GROUPE DUVAL

Environmental and Social Impact Assessment of INZOVU MALL in Kigali, Rwanda

Supplementary Lender's Information Package

31 March 2023

Project No.: 0680953

The business of sustainability

ERM

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Environmental and Social Impact Assessment of INZOVU MALL in Kigali, Rwanda

Supplementary Lender's Information Package

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Acronyms and Abbreviations

Name	Description
ALU	African Leadership University
AoI	Area of Influence
DMP	Dust Management Plan
AUCA	Adventist University of Central Africa
AZE	Alliance for Zero Extinction
BMP	Biodiversity Management Plan
BMS	Building Management System
CO	Oxide
CMP	Construction Management Plan
Cd	Cadmium
CHSSP	Community Health and Safety and Security Plan
CoK	City of Kigali
Cr	Chromium
Cu	Copper
EIA	Environmental Impact Assessment
EICV	Integrated Household Living Conditions Survey or Enquête Intégrale sur les Conditions de Vie des ménages
E&S	Environmental & Social
ESS	Executive Secretary Sector
ESMP	Environmental and Social Management Plan

Name	Description
ESMS	Environmental and Social Management System
EPRP	Emergency Prevention and Response Plan
FGD	Focus Group Discussions
H&S	Health & Safety
HH	Household
HMMP	Hazardous Material Management Plan
FSMP	Fire Safety Management Plan
GC	Grievance Committee
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GM	Grievance Mechanism
GMP	Grievance Management Procedure
IBA	Important Bird Area
IBAT	Integrated Biodiversity Assessment Tool
IFC:	International Finance Corporation's
IUCN	International Union for Conservation of Nature
JRC	Joint Research Centre
KBA	Key Biodiversity Areas
KCG	Kigali City Government
KIIs	Key Informants Interviews
kWh	Kilowatt Hour
LC	Least Concern
LPG	Liquefied Petroleum Gas
MoU	Memorandum of Understanding
NCW	National Community Work
NFPA	National Fire Protection Association
NISR	National Institute of Statistics Of Rwanda
NO_x	Nitrogen Dioxide
NMVP	Noise and Vibration Management Plan
NT	Near Threatened
O_3	Ozone
Pb	Lead
PM	Particulate Matter
PHC	Population & Housing Census
RDB	Rwanda Development Board
REMA	Rwanda Environment Management Authority
RPHC	Rwanda Population and Housing Census
RTDA	Rwanda Transport Development Agency
RURA	Rwanda Utilities Regulatory Authority

Name	Description
RWFA	Rwanda's Annual Water Status Report
SAS	Social Affairs Sector
SC	Sector Council
SEP	Stakeholder Engagement Plan
SLIP	Supplementary Lender's Information Package
SMP	Security Management Plan
SPRP	Spill Prevention and Response Pan
SO_x	Sulphur Dioxide
STWMP	Stormwater Management Plan
SUDS	Sustainable Drainage Systems
TMP	Traffic Management Plan
TVET	Technical and Vocational Education and Training
UNEP-WCMC	UN Environment Programme World Conservation Monitoring Centre
UNICEF	United Nations Children's Fund
UR	University of Rwanda
VTC	Vocational Training Centres
WMP	Waste Management Plan
WH	World Heritage
WHO	World Health Organization
Zn	Zinc

1 INTRODUCTION

1.1 Scope of the SLIP Package

The international consultancy ERM has been mandated to develop the following supplementary environmental and social studies and documents forming the "Supplementary Lender's Information Package (SLIP)" related to the proposed INZOVU MALL, a mixed-purpose property development ("the Project") developed by Duval Great Lakes Ltd. (henceforth DGL), in Kigali, Rwanda.

An Environmental Impact Assessment (EIA) was developed in 2019 by Eco-excellence Ltd in accordance with the requirements of the Ministerial Order No. 001/ 2019 of 15/04/2019. The Rwanda Development Board issued an EIA Certificate dated 24th October 2019, which is now expired.

Duval has requested a loan from International Finance Corporation (IFC). On 9th January 2023, IFC representative confirmed the requirement for Duval to prepare a Supplementary Lenders Information Package (SLIP) of their existing EIA, to meet the IFC Performance Standards (2012). Also, IFC indicated that only IFC PS1-4 are applicable for this Project. The SLIP will include two key elements:

- A Complementary Environmental and Social Baseline
- An Updated Environmental and Social Management Plan (ESMP), incorporating additional project details, impact identification and assessment and mitigation measures.

Developing the SLIP required field work to collect additional project details, social and environmental baseline data and conduct additional stakeholder engagement activities.

ERM's work has been divided in three (03) tasks:

- **Task 1: Desktop Baseline Research and Field Work Preparation.** Initially, ERM has conducted a desktop review of existing environmental and social conditions focused on filling in the gaps identified in the baseline of the 2019 EIA.
  - The Environmental desktop review focuses on an Area of Influence (AoI) of maximum 500 m radius around the Project site and it includes an assessment of the following elements:
    - Soils and Geological conditions (project site only)
    - Hydrology and Hydrogeology (project site only)
    - Air Quality, Noise and Landscape (500m)
    - Biodiversity (500m).
  - The Social desktop review considers an AoI of 500 m plus a secondary area based on existing barriers (i.e., motorways) that can extend to a maximum of 2 Km.
- **Task 2: Field Work.** A Field Reconnaissance was performed in February 2023 in order to complete the baseline, and it included the following:
  - Interaction with project design team. The main objective was to collect data relevant for the EIA SLIP plus additional project data required by IFC.
  - A reconnaissance visit along the defined AoI, to document the SLIP package and ground truth particular social and environmental data (see details in Section 3.2.3).
  - Community Stakeholder Engagement which included meetings with key affected stakeholders (such as nearby communities) and key governmental authorities, regulators, local authority representatives, etc. (See details below).
- **Task 3: SLIP Completion**. ERM has compiled a fit for purpose Environmental and Social Baseline to fill the gaps identified in ERM's critical review of the 2019 EIA (Gap Analysis report) and support the development of the ESMP.

- The ESMP outlines a series of management, mitigation, and monitoring measures to be applied during the project's activities to prevent or mitigate negative environmental and social impacts and reduce them to acceptable levels.
- The ESMP also provides specifics on the necessary actions to implement the agreed-upon controls and mitigation measures, along with the corresponding responsibilities, timelines, monitoring measures, targets, and performance metrics required for inspection, audits, and reporting. Additionally, the ESMP identifies key actions for more comprehensive management plans to be developed by Duval.
- This updated ESMP supersedes the 2019 ESIA's ESMP and addresses any identified gaps from the Gap Analysis report. Ultimately, the ESMP aims to ensure that the INZOVU MALL project is developed sustainably, both environmentally and socially, and in compliance with applicable regulatory requirements and standards.

1.2 Project Background

The construction is scheduled to start end of April / beginning of May 2023. The planned duration will be 24 months. The Project will cover a surface area of 27,000 m^2 located in the Kimihurura Sector, a commercial and business area situated close to the International Convention Centre.

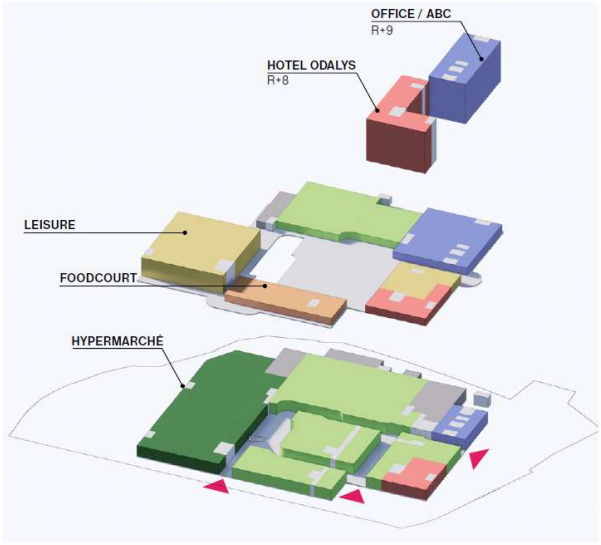
The Project will have a total Gross Leasing Area (GLA) of around 26,000 m^2, consisting of the following components:

- Hotel Odalys (G+8): 5,099 m^2;
- Retail space (G): 10,247 m^2;
- Office and African Business Center (G+9): 6,939 m^2;
- Leisure and Entertainment (G+2): 3,724 m^2; and
- Basement: 10,157 m^2. Other developments on the proposed site include 5,314 m^2 of outdoor spaces (mall circulation, plaza, and rentable terraces), a green area (2,186 m^2), walkways (1,131 m^2), and access driveways (7,509 m^2).

In the context of this Project, it is understood that the INZOVU MALL project has no associated facilities and no off-site ancillary facilities.

The Project programme is illustrated in Figure 1.1 below.

Figure 1.1 Project programme



Program		Project GBA	Project SDP	Project GLA
	BASEMENT	10 157 m²		
A	HOTEL	6 945 m²	5 724 m²	5 099 m²
B	OFFICE	8 021 m²	7 457 m²	6 939 m²
C	RETAIL	8 001 m²	6 832 m²	6 795 m²
C	HYPERMARKET	3 955 m²	3 459 m²	3 452 m²
C	F&B / RESTAURANT	1 417 m²	1 308 m²	1 292 m²
C	LEISURE	2 561 m²	2 441 m²	2 432 m²
	TOTAL	**41 057 m²**	**27 221 m²**	**26 009 m²**

	Outdoor spaces	Gross Area
Hardscape	RDC Mall Circulation	1 520 m²
Hardscape	R+1 Mall Circulation	1 186 m²
Hardscape	Plaza	551 m²
Hardscape	Rentable Terraces	2 057 m²
Hardscape	TOTAL	**5 314 m²**
Landscaping	Green Area	2 186 m²
Landscaping	Walkways	1 131 m²
Landscaping	Access Driveways	7 509 m²
Landscaping	TOTAL	**10 826 m²**

Source: Duval Great Lakes Ltd. (March 2023).

The Project is built upon government land transferred to the Client after a Memorandum of Understanding (MoU), concession and land lease agreements were signed between the Government of Rwanda and the Client in February 2022. The proposed site for the development of the mall was previously occupied by the Ministry of Justice.

Given that the site was only occupied by buildings for office used and owned by government, no land eviction or involuntary resettlement has taken place.

The proposed mall is on Plot No.UPI:1/02/08/03/681 in Rugando Cell, Kimihurura Sector, Gasabo District in Kigali City, at the RN3 roundabout, between KN 5 Rd and KG 622 Street and about 3 km from Kigali International Airport. Surrounding land-use is zoned as a commercial area (under the Kigali City Master Plan). The site neighbours Kigali Convention Centre to the West, Lemigo Hotel and Bodifa Mercy House to the East, and Fairview Building to the South.

The site location is shown below in Figure 1.2.

Figure 1.2 Site Location

Source: Kigali Mall Project EIA, Eco-excellence consultancy Ltd, 2019

The INZOVU MALL shall offer at the same time (i) conference venue to complement the Kigali Convention Center (located opposite), (ii) a 4-star hotel with serviced apartments, (iii) a shopping center of international standards with global brands offering various products, a food court and various entertainment offers.

Due to its pole activity complementarity of mixed used facility, the mall is expected to be busy 7 days a week:

- During the week, due to the offices and Hotel
- During the weekends, due to the hypermarket, shopping center and leisure facilities.

Demolition of the existing buildings on the Project site commenced in March 2022 and are now finalised. Real Contractors Ltd oversaw demotion works carried out by BDSS Ltd (subcontractor).

Coldefy and Vavaki Architects Rwanda Ltd are the Project's Architects. The Client is currently in a tendering process of selecting a civil works contractor to develop the mall, with provisional start of works in May 2023 as illustrated in Figure 1.3 below.

Figure 1.3 Estimated schedule and progress

Source: Duval Great Lakes Ltd. (March 2023).

1.3 Structure of the Report

This report is composed of the following chapters:

Table 1.1 Structure of this Report

Chapter	Content
Chapter 1	Introduces the SLIP package, providing information on the Project background and the contents of this report.
Chapter 2	Provides additional project information including key Project phases and activities, workforce, key expected emissions, resource consumption and H&S.
Chapter 3	Determines the Area of Influence for the several environmental and social components to be considered in this study, as well as the methodology of baseline data collection.
Chapter 4 **Chapter 5** **Chapter 6**	Present the physical, biological and social baseline from desktop review, key observations from reconnaissance visits and stakeholder engagements carried out to date.
Chapter 7	Explains public consultation conducted for the preparation of the SLIP, identification of main stakeholders and summarizes their main concerns.
Chapter 8	Presents the Environmental and Social Management Plan.

2 PROJECT PHASES AND ACTIVITIES

The following information has been considered in order to confirm key project impacts/mitigation measures as part of the ESMP.

2.1 Project Phases and Impacting Activities

The following Project phases, their related impacting activities, and unplanned/accidental events have been considered in this assessment:

Construction Phase

- Movement of construction vehicles (personnel/materials/waste) within the Project plot and access roads
- Earthworks (early works/excavations) (incl. use of equipment and machinery)
- Building works (structural, masonry, shell and core, MEP, ceiling, flooring & wall finishes) (incl. use of equipment and machinery)
- Water supply (public utility provider brought by trucks if necessary) and storage in tanks
- Power supply (public + power backup diesel generator)
- Generation/sorting/storage/disposal by type of solid wastes
- Generation/storage/disposal by type of liquid wastes
- Employment and presence of workforce
- Procurement of materials and services
- Removal of existing infrastructure (water pipelines, electrical lines, etc.)
- Retrenchment of workforce

Operation Phase

- Movement of operational (personnel/goods/waste) and mall visitors' vehicles within the Project plot and access roads
- Mall presence and activities (hotel, retail, office, restaurants, leisure)
- Water supply (public utility provider) and storage in tanks
- Power supply (public + power backup generators (x2) + solar powered hot water system)
- Generation/sorting/storage/disposal by type of solid wastes
- Generation/storage/disposal by type of liquid wastes
- Employment and presence of workforce
- Procurement of materials and services

Unplanned / Accidental Events

- Leakages and spillages
- Fire breakouts

2.2 Workforce

2.2.1 Construction

The construction works are currently the subject of an International tender for the Construction of the Development. It is expected the management of the construction will be undertaken by the Main Contractor to be awarded the project from the tender process. All bidding companies are International firms.

Employment during construction will depend on the programme of works scheduled by the Contractor/s. According to the current planning, the estimated number of workers during the construction peak is around 500-600 (both direct and indirect personnel) during the 24 months of construction. It is currently estimated that the majority of workforce will be local Rwandans or from neighbour countries, with a few specialists (supervisors, specialized activities) coming from Europe. Local labour will (as far as possible) be sourced from the city. Expats will be housed in surrounding infrastructure and no specific on-site accommodation area will be required. All facilities for accommodation of workers will be and operated in accordance with the provisions of the IFC Workers Accommodation Guidance.

Day and night shifts are expected.

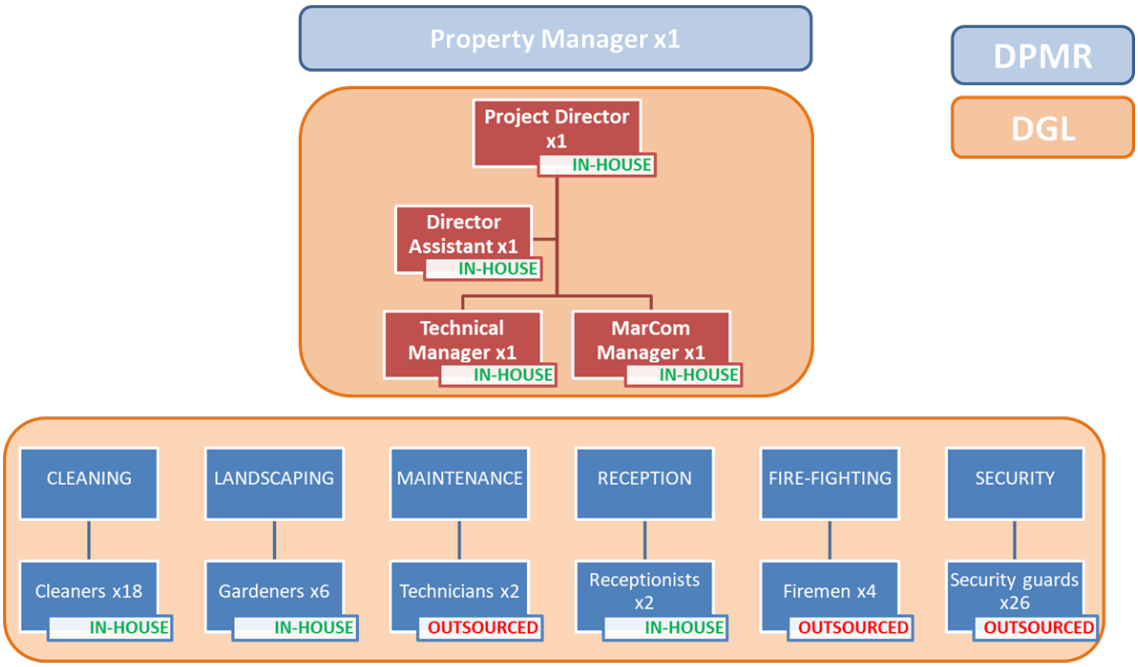
Particular attention will be paid to providing support and skills training for local young people to help them enter employment. DGL will work alongside local schools, vocational training establishments and sub-contractors to establish synergies (to organize short and refresher training courses and to develop work experience or internship programs).

2.2.2 Operations

DGL, a 100% registered subsidiary of DUVAL Group, will be responsible for the operation management and maintenance of the INZOVU MALL project. During operations, the project is expected to require a team of staff including (Figure 2.1):

- Project Director: responsible for managing the entire operation of the INZOVU MALL shopping center, including coordinating all hygiene, quality service, security, and safety matters.
- Project Director Assistant: supports the Project Director by efficiently managing their agenda and resolving any operational problems that may arise.
- Technical Manager: manages all subcontractors and contributes to maintaining all equipment and materials on-site.
- Marketing and Communication Manager: manages all marketing and communication activities on-site, as well as the annual entertainment agenda within the center.
- Operational Team: organized into six departments including cleaning, landscaping, maintenance, reception, firefighting, and security.

Figure 2.1: Operations team



Source: Duval (March 2023).

2.3 Key Emissions, Waste Generation and Management

2.3.1 Construction

2.3.1.1 Construction Air Emissions, Noise and Vibrations

During the construction phase, air emissions, noise and vibrations will occur as a result of vehicle movements, use of machinery and the presence of a back-up fuel diesel generator to be used in case of energy failure from the public grid. These emissions, considering the engine sources, will be similar in nature to those from the surrounding traffic, resulting in a temporary increase in the levels of CO, CO_2, SO_2, NO_x, PM_{10} and $PM_{2,5}$. In addition, dust emissions are expected to occur, especially during earthworks (excavation, building of foundations, transport of excavated material, etc.). Noise – as required by the city regulations- is expected to be concentrated during daytime activities, with limited vehicle movement during the night.

Currently there is no estimate of fuel consumption required during construction operations and therefore it has not been possible to produce an estimate of air emissions. The Contractor will provide estimates of fuel consumption during construction.

Considering that main energy source at the construction location will be the public energy network with an annual power consumption of 189,800 kWh, and that emissions will be mostly limited to vehicle movement associated to transport of materials to/from the site, air emissions during construction phase are not expected to exceed IFC thresholds.

2.3.1.2 Construction Waste Generation

Construction waste is expected to include the following categories:

Table 2.1 Construction Phase Waste Streams

Waste type	Description
Organic (Vegetation)	Grass and small shrubs from plot clearing.
Packaging	General construction packaging waste including pallets and plastics from construction materials and electrical and mechanical equipment.
Construction/ civil works waste	From civil work activities such as excavations, levelling, and existing debris.
General household type waste	As a result of the presence of construction workforce onsite.
Hazardous waste	Paints/lubricants/solvents and their containers.
Oils and lubricants (hazardous)	Small quantities used in maintenance of vehicles and electrical and mechanical equipment.

Currently, there is no estimate of the quantities of waste, with the only exception of the excess of excavated material, estimated in 71.000 m^3. All solid wastes will be sorted, stored, weighed, and transported to dedicated disposal and/or recycling facilities by service providers approved by the authorities. Hazardous wastes will be stored separately and disposed of by specifically approved companies.

Effluents to be generated during construction phase include sewage from toilets, wastewater from washing vehicles and machinery and concrete mixer wash water and concrete laitance. Expected quantities remain unknown at the moment of writing this report.

Sewage generated will be managed by the installation of a portable septic tank on site, removed from the site upon completion.

2.3.1.3 Construction Hazardous Materials

In terms of hazardous materials to be used, during construction phase these will be mainly formed by fuel and lubricants to be used in the maintenance and operation of machinery, vehicles, and generators. For this purpose, fuel and other hazardous materials will be stored in specific tanks including secondary containment.

2.3.2 Operations

2.3.2.1 Operations Air Emissions, Noise and Vibrations

During the operations phase, the site will be occupied by a public building sourcing the energy from both the existing public grid, two power back-up diesel generators, and from solar panels to be installed for the hot water system. Emissions to air during the operation phase will be limited to the use of the 2 back-up power generators planned to be installed, that will be used only in case of failure of the public energy network.

Considering the main source of energy will be the public electricity network and the installation of solar panels, it is considered that the direct operation of the INZOVU MALL will not result in a significant increase of emissions in the area of influence of the project. However, an increase in emissions associated to the project during operation related to the new traffic expected to be associated to the operation of the building by its external users, can be expected, though it is considered unlikely that its levels exceed thresholds.

Regarding noise and vibrations, transportation of personnel/goods/waste, the operation of the two power back-up generators, and the activities at the mall will be the main sources of noise and vibrations, however, it is unlikely that noise/vibration levels exceed thresholds.

2.3.2.2 Operations Waste Generation

During operation, the following non-hazardous solid waste streams and annual quantities are expected to be generated:

- Metal, glass, plastic: 191 Tons per year;
- Paper and cardboard: 230 tons per year;
- Food and Organic wastes: 249 Tons per year;
- Other type of garbage (trash): 2 Tons per year.

These waste streams will be segregated and separated as per the mentioned categories in different waste bins strategically located near the tenant stations, each labelled with a different category. The sizes and types of bins to be used will depend on the above types of waste.

The above waste and recyclables bins will be collected and moved to a central storage area using transport containers where they will be stored in separate large bins designated for food waste, trash, metals/plastics/glass, and paper/cupboard.

Garbage collection vehicles will the collect the waste and recyclables from the storage area and transport all recyclable material to recycling companies and the rest of the waste to Kigali city waste landfills for disposal.

Generated hazardous waste such as grease oils, cleaning chemicals and their containers, light bulbs, fluorescents, etc. will be stored and transported separately to prevent them from contaminating each other or further contaminating other waste.

Generated wastewater will be then directed to a wastewater treatment plant to be installed in the facility. The treatment plant considered is a MBBR (Moving Bed Bioreactor) type, with capacity to treat an effluent of 1,500 people. Treated wastewater will be re-used for irrigation and excess will be discharged to the stormwater drains. Sewage sludge from wastewater treatment process will be disposed of as per government requirements by and accredited service provider.

Regarding runoff water, both during construction and operation, rainfall will end up in the KN5 Storm water drains. This is understood to be no different from the current situation, since at present any rain that falls over permeable surfaces and is allowed to infiltrate naturally, travels to the KN5 Storm water drains. During operation it is planned that Sustainable Drainage Systems (SUDS) are employed on site to manage surface water runoff. The SUDS will allow a controlled rate of discharge and will include the extensive use of permeable surfaces to roads, car parks and footpaths. The sloping ground to the east along KN5 Road, will contain a series of linked parallel swales which will treat and attenuate surface water before it is discharged into the cities storm drainage systems.

2.4 Resource Consumption / Resource Efficiency Measures

2.4.1 Construction

Significant quantities of various types of construction materials will be needed such as concrete, prefabricated segments, aggregates, sand, water, diesel fuel, together with construction building components. The following main materials and equipment will be used during construction works. Quantities of the different materials required remain unknown at the moment of writing this report.

Water will be used for dust suppression, construction (batch preparation, cleaning activities, etc.) and for civil use. Water supply to the construction site will come from the existing water supply network. It is currently assumed that the water needs for construction will be met by using the existing public network water supply. In the event of scarcity, water from an approved source will be brought by trucks.

Raw materials will be procured from regional service providers located in the relative vicinity of the INZOVU MALL site. Specifically, for the case of sand and aggregates already existing licensed quarries will be used. These quarries are subject to the national standards for operation.

Fuel will be used during construction for vehicles/machinery as well as by generators to supply back-up electricity to the construction site. For this purpose, fuel will be stored in specific tanks including secondary containment.

Electricity during construction will be provided by a connection to the electricity network supported by a back-up generator. Annual power consumption was estimated to be 189,800 kWh.

In terms of material sourcing, it is expected that all materials that can be produced locally should be sourced locally (e.g. cement and aggregates for concrete, etc.). Depending on the local industrial market, some special equipment such as facades, MEP Equipment, etc., is expected to be imported. Duval Group's CSR engagements aim to contract a maximum of local suppliers and contractors if they comply with Duval's E&S policy and quality requirements.

2.4.2 Operations

During operation, water needs have been estimated in 63,000 m^3 per year that will be mainly sourced from a combination of existing public network and from harvested rainfall.

In terms of electricity, it will be supplied from the existing public network with the support of 2 diesel power backup generators. It is expected that about 4'675,650 kWh of electricity will be needed per year, and 29,390 litters of diesel will be used during main power failures. About 147,596 kg of LPG will be used for cooking purposes on an annual basis.

DGL aim to maximize local suppliers and workers. Groupe DUVAL also intends to include partnerships with local suppliers.

2.5 Resource Efficiency Measures

The buildings will be EDGE certified (certification process is ongoing). DGL have targeted as a minimum the level 1 (20% on the EDGE scale) for each building. According to the EDGE certification, each building with a different use will be certified (in the case of the project: 1-Hotel, 2-Offices, 3-retails).

In order to achieve this, several actions have been considered by the Project, including:

Energy Efficiency

- Energy usage will be metered. A Building Management System (BMS) will be installed to reduce operating costs through energy optimization.
- Use of building materials with low U-Values (high thermal performance) and by designing cooling and lighting systems to be as efficient as possible.
- Orientation of buildings to allow for good levels of daylighting (optimizing natural light) whilst shading itself in summer months and minimizing solar gain to offset some comfort cooling and air conditioning requirements. Brise Soleil and canopies have been specified to provide shading to glazed facades.
- Solar energy will be used to supply the hot water system.
- Automated lighting systems in public areas.
- Use of LED lighting throughout the whole development, which have a low energy demand profile. This together with the maximum daylighting further reduces the lighting load of the buildings.
- Ventilation and cooling design proposals will reduce the demand for mechanical comfort cooling and air conditioning through maximizing natural ventilation.

Water Efficiency

- A water meter will be installed on the mains supply to each building and individual tenant use to ensure water consumption can be monitored and managed.
- Installing water efficient sanitaryware, including low, dual flush toilets and limited flow rate for basin taps and showers.
- Treated wastewater will be used for irrigation, carwash, and the rest discharged.
- External landscaping and planting relying solely on precipitation, during all seasons of the year. Therefore, no potable mains water will be used by the development for external use.
- Sustainable Drainage Systems (SUDS), including permeable paving and swales, will be used on site to manage runoff and allow a controlled rate of discharge into the public stormwater drainage system.
- Rain/stormwater harvesting facilities such underground rainwater tanks will be installed and paved surfaces on site will be reduced to reduce stormwater run-off. Rainwater harvested will be reused for firefighting, garden irrigation, and washing.

Transport and Movement

- Minimize any unnecessary car travel to the site, particularly in the case where public transport can be made available in the future. A range of initiatives are currently being considered to encourage more sustainable travel by users of the site and are likely to include promoting car sharing initiatives, use of group travel, a dedicated bus stop immediately outside the mall, provision for electric vehicle charging facilities, secure cycle parking.

Waste and Green Spaces

- Reducing waste that ends up in landfills through as much recycling and reuse as possible via a Waste Management Plan (WMP).
- A vessel will be installed on site for composting suitable food waste resulting from the buildings daily operation and use.

2.6 Health and Safety Procedures / Traffic

Occupational Health & Safety for the Project will be conducted according to the Occupational H&S Policy of DGL that is currently being developed. This policy will follow the IFC Occupational Health and safety guidelines of IFC, The Policy will be in place before any construction activity begin. This policy will be mandatory to all DGL contractors and is being included in the tendering process.

With regards to traffic, all project traffic related (transport of goods and materials, wastes, workers, etc.) will be managed in accordance with a Traffic Management Plan to be developed as part of the ESMS of the Project.

The Development is designed to and will be constructed to comply with National Fire Protection Association (NFPA) standards.

With regards to traffic, the location of the project is part of a context of deconcentration of the city center (multiplication of urban centers) and the gradual displacement of commercial functions from the central business district (CBD) to less dense residential areas such as Rugando and Kimihurura.

The catchment area covers the whole city of Kigali, with a potential population of about 1.6 million. The target customer base - capable of frequent visits to INZOVU MALL - is estimated at around 900,000 people.

Roads around the mall are paved and in good condition, with adequate infrastructure for non-motorized transport. The RN 5 Road in the north of the site is a major connector for the population who during evening peak hours return from the CBD to residential areas, and the project will offer three entries and exit to ensure a smooth traffic in and from the Mall.

3 ENVIRONMENTAL AND SOCIAL BASELINE

This Baseline Report provides a description of the existing physical, biological, and socioeconomic conditions of the Area of Influence, which will directly or indirectly be affected by the proposed Project activities. The collection of baseline data focused on providing information to support the assessment of any potential impact of the Project and their corresponding mitigation measures.

Secondary information from publicly available online sources was collected to provide a regional, district or local contextual overview, while primary information was obtained within the Area of Influence, specifically within and in the immediate vicinity of the Project site/plot for the environmental component and the socioeconomic component.

3.1 Area of Influence

The "spatial scope", "study area" or "area of influence (AoI)" for the Project is used to describe the boundaries of the extent to which Project impacts may be felt. The AoI to be assessed can vary depending upon the type of impact being considered and the attributes of the potentially affected receptors and may also extend across administrative. In each case, the AoI includes all areas within which significant impacts are likely to occur, taking into account the:

- physical extent of the proposed works, defined by the limits of land to be acquired or used (temporarily or permanently) by the Project; and
- nature of the baseline environment and manner in which impacts are likely to be propagated beyond the Project boundary;

The Potential AoI of the Project is defined as the area in which significant effects are expected from the Project and other relevant projects in the area.

The AoI for the SLIP is based on the definition of the AoI provided by the IFC Performance Standards and is specifically:

- The footprint of the construction operations and related facilities;
- The footprint of facilities developed specifically for the Project for the extraction of raw materials (e.g., quarries) or for construction camps where equipment and materials are stored and where concrete products may be produced;
- Areas potentially impacted by indirect, secondary, or induced effects;
- Areas potentially impacted by unplanned events such as accidents; and
- Areas potentially impacted by cumulative effects associated with other known or reasonably predicted development.

In accordance with international ESIA practice, the AoI of a project includes not only the core project components but also any Associated Facilities related to the project.

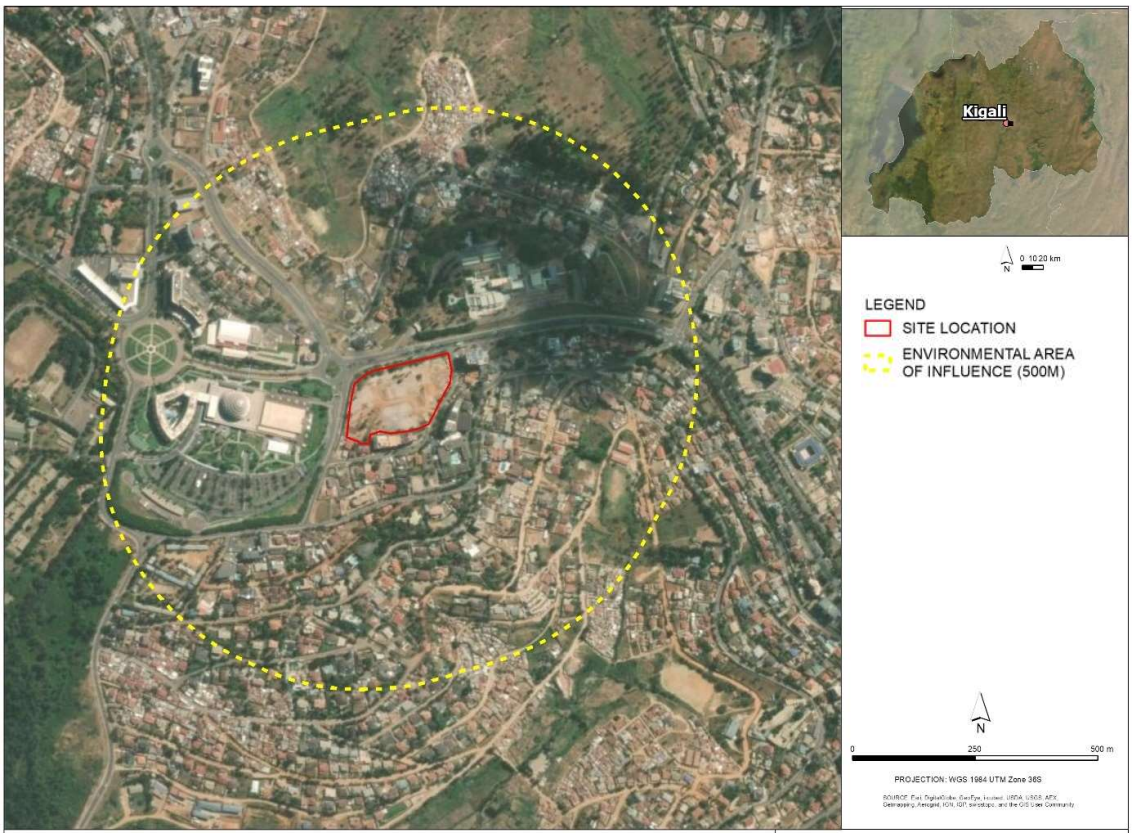
Associated Facilities are defined by the IFC as *"…facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable*". In the context of this Project, there are no associated facilities, either on site or off-site.

The sizes of the study area for each environmental and social variable have been examined separately to ensure that its size appropriately captures the impacts of the project on the receiving environment. The subsections below show the AoI and justification for choice.

3.1.1 Environmental Area of Influence

The Environmental AoI of the Project comprises the Project site/plot and a 500 m radius around it, corresponding to the area where impacts to the physical and biological features of the environment could reasonably be expected.

Figure 3.1 Environmental Area of Influence (AoI) of the Project



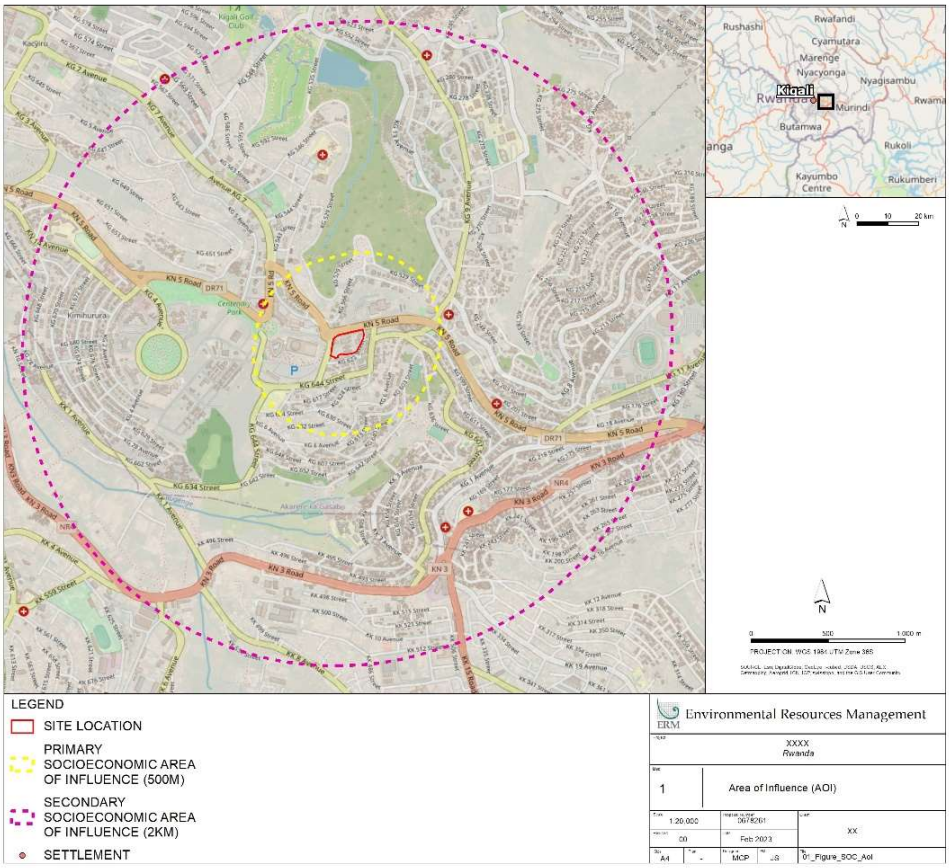
Source: ERM, 2023.

3.1.2 Socioeconomic Area of Influence

The Social desktop review will consider an AoI of 500 m plus a secondary area based on existing barriers (i.e., motorways) that can extend to a maximum of 2 Km.

Figure 3.2 shows the socioeconomic AoI:

Figure 3.2 Area of Influence of the Project, 2023



Source: ERM, 2023

3.1.3 Closest Sensitive Receptors

The closest sensitive receptors around the project plot were identified by the client. Table 3.1 identifies the schools, institutions, hotels, offices, and malls which are within this area, and which might be impacted by all of the Project's phases.

Table 3.1 Closest Sensitive receptors around the project plot

Type	Name	Distance (m)	Orientation
School	Kigali Junior Academy	416	S-E
	Dove International Montessori School	306	S
	Public school	360	S-W
Institution	Parliament of Rwanda	100	N
	Rwanda Development Board	515	N-E
	Kimihurura Sector Office + Police office	150	E
	Centre culturel francophone du Rwanda	315	S
	Université de Kigali	518	N
	Embassy of the Kingdom of Morocco	350	N
	Mali Embassy of Mali in Rwanda	120	E

Type	Name	Distance (m)	Orientation
	Hope in Jesus Church	650	S-E
Hotel, Offices & Malls	Hotel Lemigo	10	E
	Fairview building	0	S
	Kigali Convention Center	200	O
	Kigali Heights	424	N-O
	Radisson Blu	380	O
	Simba Supermarket Gishushu	12	E
	Immediate vicinity around the project site	Vicinity	Vicinity
Health	Edo Heza Surgical Centre	900	S-E
Waterbody	None within the Project Plot or immediate surroundings. Closest waterbodies are Bushenyi and Rugenge stream, both associated to the Rwampara wetland. These streams are separated from the Project plot by transport and commercial/governmental/residential infrastructure.	260 m (Bushenyi) 440 m (Rugenge)	N (Bushenyi) S (Rugenge)
Municipal stormwater drainage channels	Public stormwater drainage channels circumscribe the Project plot	Along the KN5 road and back and side streets	

Source: Duval Field Work, February 2023.

3.2 Baseline Data Collection

To understand the existing baseline conditions in the AoI, a variety of data collection methods were used. These are described below:

3.2.1 GIS Analysis

GIS analysis was undertaken and ground-truthed in site visits carried out by an ERM consultant and a DGL's representative during February 2023. GIS analysis was based on publicly available satellite imagery of the Area of Influence from Google Earth, Google Street View, government agencies, international organizations, Kigali City Master Plan 2020 and ESRI (Rwanda GeoPortal https://rwanda.africageoportal.com/).

3.2.2 Document Review

A literature review was undertaken based on the findings of the reconnaissance process, which involved secondary publicly available data and previous studies carried out in the area to determine the baseline conditions and establish the environmental, the institutional and socio-economic setting of the Area of Influence. References to these documents will be found in chapter 9.

ERM conducted a desktop review of existing environmental and social conditions focused on filling in the gaps identified in the baseline of the 2019 EIA:

- The Environmental desktop review focuses on an Area of Influence (AoI) of maximum 500 m radius around the Project site and it includes an assessment of the following elements:
    - Soils and Geological conditions (project site only)
    - Hydrology and Hydrogeology (project site only)

- Air Quality, Noise and Landscape (500m)
- Biodiversity (500m).

- The Social desktop review considers an AoI of 500 m plus a secondary area based on existing barriers (i.e., motorways) that can extend to a maximum of 2 Km.
- Desktop research has been based on satellite images, available public information from governmental sources, NGO's and scientific literature and uses GIS tools.

As a result of the desktop research ERM has:

- Designed the field workplan and methodology, based on the sensitivities and significant elements identified, with focus only on elements that require additional data or ground-truthing.
- Prepared a Data Collection Checklist with ESIA relevant project information and pictures expected to be collected by Duval personnel, including Project Data and Environmental data (reconnaissance visit + noise data)
- Prepared a questionnaire and a Stakeholder Engagement (SE) Plan to be used during the field visit.

The desk-based study also included the development of fieldwork tools, fieldwork schedules as well as the approach to stakeholder engagement as outlined in the Stakeholder Engagement Plan.

3.2.3 Site Visits

For the environmental component, a DGL's representative visited the Area of Influence in February 2023 to ground-truth the gathered desktop information.

For the socioeconomic component a site investigation was undertaken from 20th to 22nd February 2023 during which detailed social baseline data was collected and preliminary stakeholder engagement was undertaken. Stakeholder engagement activities were led by a DGL representative, an ERM social specialist and a local social specialist. Data was collected through:

- Sharing the Project's Background Information Document (BID, and presented as **Appendix A**) to identified formal stakeholders and requesting them to share their views/ comments on the proposed Project;
- Key Informant Interviews (KII) especially with the authorities of the relevant institutions; and
- Site walkovers.

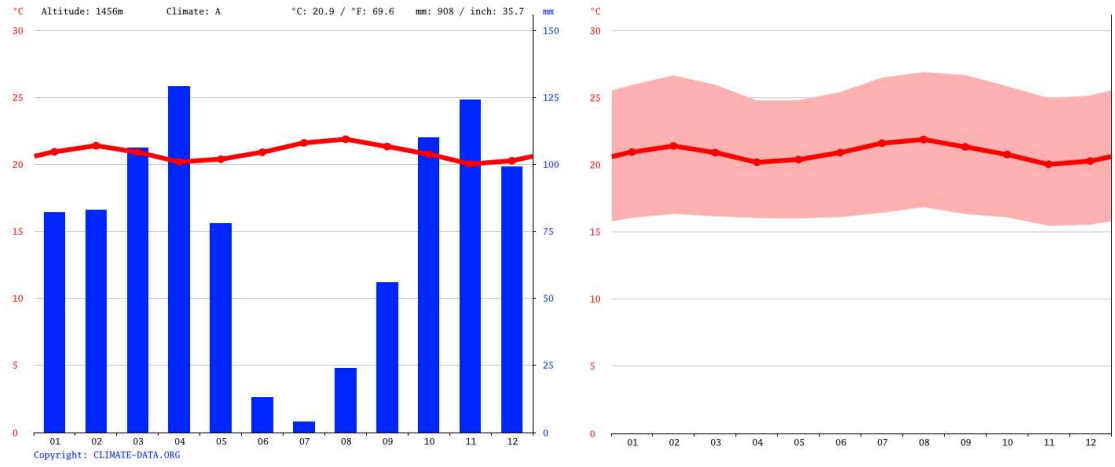
Photography and Global Positioning Systems (GPS) were used to record the salient features and baseline conditions at the Project sites and surroundings.

4 PHYSICAL BASELINE

4.1 Climate

According to the Köppen-Geiger Climate Classification, the Area of Influence is located in a tropical savannah climate zone (Kottek *et al*., 2006). There are two major climatic seasons in a year, namely the dry and rainy seasons, which alternate within the year (GDG, 2018), i.e., there are two rainy seasons, one extending from February to May and the second from late September to November. In between the two rainy seasons, there is a relatively dry period (June to August) with monthly rainfall below 25 mm (Figure 4.1). July is the driest month while the wettest is April with an average rainfall close to 130 mm (Figure 4.1). The rainfall ranges between 900 and 1,500 mm annually, while the average annual temperature ranges between 20 to 22ºC, with maximum average temperatures reaching 27 ºC and minimum average temperatures reaching 15ºC (Figure 4.1).

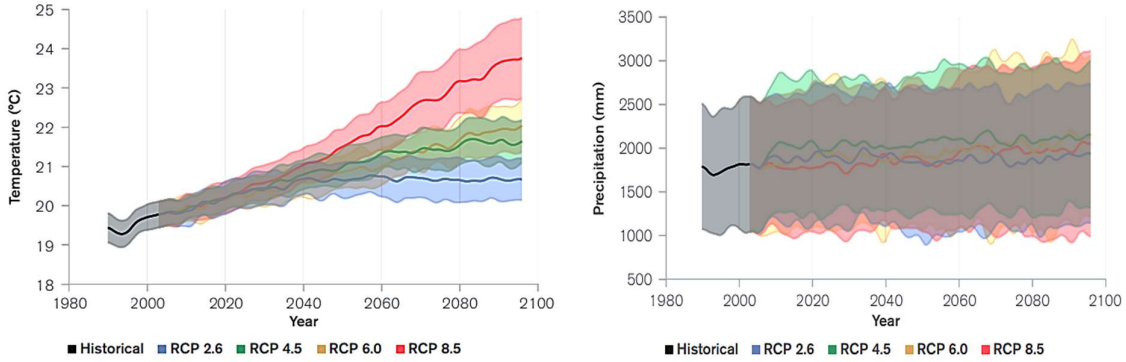
Figure 4.1 Average Precipitation and Temperature in Gasabo (1991-2022)



Source: Climate-Data.org, 2023.

Regarding climate change, according to Rwanda's Climate Risk Profile (WBG, 2021), temperatures across the country are expected to increase and projections show a change in annual mean temperature from 1.1°C to 3.9°C by end of the century (Figure 4.2). Increased heat and extreme heat conditions will result in significant implications for human and animal health, agriculture, and ecosystems. On the other hand, rainfall in the country is highly variable and projections indicate a likely increase in annual rainfall (Figure 4.2), with the increase likely to occur during the main rainy season, with drier tendencies during the dry season. This is expected to significantly impact agriculture, water, energy, forestry, and health sectors, as well as agricultural land and freshwater resources and ecosystems. Heavy precipitation events are expected to coincide with an additional occurrence of extreme rainfall and extreme events with flooding events expected to impact rivers and surface water runoff. Water routing and storage and other management options are often very different if the precipitation input comes as many weak or a series of heavy rainfall events.

Figure 4.2 Projected Annual Average Temperature and Precipitation for Rwanda (Reference Period, 1986–2005)



Note: Representative Concentration Pathways (RCP) defined by their total radiative forcing (cumulative measure of GHG emissions from all sources) pathway and level by 2100. RCP 2.6 represents a very strong mitigation scenario (low emission scenario) while RCP 8.5 assumes business-as-usual scenario (high emission scenario).

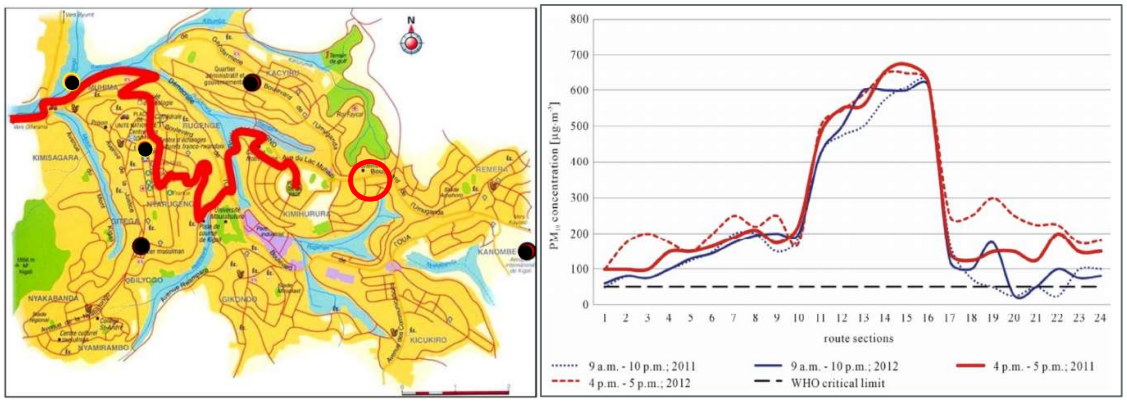
Source: WBG, 2021.

4.2 Air Quality

Air pollutants such as particulate matter (PM), sulphur dioxide (SO_x), nitrogen dioxide (NO_x), carbon oxide (CO), and ozone (O_3) originate from population growth, urbanization, industrialization, and increased use of motor vehicles. The capital city of Kigali, where the Area of Influence is located, is an urban area; therefore, its ambient air is already influenced by pollutants coming from man-made activities.

Subramanian *et al.* (2020) carried out a $PM_{2.5}$ monitoring in Kigali from March 2017 to July 2018 and found a mean $PM_{2.5}$ concentration of 52 µg/m^3 for the city, a value significantly higher than the World Health Organization (WHO) guideline (24-h: 15 µg/m^3). High PM concentrations were also found in a previous study carried out by Kalisa *et al*. (2017) in Kigali in 2017 where mean $PM_{2.5}$ and PM_{10} concentrations in the city (133 µg/m^3 and 156 µg/m^3, respectively) greatly exceeded WHO guidelines (24-h: 15 and 45 µg/m^3, respectively). The high concentrations of these pollutants were largely attributed to vehicle emissions as concentrations of particulates greatly reduced during holidays and car-free days. Earlier studies in Kigali from 2008 and 2009 also found that mean PM_{10} concentrations (1,013 µg/m^3 and 650 µg/m^3, respectively) greatly exceeded WHO guidelines, with PM_{10} emissions attributed to both vehicles and the burning of biomass (Henninger, 2009; Henninger, 2013) (Figure 4.3). Henninger (2009) also showed how heavy rain events considerably contribute to lower PM_{10} concentrations in ambient air (Figure 4.4). A study by Nsengimana *et al*. (2011) proposed that the high PM concentrations in Kigali are the result of high densities of vehicles, particularly old vehicles; inadequate maintenance facilities; poor traffic management systems and road conditions; and a lack of mass transport systems such as trains. Overall, these studies show that PM is a pollutant of concern in Kigali. The air quality in Kigali is currently being monitored and displayed at the Rwanda Environmental Management Authority (REMA)'s Air Quality Monitoring Platform (https://aq.rema.gov.rw/). The Kimihurura monitoring station is located at less than 200 m from the Project plot; therefore, PM concentrations can be observed in real-time.

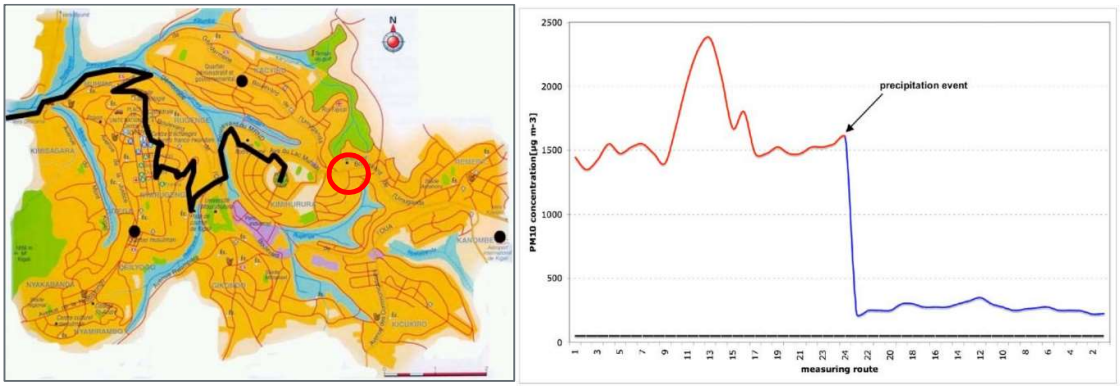
Figure 4.3 Mean PM10 concentration and Monitoring Route in Kigali (2009)



Note: Approximate location of the Area of Influence as a red circle.

Source: Henninger, 2013.

Figure 4.4 Mean PM10 concentration and Monitoring Route in Kigali (2008)



Note: Approximate location of the Area of Influence as a red circle.

Source: Henninger, 2009.

Other studies in Kigali that monitored NO_2, SO_2, and CO found that the concentrations of these pollutants were acceptable as they were generally below the WHO guidelines, although there were some higher concentrations of SO_2 during the dry season (Nsengima *et al*., 2011; Nduwayezu *et al*., 2015). There were also high concentrations of ground-level O_3 resulting in some exceedances of the 8-hour WHO guideline (100 µg/m^3) (Nsengima *et al*., 2011; Subramanian *et al*., 2020). In general, greenhouse gases (GHG) are emitted from a wide range of activities and sources in Kigali including carbon dioxide emissions from combustion of fossil fuels and burning of biomass, vegetation, and solid waste, as well as methane emissions from rice fields, wetlands and cattle, and emissions of other GHGs from industrial processes and fossil fuel combustion (KCG, 2020). These emissions contribute to the increased worldwide atmospheric levels of GHGs which are leading to global warming and climate change (KCG, 2020).

According to the Inventory of Sources of Air Pollution in Rwanda (REMA, 2018), there is not a specific sector that can be considered as the biggest contributor to air pollution within Rwanda as the levels of air pollution in a specific area are dependent on its location in relation to pollution sources. For example, in locations adjacent to busy road, vehicle emissions are the biggest contributor to poor air quality whereas in areas away from busy roads in residential areas the biggest contributor is domestic stoves. Power plants may have higher emission rates of pollutants compared to domestic stoves, but their effects on air quality in areas where there is high population density is low because the plants have stacks to aid dispersion, and they not located in residential areas.

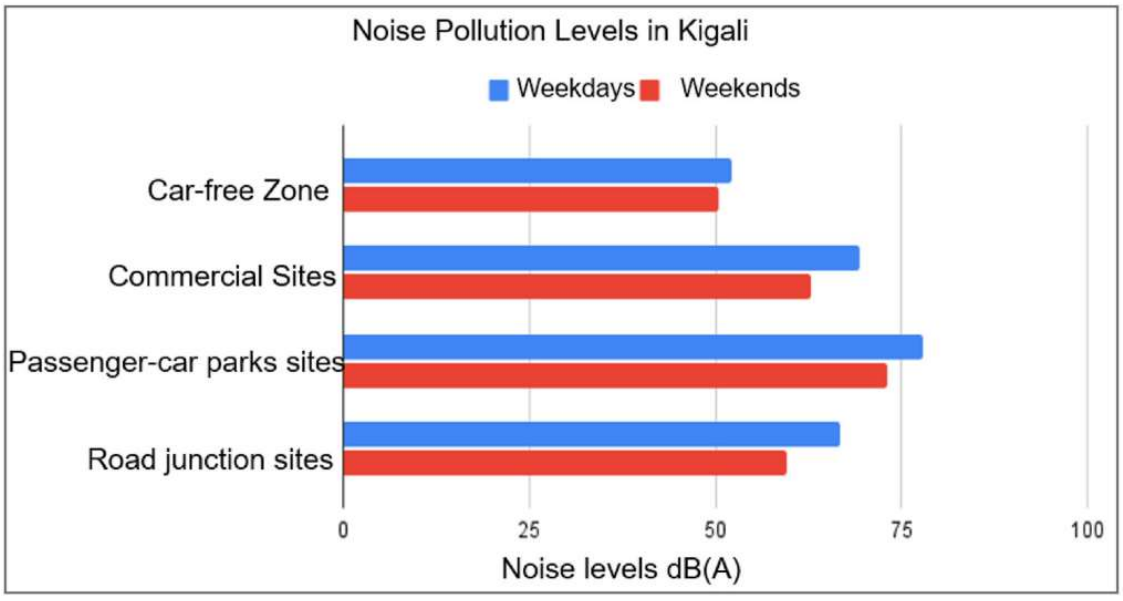
4.3 Noise

In cities, noise pollution can be associated with urbanization and the development of transport systems. High noise levels in cities can be attributed to traffic congestion resulting in honking and noise generated during the movement of vehicles. In this sense, urban density, urban morphology, street distribution, street environment, and urban land use can be considered critical factors in environmental noise levels (Kalisa *et al.*, 2022).

Kalisa *et al.* (2022) assessed the effect of land-use type on the environmental noise levels of Kigali during weekdays and weekends, in morning, noon and evening times. Results showed that the mean noise levels were higher during weekdays (60–80 dB(A)) than during weekends (50–70 dB(A)), being the lowest noise levels reported at car-free zones and the highest at passenger-car parks, followed by commercial sites and road junction sites (Figure 4.5). Spatial variation of noise levels interpolated for Kigali City showed higher noise levels in the outskirts of Kigali, Remera and Kimironko, close to where the Area of Influence is located (Figure 4.6). Noise levels recorded in Kigali exceeded the WHO permissible daytime limits during both weekdays and weekends at all land-use types except the car-free zone site. Overall, results showed that Kigali residents are exposed to high levels of noise.

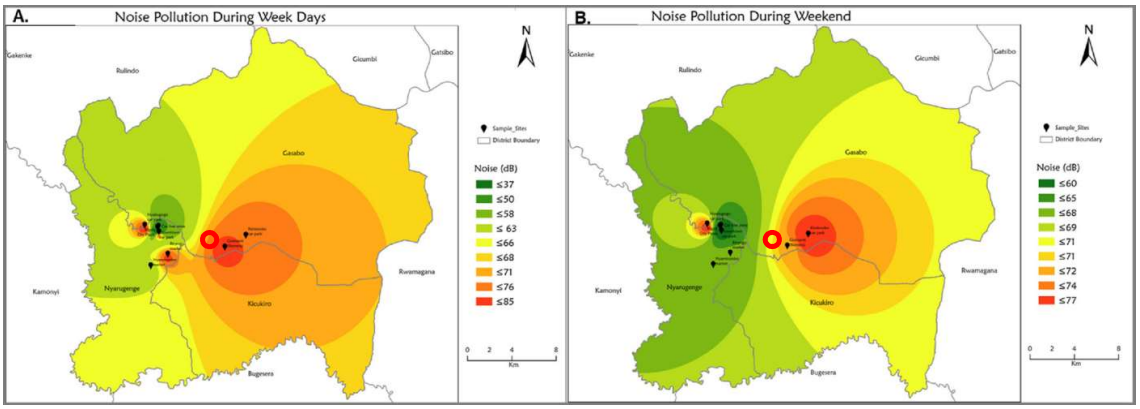
Since the Area of Influence is located in the urban area of Kigali City, surrounded by commercial, residential, and government administrative buildings and crossed by an important road (KN5), baseline noise levels are expected to be high. Nevertheless, the Project proponent will confirm the specific baseline noise levels through the conduct of a noise monitoring in May 2023, prior to the commencement of the construction phase. Noise levels will be measured at two different locations using a calibrated sonometer (Type I or Type II) with an active range of 30-130 decibels (dB). LAeq will be obtained for 24h in intervals of 15 minutes. For QA/QC, measurements will be taken in dry conditions and in the absence of strong wind speeds (< 5 m/s).

Figure 4.5 Average of Noise Levels between Weekdays and Weekends per Land-use Type in Kigali



Source: Kalisa *et al.*, 2022.

Figure 4.6 Spatial Distribution of Noise Levels in Kigali during Weekdays (A) and Weekends (B)



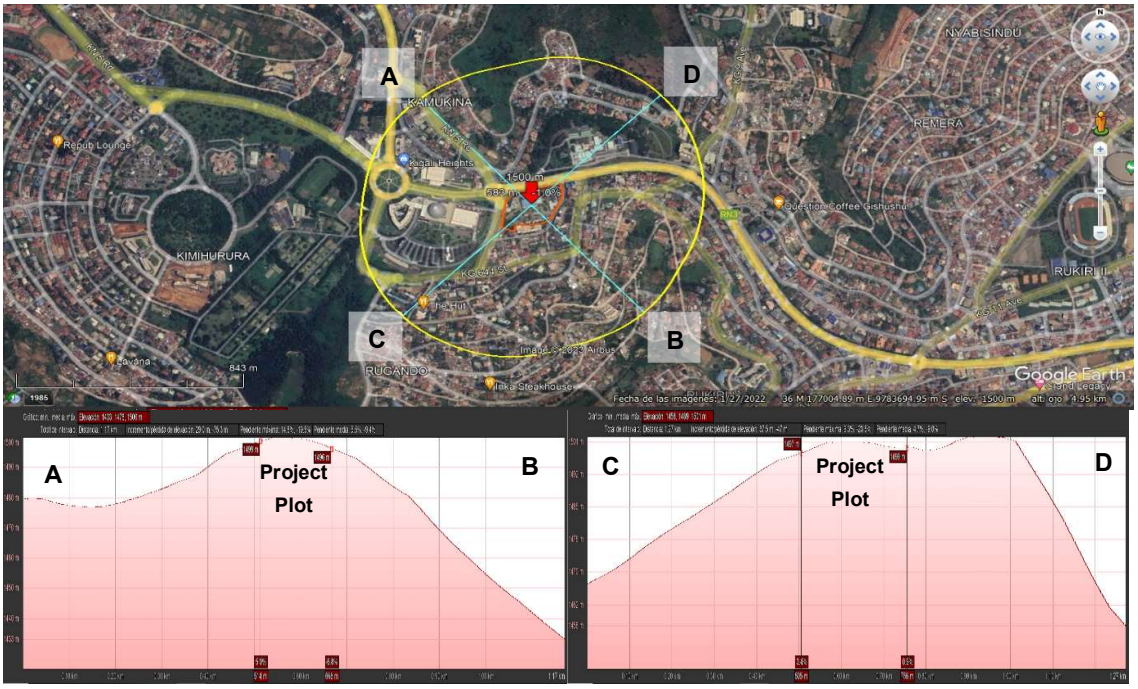
Note: Approximate location of the Area of Influence as a red circle.

Source: Kalisa et al., 2022.

4.4 Geomorphology and Topography

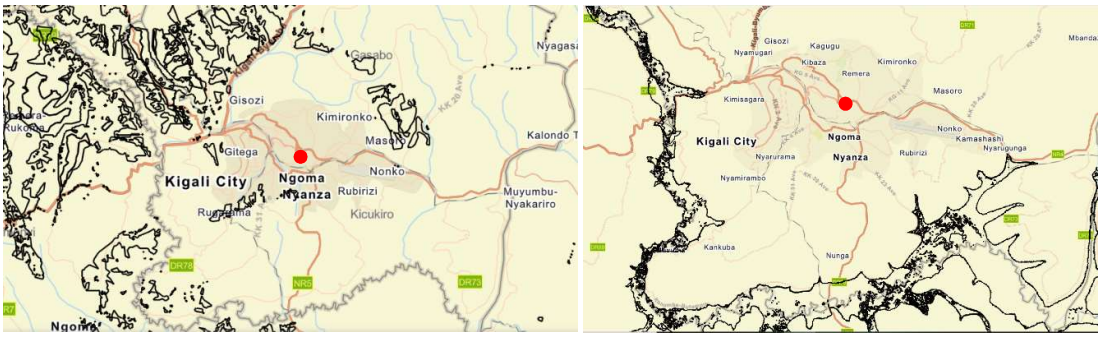
The Gasabo district is characterized by the mixture of high mountains with average altitude of 1,800 m mainly located in the rural zone, sloping basins and valleys (GDG, 2018). The district has over 30 wetlands and small rivers traversing through the valleys (GDG, 2018). Particularly, the Project plot is located on top of a hill at a mean altitude of 1,500 m.a.s.l., with mean slopes ranging from 4.7 to 9.4% and with more descending slopes towards the south and east than the north and west (Figure 4.7). In addition, the Area of Influence is not located in a landslide or flood risk area (MIDIMAR, 2015) (Figure 4.8). Currently, the Project plot presents a flattened terrain after the decommissioning and demolition of previously existing government buildings (Figure 4.15).

Figure 4.7 Topography of the Area of Influence



Source: Google Earth, 2023.

Figure 4.8 Landslide and Flood Risk Areas in Kigali



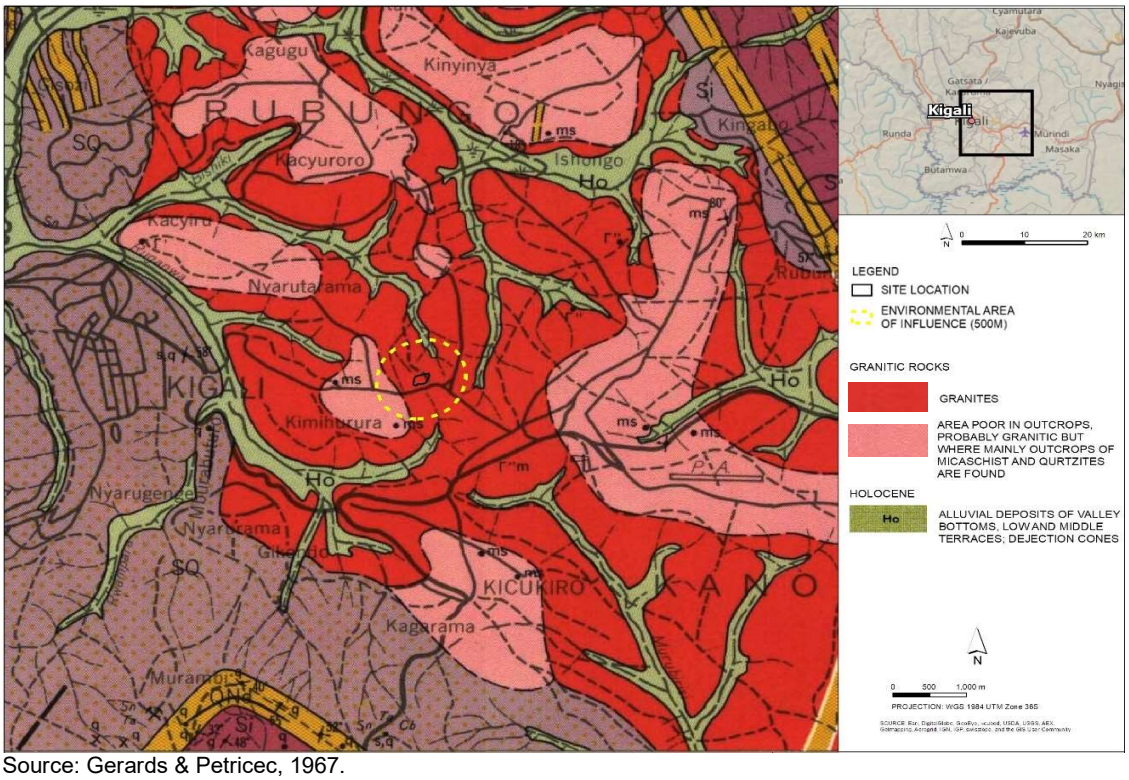
Note: Approximate location of the Area of Influence as a red circle.

Source: RLMUA, 2022.

4.5 Geology and Soils

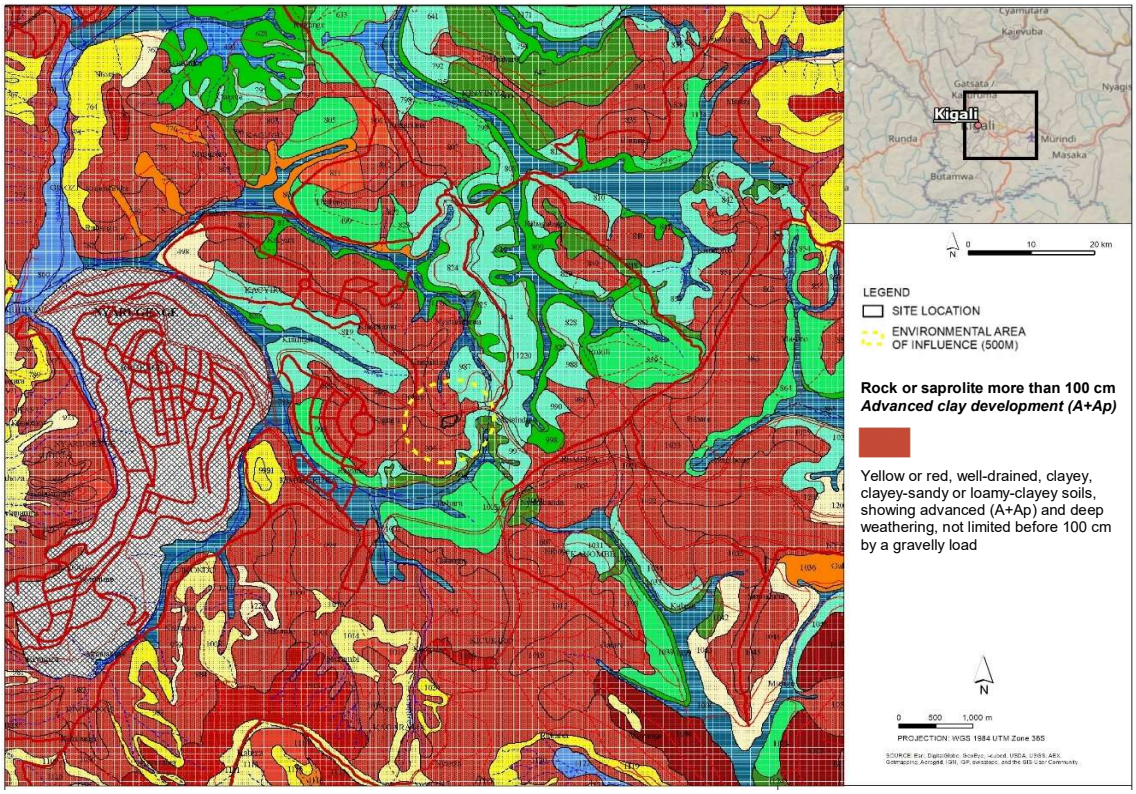
The Project plot is located on granitic rocks according to the Geological Map of Kigali (Gerards & Petricec, 1967) (Figure 4.9). In addition, based on the Soil Map of Kigali (Van Ranst *et al.*, 2000), the Project plot has advanced clay developed soils (A+Ap) (yellow or red, well-drained, clayey, clayey-sandy or loamy-clayey soils, showing advanced and deep weathering), not limited before 100 cm by a gravelly load (Figure 4.10). Currently, the Project plot presents a flattened terrain, with altered surface soils and some debris, after the decommissioning and demolition of previously existing government buildings (Figure 4.11). The Project proponent will confirm the specific properties of geology and soils of the Project plot through the conduct of geotechnical surveys, prior to the commencement of the construction phase.

Figure 4.9 Geology in the Area of Influence



Source: Gerards & Petricec, 1967.

Figure 4.10 Soils in the Area of Influence



Source: Van Ranst *et al*., 2000.

Figure 4.11 Surface Soils in the Project Plot

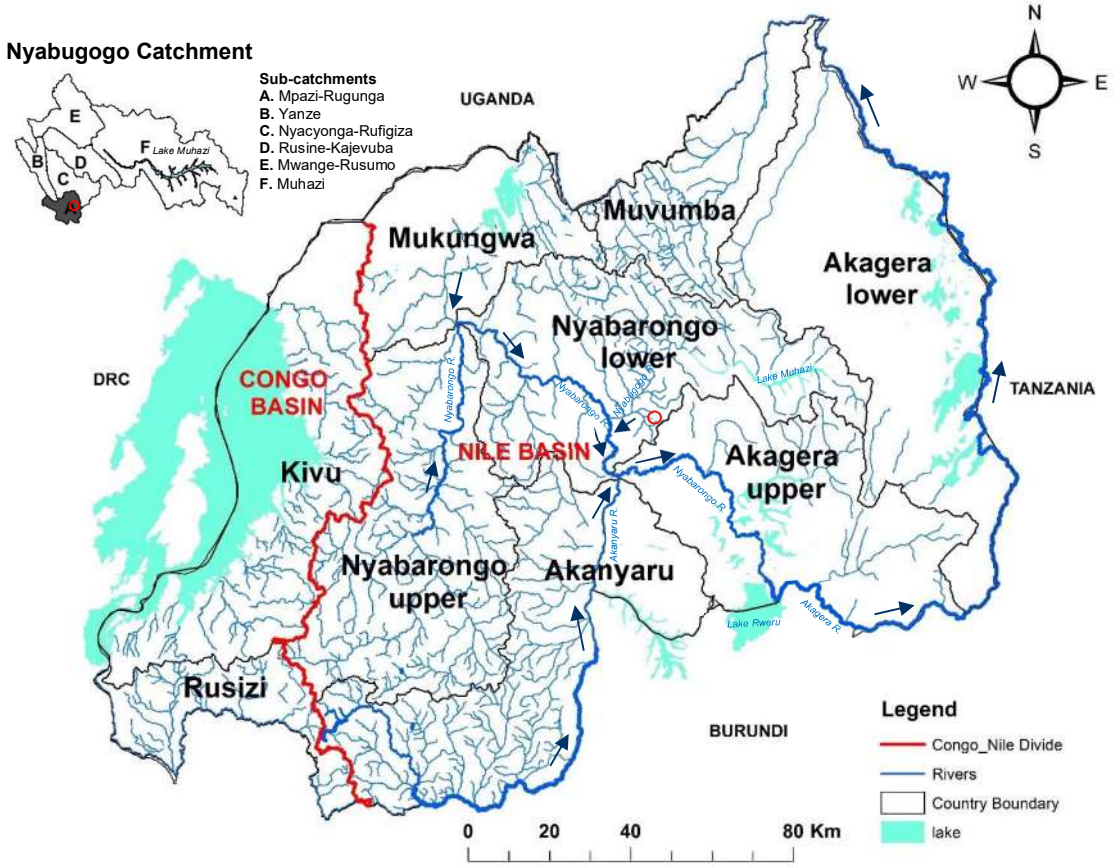
Note: Images obtained during DGL site visit in February 2023.

Source: DGL, 2023.

4.6 Hydrology

The Area of Influence is located in the Nile Basin, particularly in the Nyabarongo Lower Catchment. The Nyabarongo is a major river and the longest in Rwanda with 297 km long across its upper and lower catchments, eventually emptying into Lake Rweru and the Akagera River (Figure 4.12). Within the Nyabarongo Lower Catchment, the Area of Influence is located in the Mpazi-Rugunga Sub-catchment of the Nyabugogo Catchment. The Nyabugogo River originates in Lake Muhazi in the northeast of the Gasabo district and eventually discharges into the Nyabarongo River (Figure 4.12).

Figure 4.12 Hydrology in Rwanda and the Area of Influence



Note: Approximate location of the Area of Influence as a red circle.

Source: Adapted from NISR (2019) and MoE (2018).

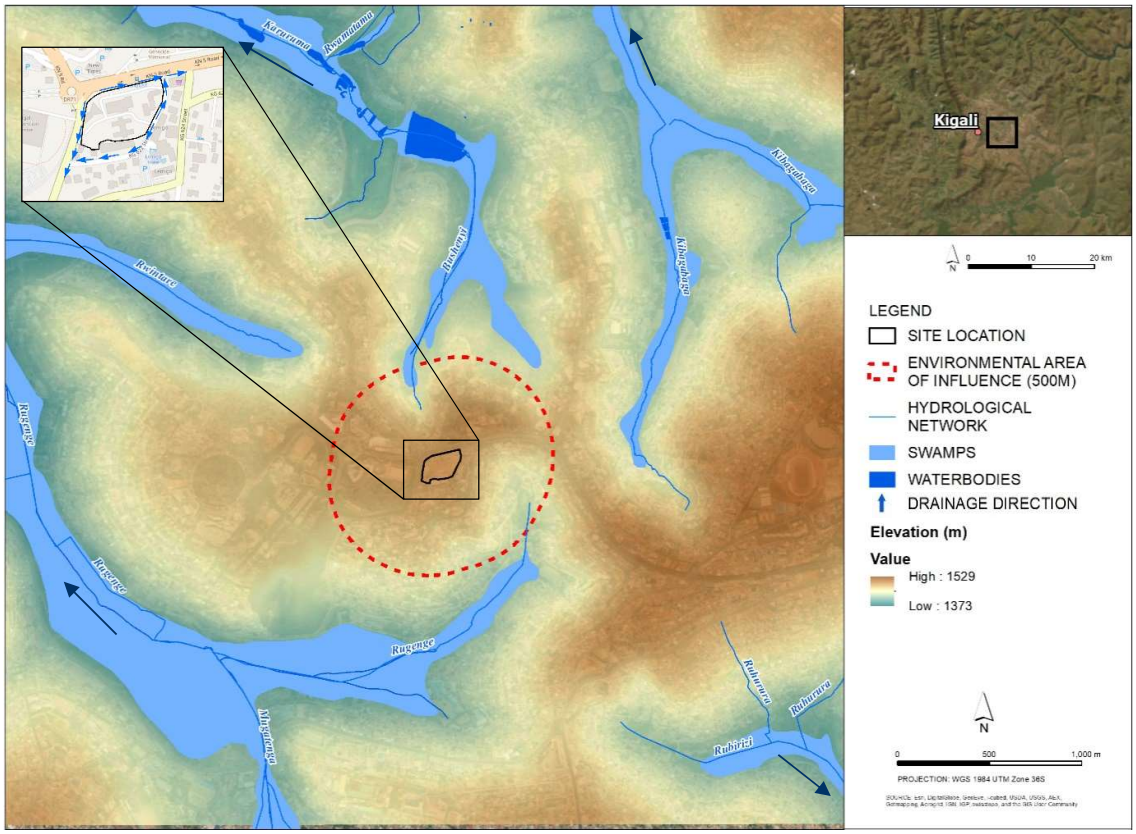
The Nyabugogo Catchment drains a total area of about 1,647 km^2, being agriculture the major land use activity in this catchment (about 54%) (Nhapi *et al*., 2011). The Nyabugogo River traverses Kigali City, and among the tributaries crossing the urbanized area are the Rwanzekuma River, the Ruganwa River, the Mpazi River, and the Yanze River. The major possible pollution generating activities in this catchment include flower farming and the Kabuye sugar works, both located along the Nyabugogo River; sugar cane plantation upstream; legumes and rice cultivation; quarrying and mining activities; and liquid waste discharges from industries (Nhapi *et al*., 2011).

An assessment of water pollution levels carried out by Nhapi *et al*. (2011) in the entire Nyabugogo system, including Kigali City and the confluence zone with the Nyabarongo River, revealed that both urbanized and rural sub-catchments have serious types of pollution. Waters from rural areas are contaminated with nutrients, suspended sediments (due to erosion upstream) and organic materials while the predominant pollutants in waters from urban areas are heavy metals and nutrients. The assessment concluded that the Nyabugogo River system is heavily polluted and urgent action to control both rural and urban pollution is required. In addition, although the Nyabugogo River is heavily polluted, its impact on the pollution levels in the Nyabarongo River was considered insignificant since the Nyabarongo River is much larger and already heavily polluted upstream of their confluence (Nhapi *et al*., 2011).

The closest waterbodies to the Project Plot are the Bushenyi stream to the north and Rugenge stream to the south, both associated to the Rwampara wetland and eventually converging and discharging into the Nyabugogo River. These streams are located at 260 m and 440 m approximately, respectively, to the Project plot, separated by transport and commercial/governmental/residential

infrastructure (Figure 4.13). On the other hand, public stormwater drainage channels circumscribe the Project plot along the KN5 road and back and side streets as observed during the field visit carried out by DGL in February 2023 (Figure 4.13).

Figure 4.13 Hydrology near the Project Plot



Note: Existing stormwater drainage system circumscribing the Project plot obtained during Site Visit (Feb 2023).

Source: ERM, 2023.

A specific study at the plains of the Nyabugogo natural wetland (Sekomo *et al*., 2011), where the Rwampara wetland waters eventually empty, concluded that there is a human health concern for people using water and products from the swamp. Zinc (Zn) concentrations in water were generally below the WHO (2008) drinking water standards whereas Cadmium (Cd) and Lead (Pb) were consistently above these limits. Except Cd, all metal concentrations were below the threshold levels for irrigation. The highest metal accumulation occurred in the sediment with up to 4.2 mg/kg for Cd, 68 mg/kg for Copper (Cu), 58.3 mg/kg for Pb, and 188.0 mg/kg for Zn, followed by accumulation in the roots of *Cyperus papyrus* with up to 4.2 mg/kg for Cd, 45.8 mg/kg for Cromium (Cr), 29.7 mg/kg for Cu, and 56.1 mg/kg for Pb. Except Cu and Zn, other heavy metal (Cd, Cr, and Pb) concentrations were high in *Clarias* sp., *Oreochromis* sp., and Oligochaetes.

Regarding the stormwater drainage system in Kigali, most of the flow through the city runs into rivers/streams with wetlands on the riverbanks, thus providing a natural buffer for the runoff; however, natural drainage is usually disrupted by high density development (KCG, 2020). Some of the key stormwater-related issues include a lack of a stormwater management plan; water in public drains being contaminated by the sewer, in turn affecting the quality of the receiving water bodies; damaged channels not functioning at their optimum design capacity, causing localized flooding during heavy rains; and people settling in high-risk zones such as wetlands, floodplains, and steep slopes (> 30%) (KCG, 2020).

4.7 Hydrogeology

According to Rwanda's Annual Water Status Report 2016-2017 (RWFA, 2018), information regarding groundwater resources is still limited. In fact, given this knowledge gap, failures of previously drilled boreholes done with limited geo-hydrological information have been reported (KCG, 2020).

At a catchment scale, the Nyabugogo is dominated by quartzite and schist/shale basement aquifers with other lithology classes including shale, granite, pegmatite, and alluvial material in valley bottoms (MoE, 2018). Aquifers associated with quartzite and schist have average storage and transmission properties hence groundwater recharge rates, base-flow and recession behaviour are expected to exhibit average values (MoE, 2018).

At a more local scale, in the Area of Influence, fractured aquifers on granite and gneiss and alluvial aquifers can be found (Figure 4.14). Fractured aquifers tend to be localized and permeability (and thus yield) depends heavily on the density and interconnection of fractures (RWFA, 2018). Granite aquifers are typically characterised by low potential unless weathered or fractured; in fact, successful boreholes tend to be found in or near the valleys relying on identifying and confirming underground faulting and fractures (RWFA, 2019). Recharge rate (5 %) and recharge probability (50%) in granite aquifers are low since they can only recharge where the rock is fractured or faulted (RWFA, 2019).

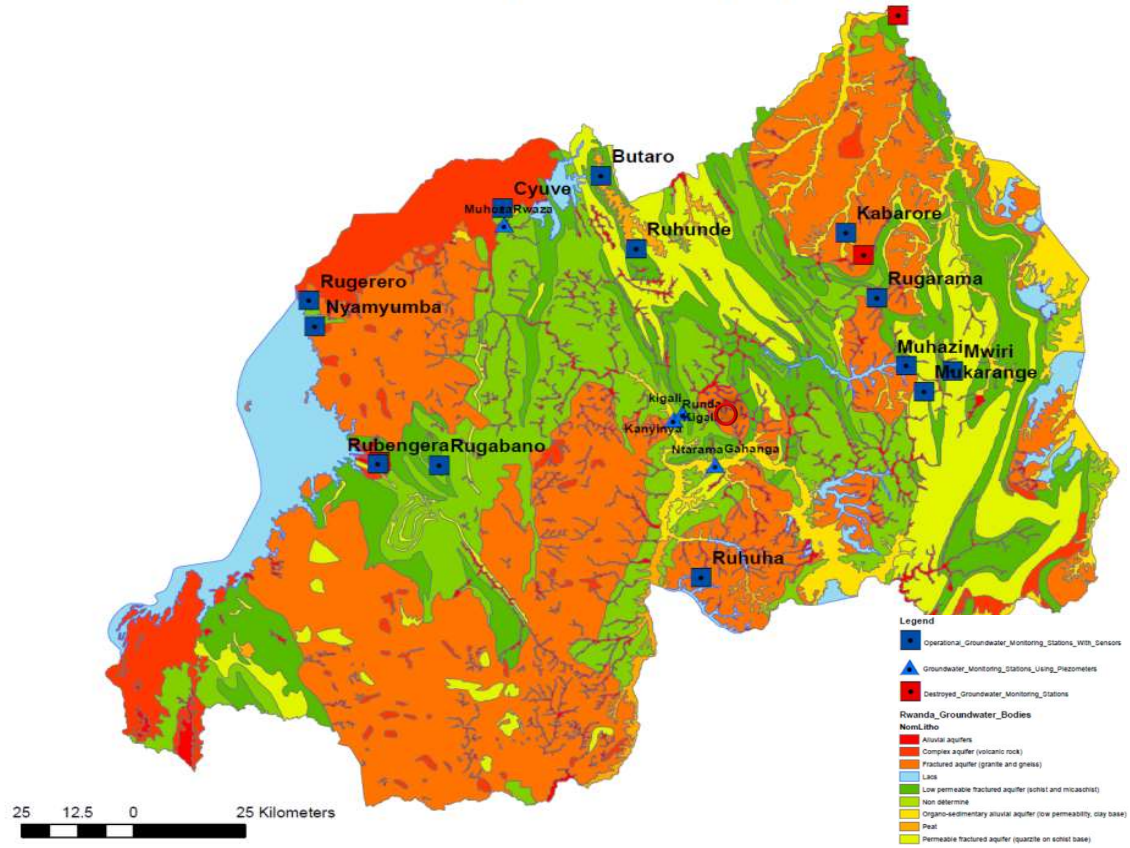
On the other hand, alluvial aquifers are usually shallow, narrow and follow river valleys and have high recharge rates due to their close connection with river and wetlands (RWFA, 2018). Overall, alluvial aquifers can consist of clayey or sandy soils, the first with high recharge rates but may not provide high yielding boreholes due to the constricting transmissivity, and the last with typically high recharge rate and high transmissivity (RWFA, 2019). In granites, this aquifer type is mostly in fact feeding the underlaying aquifer type (if fractured) (RWFA, 2019). Recharge rate (5 to 15% depending on location) and recharge probability (50 to 80%) is among the highest, but areas of high transmissivity need to be found outside of clayey soils for its use (RWFA, 2019).

In Kigali, increased housing and transport developments associated with urbanization affect water infiltration, one of the main groundwater recharge pathways, increasing runoff and soil erosion with increased potential for floods (REMA, 2009). During the rainy season, much of the run-off flows to valleys with minimal infiltration. In this sense, groundwater recharge through wetlands represents one of the main ecosystem services supporting groundwater availability in Kigali (REMA, 2009).

Regarding groundwater quality in Rwanda, a study carried out in springs, boreholes, and wells across several districts of Rwanda, including the Kicukiro, Nyarugenge, and Gasabo districts in Kigali, between 2004 and 2009, showed that parameters such as pH, conductivity, total hardness, total dissolved solids, nitrates, nitrites, and heavy metals (Pb, Cd, Cr, Fe, Mn) did not comply with the WHO guidelines for drinking water, indicating different levels of pollution in the groundwater resource (Nsengimana *et al*., 2012). According to Sekomo & Bwiza (2018), groundwater quality in Rwanda is mainly affected by human induced factors like soil erosion from agriculture and mining activities, lack of wastewater treatment facilities and application of pesticides and fertilizers.

The Project proponent will confirm the specific properties of the hydrogeology in the Project plot through the conduct of hydrogeological surveys, prior to the commencement of the construction phase.

Figure 4.14 Types of Aquifers in Rwanda



Note: Approximate location of the Area of Influence as a red circle.

Source: IGRAC, 2020.

4.8 Landscape

The Project plot is immersed in the urban landscape of Kigali City, at the top of a hill at a mean elevation of 1,500 m.a.s.l. and mean slopes ranging from 4.7 to 9.4% (Figure 4.7). It is surrounded by commercial, residential, and government administrative buildings, including three major infrastructures the Kigali Convention Centre/Radisson Blu Hotel to the west, Rwanda's government complex Parliament/Deputies Chamber/Senate to the northeast, and the Kigali Heights Commercial Centre to the northwest. Other adjacent relevant buildings include the StarTimes offices (streaming services) to the northwest, the Simba building (supermarket and other offices) and the Lemigo Hotel and FairView building (offices) to the south (Figure 4.15 and Figure 4.17).

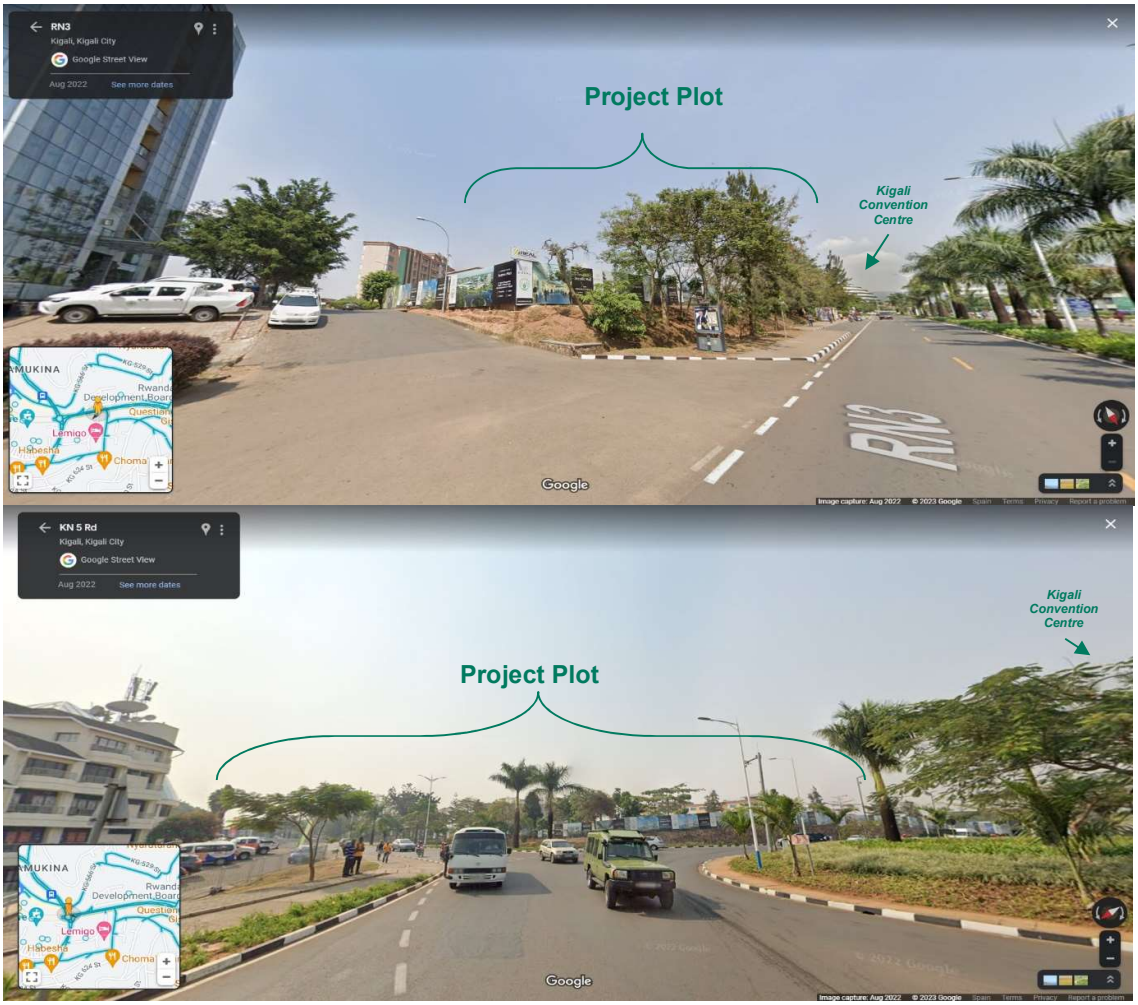
Paved road KN5 circumscribes the Project plot to the north, paved street KG 622 to the east and south, and a paved street to the west (Figure 4.16). Roads, streets, and buildings hold grass, bush, and tree gardens. Major green areas are located in the Kigali Convention Centre, the Rwanda's government complex, and the Rwampara wetland located at more than 240 m to the north and more than 500 m to the south from the Project plot (Figure 4.17).

Figure 4.15 Views of the Project Plot from Closest Buildings

Note: Images obtained during DGL site visit in February 2023 from the rooftops of the Simba Building (left) and the Lemigo Hotel (right).

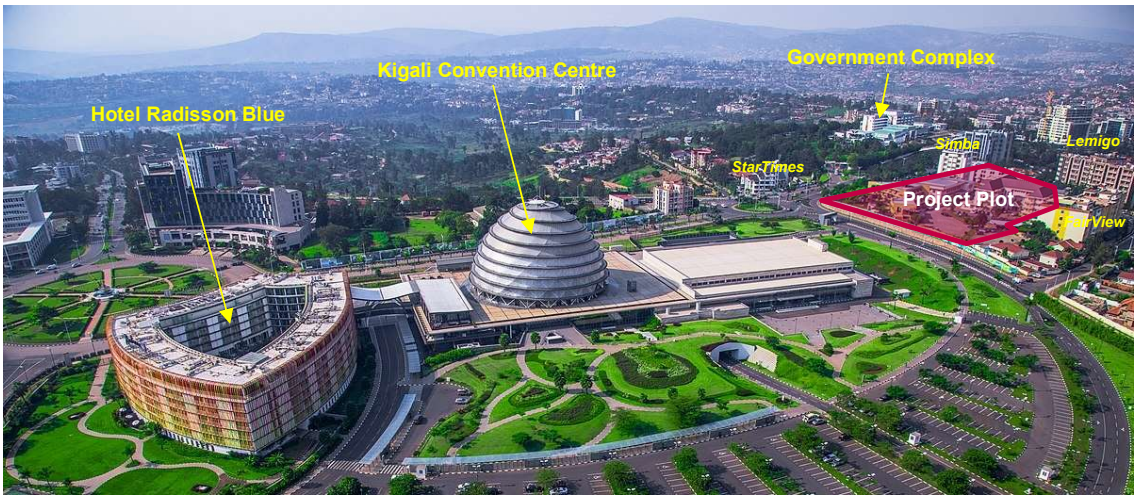
Source: DGL, 2023.

Figure 4.16 Street views of the Project Plot from the main road



Source: Google Street View (image August 2022).

Figure 4.17 Aerial view of the Project Plot



Source: Google images.

5 BIOLOGICAL BASELINE

5.1 Flora

According to KCG (2020), much of the forest and natural vegetation of Kigali City have been cleared over the years for urban development and agro-pastoral activities (e.g., burning of forest and vegetation). In areas where forests have been reforested, native forests have been replaced by planted forests of non-native Eucalyptus and Pine species, grown for agro-forestry or for slope protection and erosion control. Other commonly planted tree species in Kigali include timber species such as *Grevillea robusta*, *Vernonia amygdalina*, *Euphorbia tirucalli*, *Cupressus spp*., *Acanthus pubescens*, and *Ficus thonningii* and horticultural species such as *Persea gratissima*, *Psidium guajava*, *Capsicum frutescens*, Coffee, Banana and Papaya trees. Most natural forests in Kigali City are owned and managed by the central government, while forest plantations are either privately owned or under district government land. Native tree species and flora remain only in small patches in the city, mainly in wetlands.

Regarding the wetlands in Kigali City, they cover approximately 10.6% of the land area, occurring primarily along the low-lying valleys and floodplains of the rivers flowing through the city landscape (KCG, 2020). Wetlands in Kigali are classified as Central Plateau Swamps, and have mineralized soil substrate with dominant vegetation, when not cultivated, being *Polygonum pulchrum*, *Cyperus papyrus*, *Commelina diffusa*, *Cynodon dactylon*, *Eicchornia crasipes*, and *Pennisetum purpureum* (KCG, 2020). Natural vegetation of Kigali's wetlands has been cleared to make way for cultivated species, while remaining areas of natural vegetation transition to fewer species with the changes in hydrology and the inflow of polluted, sediment and nutrient rich waters draining from the catchment.

A more specific study carried out by Seburanga *et al*. (2014) indicates that Kigali's city green space network consists of plant assemblages largely dominated by alien species (75%). Kigali's urban woodlots are almost exclusively eucalyptus monocultures. The most popular species in streetscapes are *Roystonia regia*, *Jacaranda mimosifolia*, *Cassia spectabilis* and *Spathodea campanulata*. Among native trees, *Erythrina abyssinica*, *Markhamia lutea*, *Acacia sieberiana*, *Ensete ventricosum* and *Euphorbia candelabrum* may still be found scattered along Kigali City. However, *Euphorbia tirucalli*, a native tree that is widespread in home compound fences within informal settlements, is declining as modern housing expands and concrete fences replace live enclosures. In general, most of the native species were found to be inconspicuous and irregularly used in modern landscape projects. The study also showed that species distribution and composition of gardens settings were affected by the owner's socio-economic status. For example, palms were more frequent in fortunate quarters due to their relatively high price while fruit-bearing ornamentals such as avocado and banana plants were ubiquitous among non-formal settlement neighbourhoods.

Currently, the Project plot presents a flattened terrain with scattered trees (some 41 individuals) and grass and bush species preserved after the decommissioning and demolition of previously existing government buildings (Figure 5.1). Trees within the Project plot are mainly palmaceous and coniferous. In the surroundings of the Project plot, grass, bush, and tree gardens were also observed as part of the city green space (Figure 5.1).

Figure 5.1 Vegetation within the Project Plot and its Surroundings

Note: Images obtained during DGL site visit in February 2023.

Source: DGL, 2023.

5.2 Fauna

According to KCG (2020), loss, degradation and fragmentation of native forest and naturally vegetated ecosystems has impacted the native fauna of the area as well. Except for migratory birds in the Nyabarongo Wetland, wildlife biodiversity is quite low in Kigali City. There are a few species of reptiles, hares, jackals and fish species found in and around Kigali.

According to the database of Birds of Rwanda by Vande Weghe (2018), more than 270 bird species are known to exist in Kigali and its vicinity, mainly in urban habitats, gardens, degraded *Acacia polyacantha* woodland remnants, Eucalyptus woods, marginal agricultural fields, and highly degraded wetlands and rice fields. Some examples of these species are common along urbanized areas such as the African Pied Wagtail (*Motacilla aguimp* – IUCN Least Concern), and the Hooded Vulture (*Necrosyrtes monachus* – IUCN Critically Endangered).

It is unlikely that the Area of Influence represents an important habitat for wild and protected species given the urban commercial setting where it is located; however, since it is close to the Rwampara wetland (Bushenyi stream at 260 m N and Rugenge stream at 440 m S, both separated from the Project plot by transport and commercial/governmental/residential infrastructure), it is possible that some species, particularly birds, cross the Project plot.

5.3 Invasive Species

REMA (2016) identified flora, fish, and insect invasive alien species (IAS) in Rwanda. A total number of 32 plant species were identified as IAS; among them, top ten harmful species are *Lantana camara*,

Eichhornia crassipes, *Mimosa pigra*, *Pistia stratiotes*, *Solanum chrysotrichum*, *Acacia mearnsii*, *Acacia melanoxylon*, *Caesalpinia decapetala*, *Agave sisalana* and *Tithonia diversifolia*. Regarding fish, across the Rwandan water bodies, five major fish species are considered or suspected to be invasive: *Protopterus aethiopicus* (Imamba), *Clarias gariepinus* (inkube, karibambari), *Lamprichthys tanganicanus* (Rwandarushya, Pururu), *Cyprinus carpio* (Common carp) and *Ctenopharyngodon idella* (Grass carp). Likewise, a total 10 insect species are considered AIS; among them, the five most harmful species are *Prostephanus truncates*, *Rhyzopertha dominica*, *Thaumastocoris peregrines*, *Phenacoccus manihoti*, and *Tuta absoluta*.

Regarding IAS in wetlands of Rwanda, *Pontederia crassipes* (water hyacinth) is threatening lakes and rivers. This aquatic weed grows rapidly to form thick mats on water surfaces, increases swamps areas, reduces water supply, and undermines transport, hydroelectric power production, fisheries, and fish breeding (REMA, 2009).

No indication of invasive species within the Project plot was recorded during the site visit to the Area of Influence in February 2023.

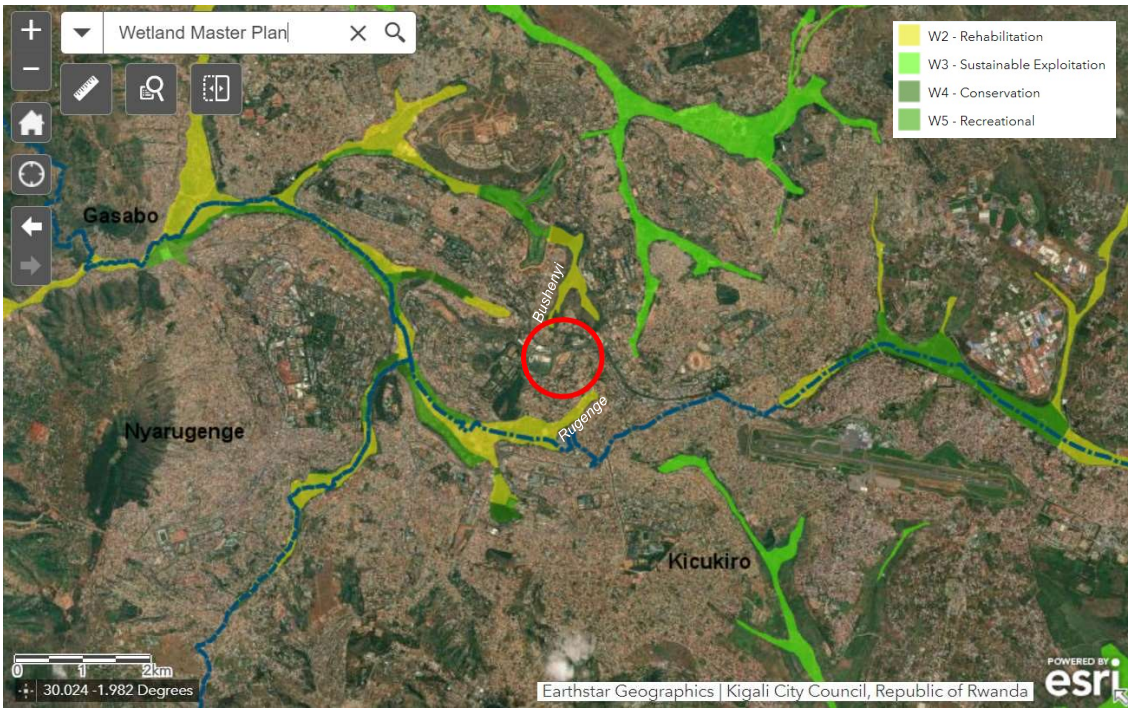
5.4 Protected Areas

No national protected areas are located within the Area of Influence; however, the Bushenyi stream to the north and Rugenge stream to the south, both associated to the Rwampara wetland, are close to the Project plot. These streams are located at 260 m and 440 m approximately, respectively, from the Project plot, separated by transport and commercial/governmental/residential infrastructure (Figure 4.13). The waters of the Rwampara wetland empty into the Nyabugogo River, which eventually discharges into the Nyabarongo River and Nyabarongo Wetlands, considered Key Biodiversity Areas (KBA) (see more details of these KBAs in the following section).

Wetlands in Rwanda are protected under Organic Law No. 04/2005. The Rwanda Environment Management Authority (REMA) is designated as the institution responsible for enforcement of wetland regulations and thus any planned development activity encroaching upon or impacting wetlands must be approved and coordinated with REMA.

Regarding the Rwampara wetland, it is currently under rehabilitation status (KCG, 2020) (Figure 5.2). In particular, studies carried out in the Rwampara wetland sector located in Nyarugenge and Kicukiro districts of Kigali (at 2.5 km southwest from the Project plot) by Rwanyiziri *et al.* (2020) and Mind'je *et al.* (2021) showed that the wetland resources are degraded and have declined over time due to an increase in built-up areas and human activities such as agriculture and waste dumping, causing impacts such as land use changes, an increase in flash flood events during the rainy season, and a decrease in water availability. Likewise, a specific study at the plains of the Nyabugogo natural wetland (Sekomo *et al.,* 2011), where the Rwampara wetland waters eventually empty, concluded that there is a human health concern for people using water and products from the swamp.

Figure 5.2 Wetlands Close to the Project Plot



Note: Approximate location of the Area of Influence as a red circle.

Source: KCG, 2020.

5.5 Potential Critical Habitat in the Area of Influence

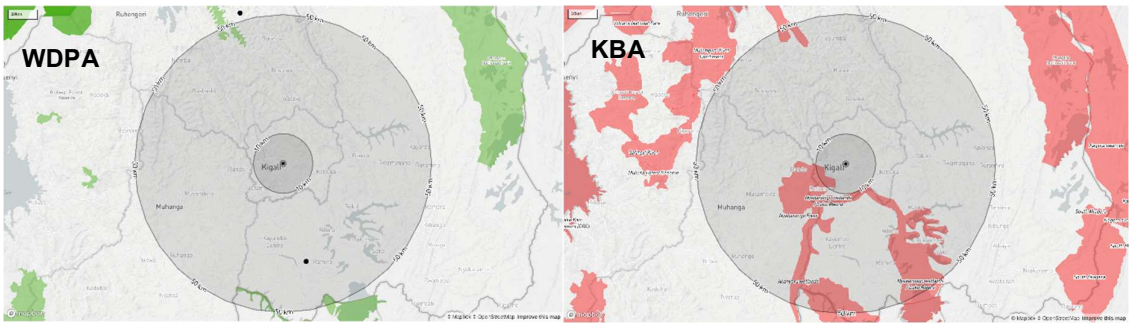
Critical habitats are areas with high biodiversity value, including (i) habitats of significant importance to Critically Endangered and/or Endangered species; (ii) habitats of significant importance to endemic and/or restricted-range species; (iii) habitats supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes.

Presence of Sensitive Areas

Based on an IBAT PS6 & ESS6 Report (2023) for the Project location, no national protected areas, World Heritage sites (WH) or Alliance for Zero Extinction sites (AZE) are present in a buffer of 10 km from the Project plot. Regarding Key Biodiversity Areas (KBAs), two KBAs, namely the Nyabarongo River and the Nyabarongo wetlands/Lake Rweru, are present at 6 km to the southwest and 9 km to the south from the Project plot, respectively, after crossing a large part of the urban areas of Kigali City.

The trigger species for these KBAs are three fish species, one assessed as Critically Endangered (CR) and the rest as Vulnerable (VU) according to the IUCN Red List. Based on their distribution range, *Labeo victorianus* overlaps with Kigali City (where the Area of Influence is located); whereas *Synodontis ruandae* is extant only in outer Kigali City (outside of the Area of Influence); and *Labeobarbus claudinae* is possibly extant in Kigali City. Thus, it is likely that *L. victorianus* and *L. claudinae* are present in the waters of the wetlands located close to the Area of Influence.

Figure 5.3 Protected Areas (left) and KBAs (right) near the Area of Influence



Source: IBAT PS6 & ESS6 Report, 2023.

The KBA Nyabarongo Wetlands is also an Important Bird Area (IBA). This IBA is currently in danger due to threats such as agricultural expansion and intensification (annual and perennial non-timber crops), biological resource use (hunting and collecting terrestrial animals - unintentional effects since species are not the target), and invasive species (BirdLife International, 2023). The trigger bird species for this IBA are eight in total, two Near-Threatened (NT) and the rest of Least Concern (LC) according to the IUCN Red List (Table 5.1). The distribution ranges of these species overlap with Kigali City (where the Area of Influence is located). According to the database of Birds of Rwanda by Vande Weghe (2018), all these species, except for *C. gracilirostris* and *C. carruthersi*, are present in Kigali. Most of these species are more likely to be present in the wetlands located close to the Area of Influence, though some of them may be found in modified areas.

Table 5.1 Trigger Bird Species in IBA Nyabarongo Wetlands

Scientific name	Common name	IUCN Category	Suitable Habitats
Bradypterus carpalis	White-winged Swamp-warbler	LC	• Wetlands (inland) -Suitable of major importance
Calamonastides gracilirostris		VU	• Wetlands (inland) – Suitable of major importance
Cisticola carruthersi	Carruthers's Cisticola	LC	• Wetlands (inland) -Suitable of major importance • Artificial/Terrestrial (arable land)- Suitable
Crithagra koliensis	Papyrus Canary	LC	• Wetlands (inland) – Suitable of major importance • Artificial/Terrestrial (arable land) – Marginal
Laniarius mufumbiri	Papyrus Gonolek	NT	• Wetlands (inland) – Suitable of major importance
Nesocharis ansorgei	White-collared Oliveback	LC	• Forest, Shrubland, Wetlands (inland) - Suitable
Ploceus castanops	Northern Brown-throated Weaver	LC	• Wetlands (inland) – Suitable
Turdoides sharpei	Black-lored Babbler	LC	• Forest, Savanna, Shrubland – Suitable with major importance • Grassland, Wetlands (inland), Artificial/Terrestrial (rural gardens) – Suitable

Note: LC: Least Concern, NT: Near Threatened, VU: Vulnerable

Source: BirdLife International, 2023.

Presence of Critically Endangered (CR) and Endangered (EN) Species

Within a radius of 50 km from the Project plot, 30 species had been identified in the IUCN Red List as Critically Endangered (CR, 11 species) and Endangered (EN, 19 species) (Table 5.2). Fifteen of these species being birds, three mammals, one reptile, and eleven plants (Liliopsida and Magnoliopsida). Suitable habitats for these species range from forests to urban areas.

After reviewing their distribution range, 14 species do not overlap with Kigali City (where the Area of Influence is located). The distribution range of the rest of species (16) include Kigali City; however, given the urban setting of Kigali City, it is unlikely that these are present in the Area of Influence itself (especially the case for large-bodied wild fauna such as Rhino species), except for fauna usually related to urban areas, as in the case of the Hooded Vulture (*Necrosyrtes monachus*). According to the database of Birds of Rwanda by Vande Weghe (2018), among the bird species in Table 5.2, only the Hooded Vulture is present in Kigali. This species is more likely to be present near abattoirs, dumpsites, and landfills where they can find carcasses and on tall Eucalyptus trees (ACNR, 2018). The loss of habitat through felling of Eucalyptus trees, lack of food/carcasses, inadequate awareness campaigns on vultures, hunting, and traditional belief, were reported as the main threats to this species in Kigali City (ACNR, 2018).

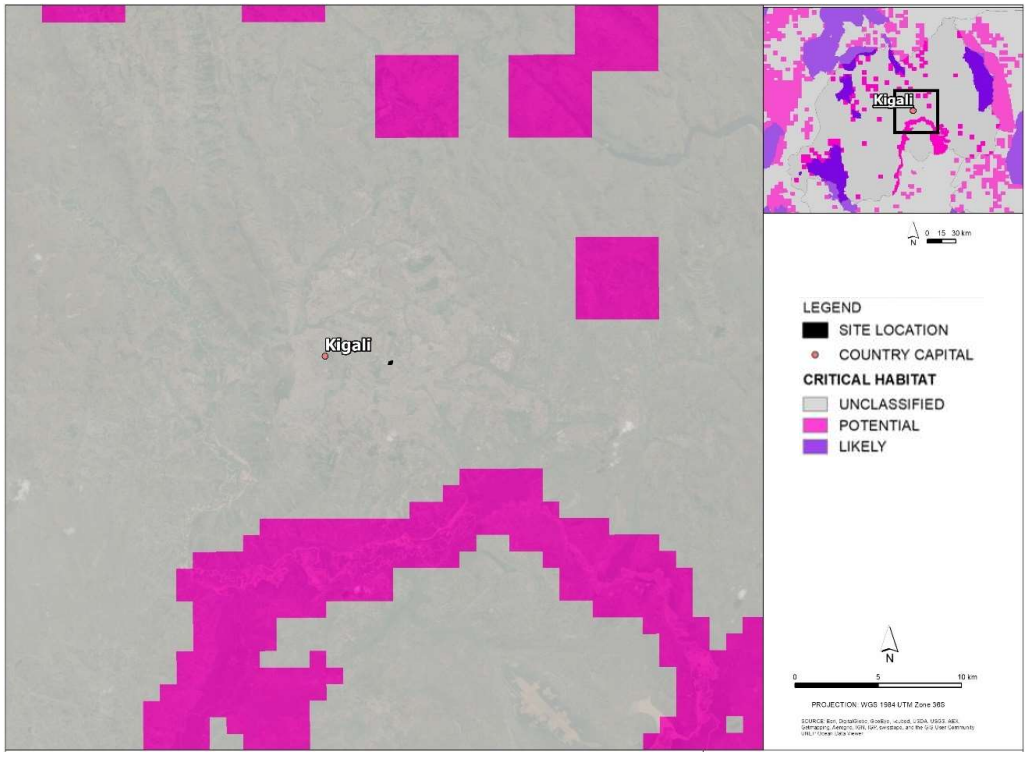
Presence of Restricted-Range Species

Within a radius of 50 km from the Project plot, seven species had been identified as restricted-range species (Table 5.3). Six of these species being birds and one a mammal. After reviewing their distribution range, none of these overlap with Kigali City (where the Area of Influence is located).

Likelihood of Critical Habitat in the Area of Influence

Based on the latter discussion, and a high-level analysis conducted by UNEP-WCMC (2017), it is unlikely that the Area of Influence lies within a prospective critical habitat.

Figure 5.4 Global Critical Habitat Screening Layer relative to the Area of Influence



Source: UNEP-WCMC, 2017.

Table 5.2 Threatened Species Identified in a 50-km Buffer from the Project Plot

No.	Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome	Distribution in Kigali City? (IUCN)	Suitable Habitats
1	*Diceros bicornis*	Black Rhino	Mammalia	CR	Increasing	Terrestrial	Extant & Reintroduced (Resident)	• Savanna, Shrubland, Desert
2	*Diceros bicornis* ssp. *Michaeli*	Eastern Black Rhino	Mammalia	CR	Increasing	Terrestrial	Extant & Reintroduced (Resident)	• Savanna, Shrubland
3	*Xyris exigua*		Liliopsida	CR	Decreasing	Terrestrial, Freshwater	No	• Wetlands (inland)
4	*Necrosyrtes monachus*	Hooded Vulture	Birds	CR	Decreasing	Terrestrial	Extant (Resident)	• Forest, Savanna, Shrubland, Grassland, Desert - Suitable • Artificial/Terrestrial (pastureland, **urban areas**) – Suitable • Wetlands (inland) - Suitable
5	*Gyps africanus*	White-backed Vulture	Birds	CR	Decreasing	Terrestrial, Freshwater	Extant (Resident)	• Forest, Savanna, Shrubland, Grassland, Desert – Suitable • Artificial/Terrestrial (pastureland) - Suitable
6	*Gyps rueppelli*	Rüppell's Vulture	Birds	CR	Decreasing	Terrestrial	Extant (Resident)	• Savanna, Shrubland, Grassland, Rocky Areas, Desert
7	*Trigonoceps occipitalis*	White-headed Vulture	Birds	CR	Decreasing	Terrestrial	Extant (Resident)	• Forest, Savanna, Shrubland, Grassland – Suitable • Artificial/Terrestrial (pastureland) - Suitable
8	*Capparis lucens*		Magnoliopsida	CR	Decreasing	Terrestrial	No. Single point in Rwanda (outside of the Kigali City)	• Grassland
9	*Stemodiopsis ruandensis*		Magnoliopsida	CR	Unknown	Terrestrial	No. Single point in Rwanda (outside of the Kigali City)	• Rocky Areas
10	*Rhamnus mildbraedii*		Magnoliopsida	CR	Unknown	Terrestrial	No. Single point in Rwanda (outside of the Kigali City)	• Wetlands (inland - bogs, marshes, **swamps**, fens, peatlands)
11	*Commelina subscabrifolia*		Liliopsida	CR	Unknown	Terrestrial	No. Two points in Rwanda (outside of the Kigali City)	• Shrubland, Grassland
12	*Phataginus tricuspis*	White-bellied Pangolin	Mammalia	EN	Decreasing	Terrestrial	Extant (Resident)	• Forest, Savanna - Suitable of major importance • Artificial/Terrestrial: - Plantations - Marginal - Rural Gardens - Suitable - Subtropical/Tropical Heavily Degraded Former Forest - Suitable of major importance

No.	Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome	Distribution in Kigali City? (IUCN)	Suitable Habitats
13	*Psilotrichum axilliflorum*		Magnoliopsida	EN	Unknown	Terrestrial	No	• Forest
14	*Carpha angustissima*		Liliopsida	EN	Unknown	Terrestrial, Freshwater	Extant (Resident)	• Grassland – Suitable • Wetlands (inland - bogs, marshes, swamps, fens, peatlands) - Suitable of major importance
15	*Leptosiaphos graueri*	Rwanda Fivetoed Skink	Reptilia	EN	Unknown	Terrestrial	No	• Forest
16	*Balearica regulorum*	Grey Crowned Crane	Birds	EN	Decreasing	Terrestrial, Freshwater	Extant (Resident)	• Forest - Suitable of major importance • Savanna, Grassland – Suitable • Wetlands (inland) - Suitable of major importance • Artificial/Terrestrial (arable, pastureland) – Suitable • Artificial/Aquatic & Marine (water storage areas over 8 ha, irrigated land including irrigation channels, seasonally flooded agricultural land) - Suitable of major importance
17	*Neophron percnopterus*	Egyptian Vulture	Birds	EN	Decreasing	Terrestrial, Freshwater	No. **Extinct in Rwanda**	• Savanna, Shrubland, Grassland, • Wetlands (inland), Rocky Areas, Desert • Artificial/Terrestrial (**urban areas**, pasturelands)
18	*Torgos tracheliotos*	Lappet-faced Vulture	Birds	EN	Decreasing	Terrestrial	Extant (Resident)	• Forest, Savanna, Shrubland, Grassland, Desert
19	*Terathopius ecaudatus*	Bateleur	Birds	EN	Decreasing	Terrestrial	Extant (Resident)	• Forest, Savanna, Shrubland, Grassland
20	*Aquila nipalensis*	Steppe Eagle	Birds	EN	Decreasing	Terrestrial	Extant (Non-breeding)	• Forest, Savanna, Grassland, Rocky Areas
21	*Polemaetus bellicosus*	Martial Eagle	Birds	EN	Decreasing	Terrestrial, Freshwater	Extant (Resident)	• Savanna - Suitable of major importance • Forest, Shrubland, Grassland - Suitable • Wetlands (inland, permanent rivers/streams/creeks including waterfalls) - Suitable

No.	Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome	Distribution in Kigali City? (IUCN)	Suitable Habitats
22	*Sagittarius serpentarius*	Secretarybird	Birds	EN	Decreasing	Terrestrial	Extant (Resident)	• Savanna, Shrubland, Grassland – Suitable • Artificial/Terrestrial (arable, pasturelands) - Suitable
23	*Ardeola idae*	Madagascar Pond-heron	Birds	EN	Decreasing	Terrestrial, Marine, Freshwater	Extant (Non-breeding)	• Wetlands (inland) - Suitable of major importance • Forest, Marine Neritic – Suitable • Artificial/Terrestrial (arable) – Suitable • Artificial/Aquatic & Marine (ponds below 8 ha, canals and drainage channels, ditches) - Suitable
24	*Kupeornis rufocinctus*	Red-collared Mountain-babbler	Birds	EN	Decreasing	Terrestrial	No	• Forest
25	*Cryptospiza shelleyi*	Shelley's Crimsonwing	Birds	EN	Decreasing	Terrestrial	No	• Forest
26	*Psittacus erithacus*	Grey Parrot	Birds	EN	Decreasing	Terrestrial, Freshwater	Extant (Resident)	• Forest - Suitable of major importance • Savanna – Suitable • Artificial/Terrestrial (plantations, rural gardens, **urban areas**) - Suitable
27	*Helichrysum ruandense*		Magnoliopsida	EN	Unknown	Terrestrial	No. Several points in Rwanda (outside of the Kigali City)	• Unknown
28	*Maerua robynsii*		Magnoliopsida	EN	Decreasing	Terrestrial	No. Two points in Rwanda (outside of the Kigali City)	• Savanna
29	*Albertisia exelliana*		Magnoliopsida	EN	Unknown	Terrestrial	No. Single point in Rwanda (outside of the Kigali City)	• Forest
30	*Ipomoea lepidophora*		Magnoliopsida	EN	Unknown	Terrestrial	No. Several points in Rwanda (outside of the Kigali City)	• Grassland

Note: Species marked in grey have distributions that overlap with Area of Influence.

Source: IBAT PS6 & ESS6 Report, 2023.

Table 5.3 Restricted-Range Species Identified in a 50-km Buffer from the Project Plot

No.	Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome	Distribution Range in Kigali City? (IUCN)	Suitable Habitats
1	*Kupeornis rufocinctus*	Red-collared Mountain-babbler	Birds	EN	Decreasing	Terrestrial	No	Forest
2	*Cryptospiza shelleyi*	Shelley's Crimsonwing	Birds	EN	Decreasing	Terrestrial	No	Forest
3	*Bradypterus graueri*	Grauer's Swampwarbler	Birds	VU	Decreasing	Terrestrial, Freshwater	No	Wetlands (inland)
4	*Grammomys dryas*	Forest Thicket Rat	Mammalia	LC or LR/LC	Decreasing	Terrestrial	No	Forest, Savanna, Artificial/Terrestrial (plantations/rural gardens)
5	*Pternistis nobilis*	Handsome Francolin	Birds	LC or LR/LC	Decreasing	Terrestrial	No	Forest, Shrubland
6	*Melaniparus fasciiventer*	Stripe-breasted Tit	Birds	LC or LR/LC	Decreasing	Terrestrial	No	Forest
7	*Graueria vittata*	Grauer's Warbler	Birds	LC or LR/LC	Stable	Terrestrial	No	Forest

Source: IBAT PS6 & ESS6 Report, 2023.

5.6 Ecosystem Services

Ecosystem services are the benefits that people, including businesses, derive from ecosystems. Ecosystem services are organized into four types: (i) provisioning services, which are the products people obtain from ecosystems; (ii) regulating services, which are the benefits people obtain from the regulation of ecosystem processes; (iii) cultural services, which are the non-material benefits people obtain from ecosystems; and (iv) supporting services, which are the natural processes that maintain the other services.

Wetlands provide a variety of ecosystem services (Barbier *et al*., 1997). Their use values include direct uses such as fish, agriculture, fuel wood, recreation, transport, wildlife, peat/energy; and indirect use values such as nutrient retention, flood control, groundwater recharge, external ecosystem support, and microclimate stabilization. In addition, their non-use values include biodiversity, culture, heritage, and bequest value.

The wetlands in Kigali, where the Area of Influence is immersed, are threatened, and impacted by urbanization, agricultural and industrial activities including cultivation in wetlands, pollution from fertilizers and pesticides, grazing by livestock, mining of clay and sand, and encroachment and pollution from industries and human settlements (KCG, 2020). Over half of the wetlands in Kigali City are degraded and have lost ecological functions and over 2078 establishments are identified as encroaching on the city's wetlands (KCG, 2020).

6 SOCIAL BASELINE

6.1 Baseline Structure

This socioeconomic baseline section presents relevant socioeconomic information, as available, at various geographic levels, with particular focus at the District, Sector and local levels. This baseline section is organised into the following sections:

- **Context overview:** Overview of the primary and secondary AoI;
- **Governance and Administration:** Presentation of administrative structures and organizations present at District level, overview of the socioeconomic characteristics along the AoI;
- **Demographic Profile:** Summary of socioeconomic characteristics of the District of Gasabo and of the AoI with a focus on population composition and trends, ethnicity, language and religion, migration and population change;
- **Land Use and Ownership:** Land use and ownership status in the AoI, description of main land uses and identification of built structures in the AoI;
- **Employment and Occupation:** Summary of resources and activities at District and Project level, including unemployment rates and formal and informal economies;
- **Livelihood Activities:** Characterization and evaluation of the natural resources-based livelihoods present along the AoI;
- **Literacy and Education:** Community education profile, including distribution of schools in the AoI and presentation of gender disaggregated data;
- **Community Health, Safety and Security:** Understanding of the community health and identification of the potential impact to health in the AoI arising from the Project;
- **Infrastructure and Public Services:** Identification of infrastructures and services in the AoI, including communication services and public and private infrastructure; and
- **Vulnerability:** High level identification and qualification of vulnerable groups residing in the AoI.

6.2 Limitations

The main limitations of this Chapter are the following:

- Some demographic information could not be collected as planned during the scheduled field work. The Kigali City officials did not schedule the meetings as anticipated and could not attend them. Duval's local social subcontractor is working on it.
- Biodiversity information has not been updated and is pending to be confirmed by the client.
- Some information hasn't been received by the client. As soon as it is provided the report will be updated:
  - Provide information on H&S Standards and procedures for the Project (both for occupational and community) that will be implemented during the construction and operational phases of the Project.
  - Information available on providers of materials during the construction period.
  - Expected water consumption (average daily - m3 or L) and if there are any water storage onsite.
  - In case generators are used, what type of fuel will be used and where will this fuel be stored
  - Provide details on storage conditions for Hazardous substances (tanks, drums, bunded area, secondary containment, etc)

- Provide management details on excavated material, aggregate resources and solid waste and wastewater and sewage
- Provide estimate on Greenhouse Gas emissions (annual tons or annual consumption and type of fuel) and/or if power plant is the main electricity source onsite (not public grid)
- Provide an estimate of daily amount of vehicle movements associated with the new facility

6.3 Context Overview

6.3.1 Governance and Administration in Rwanda

In Rwanda, there are two levels of government: central and local. As a result of a 2005 reform, the country is now divided into four Provinces and the City of Kigali, which are each divided into 30 districts. These districts are then divided into 416 Sectors, which are further divided into 2148 cells and 14837 villages. Each level of subdivision has a different person in charge and distinct responsibilities, all working towards a common goal[1].

6.3.1.1.1 The Provinces

The province coordinates decentralized services, advises entities, and oversees development projects to improve government planning, implementation, and supervision. There are four provinces and the City of Kigali, each led by a Governor appointed to oversee district organizations.[2]. The different provinces are shown in the Administrative Map of Rwanda (Figure 6.1 below).

6.3.1.1.2 The Districts

Until 2001, districts were known as communes. In 2006, the number of districts was reduced from 106 to 30. A district is administered by the district council through which policies are formulated and adopted. The day-to-day business of the district is run by the Executive committee headed by a mayor and two vice-mayors.

[1] Official Website of the Republic of Rwanda. "Government. Administrative Structure." Available at: https://www.gov.rw/government/administrative-structure#:~:text=The%20country%20is%20divided%20into%20four%20Provinces%20and%20the%20City,further%20divided%20into%20416%20Sectors.
[2] Ibid.

Figure 6.1 Administrative Map of Rwanda

Source: Nations Online Project 2022.

The Project is located in Gasabo District, Kigali. Figure 6.2 below shows the Gasabo District map with its corresponding divisions.

Figure 6.2 Gasabo District Map

Sources: Official Rwanda Government Site 2015.

Gasabo District is one of the three districts that make up the City of Kigali (CoK), with 15 sectors, 73 cells and 481 villages (also locally known as *imidugudu*). It is bordered by the districts of Kicukiro (South), Nyarugenge (West), Rwamagana (East) and Rulindo and Gicumbi (North). The district's surface area is 430.30 km^2 [3]of which a big portion is rural while the small portion represents the developed urban area. It has 15 sectors which are Bumbogo, Gatsata, Gikomero, Gisozi, Jabana, Kacyiru, Kimihurura, Kimironko, Kinyinya, Ndera, Nduba, Remera, Rutunda and Rusororo (Gasabo DDS 2018-2024).

6.3.1.1.3 The sectors

The above-mentioned districts are altogether further divided into 416 sectors. The Sector is a territorial administrative entity responsible for implementation of development programs, service delivery, and promotion of good governance and social welfare. The political organ for policy-making decisions is the Sector Council (SC). The Sector Council's functions include approval of Sector action

[3] Official Website of the Republic of Rwanda. Gasabo District. Available at: https://www.gasabo.gov.rw/

plans and programmes and ensuring the follow-up of their implementation[4]. The project lies in ***Kimuhurura Sector***.

6.3.1.1.4 Cells

The sectors are composed by 2,148 cells. The Cell is an entity that provides basic services and helps the population to achieve sustainable development. The following administrative structures are established at Cell level: A Council; an Executive Secretariat; and a Development Consultative Committee[5]. The project lies in ***Rugando Cell.***

6.3.1.1.5 The Villages

There are 14 837 villages in Rwanda, including 1,157 in the city of Kigali. The Village is the smallest politico-administrative entity of the Country and hence closest to the people. Therefore, this is the entity through which the problems, priorities and needs of the people at a grassroots level will be identified and addressed. It is also the basic unit for mobilization and interaction of the population[6].

The village is headed by two organs namely: the Council and the Executive Committee. Leaders at the Village level are volunteers who are elected, to serve their country, through a direct and universal suffrage by all the residents of the village aged above 18. They don't handle any technical issues.

6.3.2 Decentralization in Rwanda

Since 2001, when Rwanda began its decentralization process and established strong local governments, there have been significant improvements in leadership capacity. As a result of capacity building initiatives, local governments in Rwanda are now capable of handling complex tasks that were once considered beyond their reach. A 'Local Government Capacity Building Strategy' and 'Implementation Plan' have been put in place, and a 'Needs Assessment' has been conducted and 'District-level Capacity Building Plans' have been developed. The establishment of a local government institute responsible for developing the capacity of local authorities is also underway[7].

Through the decentralization process, local governments in Rwanda have achieved constitutional and legal recognition for local democracy, political freedom to elect representatives, cooperation between government levels, a defined legislative framework, citizen participation in decision-making, open and accountable government, executive oversight, inclusiveness, fair resource allocation, and equitable services.

6.4 Demographic Level

6.4.1 District Level

6.4.1.1 Population

The table below presents the population distribution by province and by district within the latter, according to the type and are of residence in 2022.

[4] Official Website of the Republic of Rwanda. "Government. Administrative Structure." Available at: https://www.gov.rw/government/administrative-structure#:~:text=The%20country%20is%20divided%20into%20four%20Provinces%20and%20the%20City,further%20divided%20into%20416%20Sectors.

[5] Ibid.

[6] Official Website of the Republic of Rwanda. "Government. Administrative Structure." Available at: https://www.gov.rw/government/administrative-structure#:~:text=The%20country%20is%20divided%20into%20four%20Provinces%20and%20the%20City,further%20divided%20into%20416%20Sectors.

[7] Ibid.

Table 6.1 Population by province and by district within province, according to type of residence, 2022

Province	District	Population			Percentage (%) Share	
		Urban	Rural	Total	Urban	Total
City of Kigali	**Gasabo**	714,069	165,436	879,505	81.2	18.8
	Nyarugenge	315,899	58,420	374,319	84.4	15.6
	Kicukiro	487,200	4,531	491,731	99.1	0.9
City of Kigali Total		1,517,168	228,387	1,745,555	86.9	13.1

Source: the 5th Rwanda Population and Housing Census (PHC) (2022)

According to Table 6.1, Gasabo district has the highest population in the Kigali Province, representing almost half of the population in the latter. The whole province is much more urban than rural. This can be seen as, in all districts, the percentage share is higher than the rural one, never lower than 75% of the total. Then, according to the European Commission's Joint Research Centre (JRC) work on the GHS built-up grid, the population density is 1,546/km², in Gasabo, 1,808 / km², in Kigali Province, and 458.7 / km², in Rwanda.

According to Table 6.2, Gasabo's population is, in its majority male (although not by a great difference), contrary to the overall tendency in Kigali Province in total. However, in both, the median age of its citizens would be classified as young – 22.2 years in total.

Table 6.2 Age and Gender Distribution in Gasabo and Kigali Province, 2021

Location	Population			Total Median Age (Years)		
	Male	Female	Total	Male	Female	Total
Gasabo	276,069 (52%)	254,832 (48%)	530,901	23.2	21.2	22.2
Kigali Province	545,853 (48.1%)	588976 (51.9%)	1,134,829	23.1	21.2	22.2

Source: CIESIN (Centre for International Earth Science Information Network)

In 2012, the Kimihurura sector in Rwanda had a population of 21,672, as per the Fourth Population and Housing Census conducted by the National Institute of Statistics. Out of this population, 56.2% were male and 43.7% were female. All the residents in this sector were exclusively urban, and there were no reports of inhabitants coming from rural areas. The density is estimated to be at 4.274 inhabitants per square km.

The forecast of the 2050 population density (people per hectare) believes that the centre will become even more densely populated and other areas further away from the centre will also become more

populated. The average density for Kigali is expected to reach a maximum of about 53 people/Ha in 2050[8].

6.4.1.2 Religion & Nationality

The dominant religious groups in Rwanda are Catholics, who represent 44% of the resident population of the country, Protestants (38%), Adventists (12%), Muslims (2%) and Jehovah's Witnesses (1%)[9]. While those with no religious affiliation represent 2.5%, adherents of the traditionalist/animists and of other religions each represent less than 1% of the population.

In 2012, out of the total population of the sector, 94.3% were of Rwandan origin while 5.6% were foreigners, and the remaining 0.1% was not declared.

6.4.2 Area of Influence (AoI)

Household, Age and Gender Distribution

Based on primary information gathered from the Local Authorities Social Affairs Officer of Kimihurura Sector, there are 4376 persons (875 households) living in the AoI of which 1988 are male and 2388 are female. The age distribution is between one year being the youngest and 78 years being the oldest person.

There are approximately 3056 persons who migrated into the area within the past three years and 1320 are indigenous. Of this population 1019 migrated from the rural areas while 2037 migrated from the urban area. Given that the AoI is a highly commercial hub, most likely the in-migration was triggered by search for jobs or greener pastures.

Religion and Ethnicity

The main religion in the AoI is Christianity with the nearest church being less that one kilometer away (Hope in Jesus Church).

6.5 Land Use & Land Tenure

6.5.1 District Level

As Kigali urban areas grow, the total agricultural land area in Gasabo district shrinks. The sector development strategy is focusing on techniques to intensify crop production on a smaller land base. Land consolidation and bench terracing have been vital in these efforts (which have also provided employment to 1,899 people through VUP Public Works).

According to EICV3, NISR (2011), farming households in Gasabo district which rely on crop cultivation utilize on average a 0.8 ha parcel of land, which is above the national average (0.59 ha), the rural average (0.6 ha) and the urban average (0.46 ha). Land use includes agricultural activities, livestock, fisheries, and forestry.

Gasabo District covers an area of 430.30 km^2. According to a study conducted by (Jane & Mbabazi Mbabazize in 2015 on the land use situation of Gasabo District, almost all respondents (99.7 %) affirmed that they exploit/use their land.

This study claims Farming is the most common kind of exploitation (73.5%), and in 99.7% of land has not been fragmented. Furthermore, 100% of those who are farmers are carrying out traditional agriculture, the maximum estimated revenue from their land per season was 200,000 RWF, the

[8] Kigali City Master Plan 2020. Transport Plan. Data available at:
https://masterplan2020.kigalicity.gov.rw/portal/sharing/rest/content/items/20035176446647f68a78ef60d84bb2a8/data

[9] The Fourth Rwanda Population and Housing Census (2012 RPHC), Socio-cultural Characteristics of the Population. Microdata.statiscis.gov.rw

minimum estimate was 8,000 RWF, and the mode estimate was 20,000 RWF. Finally, all respondents (100%) who hold land do not require any permission for land exploitation of their land.

6.5.1.1 Land tenure

Article 35 of the Rwandan constitution (as amended in 2015) stipulates that private ownership of land and other rights related to land are granted by the State. The 2005 Organic Land Law created a land tenure regularization process and the formalization of all land in Rwanda through the issue of leasehold titles. Therefore, properties are generally noted as informal by local authorities because the buildings are not compliant with planning or building guidelines or codes. Upon development of a property and provision of legal occupancy permit a leasehold title may be converted to a freehold upon application.

The structures in the area are mixed formal and informal. The share of informal settlements in consideration of formal settlements is not determined. However, information collected from the site states that informal settlements are around 96% of the total settlements with estimated 36,120 people living in in informal settlements. Most of those people living in informal settlements have no land titles.

In Gasabo District, 66% of households own land. Among those who own land, 27.3% acquired land from inheritance whereas 72.7% acquired their land through buying. Of those who possess land, 55.4% affirmed that they have a half of a hectare while 13.7% have one hectare, and 26.7% owned parcels in the range of 600m^2.

6.5.2 Area of Influence (AoI)

The 2019 Master Plan review for the City of Kigali has been drafted combining international best practices with a bottom-up approach, based on extensive socio-economic data collection and analysis and continued interaction with local and international stakeholders.

The purpose of this Regulations is to explain the proposed Zoning Plan and Development Control Regulations which will encourage and guide Public Institutions, Private Sector, National and International Organisations and Citizens in the implementation of the Kigali City Master Plan and in the harmonic and balanced development of Kigali.

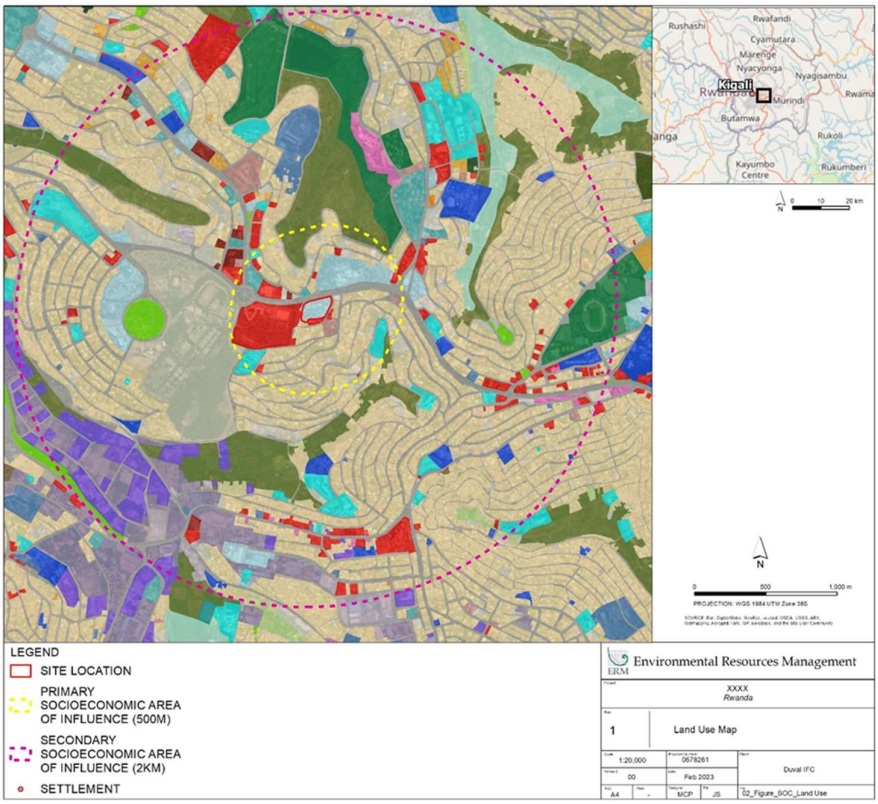
Zoning regulates the types of uses, the development intensity, the required density, the setting, and height of buildings on any plot. As such, it serves as an effective planning tool to guide development in a logical and orderly fashion. The Zoning Plan is meant to provide landowners, developers, and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

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.

The Primary (500m area around the construction site) and Secondary (2km area around the construction site) Areas of Influence include several types of Zones, with their respective applicable Zoning Regulations. On Table 6.3 appears an enumeration of the applicable ones, together with a brief explanation, as well as the permitted, conditional, and prohibited issues.

Figure 6.3 portrays the Land Use Map with the Primary & Secondary Area of Influence of the project.

Figure 6.3 Land Use Map with the Primary & Secondary AoI



Source: ERM, 2023.

6.5.2.1 Primary AoI Zoning

The **Project Site** is on: C3 – City Commercial

To the **North** of the Project Site:

- PA – Public Administration Zone

To **West** of Project Site:

- C3 - City Commercial

To **East** of Project Site:

- C1 – Mix used zone
- R1A – Low Density Residential Densification Zone

6.5.2.2 Secondary AoI Zoning

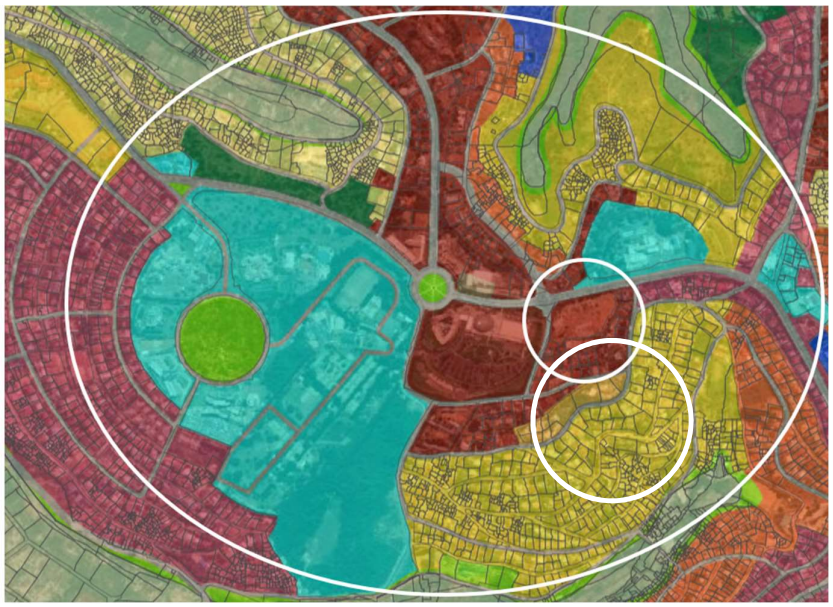
To the **North** of the Project Site:

- C3 – City Commercial zone
- PA – Public Admin zone
- R1A – Low Density Residential Densification Zone
- C1 – Mix-Used zone
- W2 – Rehabilitation
- PF2 – Health Facilities

To the **South** of the Project Site**:**

- C3 – City Commercial zone
- PA – Public Admin zone
- R1A – Low Density Residential Densification Zone

Figure 6.4 Extracted from Kigali 2020 Masterplan



Source: Kigali City Master Plan 2020

Table 6.3 Zoning Regulations Applicable to Area of Influence

Type of Zone	General Description	Permitted Uses	Prohibited Uses	Conditional Uses
City Commercial Zone (C3) Construction will take place on this Type of *Zone*	The City Commercial Zone (C3) is a Zone established to meet most of the retail, commercial and services needs for the larger community, and may include offices and entertainment activities. The minimum lot size is set at 1,000 m2 to allow for well-designed commercial buildings and to ensure that each development will be able to comply with C3 requirements.	• Developments allowed in the C1 zone (Mixed-Use) • Shopping centres • Offices • Hotels • Apartments • Leisure & Entertainment centres (*i.e. cinemas, bowling alleys*) • Galleries • Education Institutions • Coworking Spaces	• Major Industrial Uses • Major Infrastructure Installations	• Public Facilities • Petrol stations • Transport Interchange • Garages • Car Repair • Car Wash Services
Low Density Residential Densification Zone (R1A)	A residential zone for semidetached houses, single family townhouses, multifamily Houses, and low-rise developments. The R1A zone is intended to offer low and medium-rise housing and complementary commercial and public facilities as needed.	• Single family house (all types) • Semi-detached houses • Multifamily Houses, • Townhouses, • Row houses, • Home Occupation, • Accessory Residential Units	• Residential exceeding G+2, • Industrial Uses • Major Infrastructure	• Restaurants • Hotels, • Guest Houses, • B&B • Public facilities, • Commercial retail • Office Facilities
Mixed Use Zone (C1)	A zone established to create high flexibility in the mix of uses and ensure continuity in the ground level commercial activities as well as provide employment opportunities in other floors such as offices or accommodation. This Zone offers spaces for goods and services as well as living quarters and rental units to create a vibrant mixed-use commercial zone.	• Commercial / Retail • Restaurants • Recreational activities, • Office use above the 1st floor • Co-working spaces • Residential use • Home Occupation	• Large scale commercial complex • Industrial Uses • Major Infrastructure Installations	• Public Facilities • Transportation Terminals • Hotels • Petrol stations • Garages • Car Repair • Car Wash Services

Type of Zone	General Description	Permitted Uses	Prohibited Uses	Conditional Uses
Public Administrative & Services Zone (PA)	Shall only apply to lands owned by governmental agencies for public use or benefit. The PA zone applies to lands identified on the land use map as government offices or any other publicly owned properties as listed in the table below. Whenever the public use in the PA zone ceases, or the plot affected by PA zone is sold to private individuals, such zone may be developed following Zoning Regulations of the neighbouring areas without having to apply for zoning variation.	• Government offices • Correctional and rehabilitation facilities • Defence and security uses • Fire station • Police station • Transport Interchange • Other public uses	• Major industrial uses and warehouses • Major commercial uses • Public utility maintenance facilities with outdoor storage of materials & supplies	• Micro-enterprise • Commercial & Retail Use
Public Facilities Zone (PF) – Public Health Facilities (PF2)	The Public Facilities Zones (PF) are established to clearly identify each category of public facilities provided for the community. These facilities provide basic and essential support services for the community at the city level, planning area level and at neighbourhood level, depending on the type of facilities and the requirements of the community. In this case we refer to PF2 which corresponds to Health Public Facilities Zones.	• All types of health facilities • Pharmacy	• Industrial uses and warehouses • Major commercial uses • Public utility maintenance facilities with outdoor storage of materials and supplies • Cemeteries / Crematoriums	• Restaurants • Small Commercial and Retail use • Accommodations for Health Workers
Parks & Open Spaces Zone (P1)	Parks and Open Spaces Zone (P1) are established to provide recreational and leisure facilities and activities in selected areas that have unique features (including visual corridors, environmentally sensitive areas, buffer areas, or along significant routes). Parks and open spaces can include recreational, small commercial or public facilities.	• Botanical gardens, arboretums, and conservatories. • Outdoor recreational facilities, such as hiking and bicycle trails, greens, and commons, sitting areas and picnic areas.	• All types of industrial uses • All types of residential uses • Large Commercial uses • All types of major public facilities	• Restaurants, • Kiosks • Art Shops • Souvenirs shops • Other commercial structures

Type of Zone	General Description	Permitted Uses	Prohibited Uses	Conditional Uses
		• Park related public facilities such as public toilet/ changing room	• Major infrastructure installations	
Wetland Zone (W) – Rehabilitation Zone (W2)	Wetland Zone is established to conserve the wetlands and protect ecological integrity of its environmentally sensitive areas from non-sustainable exploitation, for public health safety and for general welfare. The Intent Is to control and sustainably guide the use of wetlands and its environs for social, economic, and cultural purposes. In this case, it refers to ***W2 – Rehabilitation Zone***. Areas showing signs of a diverse wetland ecosystem that previously existed but are now under different uses, have been studied and their boundaries have been delineated as a Rehabilitation Zone. Planning intent behind creation of such zones is to re-establish a wetland ecosystem.	The proposed Wetland Zoning Plan adopts an 'integrated approach' that promotes conservation and rehabilitation of wetlands on one side and encourages wise use of wetlands in alignment with national development vision of a green growth.	• Agricultural use • Grazing • Fish Farming • Livestock Farming • Clay, Peat & Sand Extraction • Mining • Groundwater Extraction • Garage • Petrol/Gas Station • Railway Station • Residential • Commercial • Mixed-use • Industrial • Warehouse • Market • Retail shop • Restaurant • Office • Post Office • Bank • Supermarket • Shopping Mall • Movie & Theatre • Hotel	• Farming • Plantation • Nursery • Roads • Airport • Forest • Afforestation • Park, Garden and Playground • Amphitheatre • Boardwalk • Botanical Garden • Biodiversity park • Waterfront promenade • Picnic and Camping Site • Ecotourism • Cycling/Hiking Trail • R&D centre • Research Institution • Outdoor sports • Water treatment Plant • Damn • Oil Pipeline

Type of Zone	General Description	Permitted Uses	Prohibited Uses	Conditional Uses
			• Schools, Colleges and University • Government office, • Hospital • Civic Centre • Civic Plaza • Art Gallery & Museum • Community Hall • Library • Auditorium • Any Public Building (>100 people capacity) • Slaughterhouse • Cemetery • Indoor games • Gymnasium • Swimming Pool • Exhibition Hall • Entertainment/Amusement Park • Golf Course • Sewage Treatment plant • Waste transfer centre • Recycling centre • Oil refinery • Land fill	

Source: Zoning Regulations; Kigali Master Plan 2050; Kigali Yacu! Our Kigali! The Centre of Urban Excellence

6.6 Economy & Employment

6.6.1 District Level

The economy of the City of Kigali has experienced positive GDP growth in the last decade averaging 6.5%. Among the three districts, Kicukiro district is the biggest in terms of GDP accounting for 42% of the total GDP, followed by Gasabo (35%) and Nyarugenge (23%)[10]. The city is projected to continue growing between 6.5% and 10% for the next three decades pertaining to enormous investments taking place especially in the service and manufacturing sector.

According to the Gasabo DDS (2018-2024), 70.1% of the Residents aged 16 years and above are in the labour market, and the labour force participation rate for male is 78.2% and female is 61.3%. The employment rate in Gasabo district for male is 60.1%, while the one for female is 39.9% as per the RHPC4. Inactive population (not engaged in reasonable economic activity) is 38% for male and 62.1% for female.

The employed youth in Rwanda (between 14-35 years) is 60.7% for male and 39.3% for female, unemployed youth are 34.6% male and 65.4% female while those inactive are 41.9% male, 58.1% female.

The EICV3[11] survey results indicated that the district's labour force (working population of above 16 years) is 280,000 people constituting 4.8% of the country's labour (5,888,000 people). While the active labour force in the district totals 223,000 representing 79.6 % of the total labour force of 280,000. Similarly, the results showed the district has the highest labour force compared to the two districts in Kigali City: Nyarugenge (173,000) and Kicukiro (186,000).

Further assessment of the district's active population, from EICV3 data, indicates that approximately 115,000 are employed in the public and private sector representing 51.6 % and the majority is employed in private informal followed by private formal, public and parastatals as detailed in the Table 6.4 below.

Table 6.4 Main sources of Employment for the Districts and the National Average[12]

	Public	Parastatals	Private, formal	Private, informal	Others
National	9.1	3.4	16.2	69.5	1.7
Nyarugenge	11.5	4.9	35.3	45.5	2.8
Gasabo	10.6	3.1	25.8	57.4	3.2
Kicukiro	8.6	6.4	27.9	53.5	3.6

Source: EICV3 Survey, 2012

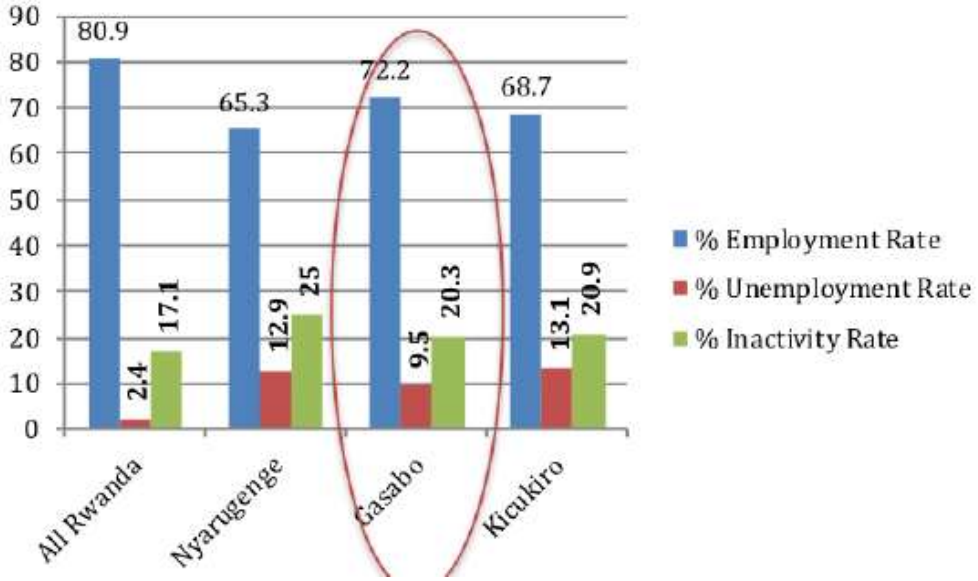
In terms of the employment rate, a key indicator for enhancing economic growth and poverty reduction, the Gasabo district is well positioned, as evidenced in the following Figure 6.5 below.

[10] Kigali Yacu! Our Kigali! The Centre of Urban Excellence. August 2020. Final Master Plan Update Report. Available at: https://gis.kigalicity.gov.rw/portal/sharing/rest/content/items/8bf652ea231f4bc5a756461a6d487026/data

11 Integrated Household Living Conditions Survey 3 (EICV3), Rwanda, 2010/11. Available at: https://www.statistics.gov.rw/publication/eicv-3-gasabo-district-profile-4

12 EICV3 Survey, 2012

Figure 6.5 Employment Status for the Different Districts in Kigali City



Source: NISR (EICV3 dataset), 2012

Important to note is that Gasabo district has a high number of labour force (16+ years) migrating for work compared to the other districts in Kigali City Province, both in terms of arrivals and departures. Gasabo registers approximately 41,000 arrivals and 30,000 departures compared to 37,000 and 28,000 arrivals realized in Kicukiro and Nyarugenge respectively (EICV3, 2012). The high number of labour force for Gasabo compared to other districts can be explained by the big share of the Kigali populations for Gasabo district. In fact, Gasabo has almost the double of the populations of Nyarugenge and Kicukiro districts.

The Gasabo district's rates are better than the national rates of 39.3% and 16.5% for poverty and extreme poverty rates respectively and the revised target of 20% of extreme poverty by year 2020.

6.6.2 Area of Influence (AoI)

Based on primary information gathered from the Local Authorities Social Affairs Officer of Kimihurura Sector, the main economic activity in the AoI is running of businesses such as hotels, restaurants, schools and hiring of public spaces. It was observed during the site visit that there were also small scale businesses such as salons, food shops and motorcycle transportation. In terms of employment, the AoI has a high employment rate whereby 3100 persons are formally employed while 1267 are unemployed and 235 are inactive or not searching for employment. The number of employed youth in the AoI stands at 920 of which 613 are male and 307 are female. The elderly persons in formal employment stand at 2180 of which 727 are male and 1453 are female. With regards to the distribution of the unemployed, 800 are male and 476 are female.

6.7 Livelihood

6.7.1 District Level

Agriculture

Agriculture in terms of crop production and livestock is the second main economic activity in Gasabo District. According to EICV4, 32.8% of the populations in Gasabo are employed in the agriculture sector including the wage farm (6.9%) and independent farmers (26.1%). This rate has been reduced from 40% reported by EICV3. Table 6.5 shows more details on agriculture and gender issues.

Table 6.5 Distribution of Gasabo Population involved in Agriculture sectors.

Economic Activity	Total Workers		Gender		Percentage	
	Count	Percent	Male	Female	Male	Female
Total	493,302	100	314,154	179,148	63.7	36.3
Agriculture, forestry and fishing	27,830	5.6	15,070	12,760	54.2	45.8

Source: RPHC4, 2012.

The Agricultural Household survey[13] states that in the Gasabo district during 2016/17 there were 2,292 listed households from which 615 (26.8%) were identified as a household whose largest source of income is derived from agricultural production (crop production and/or livestock). Furthermore, 34.4% are involved in crop production only, 6.9% only in livestock and 56.5% in both (crop production as well as livestock), the rest 2.2% were involved in both agricultural and non-agricultural activities. The average size of the agricultural household was 4.6.

Crop production

According to Gasabo DDS (2018-2024), the available agricultural land in Gasabo is 28,752.7 ha comprising of cultivated land (59.4%), fallow (15.4%) and pasture (0.5%) while the non-agricultural land represent 24.7%. The main crops produced are legumes and pulse representing 27% of cultivated land followed by cereals 23.8% (especially sorghum and maize) and banana at 17%. Table 6.6 shows the cultivated areas of Gasabo by crop type, productivity, and production.

Table 6.6 Cultivated area by crop type, productivity, and production.

Crop/Crop category	Area (Ha)	%	Productivity (Kg/Ha)	Production (MT)
Cereals	5,154	23.80%		
Maize	1,476	6.80%	762	284
Sorghum	3,653	16.90%	1,183	640
Paddy rice	25	0.10%	-	
Tubers and Roots	3,704	17.10%		
Cassava	1,947	9.00%	2,637	1,217
Sweet potato	1,034	4.80%	4,780	470
Irish potatoes	357	1.60%	5,255	25
Yarms & Taro	367	1.70%	3,376	389
Bananas	3,822	17,60%		
Cooking banana	1,509	17.00%	3,350	3,469
Dessert banana	1,230	5,70%	3,900	1,227
Banana for beer	1,083	5.00%	3,210	1,126
Legumes and Pulses	5,855	27.00%		
Bush bean	4,773	22.00%	739	1,112
Climbing bean	103	0.50%	2,131	44
Pea	202	0.90%.	597	1
Groundnut	313	1.40%	644	22

13 The National Institute of Statistics of Rwanda (NISR): Agricultural Household Survey 2017. Available at: https://www.statistics.gov.rw/publication/agricultural-household-survey-2017

Crop/Crop category	Area (Ha)	%	Productivity (Kg/Ha)	Production (MT)
Soybean	464	2.10%	589	40
Vegetables and Fruits	807	3.70%		
Vegetables	514	2.40%	8,540	2,208
Fruits	292	1.30%	1,633	209
Other crops	2,333	10.80%		
Developed land	21,675	100.00%		
Agricultural physical land	16,756	77.30%		
Fallow land	4,344	20.00%•		

Source: NISR, 2017 Seasonal Agricultural Survey - Season B

Agricultural activities

As per EICV3 in 2012, Gasabo district's agriculture sector is mostly based on cultivation of avocado (42.9%) and French beans (36.1%), as well as on cash crops like sugar cane (5%) and coffee (2.8%) (see Table 6.7). On a national level, the majority of households are growing French beans (65.8%), avocado (37.4%), squash (26.2%), sugar cane (10.9%) and coffee (10.8%).

Table 6.7 Percentage of cultivating households producing fruit, vegetables and export crops

	No. of HHs cultivating land for crop production (000s)	% of HHs producing selected fruit and vegetation					% of HHs producing export crops			
		French bean	Avocado	Squash	Pepper	Papaya	Coffee	Tea	Cane sugar	Sunflower
Gasabo	68	36.1	42.9	24.9	26.2	21.1	2.8	0	6	1.4
Rwanda	2,095	65.8	37.4	26.2	19.4	16.8	10.8	0.9	10.9	6.8

Source: EICV3, 2012

Agro-business opportunities

Agriculture offers agro-business opportunities through the commercialization of crop production. These opportunities are measured by the share of harvest sold (including households selling zero crops) which is 19.6% in Gasabo district and below national level (20.9%). The mean share of harvest sold for fruits and vegetables is lower (16.3%) than that of staple crops (20.1%) in Gasabo district. Gasabo district is using improved seeds and chemical fertilizer in an insufficient way.

Livestock production and productivity

The main type of livestock raised by Gasabo district's households are hens, goats and cattle. Gasabo district counted only one milk collection centre (March 2013), but it is not currently operational. Since 45.3% of the district's households own cattle already, the expansion of milk commercialization and investment in milk collection centres could be profitable for the district's economic development[14].

Tourism industry infrastructure

The tourism sector in the district and Kimuhurura Sector can be a source of employment for a large share of the population, given the comparative advantage Gasabo has in education. However, tourism is not yet well developed in the district and Kimuhurura. The fact that Kigali City hosts the largest portion of tourists in the country should provide an impetus for developing Kimuhurura Sector as a tourist destination.

14 "Gasabo District Development Plan 2013-2018", Gasabo District, City of Kigali, 2012

Hotel and restaurant facilities and businesses

According to the Establishment Census on Formal and Informal sector by economic sector (NIS 2011) Gasabo district counts 1,666 accommodations and food service activities.

Tour operation businesses

The tour operation businesses are concentrated in Kigali City. Eleven tour operation agencies are currently operating in Gasabo district.

Employment

Table 6.8 below portrays the distribution of the employed population in the Kimihurura Sector, the Gasabo District and in Kigali City. According to these statistics, employment is slightly above average in the area.

Table 6.8 Distribution (%) of the Currently Employed Youth of Kimihurura Sector aged 14-35 years (2012)

Sectors	Employment (%)							
	Total (counts)	Employee	Employer	Self-employed	Contributing family worker	Productive cooperative member	Other	Never attended
Kigali City	570,171	54.1	0.7	29.5	3.9	0.4	0.2	11.2
Gasabo District	260,155	51.6	0.7	32.5	3.7	0.4	0.1	10.9
Kimihurura Sector	11,962	68.1	0.8	17.3	2.7	0.3	0.2	10.6

Source: Rwanda 4th Population and Housing Census, 2012 (NISR)

6.7.2 Area of Influence (AoI)

Based on primary information gathered from the Local Authorities Social Affairs Officer of Kimihurura Sector, the main source of livelihood is running of small scale businesses such as hotels, restaurant, salon, supermarket, public spaces and schools. There have been no significant changes in the labour force for the past five years.

6.7.3 District Level

Based on the UNICEF data, Rwanda has the highest primary school enrolment rates in Africa for both boys and girls, and it is estimated that the country is on track to achieve universal access to primary education by 2015.

The 2012 statistics show that primary net enrolment rate was 96.5%: with 95% for boys and 98% for girls. Gender parity at primary school level has been achieved; the overall completion rate at primary level is 73% in 2012, a huge increase from the previous 2008 data indicating 53% enrolment.

Secondary school net enrolment rate is not as high as in primary school. The latest census data states that net enrolment was 28%, with 30% for girls. Girls now make up 52% of students in secondary education.

According to the Gasabo DDS (2018-2024), the education sector in Gasabo District is dominated by the private sector where about 80% of schools both pre-primary, primary, secondary, and tertiary schools are owned by private investors and the civil society.

According to RPHC (2012), the number of primary schools in Gasabo District is 106, with 1,316 classrooms and attended by 95,336 pupils of which 49.81% are female and 50.19% are male. The total number of teachers in these primary schools is 1,816 of whom 92% are qualified staff and 90%

have been trained in teaching methods. The general pupil: teacher ratio is 52 and pupil classroom ratio is 72 with a dropout rate of 7.2% (for male) and 7.6% (for Female).

For secondary education, Gasabo District has 111 secondary schools with 666 classrooms and attended by 20,672 students of which 51.85% are female and 48.15% are male. there 886 secondary school teacher in these schools of which 95% are qualified staff and 85% have been trained in teaching methods.

In addition, Gasabo district has a total of 20 Technical and Vocational Education and Training (TVET) schools, Vocational Training Centres (VTCs) and Technical Tertiary Institutions (awarding Diploma and Advanced Diploma). TVET provides both young and unemployed people with the skills to gain productive employment. It also provides individuals already in employment with opportunities to upgrade their skills, including entrepreneurs and other self-employment skills.

Higher institutions of learning in Gasabo district include Kigali Independent University, Adventist University of Central Africa (AUCA) and University of Rwanda (UR) - Remera Campus, Carnegie Mellon-Rwanda Campus, African Leadership University (ALU) - Rwanda Campus.

The NISR (National Institute of Statistics Rwanda) EICV5, 2018, showed that Gasabo has an 86.2% literacy rate of people above 15 years, lower than the literacy rate reported in 2014 that was 88.5%, and a 18.3 % computer literacy rate.

In relation to education the most recent data from EICV5 states, that 92.8% of the population aged 6 and above (92.0% of female and 93.3% of male) in the Gasabo district have attended school. It brings the district on the second place compared to other districts in Rwanda, when Kicukiro district with 95.0% is on the first place. The average national rate of the population aged above 6 who have ever attended school is 87.2%. Net attendance rate at primary school in the Gasabo district is with 86.4% slightly below the national level of 87.6%. The girl/boy attendance at primary level is equally balanced with 86.5% and 86.3%. In secondary school the net attendance rate is 33.0% (28.7% for female and 37.7% for male) which is above the 23.2% rate in whole Rwanda. In terms of literacy levels, the EICV5 states that the district's literacy rate of the population aged 15 and above is 87.7% (83.4% for female and 89.0% for male) and rates registered in Kicukiro and Nyarugenge are at 90.5% and 87.7% respectively. This is above the national average rate of 73.2%. The district level is below the country's target of 90% and 100%, as stipulated in the 7YGP and Vision 2020 respectively. The computer literacy rate for persons of 15 years and older stands at 20.3% (18.8% for female and 21.9% for male) what is above the national rate of just 8.9%. The district recognizes the need to improve the computer literacy rates to boost up ICT innovations and private sector led economy. The data for the Gasabo district from the Ministry of Education[15] shows that the students-per-classroom ratio for primary level is at 35.9, below the national standard of 46 pupils per classroom. Computer and internet usage in primary schools is through 254,602 computers and 1,029 schools nationwide in Rwanda have internet access.

In Table 6.9 we find the distribution (count and %) of the school-Age population of Gasabo district by School Attendance. The data portrays that attendance rates in Gasabo district are very high, especially during primary school years. Secondary school levels of attendance decline relatively, nevertheless, they're strongly above average.

15 Ministry of Education: 2018 Educational Statistic. Available at: https://www.statistics.gov.rw/publication/2018-education-statistics-report

Table 6.9 Distribution (count and %) of the school-Age population of Gasabo district by School Attendance

School-Age Population	Number				Percentage		
	Total	Currently attending	No longer attending	Never attended	Currently attending	No longer attending	Never attended
Pre-school age (3-6 years)	1,703	830	45	828	48.7	2.6	48.6
Primary-school age (7-12 years)	2,342	2,246	28	68	95.9	1.2	2.9
Secondary-school age (12- onwards)	2,378	1,834	483	61	77.1	20.3	2.6

Source: Rwanda 4th Population and Housing Census, 2012 (NISR)

According to data from 2012, the Kimihurura sector was home to 11,962 individuals between the ages of 14 and 35. Of this population, 3.6% had never received any formal education, 39.8% had dropped out after completing primary school, 40.7% had dropped out after completing secondary school, and 14.3% had gone on to attend university.

Education Levels in the Area:

Pre-primary education:

The Pre-primary Education is organized in nursery schools for a period of three years for children between the ages of 3 and 6[16]. Pre-primary education in Gasabo District is still not developed although the number of nursery schools has risen from 21, 6% in 2002 to 38,4 % in 2012(RPHC,2012). The district is confronted by insufficient number of schools in relation to the demand. This is largely due to the lack of funds for construction and to cover the running cost.

Currently more than 12.000 children attend the nursery schools in Gasabo district[17].

Secondary education:

On average, this lasts six years; the official age for this level is from 13 years to 18 years. It is composed of lower secondary (the first three years) and upper secondary (the second three years) both ending with a national examination which respectively yields eligibility for upper secondary education and tertiary education studies respectively. Upon completion of lower secondary, students enter different fields of study such as sciences, humanities, languages, teacher training or technical studies.

According to district reports, Gasabo District has 111 secondary schools with 666 classrooms and attended by 20,672 pupils out of which 51.85% are female and 48.15% are male with 886 teachers whereby 95% qualified staff and 85% have been trained in teaching methods[18].

The general pupil: teacher ratio is 23 and pupil classroom ratio is 33. The dropout rate is higher in lower secondary education (3.8%) than upper section (1.4%). Moreover, general drop out is 7.8%, this dropout rate is five times higher in girls 10.6% than boys 4.7%[19]. the district needs to take more strategies to handle this issue which affects its development.

Tertiary education:

Currently, Gasabo district count 3 higher learning institutions including ULK, AUCA and UR-Remera Campus. Moreover, considering its location with the CoK, whereby more HLIs are located, the

[16] Republic of Rwanda. Ministry of Local Government. Kigali City. Gasabo District. 'Gasabo District Development Strategy (2018/19 – 2023/24). Available at: www.gasabo.gov.rw
[17] Ibid.
[18] Ibid.
[19] Ibid.

accessibility in terms of distance is affordable; however, financial constraints are the most obstacles that limit number of people to attend those institutions.

School attendance

School attendance among children varies across education levels: It is low (38.4%) for the preschool-age population (3-6 years), widespread (92.9%) for the primary school-age population (7-12 years), and moderate (69.4%) for the secondary school-age population (13-18 years) at the time of the census.

School attendance varies also across the sectors:

- For the secondary school, school attendance is highest in Kimihurura (77.1%) and lowest in Gisozi (61.7%).
- The gross attendance rates are greater than 120% in all sectors, with minor variations except in Rutunga (117.3%).
- The net attendance rate (NAR) in Primary school for Gasabo district (87.5%) is below the NAR at Provincial and National level (89.2% and 88.2%, respectively).
- The highest net attendance rate in primary school (91.6%) is in Kimironko sector followed by Kacyiru sector with 91.1% while the sector with the lowest NAR is Rutunga with 79.9%.

Gross attendance rate in Gasabo district is more than 50% while the net attendance rate is less than 50%. This means that a big proportion of Gasabo children who are supposed to attend secondary school are not actually attending that level especially during their official school age. Gross attendance rate for females (59.7%) is less than the one for males (62.1%).

6.7.4 Area of Influence (AoI)

The nearest education facility to the Project sit is Kigali Junior Academy with is less than half a kilometre away. The pupils mainly report to school at 8:30 am and leave at 5:30 pm in the evening. During the Site visit pupils were seen walking along the pedestrian footpath near the Project Site.

Education Facilities in the Area:

Schools:

- Kigali Junior Academy: Distance: 416m / Orientation: S-E

Figure 6.6 Kigali Junior Academy

Photo 1: Kigali Junior Academy near the Project Site.

Photo 2. Children going to Kigali Junior Academy using the pedestrian walkaway near the Project Site.

- Dove International Montessori School: Distance: 306m / Orientation: S
- Public School: Distance: N/A / Orientation: S
- Université de Kigali: Distance: 518m / Orientation: N

Figure 6.7 University of Kigali near the Project Site

6.8 Community Health, Safety & Security

6.8.1 District Level

According to the Monographic Study Report published by the District in October 2013, the health network in Gasabo district comprises of five hospitals, 16 public Health centres, 29 dispensaries, 17 private clinics, 17 health post; with 3 community health workers at every village. According to DHS5, 2015, only 73.5% of the populations of Gasabo district are covered by health insurance schemes.

The stunting rate among children under 5 years is 22.3 % compared to 38% at the national level. The fertility rate is at 4.0% compared to 3.0% wanted by the same people. The use of contraception is still at low levels with only 44.3% of active women (15-49) and 54.9% of men (15 – 49) using some form of contraceptives. The mortality rate of under 5 years old is 41 per 1,000 live birth compared to 50 at national level (DHS5, 2015).

The District health profile shows that HIV prevalence is at 5.9% (7.4% in female and 4.4 % in male) for the population aged between 15-49 years. This prevalence is higher than the national average which is 3.6% for female and 2.2% for male of the same age group.

In terms of health personnel, there is a big challenge of inadequate number of doctors, nurses, and midwives, for example, Gasabo district has only 22 medical doctors (both general practitioners and Specialists, 255 nurses, 64 midwives.

It is important to note that this ESIA Project Report has also been prepared at a time when the pandemic of COVID-19 is still a global challenge, affecting all countries across the globe including Rwanda.

The Rwandan health system has seen an improved performance in recent years, based on quality of care and decentralization of health care systems. Policies and programmes have been developed in an effort to respond to the population's health care needs and to align the health system with the global health agenda. In 2015, Rwanda spent 11.2% of its gross domestic product on the health sector. The CoK is the main provider of primary health care services, in conjunction with the Ministry

of Health. Funds come from government contributions, development partners, health insurance contributions, social solidarity funding and cross subsidizing among the community. The district of Gasabo relies on two public hospitals, one private hospital and 18 health centres. Most of the villagers from Kinyinya get their health care at Kibagabaga hospital. In Kinyinya Hill, the most frequently used health facility is the Kinyinya Health Centre in Murama Cell.

Household Health Insurance

According to the Rwandan Demographic and Health Survey from 2019 – 2020[20], out of the 931 households in the Gasabo district, 84.9% of households, with at least one member covered by health insurance. These numbers are lower than the average national numbers, where, out of 12,949 households, 85.9% have at least one member of the household, covered by a private health insurance.

Childhood Mortality Rates

According to the Rwanda DHS 2019-2020, the table below shows neonatal, post-neonatal, infant, child, and under-5 mortality rates for the ten-year period preceding the survey, for the Gasabo District.

Table 6.10 Ten-year early childhood mortality rates according to additional characteristics

District	Neonatal Mortality	Post-Neonatal Mortality	Infant Mortality	Child Mortality	Under -5 Mortality
Gasabo	8	7	15	9	24

Source: Rwanda DHS, 2019-2020

Road Safety Issues

According to police data, Kigali City Road based accidents remain higher than the rest of Rwanda. In 2017, 71% of total registered road accidents involved motorcycles (moto-taxis), and bicycles[21]. The KN 7 road, the KN 5 Road (which crosses close to the project site) and city circle junctions remain the hotspots for fatal accidents in Kigali as determined from a study done from the police database. Nevertheless, the fatal accident hotspots of Kigali are not present in Area of Influence[22]. No data was available to distinguish between accidents involving pedestrian and cyclists.

During these last days, the government has continued to implement safer road programs to educate road users on effective and safe usage of the road. In 2017 the government reviewed laws on road safety to toughen penalties against traffic offenders[23]. They have also committed to implementing all possible strategies to enhance road safety measures as evident by a campaign launched by the Rwanda national police and minister of transport in 2017 to curb road accidents and promote road users respect road safety standards.

Gender Based-Violence and Harassment

No information available.

6.8.2 Area of Influence (AoI)

The nearest health facility to the Project Site I the Edo Heza Surgical Centre. About 30 percent of the population within the AoI seek treatment at the facility. The centre provides services such as; daycare, elective surgery, and diagnostic procedures. It also specialises in trauma and orthopaedics, general surgery, plastic surgery, paediatric surgery, urology, neurosurgery, Ear Nose and Throat (E.N.T)

[20] Rwanda Demographic and Health Survey 2019-2020, Final Report. Pdf Document.

[21] Kigali City Master Plan 2020. Transport Plan. Available at: data (kigalicity.gov.rw)

[22] Rwanda Statistical Yearbook, 2017.

[23] Kigali City Master Plan 2020. Transport Plan. Available at: data (kigalicity.gov.rw)

surgery, and cleft surgery. The Centre also houses physiotherapy and rehabilitation services, these services are available to support rehabilitation from injury and illness as well as proactive wellness.

About five percent of the cases treated at the facility that lead to fatalities are related to road accidents and ten percent are related to neonatal care.

Figure 6.8 Ejo Heza Surgical Centre

6.9 Infrastructure & Public Services

6.9.1 District Level

6.9.1.1 Housing

The current settlement morphology of the Kinyinya Hill comprises three categories of neighbourhoods, namely planned, informal and mixed. Planned neighbourhoods are characterized by clearly demarcated plots, separated by the main tarmac road. These are very few high-income neighbourhoods, and the residents also enjoy a greater access to urban infrastructures and services. On the other hand, informal neighbourhoods are precarious and mostly concentrated in the areas with difficult access to the main road. Houses are intersected with narrow paths and poor drainage system. They can be classified as 'spontaneous neighbourhoods' which are full of small individual houses made with bricks (often of the adobe type) or with breeze blocks but without any modern comfort and equipment. They look less attractive in terms of urban infrastructure and are commonly referred to as akajagari. These mixed neighbourhoods are hybrid of both planned and informal neighbourhoods, characterized by separate and demarcated plots on one part and small houses squeezing on the other smaller part. These neighbourhoods result from either unplanned growth of the planned settlements or upgradation of informal settlements.

Currently, 71.2% of Gasabo's households and 78% of Kigali's households are unplanned informal urban housing. In the Area of Influence, as mentioned above, informal settlements are predominant[24]. The informal settlements are found in areas with greater distance from nearby earth roads and the main tarmac road that connects different areas of Kinyinya Hill. In this context it should be noted, that the designation of informal is not equal with a missing land title. Rather it is noted as informal by local authorities because the buildings are not compliant with planning guidelines or are built of what are considered to be insufficient materials.

The key driver for the creation and growth of Informal Settlements in Kigali is from migrants to the city in search of jobs and economic opportunities, many of which are willing to settle in inadequate less

24 ERM (2020) Site Walk-Over in December 2020.

inexpensive conditions (low-quality housing on small plots). This form of land usage creates a more competitive individualistic social context thus eroding the traditional social cohesion.

Household vulnerability in Rwanda is often defined not only by pure consumption poverty but also by households' ranking under the system known as *ubudehe*.

The categories of *ubudehe* are classified in A, B, C, D & E (Special Category). The categories mean:

- **A & B: Category** of households with diverse life choices and self-reliant that spur community empowerment and graduation from poverty;
- **C & D: Category** of self-reliant households that benefit from social protection interventions and multi-sectoral interventions and have to sign performance contracts (*Imihigo*) for graduation within a period of 2 years;
- **Special category E:** This category of households is expected to benefit from full state social protection and individuals in this category are not expected to graduate and will not sign performance contracts.

It might be expected that the majority of the populations of the hill will be distributed in category C & D. The Resettlement Policy Framework (RPF) recommends conducting a detail socio-economic-survey to assess the impact of land acquisition for the Project and sub-components on households including the distribution of *ubudehe* categories (refer to RPF for further details).

6.9.2 Area of Influence (AoI)

The main religion in the AoI is Christianity and approximately 90 percent of the population living in the AoI are Christians. The nearest church to the Project Site is "Hope in Jesus Church."

Figure 6.9 "Hope in Jesus" Church

The main construction material for housing is brick and stone though it was also observed that there were semi-permanent structures that were constructed using corrugated iron sheets and timber.

6.10 Water Supply & Sanitation

6.10.1 District Level

6.10.1.1 Water Resources

The EICV4 reported that 85.6% of Gasabo district households use improved drinking water source which are accessed in meantime of 9.5 minutes compared to 84.8% which are accessed in meantime

of 11.2 minutes at national level. This indicates an improved situation in the district since 2012 when 84.7% of the households accessed improved water sources in 11.7 minutes.

6.10.1.2 Sanitation

In terms of sanitation, the EICV4 reported that Gasabo district has 94% of households (HH) with improved toilets while 1.3% do not have any toilets whatsoever. Only 48.2 % of the HHs use improved toilets and not shared with other HHs. Apart from the household sanitation facilities, the public sanitation facilities remain insignificant, for example, there are only 900 public toilets in the urban areas and 413 rooms in peri- urban areas.

The district in collaboration with the CoK has put in place one landfill in Nduba Sector to serve the whole of CoK. Currently, 11 waste collection companies were created and are operational the CoK among which three (3) waste collection companies have been contracted to offer cleaning service (Roads and public spaces) by the District; additionally, each sector contracts at least 1 waste collection company for the households. Additionally, 14 hygiene and security patrol cars have been bought to facilitate monitoring of hygienic issues across the sectors, greening and pavement at schools and at health facilities, 4 new public toilets have been constructed in Kacyiru, Rusororo and Jabana Sectors.

Access to improved drinking water' indicators[25] show that 84.7% of the households in the district have improved water sources with 36.9% households receiving water from a public standpipe[26], 16.7% from a protected spring and 4.8% from protected wells. In addition, based on district data the households that have access to clean water represent 82.0% of all households.

Many households and businesses are connected to this central supply. Those without a connection typically walk to a water kiosk to purchase water from the central water supply. Currently there is a need to do intermittent rationing of water in the system (for instance, supply water 3-4 days/week) since the demand in Kigali exceeds the supply.

It is indicated that 74.3% household have improved sanitation. The majority of households use pit latrines with solid slab (67.2%) and pit latrines without slab (23.6%). The households using flushing toilets are only 7.1%.

Both the Gasabo district and Kinyinya Hill need to improve water and sanitation access in order to reach the Vision 2020[27] targets of 100% of population having access to improved sanitation and access to clean water.

There is no central sewage system for treatment of domestic wastewater in the Kinyinya Hill nor in Kigali City in general. No industrial sewage water is discharged from the hill as there are no heavy or light industries located in the areas. Unimproved pit latrines are used by the majority of the people living in the Kinyinya Hill. The future plan of the Project is to provide improved sanitation.

Table 6.11 below portrays that the majority of the population in this district have access to a private or shared pit latrine.

25 Gasabo district Development Plan, 2013-2018

26 ERM (2020) Site Walk-Over in December 2020.

27 Ministry of Finance and Economic Planning (MINECOFIN) (II), Republic of Rwanda (2012) Rwanda Vision 2020 Progress and Way Forward" (PDF) available at:

http://www.devpartners.gov.rw/fileadmin/templates/docs/Events/DPR/2011_DPR/Day%201/Vision%202020%20Progress%20and%20Way%20Forward.pdf

Table 6.11 Distribution (count and %) of the Private Households of Kimihurura Sector by main type of Toilet Facility (2012)

Sectors	Main Type of Toilet Facility (%)						
	Total (counts)	Flush toilet	Private pit latrine	Shared pit latrine	Bush	Other	Not stated
Kigali City	286,664	4.9	50	41.1	0.2	0.4	3.4
Gasabo District	137,146	5.1	54.8	36.4	0.3	0.5	3
Kimihurura Sector	5,599	10.6	28.3	56.4	0.1	0.1	4.5

Source: Rwanda 4th Population and Housing Census, 2012 (NISR)

6.10.2 Area of Influence (AoI)

Based on primary information gathered from the Local Authorities Social Affairs Officer of Kimihurura Sector, most of the households living within the AoI have access to piped drinking water from the municipality. There are also boreholes that supplement the available drinking water.

Figure 6.10 Drainage & Sanitation

The main types of toilets used in the area the WC flush toilets.

6.11 Waste Management

6.11.1 District Level

As it can be seen in the table below, depending on the area, most private households use different modes of waste disposal. However, in all three areas, the main mode corresponds to the use of private dust bins.

Table 6.12 Distribution (count and %) of the Private Households of Kimihurura Sector by mode of Waste Disposal (2012)

Sectors	Mode of Waste Disposal (%)								
	Total (counts)	Compost dumping	Private dust bins	Public refuse dumps	In the bush	On the farms	In the River/Stream/ /Drain/Gutter	Other	Not stated
Kigali City	286,664	23	44.7	6.3	6.1	17.7	0.2	1.1	0.9
Gasabo District	137,146	27.7	37.1	7.1	7.1	19.1	0.2	0.7	0.9
Kimihurura Sector	5,599	3.4	61.1	20.6	7.8	5.4	0.5	0.1	1.1

Source: Rwanda 4th Population and Housing Census, 2012 (NISR)

6.11.2 Area of Influence (AoI)

The main waste collection company in the AoI is called BAHEZA. The Company provides solid waste collection and disposal services. Waste is collected at least twice per day (Mondays and Fridays). The main method of waste disposal for the households in the AoI is collection by a registered waste handler.

6.12 Energy

6.12.1 District Level

The energy demand for households and in the service sector in Rwanda would typically be divided into energy for cooking/heating, and electricity.

In 2016, 77.4% of urban households in Rwanda were connected to the grid as compared to 15.6% of rural households[28]. The cost for a connection to the electric grid for any new installation is charged according to an established cost table. There is a connection fee as well as a cost for the extension. Kinyinya Hill falls within the scope of Kigali City Master Plan and its anticipated grid expansion.

The EICV4 (2014) also showed that, in Gasabo district, the primary source of energy used by households for lighting are dominated by electricity (68.3%) followed by other sources like oil lamp, firewood, candle, lantern, solar panel, and battery. Additionally, the electricity network has been improved and currently the connectivity within the district is at 100%, ready for domestic use. Industrial energy facilities are in place for two industrial zones (i.e. Jabana and KSEZ).

6.12.2 Area of Influence (AoI)

About 60 percent of the households in the AoI are connected to the electricity grid. The primary source of energy used by the households is electricity.

6.13 Telecommunication Access/Infrastructure

6.13.1 District Level

Internet access in Kigali City, including access via mobile phone, present within 39.1% of households, as reported in 2016/17, which can be compared to all Rwanda where access is reported to 17.2% households. In modern planned areas reported the highest access to internet 58.9%)[29].

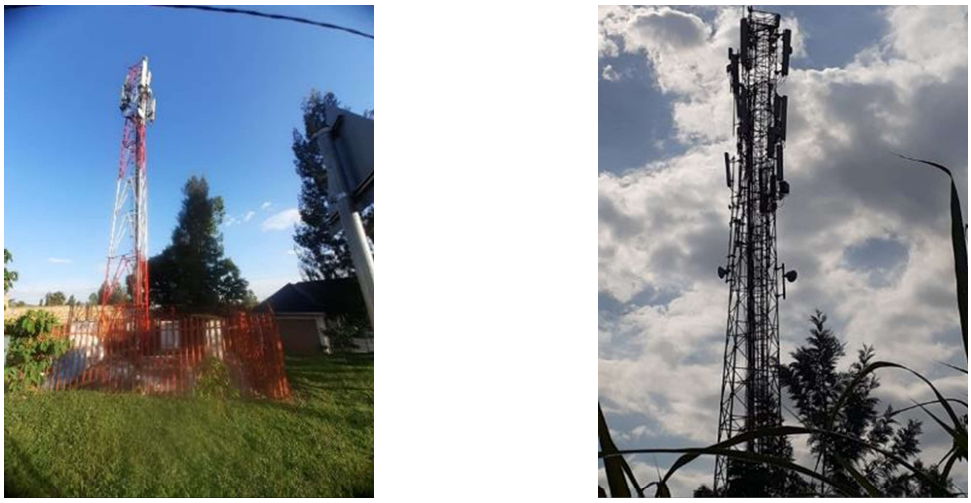
28 Koo, Rysankova et al. 2018

29 "Main Indicators Report". Kigali, National Institute of Statistics Rwanda (NISR). November.The Fifth Integrated Household Living Conditions Survey EICV5 (2016/17)

Regarding the ICT usage 41.4% of the people in Gasabo district have never used internet and 33.3% are not aware of the service. 78.2% of the population of 6+ years have never used a computer[30].

The district of Gasabo including Kinyinya sector has a fiber internet network provided by Liquid Telecom and private individuals use internet and cell phones through the telephony networks of MTN and AIRTEL/TIGO[31] (Figure 6.1).

Figure 6.11 Airtel Telecommunication Towers



Source: ERM, 2020

On the ICT and communication sector, above 90% of the adult population is subscribed to mobile phone and all 73 district administrative offices are equipped with public television sets, while all district officials from village level including leaders for Umudugudu, Cells, sectors & District councils and all staff communicate free of charge using Call user group (CUG). The coverage of internet connectivity for 4G is now in the whole district which facilitates both service delivery and access to information across the district (Gasabo DDS, 2018-2024).

In 2012, among the 13,191 households that were surveyed in the Kimihurura area, internet access was available in 50.5% of the homes, 55.5% of the offices or schools, 44.7% of the cyber cafes, and 10% of other locations.

Table 6.13 Percentage of Private Households of Kimihurura Sector possessing communication assets

Sectors	Total number of privates (counts)	Radio	TV	Telephone (Landline)	Mobile Phone	Computer
Kigali City	286,664	73.4	38.3	1.1	85.3	13
Gasabo District	137,146	72.3	31.8	1	82	11.1
Kimihurura Sector	5,599	73.8	49.1	2.3	92.6	19.2

Source: Rwanda 4th Population and Housing Census, 2012 (NISR)

30 Gasabo district Development Plan, 2013-2018

31 ERM (2020) Site Walk-Over in December 2020

6.13.2 Area of Influence (AoI)

Based on primary information gathered from the Local Authorities Social Affairs Officer of Kimihurura Sector, about 98 percent of the households have access to internet connectivity. Several cyber cafes could be observed in the AoI.

Figure 6.12 Electricity Transmission Masts

6.14 Transportation Infrastructure

6.14.1 District Level

According to EICV4, in Gasabo District, 14.2% of Households has their own means of transport including 4.2% with cars, 0.7% with motorcycles and 9.4% with bicycles, while 62.8% regularly use public transport means of transport. In the EDPRS period of 2013-2018, the district made more efforts in developing the district transport network, where, 24.9 km of asphalt road were constructed, 12.9 km of cobblestones constructed, 42.4 km of earth road rehabilitated, 105 km feeder road constructed in different sectors of Gasabo district, and 7 bridges constructed.

In the same period, under the urbanisation and rural settlement, the number of HHs in villages (imidugudu) were 4,742 (3.45%), HHs in planned areas were 14,985(10.9%), dispersed/isolated HHs were 37,238 (27.06%), HHs in Slums were 80,181 (58.5%) of all HHs in Gasabo district.

While standards in the transport sector in the district are still below other districts in Kigali City, improvements have been made over the past years as measured by usage rates for all-weather roads. Gasabo's usage rate stands at 86.2% compared to Kicukiro and Nyarugenge at rates of 97.4% and 95.9%. The satisfaction level for usage of all-weather roads indicates that 75.2% are satisfied, while 24.8% are not satisfied. However, the usage of public transport in the district is considered poor, with 40.4% regularly using public transport compared to 82.6% and 74.1% for Nyarugenge and Kicukiro respectively. This is because the majority expressed that they do not need it (67.2%) and around 29.3% said the bus stops are too far[32].

Vehicle Ownership

The majority of the households in the Gasabo District, own at least one bicycle, at least one motorcycle and/ or at least one motor vehicle. For example, some households might own more than one bicycle/ motorcycle/motor vehicle. Also, one household might own both cars and bicycles.

When comparing average monthly household income per month per person to vehicle ownership per household, it can be concluded that the higher income areas are also areas with higher motor vehicle

32 Gasabo district Development Plan, 2013-2018

ownership and the lower income areas are also areas with high bicycle ownership. Motorcycle ownership is higher towards the centre of Kigali and the Gasabo district area.

According to the World Bank automobiles and motorcycles motorization rate is rapidly growing and, in the absence of sufficient public transport supply (only 55% of population and 24% of City of Kigali (CoK) territory is within 400 meters of a bus line) that can provide high quality services for the markets served, moto-taxis are taking over a significant share of the travel market (12% modal[33]).

Moving Around: Modes of Transport

On average, the majority of employed citizens live within 2km from their place work and within 2km of the nearest school. The data also shows that most commuter trips are currently shorter than 5km which is considered an acceptable cycling distance and a relatively acceptable walking distance.

Therefore, in general, the majority of employed citizens use walking as a mode of transport to their place of work. But, when comparing the mode of transport used to travel to work to the average monthly household income, the areas where people earn a higher income (such as the one in our Area of Influence) are also the areas where the usage of private car travel is more common[34].

On average, in the Gasabo District, the most popular time of day for people to travel to work is between 06:00 and 09:00 in the morning. This is relevant, especially to avoid these times for transportation of materials and the stopping of transit throughout the area.

Road Network

Overview

Since adoption of the 2013 Transport Master Plan, many road infrastructure projects have been implemented in Kigali. The road network has been improved, upgraded, and rehabilitated in the past five years. The city topography, consisting of mainly valley and hills, remains as a natural guide and restricting for the road network.

Congestion in the City is developing rapidly which wastes fuel, increases travel time, causes additional pollution and can reduce safety. Congestion is also an impedance to public service vehicles such as ambulances and trucks.

An all-weather road is a road that can be used in all weather conditions and that is not flooded by rain. This mostly means paved roads but could also mean well-maintained unpaved roads.

The 2013 Kigali Transport Master Plan stated that only 14% of the 732km road network in Kigali was paved. The majority of roads in Rwanda are still unpaved[35]. Major paved roads only occur in the urbanized areas of the city and most of the roads in the rural areas are in the form of mud tracks.

Road Classification

The Rwandan government has published the law governing the roads in Rwanda; Official Gazette No. 04 of 23/01/2012. The Table 6.14 shows the different classifications:

[33] Kigali City Master Plan 2020. Transport Plan. Available at: data (kigalicity.gov.rw

[34] Kigali City Master Plan 2020. Transport Plan. Available at: data (kigalicity.gov.rw)

[35] Kigali City Master Plan 2020. Transport Plan. Available at: data (kigalicity.gov.rw)

Table 6.14 Rwandan Road Classes

Road Class	Definition	Lane Width (M)	Road Width (M)
National Roads	International roads that link Rwanda with neighbouring countries;	3.52 m	-
	Roads that link Districts or that link a District and the CoK;		
	Roads that link areas of tourist significance and facilities of national or international importance such as ports and airport.		
Districts & CoK roads and that of other urban areas - Class 1 Roads	Roads linking different sector headquarters within the same District, or those roads that are used within the same sector.	3.52 m	-
Districts & CoK roads and that of other urban areas - Class 2 Roads	Arterial roads that connect Districts roads to rural community centres that are inhabited as an agglomeration. - 6.03 m 24 m	-	6.03 m
Specific Roads	Roads specifically constructed to connect national roads or District roads to Kigali City and other urban areas to the centres for private sector's activities such agricultural production, natural resources processing or to tourist sites	-	-

Source: Kigali City Master Plan 2020.

Rwanda has further developed an urban planning manual called the Urban Planning Code (UPC). This manual characterises design principles and guidelines for all urban areas within the country. In this manual, there is a section on the classification and geometric requirements of the road and transport networks within the country. The document refers to there being 4 classifications of roads, namely:

- **Primary Distributor roads:** Shall be used in planning to for the primary network within an urban area and distribute traffic between central and nodal business districts.
- **Secondary Distributor roads:** Shall be used in planning to distribute the traffic between different neighbourhood areas and land use zones of an urban or human settlement area and link to the primary access network.
- **Local Distributor roads**: shall be used in planning to distribute the traffic within different neighbourhood areas & land use zones and link to the secondary access network. There may be major and minor local distributor roads depending on the volume of traffic generated within the area, and on the types of vehicles allowed.
- **Access Road**: shall be used in planning to link individual plots, buildings, and open spaces to a local distributor road. Access roads in housing areas and shopping centres are termed streets and are further classified into primary and secondary streets. They may be cul-de-sacs or loops.

Finally, according to Zoning Regulations, roads infrastructure corresponds to **Transport Zone (T.)** This is established to identify and locate major transport related areas including public transport services such as BRT, airports, railway, and depots associated with public transport uses, transport terminus, and cable car stations.

No major zoning regulations are stipulated for purely transport related infrastructure developments, because the development or physical improvements proposed within these zones are developed by government agencies or authorities, who in turn, are already subject to specific safety requirements.

6.14.2 Area of Influence (AoI)

The Area of Influence level is crossed by several types of roads, and it represent a major traffic node.

Within the Primary Socio Economic AoI:

- One (01) District Class 2 Road
- One (01) District Class 1 called KN5
- Several smaller unpaved roads.

Within the Secondary Socio Economic AoI:

- One (01) District Class 1 called KN5
- One (01) National Road called KN3 Road
- Several smaller unpaved roads.

The project site corresponds to a 'City Commercial Zone (C3)'. In terms of circulation, two (02) criteria have to be met:

- For Pedestrians:
  - All attached and semi-detached buildings facing main commercial roads / BRT/ wetland front/green corridors shall provide a continuous well designed and universally accessible arcade of no less than5 m.
  - No parking shall be allowed in this front setback.
  - NMT linkages shall be identified to link all sites to the Public Transport Network. All pedestrian circulation shall be accessible to handicapped people.
- For Public Transport:
  - Public Transport Network shall have bus stops spacing at a range of 300-500m.

6.15 Public Transport Network

6.15.1 District Level

The following public transport modes are currently (2018) available in Kigali:

- Motorised Taxis (RURA fully regulates these).
- Public transport services (supplied by licensed operators)
- Bus:
  - The RTDA Annual Report for 2016- 2017 shows there were 865.5 km of scheduled bus routes in the City of Kigali.
  - These are operated by the following bus companies:
    - Kigali Business Services (Zone I)
    - Royal Express Limited (Zone II)
- Moto-Taxi: Moto-taxis are one of the main forms of transport in Kigali. The traffic count surveys done show that over 50% of vehicles on the road during peak hours are Moto-taxis.
- Car and Minibus Taxis
- Bicycle Taxis
- Air Transport

The population in the area are aware of all of these different forms of public transport. Moreover, has been increasing regularly during the last years.

6.15.2 Area of Influence (AoI)

The main mode of transport used by the people living in the AoI is cars, bicycles and motorcycles. Traffic tend to be high during the morning and evening hours.

6.16 Vulnerability

Based on primary information gathered from the Local Authorities Social Affairs Officer of Kimihurura Sector, the main vulnerable groups in the AoI are the elderly, poor and disabled.

6.17 Elderly Population

6.17.1 District Level

As shown in the table below, elder population in the area is quite low, the majority of them being women in Kigali, Gasabo and Kimihurura.

Table 6.15 Number and Share (%) of the Resident Elderly (aged 60 years and above) among the Total Resident Population of Kimihurura Sector (2012)

Sectors	Total Elderly Population			Share of elderly population among total population (%)		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Kigali City	29,245	12,268	16,977	2.6	2.1	3.1
Gasabo District	14,787	6,257	8,530	2.8	2.3	3.3
Kimihurura Sector	422	219	203	1.9	1.8	2.1

Source: Rwanda 4th Population and Housing Census, 2012 (NISR)

6.17.2 Area of Influence (AoI)

Based on primary information gathered from the Local Authorities Social Affairs Officer of Kimihurura sector about 60 percent of the population are above the age of 50.

6.18 Households below poverty line

6.18.1 District Level

According to the Gasabo DDS (2018-2024), the poverty rate in Gasabo District is 23.4% (EICV4), and the extreme poverty is 11.3% as per the EICV 4.

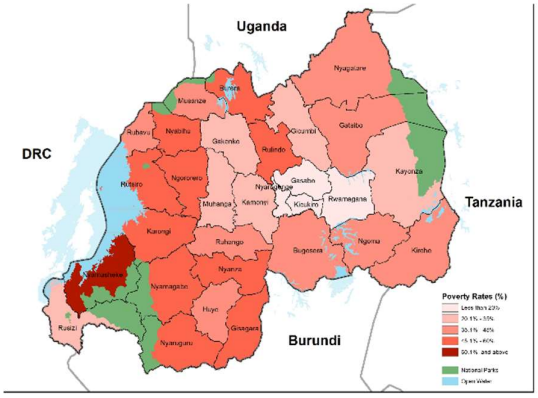
The vast majority of households (87%) in Kigali live on a monthly income below RWF 500,000 and a large portion of households (30%) in Kigali live on an income below RWF 100,000. Wages and salaries of households in Kinyinya have an average of 227,387 RWF.[36].

According to the Fifth Integrated Household Living Conditions Survey, 2016/17, the Gasabo District is one of the top districts with lower poverty – 15.8% - and extreme poverty – 4.5% - rates. Figure 6.13 below shows the different poverty indices in the country.

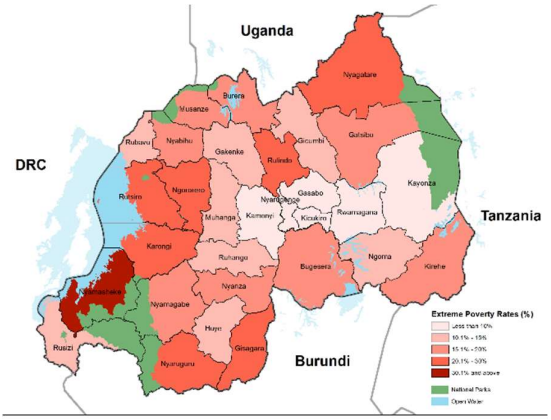
36 The Fifth Integrated Household living conditions survey, EICV5 (2016/17)

Figure 6.13 Poverty

Poverty Map Rwanda



Extreme Poverty Map Rwanda



Source: Fifth Integrated Household Living Conditions Survey, 2016/17

6.18.2 Area of Influence (AoI)

Based on primary information gathered from the Local Authorities Social Affairs Officer an estimated 100 households in the AoI are living below the poverty line.

6.19 Disability

6.19.1 District Level

According to the Fourth Population and Housing Census from 2012, out of the 19,448 individuals aged 5 years and older living in Kimihurura, 2.1% of them had a disability which makes Kimihurura the second sector in Gasabo with the lowest proportion of people with disabilities, after the Remera sector. Among those with a disability, 62.8% were men and 37.2% were women.

6.19.2 Area of Influence (AoI)

Based on primary information gathered from the Local Authorities Social Affairs Officer , there are about 17 disabled persons living within the AoI.

6.20 Archaeology & Cultural Heritage

6.20.1 District Level

Most prominent and yet sorrowful heritage of Rwanda located in Gasabo District is the Kigali Genocide Memorial at Gisozi, where 250,000 victims were buried. This memorial also serves to educate on how the 1994 Genocide against the Tutsi took shape and examines genocide in the 20th century. This memorial is more than 10km from the KSEZ and close to the Kigali City Centre (Figure 6.14).

Rwanda has no properties inscribed on the World Heritage List. On its tentative list are Rwanda's genocide memorial sites, one of them[37] is near Kinyinya sector in Gisozi (see Figure 6.14), approximately 10 km southeast from the Area of Influence. No single burial site was recorded in the

37 ERM (2020) Site Walk-Over in December 2020.

area, and the probability to find a grave in the individual properties is low considering Rwandan practice of using government approved burial sites.

Figure 6.14 Kigali Genocide Memorial in Gasabo District

6.20.2 Area of Influence (AoI)

There are no archaeological and cultural heritage sites that are within the close proximity to the Project Site.

7 STAKEHOLDER ENGAGEMENT, PUBLIC CONSULTATION & COMMUNICATION

The 2019 EIA contained a short "Stakeholder Consultation and Public Participation" chapter. Moreover, Duval also produced a more comprehensive IFC-aligned Stakeholder Engagement Plan (SEP) in French, produced in 2019 and revised in 2022. Following their review and gap analysis, it was identified that there was a need to update the SEP to close the identified gaps. In addition, it was previewed that the ESIA should provide a summary of the revised SEP while directly referencing it. Both documents were to be consistent and aligned.

In order to close the gap between the 2019 EIA and the IFC Performance Standards (2012), several gaps had to be closed. The SEP should:

- Include information on the consultation activities;
- Contain a detailed consultation plan, with detailed information material used and to be used during stakeholder engagement, as well as the attendance recording templates;
- Include the measures for encouraging the participation of women and the elderly;
- Become – and mention – that it is a living document which can evolve with new stakeholder information for the ESIA/ESMP process;
- Consult local affected groups;
- Provide evidence that project impacts have been disclosed to affected communities and that Stakeholder inputs have been considered and integrated in the project's design, planning, impact assessment and mitigation measures;
- Potentially, include a grievance mechanism. The mechanism should follow the requirements of PS1 in terms of accessibility, timeframes for resolution etc.

This Chapter presents a summary of the stakeholder engagement undertaken as part of the SLIP process for the Proposed Project. This has been done in compliance with the above-mentioned criteria. This serves as a summary of a more detailed Stakeholder Engagement Plan (SEP), which presents the engagement approach and identifies stakeholders and the mechanisms through which stakeholders have been engaged. The complete SEP is included in Appendices A & B.

The engagement process has been designed to meet both Rwandan legal requirements for public participation in relation to an ESIA Report, and international requirements for engagement as outlined in the IFC Performance Standards.

7.1 Objectives of Stakeholder Engagement

The objectives of engaging stakeholders and the community during the ESIA process and beyond include:

- **Ensuring understanding:** An open, inclusive and transparent process of culturally appropriate engagement and communication is undertaken to ensure that stakeholders are well informed about the proposed Project as it develops. Information is disclosed as early and as comprehensive as possible and appropriate.
- **Involving stakeholders in the assessment**: Stakeholders are included in the scoping of issues, the assessment of impacts, the generation of mitigation and management measures and the finalisation of the ESIA Report. They also play an important role in providing local knowledge and information for the baseline to inform the impact assessment.
- **Building relationships**: Through supporting open dialogue, engagements help establish and maintain a productive relationship between the Project and stakeholders. This supports not only an effective ESIA, but also strengthens the existing relationships and build new relationships between the Proponent and stakeholders.

- **Engaging vulnerable people**: An open and inclusive approach to consultation increases the opportunity of stakeholders to provide comment on the Project and to voice their concerns. Some stakeholders, however, need special attention in such a process due to their vulnerability. Special measures are to be considered to ensure that the perspectives of vulnerable stakeholders are heard and considered.
- **Managing expectations**: It is important to ensure that the Project does not create or allow unrealistic expectations to develop amongst stakeholders about Project benefits. The engagement process serves as one of the mechanisms for understanding and then managing stakeholder and community expectations, where the latter is achieved by disseminating accurate information in an accessible way.
- **Ensuring compliance**: The process is designed to ensure compliance with both local regulatory requirements and international best practice.

Stakeholder engagement has been undertaken in accordance with National requirements and International good practices, which places an emphasis on broad engagement and disclosure of findings to stakeholders and require that a Stakeholder Engagement Plan (SEP) to be developed.

This process will help to ensure that stakeholder concerns are integrated into the assessment and are addressed - where feasible – in the Project design. To comply to IFC PS Standards, two phases of engagement should be undertaken:

- Scoping consultations with the stakeholders along the RoW and primary data collection activities.
- Public Consultation and Disclosure sessions.

In this stage, the following activities were undertaken between 20th-22nd February:

- **Consultations with the local representatives** of the districts (Gasabo), sectors (Kimihurura) cells (Rugando) and villages impacted by the Project.
- **Focus Group Discussions (FGD) and Key Informants Interviews (KIIs)** with the main stakeholders (business representatives, community leaders, local NGOs, etc.) in the Area of Influence to inform them about the Project and collect primary data for the socio-economic baseline of the ESIA.

7.2 Project Stakeholders

A stakeholder is defined as any individual or group which is potentially affected by the Project or who has an interest in the Project and its potential impacts. Different issues are likely to concern different stakeholders as such stakeholders have been grouped based on their connections to the Project.

Table 7.1 presents a summary of the stakeholder engagements conducted for the purpose of the SLIP, while a summary of the key issues raised/ comments made is presented in Table 7.2. The selection of these stakeholder engagements was based on a desktop analysis of the area affected by the Project, as well as from recommendations from Duval's local social consultant. The results of the stakeholder consultations have been incorporated into the baseline information as well as taken into consideration in the ESMP (Chapter 0 of this SLIP Report). All interviewed stakeholders supported the Project.

Table 7.1 Details of SLIP Stakeholder Engagement

Stakeholder	Attendance to Meeting	Mode of Engagement	Engagement Date	Venue
Local Authorities from Kimihurura Sector and Rugando Cell	• ERM – Gideon Owaga • Groupe Duval – Franck TOH • Social Subcontractor – Chantal Umulinga • Executive Secretaries for Kimihurura & Rugando Cell • Kimihurura Head Teacher, • Kimihurura Social Affairs Officer & Team Leader • Kimihurura Police Commander)	Meeting	21 February 2023 – 13.10	Office of the Executive Secretary (Kimihurura)
Boolifa Property Owner	• ERM – Gideon Owaga • Groupe Duval – Franck TOH • Social Subcontractor – Chantal Umulinga • Boolifa Property Owner	Meeting	21 February 2023 – 14:00	Boolifa Offices
Lemigo Hotel Management	• ERM – Gideon Owaga • Groupe Duval – Franck TOH • Social Subcontractor – Chantal Umulinga • Lemigo Hotel Management, CEO, Operations Manager & Board Member	Meeting	22 February 2023 – 11:08	Lemigo Hotel
Rwanda Development Board (RDB)	• ERM – Gideon Owaga • Groupe Duval – Franck TOH • Social Subcontractor – Chantal Umulinga • RDB Analyst & Consultant	Meeting	22 February 2023 – 11:05	KG 220 St, Kigali, Gishushu Kigali Rwanda
Rwanda Environment Management Authority (REMA)	• ERM – Gideon Owaga • Groupe Duval – Franck TOH • Social Subcontractor – Chantal Umulinga • REMA Project Managers & Social Coordinator	Meeting	22 February 2023 – 13:10	KG 220 St, Kigali, Gishushu Kigali Rwanda
Kigali City officials	• Worship Mayor from the City of Kigali • Gasabo District Mayor	Email (At the moment this document was issued, no answer had been received from the Kigali City officials).	20th February 2023	

7.3 Outstanding Feedback and Primary Demographic Social Baseline

Despite receiving the invitation letter, the Kigali City Officials did not act upon it and the meetings scheduled for Monday 20th February 2023 could not take place. An email was sent to the leadership Madam Solange and the His Excellency the Mayor, along with the Project Documentation (Background Information Document and Sign in Registration Sheet) to give their written feedback. No feedback had been given by the time of writing this report.

Due to the delays in organizing the meetings by the Kigali City Officials, it was also not possible to collect primary demographic baseline information (e.g., Up to date population statics) from the area Chief/local authorities of Kimihurura through Key Informant Interviews (KIIs).

Figure 7.1 Photographs of Consultation Meetings

Group photo session after meeting with the Local Authorities for Kimihurura & Rugando cell

Photo after a consultation Meeting with the Lemigo Hotel Management

Round table consultation Meeting with Rwanda Environment Management Authority (REMA)

Round table consultation Meeting with the Rwanda Development Bank Analyst (Dominique Savio) and Consultant (Vinod Naida)

As indicated in Table 7.1 stakeholder engagement meetings were held during the SLIP process of the Project. The key questions and concerns raised by stakeholders are outlined in Table 7.2. The Background Information Document (BID), detailed minutes of the stakeholder engagement meetings conducted during the SLIP process, attendance registers, are all presented in Appendix A, Appendix B and Appendix C.

Table 7.2 Outcomes of ESIA Process Stakeholder Engagements

Main Themes brought up by Stakeholders	Key stakeholders' issues/ comments
On Stakeholder Engagement	■ Set up monthly meetings with local authorities from Kimihurura and Rugando Cell during construction. ■ Set up a Grievance Committee (GC) composed of members from the Executive Secretary Sector (ESS), traffic police, school representatives, Social Affairs Sector (SAS), village leaders and other security organs. ■ Recommendation to utilise the National Community Work (NCW) meetings held monthly in the country to sensitize the community on the upcoming project and discuss any issues of concern. ■ Regular updates to Project progress to RDB.
On Positive impacts/ opportunities	■ Employment and increased revenue generation. ■ Increased property values. ■ Both nearby hotels suggested to accommodate workers during construction.
Management of Negative Impacts	■ Management of dust, noise and traffic during the construction ■ Logistical issues ■ Mitigation measures proposed: - Put proper netting around the site to reduce dust; - Heavy construction to be done during day time; - Use multiple entrances to avoid traffic / logistical issues; and - Develop proper waste management system as increased waste is anticipated during construction and operation
On traffic	■ The Project AoI is a meeting hub e.g., the Convention Centre is located less than 1km away, there is also a school less than one kilometre from the Project Site and a busy pedestrian footpath near the Project site. ■ Recommendation to develop a Traffic Management Plan in collaboration with police department at Kimihurura to manage traffic increase during transportation of construction material. ■ Consider having multiple entry and exit points to reduce traffic conflicts and congestion.

Source: ERM, 2023

7.4 Public Participation & Grievance Mechanism

Public participation is a legal requirement in the ESIA process; the key principle of consultation is to ensure that the views of stakeholders are considered and reported throughout the ESIA process. The objective is to ensure that the assessment is robust, transparent and has considered the full range of issues or perceptions, and to an appropriate level of detail. Stakeholder participation will assist in identifying environmental and social consequences of the proposed Project and ensure that these are evaluated in the process.

A grievance is considered to be any complaint or comment (including questions/ suggestions) about the way a project is being implemented.

During the Project lifecycle, there may be several instances of conflicts, allegations and dissatisfaction due to Project-related activities raised by stakeholders. Grievance management is an important component of any project's implementation and is driven by well-defined Grievance Mechanism (GM) procedure.

Duval Group has already a GM in place that is presented in the existing Stakeholder Engagement Framework (SEF). Further information of the GM will be included in the SEP to be prepared as part of the ESIA phase.

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1 Introduction

The Environmental and Social Management Plan (ESMP) aims to provide the framework, standards, and controls required to mitigate, manage, and monitor the environmental and social impacts derived from the Project activities. The ESMP was designed in a conceptual manner, guided by best practice principles requiring that every reasonable effort is made to reduce, and preferably to prevent, adverse impacts while enhancing the Project benefits.

It is noteworthy that a gap assessment of the ESMP of the previously approved 2019 Environmental Impact Assessment Report of this Project (the 2019 ESMP) was conducted to address any new Project premises and associated impacts not contemplated before. Some of these gaps include the incorporation of more specific mitigation and management measures; sensible, readily measurable quantitative and qualitative indicators and monitoring frequency for the proposed measures; and additional specific management plans based on the identified impacts. This current 2023 ESMP section is, therefore, including relevant information from the previously approved EIA, filling in the identified gaps, and replacing the 2019 ESMP.

8.2 Overview & Scope

The ESMP is intended to cover the Project activities during the construction and operation phases described in Section 2. It will be subject to thorough reviews prior to the commencement of activities to ensure completeness. Changes should be introduced in this ESMP also as work progresses to ensure it is adapted to the current on-site conditions and Project needs. Therefore, this ESMP should be considered as an initial proposal, but the Project proponent DGL and its contractors (and subcontractors if any) may define additional plans or reorganize the ones proposed in this document to align the overall approach to a proper standard Environmental Management System (ESMS) and still fulfil the commitments established in this ESMP.

8.3 Objectives

The ESMP is essential for successfully implementing the Project's environmental and social performance throughout the Project lifecycle. Having this ESMP in place ensures a systematic approach to bringing environmental and social considerations into decision-making and day-to-day operations. It establishes a framework for tracking, evaluating, and communicating environmental and social performance and helps ensure that environmental risks and liabilities are identified, minimised, and managed. It is important to approach the ESMP as a living document, which will continue to develop during the construction and operation phase to enable continuous improvement of the Project's environmental and social performance.

The core objectives of the ESMP are as follows:

- Ensuring compliance with regulatory authority stipulations and guidelines, which include local, national, and international.
- Ensuring that there is sufficient allocation of resources on the Project budget so that the scale of the ESMP related activities is consistent with the significance of Project impacts.
- Verifying environmental and social performance through information on impacts as they occur.
- Periodically updating the ESMP as the Project activities progress.
- Responding to unforeseen events.
- Providing feedback for continual improvement in environmental performance.

8.4 General Requirements

This ESMP has been developed in line with applicable national and local laws and regulations within Rwanda, as well as with international requirements such as the World Bank Group General EHS Guidelines (2007) and the following IFC's Performance Standards (PS):

- PS 1 – Assessment and management of environmental and social risks and impacts.
- PS 2 – Labour and working conditions.
- PS 3 – Resource efficiency and pollution prevention.
- PS 4 – Community health, safety, and security.

8.5 Groupe Duval Corporate Sustainability System, Policies & Processes

In addition to the general requirements, the Project will comply with DGL's Environmental and Social Policy (E&S), Groupe Duval Code of Conduct and Groupe Duval's Ethics and Compliance Charter and other corporate sustainability systems, policies, and processes.

The Groupe Duval Grievance Procedure will be initially used, but DGL will put in place a specific project procedure to be managed in country.

The Project will also comply with the Good International Industry Practices followed by DGL during the design, construction, and operation phases.

8.5.1 Human Resources

The DUVAL Group's objective is to strive for parity between men and women in all operations.

For this project, DUVAL Group is committed to recruit and train a maximum number of national employees. 100% of the mall's operational staff will be local (highly skilled, low-skilled and unskilled personnel), underlining our commitment to employ candidates locally for a majority of the positions to be deployed on this project.

All HR benefits that are provided by the Labor Laws of the Republic of Rwanda will be granted to all employees. Additionally, Groupe Duval HR Policies will apply.

In particular, all employees and their family will be 100% medically covered. Some other additional HR benefits may be granted to some employees depending on their status.

In regard to training, a thorough and customized training plan will be designed and implemented in due time, in order to insure that employees are efficiently skilled to operate, use, improve and maintain the latest equipment's available in the mall and office spaces.

8.5.2 Supply Chain

Duval Group's CSR engagements aim to contract a maximum of local suppliers and contractors if they comply with Duval's E&S policy and quality requirements.

8.6 Management Plan Process

The ESMP process follows a methodical and ongoing approach to manage environmental and social impacts and risks in four steps (plan, do, check, act), as presented below:

Box 1. Plan-Do-Check-Act Process

Plan

- Define policies and objectives for environmental and social performance;
- Identify environmental and social impacts and risks of the operations;
- Develop mitigations and operational controls to address impacts and risks; and
- Develop a management plan to achieve these objectives.

Do

- Implement management plan; and
- Implement mitigations and operational controls.

Check

- Monitor performance against policies and objectives; and
- Check that mitigations and operational controls are effective.

Act

- Make corrections to plans, mitigations, or controls in response to performance monitoring or out of control events.

8.7 Planning

8.7.1 Impact Identification & Assessment

As part of the planning process, environmental and social impacts have been identified and assessed for both the construction and operation phases.

For the identification of impacts, a matrix relating the Project impacting activities and the environmental and social aspects has been prepared (Appendix D). When no interaction was reasonably expected or when the interaction was reasonably possible but resulting in negligible effects, the aspect was scoped out of the further impact significance assessment. Interactions reasonably possible resulting in a potential significant negative effect were scoped in. Positive interactions were also scoped in.

The significance of impacts was assessed following a post-mitigation criterion (i.e., after including the mitigation and management measures of this ESMP in Table 8.6) and by applying a simplified version of the ERM Impact Assessment Standard (2012). Based on this standard, the significance was assessed with the following attributes:

- **Impact Nature:** *Positive* (impacts that positively alter one or more environmental or social aspect within the Project's area of influence) or *Adverse* (impacts that adversely alter one or more environmental or social aspect within the Project's area of influence).
- **Impact Scale:** The estimated size of the impact (e.g., the size of the area damaged or impacted, the fraction of a resource that is lost or affected).
- **Impact Frequency:** A measure of the constancy or periodicity of the impact.
- **Impact Magnitude:** Describes the degree of change that the impact is likely to impart upon the receptor. The Magnitude is determined as the product of the interaction of Scale and Frequency (Table 8.1). Regarding positive impacts, it is considered sufficient to indicate that the Project will result in a positive impact, without characterizing the exact degree of positive change likely to occur.
- **Sensitivity of the Receptor:** There are a range of factors to be considered when defining the sensitivity of the receptor, including legal protection, government policy, stakeholder views and economic value, among others.
- **Impact Significance:** Determined as the product of the interaction of Magnitude and Sensitivity of the Receptor (Table 8.2). A brief description of the different Significance categories is presented below:

- *Negligible*: The receptor will essentially not be affected in any perceptible way or is indistinguishable from natural background variations.
- *Minor*: The receptor will experience a noticeable effect, but the impact magnitude is sufficiently small (with or without mitigation), and/or the receptor is of low sensitivity. In either case, the magnitude should be well within applicable standards.
- *Moderate*: The impact is within applicable standards (law and/or regulation) but falls somewhere in the range of a threshold below which the impact is minor, up to a level that might be just short of breaching a legal limit. The emphasis for moderate impacts is therefore on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that moderate impacts shall be reduced to minor, but that are being managed effectively and efficiently.
- *Major*: Relates to one of two situations: either it promotes changes in environmental aspects above standards established by law, or it changes a social aspect on a scale not observed in the current situation in the Project's area of influence (for which there are no legal standards).
- *Critical*: Significantly exceeds an accepted limit or standard and presents material risk to receptors.

Table 8.1 Magnitude Matrix

MAGNITUDE

		FREQUENCY			
SCALE		Rare	Occasional	Frequent	Constant
	Minimum	Negligible	Small	Small	Medium
	Low	Small	Small	Medium	Large
	Medium	Small	Medium	Large	Large
	High	Medium	Large	Large	Large

Source: Adapted from ERM Impact Assessment Standard (2012).

Table 8.2 Significance Matrix

SIGNIFICANCE

		SENSITIVITY OF RECEPTOR		
MAGNITUDE		Low	Medium	High
	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Critical

Source: Adapted from ERM Impact Assessment Standard (2012).

8.7.2 Summary of Residual Impacts

A summary of residual impacts of the Project after applying the mitigation and management measures is presented in Table 8.3.

A brief impact assessment description is also included in the ESMP table (Table 8.6).

8.7.3 Environmental & Social Commitments

Mitigation and management measures have been identified to address environmental and social impacts associated with the Project impacting activities. The Project commits to implement these to ensure or improve environmental and social performance.

The types of commitments are summarised in the following box, with the specific actions intended to address a particular environmental or social issue.

Box 2 - Type of Environmental and Social Commitments

Avoidance
During the planning phases, potential impacts to sensitive resources are identified. Where feasible, locations or processes can be changed during the planning or design phases to avoid impact to these areas.

Minimisation
Minimisation involves measures to reduce proposed impacts to a resource.

Management
Management commitments include development of plans and procedures for ensuring that measures to protect the environment actually take place and are of the desired standard of practice. Training is another commitment in this category.

Monitoring
Commitments to monitoring are primarily to ensure the above measures are working properly and delivering the desired (and anticipated) results.

Additionally
Additionally involves actions and contributions which are designed to provide a positive benefit. Examples include assisting with additional domestic water supply to surrounding towns or villages.

Table 8.3 Residual Impacts of the Project

Phase	Impacts	Nature	Scale	Frequency	Magnitude	Sensitivity of the Receptor	Significance (Residual)
Construction	Impact on local air quality	Adverse	Minimum	Frequent	Small	Medium	Minor
	Impact on local noise and vibrations	Adverse	Low	Frequent	Medium	Medium	Moderate
	Impact on local land and soil and water quality	Adverse	Minimum	Constant	Medium	Low	Minor
	Impact on local biodiversity	Adverse	Minimum	Frequent	Small	Low	Negligible
	Impact on employment, procurement, and the economy	Positive	NA	NA	NA	NA	Positive
	Impact on traffic	Adverse	Low	Frequent	Medium	Medium	Moderate
	Impact on disease transmission	Adverse	Low	Rare	Negligible	Medium	Minor
	Impact on community health, safety, and security risks	Adverse	Low	Rare	Negligible	Medium	Minor
	Impact on workers' rights	Adverse	Low	Rare	Small	Medium	Minor
	Impact on occupational health and safety	Adverse	Minimum	Rare	Negligible	Medium	Negligible
	Impact on local urban infrastructure and public utilities	Adverse	Not available	Not available	Not available	Not available	Moderate
Operation	Impact on local air quality	Adverse	Minimum	Frequent	Small	Medium	Minor
	Impact on local noise and vibrations	Adverse	Minimum	Frequent	Small	Medium	Minor
	Impact on local land and soil and water quality	Adverse	Minimum	Constant	Medium	Low	Minor
	Impact on climate change resilience	Adverse	Minimum	Frequent	Small	Medium	Minor
	Impact on local biodiversity	Adverse	Minimum	Frequent	Small	Low	Negligible
	Impact on employment, procurement, and the economy	Positive	NA	NA	NA	NA	Positive
	Impact on traffic	Adverse	Low	Frequent	Medium	Medium	Moderate
	Impact on labour and working conditions (including OHS)	Adverse	Low	Rate	Small	Low	Negligible
	Impact on community health, safety and security risks	Adverse	Low	Rate	Small	Low to Medium	Negligible

Source: ERM, 2023.

8.7.4 Supporting Environmental & Social Management Plans

The following supporting management plans will set out how the mitigation measures will be put into practice, monitored, and upheld. Together with this ESMP, these specific plans will form the overall **Environmental and Social Management System (ESMS)** for the Project.

Environmental:

- Construction Management Plan (CMP)
- Dust Management Plan (DMP)
- Noise and Vibration Management Plan (NMP)
- Waste Management Plan (WMP)
- Hazardous Material Management Plan (HMMP)
- Stormwater Management Plan (STWMP)
- Traffic Management Plan (TMP) – *for environmental and social impacts.*
- Emergency Prevention and Response Plan (EPRP), including:
    - Spill Prevention and Response Pan (SPRP)
    - Fire Safety Management Plan (FSMP)

Social:

- Stakeholder Engagement Plan (SEP) includes Community Grievance Mechanism (CGM) and Workers Grievance Mechanism (WGM)
- Labour and Working Conditions Management Plan (LWCMP)
- Occupational Health and Safety Management Plan (OHSMP)
- Procurement and Supply Management Plan (PSMP)
- Community Health, Safety and Security Management Plan (CHSSMP)
- Traffic Management Plan (TMP) – *for environmental and social impacts.*

The plans have been listed in Table 8.4, alongside with how they relate to Project activities and impacts, as well as the identified responsible party for the development and implementation of each specific plan.

Table 8.4 Environmental and Social Management Plans

Plan Name	Includes	Responsible Party for Development and Implementation	
		Construction Phase*	Operation Phase
Construction Environmental and Social Management Plan (C-ESMP)	Plan outlines how the construction of the Project will be executed, controlled, and monitored. It will comply with the Project's ESMP.	Constructor's Project Manager	NA
Dust Management Plan (DMP)	Plan outlines potential sources of dust emissions, potential impacts, and mitigation and management measures, including monitoring procedures, during the Project's construction.	Constructor's Project Manager	NA

Plan Name	Includes	Responsible Party for Development and Implementation	
		Construction Phase*	Operation Phase
Noise and Vibration Management Plan (NMP)	Plan outlines potential sources of noise and vibration, potential impacts, and mitigation and management measures, including monitoring procedures during Project lifetime.	Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Waste Management Plan (WMP)	Project-related waste management procedures for hazardous and non-hazardous wastes, as well as solid and liquid wastes during Project lifetime.	Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Hazardous Material Management Plan (HMMP)	Plan for the management of the hazardous substances used during Project lifetime.	Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Stormwater Management Plan (STWMP)	Plan for the management of the rainfall and stormwater during Project lifetime, preventing any potential pollutants from entering groundwater and existing drainage channels, and that avoids flooding within the Project site and surroundings.	Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Traffic Management Plan (TMP)	Plan for the management of Project vehicles and traffic during the Project lifetime. It includes controls over prescribed routes, driver training, vehicle maintenance, speed restrictions, appropriate road safety signage, and vehicle loading and maintenance measures and vetting procedures. It will also include specification for community awareness and safety programmes.	Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Emergency Preparedness and Response Plan (EPRP)	Administration (policy, purpose, distribution, definitions, etc.), organisation of emergency areas (command centres, medical stations, etc.), roles and responsibilities, communication systems, emergency response procedures, emergency resources, training and updating, checklists (role and action list and equipment checklist) and business continuity and contingency. The Plan will also include specifications for emergency communications as well as on-going public and community communication and disclosure. This plan will comprise the Spill Prevention and Response Plan (SPRP) and the Fire Safety Management Plan (FSMP).	Constructor's Project Manager	Groupe Duval E&S Real Estate Manager

Plan Name	Includes	Responsible Party for Development and Implementation	
		Construction Phase*	Operation Phase
Stakeholder Engagement Plan (SEP)	Presents the engagement approach and identifies stakeholders and the mechanisms through which stakeholders have been engaged during Project lifetime. Defines specific Community Grievance Mechanism (CGM) and Workers Grievance Mechanism (WGM).	Groupe Duval E&S Real Estate Manager	Groupe Duval E&S Real Estate Manager
Labour and Working Conditions Management Plan (LWCMP)	Includes a range of mitigation measures designed to avoid or reduce undesired labour and worker condition impacts during construction and operation. Establishes a basis for use by Contractor to develop their own plans. LWCMP also covers Local Content Management. Refers to and is aligned with Workers Code of Conduct, WGM and Project Human Resources Policies and Procedures.	Groupe Duval E&S Real Estate Manager + Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Occupational Health and Safety Management Plan (OHSMP)	Includes all project-related activities during the construction and operational phases, including contractors and subcontractor's work. OHSMP works to minimize hazards to workers resulting from work-related activities and guarantees the work safety of all Project personnel, including contractors and subcontractors operating at the site.	Groupe Duval E&S Real Estate Manager + Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Procurement and Supply Management Plan (PSMP)	Includes measures to maximise procurement from local suppliers and economic benefit for local businesses during Project lifetime. Ensures that the Project environmental and social standards and commitments are adequately communicated by the Contractor to its Sub-contractors and suppliers and included in their contractual arrangements.	Groupe Duval E&S Real Estate Manager + Constructor's Project Manager	Groupe Duval E&S Real Estate Manager
Community Health, Safety and Security Management Plan (CHSSMP)	Focuses on the potential health and safety impacts that may arise from the interaction between the Project and the community and corresponding mitigation measures during Project lifetime. CHSSMP also covers Communicable Disease Management.	Groupe Duval E&S Real Estate Manager	Groupe Duval E&S Real Estate Manager

*Note: * Groupe Duval is responsible for the reviewing, auditing, and monitoring of the development and implementation of the construction phase plans.*

Source: ERM, 2023.

8.8 Implementation

8.8.1 Contractual Requirement

As a contractual requirement, DGL's contractors (and subcontractors if any) will be required to demonstrate compliance of their activities against the ESMP. This includes providing resources to ensure compliance of next tier contractors and a process for emergency stop-work orders in response to monitoring triggers. Contractors will be responsible for performing all work in compliance with:

- Relevant national and international EHS legislation and regulations, and with other requirements to which the Project subscribes.
- Project ESMP, and related management plans for specific aspects.
- Contractual technical and quality specifications.

The Project's ESMP and related documentation will be the main contractual documentation to which DGL's contractors (and subcontractors if any) will be bound. They will be required to develop their own management plans which show how they will comply with these environmental and social requirements.

In this way, the ESMP will be implemented and controlled using both DGL and the contractor management systems. The contractor management systems will therefore:

- Provide the framework that regulates their activities.
- Define responsibilities and reporting relationships for expediting mitigation and monitoring actions detailed in the ESMP.
- Specify the mechanisms for inspecting and auditing to ensure that the agreed actions are implemented.

Contractors will be required to self-monitor against their plan and compliance with the plan will be routinely monitored by DGL directly or by third parties. Contractors will be required to submit regular reports of monitoring activities and the Project will review these on a regular basis (monthly during construction and annual during operations).

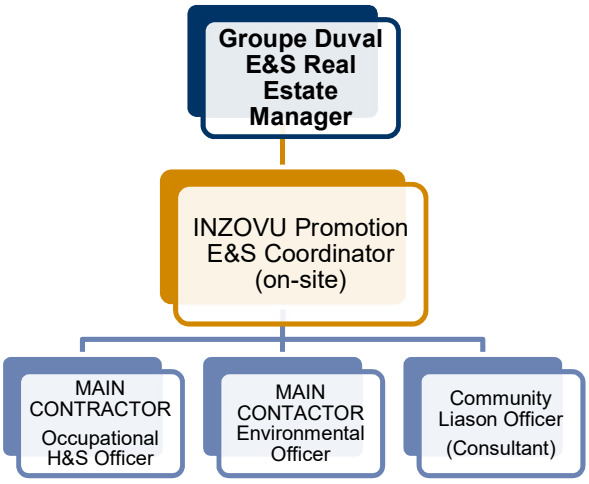
Contractors will be reviewed and approved by DGL. An external audit and assurance process will be conducted of the contractors' EHS documentation on a biannual basis during construction and annual basis during operation. The results of these audits will be disclosed at completion of the process.

8.8.2 Roles & Responsibilities

DGL is the investor and will operate Inzovu Mall in the operation phase. As the Project proponent (DGL) is ultimately responsible for the management and supervision of all Project activities and will have principal responsibility for the implementation of this ESMP and its mitigation and management measures. During the construction phase, DGL will delegate responsibility to Inzovu Promotion – the Promotor of the Project. DGL (via Inzovu Promotion or directly) is committed to providing resources and establishing the systems and components essential to the implementation and control of the ESMP during the construction and operation phase. These include appropriate human resources and specialised skills, training programmes, communication procedures, documentation control and a procedure for the management of change. Likewise, DGL will support the process and have an EHS department with competent staff on the basis of appropriate education, training and experience. Likewise, contractors (and subcontractors if any) will be contractually required to undertake their activities in an environmentally responsible manner, following the ESMP.

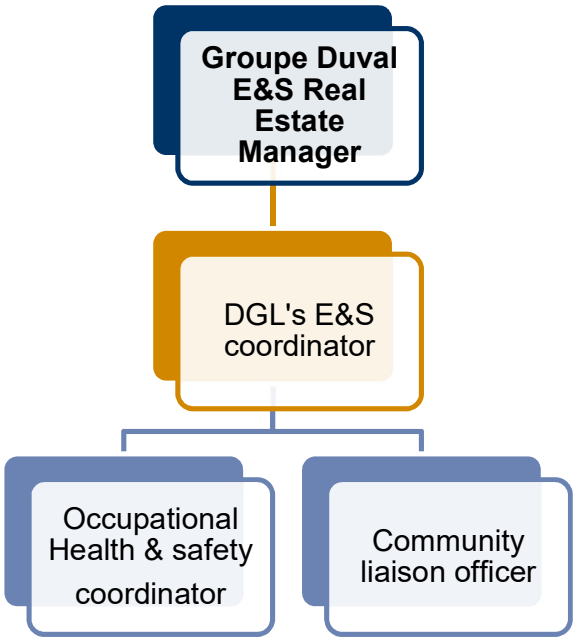
The effective implementation of the ESMP is dependent on established and clear roles, responsibilities, and reporting lines within the institutional framework of DGL and its contractors (and subcontractors if any). Figure 8.1 and Figure 8.2 include the indicative organigrams for DGL's E&S Team during the construction and operation phases. Key roles and responsibilities are outlined in Table 8.5.

Figure 8.1 DGL's Organisational Chart for the Project (Construction Phase)



Source: DGL, 2023.

Figure 8.2 DGL's Organisational Chart for the Project (Operation Phase)



Source: DGL, 2023.

Table 8.5 Roles, Responsibilities, and Reporting for the Project

Role	Responsibilities	Reporting to
Project Proponent (DGL)	■ DGL has the overall responsibility for ensuring that the construction and operation of the Project is undertaken in an environmentally sound and responsible manner, and in particular, reflects the requirements and specifications of the ESMP and recommendations from the relevant authorities. ■ Appoint or designate a suitably qualified E&S Manager to manage the implementation of the proposed Project. ■ Appoint the Project Contractor. ■ Establish and maintain regular and proactive communications with the designated/appointed E&S Manager and Coordinator. ■ Ensure that the ESMP is reviewed and updated as necessary.	Regulatory authorities, Lenders, and General Public

Groupe Duval E&S Real Estate Manager	■ Ensure that the Contractor and DGL's and Inzovu Promotion staff complies with the environmental specifications in the ESMP. ■ Oversee the general compliance of the Contractor with the ESMP and other pertinent site specifications. ■ Liaise with the Inzovu Promotion's E&S Coordinator during the construction phase and DGL's E&S coordinator in the operation phase and Contractor on environmental matters, as well as any pertinent engineering matters where these may have environmental consequences. ■ Contract and supervise the role of the community liaison officer (consultant)	DGL + Groupe Duval Afrique CSR Manager
Inzovu Promotion E&S coordinator or DGL's E&S Coordinator	■ Ensure that the ESMP is fully implemented and that appropriate actions are undertaken to address any discrepancies and non-compliances. ■ Act as site 'custodian' for the implementation, integration, and maintenance of the ESMP in accordance with the contractual requirements. ■ Ensure successful implementation of the ESMP. ■ Ensure that the Contractor, his employees and/or sub-contractors receive the appropriate environmental awareness training prior to commencing activities.	Groupe Duval E&S Real Estate Manager
Contractors	■ Ensure that the environmental specifications of the ESMP (including any revisions, additions, or amendments) are effectively implemented. This includes the on-site implementation of steps to mitigate environmental and social impacts. ■ Preserve the natural environment by limiting any destructive actions on site. ■ Ensure that suitable records are kept and that the appropriate documentation is available to the PM. ■ Take into consideration the legal rights of the individual landowners, communities, and DGL's staff. ■ Ensure quality in all work done, technical and environmental. ■ Underwrite the DGL's Environmental Policy at all times. ■ Ensure that all sub-contractors and other workers appointed by the Contractor are complying with and implementing the ESMP during the duration of their specific contracts.	DGL's Coordinator + Groupe Duval E&S Real Estate Manager
Subcontractors	■ Perform appointed services and/or provide appointed products on behalf of its Contractor. They will be contractually required to undertake their activities in an environmentally responsible manner, as described in the ESMP. ■ Ensure environmental awareness among employees so that they are fully aware of and understand the environmental specifications and the need for them.	Contractor

Source: DGL, 2023.

8.8.3 Training & Awareness

DGL will identify, plan, monitor, and record training needs for personnel whose work may have a significant adverse impact upon the environment or social conditions. DGL recognizes that it is important that employees at each relevant function and level are aware of the Project's environmental and social policy; potential impacts of their activities; and roles and responsibilities in achieving conformance with the policy and procedures. Training and awareness-raising therefore forms a key element of both EHS and the expediting of this ESMP. The Groupe Duval CSR manager for Africa, supported by the Groupe Duval HR department and corporate compliance department will support the E&S DGL team to identify training needs and plan appropriate capacity building and sensitization.

Key staff will, therefore, be appropriately trained in key areas of EHS management and operational control with core skills and competencies being validated on an on-going basis. The identification of training and awareness requirements and expediting of the identified training/awareness events will

be the responsibility of the DGL E&S team, composed by Groupe Duval E&S Real Estate Manager and DGL E&S coordinator.

Training and awareness are not a requisite only of DGL personnel (and subcontractors).

This will be achieved through a formal training process. Employee training will include awareness and competency with respect to:

- Environmental and social impacts that could potentially arise from their activities.
- Legal requirements in relation to environmental and social performance.
- Necessity of conforming to the requirements of the ESMP to avoid or reduce those impacts.
- Activity-specific training on waste management practices, documentation systems and community interactions.
- Roles and responsibilities to achieve that conformity, including those in respect of change management and emergency response.

The GD E&S Real Estate Manager is responsible for coordinating training, maintaining employee-training records, ensuring that these are monitored and reviewed on a regular basis. The GD E&S Real Estate Manager will also periodically verify that staff are performing competently through discussion and observation.

Employees responsible for performing site inspections will receive training by drawing on external resources as necessary. The GD E&S Real Estate Manager will coordinate training prior to commissioning of the facilities. Upon completion of training and once deemed competent by management, staff will be ready to train other people.

Similarly, the Project will require that each of the contractors organises training programmes for its personnel. Each contractor is responsible for site EHS awareness training for personnel working on the job sites. The contractors are also responsible for identification of any additional training requirements to maintain required competency levels.

The contractor training program will be subject to approval by DGL, and it will be audited to ensure that:

- Training programs are adequate.
- All personnel requiring training have been trained.
- Competency is being verified.

8.8.4 Communication

DGL will maintain a formal procedure for communications with the regulatory authorities and communities. The GD E&S Real Estate Manager will be responsible for communication of EHS issues to and from regulatory authorities whenever required. The GD E&S Real Estate Manager will be kept informed of such communications and pertinent information arising from such interactions will be communicated to contractors through the GD E&S Real Estate Manager.

Meetings will be held, as required, between Contractors and the appropriate regulatory agency and community representatives to review EHS performance, areas of concern and emerging issues. Dealings will be transparent, and stakeholders will have access to personnel and information to address concerns raised.

DGL will implement a grievance mechanism whereby community members can raise any issues of concern. Grievances may be verbal or written and are usually either specific claims for damages/injury or complaints or suggestions about the way that the Project is being implemented. When a grievance has been brought to the attention of the Project team it will be logged and

evaluated. The person or group with the grievance is required to present grounds for making a complaint or claiming loss so that a proper and informed evaluation can be made.

Where a complaint or claim is considered to be valid, then steps are required to be undertaken to rectify the issue or agree compensation for the loss. In all cases the decision made and the reason for the decision will be communicated to the relevant stakeholders and recorded. Where there remains disagreement on the outcome then an arbitration procedure may be required to be overseen by a third party (e.g., government official). Local community stakeholders will be informed on how to implement the grievance procedures.

8.8.5 Documentation

DGL will control EHS documentation, including management plans; associated procedures; and checklists, forms, and reports, through a formal procedure. All records will be kept on site and will be backed up at several offsite locations (including secure cloud storage facilities). Records will be kept in both hard copy and soft copy formats. And all records will be archived for the life of the project.

Furthermore, the document control procedure will describe the processes that the Project will employ for official communication of both hardcopy and electronic (through the internet) document deliverables. In addition, it will describe the requirement for electronic filing and posting and for assignment of document tracking and control numbers (including revision codes).

The GD E&S Real Estate Manager is responsible for maintaining a master list of applicable EHS documents and making sure that this list is communicated to the appropriate parties. The GD E&S Real Estate Manager is responsible for providing notice to the affected parties of changes or revisions to documents, for issuing revised copies and for checking that the information is communicated within that party's organisation appropriately.

The contractors will be required to develop a system for maintaining and controlling their own HSE documentation and describe these systems in their respective HSE plans.

8.8.6 Operational Control Procedures

Each activity for which a potentially significant environmental or social risk or impact is expected will have an operational control associated with it that specifies appropriate procedures, work instructions, best management practices, roles, responsibilities, monitoring, measurement, and record keeping for avoiding or reducing impacts. Operational controls are monitored for compliance and effectiveness on a regular basis through a monitoring and auditing procedure described in the ESMP.

Operational control procedures will be reviewed and, where appropriate, amended to include instructions for planning and minimising impacts, or to at least reference relevant documents that address impact avoidance and mitigation.

8.8.7 Managing Changes to Project Activities

Changes in the Project may occur due to unanticipated situations. Adaptive changes may also occur during the course of the project lifecycle. The Project will implement a formal procedure to manage changes in the Project that will apply to all project activities.

The objective of the procedure is to ensure that the impact of changes on the health and safety of personnel, the environment, infrastructure, and equipment are identified and assessed prior to changes being implemented.

The management of change procedure will ensure that:

- Proposed changes have a sound technical, safety, environmental, and commercial justification.
- Changes are reviewed by competent personnel and the impact of changes is reflected in documentation, including operating procedures and drawings.

- Hazards resulting from changes that alter the previously assessed conditions have been identified and assessed and the impact(s) of changes do not adversely affect the management of health, safety, or the environment.
- Changes are communicated to personnel who are provided with the necessary skills, via training, to effectively implement changes.
- The appropriate DGL person accepts the responsibility for the change.

As information regarding the uncertainties becomes available, the Project ESMP will be updated to include that information in subsequent revisions. Environmental and social, as well as engineering feasibility and cost, considerations will be considered when choosing between possible alternatives.

8.8.8 Stakeholder Engagement & Grievance Management

In addressing the different needs of stakeholders, Groupe Duval has developed a stand-alone Stakeholder Engagement Plan (SEP), which will be modified and updated as required.

Implementation will rest with the DGL Project's Director, the GD E&S Real Estate Manager and the Community Liaison Officer.

The stakeholder engagement activities will include the following:

- Community engagement – recognising and ensuring active participation of differentiated interest groups within the affected communities. Engagement frequently during pre-construction and during site preparation and construction with support of local leaders.
- Engagement with Government Authorities – this will facilitate integration between Project activities with ongoing Provincial and municipal planning and implementation. It will also allow partnerships where appropriate (e.g., HIV/AIDS prevention programmes).

Project information will be provided in a local manner appropriate for the Project phases and activities. In addition, ongoing verification and monitoring activities will be a key component of continued stakeholder engagement, ensuring reporting on compliance and performance regarding environmental and social commitments.

The Project SEP defines a generic Grievance Mechanism procedure which will need to be further developed and implemented. Labour-related grievances will be dealt with internally through a specific Workers Grievance Mechanism (WGM) for the Project workforce including contractors and subcontractor workers. DGL will manage grievances of its employees in accordance with national regulatory requirements. Community-related grievances will be dealt with internally through a specific Community Grievance Mechanism (CGM) which will be implemented by the Project to manage and address all public grievances. Stakeholders have recommended to set up a Grievance Committee (GC) composed of members from the Executive Secretary Sector (ESS), traffic police, school representatives, Social Affairs Sector (SAS), village leaders and other security organs.

8.8.9 Checking & Corrective Action

Checking includes inspections and monitoring as well as audit activities to confirm proper implementation of checking systems as well as effectiveness of mitigations. Corrective actions include response to out-of-control situations, non-compliances, and non-conformances. Actions also include those intended to improve performance.

8.8.9.1 Inspection

EHS inspections will be conducted weekly on an *ad hoc* basis and formally at least once every six months. The results of the inspection activities will be reported to DGL's management to be addressed.

8.8.9.2 Monitoring

Monitoring will be conducted to ensure compliance with regulatory requirements as well as to evaluate the effectiveness of operational controls and other measures intended to mitigate potential impacts. Monitoring parameters are included in the ESMP. In addition, lender requirements may include other forms of external monitoring as specified by the lending institution.

Monitoring methodologies or processes must be put in place to ensure the efficacy of the mitigation measures. Monitoring methodologies should be established to address the following:

- Alteration to the biological, chemical, physical, social and health characteristics of the recipient environment;
- Alterations in the interactions between project activities and environmental sensitivities, and interactions among the various sensitivities;
- To monitor the effectiveness of the mitigation measures;
- Determination of long term and residual effects; and,
- Identification of Project specific cumulative environmental effects.

The aim of the monitoring programme is to ensure that the adverse impacts are effectively mitigated during the construction and operation phases of the Project.

8.8.9.3 Auditing

Beyond the routine inspection and monitoring activities conducted, audits will be carried out internally by DGL to ensure compliance with regulatory requirements. Audits to be conducted will also cover the contractor self-reported monitoring and inspection activities. The audit shall be performed by qualified staff and the results shall be reported to DGL management to be addressed.

The audit will include a review of compliance with the requirements of this ESMP and include, at a minimum, the following:

- Completeness of EHS documentation, including planning documents and inspection records.
- Conformance with monitoring requirements.
- Efficacy of activities to address any non-conformance with monitoring requirements.
- Training activities and record keeping.

There will also be a cycle of audits into specific areas or activities of the Project. The frequency of audits will be risk based and will vary with the stage of the Project and will depend on the results of previous audits.

8.8.9.4 Corrective Action

Impacts will be identified, and associated risks addressed before an incident occurs. Investigating a 'near miss' or actual incident after it occurs can be used to obtain valuable lessons and information that can be used to prevent similar or more serious occurrences in the future.

DGL will implement a formal non-compliance and corrective action tracking procedure for investigating the causes of, and identifying corrective actions to, accidents or environmental or social non-compliances. This will ensure coordinated action between DGL and its contractors (and subcontractors if any). The GD E&S Real Estate Manager will be responsible for keeping records of corrective actions and for overseeing the modification of environmental or social protection procedures and/or training programs to avoid repetition of non-conformances and non-compliances.

8.8.9.5 Reporting

Throughout the construction period, DGL will keep the regulatory authorities informed of the Project performance with respect to EHS matters by way of written status reports and face-to-face meetings. DGL will prepare a report on environmental and social performance and submit it to Rwandan Environmental Authorities. The frequency of this reporting will be agreed upon between DGL and Rwandan Environmental Authorities.

If required, DGL will provide appropriate documentation of EHS related activities, including internal inspection records, training records, and reports to the relevant authorities. Contractors (and subcontractors if any) are also required to provide EHS performance reporting to DGL on a regular basis through weekly and monthly reports. These will be used as inputs to the above.

8.9 ESMP Table

The following ESMP Table presents the various mitigation and management measures specified for the environmental and social impacts of the Project. An impact assessment description is also included. The ESMP table also provides information on how the Project will mobilize organizational capacity and resources to implement the proposed measures by assigning responsibilities, schedules, and costs.

Table 8.6 Environmental and Social Management Plan

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
		CONSTRUCTION PHASE				
General	Contractor is required to develop and implement a Contractor's Construction Environmental and Social Management Plan (C-ESMP).	All applicable elements of the Project's ESMP should be used in drafting and finalising the contractor specific C-ESMP, which is to be used for the construction phase, and against which the E&S performance of the contractor will be monitored.		A comprehensive and appropriate C-ESMP in place	Once – off (prior to commencement of construction)	No additional cost
Impact on local air quality	**Project Activities:** Earthworks and vehicle movement will lead to an increase of particulate matter (dust). In addition, construction vehicles, equipment, machinery, and a power back-up generator, are expected to cause CO_2, NO_2, SO_2 and VOC emissions from their diesel/petrol engines. Most of construction activities will be carried out during daytime, some of them will be at night. Particular attention will be paid to nuisance of night work and specific reduction and prevention measures will be requested from the contractor. **Impact Nature:** *Adverse*. **Impact Scale:** *Minimum*. This impact will be localized within the Project site and along paved access/delivery routes. The effects of gaseous and dust emissions will cease shortly after construction activities. **Impact Frequency:** *Frequent*. This impact will be manifested when vehicles, equipment, machinery, and the power back-up generator, are being operated throughout the construction phase. **Impact Magnitude:** Small **Sensitivity of the Receptors:** *Medium*. The Area of Influence is located in an urban zone of Kigali City, planned for commercial purposes. The Project site is surrounded by commercial, governmental, low-rise residential buildings, and paved roads. Local air quality is already influenced by pollutants coming from man-made activities (particularly particulate matter). **Impact Significance:** Minor	• Use of modern, lower emissions vehicles as much as practicable. • Regular inspection and maintenance of construction vehicles, equipment, machinery, and power back-up generator. Shutting down or avoiding idling when not in use, unless impractical for health and safety reasons. • Ensure that the power back-up generator uses best available technology and is regularly maintained as per the manufacturer's instructions. • Although the construction phase is not expected to result in significant greenhouse gases (GHG) emissions, efficiency related measures will be put in place wherever possible. Some measures, apart from the abovementioned, include the local procurement of goods and materials wherever possible, contracting vehicles in good condition with inspection certificates, use of appropriate technology with minimal GHG emissions, prioritization on the use of fuels with lower GHG emissions, implementation of a Waste Management Plan (WMP), and no use of outlawed or banned GHG compounds or Ozone depleting substances. • Any fire outbreak should be managed within a reasonable time in line with the Fire Safety Management Plan (FSMP) to prevent increasing emissions. **Dust Management Plan (DMP)** • Regular humidification of bare soil and use of fencing around the Project plot. • Covering of stockpiles and truck hoppers. • Soil compaction of completed earthworks. • Placing vegetative/ground cover should occur as soon as possible where green areas are planned. • Visual inspections within the Project site and immediate surroundings for dust-related issues. • Develop and implement an appropriate Traffic Management Plan (TMP), establishing vehicle speed limits, reducing the number of trips as practically possible, establishing the avoidance or minimization of Project traffic routing through residential areas as far as reasonably possible. • Air quality monitoring for particulate matter ($PM_{2.5}$ and PM_{10}). • Include dust complaints as part of the grievance procedures.	Contractor	An effective DMP in place	Periodical	Included in overall construction costs
				No recorded dust-related incidents or grievances by surrounding land users	Daily	
				Records of audits/visual inspections	Regular	
				Air quality monitoring records ($PM_{2.5}$ and PM_{10}) close to sensitive receptors not exceeding the maximum permitted limits (Rwandan and IFC guidelines)	Two times during earthworks and then biannually for the rest of the construction period	

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
Impact on local noise and vibration	**Project Activities:** Construction vehicles, equipment, machinery, and the power generator will be the main sources of noise and vibration. Most of construction activities will be carried out during daytime, some of them will be at night. Particular attention will be paid to nuisance of night work and specific reduction and prevention measures will be requested from the contractor. **Impact Nature:** *Adverse*. **Impact Scale:** *Low*. This impact will be mostly localized within the Project site, and lower at the immediate surroundings. The effects of noise and vibrations will cease shortly after construction activities. **Impact Frequency:** *Frequent*. This impact will be manifested during the operation of vehicles, equipment, machinery, and power back-up generator throughout the construction phase. **Impact Magnitude:** Medium **Sensitivity of the Receptors:** *Medium*. The Area of Influence is located in an urban zone of Kigali City, planned for commercial purposes. The Project site is surrounded by commercial, governmental, low-rise residential buildings, and paved roads. Local noise and vibration levels are already influenced by man-made activities in the area (particularly traffic in the main road KN5). **Impact Significance:** Moderate	**Noise and Vibration Management Plan (NVMP)** • Ensure that the power back-up generator uses best available technology with lower sound power levels and/or fitted with silencers and is regularly maintained as per the manufacturer's instructions. • Locate the power back-up generator as far as possible away from human receptors. • Installation of silencers, mufflers, or acoustic enclosures on machinery and equipment, where applicable. • Regular inspection and maintenance of construction vehicles, equipment, machinery, and power back-up generator. Shutting down or avoiding idling of Project vehicles, equipment, and machinery, when not in use, unless impractical for health and safety reasons. • Limiting hours of heavy construction activities to daytime only. Periods of respite should be provided in the case of unavoidable exposure to high noise level events. These respite periods should be negotiated with the affected receptors. • Develop and implement an appropriate Traffic Management Plan (TMP). • Noise monitoring. • Develop and implement a grievance procedure to manage any noise and vibration complaint.	Contractor	An effective NVMP in place	Periodical	Included in overall construction costs
				No recorded noise-related incidents or grievances by surrounding land users	Daily	
				Records of audits/visual inspections	Regular	
				Noise monitoring records close to sensitive receptors not exceeding the maximum permitted limits (Rwandan and IFC guidelines)	Quarterly during construction	
Impact on local land and soil and water quality	**Project Activities:** Construction activities will generate solid and liquid wastes (hazardous and non-hazardous) that may enter in contact with local soil and water (surface waters, through existing stormwater drainage channels, and groundwater) if unmanaged. On the other hand, earthworks/excavations and building works may influence run-off particularly during heavy rain. Earthworks/excavations are planned to be carried out during the dry season. **Impact Nature:** *Adverse*. **Impact Scale:** *Minimum*. This impact will be localized within the Project site.	**Waste Management Plan (WMP)** • Develop and implement a Waste Management Plan (WMP) for solid and liquid wastes according to the waste management hierarchy, following the principles of waste minimization at source, segregation for reuse, recycling, and safe disposal of waste (as a last resort) through a government-approved waste contractor. Measures stipulated in this plan will include: – Using waste minimization techniques. – Identifying all sources of waste. – Allocating responsibilities for waste management, ensuring wastes are handled by personnel licensed/trained to do so, especially for hazardous waste. – Installing suitable facilities for the collection, segregation, and safe disposal of waste, ensuring that wastes are not blown off site by wind contributing to wind-blown litter within the Project site and its surroundings.	Contractor	Effective WMP, HMMP, and STWMP in place	Periodical	Included in overall construction costs
				No recorded waste or stormwater-related incidents or grievances by surrounding land users	Daily	

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	Impact Frequency: *Constant*. This impact will be manifested constantly throughout the construction phase due to daily waste generation. Stormwater-related impacts will depend on actual rain events. **Impact Magnitude:** Medium **Sensitivity of the Receptors:** *Low*. The Area of Influence is located in an urban zone of Kigali City, planned for commercial purposes. The Area of Influence is surrounded by commercial, governmental, low-rise residential buildings, paved roads, and concrete stormwater drainage network channels. Currently, the Project plot presents levelled altered soils after the decommissioning/demotion of previously existing buildings. Soil fertility is not a value or concern. No river or stream is located within the Project plot or the immediate surroundings. **Impact Significance:** Minor	– Waste collection areas with clearly marked facilities such as color-coded bins (organic waste, plastics, glass, and paper) and equipment for handling the various waste types. – Wastes that cannot be reused or recycled should be collected by approved waste contractors and transferred to an appropriate waste management facility for treatment and ultimate disposal (RURA-licensed). – Construction debris will be separated at source (concrete and cement debris) to simplify its disposal. It shall be disposed at the district designated dump site. – Any electrical electronic waste should be managed through an appropriate RURA waste contractor, certified to handle such wastes. – The use, storage, transport, and disposal of hazardous materials will be carried out in accordance with a Hazardous Material Management Plan (HMMP) complying with all applicable Rwandan regulations and Material Safety Data Sheets (MSDS). Any hazardous waste to be disposed of should be documented beforehand, treated as per any MSDS requirements, and transported and disposed of in consultation with the applicable local authorities and via RURA-approved hazardous waste handlers. – Spoil/excavations should be visually assessed to determine any contamination. If contaminated, it should be handled as a hazardous waste and disposed of under supervision and into controlled dumping areas. – Sewage will be managed by the installation of a portable septic tank on site, removed from the site upon completion. – Zero raw wastewater will be released to the environment, and if treated and discharged into the environment, it will meet the requirements of the effluent discharge permit, complying with Rwandan and IFC discharge standards prior to discharge. The quality and quantity will be monitored. – Visual inspections within the Project site and immediate surroundings for waste-related issues. **Stormwater Management Plan (STWMP)** • Develop and implement a Stormwater Management Plan (STWMP) that prevents any potential pollutant from entering groundwater and existing drainage channels,		Records of audits/visual inspections	Regular	
				Bins per type of waste placed at the Project site	Throughout the Project lifecycle	

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
		and that avoids flooding within the Project site and surroundings. Some of the measures will include: – All construction areas and associated facilities should be maintained in a good and tidy condition. – Wastes should be managed following the Waste Management Plan (WMP), ensuring that they cannot become entrained in surface runoff during periods of heavy rain. – Covering of stockpiles and truck hoppers. Where practical, exposed surfaces and friable materials should be covered/sheeted. – Major servicing and maintenance of vehicles, equipment, and machinery should be done at designated workshops offsite. Minor servicing and maintenance that may be done on site will be carried out in a designated area properly constructed to prevent pollution and should as reasonably practically include cemented floors, sand bins, containment berms, and an oil/grease trap. – Visual inspections within the Project site and immediate surroundings for stormwater-related issues.		Effluent discharge monitoring records (BOD_5, Total suspended solids, faecal coliforms) complying with Rwandan and IFC guidelines	Monthly	
Impact on Employment, Procurement and the Economy	**Project Activities**: The construction phase will generate jobs for workers in the civil construction sector for both skilled and unskilled labour. i.e., architects, engineers, environmentalists, specialised experts, masons, plumbers, welders, casual labourers. A total of 500 to 600 workers are expected to be hired for the construction phase over the period of 2 years. The growth in demand for local products and services will occur as a positive impact of the construction phase due to the acquisition of products and services in the Project's immediate area of influence (local procurement and worker spending). The 2019 EIA also mentioned acquired revenues from taxes off construction material during construction.	**Construction Labour and Working Conditions Management Plan (LWCMP)** Includes the following Local Content Management measures: • Communicate job opportunities that can be filled by residents of local communities, especially the most vulnerable, promoting local development and increased income. • The Contractor will prioritise the recruitment of workers (unskilled, semi-skilled) from the local communities around the Project site where available in accordance with DGL's Environmental and Social Policy 2022 (*"Adopt, subject to compliance with the previous paragraph, a proactive approach to local content by prioritizing local, national or regional service providers and suppliers, in order to promote employment and local economic spin-offs"*) • The Contractor will adhere to Groupe Duval's Social, Societal and Environmental Responsibility Commitments – Strategic Plan 2021-2025[38] ("*The Group will pay particular attention to diversity, gender balance, equal opportunity and inclusion, as well as the well-being of its employees.*")[39] • The Contractor will notify identified representatives of the Local authorities (Gasabo District, Kimihurura Sector and Rugando Cell) of the specific jobs and the skills required for the Project, during the recruitment process. • No recruitment will take place at the entrance gates of the facility. **Construction Procurement and Supply Management Plan (PSMP)**	■ Contractor	■ Contractor recruitment plan ■ Employment records	• Preparation of Human Resources guiding documents (including recruitment guidelines) prior to construction • Employment records checked monthly	■ Internal costs

[38] Translated from French: Engagements en matière de Responsabilité Sociale, Sociétale et Environnementale – Plan Stratégique 2021-2025
[39] Translated from French: « Le Groupe sera particulièrement attentif à la diversité, à la mixité, à l'égalité des chances et à l'inclusion, ainsi qu'au bien-être de ses collaborateurs. »

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	Impact Nature: *Positive*	• The Contractor will aim at procuring locally available materials, products and services where feasible and use local suppliers and commerce where appropriate, to enhance the positive impact.				

Impact on Community Health, Safety and Security Risks	**Project Activities:**
	• Construction of Project infrastructure as well as the movement of vehicles and construction equipment through or near communities.[40]
	• The peak demand for temporary contract workforce by either the Proponent or the Construction Contractor for the duration of the construction phase.
	• Improved economic, employment and business opportunities provided by the presence of the Project over time may induce slow and long-term immigration of economic migrants and work-seekers into communities immediately surrounding the Project.
	• The storage, management and transport of any Project goods, materials, equipment, and waste (including general and hazardous waste) on any existing or new public roads or land, as well as the transport of such materials through local communities and towns.
	• The Project's use of private security forces to secure their operations, and the level of interaction between these forces with local communities during (1) routine operations (2) emergency events, (3) conflicts, strikes or demonstrations.
	
	The establishment of the Project will result in a broad range of community health, safety and security risks, and these risks cross through a range of technical expertise (i.e., occupational health and safety, air emissions, water pollution etc.). Community Health, Safety and Security is however an umbrella term, and the potential project risks may specifically include:
	• Community exposure to noise and air emissions[41];
		The Contractor should develop and implement a **Construction Community Health, Safety and Security Management Plan (CHSSMP)** in line with good industry practice, including the requirements of the IFC Performance Standard 4.
		
		CHSSP includes the following mitigation measures:
		
		<u>On GBVH</u>
		• A **Worker Code of Conduct** should be developed for all project personnel that include guidelines on worker-worker interactions, worker-community interactions and development of personal relationships with members of the local communities. As part of the Worker Code of Conduct, all project personnel should be prohibited from engaging in illegal activities including any form of gender-based violence and harassment (GBVH), the use of commercial sex workers and transactional sex. There should be a zero-tolerance for the sale, purchase or consumption of drugs and alcohol; as well as involvement in gambling and fighting. Anyone caught engaging in illegal activities will be subject to disciplinary proceedings. If workers are found to be in contravention of the Code of Conduct, which they will be required to sign at the commencement of their contract, they will face disciplinary procedures that could result in dismissal.
		• The Project can take action and respond to reports of GBVH by integrating measures into existing systems. This can be done by:
		  ○ strengthening leadership and company culture, so that GBVH risks are understood, clear and consistent messages are communicated, necessary partnerships are developed, inclusive organisational structures are developed, and adequate resources are invested, proportional to the size of the Project and workforce.
		  ○ developing and communicating policies and codes of conduct that define GBVH, set out prevention and response measures and outline behaviours that are not tolerated, with clear links to sanctions and disciplinary procedures
		  ○ strengthening recruitment and performance assessments so that they address GBVH risks
		  ○ working with contractors and suppliers to address GBVH through procurement processes, contract selection and negotiation and regular engagement along the supply chain
		  ○ improving the physical design of worksites and service delivery locations, with safety assessments to identify potential GBVH hotspots for workers, service users and community members.
		
		<u>On Security</u>
		Develop and implement **Security Management Guidelines/Standards/Plan** that will set out the process for recruitment and management of security personnel. This will include:
			Contractor	Development of a Workers' code of conduct
				
				Inclusion of community requirements in any new Health and Safety Plans.
				
				A record of community incidents, emergency events and responses.
				
				Records of inductions such as health awareness trainings
				
				Records of community grievances
				
				Security Management Plan
					Monthly	Internal costs

[40] Addressed in Traffic Impacts
[41] Addressed in Impact on local noise and vibration and Impact on local air quality

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	• Community exposure to ground and surface water pollution[42] • Community exposure to general and hazardous waste storage and transport[43] ; • Community exposure to communicable and vector-borne diseases (including STDs)[44]; • Public vehicle and pedestrian traffic on private and public roads[45]; • Community relations and conflict with private security personnel; • Community incidents related to Project emergency events; and • Gender-based violence and harassment (GBVH). Money circulation and community-workforce interactions may trigger cases of GBVH in the area. GBV includes sexual exploitation, abuse and harassment, including violence and harassment that is physical and/or psychological; and financial. GBVH can be perpetrated between workers and community members, whether the workers come from or reside in local communities, or are visiting from other areas. Interactions can take place before, during or after work, for example, at break times or on daily commutes or through company-led processes, such as community engagement exercises. GBV can be perpetrated by workers against community members, and vice versa. In addition, the establishment of the Project may result in a range of indirect or induced risks to community health, safety, and security via: • Increased pressure on existing public services and facilities related to worker use and labour influx; • The use of violence, theft and improper behaviour by local people and workforce; • Increased transactional sex and associated STDs risk;	• Conducting background checks on security personnel to ensure that they have no records of human rights abuse; • Provision of training on upholding community and employee rights and appropriate use of force; • Provisions for investigating any unlawful or abusive behaviour and appropriate disciplinary action, including potential termination of contract. Unlawful and abusive acts will be reported to the appropriate public authorities.; and • Code of conduct, monitoring of security personnel. • Implement and disseminate information on the Community Grievance Mechanism. The grievance mechanism will provide a clear process for informing stakeholders of the process for reporting complaints about security personnel and addressing any such complaints in a timely manner.				

[42] Addressed in Impact on local land and soil and water quality
[43] Addressed in Impact on local land and soil and water quality
[44] Addressed in Disease Transmission
[45] Addressed in Traffic Impacts

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	• Increased social pathologies associated with labour influx and Project workforce. **Impact Nature**: *Adverse*. **Impact Scale**: *Low*. **Impact Frequency**: *Rare*. **Impact Magnitude**: Negligible **Sensitivity of the Receptors**: *Medium*. Communities are vulnerable to health, safety, and security impacts. **Impact Significance:** Minor					
Impact on Traffic	**Project Activities:** Construction work will require the supply of construction material, disposal of debris, to be undertaken by large or small trucks which will increase traffic on the KN5 Airport Road and KG2 roundabout. Increased heavy truck traffic may result in traffic accidents. An estimate of daily amount of vehicle movements associated with the Project including heavy and light vehicles is not yet available and/or has not been provided. Some preliminary assessment of traffic was undertaken as part of the 2019 EIA which mentioned that traffic around the site is managed by a single roundabout and that the proposed access to the Project site could result in traffic accidents. **Impact Nature**: *Adverse*. **Impact Scale**: *Low* (Local). Traffic impacts will be limited to the Project AoI. Project equipment along major in-country highways will be negligible since such highways are already approved and continuously used for transportation of large volumes of goods in addition to general transport services. Given the highly urbanised nature of the AoI, a large number of people will be potentially affected. **Impact Frequency**: *Frequent*. Although, this impact will cease after the completion of the construction phase, traffic will increase frequently during the construction period. The volume and schedule of traffic needed needs to be defined to clearly determine the frequency of this impact.	**Traffic Management Plan** • The 2019 EIA indicated that a more robust traffic survey of the roads accessing the project site was required. • In consultation with the Rwanda Transport Development Agency (RTDA), develop and implement a **Traffic Management Plan** covering the routes to be used by the contractor vehicles, vehicle safety, speed limits on roads (towards the Mall entrance and exit), traffic signals, humps, traffic personnel to guide traffic during peak hours, driver and passenger behaviour, use of drugs and alcohol, hours of operation, rest periods and location of rest stops, and accident reporting and investigations. • Prepare and implement an appropriate **Community Grievance Mechanism**. The Community Grievance Mechanism should be communicated to all the local community members and neighbours around the Project site. • As much as possible, avoid transportation of Project equipment and materials through busy trading centres and towns by using by-passes as appropriate. • Regularly maintain Project vehicles and equipment as per the manufacturers' recommendations. • There should be proper traffic management during peak hours to avoid congestion and disruption. The Contractor can consider construction alternative access roads or upgrading and expanding the existing roads to minimise disruptions.	Contractor in liaison with DGL, RTDA and Rwanda police	• Incident records • Records of complaints • Traffic Management Plan Community Grievance mechanism in place, where traffic incidents are recorded and addressed	Monthly	Internal costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	Impact Magnitude: Medium **Sensitivity of the Receptors**: *Medium*. Traffic impacts will inconvenience the current road users and businesses along them. There is a busy footpath less than 1 km from the Project Site which is used by children going to school. **Impact Significance:** Moderate					
Impact on Disease transmission	**Project Activities:** The absence of adequate sanitation could contribute to an increased incidence of infectious disease, in particular, water borne diseases. Standing water created during construction activities could also serve as breeding grounds for mosquitoes, spreading malarial and dengue risk within the area. Construction activities including increased traffic may result in increased dust levels, which have the potential to exacerbate respiratory illnesses. Given the location of the proposed Area of Influence within the vicinity of the already highly urbanised City of Kigali, the low number of construction workers that will be needed, the fact that majority of the construction workers will be locally recruited hence minimising the risk of labour influx, and the fact that the Area of Influence is located within a designated commercial area where a number of other commercial projects have been already developed, with more to be developed, the risk of increased spread of communicable and sexually transmitted diseases including HIV/AIDS attributable to the Project will be negligible. **Impact Nature**: *Adverse*. **Impact Scale**: *Low*. Any increase in disease transmission will result in negative impacts to the health system. With the implementation of the mitigation measures, the increase in disease prevalence attributable to the Project will be avoided. **Impact Frequency**: *Rare*. The incidence of communicable diseases and other diseases attributable to the Project will be avoided or only occur rarely.	**Construction Community Health, Safety and Security Management Plan (CHSSMP)** • Workers should receive awareness training as part of their induction and then at least every 6 months on potential high risk communicable and vector borne diseases, symptoms, preventative measures and transmission routes as well as treatment options. This will be particularly important for diseases with which non-local workers are unfamiliar and in case of any emerging disease outbreaks. • In the event of a new disease, increased transmission or outbreak compared to the baseline, the Contractor should interact with local health care facilities and workers to ensure there is an appropriate response in place to make workers aware and to ensure proper precautionary measures are implemented. • The Contractor will adhere to DGL's Supplier Code of Ethic providing a worker code of behaviour including worker-worker interactions, worker-community interactions and development of personal relationships with members of the local communities. • Providing workers with appropriate sanitary facilities, which are appropriately designed to prevent contamination. • Developing a robust waste handling system to avoid the creation of new vector breeding grounds or attracting rodents to the area. • Implementing measures to reduce the presence of standing water onsite through environmental controls and source reduction to avoid the creation of new breeding grounds. • The workforce will be provided with access to selected treatment at health facilities at or near the Project Site as deemed necessary for this Project. The requirements for these health facilities should be based on a risk assessment considering access to existing health facilities and travel time to facilities that offer international standards of care. Access to health care should include direct employees, and sub-contractors working on site. • Pre-employment screening protocols will be put in place within the framework of equal opportunities and non-discrimination. This should include pre-employment medicals and follow up medicals as appropriate. The screening protocols should consider heath conditions related to the nature of the work undertaken, employee residential details and legal requirements. Workers should not be denied employment on the basis of the outcomes of the screening but should be provided treatment or alternative roles as appropriate. • The Project should prepare and implement a **Communicable Disease Management Plan** during the construction phase. This plan should be explained clearly to the workforce. No recruitment is permitted on the construction site. This will serve to prevent in migration of work seekers from outside the local area.	Contractor in liaison with DGL	• CHSSMP includes Communicable Disease Management and Communicable Disease awareness training • Any HIV/AIDS/Malaria/TB Policy drafted • Worker Code of Conduct refers to Communicable Disease Management • Disciplinary procedures for workers who contravene the Code of Conduct	• Plans and policies before construction Awareness training during induction and every 6 months	Internal costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	Impact Magnitude: Negligible **Sensitivity of the Receptors**: *Medium*. The receptors of increased disease transmission will be the neighbouring community of the Project site as well as Project workers. Vulnerability of receptors is dictated by the local people not having access to sexual health and family planning services, the current prevalence of disease, the health status of receptors as well as the limited access to health care. **Impact Significance:** Minor					

Impact on Workers' rights	**Project Activities**: The main contractor is not appointed yet but a total of 500 to 600 skilled and unskilled workers are estimated to be needed during construction. They should be coming mainly from Rwanda, or neighbouring countries, with a few international supervisors coming from Europe. Risks related to labour rights include human rights violations associated with unfair working conditions, including discrimination, unfair treatment, prevention of freedom of association, use of child/forced labour, poor housing conditions and poor working conditions (i.e., provision of breaks, access to sanitary facilities, working hours, terms of payment lack of contracts in place etc.).
	
	Impact Nature: *Adverse*.
	Impact Scale: *Low*. With the implementation of the management measures, the number of Project workers exposed to workers' rights violations will be low.
	Impact Frequency: *Rare*. With the implementation of the management measures, exposure of Project workers to workers' rights violations will be rare.
	Impact Magnitude: Small
	
	Sensitivity of the Receptors: *Medium*. Receptors to this impact will include those contracted or subcontracted to work on the Project. The Project workers will be highly sensitive to any inadequate labour and working conditions if this happens at the Project
		Human Resources Policy
		• The contractor will have a **Human Resources Policy** in place that adheres to the requirements of the IFC Performance Standard 2, Rwanda labour law and the ILO Labour Conventions ratified and in-force in Rwanda, to which Rwanda is a signatory. The HR policy will include a **Labour and Employment Plan**, conditions of employment and **Workers Grievance Mechanism**. These requirements will also be passed on to any sub-contractors.
		• Key aspects of the HR policy which should be included, are the following:
		  ○ Provision of clear and understandable information regarding rights under national labour and employment law, and any applicable collective agreements, including those related to hours of work, wages, overtime, compensation, etc.;
		  ○ Provision of reasonable working conditions and terms of employment;
		  ○ Provision of employment, compensation/remuneration and working conditions, including working hours, based on equal opportunity and fair treatment, avoiding discrimination on any aspects;
		  ○ Provision of adequate welfare facilities on site;
		  ○ Implementation of a grievance mechanism;
		  ○ Adoption and implementation of a **sexual harassment policy**; and
		  ○ Adoption of an open attitude towards freedom of association.
		
		• The Contractor should put in place hiring mechanisms to ensure no employee or job applicant is discriminated against on the basis of his or her gender, marital status, nationality, ethnicity, age, health status, religion or sexual orientation.
		• All workers (including those of the contractor and subcontractors) will, as part of their induction, receive training on worker rights in line with Rwandan legislation to ensure that positive benefits around understanding labour rights are enhanced. This process will be formalised within the Code of Conduct that will be provided by the contractor.
		• All workers (including those of the contractor and subcontractors) will have contracts which clearly state the terms and conditions of their employment and their legal rights. Contracts will be verbally explained to all workers where this is necessary to ensure that workers understand their rights. Contracts must be in place prior to workers commencing work.
			Contractor	Employment records and other key performance indicators (KPIs) for worker rights
				
				A record of workers' grievances (including those of third party's)
				
				Development of a Workers' Code of Conduct
				
				Ad hoc inspection of sites by District engineers shall include inspection of age of workers.
				
				• Employment records inspection
					• Monthly	Internal costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	Impact Significance: Minor - The 2019 EIA analysed the significance of Possible child labour impact as Minor - The 2019 EIA analysed the significance of Poor site working conditions as Minor - The 2019 EIA analysed the significance of Gender inequality in regard to employment as Minor	• The contractor will put in place a Workers Grievance Mechanism that will be accessible to all workers, whether permanent or temporary, or directly or indirectly employed. The WGM shall be open to all the Project workers in the event that their grievance is not adequately resolved by their direct employer. Workers will also have access to DGL's grievance management system (Group's internal whistleblowing procedure), to raise any issues with their employer. • All workers (including those of the contractor and subcontractors) will have access to training on communicable diseases and STDs and community interactions in general. This training will be developed in collaboration with local health institutions. • Surveillance and assurance that no children or forced labour is employed directly by the contractor, and to the extent possible by third parties related to the Project and primary suppliers where any such risk may exist. Recruitment of workers, +16 years old, shall be based on submission of a copy of National ID. • The risk of non-observance of labour laws (including freedom of association, health and safety, non-discrimination, regular payment of wages, working hours, overtime, rest or leave by construction contractors and/or suppliers of materials or services) can be mitigated by: o The screening of contractors and suppliers on the basis of whether they are able to comply with the Project's commitments and policies. o Monitoring and evaluation visits to contractors and suppliers to verify compliance with company policies. o Formal induction on company policies for all appointed contractors and supplier sensitisation programme • Implementation of a Workers Grievance Mechanism				
Impact on Occupational Health and Safety	**Project Activities:** • Movement of vehicles both internally and externally[46]; • Use / operation of mobile and immobile construction equipment; • Working at heights; and • Ergonomic risks related to lifting of heavy loads. **Impact Nature**: *Adverse*. **Impact Scale***: Minimum*. With the implementation of the management measures, the number of Project workers exposed to OHS risks will be very small. **Impact Frequency**: *Rare*. With the implementation of the management measures, exposure of Project workers to OHS risks will be rare. **Impact Magnitude**: Negligible **Sensitivity of the Receptors**: *Medium*. Sensitive receptors will be Project employees,	• The Contractor should develop and implement an **Occupational Health and Safety Management Plan/System** in line with good industry practice, including the requirements of the IFC Performance Standard 2, and in accordance with the Labour Code of Rwanda and the Labour law No. 66/2018. This OH&S system will need to consider hazard identification, risk assessment and control, use of Personal Protection Equipment (PPE), incident investigation and reporting, reporting and tracking of near misses, incidents etc. The management system will also include **emergency response plans**. Roles and responsibilities for the implementation of the OH&S Plan should be clearly defined. • All workers (including those of contractors and subcontractors) should, as part of their induction, receive training on health and safety guidelines (including awareness-raising of disease vectors) and should receive updated training routinely, as well as when undertaking new tasks, such as working at heights or working in confined spaces. • Daily toolbox talks will be held with the Project workers to discuss the health and safety risks associated with the tasks at hand. • A 'fitness for work' programme should be established to ensure that all employees are physically able to undertake their work without impact to their health; • An **occupational health and safety monitoring and surveillance programme** should be established; • Specific OHS training programmes should be provided for workers assigned to tasks associated with particular H&S risks;	Contractor	**Occupational Health and Safety Management Plan** **Occupational Health and Safety Monitoring and Surveillance Programme** **Emergency Response Plan** Induction and training documentation for all workers on site Specific OHS training programmes • Development of a **Workers' Code of Conduct**	• Monthly	Internal costs

[46] Traffic impacts are assessed separately

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	contractors and sub-contractors. It is expected that these workers will have a fair understanding of general construction conditions and common construction related OHS risks and how they can be minimised. The Project workers will be highly sensitive to any inadequate labour and working conditions if this happens at the Project. **Impact Significance:** Negligible	• The provision and enforcement of use of appropriate Personal Protective Equipment (PPE) based on task based hazard analysis; • Visual warning signs should be put in place, including those for the electrical and mechanical equipment safety warnings, and chemical hazard warnings; • Working hours should be regulated in accordance with national legislation and international guidelines.				
Impact on local urban infrastructure and public utilities	**Project Activities:** The pressure on urban infrastructure and local public services is a by-product of the project's impact on the increase of circulation of workers during the construction phase. Furthermore, the site is traversed by utilities and infrastructure services such as: • Water connections: Primary Main Pipe located at site boundary with KN5 Airport Road, secondary distribution 90PVC pipe supplying the Institutions on site and the immediate neighbourhood in Rugando Cell, tertiary pipes connections the different buildings on site to the secondary distribution pipes. • Electricity connections: Presence of "Ring Main Unit" and underground electric cables on site connecting existing institutions on site and the neighbourhood. • Broadband internet connection: site is traversed by optic fibre and has a "Point of Presence" which provides Internet to neighbouring institutions such as the Supreme court, the Parliament, RDB, Lemigo hotel and immediate neighbourhood. These will be demolished during construction which will cut off connectivity in the neighbourhood. **Impact Nature**: *Adverse.* **Impact Significance**: Moderate	• Provide alternative electricity, water and internet connections when cut off following their demolition to minimise disruption and impacts on neighbouring institutions and communities. • DGL to collaborate with utilities companies (EUCL, WASAC and KTRN) once preliminary design are complete to determine how to avoid or minimise the impact of relocating the key utility infrastructures on site (Electricity Ring Main Unit, 90 PVC Secondary distribution water pipe, Point of Presence of broadband internet). • Adoption of staggered times for workers shifts to reduce pressure on transport infrastructure.	DGL, Project design team, Contractor			20million Rwf (equivalent to 21, 622 USD) estimated for Broadband internet PoP relocation. Cost of other utilities will be determined after preliminary project designs are complete

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	The 2019 EIA analysed the significance of Destruction of utilities and existing infrastructure services as Moderate					
		OPERATION PHASE				
Impact on local air quality	**Project Activities:** Main operational activities that may alter the local air quality are the vehicular movement of Project staff and for the transportation of goods/wastes, and the operation of equipment and the power back-up generators (x2). The Project site will have a stable supply of electricity from the national grid; therefore, outages are expected to be infrequent and short-term. In addition, solar energy will be used for hot water. Exhaust emissions from the diesel/petrol engines of vehicles, equipment, and power back-up generators are expected to include CO_2, NO_2, SO_2 and VOCs. **Impact Nature:** *Adverse*. **Impact Scale:** *Minimum*. This impact will be localized within the Project site and along paved transportation routes to the mall. **Impact Frequency:** *Frequent*. This impact will be manifested when vehicles, equipment, and power back-up generators are being operated throughout the operational phase. **Impact Magnitude:** Small **Sensitivity of the Receptors:** *Medium*. The Area of Influence is located in an urban zone of Kigali City, planned for commercial purposes. The Project site is surrounded by commercial, governmental, low-rise residential buildings, and paved roads. Local air quality is already influenced by pollutants coming from man-made activities. **Impact Significance:** Minor	The following measures correspond to the emissions coming from Project vehicles, equipment, and power back-up generators during operation. Regarding the emissions coming from vehicles of mall customers, since these are not under the Project management, a range of initiatives are currently being considered to encourage more sustainable travel by users of the site and are likely to include promoting car sharing initiatives, use of group travel, a dedicated bus stop immediately outside the mall (to be coordinated with local transport authorities), provision for electric vehicle charging facilities, secure cycle parking. • Develop and implement an appropriate Traffic Management Plan (TMP) for project related vehicles, establishing vehicle speed limits, reducing the number of trips as practically possible. • Use of modern, lower emissions vehicles as much as practicable. • Regular inspection and maintenance of Project vehicles, equipment, and power back-up generators. Shutting down or avoiding idling when not in use, unless impractical for health and safety reasons. • Ensure that the power back-up generators use best available technology and are regularly maintained as per the manufacturer's instructions. • Develop and implement a grievance procedure to manage any complaint. • Any fire outbreak should be managed within a reasonable time in line with the Fire Safety Management Plan (FSMP) to prevent increasing emissions.	DGL, contractors	No recorded incidents or grievances by surrounding land users	Daily	Included in overall operational costs
				Records of audits/visual inspections/ maintenance activities	Regular	

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
Impact on local noise and vibration	**Project Activities:** Transportation of personnel/goods/waste, the operation of power back-up generators (x2), and the activities at the mall will be the main sources of noise and vibrations. **Impact Nature:** *Adverse*. **Impact Scale:** *Minimum*. This impact will be mostly localized within the Project site, and lower at the immediate surroundings. **Impact Frequency:** *Frequent*. This impact will be manifested during the operation of vehicles, equipment, and power back-up generators, and during the mall activities throughout the operational phase. **Impact Magnitude:** Small **Sensitivity of the Receptors:** *Medium*. The Area of Influence is located in an urban zone of Kigali City, planned for commercial purposes. The Project site is surrounded by commercial, governmental, low-rise residential buildings, and paved roads. Local noise and vibration levels are already influenced by man-made activities in the area (particularly traffic in the main road KN5). **Impact Significance:** Minor	The following measures correspond to the noise/vibrations generated by the Project operations (vehicles, equipment, generators, etc.). Regarding the noise/vibrations coming from vehicles of mall customers, since these are not under the Project management, a range of initiatives are currently being considered to encourage such as promoting car sharing initiatives, use of group travel, a dedicated bus stop immediately outside the mall (to be coordinated with local transport authorities), and secure cycle parking. **Noise and Vibration Management Plan (NVMP)** • Selection of equipment and power back-up generators with lower sound power levels. • Locate the power back-up generators as far as possible away from human receptors. • Ensure that the power back-up generators use best available technology with lower sound power levels and/or fitted with silencers and are regularly maintained as per the manufacturer's instructions. • Installation of silencers, mufflers, or acoustic enclosures on equipment, where applicable. • Regular inspection and maintenance of Project vehicles, equipment, and power back-up generators. Shutting down or avoiding idling when not in use, unless impractical for health and safety reasons. • Proper zoning of potentially loud noise generating businesses away from sensitive receptors, including customers and staff. These businesses can be required to install soundproof material. • Centralization of music under DGL's control to avoid chaotic noise. • Solid walls to avoid noise emissions towards sensitive areas in the Project surroundings. • Design orientation of open public space towards areas of less noise impact to the surroundings. • Noise monitoring. • Develop and implement a grievance procedure to manage any noise and vibration complaint.	DGL, contractors	An effective NVMP in place	Periodical	Included in overall operational costs
				No recorded noise-related incidents or grievances by surrounding land users	Daily	
				Records of inspections and maintenance activities	Regular	
				Noise monitoring records close to sensitive receptors not exceeding the maximum permitted limits (Rwandan and IFC guidelines)	Annual	
Impact on local land and soil and water quality	**Project Activities:** Operational activities will generate solid and liquid wastes (hazardous or non-hazardous) that may enter in contact with local soil and water (surface wasters through existing stormwater drainage channels and groundwater) if unmanaged. On the other hand, stormwater will be collected throughout the mall.	**Waste Management Plan (WMP)** • Develop and implement a Waste Management Plan (WMP) for solid and liquid wastes according to the waste management hierarchy, following the principles of waste minimization at source, segregation for reuse, recycling, and safe disposal of waste (as a last resort) through a government-approved waste contractor. Measures stipulated in this plan will include: – Using waste minimization techniques. – Identifying all sources of waste.	DGL, contractors	Effective WMP, HMMP, and STWMP in place	Periodical	Included in overall operational costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	Impact Nature: *Adverse*. **Impact Scale:** *Minimum*. This impact will be localized within the Project site. **Impact Frequency:** *Constant*. This impact will be manifested constantly throughout the operational phase due to daily waste generation. Stormwater-related impacts will depend on actual rain events. **Impact Magnitude:** Medium **Sensitivity of the Receptors:** *Low*. The Area of Influence is located in an urban zone of Kigali City, planned for commercial purposes. The Project site is surrounded by commercial, governmental, low-rise residential buildings, paved roads, and concrete stormwater drainage network channels. Soil fertility is not a value or concern. No river or stream is located within the Project plot or the immediate surroundings. **Impact Significance:** Minor	– Allocating responsibilities for waste management, ensuring wastes are handled by personnel licensed/trained to do so, especially for hazardous waste. – Installing suitable facilities for the collection, segregation, and safe disposal of waste, ensuring wastes are not blown off site by wind contributing to wind-blown litter within the Project site and its surroundings. – Waste collection areas with clearly marked facilities such as color-coded bins (organic waste, plastics, glass, and paper) and equipment for handling the various waste types. – Oils and greases from restaurants and hotels will be managed by an approved waste contractor and not discharged into the drainage system. – Wastes that cannot be reused or recycled should be collected by approved waste contractors and transferred to an appropriate waste management facility for treatment and ultimate disposal (RURA-licensed). – Any electrical electronic waste should be managed through an appropriate RURA waste contractor, certified to handle such wastes. – The use, storage, transport, and disposal of hazardous materials will be carried out in accordance with a Hazardous Material Management Plan (HMMP) complying with all applicable Rwandan regulations and Material Safety Data Sheets (MSDS). Any hazardous waste to be disposed of should be documented beforehand, treated as per any MSDS requirements, and transported and disposed of in consultation with the applicable local authorities and via RURA-approved hazardous waste handlers. – Monitor discharges (quantity and quality) from the biodigester wastewater treatment plant. Treated wastewater will be re-used for irrigation and excess will be discharged to the stormwater drains. Zero raw wastewater will be released to the environment. Treated wastewater will meet the requirements of the effluent discharge permit, complying with Rwandan and IFC discharge standards prior to discharge. – Sewage sludge from wastewater treatment process will be disposed of as per government requirements. – Visual inspections within the Project site and immediate surroundings for waste-related issues. – Develop and implement a grievance procedure to manage any waste-related complaint. **Stormwater Management Plan (STWMP)**		No recorded waste or stormwater-related incidents or grievances by surrounding land users	Daily	
				Records of audits/visual inspections	Regular	
				Bins per type of waste placed at the Project site	Throughout the Project lifecycle	

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
		• Develop and implement a Stormwater Management Plan (STWMP) that prevents any potential pollutant from entering groundwater and existing drainage channels, and that avoids flooding within the Project site and surroundings. Some of the measures will include: – All operational areas and associated facilities should be maintained in a good and tidy condition. – Wastes should be managed following the Waste Management Plan (WMP), ensuring that they cannot become entrained in surface runoff during periods of heavy rain. – Project infrastructure should be designed and located to minimize the impacts to natural water flow. – Placing vegetative/ground cover where green areas are planned. – The design of all Project drainage channels should be informed by the climate of the Area of Influence to be constructed to be able to manage peak run-off. – Sustainable Drainage Systems (SUDS), including permeable paving and swales, will be used on site to manage runoff and allow a controlled rate of discharge into the public stormwater drainage system. – Rain/stormwater harvesting facilities such underground rainwater tanks will be installed and paved surfaces on site will be reduced to reduce stormwater run-off. Rainwater harvested will be reused for firefighting, garden irrigation, and washing. – Regularly maintain the drainage system as required. – Sludge from stormwater catchments will be disposed in compliance with local regulatory requirements, in the absence of which disposal shall be consistent with protection of public health and safety, and conservation and long-term sustainability of water and land resources. – Regular inspection and maintenance of vehicles, equipment, and generators. – Major servicing and maintenance of vehicles, equipment, and machinery should be done at designated workshops offsite. Minor servicing and maintenance that may be done on site will be carried out in a designated area properly constructed to prevent pollution and should as reasonably practically include cemented floors, sand bins, containment berms, and an oil/grease trap. – Visual inspections within the Project site and immediate surroundings for stormwater-related issues.		Effluent discharge monitoring records (BOD_5, Total suspended solids, faecal coliforms) complying with Rwandan and IFC guidelines	Monthly	
Impact on Climate Change Resilience	**Project Activities:** GHG emissions from vehicles, equipment, power back-up generators throughout the operational phase. **Impact Nature:** *Adverse.* **Impact Scale:** *Minimum*. GHG contributions from this Project are not of a large enough scale to be considered significant at a	• Energy and fuel use data will be measured to calculate an accurate direct carbon footprint of the mall and to apply efficiencies. • Some GHG emissions measures will include the local procurement of goods and materials wherever possible, contracting vehicles in good condition with inspection certificates, use of appropriate technology with minimal GHG emissions, prioritization on the use of fuels with lower GHG emissions, implementation of a Waste	DGL, contractors	GHG emission inventory and GHG monitoring records at chimneys (if any) (CO_2, NO_2, SO_2, O_3 and VOCs) not exceeding the maximum permitted limits (Rwandan and IFC guidelines)	Annual	Included in overall operational costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	national or international level or considered to place any commitments made with respect to international agreements at risk. **Impact Frequency:** *Frequent*. This impact will be manifested during the operation of vehicles, equipment, and power back-up generators throughout the operational phase. **Impact Magnitude:** Small **Sensitivity of the Receptor:** *Medium*. Climate change resulting from global GHG emissions will lead to social, environmental, and economic impacts felt globally, regardless of where the GHGs are emitted. While current climate conditions and weather variability may affect construction, projected longer term climate change scenarios may affect operations. Therefore, proactive design, planning, and maintenance are required in consideration of the potential normal and extreme conditions that might be encountered throughout the lifecycle of the Project. Impacts of climate change most relevant to the Project include an unreliable supply of power and water and increase in the occurrence of extreme rain events and droughts. **Impact Significance:** Minor	Management Plan (WMP), and no use of outlawed or banned GHG compounds or Ozone depleting substances. • GHG inventory and GHG emission monitoring at chimneys (if any) carried out to ensure that acceptable levels are met. • A Climate Risk Assessment (CRA) will be conducted to identify key risks along value chains, as well as the strengths and weaknesses in actors' adaptive capacity, and to comprehend and visualize rather complex concepts and define effective and contextualized adaptation strategies. • The risk of unreliable power supply can be mitigated through a transition through to decentralized 'clean' sources of energy, which may be low emission alternatives that can also help reach emission reduction goals (solar has been integrated into the Project design for hot water). The same can be applied to the risk on the supply of fossil fuel-based energy for the Project's equipment and transport. A shift towards electric drive technologies and electric mobility will help mitigate this impact.		Records of audits/visual inspections Climate Risk Assessment (CRA) conduced	Regular Once	
Impact on Employment, Procurement and the Economy	The proposed Project will create both direct and indirect employment opportunities across different skills levels (unskilled, semi-skilled and skilled) during the operations phase. A workforce of approximately 70 people is expected to be directly employed at the Project during the operations phase. Indirect employment is also expected from customers, and induced employment related to jobs ensuing from the expenditure of incomes associated with direct and indirect Project related jobs. Furthermore, employment is expected from tenants of the mall. i.e. the stores, restaurants, office areas, serviced apartments, gyms, etc... Direct and indirect employment opportunities, and combined multiplier effect of this economic growth will result in increased	• The Project will prioritise the recruitment of workers (unskilled, semi-skilled and skilled) from the local communities around the AoI where available, and in accordance with in accordance with DGL's Environmental and Social Policy 2022 ("Adopt, subject to compliance with the previous paragraph, a proactive approach to local content by prioritizing local, national or regional service providers and suppliers, in order to promote employment and local economic spin-offs") • The Project will develop a fair and transparent employment and procurement policy, and will implement processes, that prevents any form of nepotism and favouritism. DGL will develop a recruitment plan. • Advertisements on the employment and procurement opportunities during the operations phase will be placed at notice board in the neighbourhood. In the event that the position cannot be filled from within the AoI, it will be advertised city-wide, and only then, nationally. No recruitment will take place at the entrance gates of the facility.	DGL Maintenance contractor	Employment record	Preparation of Human Resources guiding documents (including recruitment guidelines) prior to construction Employment records checked monthly	Internal costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	incomes; promoting some degree of an increase in standards of living. **Impact Nature**: *Positive*					
Impact on Traffic	**Project Activities**: During the operations phase, Project traffic will comprise trucks transporting customer goods to and from Project site, a few operations and maintenance vehicles as well as vehicles of Mall users. The Project will provide 306 parking spaces (196 retail & leisure parking spaces, 65 office parking spaces and 45 hotel parking spaces). This induced traffic has a potential of slowing down road traffic along the routes to the Mall and to increase the risk of injuries from road traffic accidents, particularly to people living or working within close proximity to the roads on the transport routes. However, the existing road network is open to traffic and will thus be serving its purpose. However, it is important to highlight that the road system of the project's area of influence is present high capacity for road transport and traffic. **Impact Nature**: *Adverse*. **Impact Scale**: *Low* (Local). **Impact Frequency**: *Frequent*. **Impact Magnitude**: Medium **Sensitivity of the Receptors**: *Medium*. Traffic impacts will inconvenience the current road users and businesses along them. There is a busy footpath less than 1 km from the Project Site which is used by children going to school. **Impact Significance:** Moderate	• Identify opportunities for improvement and adaptation of the local road system, such as the implementation of alternative access to the project, in accordance with the Rwanda Transport Development Agency (RTDA). • Develop and implement a "Driving Policy". • Project drivers will undergo the necessary driver training and will be trained in defensive driving. Drive training will be mandatory for all drivers. • The Project will develop and implement an **Operations Phase Traffic Management Plan**. The implementation of this Plan will be regularly monitored and audited, and the results of such audits and monitoring will be regularly reported. • Regularly maintain Project vehicles and equipment as per the manufacturers' recommendations.	Project Proponent and customers Maintenance Contractor	Incident records Records of complaints Traffic Management Plan	Quarterly	Internal costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost

Labour and working conditions (including OHS)	**Project Activities**:
	
	• The average number of workers estimated during operations is 50.
	• OHS risks during the operations phase will include the movement of operational (personnel/goods/waste) and mall visitors' vehicles within the Project plot and access roads which may create some traffic risks. Workers may also face ergonomic risks related lifting of heavy loads, etc.
	• Risks related to labour include human rights violations associated with unfair working conditions, including: discrimination, unfair treatment, prevention of freedom of association, use of child/forced labour and poor working conditions (i.e., provision of breaks, access to sanitary facilities, working hours, terms of payment, lack of contracts in place etc.).
	
	Impact Nature: *Adverse*.
	Impact Scale: *Low*. This impact may affect a small proportion of the 50 workers estimated to be employed at the Project during the operations phase. Some of the OHS impacts such as major injuries can be severe. However, with the implementation of the recommended mitigation measures, the impact will be largely avoided, and in case of occurrence only affect a few workers.
	Impact Frequency: *Rare*. With the implementation of the recommended mitigation measures, this impact will be largely avoided and only rarely occur.
		• The Project will develop and implement an operations phase **Occupational Health and Safety (OH&S) Management System** in line with good industry practice. This system should include consideration of hazard identification, risk assessment and control, use of Personal Protection Equipment (PPE), incident investigation and reporting, reporting, training of workers on OHS risks and tracking of near misses, incidents etc. The management system should also include emergency response plans. Roles and responsibilities for the implementation of the OH&S Management System should be clearly defined.
		• The Project will develop a **Human Resources Policy** to guide labour recruitment and labour management. This will include a **Labour and Employment Plan** and **Worker Grievance Mechanism**. Key issues covered by such Plans will include, but not be limited, to the following:
		  ○ Provision of clear and understandable information regarding rights under national labour and employment law, and any applicable collective agreements, including those related to hours of work, wages, overtime, compensation, etc.;
		  ○ Provision of reasonable working conditions and terms of employment;
		  ○ Provision of employment , compensation/remuneration and working conditions, including working hours, based on equal opportunity and fair treatment, avoiding discrimination on any aspects;
		  ○ Provision of adequate welfare facilities on site;
		  ○ Implementation of a grievance mechanism;
		  ○ Adoption and implementation of a **sexual harassment policy**;
		  ○ Prohibition of child and forced labour; and
		  ○ Adoption of open attitude towards freedom of association.
		• All workers will have contracts which clearly state the terms and conditions of their employment and their legal rights. Contracts will be verbally explained to all workers where this is necessary, to ensure that workers understand their rights. Contracts must be in place prior to workers commencing work.
		• All workers (including those of contractors and subcontractors) should, as part of their induction, receive training on health and safety guidelines (including awareness-raising of disease vectors) and should receive updated training routinely, as well as when undertaking new tasks, such as working at heights or working in confined spaces.
		• Daily toolbox talks will be held with the Project workers to discuss the health and safety risks associated with the tasks at hand.
			DGL, maintenance contractors, and customers.	Employment records and other key performance indicators (KPIs) for worker rights
				
				A record of workers' grievances
				
				Induction documentation for all workers to include necessary items
				
				Annual Occupational Health & Safety and fire safety audits will be conducted by appropriately registered and independent consultants
					Monthly	Internal costs

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	Impact Magnitude: Small **Sensitivity of the Receptors**: *Low*. Project employees. **Impact Significance:** Negligible	• A 'fitness for work' programme should be established to ensure that all employees are physically able to undertake their work without impact to their health; • An **occupational health and safety monitoring and surveillance programme** should be established; • **Specific OHS training programmes** should be provided for workers assigned to tasks associated with particular H&S risks; • The provision and enforcement of use of appropriate Personal Protective Equipment (PPE) based on task-based hazard analysis; • Visual warning signs should be put in place, including those for the electrical and mechanical equipment safety warnings, and chemical hazard warnings; • Working hours should be regulated in accordance with national legislation and international guidelines. **Annual OSH and fire safety audits** will be conducted by appropriately registered and independent consultants.				
Impact on Community Health, Safety and Security Risks	**Project Activities**: • Operation of the Mall as well as the movement of vehicles through or near communities. • The Project's use of private security personnel to secure their operations, and the level of interaction between these forces with local communities during (1) routine operations (2) emergency events, (3) conflicts, strikes or demonstrations. The establishment of the Project will result in a broad range of community health, safety and security risks, and these risks cross through a range of technical expertise (i.e., occupational health and safety, air emissions, water pollution etc.). Community Health, Safety and Security is however an umbrella term, and the potential project risks may specifically include: • Community exposure to noise (linked to commercial activity) and air pollution (linked to increase in traffic). • Public vehicle and pedestrian traffic on private and public roads (although incremental traffic will be negligible given that existing roads will be used, which are already accommodating heavy traffic) **Impact Nature**: *Adverse*. **Impact Scale**: *Low*. With the implementation of the management measures, the number of community members exposed to community	The Project should update and implement a **Community Health, Safety and Security Management System** in line with good industry practice, including the requirements of the IFC Performance Standard 4. •		Update and implementation of a Community Health, Safety and Security Management System Inclusion of community requirements in any new Health and Safety Plans. A record of community incidents, emergency events and responses. Records of community grievances An updated Security Management Plan and associated procedures is in place An updated Emergency Prevention, Preparedness and Response Plans and associated procedures are in place		

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	health, safety and security risks will be very small. **Impact Frequency**: *Rare*. With the implementation of the management measures, exposure of Project workers to community health, safety and security risks will be rare. **Impact Magnitude**: Small **Sensitivity of the Receptors**: *Low to Medium*. Communities surrounding the Project. **Impact Significance:** Negligible					
FOR ALL PROJECT PHASES (UNPLANNED EVENTS) *Unplanned events are not expected to occur during the Project's normal activities; therefore, the probability of occurrence is very low. The significance of impacts associated with these events cannot be determined due to the highly variable range of undesired effects. Therefore, the Contractor (during construction phase) and DGL (throughout the project life cycle) will incorporate best industry standards to minimize the probability of unplanned events.*						
Accidental leakages and spillages	Accidental leakages and spillages can potentially occur in areas where liquids (including condensed gases) are stored or used. The Project vehicles, equipment, machinery, and power back-up generators will use fuel (diesel and/or petrol) as well as	**Spill Prevention and Response Plan (SPRP)** • All Project vehicles, equipment, machinery, and power back-up generators will be properly maintained as per the manufacturer's recommendations. In particular, the status of fuel and oil tanks will be checked. • At the start of every workday, Project vehicles and equipment will be checked for spills and leakages.	DGL, contractors	An effective SPRP in place	Periodical	Included in overall construction and operational costs
				Records of maintenance activities	Periodical	

Impact	Description	Mitigation/Management Measures	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	oil for lubrication during both the construction and operations phase. If there are any unnoticed leaks on the fuel or oil tanks, the fuel and/or oil will flow to the ground thus contaminating the soils and can potentially flow in stormwater thus reducing its water quality.	• Project equipment and machinery will be serviced off site. • Fuel, oil and used oil storage areas will be contained in bunds of 110 percent capacity of the stored material. Fuels will be stored in above-ground storage tanks. • Spill containment and clean up kits will be available onsite and clean-up from any leakage or spill will be appropriately contained and disposed of. • Provide appropriate Personal Protective Equipment (PPE) and training to Project workers. • Develop and implement a grievance procedure to manage any complaint. • Any leakage or spillage should be cleaned up within a reasonable time in line with the Spill Prevention and Response Plan (SRP). • Areas where a spillage has occurred should be excavated (to the depth of contamination) and suitably rehabilitated. If any other minor spillage occurs, it should be cleaned as soon as possible, but within the same shift and the contaminated area should be reinstated. All contaminated material should be suitably disposed of following the Waste Management Plan (WMP). • Provide appropriate Personal Protective Equipment (PPE) and training to Project workers. • Develop and implement a grievance procedure to manage any waste-related complaint.		No recorded incidents or grievances of accidental leakages/spillages	Daily	
Fire outbreaks	Welding, electrical installations and testing, mechanical automobile repair on site during construction are likely sources of fire outbreak. Electronic appliances, kitchens in restaurants, bars, gym, service apartments, different stores, offices are all liable to electrical circuits, which could be a source of fire outbreaks on the Kigali Mall.	**Fire Safety Management Plan (FSMP)** • During construction, fire extinguishers, and signage of assembly points, escape routes and exits in both Native, English, and French language. • During operation, the mall will include fire safety measures such as: fire extinguishers, fire blankets, hose reels, hydrants, sprinklers, wet riser, a fire detection and alarm system, smoke detectors, heat detectors, break glass contacts, sirens/strobes, a voice evacuation system, water storage tanks to be used in case of emergency, and signage of assembly points, escape routes and exits in both Native, English, and French language. • Regular training during construction and operation. • Fire safety drills conducted regularly during construction and operation. • Implement a Health and Safety Policy. • Fire resistant Personal Protection Equipment (PPE) available to people in fire prone workplaces. • Develop and implement a grievance procedure to manage any complaint.	DGL, contractors	An appropriate Fire Safety Management Plan	Monthly	Included in overall construction and operational costs
				Records of fire safety trainings and drills	Periodical	
				No recorded incidents or grievances of fire outbreaks	Daily	

Source: ERM, 2023.

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APPENDIX A BACKGROUND INFORMATION DOCUMENT (BID)

Appendix B MINUTES OF THE STAKEHOLDER ENGAGEMENT MEETINGS

APPENDIX C ATTENDANCE REGISTERS

APPENDIX D DUVAL MALL IMPACT IDENTIFICATION MATRIX

ERM has over 160 offices across the following countries and territories worldwide

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