needed. Furthermore, from community consultations meeting, it was found that ECDs are needed as through the community arrangement where the home based ECDs (Amarerero yo mugo) have big number, therefore 1 ECD per each rural settlement site is needed.

Determination of number of Primary schools needed.

Description	2022	2025	2030	2035	2040	2045	2050
Total Population	381,900	422,452	499,831	591,383	699,705	827,864	979,500
Percentage of Children in Primary	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%
Primary (6-11)	54,382	59,988	70,976	83,976	99,358	117,557	139,089
Children / School(2050)	840	840	840	840	840	840	840
Planned school	65	71	84	100	118	140	166
Planned Classrooms	1554	1714	2028	2399	2839	3359	3974
Required Classrooms	-18	142	456	827	1267	1787	2402
Required Schools	-1	5	16	30	45	64	86

Table 19: the required number of primary schools in the District

The table above shows that the Huye District will need new primary schools. The need remains at the level rehabilitation, extension, or relocation of school/Classrooms to the new site.

Determination of number of Secondary schools needed.

Description	2022	2025	2030	2035	2040	2045	2050
Total Population	381,900	422,452	499,831	591,383	699,705	827,864	979,500
Percentage of Children in Secondary	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%
Secondary (12-17)	54,382	59,988	70,976	83,976	99,358	117,557	139,089
Children / School	840	840	840	840	840	840	840
Planned school	65	71	84	100	118	140	166
Planned Classrooms	1554	1714	2028	2399	2839	3359	3974
Required Classrooms	715	875	1189	1560	2000	2520	3135
Required Schools	30	36	50	65	83	105	131
TVETs Schools (60%)	18	22	30	39	50	63	78
General Education (40%)	12	14	20	26	33	42	53

Table 20: the required number of secondary schools in the District

At the level of secondary schools, the needs for the construction of schools from the year 2022 where in 2022 ,30 schools were needed and the total number of schools of the secondary level to be constructed should be 131 by 2050. This will need to build an average of 78 schools for TVETs and 53 Schools for General Education. Due to the vision 2050 and NST1 which are aimed to achieve education for all by 2050, National Land Authority (2022) through Land Use Plans Zoning Regulations Guiding Tool provided the Guidelines regulating the school facilities for instance secondary school covers a lot size of 1.5 Ha, primary school needs 1Ha lot size and nursery requires 0.5 Ha.

- ***Land Requirements for Education infrastructure establishing schools in Huye District in alignment with NLUDMP 2020-2050.***

The above tables show Huye District Educational facilities will be planned based on the following guidelines related to land allocation and must be fully complied to by the District during implementation of any project to be respected through the District at each project of schools construction up to 2050.

Order	School category	Maximum size of land requirement (in Ha)
1	Nursery	0.5
2	Primary	1
3	Secondary	1.5
4	TVET	2
5	Higher education & Universities	3

Table 21: Land size requirement per school category-Source: NLUDMP 2020-2050

4.4.2 Healthcare facilities

4.4.2.1 Existing situation for healthcare services in Huye District

Healthcare is considered as a key essential component of overall social and economic development. The quality of life in human settlements depends on the state of health care which in turn is linked with availability of safe water, waste disposal, transportation, housing, sanitation, and food. Most healthcare services in the District of Huye are currently delivered by the Government in terms of providing and management of hospitals and other health centers. However, the local authorities, church missions, industrial health units and private institutions and individuals also provide small scale healthcare services to support the Government on service delivery, these range from private pharmacy and private medical clinics established in different urban areas and rural settings.

Huye District possesses some healthcare facilities including a district hospital, health centers and health post). The issue is that some of these facilities are lacking the necessary equipment and personnel to enable the providing the better and quality services desired by people. There is a need to increase the capacity of CHUB to meet the needs of people. The district further still has experienced some hindrances in providing efficient healthcare services for the fast-growing population because it really needs heavy investment to upgrade, modernize and construct new healthcare facilities.

The district health coverage is composed of 3 Hospitals and 16 Health centers throughout all Sectors of Huye District.

Healthcare Facilities			
	Names	Numbers	Status 2021
1	Hospitals	3	Good
2	Health Centers	16	Fair
3	Health Posts	23	Good
4	Private Clinique	3	Good

Table 22: Status of Healthcare Facilities in Huye District- Source: Huye District, 2021

Healthcare	
% of de jure under age 5 whose birth are registered with civil authorities	61%
% of de jure HH members with Health insurance	79%
Median age at first marriage	Male: 23.8; Female: 27.1
Median number of months since preceding birth (birth interval)	43.2
Median age at first birth among women age 25-49	24.5
% of women aged 15-19 who have begun childbearing	10%
Wanted and observed total fertility rates for women age 15-49	Wanted TFR: 3.0; Observed TFR: 4.0
% of men and women who heard or saw a family planning message by type of channel	
Radio	Men: 88% ; Women: 44%
Television	Men: 8% ; Women: 11%
Newspaper/magazine	Men: 11% ; Women: 7%
None	Men: 12 ; Women: 54%

% of women aged 15-49 who received antenatal care from a skilled provider	99%
% of mothers 15-49 who delivered in a health facility	95%
% of mothers assisted by a skilled provider during delivery	96%
% of women/newborn who received postnatal checkup in the first two days after birth	Women: 45%; Newborn: 30%
Prevalence of Acute Respiratory Infection (ARI) among children under-five years	5.0%
Prevalence of Diarrhea among children under five years	18.0%
% of children aged 6-59 months classified as having anemia (hemoglobin<11.0gr/dl	47.0%
Prevalence of anemia among women age 15-49	29.0%
% of de facto HH's population with an Insecticide-Treated Nets (ITNs)	66.0%

% of children under age 5 who sleep under ITN	66.0%
Prevalence of malaria among children under 5 years	15.0%
Prevalence of malaria among women age 15-49	1.4%
% of people with complete knowledge of HIV prevention methods	Men: 90% ; Women: 84%
% of women and men aged 15-49 with comprehensive knowledge on HIV	Men: 77% ; Women: 71%
Prevalence of sexually transmitted infections (STIs) and STI symptoms	Men: 1% ; Women: 11%

% of men aged 15-49 who are circumcised	29%
% of women and men aged 15-49 with HIV prevalence	Men: 2.5% ; Women: 3.2%
Nutrition	
% of children under 5 years by nutritional status	
Stunted	43%
Wasting	1%
Underweight	13%
Median duration of exclusively breastfed children under age 5	7.2
% distribution of women aged 15-49, by nutritional Status	
Total thin	9%
Total normal	72%
Total overweight or obese	19%

Table 23: Health status in Huye District-Source: DHS5-Southern Province 2014-2015

4.4.2.2 Planned Healthcare Facilities by 2050

According to NLUMP 2050, each approved and approved rural settlement site selected will be mandated to have one health post that will be constructed on a maximum 600 sqm of land. No health facility will be allowed to be established outside of rural settlement sites. Rural settlement sites will be detailed and zoned to have all land use categories that support residential settlement and other land uses.

One1 Health Centre of 2000 Sqm Ha each per Sector. It is further suggested by NLUDMP 2020-2050 that 14 health centers are planned to be constructed in Huye District to which every Sector will have a health center. Each health center will be constructed in 2000 sqm, but it is

recommended to construct health centers vertically and any other Healthcare Facilities for efficient land utilization.

Concerning District Hospital, it is planned that two District Hospitals of 2 Ha each will, two hospitals are planned to be constructed at Huye District level and the hospital should be constructed on land size of 2Ha

4.5 PUBLIC UTILITIES

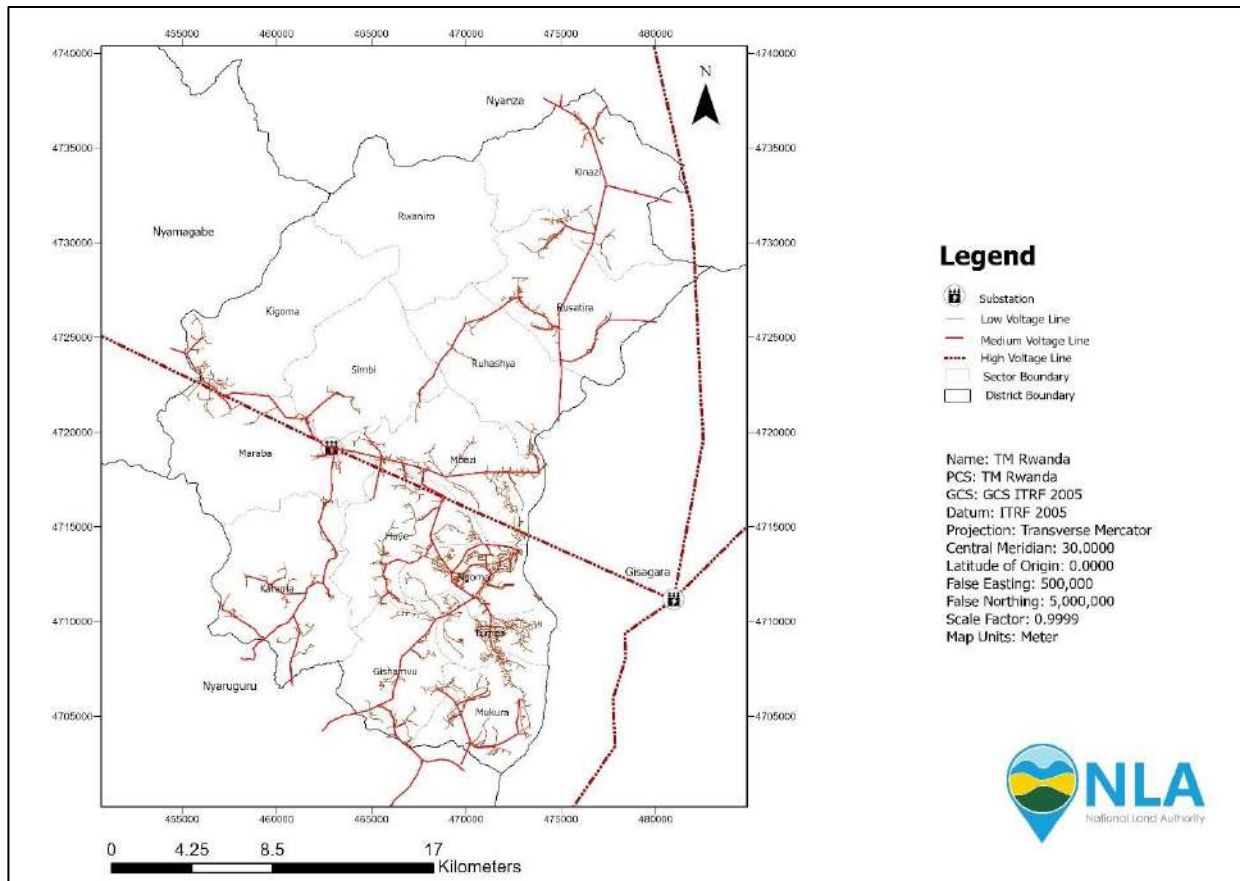
Energy stands at the core of Rwanda's economic aspirations and development strategies. It serves as a cornerstone supporting various sectors, including housing and urbanization, manufacturing, agro-processing, mining, tourism, and information technology. Consequently, a well-functioning and efficient energy sector play a pivotal role in realizing the nation's overarching objectives.

Rwanda's energy sector comprises three primary sub-sectors: power, hydrocarbon, and new and renewable energy sources. Notably, renewable energy sources such as biomass, solar, peat, wind, geothermal, and hydropower are integral components. Among these, biomass stands out as the most prevalent, exerting significant influence over both the demand and supply aspects of the Rwandan economy.

4.5.1 Power supply

- **Existing situation of electricity connectivity and other sources of energy**

According to population and housing census 2022, in Huye District 54.5% of households that have access to electricity. 66.7% in urban areas and 50.5% in rural areas. Only 37% of private households rely on electricity from REG as their primary source of energy for lighting, contrasting with 47% nationally. This underscores the prevalent dependence on firewood for cooking among the majority of Huye residents, standing at 83.6%, in comparison to 76.1% nationwide. Additionally, charcoal is utilized by a minimal fraction of Huye's population (7.1%) as a cooking fuel source, significantly lower than the 17.3% observed at the national level.



Map 8: Huye transmission and distribution network

- **Planning perspectives**

Energy plays a pivotal role in driving economic growth by catalyzing the expansion of small and medium-sized enterprises (SMEs) and mitigating the operational costs associated with conducting business.

In Huye District, approximately 50.9% of households currently lack access to electricity, whether through the grid or off-grid systems. This significant portion of the population faces barriers to development and growth, as electricity serves as a fundamental catalyst for modern technology adoption and socio-economic advancement.

According to Vision 2050, achieving a sustainable energy supply and demand requires universal access to electricity for all households by 2035, whether through grid connectivity or off-grid solutions. This ambitious goal underscores the importance of bridging the electricity gap to foster inclusive development and improve the quality of life for residents in Huye District.

The projection of electricity accessibility is presented in the table below:

	HHs 2022	HHs 2035	HHs 2050
Households	77,915	147,845	244,875
Urban Households	20,053	86,556	157,375
Rural Households	77,915	61,289	87,500
Access to electricity (%)	54.5	100	100

Table 24: Electricity demand projection

To achieve this transformation (*bridging the electricity gap*), Huye District must enhance energy production and diversify its sources by investing in alternative energy solutions. It is crucial to reduce dependence on biomass by maximizing the use of gas and other viable alternatives. By 2035, the focus will be on increasing electrification rates and expanding energy generation capacity across all Sectors, including rural areas. Furthermore, there will be a dedicated effort to ensure equitable distribution of energy access across all socioeconomic groups.

4.5.2 Water supply

- **Existing situation**

The provision of potable water in Huye District primarily relies on WASAC, a state-owned public utility responsible for water production, transmission, and distribution in Rwanda.

According to the 2022 population and housing census, 88.6% of private households in Huye District have access to improved drinking water. This access varies between urban (97.7%) and rural (86.6%) areas. The predominant sources of drinking water for most households include protected springs/wells (44.6%) and public taps outside the compound (27.6%). (12.5%) has piped water within their compounds, higher than the national average of 11.5%.

Data from the EICV 5 (2017) reveals that 2.3% of households in Huye spend between 30-59 minutes reaching their primary water source. However, the World Health Organization (WHO, 2022) recommends that water sources ideally be within 1,000 meters or approximately a 10-minute walk from homes or communities. This proximity is crucial for reducing collection time and distance, particularly for vulnerable populations such as women, children, and the elderly.

- **Planning perspective**

As per Water Supply Masterplan of 2021, the ongoing economic development within Huye District is anticipated to enhance the living standards of households. Consequently, there will be a rise in unit water demand, projected to reach 70 liters per capita per day (l/c/d) in urban areas and 30 l/c/d in rural areas by the year 2050. This forecast underscores the necessity for significant improvements within the district.

According to the water statistics report of 2022 by RURA, water consumption in Huye District stood at 690 cubic meters per day (m³/day) in 2022. By 2050, this figure is expected to surge to 39,044m³/day, with an intermediate projection of 23,573m³/day by 2035. These estimates are crucial as they signify a crucial milestone: achieving a 100% water supply coverage for all residents of Huye District.

The distribution of water consumption between urban and rural areas is presented in the table below:

	Population 2022	Population 2035	Population 2050
District Population	328,398	591,383	979,500
Urban Population	79,744	346,225	629,500
Rural Population	302,156	245,157	350,000
Urban Water demand 70l/p/d	145	13,801	25,093
Rural Water demand 30l/p/d	545	9,772	13,951
Total (m³/day)	690	23,573	39,044

Table 25: Water consumption between urban and rural areas

4.6 AGRICULTURE AND LIVESTOCK

4.6.1 Agriculture

Agriculture plays a major role in Rwanda's national planning. One of the six Pillars of Rwanda's VISION 2020 is productive high value and market-oriented agriculture. The task for NLUDMP is to provide the spatial infrastructure needed to realize this goal.

Agriculture in Rwanda plays a dual role, in generating income and foreign currency through export of agricultural products (mainly coffee and tea) and in generating food for the local population.

Given the size of the country and population, the main question to be asked is whether it is possible to feed the local population (today and in 30 years from now) given the limited arable land. The food needs of the growing population of Rwanda were analyzed based on three scenarios regarding agricultural yields' development, to calculate the size of the agricultural land needed for protection within the NLUDMP. In a business-as-usual situation, given the current crops' yields – the farmland in Rwanda will not be sufficient to feed 22.1 million people in 2050, because this situation requires large agricultural land surface almost 4 times the current size which is not possible.

In a realistic scenario where, within 20 years, 80% of farmers are commercial and the consumption of livestock products rises to 10% of the diet, the farmland in Rwanda is still not sufficient to provide food for a population of 22.1 million people by 2050. Even if the yields in Rwanda improve to the best practice, the existing farmlands cannot provide food for 22.1 million people due to several factors among which physical landscape, erosion and the competition over land.

The recommendation is therefore to protect the current agricultural land of 10,949 Km² (41.6%) meaning that for the period of 3 decades to achieve vision 2050, only 12,433 Km² (47.2%) of agriculture land to be reserved to satisfy future generations and to be protected and efficiently utilized and enlarge it as much as possible, given the demand for other land uses and possibly up to 15,000 km² to have room for sustainable food security.

The farmers should be no more than 30% of the projected population with less than 10% of agriculture contribution to the GDP and this does not mean reducing the size and value of

farmlands, but rather increasing the economic growth of other sectors like Industry and services. The average Land per farmer ratio should be around 1.5 hectares in a consolidated form.

In the Eastern, Northern and Southern districts (the LUCA A areas in NLUD MP 2050) agriculture should be developed further, so that cultivated land grows in size, and yields improve dramatically. However, in the Western districts, where landslides prevail, other economic sectors should be emphasized.

In 2050, the agricultural land / farm (household) ration should be around 0.75 hectares per farm (household). About 8.4% of the workforce will be employed in commercial agriculture.

Scattered homestead homesteads will be eliminated gradually, consolidated/agglomerated in few settlement sites to decongest agriculture zones to and allow the use of technology in agriculture.

Based on all these recommendations, in 2050 Rwanda will fulfill its vision of a nation that enjoys food security, nutritional health and sustainable agricultural growth from a productive, green and market-led agricultural sector.

4.6.1.1 Existing situation

The district of Huye has a surface land area of 581.5 km² (NISR, 2019). Data collected by NLA (2021) showed that available land for farming activities on hillside and marshlands is about 348.3 km² and 40.2 km², respectively. This makes a total of 388.5 km² of the district agricultural land; however, only 270 km² of it is cultivated (EICV5). The proportion of lands protected against soil erosion is estimated to 81.6% which highlights an important achievement in terms of land management. The farming systems are dominated by a wide range of crops which occupy different land sizes following farmers' prioritization. These are namely legumes and pulses (9,040 Ha), root and tubers (7,856 Ha), banana (5,212 Ha), cereals (3,649 Ha) and vegetables and fruits (808 Ha)

- **Agricultural Land Suitability for Huye District**

Huye District belongs to the land use category (LUCA) B considered as agricultural suitable lands. Although farmers are used to cultivating a variety of crops, the region is most suitable for maize as a food crop and tea as well as coffee as industrial crops.

Agriculture suitability analysis has been conducted countrywide for guiding districts in Agriculture development. For the national scale, the suitability studies combine 8 crops which

are: Maize, Beans, Potato, and Soja bean, Cassava, Banana, Coffee and Tea. The following suitability categories have been established:

- ❖ **S1** : Best suitable
- ❖ **S2**: Suitable
- ❖ **S3**: Low suitable
- ❖ **N1**: Poor suitability
- ❖ **N2**: Not suitable

Only categories S1 and S3 have been identified as main suitable lands for above-mentioned crops in Huye District. The total agricultural land size in Huye District is represented by two categories as follow:

The information related to the area size for suitable agricultural land considering eight crops; per category as provided above is spatially represented by the map below: S1 representing most suitable agricultural land is less important in Huye District with 7,242.30 Ha against 49,377.9 Ha; the lands for S3 which is low suitable. The suitable lands (3) are mostly located in Swamplands.

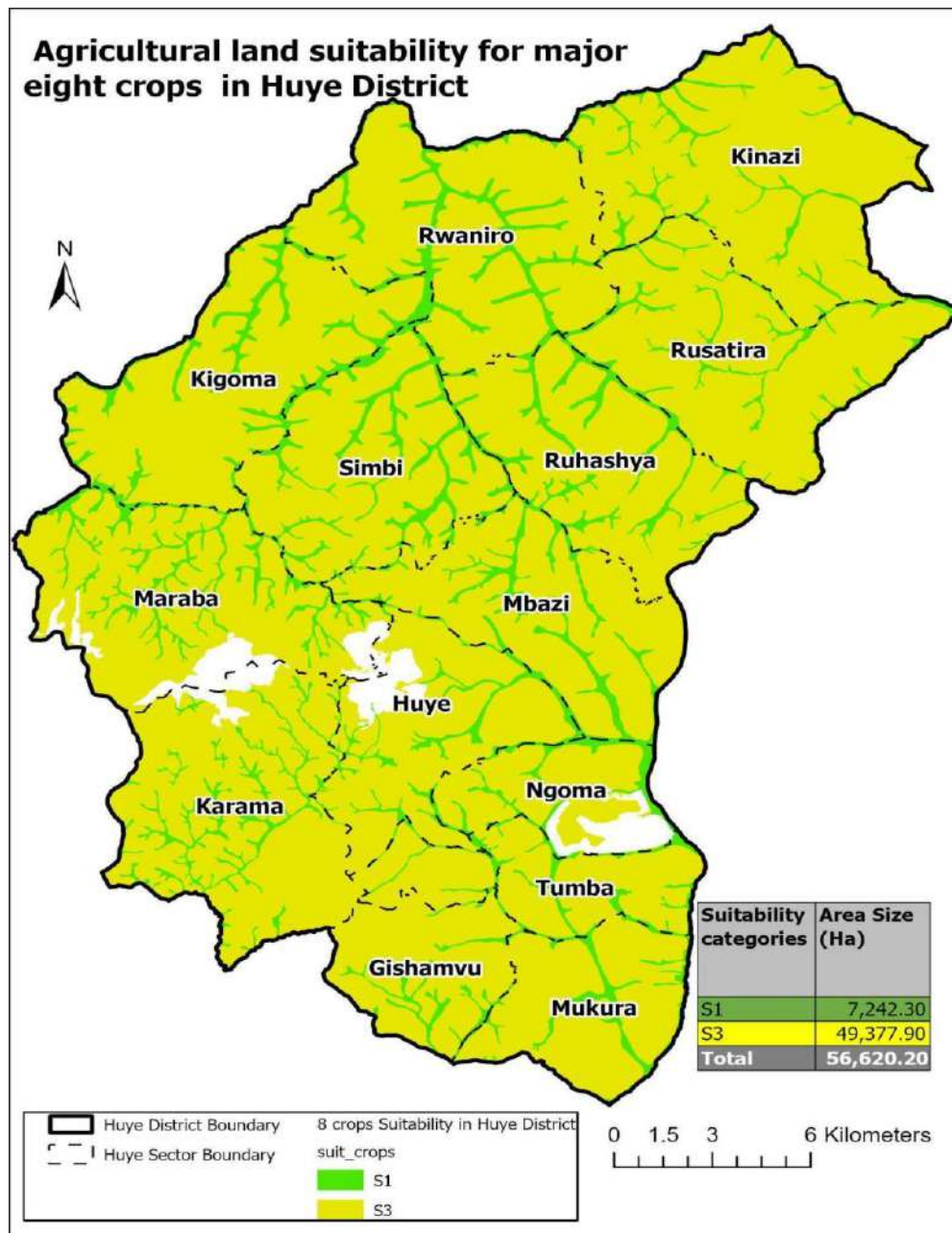


Figure 19: Crop suitability map in Huye District

As illustrated by the figure (map) above the S1 dominates as it occupies 78.7 Km² (Including 62.7 Km² of Swamplands and their buffers) while the S3 covers 283 Km² of the District size. Agriculture development is in general hampered by land fragmentation due to scattered settlements in agricultural landscapes. Scattered homesteads will be eliminated gradually, consolidated/agglomerated in a few settlement sites to decongest agriculture zones to allow the use of technology in agriculture. The analysis of the existing built-up and house footprints, the DLUP identified 38,462 houses of 2.4 Km² in the agriculture zones to be relocated.

In order to ensure food security by 2050, one of the strategies is to group farmers into settlements out of agricultural lands and prioritize agriculture development projects and techniques such as drainage, irrigation, erosion control mechanisms, especially radical terraces development, the use of fertilizers, land use consolidation, crop regionalization, agricultural mechanization, farmers cooperatives formation, agricultural research and extension services. Further identification and delineation of suitable agricultural land, initiative and opportunity to enlarge will be an important pillar of agricultural development.

4.6.1.2 Planning perspectives

Results from the population census showed that the population of Huye District is estimated to be 328,298 inhabitants (r). With an annual growth rate of 2.58% per year, it is expected that the Huye population will almost increase to 582,401 inhabitants by 2050 (NISR, 2019). It is also projected that the available land for agriculture will shift from 388.5 km² (hillside: 348.3 km²; marshlands: 40.2 km²) in 2021 to 341.6 km² (hillside: 302.3 km²; marshlands: 39.33 km²) by 2050. The slight decrease of agricultural land by 2050 can be justified by the promotion of other land use categories (settlements, industries etc...) in Huye District.

Although agriculture can still meet the current food needs of the population of the district with the possibility of increasing the land under crop production, agriculture development is likely to be hampered by low use of modern, improved agricultural inputs. Most farmers are still using traditional seeds (96.9%) and only 37.4 % use mineral fertilizers while the irrigated land is about 7.8%. This is exacerbated by the constraint associated with the land fragmentation due to scattered settlements in agricultural landscapes.

To meet the food security of the growing population (582,401 inhabitants) by 2050, one of the strategies is to address the mentioned production constraints. This will need to relocate farmers from agricultural lands and group them in rural settlements and protect them against other encroachments. Moreover, farmers will be professionalized and commercialized value chains developed. This will allow availing more lands for agriculture and enhance farmers' adoption of modern inputs (such as improved seeds) and new fertilizer technologies focused on the efficient and utilization of fertilizer rates to meet crop nutrition needs and thus increased crop productivity. Besides, people operating in agriculture will be empowered by linking them to agriculture finance and risk sharing facilities.

4.6.2 Livestock

Huye is one of the districts with improved livestock farming and records higher and the milk yield of milk production is significantly high compared to other districts of Southern Province of Rwanda. Livestock farmers are organized in cooperatives and produce about 101,300 liters per day collected through various milk collection centers. The milk is then processed and sold to Kigali markets and other areas in the country.

The small stocks such as goat, sheep, pigs, chicken which also contribute to socio-economic life of the populations in the districts.

Livestock products such as impu (skins)

The District is advised to continue specializing and modernizing livestock farming, increasing technology as well as focusing on improved growing of wheat, soybean and maize production to feed cows that will increase milk production sufficiently.

S/N	Name of M.C.C	Sectors	Number
		GISHAMVU	
		KARAMA	
		KIGOMA	
	1. Kinazi MCC 2. Kidaco MCC 3. Rudako MCC	KINAZI	3
		MARABA	
	Mbazi milk collection Point	MBAZI	1
		MUKURA	
		NGOMA	
		RUHASHYA	
		HUYE	

		RUSATIRA	
	Rwaniro milk collection Point	RWANIRO	2
	Simbi milk collection Point	SIMBI	1
	Tumba milk collection Point	TUMBA	1
TOTAL			8

Table 26: List of M.C.C operating in Huye District

4.7 ENVIRONMENT AND NATURAL RESOURCES

Rwanda is a natural resources-based economy, and therefore environment and climate change issues are a key priority and cross-cutting area that needs to be enhanced as stated in various medium and long-term national planning and strategic documents. Based on this, the key to planning and implementing the NLUDMP is to ensure harmonization of land allocation for each Sector while at the same time ensuring that there are targeted efforts to the conservation of natural resources and promotion of their sustainable use.

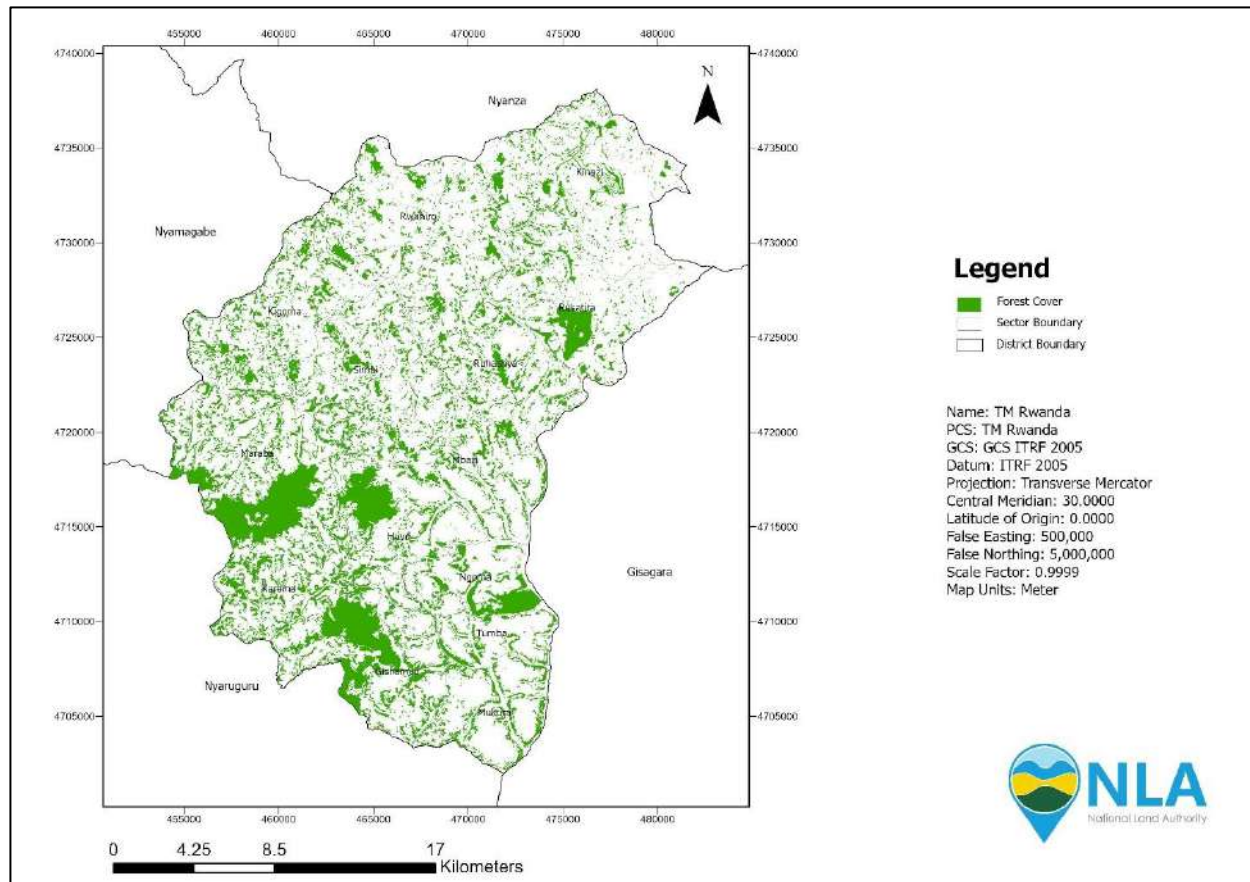
4.7.1 Forestry

The vision of Rwanda is to achieve and sustain forest cover at 30%. The most recent data on forestry in Rwanda based on the 2019 forest cover informed that the Rwanda forest cover is about 7,246 km² which is equivalent to 30.4% of the dry land. Specifically, 53.5% of the forest cover are plantations, 23.3% is wooded savannah in the East, 18.1% are natural mountain rain-forests, and 6.1% are shrubs. In addition, Bamboo stands occupy only 613 hectares and its plantations have mainly grown in the buffer zones of rivers (*Rwanda Forest Cover, 2019*).

4.7.1.1 Existing Situation

Particularly, forests in Huye District cover 14,688 ha which is about 25% of total district land. Specifically, 14,448 ha (98%) are forest plantations and 240 ha (2%) for natural vegetation. The highest forested Sectors are Karama with 2,223 ha (42% of the Sector land), followed by Maraba Sector with 1,894ha (37%), Gishamvu with 1,163 ha (38%), Kigoma with 1,144 ha (22%), Huye with 1,123 ha and Rusatira with 1,002 ha (19%). The least forested Sectors are Kinazi Sector with 851 ha (14%) and Rwaniro Sector with 875 ha which is equivalent to 16% of the total Sector land

(Rwanda Forest Cover, 2019). Forest of Arboretum, in Butare cell, Ngoma Sector with mixed species of trees; were planted for the purpose of education and academic research.



Map 9: Existing forest cover in Huye District

4.7.1.2 Planning Perspectives

Huye Districts seems to be forested even if it has not yet met the recommended target for the country of 30%. The District is still working on afforestation and fighting against deforestation. The last decade shows that the afforestation rate is 35% against deforestation of 11% over ten years from 2009. The highest afforested Sectors are Simbi with 91.7%, followed by Ruhashya with 75.3%, and then Mbazi Sector with 63.4%. In addition, the District Forest Management Plan (DFMP) provides a clear plan on the reforestation of mountain ridges of Maraba, Karama, Gishamvu and Rusatira, which are under continuous degradation in order to improve the productivity of public forests in Huye District. Further, forest plantation on steep slopes, agroforestry, protection of road and river sides as well as introduction of urban forestry and trees in open spaces found in towns and centers are still recommended in order to reach the national target and sustainable development of Huye District.

The surface area of forest cover (2019) has decreased with more than 3,400 ha in Huye District compared to forest cover in the land use plan for Huye District due to existing small forests

merged to other zoning like residential or agriculture, therefore it is proposed to compensate that area by deforestation the buffer zones and area of high slope within the district.

The efforts for preventing deforestation in order to protect the environment and combating the land degradation issues are required while increasing forest ecosystem cover and implementing forest management strategies, therefore high slope zones that are greater than 55, will be used for afforestation in order to improve forestry and environmental protection in the district.

4.7.2 Swamplands

There are 935 swamps under the order No 006/03 of 30/01/2017, drawing up a list of swamplands, their characteristics, and boundaries, and determining modalities of their use, development, and management. They have a total of a recorded 276,477 ha where 74% of total Swamplands are under conditional exploitation, 6% are under full exploitation, and 20% of the full Swamplands are fully protected.

4.7.2.1 Existing Situation

The Swamplands have been used for agriculture, clay mining, and brick production; only a few Swamplands remain untouched and in their natural state. Cultivated Swamplands are classified into two main types. The first type of Swampland is one with developed modern monoculture farming practices. The second category of Swamplands includes those that are individually cultivated with a variety of crops.

4.7.2.2 Planning Perspectives

Swampland maintain critical hydrologic processes that help in ground and surface water as well as supporting in improving local livelihoods therefore it is necessary for enforcing zoning regulation to ensure limited acquisition of Swampland for enhancing protections. Particularly it is necessary to protect all the buffer zones for Swamplands or have their use guided.

A Swampland sectorial master plan will be highly advantageous hence to assure Protection of the totality of the Swamplands which would be marked preserved. Furthermore, the master plan indicates the part of the Swamplands to be used conditionally for other uses, e.g., Recreation, research, tourism, etc. Moreover, to identify the urban Swampland points suitable for collecting and filtering for storm water from the urban areas as well as describing degraded Swampland to have a focus on while planning Swampland restoration.

4.7.3 Water bodies

Countrywide, water bodies occupy 6.2 % of the total area of the country that accounts for about 1537 km². Most of the lakes and rivers are fed by marshes, which in turn are fed by shallow groundwater and seasonal floods. One hundred one lakes cover 149,487 ha, and 861 rivers totaling to 6462 km in length in Rwanda. The central pressures on water resources result from the use of utilizing the natural resources to meet basic household needs as well as social-economic development, e.g., undertaking Agriculture.

4.7.3.1 Existing Situation

Except for Mwogo and Agatobwe rivers which are of the category 3 according to the classification of rivers by Water Resources Master Plan, there are no sizable rivers in the district. Mwogo River origins can be traced back to Kitabi Sector of Nyamagabe District. It runs eastward past Nyarusiza into the Huye District and continues to join Rukarara River, both to become the primary source of water used in Nyanza District.

4.7.3.2 Planning Perspectives

By adhering to the water policies and strategies, it is essential to ensuring that all the water bodies and their buffer zones are fully protected, particularly prohibiting settlements in 50m from lakeshores, 10m for rivers and 20m buffer for Swampland boundaries. Buffer zones are used for forestry, tourism and conservation efforts. Moreover, the development of hydrological and hydraulic at district and catchment levels, through the support of hydrological and hydraulic models, improved rainfall monitoring, river flow and groundwater monitoring and a better understanding of agro-meteorology and water quality testing. Furthermore, enhance and improve the knowledge and operations of water users within districts, catchments area, irrigated and mining sites etc. as instructed in the NLUDMP 2020-2050.

4.7.4 Mining

The Government of Rwanda recognizes that the mining sector has the potential to become one of the drivers of long-term sustainable growth through economic transformation, industrialization and inclusive growth taking into account environmental and social considerations and using green mining techniques.

4.7.4.1 Existing Situation

The major minerals extracted in Huye District are Cassiterite, Coltan and construction materials (Clay, Sandstone and gravel). The minerals are extracted specifically in the Kigoma and Rwaniro Sectors. The mining activity dated for a long time in these Sectors. Due to the size of the mining concessions under exploration, their layers must be overlaid on the major land uses except residential use. Mineral resources estimation will come up to concession size reduction. As the land use master plan is dynamic, it will update the potential mining areas.

Industrial materials (especially Clay) are extracted in different swamps of Huye District and their extraction will follow the use of the swamps for commercial purposes as per the Prime Minister's order N°006/03 of 30/01/2017 drawing up a list of swamp lands, their characteristics and boundaries and determining modalities of their use, development, and management.

4.7.4.2 Planning Perspectives

The mining sector employs over 60,000 people countrywide and has generated 733 USD in 2020. Its contribution to the GDP was 2% in 2020. The mining activities play an important role in the economic and social development of Huye District. The exploration and extraction of Coltan, Cassiterite and industrial minerals and construction material will employ a big number of people, especially the ones living in the nearby mining concessions. The mining activities will generate money through opportunities for employment, backwards and forward linkages that will overall generate substantial social and economic benefits to the district.

To ensure sustainable mining the following needs to be ensured and undertaken going forward:

- ❖ Undertaking a land-use analysis (cost-benefit analysis) for current land use versus the proposed mining activities and use the analysis results to understand the best land use;
- ❖ Undertaking of a complete risks analysis (Environmental and Social Impact Assessment Study approved by the competent authority) to the natural and human environment before the licensing of the mining activities;
- ❖ Developing and Implement land-use master plan concerning the proposed mining activities;
- ❖ Undertake and Enforce environmental and social assessment and monitoring (EIA, EA, SIA, EMP);
- ❖ Enforce the programs for orderly, rehabilitation, restoration, and utilization of mining sites after an operation;

- ❖ Develop a mine drainage and leaching of contaminants plan associated with mining metals to avoid impacts on rivers, streams and water quality.
- ❖ To protect other natural resources during mining activities

4.7.5 Green Urbanization

The District Land Use Plan will be anchored on the implementation of Green cities, green villages, green buildings, and green transport in both rural and urban areas as well as ensuring that there is adequate sanitation, urban drainage and water control systems, and recycling in all settlement areas in rural, rural and urban settings for preventing the Unsustainable land use due to Urbanization and human settlement that have an impact on natural habitat and environment.

4.7.5.1 Existing Situation

Because Huye is a secondary city, the NLUDMP projected the population of Huye to be between 250-650K whereas the current population is 365889 inhabitants; this implying that green urban development and other factors are required to increase the number of inhabitants from rural area. Huye urban area is made by 3 emerging centers and district town which is considered as secondary city that is divided into residential areas in the north and south, and a cluster with commercial, administrative, and public institutions in the center, with agriculture serving as the backbone sector for Huye economic growth (NR, 2015), with high potential for historical and cultural tourism and resource-based manufacturing opportunities.

4.7.5.2 Planning Perspectives

Various actions must be implemented to guarantee that the NLUDMP is environmentally sustainable in its execution. It is essential that numerous policies and legal frameworks must be reviewed and updated in parallel with the NLUDMP. Therefore, for a green urbanization it is recommended that All Population, Urbanization, Settlements, and Housing (Push) programs of the district must comply with the projection of NLUDMP. Moreover, the district should favor the Investment in green urban infrastructures, green entrepreneurship and jobs such as Green building, Clean energy, etc. In addition, together with MINICOM to develop industrial ecological parks as well as technical training in green industries and entrepreneurship.

Furthermore, it is advantageous to the district to identify and upgrade the informal settlements as well as develop urban green spaces and assure urban food security. As Huye was meant to be a Hub for Knowledge, Culture and Agribusiness therefore investment has to focus on tourism,

agribusiness and education.

4.7.6 Waste Management

The amount of solid waste is increasing rapidly because of rapid growth and migration from rural to urban regions. The fast urban population increase has a significant socioeconomic and environmental influence on solid waste management techniques.

Within the district some good solid waste collection practices are already in Place, but they need to be strengthened by sorting at the source and recycling a broader range of wastes, Moreover the liquid waste management approaches have to be improved for limiting the ecosystem and Swampland pollution due to unsustainable handling of wastewater in the district.

4.7.6.1 Existing Situation

According to The EICV 5, 55.8 % of Huye’s population dispose of their waste by dumping it in nearby bushes or fields. This is higher than the national average of 46.5 percent and is a source of concern for the environment. Residents use a collection service at a rate of 0.1 %, which is significantly lower than the national average of 8.3 %.

Huye City lacks a proper landfill. Solid waste is transported to the Sovu composting plant. The studies for this composting plant were conducted with the goal of building a solid waste collection and recycling center to generate compost and briquettes. Since the landfill in Sovu is not well maintained, it may negatively affect the environment and surrounding communities. With poor practices some solid waste from settlements are transported and deposited in the Swampland by runoff.

Waste water from Rwabayanga restaurants and lodges pollutes the Rwabayanga Swampland through Rwabayanga area channels and liquid wastes from the market of Rwabayanga, TVET school of Rwabuye which may harm Rwabuye Swampland.

4.7.6.2 Planning Perspectives

a) Solid waste

The Huye District office intends to build a sanitary landfill in the Sovu cell, which is located outside of Huye City and all waste generated in urban/high-density areas will be collected for being disposed of at an engineered landfill. According the Huye secondary city master Plan, the issues the following issues must be addressed in the city as well as within the whole district,

- Collection and disposal of waste for areas outside of the city centre;
- Reduction in volume of waste generated by the population as well as education of the population on efficient methods of recycling;
- Dumping of large volumes waste into the environment;
- No engineered landfill or solid waste treatment;
- Providing training to District technicians on sustainable waste management measures

b) Liquid waste

Increased water supply leads to increased sewer flows, which contaminate water sources; this must be mitigated by ensuring adequate sewage collection and disposal methods, as well as vital integrated planning. Moreover, efforts are required for fully implementing the proposed sewer network and treatment plants proposed by the sanitation Master Plan.

4.7.7 Storm water Management

Some Swamplands, settlements and infrastructure are often affected by the impact of storm water therefore, actions are required during the implementation of the NLUDMP 2020-2050 through District Land Use Plan for ensuring the adequate sewage treatment and storm water control mechanisms.

a) Existing situation

Within the District there are Inadequate cross-drainage arrangements to facilitate storm water drainage along crossroads as well as Absence of proper roadside drains which require detailed drainage investigation to be done for developing an effective solution and plan.

b) Planning perspectives

According to the Huye secondary city master plan, sustainable storm water management practices that Huye could adopt are: vegetated swales which are open-channel drainage ways used to convey storm water runoff that can be used as replacement for the conventional drainage system. Moreover, the Bioretention Swale was a vegetated swale with an additional bio-treatment system at the base. Furthermore, Bioretention Basin is a practice of a landscaped depression or a shallow vegetated basin that is designed to slow down and treat the storm water runoff on-site.

4.8 TOURISM AND CONSERVATION

4.8.1 Existing situation

Tourism is considered one of the vital sectors that have significantly contributed to the socio-economic development of the country through revenues generated by the industry in Rwanda. It is recognized as an essential economic sector with the potential to boost domestic economic growth and development, contribute to poverty reduction, job creation, export growth, and prosperity through revenues generated from the tourism industry. This is because the tourism sector can generate much-needed revenues as the country's largest source of foreign exchange with reported receipts of US\$438 million in 2017 and expected to generate over US\$800 million by 2024, according to figures and estimates provided by Rwanda Development Board (RDB, 2018) and NST1 projections.

4.8.2 Planning perspectives

Tourism in Rwanda has been an expansive phase with strong growth for several years. Part of the growth strategy of tourism in Rwanda is the diversification of tourism products. Tourism in Rwanda has long been associated with one single product: Volcanoes National Park and the mountain gorillas. The mountain gorillas are the main driver of tourism to Rwanda, and an enormous asset in attracting visitors. If Rwanda's tourism is to continue to grow beyond the capacity of National Parks, diversification of the tourist offering is what the country needs. This means that new key tourism attractions need to be developed.

The country has developed the National Tourism Policy and the Sustainable Tourism Master Plan to guide future tourism growth. Rwanda's Sustainable Tourism Development Plan presents eight Destination Management Areas as a way of diversifying Rwanda's tourism offering through the creation of new core and supporting products. Among other things a lot of focus is currently on Rwanda's cultural tourism development hence the development of a specific tourism sub master plan known as Heritage Corridor Tourism Sub Master Plan to develop cultural and historical tourism in Rwanda.

Tourism being recognized as an essential economic sector with huge potential to boost domestic economic growth and development, contribute to poverty, job creation, export growth and prosperity through revenues generated from tourism industry, the Government of Rwanda has defined new and ambitious goals for the further development of the country and implementation

of different strategies such as the National Strategy for Transformation whereby Rwanda has to double tourism revenues and reach 800 Million USD by 2024.

In line with GoR's vision to diversify the tourism sector, all provinces based on their respective tourism master plans and sub-master plans, or related strategies would be required to develop tourism attractions and sites as well as encourage private investments in areas beyond the current tourism hotspots. According to the 2050 Rwanda's Vision, new tourism segments will shape the future of the tourism industry, mainly sport, medical, education, water-based, urban, and adventure tourism. These segments reflect Rwanda's aspirations of becoming a high-value tourism destination hub through diversification. Even though some of these segments may not necessarily be land-based. As far as Huye District is concerned, Heritage Corridor Tourism Sub-Master Plan covering the entire southern province has been developed for cultural and historical tourism development and due to its enormous potential for cultural tourism development the district of Huye is envisioned to become the center point of the heritage corridor for domestic and regional tourists. Huye can build on its strong foundation as a heritage and cultural destination thanks to its important historic assets.

Based on the 2050 Rwanda's Vision, the new tourism segments that will shape the future of the tourism industry shall include MICE, Medical, Education, Water-based, Adventure, and Religious tourism. The projected 2050 contribution of each tourism segment is shown in table below:

Tourism segment	Expected total GDP Contribution%	International	Domestic
Meetings, Incentives, Conference & Exhibition (MICE)	25%	20%	5%
Wildlife	20%	12%	8%
Cultural and Historical	15%	5%	10%
Religious	7%	3%	4%
Medical	5%	5%	-
Educational	3%	3%	-

Table 27: Tourism segment by 2050

In line with RDB's vision to diversify the tourism sector, all provinces based on their respective master plans or strategies would be required to develop tourism attractions and sites as well as encourage investments in areas beyond the current tourism hotspots. According to the 2050 Rwanda's Vision, new tourism segments will shape the future of the tourism industry, mainly sport, medical, education, water-based, urban, and adventure tourism. These segments reflect Rwanda's aspirations of becoming a high-value tourism destination hub through diversification. Even though some of these segments may not necessarily be land-based.

Some areas of interest for tourism development will be subject to several factors such as environmental impact assessment, accessibility, and compatibility with other economic activities of Rwanda. Key tourism zones like national parks, islands and Tourism strategic lands around lakes and high-end zones for hotels and leisure will take **3,525 Km²** (13% of the country surface).

*Figure 20: Tourists exploring a visiting site.*

Resources	Total Area (Size)
National Parks (Akagera, Volcanoes, Nyungwe and Gishwati Mukura), expansions and their buffers	2611 km ²
Lakes Islands	16 km ²

Eco-Tourism land around lakes		886 km2
Functions	Tourist parcels outside national parks, allocated for tourism development	12 km2

Table 28: Tourism segment by 2050

a) Tourism potential in Huye District

In addition to civic facilities, the existing tourism and heritage sites of Huye will be conserved as part of the rich cultural assets of the district. Existing and potential tourism and heritage sites that are within of Huye District include the following:

Key Attraction	Existing Conditions/Assessment	Potential for Improvement	Photo
Huye Ethnographic Museum	This museum was built in 1987, and now houses one of Africa's finest ethnographic collections. Its seven galleries display historical, ethnographic, artistic and archeological artefacts accompanied by visual aides, giving visitors a rich insight into the culture of Rwanda.	✓ Need to integrate a coffee shop, modern book and gift shop and handcraft selling station and packaging place	
Butare Cathedral	Historic attraction in good condition, preserved by the catholic church The largest church in Rwanda and historically given as a gift from Belgian King Albert and Queen Astrid. Constructed in 1936-1937	✓ Need of proper signage	

University of Rwanda (UNR)	Established in 1963 by the government of Rwanda in partnership with the Dominicans catholic congregation from the Province of Quebec, Canada. Well preserved by Rwanda University management Easily accessible by foot from Huye town centre	✓ Need proper signage. ✓ Train local guides and story tellers. ✓ Installation of an historical monument	
Arboretum of Ruhanda University of Rwanda	A famous University established in 1934 amidst a beautiful forest ideal to study the behavior of imported and indigenous tree species.	✓ Improve the hiking path along the ground. Install benches, birds' observatory and train local tourism oriented guides. ✓ Brochures and story tellers on the history of University and its colonial buildings.	

Ibisi bya Huye (Mount Huye)	Located at the top of Huye Mountain, a beautiful tourism site with a good historical background and a scenic view point Historically related to Nyagakecuru during the reign of King Ruganzu II Ndoli (1510-1543)	✓ Improve access road and the foot path to the top ✓ Needs proper signage	
Gishamvu Blacksmith Cooperative	Handcraft cooperative. Historically known as the place where all the steel tools during kingdom times were made Nowadays they make handcrafts as well as agricultural tools and teach those techniques to youth	✓ Training of cooperatives members in term of tourism oriented business ✓ Needs proper signage and training of local guides. ✓ Creating online and visa card payment facilities	
Maraba Coffee Plantation & Washing Station	Located on the Roadside, 8kms on the road to Nyamagabe. Coffee testing experience	✓ Training of cooperatives members in term of tourism oriented business ✓ Needs proper signage and training of local guides	

Table 29: Tourism potential in Huye District

b) Existing Tourism and Heritage in Huye District potentialities

Nyungwe Destination Management Area

Further to its tourism assets as part of the heritage corridor, huge potential for tourism development equally lies in its proximity to Nyungwe National Park, one of the oldest rainforests in Africa, rich in biodiversity and spectacularly beautiful. The mountainous region is teeming with wildlife, including a small population of chimpanzees as well as 12 other species of primate, including the L’Hoest’s monkey endemic to the Albertine Rift as well as an aligned marketing plan, and stronger promotion as a tourism transit point for domestic, regional and international tourists. Huye District has the great potential to be attached to this area where tourism is a key destination to, the Park’s extensive area provides the opportunity to create a high-quality, environmentally responsive and internationally renowned birding destination and other tourism attractions.

To achieve its potential, the development of more tourism infrastructures, accommodation facilities and leisure /entertainment facilities would strengthen the district’s position as one of the secondary cities targeted by domestic and foreign tourists.

In addition to civic facilities, the existing tourism and heritage sites of Huye will be conserved as part of the rich cultural assets of the district. Existing tourism and heritage sites that are within of Huye District include:

- **Roman Catholic Cathedral:** Huye is also a religious centre with the presence of a massive Roman Catholic cathedral built in memory of Belgium’s princess Astrid in the 1930s. It has a grand long hallway, arches, and large windows with sculpture of Mary on the spacious garden outside. It is supposed to be the largest in Rwanda.
- **Arboretum De Ruhande:** Another interesting asset in Huye is the Arboretum De Ruhande which occupies a 220ha area and is not only a botanical park but also a historical site of Huye District. It was created in 1934 to promote the agroforestry in Rwanda. Although it doesn’t attract as many visitors other than some students and bird watching groups, it has a great potential to develop as one of the tourism destinations.
- **Maraba coffee:** Huye is home to the world renowned Maraba coffee trade cooperative and Maraba coffee washing stations are operational in Huye. This is another great tourism potential to increase economic growth.

-Huye Stadium: The presence of a functional stadium in Huye, places it in a good position to attract children and youth for sports training and boost sports tourism.

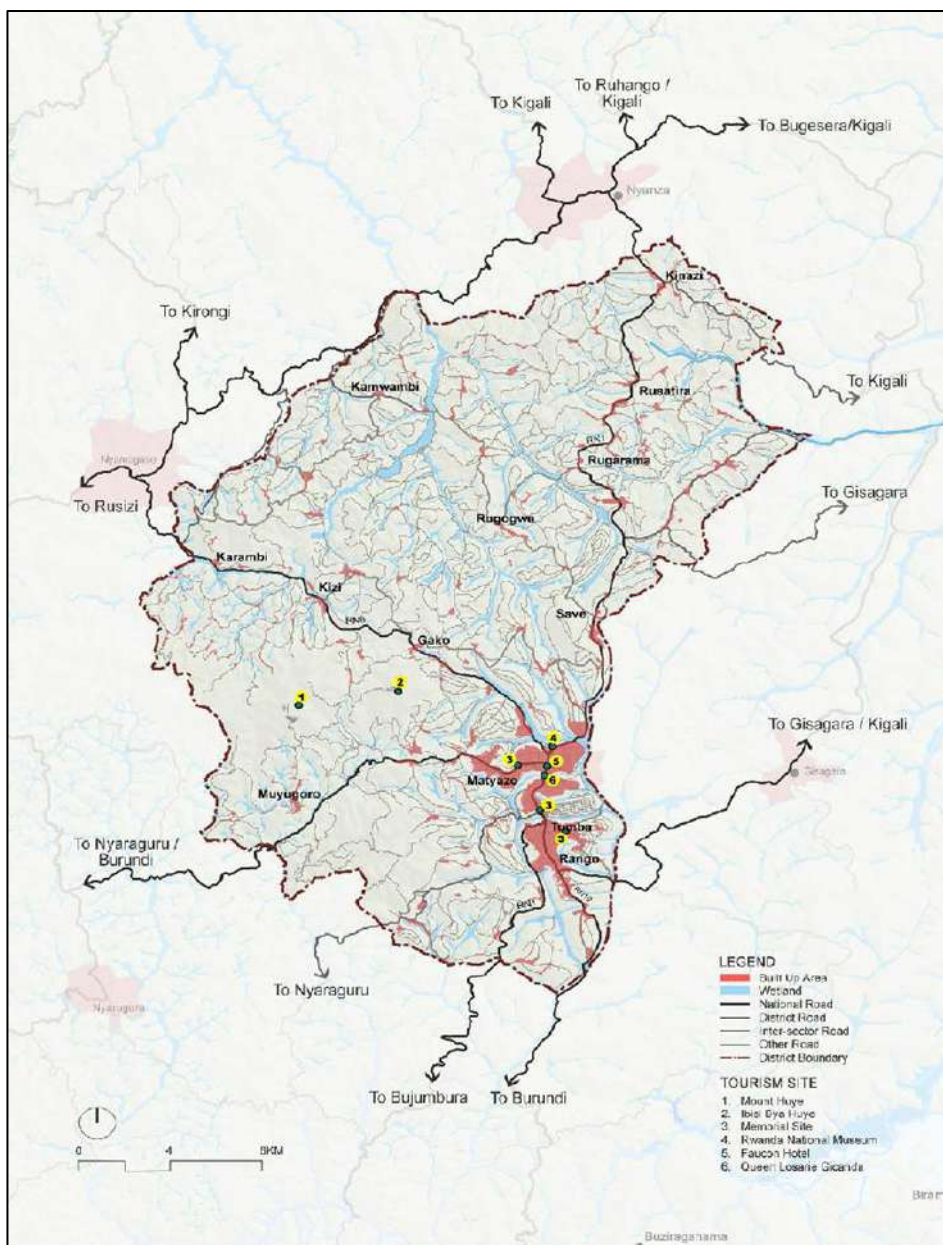
-Mount Huye: At an elevation of about 2000m, Mount Huye has beautiful/ scenic views and is a popular destination for hiking. It is said that it is also popular for the cultural folklore around the Nyagakecuru legend.

-Nyungwe National Park: To the west of Huye is the Nyungwe National Park, a 970sqkm expanse of the only rainforest that stretches towards the Burundi frontier.

-National Ethnographic Museum: One of Rwanda's leading cultural attractions, the National Ethnographic Museum is located at the northern entry to Huye City. It was built and donated by the Belgian royal family. It has a wide and well showcased collection of artifacts that provides clear insight into Rwanda's history, cultural traditions and lifestyles. As Huye is not situated on the main foreign visitor route, the museum does not attract as many visitors. In the Master Plan review, this aspect needs good assessment and strategies to attract more visitors to the museum and to Huye City.

-Traditional seat of the Rwandan court and site of the Royal Palace (1932): It is in Nyanza, about 30km north of Huye and is another site to explore. This place provides a great experience of learning about the long, rich history of the Kings of Rwanda with its reconstruction of a traditional thatched palace and great collection of photographs, artifacts, and some original pieces of furnishing. This site can easily be combined with the visit to Huye or to Nyungwe National Park.

-National University of Rwanda: This education institution is a knowledge asset for Huye city to hosts international conferences and seminars and become an international centre for education and research. Educational/learning tourism is also one of the central ideas included in the Sustainable Tourism Master Plan. It indicates that there is a paradigm shift with a large number of youngsters traveling around the world for learning purposes rather than just for a holiday.



Map 10: Key touristic zone areas in Huye District map

Destination Management Areas (DMAs)

The national tourism circuits commonly called “Destination Management Areas” are centered on major attractions and have been demarcated by Rwanda Development Board as hotspots for tourism development and investment. It is worth noting that each DMA is centered on its core attractions and whatever else could add value to the overall product catalog, based on what Rwanda has to offer as a competitive destination.

Destination Management Areas do not become destinations overnight: their development requires investment in infrastructures, services and products. Each stage of the lifecycle of a destination is associated with a specific spatial distribution and allocations to suit its intended objectives.

Nyungwe Destination Management Area

In terms of Destination Management Area Huye District has the great potential to be attached to this area where tourism is a key destination to, the Park's extensive area provides the opportunity to create a high-quality, environmentally responsive and internationally renowned birding destination and tourism attraction. Sites will be zoned for tree-top lodges geared towards the birding market, together with associated trails and facilities for both active and passive use. This is one of the critical areas in Rwanda with potential for domestic tourism, including hotels, small marinas, lake facilities, leisure parks, and for supporting locally owned accommodation facilities and services that will foster tourism development and increase the revenue associated with it.

Huye District Heritage Corridor

Huye is one the 8 Districts including (Nyanza, Ruhango, Kamonyi, Nyaruguru, Muhanga, Gisagara and Nyamagabe) in Southern Province that builds on its strong foundation as a heritage and cultural destination due to its important historic/colonial assets. The opportunity for Huye District lies in the development of a tourism circuit, as well as an aligned marketing plan, and stronger promotion as a tourism transit point for domestic, regional, and international tourists. Developing more infrastructures, accommodation facilities and leisure /entertainment facilities would strengthen the district's position as one of the secondary cities targeted by domestic and foreign tourists as demonstrated in the map below.

In connection with the heritage corridor, Huye District is known for hosting the national ethnographic museum. This Museum was built in 1987, and now houses one of Africa's finest ethnographic collections. Its seven galleries display historical, ethnographic, artistic and archeological artifacts accompanied by visual aids, giving visitors a rich insight into the culture of Rwanda, its cultural and historical assets. The District is also known for its coffee experience, the tin hand craft, the "Mount Huye " and the University Arboretum.

The main challenges for tourism development are related to lack of responding and anticipating tourist needs. To move tourism to another level requires private sector involvement in district development. According to the Heritage Corridor tourism sub master plan, in addition to the required efforts to diversify tourism offerings, there is a need for hotels improvement in standards as it is very key to position Huye as a cultural tourism hub. Though more hotels will be needed in the long run to cater for tourists flow in the southern province, the real concern is the quality of rooms and other services offered.

Cultural Tourism

The culture of Rwanda is varied and has a long history of (oral/written) literature, music, dance, traditional arts, and crafts produced throughout the country. Cultural tourism is considered as one of the creative industries which can play an important role in Rwanda. Huye District is one of the best destinations for cultural tourism with a long history. Cultural tourism is one of the most attractive potentialities liked by most tourists visiting Huye. This means that Huye District will continue to invest in cultural tourism infrastructures to improve on their quality.

For Huye District to achieve this transformation, culture and heritage sites should be viewed as a complex process that requires using culture assets as tourism products. In terms of spatial requirements, cultural and heritage tourism will require land and spaces as indicated in table below:

Typology	Amenities and infrastructures
Religious sites	Spiritual retreats and pilgrimages sites
Modern culture	Shopping malls and galleries
Performing arts venues	Cultural centres, concert halls and theatres
Special events and festivals	Sports and recreational venues and green parks (spaces)
Heritage places	Museums, historical towns, monuments, archaeological sites, architectural and archaeological treasures
Arts and crafts	Arts and Exhibition Centres
Traditions and indigenous communities	Culture and heritage centres and visitor centres

Table 30: Typology of Culture and Heritage sites-Source Huye District, 2020

Cultural and heritage tourism as integrated into Huye secondary city development will continue to be an important segment of tourism. The supply of cultural attractions and amenities will continue to grow in other cities and regions; hence the integration of key amenities will be important for both domestic and international tourism. Culture tourism can help to upgrade cities

and regions by creating distinctive cultural attractions and activities, as well as products that can drive forward socio-economic development plans across the country.

Some sites will need to be preserved and protected while others will need to be improved in terms of visitor's experience to allow this sub-sector of tourism to thrive. Easy access to the key cultural and heritage sites needs to be considered. Based on the map below, it is clear that not all sites will be accessible, so some related amenities will need to be agglomerated into cities, growth poles and secondary cities. This will allow better connection to other services such as restaurants, shops and entertainment amenities. Accessibility (the transport network), infrastructure and supporting services will be instrumental in connecting the different sites around the country to potential tourism markets (domestic and international).



Figure 21: Rwanda cultural tourism map - Source: NLU DMP 2020-2050

4.9 ECONOMIC DEVELOPMENT

4.9.1 National Context on Economic Development

One of the key pillars of Rwanda's economic development strategy is the promotion of private sector-led growth. This has involved a range of measures to create an enabling environment for businesses to flourish, such as streamlining business registration procedures, improving access to

finance, and promoting investment in priority sectors. Additionally, Rwanda has sought to leverage its strategic location within East Africa to position itself as a regional hub for trade and investment.

The country has made significant progress in recent years, with improvements in key sectors such as agriculture and manufacturing. However, challenges remain, particularly in areas such as infrastructure development and access to finance.

Furthermore, the projected demographic changes will have significant implications for policy development, particularly in areas such as education, healthcare, and employment. The growth in the working-age population presents an opportunity for the country to expand its workforce and drive economic growth, but this will require targeted investments in skills development and job creation.

4.9.2 Employment situation

a) Current situation

According to EICV5, the working age population in Huye District was approximately 200,000 with a workforce to population ratio of 83.7%. In terms of job status, the breakdown is as follows: 12.6 % were engaged in wage farming activities, 18.3 % in non-wage farming activities, 62.7 % were independent farmers, 6.1 % were independent non-farmers and 0.2 % were unpaid farmers. Furthermore, when considering the distribution of these individuals across broad economic sectors, 69.5 % were employed in agriculture sector, 9.3 % in industry and 21.2 % in services.

Recognizing the significance of employment creation in addressing the country's rapid population growth, poverty reduction, and overall economic growth, the government has made it a priority. In the Huye District Development strategy for 2018-2024, it is outlined that the aim to create 42,000 off farm jobs by 2024, with a particular emphasis on empowering youth and women.

To better illustrate the current status of employment creation for the population over 16 years old in Huye a visual representation is provided below:

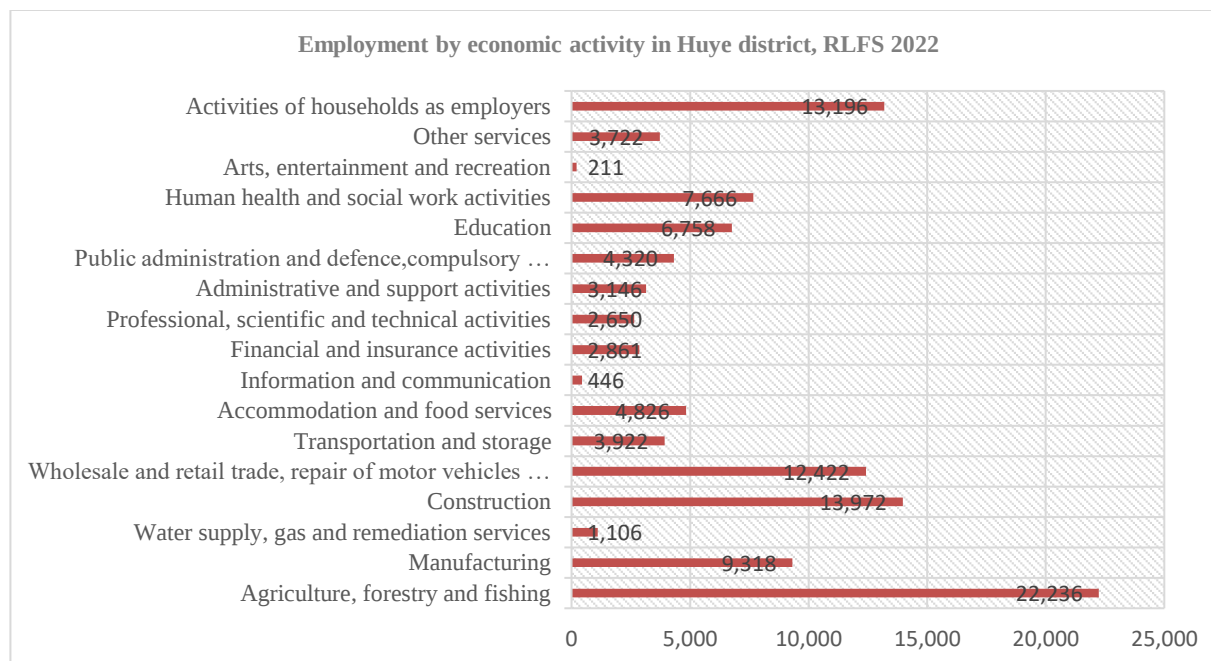


Figure 22: Employment by branch of economic activity in Huye District, RLFS 2022

Based on the data presented in the figure above, it is evident that the employment landscape in Huye District is characterized by significant sectoral distribution. The key findings reveal:

Agriculture dominates, encompassing a substantial 19.7 % of total employment in the district. The construction sector accounted for 12.4 %, playing a crucial role in both infrastructure development and job creation, thereby fostering economic growth. The activities of household as employers collectively made up 11.7% of total employment, while wholesale and retail trade, as well as vehicle and motorcycle repair contributed 11%. The remaining 45.18 % of Huye's total employment was distributed across other sectors, as illustrated in the figure above.

b) Planned perspective on employment opportunities in the district

Using the base of the labor Force Survey (RLFS 2022), and a methodology that cascades the assumptions from the NLUDMP 2020-2050 to the district level, and considering economic specialization of Huye District and grouped the employment into five main categories as follows:

- ❖ Agriculture, Forestry and Fishing
- ❖ Mining and Quarrying
- ❖ Construction
- ❖ Manufacturing and

❖ Services

This systematic approach ensures alignment with NLUDMP 2020-2050 guidelines and facilitating accurate and consistent estimation, as depicted in the graph below.

Sector of activity	Number of Employment to be created
Formal Employment 2050	579,178
Agriculture, forestry, and fishing	46,103
Mining and quarrying	37,125
Manufacturing	198,739
Construction	59,482
Services	237,730

Table 31: Employment projection in Huye District by 2050

By the year 2050, as urbanization expands and job opportunities increase, the service sector is anticipated to play a significant role in employment generation, making up 41% of the total employment to be generated, particularly in commercial activities. Simultaneously, the manufacturing sector is expected to contribute 34.3 % of employment creation. In contrast, the construction sector is set to play a crucial role in employment growth by facilitating the development of modern infrastructure, representing around 10.3% of the total employment landscape. Despite the availability of arable land and abundant forests, agriculture, forest, and fishing are projected to make up only 8 % of total employment. Finally, the mining sector is estimated to contribute 6.4%.

4.9.3 Trade and Industry

Huye District Secondary City is among 13 Districts in the Country that were potential for future manufacturing with 50 ha of land allocated for industrial development. Huye District is at the heart of cultural tourism; more cultural and historical sites are being developed to create a firm cultural and historical heritage corridor. Cross border trade given its strategic location to Rwanda-Burundi border shall be equally important. Formal employment will increase by 20.6% due to increased industries.

4.9.3.1 Production capacity of Light industries in Huye District and main challenges

Huye is one of the districts that will continue to be a hub for industrialization, the district level of industrial development is still low but estimated to increase due to investments channelled in established industrial park.

	Name of Industry	Installed Capacity	Capacity Utilization (%)	Average capacity utilization in Rwanda	Main challenges
Rice processing	Rwabuye rice/electromax	4032 (tons/year)	19.3	21.6%	Lack of sufficient raw material
	Karubanda Rice	10080 (tons/year)	18.3		
	Mamba rice	5376 (tons/year)	19.1		
	Minoterie de Huye	5376 (tons/year)	20.6		
	Karubanda Prison	2688 (tons/year)	16.5		
	Kinazi rice mill	6720 (tons/year)	New		
	Rwirangira rice mill	4580 (tons/year)	New		
Cassava Processing	Rwanda cassava processing lumen	3 (MT/Day)	45	28.5%	Lack of sufficient RM
Mineral water processing	Electromax	6.720.000 (L/Year)	51	37.5%	Limited Market
Beans processing	RABI	13.440 (T/Year)	Temporally closed		Limited Market
Hides and Skins processing	New Rucep	30.240.000 (Pieces/year)	Temporally closed		Limited Market

Table 32: Production capacity of light industries in Huye District and main challenges.

4.9.3.2 Planning Perspectives

The growth rate of industrial parks will be an average of 7% annually, reaching 88 km² in Huye by 2050. The allocation result will be 29 km² in 2050 and 88 km² in 2050. Industrial parks will be developed in only 13 Districts, Huye, Rwamagana, Bugesera, Huye, Muhanga, Rubavu, Rusizi, Musanze, Kirehe, Karongi, Nyabihu and the City of Kigali other Districts will be allowed only for agro-processing plants and handicraft factories/light industries. This means that, from guidelines of the NLUDMP, Huye District will be the 2nd public service led city after Kigali. It will remain an academic hub of the country that will be supported by Hi-Tech. Huye District is at the heart of cultural tourism; more cultural and historical sites are being developed to create a firm cultural and historical heritage corridor. Cross border trade given their strategic location to Rwanda- Burundi border shall be equally important.

5 HUYE DISTRICT LAND USE

5.1 LAND USE BALANCE SHEET

5.1.1 Existing District Land Use

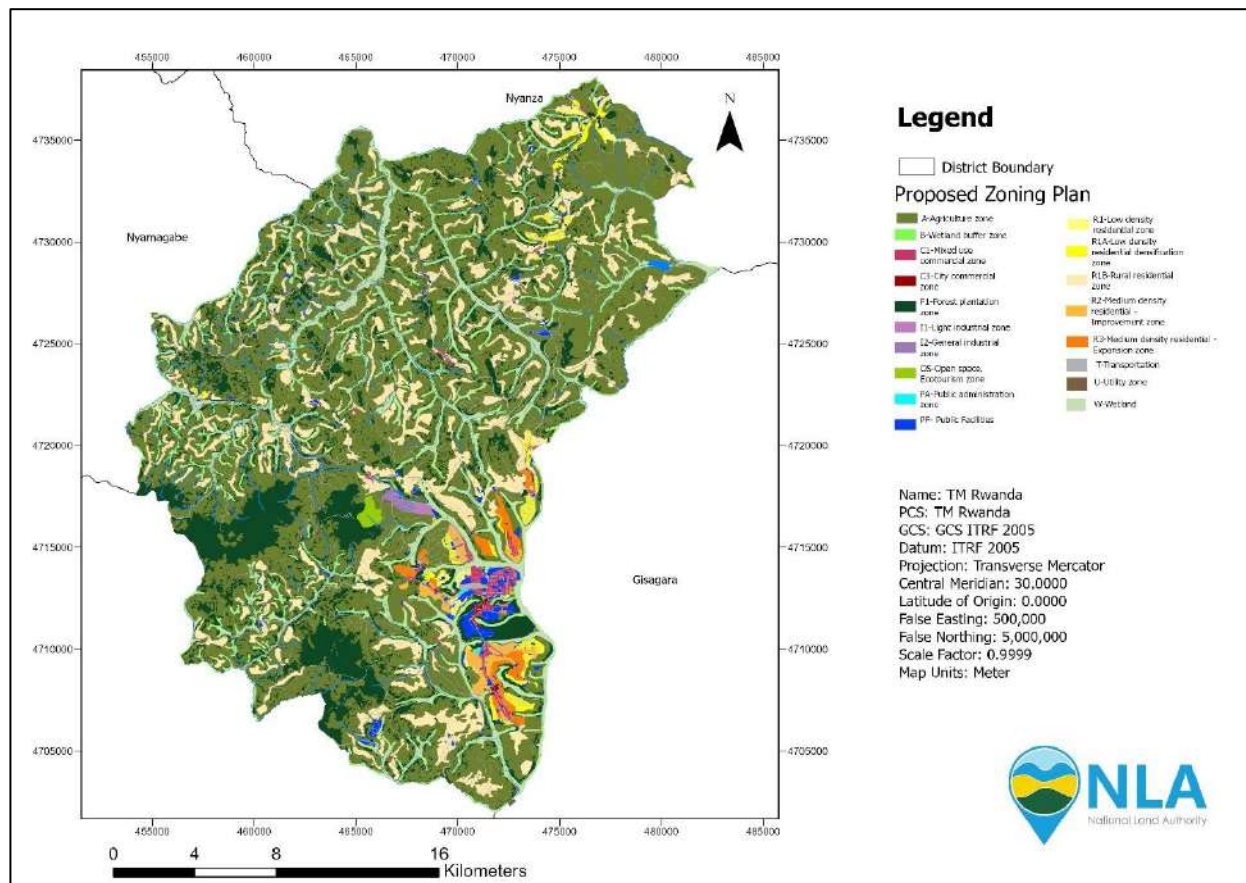
Land use	Area(sqkm)	Percentage
Agriculture	348	60
Buffers	22.5	3.8
Built-up	30.7	5.2
Forest	115.6	20
Public facility	10.3	1.7
Transportation	13.1	2.2
Swamplands	40.2	7
Total	581.5	100

Table 33: Huye District existing land uses

Existing built-up area for Huye District composed of residential, commercial, industrial, and temporal structures obtained from national building footprints data is occupying the surface area equal to 9.07 Km² from 581.53Km², the total area of Huye District which is almost 1.5%.

The analysis showed that 2.96Km² among 9.07Km² equals 0.5% falling in agricultural land in Huye District. This analysis is showing the magnitude of how agricultural land in Huye District has been encroached by scattered settlements.

5.1.2 Planned Land Use Balance sheet.



Map 11: Land use allocation in Huye DLUP 2023-2050

Land uses	Area(km ²)
Residential	53.02
Commercial	4.01
Industries	1.24
Public facilities	6.79
Public administration	0.22
Open spaces	1.28
Transportation	38.25
Agriculture	274.58

Forest and open space	130.14
Public utility	0.29
Swampland	39.33
Water body	0.001851
Buffers	25.21
Total	583.41

Table 34: Land Use Allocation for Huye District 2020-2050-Source: NLA spatial data analysis, 2021

Public facilities (education and research, religion facility, health facility, cultural / memorial sites, cemetery / crematoria)

N/S	Existing land uses	Current land area (Km2) (2021)	Planned land area (km ²) by 2050
1	Built up	54.1	103.54
2	Agriculture (hillside)	348.3	274.58
3	Swampland	40.22	39.33
4	Buffers	22.5	22.5
5	Forest	115.6	130.14
6	Open spaces	-	1.28
TOTAL		581.5	581.5

Table 35: Land Use Allocation for Huye District 2020-2050.

6 IMPLEMENTATION FRAMEWORK

This sub chapter describes the implementation framework for the Huye District Land Use Master Plan; that aims to align the district and city's priorities in line with the country's directives and vision. It acknowledges the key challenges for implementation in the existing framework and the need for collaboration between various national and district authorities through focused and strategic developments. The Integrated implementation framework covers proposed Institutional Setup, priorities sectors to be considered and Capital & catalytic Improvement Projects and some designed recommendations.

6.1 EXISTING LAWS ENFORCEMENT

The DLUP should demonstrate the clear tools for spatial implementation in the entire District. Implementation, in general, provides the roadmap of development on the ground for short and medium-term projects. The implementation of long-term plans is different. Its principal task is to advance the long-term guidelines and translate them into plans under execution and provide to executive authorities the proper tools for controlling and enforcing compliance being legally supported. In this context, the District Land Use Plan should be implemented in compliance with the National Land Use and Development Master Plan in every phase prospectively alongside the policy and legal tools including land law etc. The National Land Policy of 2004 and land law of 2013 were revised to ensure the compliance with new dynamics of the country's needs and changes. The new revised National Land Policy 2019 and new land law 2020 will back up and support the implementation of NLUDMP and subsequently other Land Use Master Plans tools at different levels. The existing conflicting policies, laws, orders, and sectoral plans had been characterized by inconsistencies that led to difficulties in implementation associated with the issues in institutional coordination and lack of top-down legal hierarchy in the land-use master-planning process and regular review and standalone planning, based on sector goals and plans, not an integrated perspective.

Non implementation of Huye DLUP 2023-2050 will be punishable by Law N° 27/2021 of 10/06/2021 Governing Land as the law contains many articles related to land use planning and implementation. Some of them are the following:

- 7 Article 54: The use of land is guided by the land use master plan of the area where the land is located.

- 8 Article 61: Any permit granted in contradiction with the Land Use Master Plan is null and void and has no effects irrespective of any kind of prescription.
- 9 Article 63: The change of land use is carried out in accordance with the master plan and approved by the institution in charge of land management and use.
- 10 Article 65: The land planned for agricultural and livestock use is protected and conserved. Every person has an obligation to use the land planned for agricultural and livestock use in accordance with land use consolidation.
- 11 Article 76: An individual who does not comply with the land use and development master plan commits a fault. He or she is liable to an administrative fine of not less than one million Rwandan francs (FRW 1,000,000) but not more than three million Rwandan francs (FRW 3,000,000). Without prejudice to other relevant laws, a person who performs activities on that land removes them or pays the cost for their removal.
- 12 Article 78: The fine provided for under this Law is multiplied by ten (10) in case the fault referred to under article 76 of this Law is committed by a state-owned company, a non-public company, a cooperative organization, a national non-governmental organization, an international non-governmental organization, or a faith-based organization with legal personality.

6.2 THE NEW HIERARCHY STRUCTURE OF PLANNING

A new structure of planning level was suggested, which demonstrated the compulsory hierarchy of planning to improve in the best planning procedures. The sequence starts with Vision 2050 through NLUDMP, District Land Use Plans, and Detailed Physical Plans Site Planning until reaching the permitting for construction, development, inspection, and control.

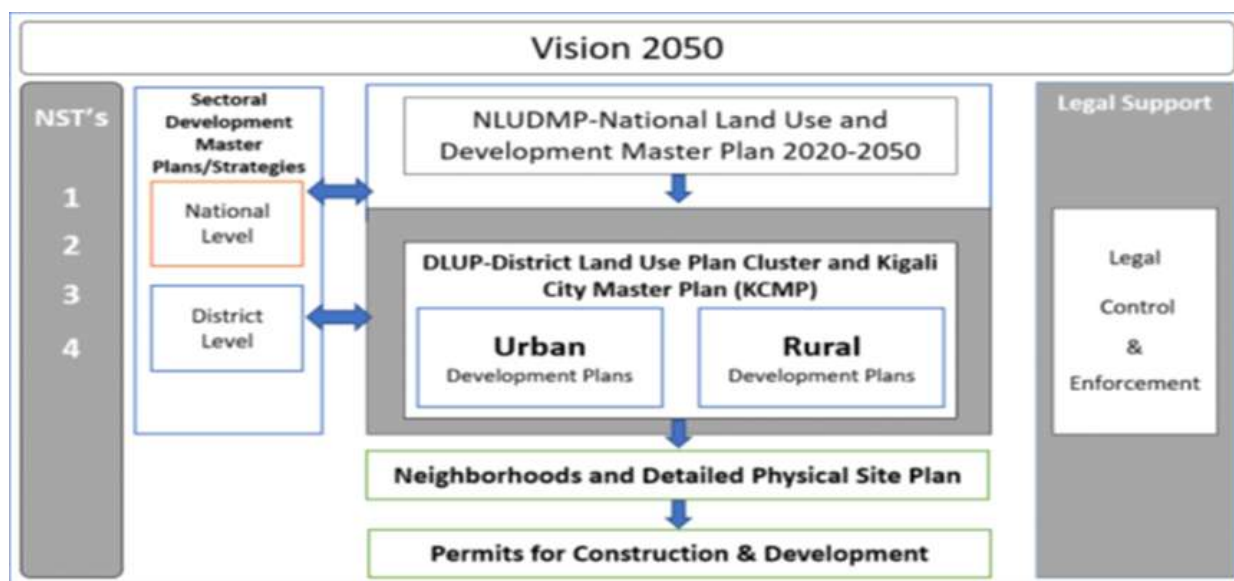


Figure 23: The new hierarchy of land use planning in Rwanda-Source: NLUDMP 2020-2050

The new hierarchy of land use planning as mentioned above is mandatory to be respected in all planning and implementation phases of all land use master plans, it is connected to vision 2050 as the overall aspiration of the country from low-income to an upper-middle-income state within 30 years.

It is also further still harmonized with planning and budgeting aligned and integrated into NSTI, NST's and Medium-Term Expenditure Framework (MTEF) and annual budgeting and implementation. The hierarchy also, integrates National Master Plan for Spatial Planning which is a national spatial planning tool intended to guide the well-balanced, integrated and efficient use of land and development in the country during the implementation of Vision 2050, with sectoral development master plans and Strategies, each sector which has a spatial dimension and requirement for land allocations for the sectoral activities, is recommended to update its master plan and strategies following NLUDMP 2020-2050 guidelines.

The hierarchy also proposes that, sectoral development strategies at national level, such as National Agriculture Strategy, National Land Transportation Strategy, Forestry and Natural Parks, Water and Swamplands (+buffer zones), Power and Energy, Mining and Quarrying, Human Habitation (Urban, rural and rural settlements), Inlands, Tourism and Conservation etc... will be prepared in line to NLUDMP 2020-2050 and in parallel to the preparation of the DLUP,

the district level strategies will be more detailed to feed the district's land use plans with more informative data, relevant to their perspective and preferences.

The hierarchy also puts into consideration the development of the District Land Use Plan Cluster composed of urban and rural zoning plans. For Urban and Rural development plans, a District Land Use Plan Cluster to ensure that land use classifications are well considered such as; Residential, Commercial, Industrial, Public Facility, Public Administration, Forest and Open Spaces, Agriculture, Swamplands, Water Body, Transportation, Public Utility etc.

6.3 LEGAL AND INSTITUTIONAL FRAMEWORK

Institution	Key Responsibilities
MINECOFIN	• Ensure coordination of activities of developing a land use and development master plan. • Important role to play in implementation of projects within the district and city; and work closely for the financing of public projects and providing support between the local Government and donors for financing the development projects.
MOE	To ensure the safeguard of green and climate resilient for growth of the economy and ensure optimal and rational utilisation of Water Resources, Lands and Forests for sustainable national development.
MININFRA	• Policy development and supervision of the following sectors, Transport, Energy, Water and Sanitation, Urban Planning and Housing Development
MINAGRI	MINAGRI and its Agency RAB: Development of Agriculture suitability studies and mapping and Rwanda Irrigation master Plan.
MINALOC	Planning, development, and maintenance of transport infrastructure and services within local authorities.
NLA	Ensures the management of the land and its use, supervising all land-related matters and represent the State for supervision and monitoring of land management and use.

RHA	RHA oversees housing development and related infrastructure, establishing living conditions, and attracting foreign investment in residential sectors.
WASAC	Development of sectoral major physical infrastructure master plans of the Water and Sanitation sector. Water and sewage treatment corporation is acquiring the water supply network geospatial data and built those into a system with overseas aid and its generated revenues. It has 20 branches in Kigali and throughout the country, and continuously updates the water supply network geospatial information.
RTDA	Development of sectoral major physical infrastructure master plan of the Transportation sector. RTDA undertakes construction, safety management, and maintenance management for national transportation facilities (road, railway, waterways, etc.) and related facilities infrastructure.
REG	Development of sectoral major physical infrastructure master plans of the Energy` REG is in charge of electricity supply to the people and each region. As for water supply, electricity is a vital policy of GoR. Thus, the electricity's supply network administration and its planning and mapping are significantly important.
LODA	Implementation of projects within the district and city, and financing of public projects and providing support between the local Government and donors for financing the development projects
Huye District	● Implementation of minor infrastructure development such as planning of road construction, supervision and road maintenance are done by the Huye District. Local roads are planned and implemented by the district depending on the available budget. ● Planning, supervision, inspection and maintenance of other minor utilities, infrastructure such as water and sanitation work, and street electrification and public lighting.

Table 36: Key Stakeholder Institutional framework for the Land Use and Development Plan Implementation-Source: Huye District, 2021

6.4 PHASING PLAN

Phasing of Development is part of all land-use plans provisions and elaborated based on the local context. The leading spatial principle in phasing is Tiling, which simply prevents random and remote locations of development. A new development site must always have a common boundary with a previous one, as shown in the figure below.

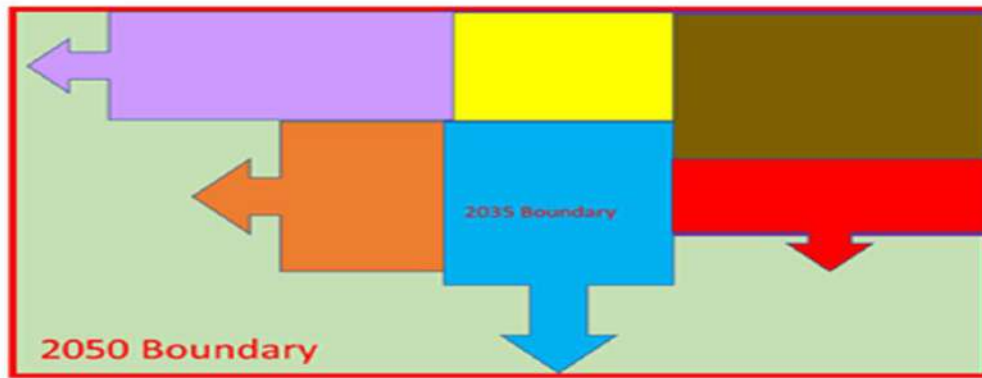


Figure 24: DLUP Implementation phasing.

Every settlement land use master plan must demonstrate where implementation will focus every 5 years, after which evaluation will be conducted before opening the next phase. The evaluation report of each phase would be presented to institutions in charge of land management and urban planning (NLA) and relevant stakeholders to be a learning and decision-making tool before moving forward to implement other sites of the next phase of development.

The phasing plan for Huye DLUP 2023-2050 intends to provide flexibility to the implementer agents to prioritize development in a particular area of the entire urban areas and source adequate funding to finance the selected projects. It provides the Government, communities, and donors/financiers with rationale to prioritize infrastructure and associated urban services to incrementally develop in a phased manner. Hence in this project Huye District will take phasing developments in effective time after a detailed master for which phase will take 5 years and implemented into 3 phases.

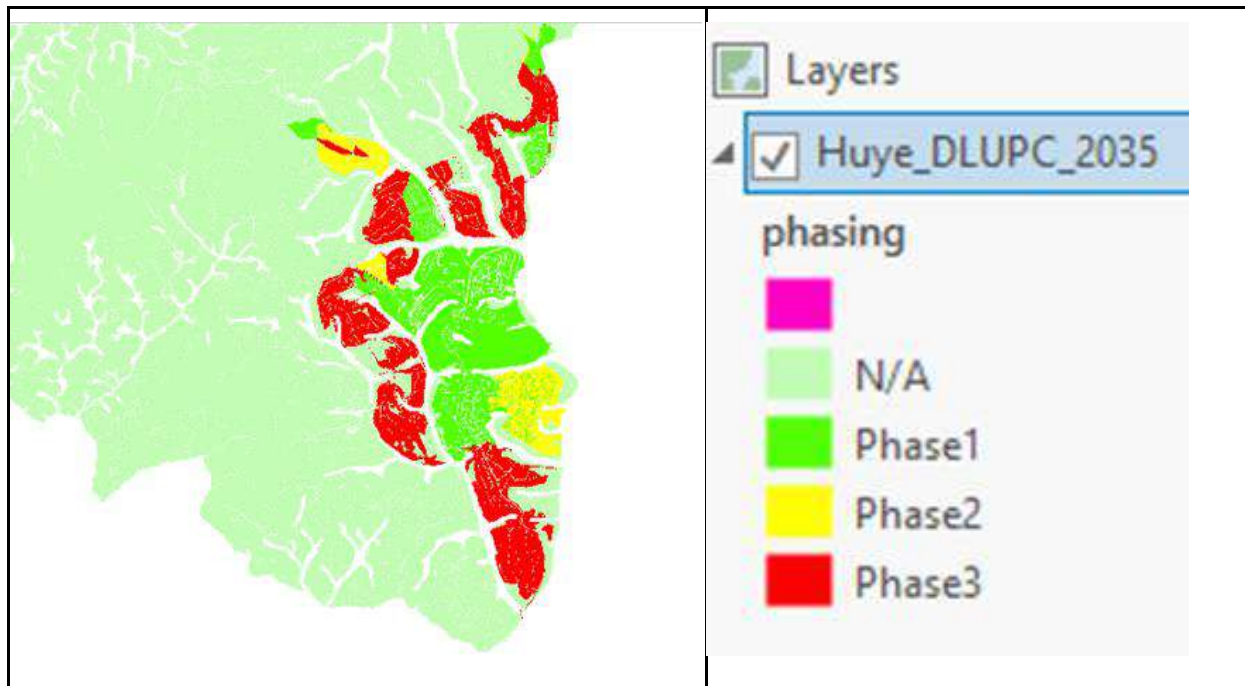


Figure 25: Implementation plan of Huye city Master Plan

The phasing plan intends to provide flexibility to the implementers to prioritize development in a particular area of the Huye DLUP Urban City and source adequate funding to finance the selected projects. It provides the Government, communities, and donors/financiers with rationale to prioritize infrastructure and associated urban services to incrementally develop in a phased manner. Hence in this project Huye District will take phasing developments in effective time after a detailed master. The following are the two estimated phasing through which Huye DLUP 2023-2050 will be implemented.

- **Phase I:** covers the areas which have or will be serviced with basic infrastructures, and which are ready to implement the master plan and will start to be implemented from 2021-2028.
- **Phase II:** Covers the areas which have no basic infrastructures, and the implementation will start from 2029-2050, but once the basic infrastructures are available before the set time, the implementation will start immediately without waiting the set time.

6.4.1 Construction permits based on phasing plan.

The construction permits will be issued only in phase 1, to avoid urban sprawl and to promote densification. However, it is prohibited to provide construction permits in Phase II. Big projects/Investments like schools, healthcare facilities, real estates, apartments, hotels, complex

markets, etc, can be assessed by Huye District One Stop Center for permission in phase II, if investors can develop basic infrastructures.

Phase II: The construction permits will be allowed in Phase II after development of detailed physical plans and distribution of basic infrastructures like electricity, water, drainage network etc.

6.4.2 Community approach

Landowners must be willing to participate in all phases from beginning to the end including elaboration of site physical plans, data collection and all mapping and site demarcations exercises until the assignment is completed and approved. Being assisted by in-depth advice of planners and appraisal experts.

A land readjustment map and appraisal documents must be approved together with the concerned detailed local plan as one unit. Alternatively, simplified voluntary land exchange processes shall be introduced. A readjustment is an essential tool for land consolidation and orderly development. Huye District communities should have ownership in all phases and must contribute as well as ensuring compliance during development.

Any conflicts and disputes that may occur in the process should be resolved between landowners, the site committees, local Village Chiefs and Cell Leaders. Therefore, the community approach is part of Huye DLUP 2023-2050 for its successful implementation.

7 COMPLIANCE AND MONITORING

Every 5 years the existing situation should be updated and the DLUP revised to ensure implementation. The proposed compliance between the different planning levels is a must to rectify disparities in planning process and policy formulation.

The purpose of this section is to set up administrative and planning tools. A Continuous Compliant Planning principle (CCP) was adopted to ensure the fulfilment of the chain of planning.

Under this principle of CCP, the following measures and procedures are essential to achieve the desired compliance in planning process.

- Providing a non-objection to any land use plan and project by National land Authority in charge of Land Use Management through the strong back up coordination force from MINECOFIN will be instrumental in resolving coordination and compliance issues.
- NDMP dominance, ensuring that the projects and activities of all Ministries & Authorities comply with this plan. The national development planning and budgeting process (MINECOFIN) should ensure that sector priorities and investments comply with the NLUDM. In other words, there must be a balance between economic planning and spatial planning.
- Delineate and enforce settlement boundaries. It is recommended that new boundaries will gain legal status only to supply developing needs for a period of 30 years (2020-2050). All master plans shall show implementation phases for midterm (2050) without overpassing this boundary. The areas of the development phases will be adjacent to each other to create a paving system for the efficient use of lands. The long-term boundary for 2050 will be protected for the next 30 years.
- Consolidation principles in land use planning will be directed towards and applied to all levels and all sectors of land-use planning.
- Regular updating of spatial data and base maps through large-scale mapping will greatly support the development of master plans and monitoring of land use.
- To improve the adequate performance of Building Permitting Management Information system (BPMIS) and its dissemination in all districts to serve the urban and rural construction and development permitting countrywide.

- Strong community outreach program and mindset change on land use planning in Rwanda will be organized continuously in Huye District for community public awareness and ownership.

7.1 LAND READJUSTMENT (DETAILED PHYSICAL PLANS)

Land readjustment of existing plots is recommended during implementation of Huye DLUP 2023-2050 to assure rational development. The underlying principle is that every owner must be compensated for their land with the land of equivalent value. The readjustment of the land transforms the irregularly shaped plots into regular and standard shaped land with access to infrastructures such as roads, electricity, water, schools, hospitals and other services, which contributes to the value of the land in any specific area.

7.2 ZONING PLAN AND REGULATIONS

7.2.1 Objective of the Zoning Plan and Regulations

The objective of the Zoning Regulations is to provide a clear mechanism for the implementation of CoK and Districts land use plans and to direct public and private sector development to follow a clear set of development objectives, definitions, regulations, and guidelines that reflect the vision and concept proposed in the Master Plans. The objectives, definitions and regulations ensure that development is carried out to achieve a logical, attractive, and liveable development pattern in the Cities, safeguard privacy and amenities, and provide opportunities for growth, with enough flexibility to respond to changing business needs and development trends.

The regulations place an emphasis on encouraging mixed-use mixed-income development for integrated, well connected, inclusive, and equitable development that are sustainable and are designed to achieve a quality living environment.

7.2.2 Zoning Plan

Zoning regulates the types of uses, the development intensity, the required density, the setting, and height of buildings on any plot. As such, it serves as an effective planning tool to guide development in a logical and orderly fashion. The Zoning Plan is meant to provide landowners, developers, and stakeholders with a clear picture of what can and cannot be developed on any parcel of land.

The Zoning Plan is made up of a Zoning Map and a set of Zoning Regulations. The Zoning Map identifies specific zones within the planning area based on the predominant land use, and the desired intensity, building height and density for that area.

The Zoning Regulations stipulate the permitted, conditional, and prohibited uses, location of a building on any plot, the overall maximum intensity, as well as the building height. Specific regulations related to overall building form, landscaping, development strategy and signage are also stipulated in the Zoning Regulations. Zoning Regulations stipulate allowable development for a zone, but flexibility in development is ensured by allowing incentives such as additional GFA, promoting inclusionary zoning, incremental / phased development.

7.2.3 The three categories of uses that are tabulated by Zoning Regulations

There are: Permitted, Conditional and Prohibited uses.

7.2.3.1 Permitted Use

Uses that comply with the intended use for the zoning code and can be permitted outright. However, the development shall comply, when relevant, with other context specific additional regulatory restrictions such as Urban Design Guidelines, Overlays, Heritage, and Conservation guidelines.

7.2.3.2 Conditional Use

Conditional uses are usually activities that may create significant traffic, noise, or other impacts on the surrounding neighbourhood. Such identified uses can be permitted “conditionally” within a zone following the assessment of CoK and Districts’ One Stop Center’s approval. OSC may require the development to conform to a set of conditions and standards as per the regulations which must be met always. Each zone can allow different but compatible developments that are complementary in terms of use and scale. For example, a small-scale commercial development could be allowed in residential areas to provide convenience for residents to meet their daily shopping needs. Similarly, Civic facilities like schools, day care centers, religious facilities could be allowed in a residential zone, provided the facility meets the parking, noise standards etc. Such conditional uses could be permitted after careful consideration and evaluation by the One Stop Center of CoK and Districts and may be subject to certain conditions as deemed necessary by the review committee, to ensure that the overall planning intention for any specific is not compromised.

7.2.3.3 Prohibited Use

These are uses that are deemed prohibited and include activities that have been found to be incompatible with the zone. For example, Heavy Industrial Uses are prohibited within the residential zones.

7.2.3.4 Overlay Zones

Within these Zoning Regulations, overlay zones provide more discretion and flexibility by allowing the City to protect certain areas as well as encourage or discourage certain types of development. Overlay Zones are mapped zones superimposed over the established zoning and can be used to impose supplement restrictions, permit, or disallow various forms of density as well as provide bonuses and incentives to achieve the desired planning intent for that area. The parcels within the overlay zone will be thus subject to the regulations of the underlying zoning as well as the overlay zoning requirements. An overlay zone can cover more than one zone and even portions of several underlying zoning. The Steep Slope Overlay Zone, Urban Design Overlay, Heritage, and Conservation Overlay are examples of Overlay Zones.

7.2.4 Principle guiding the zoning requirements.

7.2.4.1 Integrated development and urban resilience

The integrated approach to urban development promotes appropriate growth of Cities, ensures sustainable mobility, more cohesive communities, and a better environment. By looking at the City in a holistic fashion, it strengthens the urban resilience, known as “the capacity of urban systems, communities, individuals, organizations, and businesses to recover, maintain their function and thrive in the aftermath of a shock or a stress, regardless of its impact, frequency or magnitude”.

These Zoning Regulations enhance this approach and help to build the resilience, providing adequate tools and measures to guide the growth of the City as an urban system, where all components - infrastructural, institutional, economic, and social are taken into consideration.

7.2.4.2 Inclusivity and Community Involvement in the Planning

Inclusivity and equity in the planning and development process help create more sustainable cities with people getting the right to fully participate in every aspect of social, economic, political, and

cultural life and voice their concerns and aspirations to create thriving neighbourhoods and communities.

All developments shall consider the needs and aspirations of all groups, including vulnerable groups and people of all abilities, in the design and implementation process. A participatory and bottom-up approach shall be followed involving and engaging the community in the design, development, and monitoring process.

7.2.4.3 Incrementality and Flexibility

The principle of incrementality is adopted in these Zoning Regulations to allow communities, investors, and developers to develop according to their current financial capacities. The objective is to create a flexible environment where all developments happen in an organic manner, without creating financial overexposure and hence hindering the affordability of the development. At the same time, the incremental approach is designed in such a way that future addition to the development would help achieve the desired density for the specific zone in future years.

Incremental development also allows developers to better adapt to current and future market conditions, thus reducing investment risk and facilitating access to the market to a larger segment of the population.

Incremental development shall be an opportunity to limit ongoing informal development processes and ensure efficient provision of infrastructure and service delivery and rational land use.

7.2.4.4 Mixed Land Use

The zoning regulations allow and encourage Integrated and mixed-use development within all zones to create higher density, compact and vibrant places for people from all groups and neighbourhoods. Neighbourhoods shall showcase a blend of residential, commercial, cultural, public facilities, and micro-enterprises that are accessible and well connected to the transit system. This will enhance inclusivity, bring work closer to homes and reduce disparity and social segregation between different groups.

7.2.4.5 Pedestrian First

“Cities around the world are recognizing how essential walkability is for the access and health of their citizens, and the economic growth of their cities.

All planners, designers and developers shall ensure walkable and integrated neighborhoods that link residences to the public facilities, commercial and recreational areas. The Master Plan provides for the city to expand its Non-Motorized Transport (NMT) network to cover the entire City for complete, continuous, and safe walkway and cycleway networks that provide clear protection from motor vehicles and are accessible to people of all groups. Universal designs shall be adopted by removing all physical barriers and providing a safe route for smooth mobility and easy access.

7.2.4.6 Transit Oriented Development (TOD)

Transit-oriented development (TOD) presents as the best approach for Cities of Rwanda to continue keeping the private vehicle ownership on the low, and to avoid unsustainable, car-dependent, and sprawling settlement. TOD is necessary for inclusivity, equity, and long-term sustainability of the cities. The integrated and transit-oriented development brings people closer to activities, work, home, and public space, providing inclusive access for all, to Citywide opportunities and resources at the lowest financial and environmental cost, and with the highest resilience to climate change and other disasters.

The City shall provide high-quality, safe, and reliable mass transit system for a sustainable, and equitable development. Mixed-use, integrated, and higher density developments that are well connected with easy walking and cycling connection, and in proximity to reliable transit service to the rest of the city are at the base of this master planning effort.

7.2.4.7 Sustainable Design

All developments shall be designed and developed with due regards for the environment, by incorporating environmentally friendly and sustainable design practices in both design and construction of the buildings. It shall be of paramount importance to encourage environmentally responsible buildings that are appropriate for the existing urban fabric.

Subject to review and evaluation of developments in certain zones, and in line with GBMC, the CoK and Districts One Stop Centres may, at its discretion, grant increases in additional floor area, building height or building coverage for developments that adopt sustainable design technologies or techniques or provide additional benefit to the neighbouring communities such as public spaces or recreational areas.

7.2.5 Identification of zoning categories for Huye DLUP

The following are the various zoning categories and sub-categories proposed for Huye District:

- ***Residential***

Low Density Residential Zone (R1)

Low density Residential Densification zone (R1A)

Rural Residential Zone (R1B)

Medium Density Residential - Improvement zone (R2)

Medium Density Residential - Expansion zone (R3)

- ***Commercial***

Mixed Use zone (C1)

City Commercial zone (C3)

- ***Industrial***

Light Industrial Zone (I1)

General Industrial Zone (I2)

Mining and Quarrying Zone (I3)

- ***Public Facilities***

Education and Research Facilities Zone (PF1)

Healthcare Facilities Zone (PF2)

Religious Facilities Zone (PF3)

Cultural, Heritage, Memorial Sites Zone (PF4)

Cemetery/ Crematorium Facilities Zone (PF5)

- ***Public Administrative Zone (PA)***

- ***Open Spaces, Ecotourism zone (OS)***

- ***Forest Zone (F)***

Forest Plantation zone (F1)

Afforestation zone (Steep slopes > 55%)

- ***Agriculture Zone (A)***

Agriculture zone (A1)

Livestock zone (A2)

- ***Swampland Zone (W)***

Swampland-Unprotected zone (W1B)

- ***Waterbody Zone (WB)***

- ***Transportation Zone (T)***

Road reserve (T1)

Railway and stations (T4)

- ***Buffer Zone***

Swampland buffer zone (B1)

Water body buffer zone (B2)

National Park buffer zone (B3)

S/N	Harmonized generic Land Use Classification	Harmonized land use details - Description	Land Use Code		KIGALI CITY AND DISTRICT ZONING PLAN		Zoning Color
1	Residential	High density	R	255,194,0	R4	High density residential zone	255, 90,37
		Medium density			R3	Medium density residential - Expansion zone	255,127, 0
					R2	Medium density residential - Improvement zone	255,187,54
		Low density			R1	Low density residential zone	255,236,24
					R1A	Low density residential densification zone	255,255,127
					R1B	Rural residential zone	255,235,176
2	Commercial	Regional	C	255,0,0	C4	Regional commercial zone (O-C4)	102,0,13
		City			C3	City commercial zone	150,2,2
		General			C1	Mixed use commercial zone	204,51,102

3	Industrial	Logistics, light industry, Warehouse, Business Park	I	255,0,197	I1	Light industrial zone	194,122,192
		General Industry			I2	General industrial zone	156,122,188
		Mining, Quarry			I3	Mining, Extraction, Quarry	148,82,165
4	Public Facility	Education and Research facilities	PF	0,63,255	PF1	Education and research facilities	0,63,255
		Healthcare Facilities			PF2	Healthcare Facilities	0,63,256
		Religious facilities			PF3	Religious facilities	0,63,255
		Cultural, memorial sites			PF4	Cultural, Heritage, Memorial sites	0,63,255

		Sport and leisure facilities, sport compounds and centres, Sport fields and playgrounds			PF5	Sport, Leisure facilities	0,63,255
		Cemetery, Crematoria			PF6	Cemetery, Crematoria	0,63,255
5	Public Administration	Government offices, Police, Correctional and rehabilitation facilities, Defence and	PA	0,255,255	PA	Public Administration zone	0,255,255

		security, Courts, Other					
6	Forest	Natural forest, Forest Conservation areas, Forest Plantations, Afforestation, Forest Reserves, Steep slope > 55%	F	13,73,37	F1	Forest plantation zone	13,73,37
					F2	National parks zone	13,73,37
					F3	National Park expansion zone	13,73,37
					F4	Natural forest zone	13,73,37
					F5	Afforestation zone	13,73,37
7	Open Space	Recreational Parks and open spaces, pockets parks, Green spaces	OS	153,205,0	OS	Open space, Ecotourism zone	153,205,0
8	Agriculture		A	110,129,48	A1	Agriculture zone	110,129,48

		Crop farming, Agro-forestry					
		Animal husbandry, Livestock rearing, Pisciculture, Bee farming, Aqua culture			A2	Livestock zone	110,129,48
9	Swampland	Swamplands, Swamps	W	198,224,180	W1A	Swampland - Protected zone	198,224,180
					W1B	Swampland - Unprotected zone	198,224,180
					W2	Swampland - Rehabilitation zone	198,224,180
					W3	Swampland - Sustainable exploitation zone	198,224,180
					W4	Swampland - Conservation zone	198,224,180

					W5	Swampland - Recreational zone	198,224,180
10	Water Body	Lake, River, Stream, Other waterbody	WB	5,130,255 (150)	WB	Waterbody zone	5,130,255 (150)
11	Transportation	Road Reserve and Transport (Airports, Airstrips, Bus terminal and depots, Ports, Roads and interchange, Railways and station etc, Other Transportation facilities (moto taxi park,	T	178,178,178	T1	Road reserve	178,178,178
					T2	Bus terminals and stations	178,178,178
					T3	Airports, Ports and connected facilities	178,178,178
					T4	Railway and stations	178,178,178

		charging stations, etc)					
12	Public Utility	Power Plants & Stations, Treatment Plants, Sewerage Treatment Plants, Waste & Sanitation Sites and transfer stations, Fire & Emergency stations, ICT infrastructure	U	127,95,63	U	Utility zone	127,95,63
13	Buffer	Swampland, Swamp Buffer	B	125,255,75	B1	Swampland buffer zone	125,255,75

		Lakes, River, Stream and other water bodies			B2	Water body buffer zone	125,255,75
		National Park buffer			B3	National park buffer zone	125,255,75
		Other buffer			B4	Other buffer zone	125,255,75

Overlays	Internal Remarks		Color and representation	
Urban area extension zone	UE	255,80,80	UE	255,80,80
Rural Settlement site	RS	255,102,0	RS	255,102,0
C2 - Neighbourhood Level Mixed Use Commercial	To update - C2 overlay - 30m wide		Diagonal hatch	254,36,0

PF	Show PF overlay at neighbourhood and at precinct with facilities listed in each catchment area; facility standard to be in zoning report		Circles - dash line	0,63,255
Land Assembly	Parcels with no access (show developable parcels)			
Land Subdivision	Overlay in Zoning plan, part of MP - part of implementation plan		Boundary - Dark maroon- dash dot line	122,0,0
Slope (30-55)	With conditional uses listed - the uses include - Open Spaces, R1, resorts and agriculture		Peach diagonal hatch	
Tourism promotion zone	Incentives to promote night life, higher FSI (FAR), TDR, lower development charges etc.		Dark maroon diagonal hatch	122,0,0

Urban Design	Recommendations for Urban Development		Boundary	255,0,255
Heritage conservation and promotion	Neighbourhood with specific features - trees, specific site, school facility as tourism, City to help identify these features		Ochre diagonal hatch	255,102,0
Mining concession	Case by case site evaluation for release of land for mining		Purple diagonal hatch	153,0,204
Utility buffer zone	Power lines Buffer (HV- 25m, MV line - 12m) , Landfill, sewerage buffers, etc.		Dark Grey diagonal hatch	89,89,89

Table 37: Land Use and Zoning Classification

8 REFERENCE

1. The Republic of Rwanda, the Ministry of Environment (2020), *National Land Use and Development Master Plan (NLUDMP)*.
2. Republic of Rwanda, the Ministry of Justice, (2021) Presidential Order n° 038/01 of 20/05/2022 establishing the national land use and development master plan.
3. Republic of Rwanda, General Census, 2012 and 2022 National Institute of Statistics of Rwanda (NISR).
4. Republic of Rwanda, Rwanda Urban Planning Code (UPC) (2015), RHA
5. Republic of Rwanda, Urbanization and Rural Settlements Sector Strategic Plan 2018-2024 (2018, MININFRA)
6. Republic of Rwanda, Environmental Impact Assessment Guidelines, REMA 2007
7. UN, The United Nations Sustainable Development Goals are (SDGs), 2015
8. Republic of Rwanda, Rwanda's Vision 2050 (2020, MINECOFIN)
9. Huye District Development Plan (DDS), 2018-2024

Bibonywe kugira ngo bishyirwe ku mugereka w'Iteka rya Minisitiri n° 005/24/10/TC ryo ku wa 22/08/2024 rishyiraho igishushanyo mbonera cy'imikoreshereze n'imitunganyirize by'ubutaka cy'Akarere ka Huye.	Seen to be annexed to Ministerial Order n° 005/24/10/TC of 22/08/2024 establishing land use and development master plan of Huye District.	Vu pour être annexé à l'Arrêté Ministériel n° 005/24/10/TC du 22/08/2024 établissant le schéma directeur d'utilisation et d'aménagement des terres du District de Huye.
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Kigali, 22/08/2024

(sé)

MURANGWA Yusuf

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Minister of Finance and Economic Planning
Ministre des Finances et de la Planification Économique

Bibonywe kandi bishyizweho Ikirango cya Repubulika:

Seen and sealed with the Seal of the Republic:

Vu et scellé du Sceau de la République:

(sé)

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Ministre de la Justice et Garde des Sceaux