TRANSPARENCY INTERNATIONAL Rwanda

Comprehensive Environmental and Social Audit of Sampled Infrastructure Projects Against the Safeguarding Criteria in 5 Districts of Rwanda

FINAL REPORT

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EXECUTIVE SUMMARY

This assignment aimed to conduct environmental assessments and evaluate social safeguards for Six infrastructure projects in Rwanda, selected in Bugesera, Gasabo, Karongi, Gisagara, and Musanze districts. The social audit examined citizens' capacity to monitor and hold decision-makers accountable, focusing on compliance with environmental and social safeguards in public infrastructure development. Using both qualitative and quantitative approaches, the study assessed transparency, accountability, and the effectiveness of mitigation strategies across the projects to minimize environmental and social impacts.

One notable finding was the partial compliance of the Ndora-Gisagara Chip seal road project with safety and environmental standards. While the project included measures like public signage, waste disposal, and a traffic management plan, critical safeguards such as the Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), and Environmental and Social Management Plan (ESMP) were absent. This poses risks of environmental degradation and social inequality, further exacerbated by non-compliance with occupational health and safety regulations, as workers were found to be operating without personal protective equipment (PPE) and drainage systems did not meet national standards.

The Runzenze Mine Site demonstrates responsible mining practices in several areas, including worker safety measures such as medical insurance, PPE, and safety training. It also maintains communication and waste management efforts, though there is no formal waste management plan in place, which breaches mining regulations. While these safety practices are commendable, the absence of critical assessments such as a Resettlement Action Plan (RAP) and Environmental Impact Assessment (EIA) introduces risks of environmental and social damage, such as habitat destruction, pollution, and community displacement. Furthermore, the lack of soil erosion control and poor management of dust and noise exacerbates these risks.

Additionally, there are several non-compliance issues that raise concerns. The mine lacks dedicated changing rooms for men and women, which violates labor laws, and the roads leading to the site are in poor condition, contravening land and environmental regulations. Health and safety standards are also neglected, as there is no first aid room or medical personnel on site, and the mine boundaries are poorly defined. On a positive note, the site adheres to post-mining environmental restoration practices, including the development of tree nurseries, in line with Rwanda's mining laws. However, without addressing the gaps in compliance, the long-term sustainability of the Runzenze mine remains uncertain.

The environmental audit of the Cyuve Dumping Site shows some strong areas of compliance, such as regulated with proper site marking, legal disposal permits, and operational accountability. Worker safety is somewhat addressed through formal contracts, medical insurance, and regular safety briefings. However, major gaps in environmental management, including the absence of billboards, guidelines, and crucial reports like the Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP), raise concerns. These omissions could lead to unsafe waste practices, environmental hazards, and unresolved social issues, affecting both the local community and long-term sustainability.

Significant non-compliance issues were also identified, particularly in terms of security and safety. The site lacks access control, allowing children and domestic animals to enter freely, which violates regulatory standards. Erosion and sediment control measures are absent, and the site's proximity to residential areas contravenes national landfill guidelines. Additionally, poor waste segregation practices and inadequate drainage systems have led to environmental contamination. Workers lack proper training on personal protective equipment (PPE), further violating hazardous waste management regulations, leaving them vulnerable to health risks. Without addressing these issues, the Cyuve Dumping Site poses substantial environmental and social risks.

The environmental audit of the Busogo Waste Treatment Center under the RV3CBA Project demonstrates strong compliance with environmental regulations and public health safeguards. The site holds valid waste management permits and has completed an Environmental and Social Impact Assessment (ESIA), ensuring proper waste treatment while minimizing risks. Safety protocols, including waste segregation and community engagement through grievance mechanisms, contribute to both environmental benefits and public trust. However, the absence of elements such as billboards, site guidelines, and reports on HIV/STD prevention and ecosystem restoration presents potential operational and environmental challenges that could undermine the sustainability of the project.

The facility is considered up-to-date and adheres to most key regulatory requirements, including effective waste separation of materials like ceramics, plastics, metals, and electronic waste, which supports recycling and pollution reduction. The site's waste management practices comply with Rwanda's solid waste and hazardous waste management regulations, and its design includes well-implemented drainage systems to manage rainwater. Moreover, the facility has developed a comprehensive compost manual for managing organic domestic waste, further solidifying its role as a well-operated waste treatment center. Despite these strengths, addressing the missing environmental and social reports would enhance long-term sustainability and community well-being.

The environmental audit of the KIP/NPD Mulindi-Gasogi-Kabuga road project reveals strong compliance with several operational and safety standards, including proper signage, traffic management, and worker protections like medical insurance. Billboards and disposal permits were also in place, contributing to the project's responsible management. However, significant gaps, such as the absence of an Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), and a comprehensive waste management plan, raise concerns about potential environmental harm, unsafe working conditions, and social dissatisfaction. These missing components could hinder the long-term sustainability of the project and strain community relations.

In terms of road safety, the project complies with the Rwanda Transport Development Agency (RTDA) standards through the use of reflective road markings, signs, and delineators that enhance visibility and reduce accidents. However, the drainage system is inadequate, with many ditch floors left unpaved or unconstructed. This poor drainage design could lead to soil erosion and collapse of ditch walls during heavy rainfall, violating the regulations outlined in Law No. 042/2023 on land and waterways transport. This flaw presents a risk to the project's structural integrity and environmental compliance.

Corruption awareness and experiences varied significantly across projects. Minimal corruption was reported at the agricultural transformation project in Bugesera and the KIP/NPD Mulindi-Gasogi-Kabuga road project, while the Ndora-Gisagara Chipseal Road project exhibited troubling corruption trends. This suggests that some projects may lack adequate anti-corruption mechanisms and reporting systems. Similarly, awareness and participation in consultations during the resettlement process showed large variations, with the agricultural transformation project in Bugesera and the KIP/NPD Mulindi-Gasogi-Kabuga road project having higher levels of engagement, while the Ndora-Gisagara Chipseal Road and Busogo Waste Treatment Center projects demonstrated lower levels of consultation, pointing to the need for better communication and stakeholder involvement.

The study also highlights disparities in compensation and workplace conditions across the projects. Compensation delays were particularly noted in the Ndora-Gisagara Chip seal Road and Busogo Waste Treatment Center projects, raising concerns about transparency and fairness in the valuation process. In contrast, some timely compensation was reported at the Runzenze Mine Site. Additionally, workplace harassment, mostly verbal abuse and exploitation, was prevalent in some projects, with the highest rates reported in the KIP/NPD Mulindi-Gasogi-Kabuga road project. There were also significant disparities in Gender-Based Violence (GBV) awareness and prevention training, with the Runzenze Mine Site showing the highest engagement, while other projects lagged, indicating uneven prioritization of GBV prevention efforts across the districts.

Recommendations:

- Ensure that all projects develop and implement the Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), and Environmental and Social Management Plan (ESMP) to mitigate risks associated with environmental degradation and social inequality.
- Establish strict adherence to occupational health and safety regulations by providing necessary personal protective equipment (PPE) and training for all workers.
- Develop comprehensive waste management plans across all sites, ensuring compliance with national regulations regarding hazardous waste management and solid waste segregation, to minimize environmental risks and ensure public safety.
- Enhance communication and engagement strategies to involve affected communities in project planning and implementation, particularly for projects like the Ndora-Gisagara Chipseal Road and Busogo Waste Treatment Canter, where participation has been low.
- Establish clear and transparent processes for compensation valuation and disbursement to ensure timely payments to individuals affected by infrastructure projects, particularly in the Ndora-Gisagara Chipseal Road and Busogo Waste Treatment Center projects.
- Implement regular safety audits and training sessions across all projects to promote a culture of safety, accountability, and compliance with safety regulations, especially in high-risk areas like mining and construction.

- Develop and implement comprehensive training programs on GBV awareness and prevention for all project staff, especially in projects showing low engagement in GBV prevention efforts.
- Implement best practices for land use and development, including soil conservation measures, to align with national laws and enhance long-term sustainability of agricultural and infrastructure projects.

ABBREVIATION

- EIA: Environmental Impact Assessment
- FGD: Focus Group Discussion
- GPS: Global Positioning System
- IFC: International Finance Corporation
- INKI: 'Indi Ntambwe mu Kwiyubakira Igihugu
- KII: Key Informants Interviews
- MININFRA: Ministry of Infrastructure
- PAP: Population affected by the project
- PC: Portable computer
- REMA: Rwanda Environment Management Authority
- RAP: Resettlement Action Plans
- SIA: Social Impact Assessments

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1. Background and Rationale

1.1. Introduction

Transparency International Rwanda is a civil society organization created in 2004 and became accredited as a national chapter of the Transparency International global movement in 2011. The mission of TI-Rwanda is to contribute to the fight against corruption and promote good governance through enhancing integrity in Rwandan society. Our vision is zero tolerance to corruption in the Rwandan society.

In the framework of implementing the project dubbed "Indi Ntambwe mu Kwiyubakira Igihugu (translating as "An Extra Mile in State building"), abbreviated INKI, in partnership with NPA and other civil society organizations, TI is upholding the responsibility of duty bears in service delivery while considering a strong culture of safeguarding the design and implementation of locally-led public and other national large-scale infrastructure projects while accounting for liabilities to fully take shape.

Taking decentralization as an entry point of engagement towards the desired future state whereby the design and implementation of policies (on gender, climate and or planning as well as other relevant issues) are more inclusive, effective and accountable, INKI project seeks to contribute towards addressing three long-standing policy issues among many others that Rwanda is currently faced with.

On the one hand, there is the issue of limited compliance, by central and local government institutions alike, with the national decentralization principles amidst increasing decentralization tendencies. On the other hand, INKI will address the issue of fragile knowledge and understanding of government policy choices in sectors that matter most to citizens. Finally, it will focus on the issue of a limited culture of environmental and social justice safeguarding while designing and implementing locally led and large-scale public infrastructure projects.

The Project intends to establish that duty bearers, right holders and other relevant stakeholders increasingly embrace a culture of value-based environmental and social safeguarding and subject themselves to accountability dialogue for unmet liabilities.

Rwanda's commitment to sustainable development is reflected in its robust framework for environmental and social safeguards audits. The Rwanda Environment Management Authority (REMA) plays a pivotal role in enforcing these safeguards, guided by the Organic Law on the Environment (2005) and Environmental Impact Assessment (EIA) regulations. EIAs are mandatory for significant projects, ensuring potential environmental impacts are identified and mitigated before project implementation. This regulatory framework aims to protect the environment while promoting economic growth (REMA,2005).

Environmental audits are conducted post-project to ensure compliance with initial EIA recommendations and environmental management plans. These audits evaluate the effectiveness of mitigation measures and actual environmental impacts. REMA's oversight ensures that environmental standards are maintained throughout the project lifecycle, promoting accountability and continuous improvement in environmental management practices (REMA, 2020).

Public participation is integral to Rwanda's environmental safeguards. The EIA process includes consultations with communities potentially affected by projects, ensuring their concerns and suggestions are incorporated into environmental management plans. This approach fosters transparency and community ownership of development projects, enhancing their social acceptance and long-term sustainability (REMA, 2018).

Social safeguards in Rwanda are governed by laws and policies that address resettlement, compensation, and the protection of vulnerable groups. Social Impact Assessments (SIA) are conducted to evaluate the social implications of development projects, focusing on livelihoods, social structures, and community well-being. Resettlement Action Plans (RAP) are developed for projects requiring land acquisition or displacement, ensuring fair compensation and livelihood restoration for affected communities (MININFRA, 2019).

Rwanda aligns its environmental and social safeguards with international standards, including those of the World Bank and the International Finance Corporation (IFC). These standards provide comprehensive guidelines for managing environmental and social risks, ensuring Rwanda's practices meet global benchmarks. Adherence to these standards enhances the credibility and attractiveness of Rwanda's development projects to international investors and donors (World Bank, 2016).

Despite significant progress, challenges in implementing environmental and social safeguards persist. Limited resources and the need for continuous capacity building are notable hurdles. Ensuring effective community engagement remains crucial, as does adapting to evolving environmental and social contexts. Rwanda's ongoing efforts to strengthen institutional capacity and promote sustainability underscore its dedication to balanced and inclusive development (IFC, 2012).

The social audit will be conducted to assess whether citizens have the skills, capacity and tools to effectively monitor and evaluate their governments and decision-makers to claim better compliance with the safeguards by different duty bearers as pathway to better access to environmental and social rights. This assessment will therefore focus on environmental and social justice safeguarding across public infrastructure development projects.

1.2. Objectives

The primary objectives of the assignment are as follows:

1. Examine various environmental policy decisions, keeping in view stakeholder needs and priorities, particularly of those marginalized people (rural poor, women, People with disability...);

2. Analyze the level of awareness and practices among beneficiaries and service providers of environmental and social justice safeguarding across public infrastructure development projects; and measure the level of public participation at all stages of the implementation of public infrastructure development projects;

3. Evaluate the level of transparency and accountability in the implementation of public infrastructure development projects against established environmental safeguarding

criteria in selected districts; and Identify areas for institutional and bureaucratic reforms of institutions while implementing public infrastructure development projects

4. Evaluate the design and implementation of the infrastructure projects to determine its suitability in minimizing environmental and social impacts and Measure both negative and positive social impact and vulnerability associated with the implementation of infrastructure development projects on beneficiaries' livelihood

5. Identify existing mitigation measures and adherence to best practices and assess their effectiveness;

6. Formulate actionable recommendations to enhance environmental and social justice safeguarding in the implementation of public infrastructure development projects in Rwanda.

2. Overview of environmental policies and environmental compliance of infrastructures projects in Rwanda

2.1. Environmental policies keeping in view stakeholder needs and priorities, particularly of those marginalized people

According to the National Land Policy (2019), all Rwandans enjoy the same rights of access to land, implying no discrimination against women and other marginalized people. Under Rwandan law, all citizens have equal rights to access land, and compensation for lost land is given in cash, based on market value. As per the Resettlement Policy Framework (2017), the World Bank OP 4.12 goes beyond this, ensuring that people without formal land titles, but with customary rights, also receive full compensation. However, there is no specific legal requirement in Rwanda to favor land-based resettlement strategies. The agreed gap-filling measure ensures that cash compensation is used when the remaining land is viable, and land-based compensation is provided for those losing all their land.

Rwandan legislation does not provide for compensation to land squatters without legal rights. In contrast, the World Bank requires that all people, regardless of legal title, receive compensation for structures and assistance in restoring livelihoods. The gap-filling strategy involves compensating all tenants and non-recognized occupants according to the principles of World Bank OP 4.12, ensuring fair treatment for those with formal or informal agreements.

While Rwandan law entitles land users to compensation for crops, it does not specifically provide for compensation for the land itself. World Bank OP 4.12 mandates that land users should receive compensation for crops and assistance in restoring their livelihoods to pre-project levels. The gap is addressed by ensuring compensation for movable properties and activities on the expropriated land.

Rwandan law provides cash compensation for non-permanent buildings based on market value, whereas the World Bank prefers land-based resettlement for those with land-based livelihoods. The solution adopted is to provide cash compensation at full replacement value, including labor costs, and allow owners to recover materials from their buildings.

Both Rwandan law and the World Bank OP 4.12 require compensation for permanent buildings, with the World Bank emphasizing in-kind compensation or full replacement costs. The proposed measure follows both national laws and World Bank standards, ensuring that vulnerable groups are supported in relocating to alternative sites, with compensation at replacement value.

Rwandan law compensates perennial crops based on agricultural income, while the World Bank prefers restoration of livelihoods through land-based solutions. Both approaches adopt the principle of replacement value, ensuring that affected farmers can re-establish crops and are supported with livelihood restoration measures.

With regard to livelihood restoration and development assistance, Rwandan law lacks explicit provisions for livelihood restoration, while the World Bank requires that displaced people's livelihoods be restored to at least pre-displacement levels. The gap is filled by applying the World

Bank's OP 4.12, and a Livelihood Restoration and Support Program (LRSP) will be implemented to assist affected individuals in regaining their livelihoods.

Concerning the consultation and disclosure**,** Rwandan law requires public dissemination of the expropriation process but limits public opposition. The World Bank emphasizes meaningful consultation with project-affected persons and communities. To fill the gap, consultations will follow World Bank OP 4.12 guidelines, ensuring inclusive participation, especially of vulnerable groups, and proper disclosure of information.

As for the Grievance Mechanism and Dispute Resolution, the Rwandan law provides for a formal process to contest compensation values, while the World Bank requires accessible grievance mechanisms. The combined approach includes a locally established Grievance Redress Mechanism (GRM) involving district authorities, project representatives, and PAPs, ensuring a fair and accessible dispute resolution process.

2.2. Environmental Compliance of infrastructures projects in Rwanda

In Rwanda, environmental audits for mining sites are governed by the country's environmental and mining regulations, primarily under the Environmental Law (Law No. 48/2018 of 13/08/2018) and the Mining and Quarry Operations Law (Law No. 58/2018 of 13/08/2018), both implemented by the Rwanda Environment Management Authority (REMA) and the Rwanda Mines, Petroleum, and Gas Board (RMB). **Key criteria for an environmental audit of mining sites include**:

1. Compliance with Environmental Impact Assessment (EIA) Requirements: Mining operators must ensure compliance with their approved Environmental Impact Assessments, which outline mitigation measures for environmental protection. Regular audits check for adherence to these measures.

2. Waste Management Practices**:** Auditors assess the proper management and disposal of mining waste, including tailings, sludge, and hazardous materials, to prevent contamination of soil, air, and water sources.

3. Water and Air Quality Monitoring: Audits require that mining sites implement systems to regularly monitor and report on water quality in surrounding areas (such as rivers and groundwater) and air quality, particularly concerning dust and emissions of toxic gases.

4. Biodiversity Conservation: Mining companies are expected to protect local biodiversity, avoiding or mitigating the destruction of habitats for flora and fauna. Compliance with reforestation or habitat restoration obligations is also evaluated.

5. Land Rehabilitation; Audits examine whether companies have a land rehabilitation plan in place for site restoration once mining activities cease, including soil stabilization, replanting, and ensuring safe post-mining land use.

6. Health and Safety Standards**:** Compliance with occupational health and safety regulations is assessed, focusing on protecting workers and nearby communities from environmental hazards associated with mining activities.

7. Public Consultation and Reporting: Audits ensure that mining operations are transparent about their environmental impacts and engage local communities in addressing environmental concerns, in line with Rwanda's policies on public participation and environmental rights.

These audits are designed to ensure sustainable mining practices and are backed by national policies like Rwanda's National Environment and Climate Change Policy (2021), which emphasizes environmental protection and sustainable resource use across industries, including mining.

Environmental audits for road construction projects are governed by the Law No. 48/2018 of 13/08/2018 on Environment and related regulations implemented by the Rwanda Environment Management Authority (REMA). These audits ensure that road construction adheres to environmental sustainability and mitigate negative impacts. The key criteria for environmental audits of road construction projects include:

1. Compliance with Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP)**:** Auditors check if the road construction complies with the approved EIA and EMP, which outline mitigation measures to protect the environment. All projects must undergo an EIA prior to implementation, as stipulated by the law.

2. Soil Erosion and Land Degradation Control: Road construction can lead to soil erosion and land degradation, particularly in hilly areas. Audits assess whether measures like retaining walls, drainage systems, and re-vegetation have been implemented to prevent soil erosion and stabilize land.

3. Water Resource Protection: The audit examines how the project affects water bodies, including rivers, lakes, and wetlands. Road projects must avoid disrupting water flow or contaminating water sources with construction debris, chemicals, or oil spills, in compliance with the Water Law No. 62/2008 and the Ministerial Order No. 003/16.01 of 15/07/2010 regulating water protection.

4. Waste Management: Proper disposal of solid and liquid waste generated during construction is a critical aspect. The audit checks if the construction site has implemented waste management practices in line with the Ministerial Order No. 004/16.01 of 15/07/2010 on solid waste management, ensuring no hazardous materials contaminate the environment.

5. Air and Noise Pollution Control: Construction activities often produce dust, emissions from vehicles and machinery, and noise. The audit reviews air quality monitoring systems and the effectiveness of dust control measures (such as water spraying) and evaluates compliance with national air quality standards, as well as noise pollution regulations.

6. Biodiversity Conservation: Auditors evaluate the impact of road construction on local ecosystems and biodiversity, particularly in areas near protected forests, wetlands, or wildlife habitats. Projects are expected to avoid or minimize habitat destruction, as per the Rwanda National Biodiversity Strategy and Action Plan (2016-2020).

7. Health and Safety Compliance: The audit checks adherence to occupational health and safety guidelines, ensuring the protection of construction workers and nearby communities from environmental risks. This includes managing construction hazards, such as accidents, dust inhalation, or hazardous material exposure.

8. Public Consultation and Grievance Mechanisms: The law requires public involvement in environmental matters. Auditors assess whether communities were consulted during the EIA process and whether there are mechanisms in place to address grievances related to environmental impacts during construction.

9. Post-Construction Environmental Management: Audits also cover post-construction activities, such as land restoration, reforestation, or revegetation efforts to restore ecosystems affected by road construction. Compliance with these activities is key for long-term environmental sustainability.

With regard to environmental audits of landfill or dumping sites: these are conducted to ensure these sites operate in an environmentally sustainable manner, in compliance with laws like Law No. 48/2018 of 13/08/2018 on Environment and regulations set by the Rwanda Environment Management Authority (REMA). The key criteria for such audits include:

1. Compliance with Environmental Impact Assessment (EIA) and Environmental Management Plan **(EMP)**: All landfills or dumping sites must have undergone an EIA before their establishment. The audit checks whether the site operates according to the approved EIA and EMP, which outline specific measures for mitigating environmental harm.

2. Waste Segregation and Management: Auditors evaluate the landfill's waste management practices, ensuring waste is properly segregated (hazardous vs. non-hazardous waste) and handled. The Ministerial Order No. 004/16.01 of 15/07/2010 on solid waste management governs proper disposal, recycling, and treatment of waste at these sites.

3. Leachate Control and Water Quality Monitoring: Landfills generate leachate, which can contaminate groundwater and nearby water bodies if not properly managed. Audits assess whether there are systems in place for the collection, treatment, and monitoring of leachate to prevent water pollution, in line with the Water Law No. 62/2008.

4. Air Quality and Greenhouse Gas Emissions: The audit reviews whether the site has implemented measures to control air pollution, such as preventing the release of toxic gases like methane and other volatile organic compounds (VOCs). The monitoring of gas emissions, particularly methane, is crucial for compliance with national air quality standards and greenhouse gas reduction goals.

5. Odor and Pest Control: Poorly managed landfills can generate strong odors and attract pests like rodents and insects. Auditors evaluate odor management systems and pest control measures, ensuring minimal impact on surrounding communities and ecosystems.

6. Soil and Groundwater Protection: The audit checks if the landfill has appropriate liners and barriers to prevent waste materials and leachate from contaminating soil and

groundwater. The integrity of these barriers and their maintenance are critical to environmental safety.

7. Biodiversity and Ecosystem Protection: Landfills near ecologically sensitive areas require special attention to ensure they do not harm local flora and fauna. Auditors assess the potential impact of the landfill on surrounding biodiversity and evaluate compliance with the Rwanda National Biodiversity Strategy and Action Plan (2016-2020).

8. Public Health and Safety: Landfills can pose health risks to workers and nearby communities if not properly managed. The audit reviews safety measures, such as protective gear for workers, regular health checks, and precautions to prevent community exposure to hazardous materials, in compliance with Rwanda's public health and safety standards.

9. Land Rehabilitation and Post-Closure Plan: Auditors examine whether the landfill has a post-closure plan for rehabilitating the land once the site is closed. This includes steps for restoring the site to a usable state, including landscaping, reforestation, and monitoring for residual contamination.

10. Public Engagement and Transparency: The audit also checks if local communities were involved in consultations during the EIA process and whether the landfill maintains a grievance mechanism for addressing environmental and health concerns from the public, in line with Rwanda's Environment Law on public participation in environmental management.

11. Compliance with National and International Waste Management Standards: The audit evaluates whether the landfill adheres to Rwanda's national waste management standards and international best practices for landfill management, such as the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.

Environmental audits for land terracing projects are guided by laws and policies that promote sustainable land use and environmental protection, such as Law No. 48/2018 of 13/08/2018 on Environment and regulations overseen by the Rwanda Environment Management Authority (REMA). Terracing is widely used to prevent soil erosion and enhance agricultural productivity in Rwanda's hilly landscapes. The key criteria for environmental audits of land terracing sites include:

1. Compliance with Environmental Impact Assessment (EIA) and Environmental Management Plan **(EMP)**: Before implementing a terracing project, an EIA is required to assess potential environmental impacts. The audit checks compliance with the approved EIA and EMP to ensure that terracing activities follow sustainable practices.
2. Soil Erosion Control and Slope Stability: The primary goal of land terracing is to reduce soil erosion. Auditors evaluate the effectiveness of the terraces in preventing soil loss and ensuring slope stability, including the construction of retaining walls, proper drainage, and soil conservation techniques. These measures should be aligned with the Rwanda Soil Conservation Policy.

3. Water Management and Conservation: Effective terracing must include proper water management to prevent runoff and retain water for agricultural use. The audit checks the design and implementation of water conservation structures, such as contour trenches, diversion ditches, and infiltration pits, to ensure they minimize water loss and soil erosion, in compliance with the Water Law No. 62/2008.
4. Vegetation and Agroforestry Practices: Audits assess whether terracing projects have integrated agroforestry or vegetation cover to stabilize the terraces and enhance soil fertility. This is important for both erosion control and maintaining biodiversity. Reforestation and use of cover crops are often required as per the Rwanda National Biodiversity Strategy and Action Plan (2016-2020).
5. Soil Fertility Management: The audit evaluates the impact of terracing on soil fertility. Sustainable agricultural practices, such as the use of organic manure and crop rotation, should be promoted to enhance soil health. Compliance with policies that promote sustainable agriculture, like the Rwanda Agriculture Policy, is crucial.
6. Impact on Biodiversity and Ecosystem Services: Terracing can affect local ecosystems, especially if forests or natural habitats are cleared for agriculture. The audit examines whether the project has minimized negative impacts on biodiversity and whether restoration efforts (e.g., planting indigenous species) are in place to compensate for lost habitat, in line with the National Forestry Policy.
7. Social and Economic Benefits: Environmental audits also review the social impact of terracing, ensuring that projects benefit local communities by improving agricultural productivity, reducing flood risks, and preventing land degradation. These benefits should align with the goals of Rwanda's National Land Policy.
8. Health and Safety of Workers and Communities: The audit assesses the safety conditions for workers involved in terracing projects, such as the use of protective gear and access to health services. It also checks for any health impacts on local communities, particularly in relation to dust or water contamination.
9. Sustainability of Terracing Structures: The durability and maintenance of terraces are crucial for their long-term environmental benefits. Auditors check whether the project has a long-term plan for maintaining the terraces and preventing degradation, ensuring sustainable use of the land.
10. Public Consultation and Participation: The audit reviews the extent of community involvement in the planning and implementation of terracing projects. Public participation is essential to ensure that the terraces are designed in ways that reflect local knowledge and meet community needs, as required by Rwanda's environmental law on public involvement in decision-making.
11. Compliance with National Climate Change and Land Degradation Policies: The audit assesses whether the terracing project supports Rwanda's climate adaptation goals, as terracing can help mitigate the effects of climate change by reducing flood risks and improving soil resilience. This is in line with Rwanda's National Environment and Climate Change Policy (2021) and the Land Degradation Neutrality Target under the UN Convention to Combat Desertification.

3. METHODOLOGY

This survey used mixed approach including quantitative and qualitative approaches and observation on the ground. The quantitative approach served to determine the level of awareness and practices among beneficiaries and service providers of environmental and social justice safeguarding across public infrastructure development projects; the level of public participation at all stages of the implementation of public infrastructure development projects; the level of transparency and accountability in the implementation of public infrastructure development projects against established environmental safeguarding criteria in selected districts as well as measure both negative and positive social impact and vulnerability associated with the implementation of infrastructure development projects on beneficiaries' livelihood. In addition, the study explored the extent to which workers in infrastructure project as well population affected by the project were involved in corruption. The qualitative approach was used to collect secondary data and opinions from interviews and FGDs on issues pertaining to environmental and social safeguarding in selected infrastructure projects. The table below illustrates the tools used to collect both qualitative and quantitative data

Table 1: Tool of data collection

Method	Tools	Type of Data
Literature Review	Review of documents such as resettlement action plan, socio safeguards documents., ESIA, ESMP	Secondary Data
Structured Questionnaire	Questionnaire for workers in the construction project. Questionnaire for population affected by the project.	Quantitative Data
Interviews (Key Informant Interviews)	Semi-structured interview guide for representative of the company in charge of construction.	Qualitative Data
Focus Group Discussions (FGDs)	Focus group guide with participants from relevant groups.	Qualitative Data
Observation	Checklist	Qualitative Data

The tool for the FGD focused on qualitative information from beneficiaries by Identifying existing mitigation measures and adherence to best practices and assess their effectiveness.

3.1. Sampling Structure

The social audits focused on the selected districts as indicated in the terms of reference, namely: Karongi, Musanze, Gisagara, Bugesera, and Gasabo. The consultant expected to purposively identify 1 project in each district. Those projects included road construction, radical terracing projects, mining extraction, as well as dumpsite project construction. Different respondents involved in a project related to the protection of the environment were identified. The respondents identified in each project include representatives of the company in charge of construction services, employees in the construction project, and the population affected by the project (PAP). The consultant conducted interviews with grievance redress committees, project-affected people, constructors/supervising consultants, and the project team at the central level, district leaders such as the director in charge of infrastructure at the district level, as well as authorities in charge of infrastructure at the central level." The table below presents the sample

size of study by selected district , the number of projects and the category of respondents per project.

Table 2: Sample Size of the study

	Districts	Number of selected projects and category of respondents	Sample Size
1	**Musanze**	**2**	
		Representative of landfill operating companies	**1**
		Employees in the land fill construction project	**23**
		The population affected by the population	**11**
2	**Karongi**	**1**	
		Representative of the mining cooperative	**1**
		Employees in the mining company	**16**
		The population affected by the project	**2**
3	**Gisagara**	**1**	
		Representative of road construction company	**1**
		Employees in road construction project	**20**
		The population affected by the project	**15**
4	**Gasabo**	1	
		Representative of road construction companies	**1**
		Employees in road construction project	**63**
		The population affected by the project	**39**
5	**Bugesera**	**1**	
		Representative of terracing company conducting the project	**1**
		Employees in terracing project	**22**
		The population affected by the project	**24**
	Total	**6**	**240**

The sample size was selected purposively with Six projects in the five districts with 240 respondents**.**

3.2. Focus group discussions

The consultant anticipated conducting focus group discussions where the target population was the population affected by the project in the five selected districts. Five FGDs were conducted in Gasabo, Karongi, Musanze, Gisagara, and Bugesera districts. Each focus group discussion included 10 to 12 participants. Participants were people affected by the project and members of the Grievance Redress Committee. The topic of discussion was related to: 'negative and positive social impact and vulnerability associated with the implementation of infrastructure development projects on beneficiaries' livelihoods, and awareness and practices among

beneficiaries and service providers of environmental and social justice safeguarding across public infrastructure development projects.

3.3. Key informants' interviews

The consultants conducted key informant interviews with project team at the central level, workers, Grievance Redress Committees, project team at the District/City of Kigali level, regulatory institutions (REMA/district), Project Affected People, and contractors/supervising consultants. The topic of discussion was based on issues related to environment and social risk management, Environmental and Social Risks management instruments, and households affected by the project.

3.4. Quality control

In a bid to ensure data quality, the data collection activity was implemented by enumerators while team leaders and supervisors were responsible for supervision and coordination. Supervisors include TI-RW's researchers while team leaders were recruited based on their experience in carrying out such exercise. For data quality control purposes, the following measures were taken:

- Recruitment of skilled interviewers and supervisors
- Training of interviewers and supervisors
- Setting the questionnaire in Kobo Toolbox and introducing it into tablets
- Testing of the questionnaires
- Supervision of data collection activity
- Overall coordination of the field work
- Use of SPSS software for data analysis
- Data cleaning prior to analysis

3.5. Observation

The method of observation during the environmental and social safeguard audit of infrastructure construction projects involved closely monitoring the project's adherence to environmental protection standards and social impact mitigation measures. This included site visits where the focus was based on assessing how well the construction is minimizing harm to the environment, such as proper waste management, pollution control, and the protection of natural habitats. Additionally, the audit observed compliance with social safeguard policies, such as fair labor practices, community engagement, and mitigation of adverse impacts on local populations. Findings were recorded with photographic evidence, checklists, and notes to ensure all safeguard aspects were followed as per the project's commitment.

3.6. Data Analysis

All indicators were computed during this social audit with the data available. A merged database for different questionnaires was generated for analysis purposes. This was done after data cleaning and then data analysis. Data were collected using Android tablets (Kobo Collect) and

immediately converted into STATA for cleaning. The findings were presented in the form of tables and graphs to ease understanding by different audiences. Descriptive analysis was conducted to show different factors associated with the environmental social impact related to the projects.

The analysis of this assignment was based on two components: the evaluation, design, and implementation of the infrastructure projects to determine their suitability in minimizing environmental and social impacts, and the measurement of the level of public participation at all stages of the implementation of public infrastructure development projects.

3.7. Assessment of Technical Suitability

- The assessment of technical suitability for the infrastructure project involved a comprehensive evaluation of the design and construction to determine its effectiveness and stability. This involved a thorough physical checking of the design, construction plans, and materials specifications to ensure that they met the necessary safety and performance standards.

- Site visits were also conducted to observe the construction methods used and to evaluate adherence to best practices for impact mitigation. The effectiveness of the implemented mitigation measures, such as erosion control and habitat restoration, was assessed through field observations. The current condition of the infrastructure was evaluated through visual observations, noting defects or damages, geometrical hazards, and introducing effective solutions.

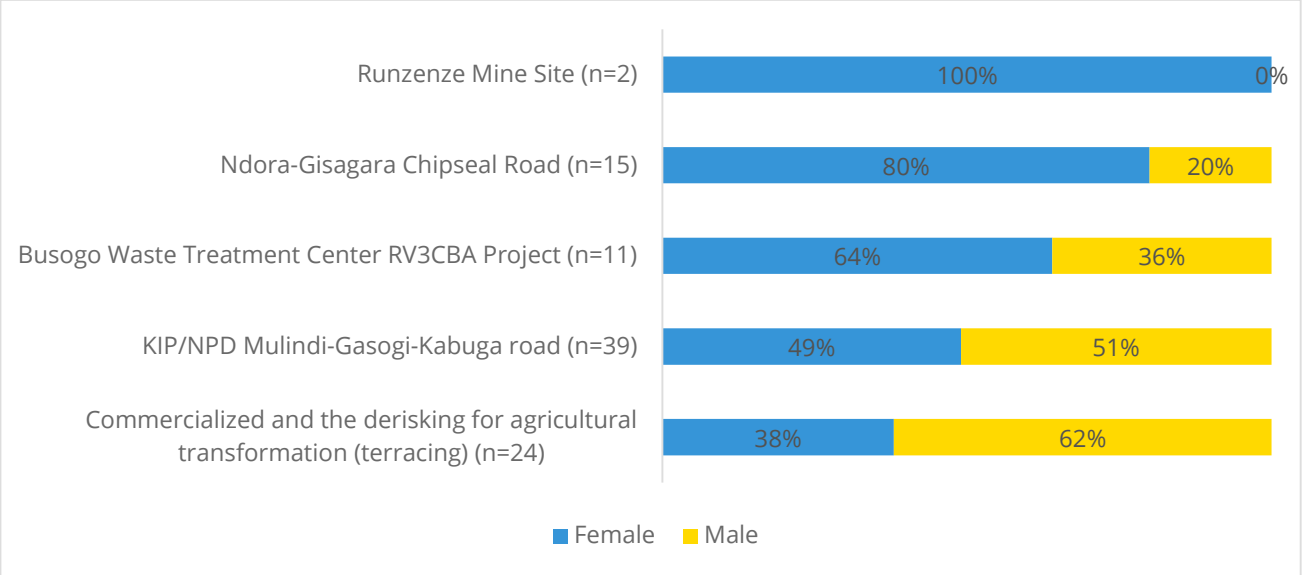
- Based on the findings, recommendations were developed for technical improvements or alternative approaches to enhance the technical suitability of the infrastructure project. Opportunities were identified to modify the design, explore alternative construction methods, or implement additional mitigation measures to further minimize environmental and social impacts while maintaining the functionality and cost-effectiveness of the infrastructure.

4. FINDINGS

4.1. Introduction

This study presents a comprehensive analysis of various aspects related to public infrastructure development and its impact on communities. The report then analyses the compliance of public infrastructure projects with environmental and social justice safeguards, assessing how well these projects adhere to regulatory standards. It also evaluates the level of awareness and practices among beneficiaries and service providers regarding these safeguards, shedding light on knowledge gaps and implementation challenges. Transparency and accountability in project implementation are scrutinized to determine how openly and responsibly development activities are managed. Additionally, the study explores the social impacts both positive and negative on beneficiaries' livelihoods, highlighting areas of vulnerability and benefit. It assesses the suitability of measures taken to minimize environmental and social impacts and reviews the effectiveness of mitigation strategies and adherence to best practices and bureaucratic reforms designed to enhance safeguards in public infrastructure projects.

Figure 1: Distribution of people affected by the project by type of project and by sex



The data shows the gender distribution across various infrastructure and agricultural projects. The terracing project under "Commercialized and the derisking for agricultural transformation" has a male-dominated workforce, with 62% male and 38% female participation. Similarly, the KIP/NPD Mulindi-Gasogi-Kabuga road project shows almost equal participation from both genders, with males slightly leading at 51% compared to 49% females. In contrast, the Ndora-Gisagara Chipseal Road and Runzenze Mine Site are more gender-skewed, with the former being predominantly female (80%) and the latter fully female (100%). The Busogo Waste Treatment Center also leans towards female participation, with women making up 64% of the workforce. Overall, there is significant gender variation across different projects, with some showing near parity while others display strong gender biases.

4.2. Compliance of public infrastructures projects on environmental and social justice safeguarding

Compliance with environmental and social justice safeguards in public infrastructure projects is essential for promoting sustainable development. These projects impact communities, ecosystems, and local economies, making adherence to environmental standards vital to prevent harm to natural resources and biodiversity, and to support climate action through carbon footprint reduction. Social justice considerations ensure that marginalized and vulnerable groups receive fair compensation, have a voice in decision-making, and avoid disproportionate negative impacts. By addressing both environmental and social factors, infrastructure projects contribute to inclusive, equitable, and sustainable growth.

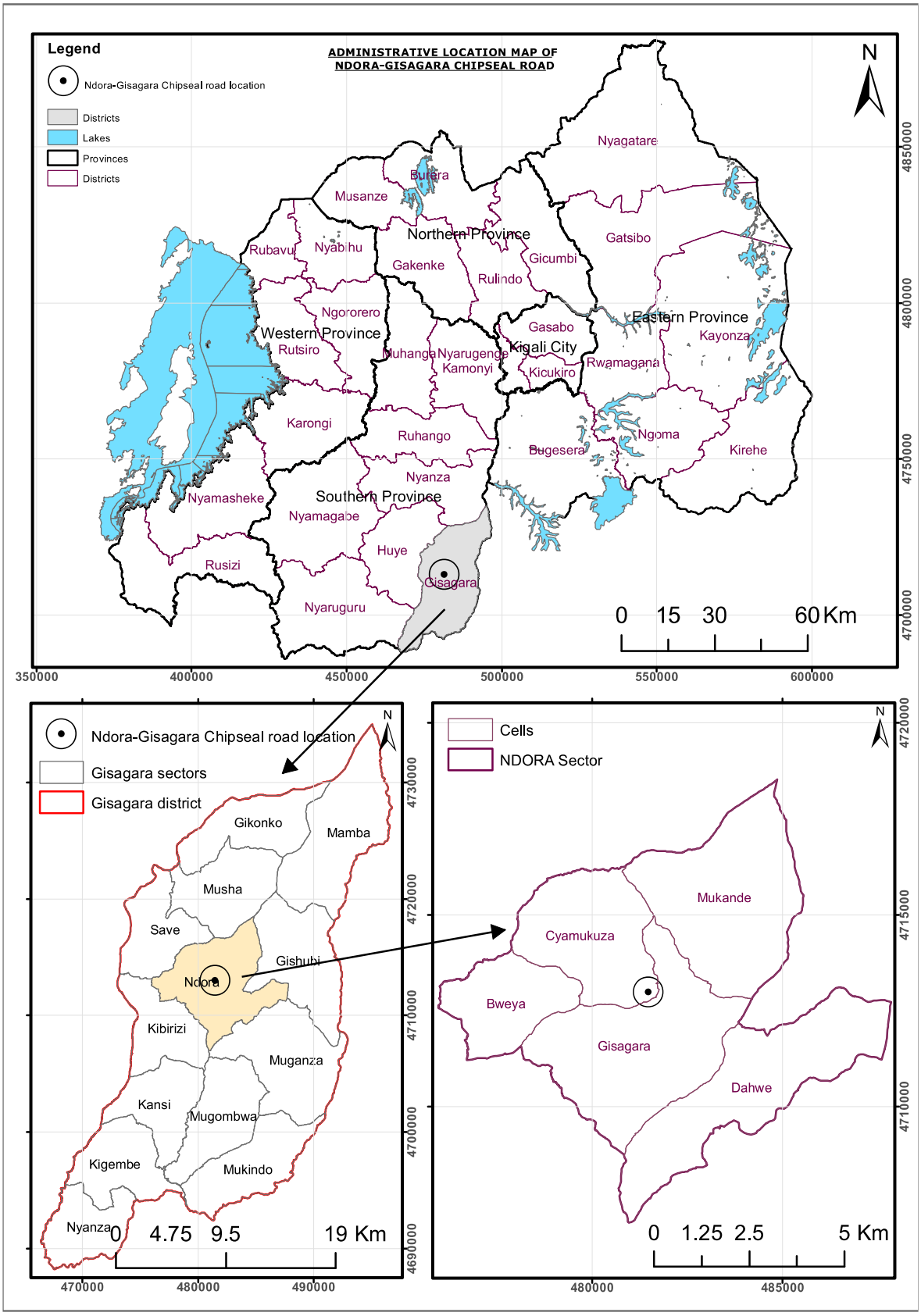
4.2.1. Compliance with environment and social safeguards criteria for Ndora – Gisagara Chipseal Road Project

4.2.1.1. Description of the Ndora – Gisagara Chipseal Road

This road construction project is located in Southern province, Gisagara's District, Ndora Sector, E: 481476m, N:4712985m, Z:1706m and has total length of 1.5km. It is implemented by ECOGEC Ltd. It is district road category, 6m carriageway and 1.2m walkways were respected. The government has placed emphasis on improving many road networks to promote commercial exchanges, passenger comfort and safer traffic.

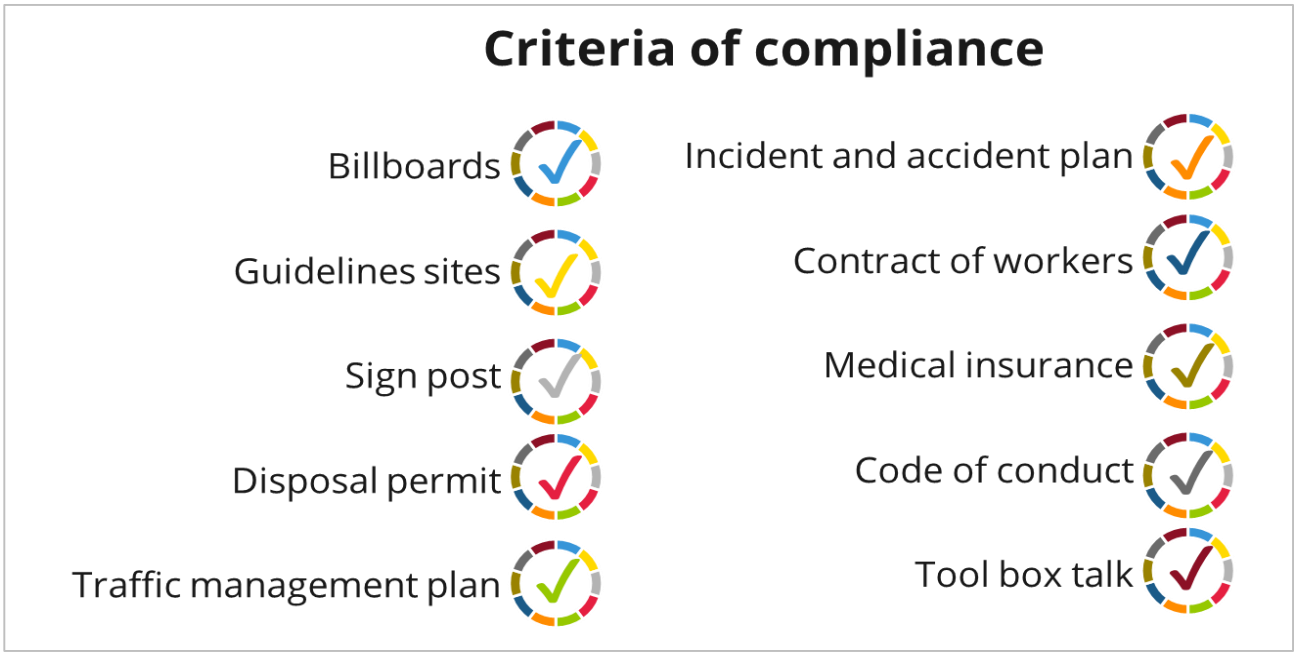
From the above, a good idea in many districts of using chip seal (better for low traffic, +8years) which is cheaper than asphalt concrete (better for high and heavy traffic, +20years) is being implemented across the whole country as well as in Gisagara District for better connecting people and improve road network accessibility (for all seasons) in residential areas. The carriageway width of this road meets the terms of reference for the contract (6m). This complies with the Law no 042/2023 of 02/08/2023 governing land and waterways transport in its article 21.

Figure 2: Administrative Location Map of Ndora – Gisagara Chipseal Road



4.2.1.2. Compliance criteria for environmental and social safeguards (Ndora – Gisagara Chipseal Road)

Figure 3: Ndora-Gisagara chipseal compliance



The figure above provided that the Ndora-Gisagara's Chipseal road construction project has effectively implemented key compliance criteria, ensuring the project's alignment with safety, environmental, and social standards. Items like billboards, guidelines at sites, and signposts ensure proper communication with the public and project stakeholders. These visual tools help maintain awareness and manage expectations regarding the construction's impact on the community. Furthermore, having a disposal permit and a traffic management plan demonstrates the project's commitment to environmental protection and minimizing disruptions, ensuring that waste is handled responsibly and that traffic flow is well-coordinated during construction activities.

In terms of worker safety and community protection, the presence of incident and accident plans, and medical insurance ensures that both employees and local communities are safeguarded against potential risks. Additionally, having a code of conduct guarantees that any issues raised by the community or workers are addressed systematically, ensuring ethical behavior and fair treatment. Finally, the contract of workers and toolbox talks ensure that the workforce is not only protected by labor agreements but also regularly trained on safety and operational standards, enhancing overall project safety and compliance.

The non-conformity of compliance of critical environmental and social safeguards criteria, such as an Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), and Environmental and Social Management Plan (ESMP) implementation plan, can have serious negative effects on both the environment and local communities. Without an ESIA, the road construction project may proceed without a clear understanding of the potential environmental and social risks. This could lead to significant ecological degradation, such as habitat destruction, soil erosion, and water pollution, as well as unanticipated negative social consequences like the displacement of vulnerable populations. Without a RAP, those affected by land acquisition for

the project may not receive adequate compensation or resettlement assistance, exacerbating social inequalities and leaving families displaced without support.

Moreover, the lack of a waste management report, occupational health measures and personal protection equipment (PPE) creates serious risks during construction. For example, without proper waste management, construction debris and hazardous materials may be improperly disposed of, leading to pollution that affects surrounding communities and ecosystems. This, not only poses health risks to local residents but can also cause long-term environmental damage. The absence of occupational health protocols leaves workers vulnerable to accidents, injuries, and exposure to harmful substances. Poor working conditions without the necessary health and safety precautions can result in a higher rate of on-site accidents, reduced worker productivity, and long-term health problems, all of which could delay the project and increase costs. These gaps in compliance could significantly undermine the project's sustainability and lead to long-term socio-environmental harm.

Similarly, as shown in the picture below, workers in Ndora- Gisagara chip seal road construction operate without any protective measures. At a busy road construction site, the absence of personal protective equipment (PPE) turns a space meant for progress into a hazardous environment. Workers toiling under the sun are at risk, as the lack of hard hats exposes them to falling debris, and the absence of high-visibility vests makes them difficult to see for moving machinery. A worker engrossed in his job unexpectedly comes face-to-face with a reversing truck, the horn blaring too late to prevent an accident. This incident highlights the serious repercussions of neglecting safety, resulting in injuries that not only cause physical pain but also lead to psychological distress.

The project faces delays and increasing insurance claims, pushing the timeline into uncertainty due to the failure to prioritize safety measures. The absence of PPE impacts not just the individual but also their colleagues, families, and the broader community, underscoring the significant consequences of seemingly minor lapses in safety protocols. This show that the project does not meet compliance with occupational health and safety regulations. Here the Ministerial order No 2 of 17/05/2012 determining conditions for occupational health and safety in its article 29 is not complied.

Picture 1: Personal protective measures for workers not respected

Furthermore, as shown in the picture below, the retaining wall thickness on the top was ±30cm, middle ±24cm and bottom width ±30cm. This does not comply with the RTDA[1] manual where dimensions at bottom width should be more than double top width according to the special height. This can prevent collapsing caused by earth pressure. Technical inspections assessed visually their thickness and find that when the retained soil is much moisture should break these walls, due to their small thickness comparatively to their relative height.

Picture 2: Retaining wall not complying with its thickness compared to its relative height

4.2.1.3. Road geometry

The geometric design of roads incorporates both horizontal and vertical alignments to ensure safety and efficiency in transportation. The straight sections must be designed to accommodate the terrain and traffic conditions. RTDA manual recommends maintaining a maximum vertical gradient of 10% for paved roads, with a desirable range of 6-7% to facilitate the movement of heavy vehicles and enhance overall road safety and this was respected for Ndora-Gisagara chip seal road[2].

4.2.1.4. Shoulders, Sidewalks and Paths

In Rwanda, most paved roads have acceptable shoulders, but sidewalks and dedicated paths for pedestrians and cyclists are scarce. The absence of these Non-Motorized Transport (NMT) facilities often results in conflicts between motor vehicles and NMT users. In the case of this particular road, walkways are provided according to the 1.2-meter specification outlined in the construction terms of reference. However, the main issue is the poor preparation of the walkway

[1] RTDA (2014) Road Pavement Design Manual

[2] RTDA (2014) Road Pavement Design Manual

base. It appears that the base was not properly compacted, and the surface of the walkway sits lower than the two adjacent curbs. This design could lead to water stagnation, base layer infiltration, and eventual damage of the road structure(see picture below).

Picture 3: The whole pedestrian ways along the project must be re-filled to easily facilitate rainwater flow

4.2.1.5. Drainage

Surface cross drainage refers to directing water runoff across roadways through side ditches. Based on physical observations, the chipseal on this road is poorly constructed, particularly in terms of roughness and cross slope, resulting in inefficient water drainage from the road surface. Soil accumulation in the ditches needs to be cleared, and some ditches should be covered in certain areas to allow easier pedestrian access. This drainage does not comply with Law No 042/2023 of 02/08/2023 governing land and waterways transport in its article 29 which state that run of water from the road is conveyed into well-built water which enable to prevent it from causing damage to the road and other forms of infrastructure, the environment or properties.

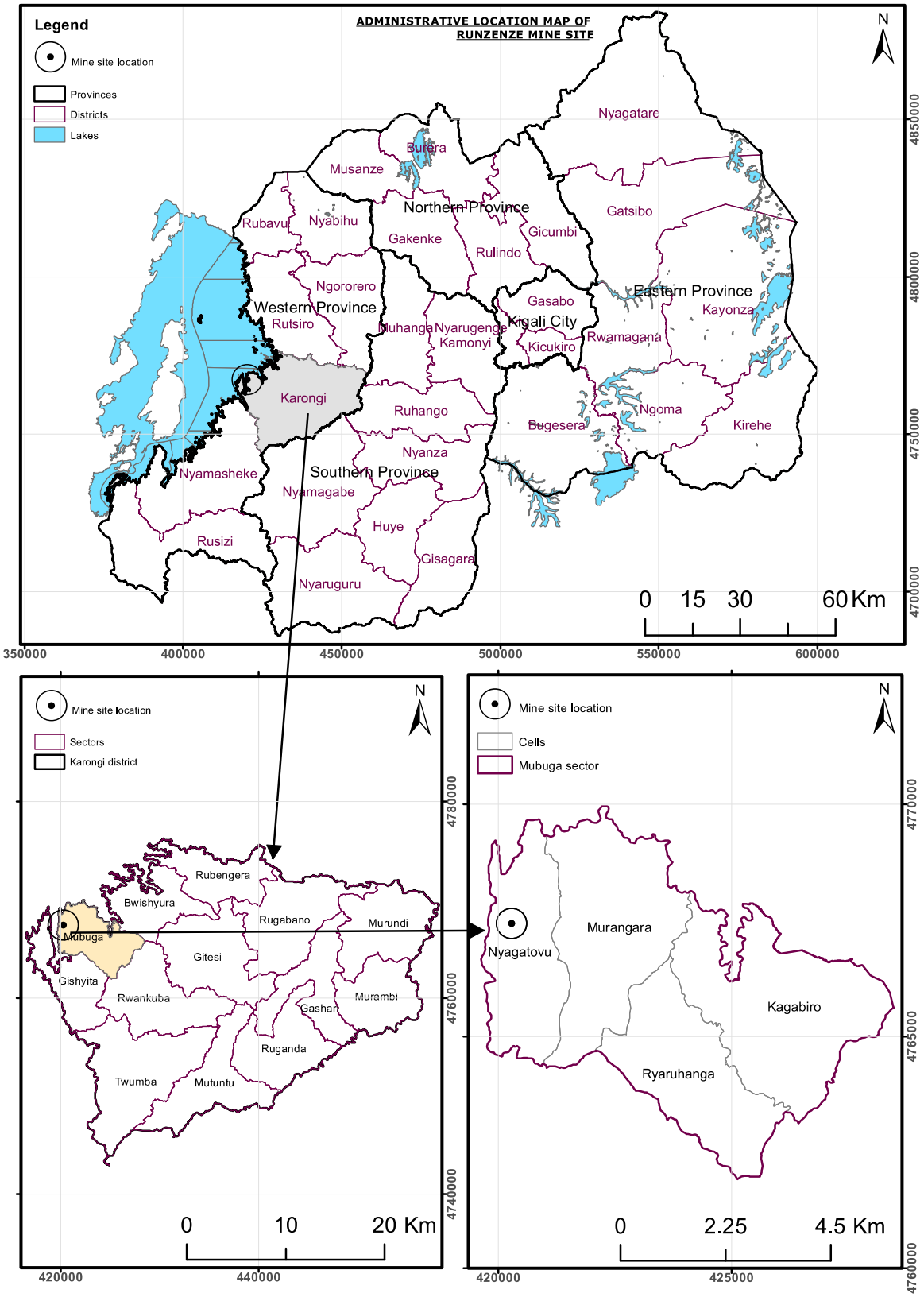
4.2.2. Runzenze Mine Site Compliance

4.2.2.1. Localisation

This mine site project is located in Western province, Karongi district, Mubuga Sector. Owned by Cooperative ABAHIZI licensed from October 2023 to last 15years. Blasting was prohibited from 2018 by Rwanda Mineral Board after experiencing explosive dangers to neighboring properties. They are nowadays using hand drillers for exploring cassiterite minerals.

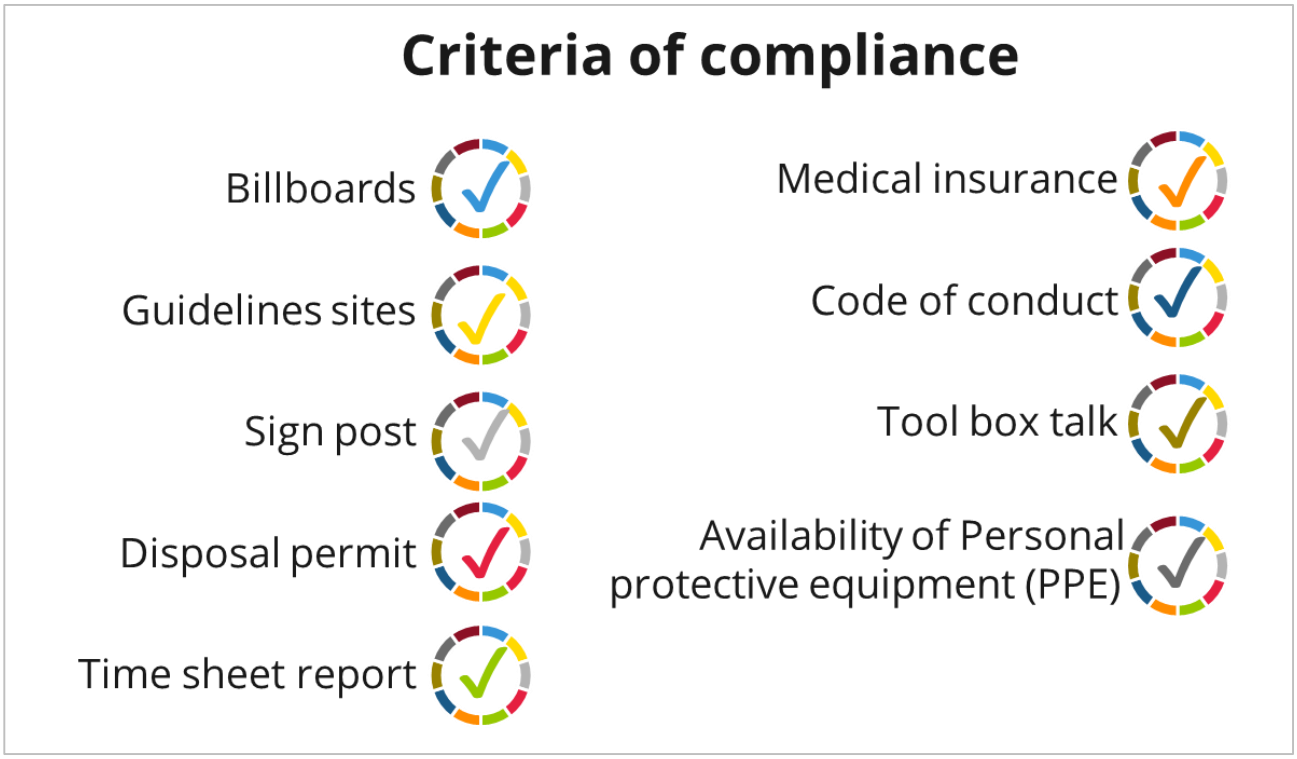
RUNZENZE mine site has an office where you can find regularly Accountant, environmentalist and Mine engineer; there is also Committee leader who is often attend and follow mine daily activities. The mine office is accessible on the main road and serves as a central hub for administrative tasks, record-keeping, and different communications. The office is equipped with computer and relevant documentation related to mining operations, safety protocols, and environmental compliance.

Figure 4: Administrative Location Map of Runzenze Mine Site



4.2.2.2. Compliance criteria for environmental and social safeguards at the Runzenze Mine Site

Figure 5: Runzenze Mine Site compliance



The compliance criteria for environmental and social safeguards at the Runzenze Mine Site demonstrate a strong commitment to responsible mining practices. The presence of billboards, guidelines, and signposts indicates that clear communication is in place to guide workers and inform the community about key safety measures and environmental considerations. These measures suggest that the mine is taking steps to prevent pollution and protect local ecosystems.

On the social front, the provision of essential amenities like medical insurance, and personal protective equipment (PPE) reflect the company's dedication to safeguarding workers' health and wellbeing. Regular toolbox talks and the availability of a code of conduct suggest that safety and ethical behavior are emphasized through ongoing education and awareness, reinforcing a culture of responsibility. Compliance with these safeguards ensures that the mining activities not only meet legal requirements but also contribute positively to the community, supporting both environmental protection and social welfare.

The absence of key compliance items such as the Resettlement Action Plan (RAP) and Environmental Impact Assessment (EIA) report during ongoing mining activities can lead to serious social and environmental consequences. Without a RAP, there is no formal plan to compensate and relocate displaced communities, which can cause social unrest, disrupt livelihoods, and violate the rights of affected populations. Similarly, the lack of an EIA report means that critical assessments of the mine's environmental impacts have not been conducted, leading to unmitigated harm to local ecosystems. This could result in the degradation of natural

habitats, loss of biodiversity, and long-term damage to land and water resources, causing significant consequences for the local environment and communities relying on those resources.

The absence of reports on soil erosion measures, ecosystem restoration, dust, and noise control can further amplify environmental degradation. Without soil erosion control, the site is vulnerable to land degradation, potentially destabilizing the landscape and affecting nearby agricultural areas. The lack of ecosystem restoration plans means that the mine's footprint could remain damaged long after operations cease, hindering biodiversity recovery. Furthermore, the absence of dust and noise control measures exacerbates air and noise pollution, affecting both worker health and nearby communities. Prolonged exposure to dust can lead to respiratory issues, while excessive noise can cause stress and hearing damage, making these omissions detrimental to the well-being of people and the environment.

4.2.2.3. Waste management

Field workers at the Runzenze mine site observed a lack of a waste management plan. Without proper waste management, mining activities can lead to serious environmental damage. Hazardous substances such as toxic chemicals and heavy metals may infiltrate the soil and water systems, contaminating both groundwater and surface water. This contamination negatively impacts local ecosystems, endangering plant and animal life while posing health risks to nearby communities that depend on these water sources for drinking and farming. Additionally, improper disposal of mining waste can cause debris accumulation, landscape changes, soil erosion, and deforestation, worsening environmental degradation. The Runzenze mining does not comply with waste management regulation according to the Law No **072/2024 of 26/06/2024** on mining and quarry operations.

4.2.2.4. Safety meeting

At the Runzenze Mine site in Karongi district, the engineer emphasizes the significance of holding regular safety meetings to remind workers of potential hazards and safety protocols. These meetings detail topics discussed, attendance, and action steps to enhance workplace safety. By fostering open communication and involving employees in safety discussions, these meetings contribute to a safer environment and mitigate risks associated with mining. Workers from Cooperative Abahizi set a strong example by consistently using personal protective equipment, such as helmets and boots, demonstrating practices that should be adopted in other projects to protect workers during mineral extraction. The Runzenze mine site comply with safety meeting. In a mining project, safety meetings are essential for maintaining a secure working environment. According to **Rwanda's Mining Law No. 58/2018 of 13/08/2018**, and as outlined in the **Ministerial Guidelines on Occupational Safety and Health (OSH)**, regular safety meetings should be conducted to review potential hazards, discuss safety procedures, and outline preventive measures. These meetings should cover worker attendance, key discussion points, and actions to enhance safety. The meetings also promote open communication, allowing employees to voice concerns, which supports a safer work environment.

4.2.2.5. Sanitation facilities with gender respect

A technical inspection assessed the availability, cleanliness, and accessibility of sanitation facilities for both male and female workers, rating them as moderate. While separate sanitations were provided, they were positioned too close to each other, compromising privacy. Cleanliness was acceptable but access was challenging due to only one facility serving a large area divided by distant tunnels. Additionally, no dedicated changing rooms for men and women were provided, despite this being a requirement by the Rwanda Mining Board. In term of sanitation facility, the Site does not comply with regulation because Rwanda Mining Board (RMB) guidelines, mining companies are required to provide separate sanitation facilities for male and female workers. In addition of that the number of facilities were not sufficient which make it worse for this site because the same guidelines stipulate that facilities must be sufficient in number based on the workforce size and should be easily accessible from different parts of the mining site, especially in areas where workers are involved in intensive activities such as tunnels or remote location. There was no changing room from men and women which deviate from the Law N°66/2018 of 30/08/2018 Regulating Labor in Rwanda. Mining projects must also provide designated changing rooms and shower facilities for workers, ensuring privacy and dignity, especially after shifts involving heavy labor.

4.2.2.6. Roads toward Mining

The roads leading to the mine were in poor condition, only providing access to the site entrance, forcing workers in tunnels. Directional signs were limited, with warnings placed primarily at tunnel entrances. Guidelines for road access to mining sites emphasize both environmental sustainability and worker safety. Roads should be designed to ensure efficient transportation while minimizing the impact on the surrounding landscape and communities. Here are key guidelines for road construction in mining projects. This shows non-compliance with Law N°43/2013 of 16/06/2013 Governing Land in Rwanda. Infrastructure, including roads, should be developed in a way that promotes sustainable land use and environmental conservation. In addition, it does not comply with Law N° 66/2018 of 30/08/2018, which requires employers to provide health and safety facilities in line with the nature of the work and the risks involved.

4.2.2.7. Medical Kits First Aid Facilities

There was also no dedicated first aid room or medical kits, nor any personnel assigned to health and safety. In case of an emergency, quick transport to nearby health centers was arranged. Moreover, despite the fire risks from machinery and flammable materials, the site lacked fire safety equipment and trained personnel, leaving it unprepared for fire emergencies. In this regard the site does not comply with Ministerial Order No. 03/2014/RSB of 2014 on occupational safety and health, which mandates that workplaces provide immediate medical attention in case of accidents or injuries. In addition, the site does not comply with the Law No 66/2018 of 30/08/2018, which requires employers to provide health and safety facilities in line with the nature of the work and the risks involved.

4.2.2.8. Mine Boundaries

The mine boundaries are not clearly defined, which poses risks to operational safety and regulatory compliance. The absence of both natural and artificial fixed boundaries means that workers and the surrounding environment lack adequate protection, leading to potential violations of mining permits and regulations. Additionally, no power or water supply systems were observed at the site. However, Runzenze mine does have a storage area at the main office where materials are stored properly and are easily accessible, with items kept in bags within a clean room. The site does not comply with **Law No. 58/2018 of 13/08/2018** on Mining and Quarry Operations requires that mining activities must ensure environmental protection and safety. Clear mine boundary marking is a part of ensuring compliance with safety regulations.

4.2.2.9. Extraction mining underground operations

The tunnel dimensions of 1.2 by 1.8 meters at the Runzenze mine site are intended to maintain worker safety and ensure operational effectiveness, as per standard mining practices. However, despite adhering to these specifications at the entrance, certain tunnels have inward slopes. This improper sloping leads to water infiltration and stagnation, which can jeopardize the structural integrity of the tunnels and the safety of workers. Such issues should be promptly corrected to comply with Rwanda's mining regulations, particularly those outlined in the Ministerial Order N°003/Minirena/2015 governing mining and quarry operations, which mandates proper drainage systems and safe working conditions to mitigate risks such as water accumulation.

4.2.2.10. Mineral Resources Report Regularly Updated

Maintaining an up-to-date mineral resources report prove an effective planning and management of mining operations. The office shows the document for recording after weighing. Maintaining an up-to-date mineral resources report is crucial for effective planning and management in mining operations. This practice aligns with Rwanda's mining regulations, particularly the Law N°58/2018 of 13/08/2018 on Mining and Quarry Operations. The law stipulates that mining entities must submit regular reports that include the quantity of minerals extracted, processed, and sold. Additionally, accurate record-keeping ensures compliance with environmental and safety standards and enables effective resource management and operational planning. In this case scenario, the presence of a document for recording after weighing at the office shows adherence to this requirement, reflecting compliance with legal obligations under Article 17 of the mining law, which mandates the submission of accurate mineral production data for accountability and transparency. This documentation is also critical in resource management and taxation processes.

4.2.2.11. Mine Design, Development Plan and Layout

The mining design prioritizes the safety, efficiency, and sustainability of operations by considering the arrangement of mining openings, the placement of support systems, and the integration of ventilation and drainage. However, at the Runzenze mine site, none of these elements are present. Mineral exploration is solely guided by visual inspections and mineral directories, with no emergency exits or safety shafts in tunnels to protect workers during emergencies. The site does not comply with **Rwanda Mining and Quarry Operations Law N°**

58/2018 of 13/08/2018, which mandates a comprehensive Mine Development Plan before operations begin. This plan should include detailed geological surveys, the layout of mining openings, support systems to prevent collapses, proper ventilation to ensure airflow, and drainage systems to manage water. Safety measures, such as emergency exits and safety shafts, are required to protect workers in emergencies. Additionally, the plan must address environmental sustainability, including waste management and land rehabilitation. Compliance with these guidelines is overseen by the **Rwanda Mines, Petroleum and Gas Board (RMB)**.

4.2.2.12. Mine Support System

A well-designed and correctly installed mine support system ensures the stability and safety of underground openings. The company claims to have stable soil conditions; however, when encountering loose soil, they use timber supports, as observed at the tunnel entrance. The site complies with the **Rwanda Mining and Quarry Operations Law N° 58/2018 of 13/08/2018**, which mandates that all underground mining operations have proper support systems to ensure stability and worker safety. These support systems must be designed based on geological conditions and the nature of the soil or rock being mined. When loose or unstable ground is encountered, as per the law, operators are required to install reinforcements such as timber, steel supports, or other suitable materials to prevent collapses. The law emphasizes that support systems should be regularly inspected and maintained, with the responsibility resting on the operator to protect the structural integrity of the mine and ensure a safe working environment for miners.

Picture 4: Tunnel walls and top protection comply with Mine support system

4.2.2.13. Lighting and Ventilation System in Tunnels

Proper lighting and ventilation are essential for ensuring worker safety, visibility, and health in tunnels. Currently, all tunnels at the site are new and close to the entrance, but the company is awaiting RBM permits to continue exploration with blasting, at which point lighting and ventilation issues will arise, as no mechanical systems for these are currently in place. Additionally, gas detectors to monitor the concentration of various gases in the tunnels have not yet been purchased or installed, which could lead to potential life-threatening situations.

However, the site engineer highlights that regular safety meetings are prioritized, where employees are reminded of potential hazards and safety protocols. These meetings, which include attendance records, discussed topics, and identified action points, promote open communication and encourage participation, contributing to a safer work environment and reducing mining-related risks. The site does not comply with the **Rwanda Mining and Quarry Operations Law N° 58/2018 of 13/08/2018**, which mandates the protection of worker health and safety in underground operations. Adequate lighting must be installed to ensure clear visibility in tunnels, especially in areas where natural light is insufficient, to prevent accidents. Ventilation systems are essential to maintain air quality by controlling dust, removing hazardous gases, and ensuring sufficient oxygen levels for workers. Operators must also install gas detection systems to monitor and address harmful gas concentrations. Compliance with these requirements is crucial for preventing respiratory health issues and ensuring the safety and efficiency of underground mining activities.

4.2.2.14. Erosion Control

The team evaluated the adequacy of erosion control practices, including sediment basins and vegetation cover, aimed at preventing soil loss and safeguarding water quality. The assessment shows how effective these measures were in controlling runoff and sedimentation during rainfall and observed some open water ponds with natural, unimproved channels. Regarding waste rock handling and management, the soil is leveled in designated areas, where grass or trees are planted for stabilization. The site does not comply with the **Rwanda Mining and Quarry Operations Law N° 58/2018 of 13/08/2018** and environmental protection regulations. Mining operators are required to implement effective erosion control measures to prevent soil loss and protect water resources. These measures include the use of sediment basins, proper drainage systems, and the establishment of vegetation cover to stabilize soil and reduce runoff. The law mandates the rehabilitation of disturbed land by leveling areas and planting grasses or trees to restore the ecosystem. Regular monitoring of these erosion control practices is necessary to ensure their effectiveness, particularly during heavy rainfall, to prevent sedimentation and protect nearby water bodies.

4.2.2.15. Tree Nursing

In the Runzenze mining area of Karongi district, there is a commendable practice of developing tree nurseries, which plays a vital role in environmental protection. Establishing tree nurseries in mining activities is crucial for ecological restoration and sustainability, as mining often leads to deforestation, soil degradation, and habitat loss. By cultivating trees, mining companies can rehabilitate impacted areas, reintroducing native vegetation, stabilizing soil, and enhancing biodiversity. Additionally, trees help reduce carbon emissions and combat climate change. This initiative also encourages community involvement and offers local employment, contributing to both ecological restoration and social benefits in mining-affected areas. The site comply with **Rwanda Mining and Quarry Operations Law N° 58/2018 of 13/08/2018**, which mandates environmental restoration as part of post-mining rehabilitation efforts. Mining companies are required to establish tree nurseries to support reforestation and land restoration in areas impacted by mining activities. This includes planting native tree species to stabilize the soil, prevent erosion, restore biodiversity, and improve ecological balance.

Picture 5: Trees nursery is established to support reforestation and land restoration

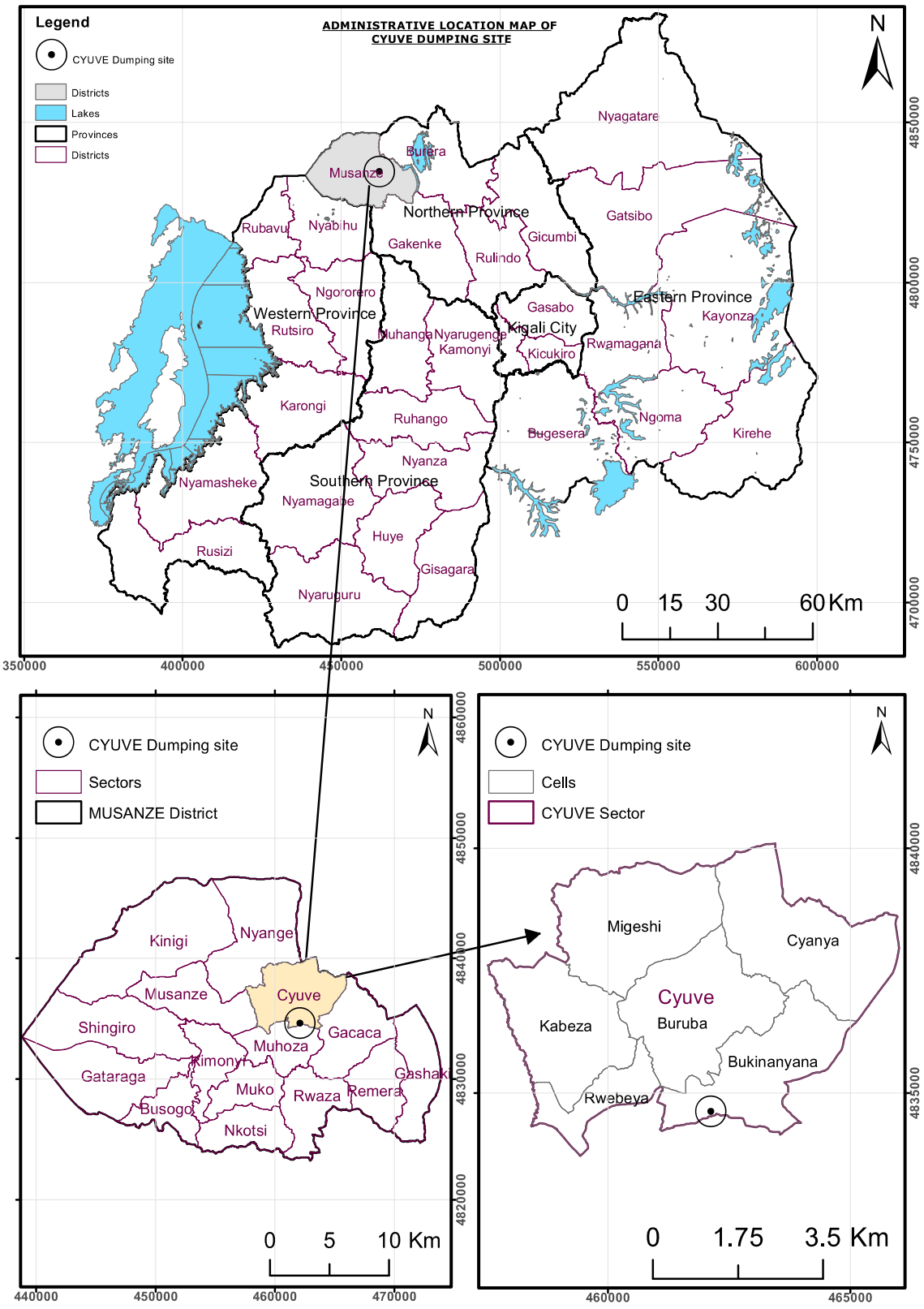
4.2.2.16. Tree Planting

Planting trees in areas affected by mining is essential for restoring ecosystems and maintaining environmental health. Mining often leads to significant changes in the landscape, such as soil erosion, biodiversity loss, and disruption of natural water cycles. Trees help reverse these impacts by stabilizing the soil, reducing erosion, and aiding the recovery of local plant and animal species. They also improve soil fertility and water quality by filtering pollutants and controlling runoff. Additionally, reforestation contributes to climate change mitigation through carbon sequestration and helps recreate natural habitats for wildlife. Overall, tree planting in post-mining areas promotes ecological stability and supports long-term environmental and community sustainability. The site complies with the **Rwanda Mining and Quarry Operations Law N° 58/2018 of 13/08/2018**, which requires mining companies to implement reforestation as part of land rehabilitation. Mining operators must plant native tree species in areas affected by mining to restore ecological balance, prevent soil erosion, improve biodiversity, and enhance soil fertility. Tree planting efforts should also contribute to carbon sequestration, helping mitigate climate change impact.

4.2.3. Cyuve Dumping Site

4.2.3.1. Localization of Cyuve Dumping Site

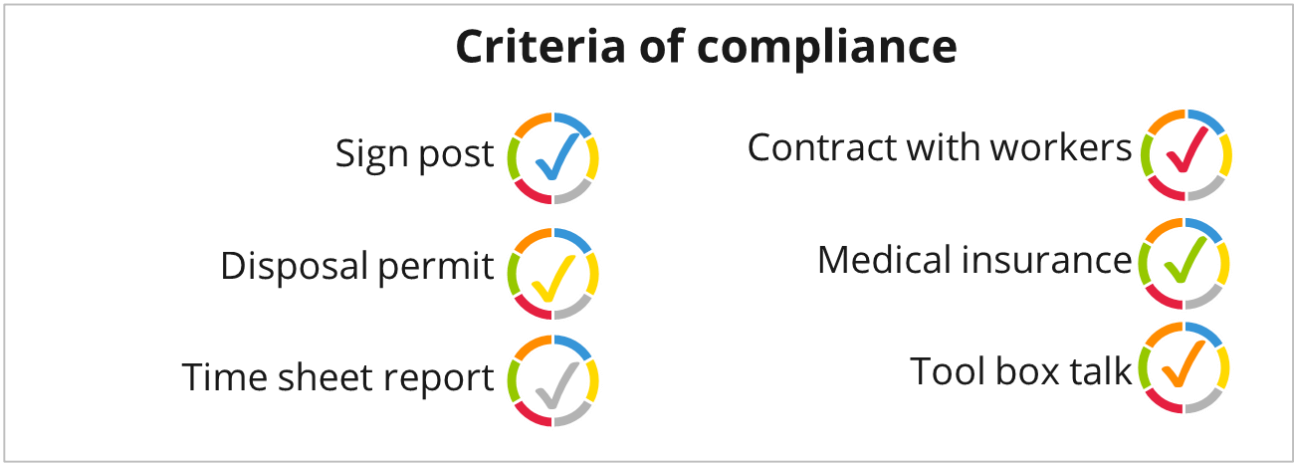
Figure 6: Administrative Location Map of Cyuve Dumping Site



CYUVE Dumping site is located in Northern province, Musanze district, Cyuve Sector, Bukinanyana cell and Rubando village, E:462121m, N:4834626m and Z:1846m. It is controlled by M. ZI Company Ltd. This site started to receive domestic waste since 2009. The company has signed the contract with Musanze district.

4.2.3.2. Compliance with environment and social safeguards

Figure 7: Cyuve dumping Site compliance



The environmental audit of the Cyuve Dumping Site reveals strong adherence to essential compliance criteria. The presence of a sign post indicates that the site is clearly marked, helping direct both workers and visitors. Having a valid disposal permit , preventing unregulated dumping and safeguarding environmental quality. The time sheet report adds accountability, tracking the schedules and operations to ensure regulated disposal activities. These compliance measures, taken together, demonstrate the site's commitment to maintaining transparency and legal conformity in its waste management practices.

In addition, the audit highlights provisions that support the well-being and safety of the workforce. The site has contracts in place with workers, which formalize their employment and help ensure fair labor practices. Medical insurance coverage is also provided, which is crucial in protecting workers' health by covering any medical costs that may arise during work. Furthermore, the inclusion of a toolbox talks underscores the importance of safety education, as it involves regular safety briefings and risk awareness sessions to ensure that workers understand the hazards of the job and are equipped to minimize accidents. These worker-focused compliance items not only improve safety but also promote worker satisfaction and retention at the site.

The absence of key environmental management items, such as billboards and guideline sites, poses significant challenges for the Cyuve Dumping Site. Without billboards or clear signage, there is limited public awareness and transparency regarding the operations of the site, making it difficult for both workers and local communities to understand the rules, safety procedures, and environmental guidelines in place. This lack of visible information may lead to unsafe practices, unauthorized access, or misuse of the site. Furthermore, the absence of a clear guideline site means there are no reference points for standardized procedures, leaving workers

without a structured operational framework, which can lead to inconsistencies in waste disposal practices, increased environmental risks, and confusion among site personnel.

In addition, the absence of critical reports like the Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), community grievance report, Environmental and Social Management Plan (ESMP) implementation report, and waste management report suggests a failure to comprehensively assess and mitigate the environmental and social impacts of the dumping site. Without an ESIA and RAP, the site may have overlooked significant environmental hazards and social disruptions that could affect nearby communities, such as displacement or health risks. The lack of a community grievance report indicates that there is no formal channel for the local population to voice concerns, potentially leading to unresolved tensions and conflicts. Furthermore, the absence of ESMP and waste management reports points to a failure in monitoring and managing the environmental effects of dumping activities, which could result in improper waste handling, pollution, and long-term degradation of the surrounding environment. These missing elements would not only compromise environmental sustainability but also increase the likelihood of regulatory violations and community opposition.

Picture 6: District environmentalist team welcoming TI team at Cyuve dumping site

4.2.3.3. Regulatory compliance

Regulatory compliance ensures that waste management practices align with national standards. The visit of cyuve dumping site revealed that many documents related to the dumping site requirements are not on the site as there is no office. Several important documents were missing such as Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), community grievance report, Environmental and Social Management Plan (ESMP) implementation report, and waste management report and therefore failed to comply with the Law No. 48/2018 of 13/08/2018 on Environment and regulations set by the Rwanda Environment Management Authority (REMA).

4.2.3.4. Administrative Office, Managing Staff, Security, and Sanitaries

There are no administrative offices on-site, and there are no records or documents related to dumping activities. The supervisor mentioned that such documents are located at an office far from the site. The staffing levels are inadequate, as only one supervisor was present, and this is insufficient to handle all the necessary operations, safety enforcement, and emergency responses for the dumpsite.

Security measures are severely lacking, with no access control or surveillance. Children frequently enter the site to scavenge, and domestic animals roam freely. This does not comply with the Law n°° 39//22001 of 13 September 2001 establishing the Rwanda Utilities Regulatory Agency (RURA)) of certain Public Utilities, in its ARTICLE 1 highlighting its mandate to regulate sanitation services, and stipulate that the site must effectively be fenced or otherwise secured to prevent unauthorized entry[3].

Picture 7: Kids collecting metals, bottles, plastics materials and other small things they find important to return back at their homes or elsewhere. The site does not have fence nor security personnel and anyone from outside can enter freely

There are also footpaths passing through or near the site, used by people traveling to other areas. Additionally, there are no sanitary facilities for workers. The supervisor mentioned that they use nearby residential facilities, but human waste is visibly scattered around and within the site itself.

Weighing and Record Keeping: The supervisor said they don't weigh but count number of trucks. And normally reliable record-keeping should monitor waste management performance, facilitating reporting to regulatory authorities, and ensuring compliance with environmental standards.

[3] RURA (2001) Guidelines on the management of waste disposed site(landfill).

Road Networks Accessibility and Conditions

The accessibility to this dumping site is good, road is wide and rough to facilitate truck for efficient waste transportation and operational effectiveness. However, some waste deposits still observable within site roads

Picture 8Leachate observable within roads in dumping site

4.2.3.5. Erosion Control and Sedimentation Measures

It is crucial to minimize the environmental impacts associated with dumping sites, but there are no strategies in place to prevent soil erosion at this site. Due to the volcanic nature of the terrain, which is generally stable, erosion is not currently a major concern since the rock base remains intact year-round. However, during heavy rains, water takes longer to infiltrate, and once the ground becomes saturated, waste could be carried rapidly to nearby marshlands. There is no retention pond, so excess water flows off the site directly.

There are no erosion or sediment control plans in place, and national guidelines have not been followed. The 2009 RURA guidelines on managing waste disposal sites (landfills) specify that:

- The bottom of the landfill should be at least three meters above the seasonal high groundwater.
- The maximum height of the landfill should not exceed three meters above ground level.
- The landfill's edge should be at least 60 meters from a surface water body and 100 meters upstream from a public water supply.

Picture 9: People are washing their cloth using contaminated water from the dumping site

Picture 10: Kids swimming in this turbid water as natural pool located within 30meters from dumping site

4.2.3.6. Buffer Zone

The requirement to establish a buffer zone with a designated reserve width around dumping sites to shield nearby properties from potential environmental impacts has not been followed. The Cyuve dumping site is located directly adjacent to residential areas, violating the guideline set by RURA (2009, 4.2C), which mandates that such sites be at least 400 meters away from any residential development. This regulation has clearly been disregarded, as some residents are living within the dumping site areas. A proper buffer zone is essential for reducing conflicts with local communities, safeguarding public health and safety, and supporting the long-term sustainability of waste management operations.

Picture 11: Residential houses within dumping site

4.2.3.7. Waste Management

The waste management practices observed at the site are inadequate. The company lacks effective strategies for waste collection, transport, treatment, and disposal. No plans have been made for waste segregation, recycling, or environmental protection, and there are significant risks involved. Additionally, there are no personnel responsible for waste screening; their only activity involves unloading and spreading waste. The waste is being dumped at an uncontrolled site close to residential areas. The site is unfenced, which exposes the waste to scavenging, particularly by children. Access to the site is also limited due to an unpaved road.

Waste inspection procedures, which are intended to ensure that the materials disposed or meet regulatory standards, are not being followed here. All types of waste, including bottles, metals, plastics, rubber, electronics, and organic materials, are mixed together. This does not comply with the solid waste management regulations in Rwanda (No. 002/EWASTAN/SW/RURA/2015), which require waste to be processed or treated without causing environmental harm or public health risks. No action has been taken to prevent issues like odor, leachate, or the potential for fires or explosions, all of which are prohibited under the regulations. As a result, the site does not meet legal waste management standards.

Picture 12: There is no inspection to identify any hazardous or prohibited materials in order to prevent contamination of the landfill and ensure compliance with environmental regulations

4.2.3.8. Storage Areas

The design and condition of storage areas at dumping sites is a must for effective control of leachate and runoff management. As said earlier, storage areas should be covered or paved (or compacted for less infiltration) to prevent leachate from contaminating surrounding soil and water sources. Inspection shows Cyuve dumping site is clearly open, storage pavements is highly infiltrated and no drainage systems to manage runoff, that's why leachate has been observed at lower points on marshland side. The storage does not comply with the regulation governing the provision of services of hazardous waste management No 002/R/SAN/EWATSAN/RURA/2017 of 01/03/2017 in which article 5 stipulated that" The generator of hazardous waste must ensure that hazardous waste is well segregated from other wastes to avoid any harm to the environment or to the community. The segregation of hazardous waste must meet the following requirements:1°all hazardous waste must be segregated according to their nature to prevent incompatible mixtures;2°the segregation can be by hazard class such as flammable, oxidizer, pyrophoric, reactive, reducer, acid, base, and toxic.[4]

4.2.3.9. Waste Compaction

Waste compaction is a crucial practice in managing dumpsites, as it optimizes space usage and minimizes the risk of waste movement and leachate formation. However, this technique is not being implemented at this site, where waste is simply spread out and left to settle naturally. Ideally, waste should be regularly compacted and covered with soil to control odors and prevent pest infestations. Proper compaction methods enhance landfill efficiency, extending its lifespan and ensuring compliance with environmental standards. In this case, the dumpsite does not meet the requirements outlined in Law No. 39/22001 of 13 September 2001, which established the Rwanda Utilities Regulatory Agency (RURA). This law mandates that waste at the site must be compacted and covered monthly with at least 150 millimeters of soil to maintain proper sanitation and environmental standards.

4.2.3.10. Health and safety measures

The inspection evaluated whether all workers had access to necessary personal protective equipment (PPE), such as gloves, masks, boots, overalls, and high-visibility clothing, which are critical for safety during waste handling. It was found that the workers were not adequately trained on the use of PPE, leading to misunderstandings about its importance and how to properly maintain it. No one was observed wearing full protective gear, and some workers admitted unfamiliarity with the equipment. They also noted difficulties in performing tasks, such as handling waste, when wearing items like gloves. It was recommended that workers receive proper safety training, and that the company should only allow personnel in full protective kits to work. The current situation at the dumpsite does not comply with the regulation for managing hazardous waste (No. 002/R/SAN/EWATSAN/RURA/2017), specifically Article 15, which mandates that service providers handling hazardous waste must supply appropriate safety equipment, including masks, safety shoes, eye protection, and other necessary gear to their employees.

[4] Official gazette no 10 of 22/03/2021

Picture 13: Workers without wearing masks, boots, gloves or any other protective material for hazards waste handling

4.2.3.11. Emergency Response Plan Trained Personnel

There are no staff on-site responsible for safety or emergency management. A clear emergency response plan, along with trained personnel, is essential for effectively handling incidents. During technical inspections, the existence and adequacy of an emergency response plan were evaluated, but no one was available to provide information, and visual observations indicated that unknown hazardous materials could appear at any time without any preventive measures in place. The site lacks fire extinguishers, a connected water pipeline, and first aid kits.

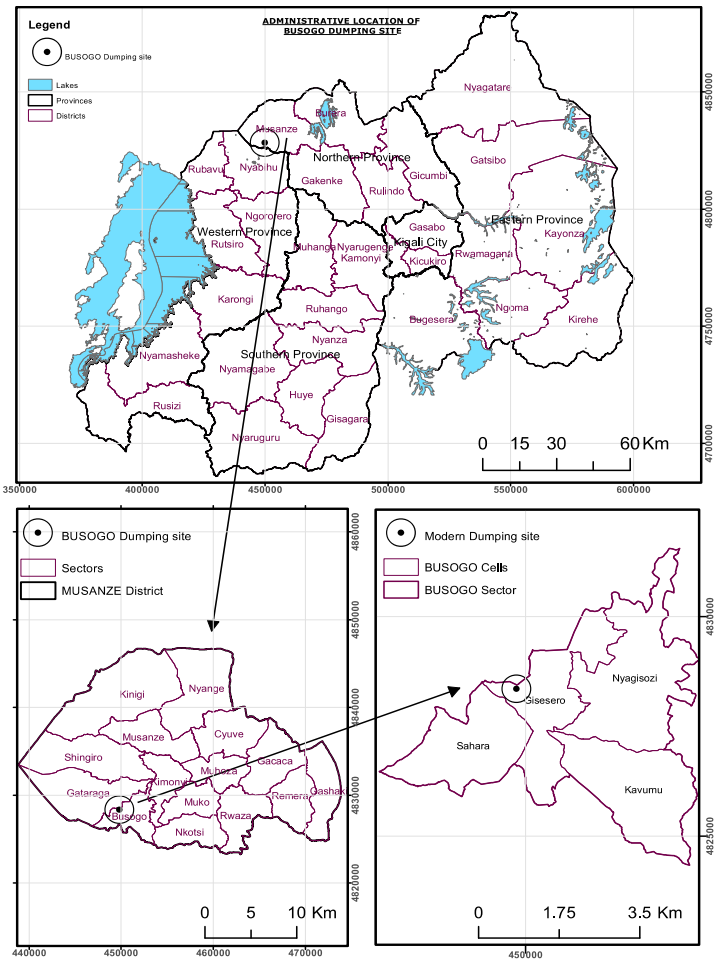
The current situation at the dumpsite does not meet the requirements of the regulation for hazardous waste management (No. 002/R/SAN/EWATSAN/RURA/2017), particularly Article 34, which states that staff handling hazardous waste must receive sufficient training to fully understand safety protocols. [5]

[5] Official gazette no 10 of 22/03/2021

4.2.4. Busogo Waste Treatment Center RV3CBA Project

4.2.4.1. Localisation

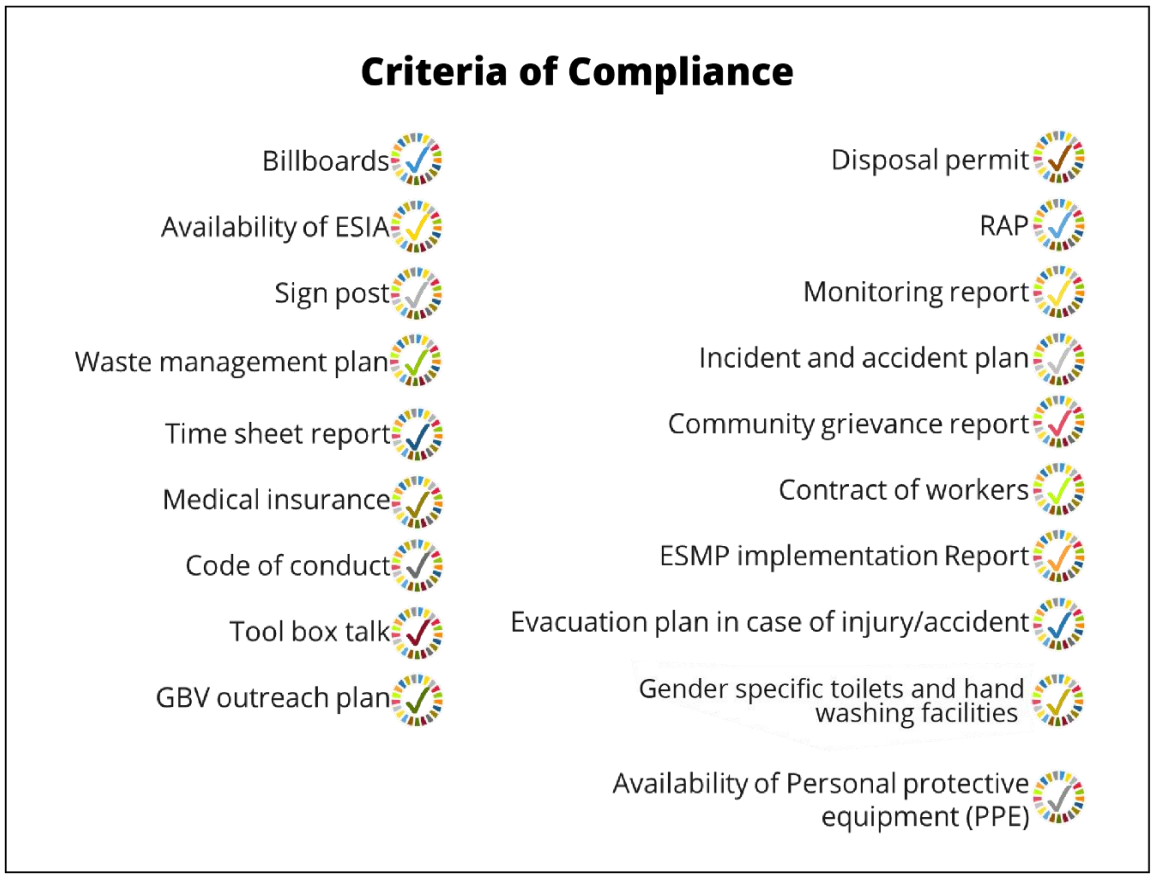
Figure 8: Administrative Location Map of Busogo Waste Treatment Center RV3CBA Project



Busogo waste treatment center site is located in Northern province, Musanze district, Busogo Sector, Gisesero cell and Gahanga village, E:449811m, N:4828352m and Z:2232m. It is controlled by Recycle Africa Ltd. The company has signed a contract with Musanze district in 2019 to last 5 years. This waste center has well developed infrastructures, huge open bins packed with segregated waste, area reserved for compost manual from domestic organic waste and well packed fertilizers produced from this waste treatment center.

4.2.4.2. Compliance with environment and social safeguards

Figure 9: Busogo waste treatment center compliance



For the environmental audit of the Busogo Waste Treatment Center under the RV3CBA Project, items for compliance play a vital role in ensuring environmental sustainability and the protection of public health. Compliance with environmental standards involves essential documentation such as waste management permits, environmental and social impact assessments (ESIA), RAP, ESMP and regular reports on waste treatment operations. These documents demonstrate that the facility is adhering to national and international environmental regulations, helping to prevent contamination of the surrounding ecosystem, including nearby water sources. By maintaining such compliance, the waste treatment center can operate efficiently while minimizing its ecological footprint, ensuring that waste is properly treated and disposed of without causing harm to the local environment.

Furthermore, items for compliance such as safety protocols, community engagement reports, and environmental monitoring plans are crucial in fostering a safe and collaborative relationship between the facility and the local community. Safety protocols ensure that workers are adequately protected during operations, reducing the likelihood of workplace accidents and exposure to hazardous materials. Meanwhile, community engagement through grievance mechanisms and public reports allows for local residents to voice concerns, ensuring that the facility remains responsive to community needs and concerns. Compliance with these items not only builds trust with local populations but also helps the waste treatment center to remain a

socially responsible entity, addressing both environmental and human health concerns comprehensively

The existence of key environmental and social management items, such as billboards and guideline sites, at the Busogo Waste Treatment Center under the RV3CBA Project can lead to increase transparency for the public to understand what activities are taking place and whether safety and environmental precautions are being followed.

Picture 14: TI-Rw team and District officials discussing on how to manage waste within Busogo waste treatment canter

4.2.4.3. Site criteria and infrastructures

This site is regarded as up-to-date and complies with most key requirements for a properly managed waste treatment facility. It holds a valid permit and has successfully completed an Environmental Impact Assessment (EIA). The wastewater management system is effective, preventing liquid waste from polluting the environment. Furthermore, the site is situated at a considerable distance from residential areas, minimizing any health hazards to local communities. Its elevated position, well above the groundwater level, further reduces the likelihood of groundwater contamination, ensuring adherence to environmental and safety regulation. The Busogo waste treatment comply with Law No 48/2018 of 13/08/2018 for having Environment Impact assessment. In addition, the project complies with the Ministerial Order No. 004/16.01 of 15/07/2010 on solid waste management governing proper disposal, recycling, and treatment of waste.

4.2.4.4. Separation of waste materials

The separation of ceramic materials, bottles, metals, plastic bags, and electronic waste provides substantial environmental benefits by facilitating recycling and reducing pollution. By sorting these materials, recyclable items like metals, glass, and certain plastics can be processed for reuse, cutting down the demand for new raw materials and preserving natural resources. Proper handling of electronic waste prevents harmful chemicals such as lead, mercury, and cadmium from contaminating the soil and water. Segregating plastic bags helps reduce plastic pollution,

which is harmful to wildlife and ecosystems. Additionally, ensuring that ceramics and other non-recyclable materials are disposed of or repurposed properly contributes to responsible waste management. This organized approach to waste separation reduces landfill use, decreases greenhouse gas emissions, and promotes a circular economy that focuses on resource efficiency and environmental sustainability. This imply that the Busogo waste treatment center fulfills the condition of regulation governing the provision of services of hazardous waste management No 002/R/SAN-EWA/SAN/RURA/2017 OF 01/03/2017 on its article 5 of segregation of hazard[6].

Picture 15: Plastic waste collected

4.2.4.5. Waste Management Plan

The Waste Management Plan appears to be well-implemented, as the company has established effective strategies for managing and disposing of waste. Upon physical inspection, it was observed that the company's operations are aligned with best practices in waste segregation, recycling, and environmental protection. Most of the essential requirements and guidelines set forth for waste management have been adhered to. This includes measures to ensure that recyclable materials are properly sorted, waste is processed in an environmentally responsible manner, and disposal practices minimize the impact on the surrounding ecosystem. The company's efforts suggest a commitment to sustainable waste management, promoting both regulatory compliance and environmental stewardship. The company comply with the regulation No 002/EWASTAN/SW/RURA/2015 of 24/04/2015 governing solid wastes recycling in Rwanda especially in its article 15 of segregation of waste materials as well as on article 9 on operation on recycling facility.

[6] Official gazette no 10 of 22/03/2021

Picture 16: Ceramic materials, bottles, metals kept in different open bins

4.2.4.6. *Managing Staff, Security, and Sanitation*

Personnel are consistently present and actively working at the site. It is securely fenced and staffed with security personnel, along with effective sanitation facilities, power supply, and access to potable water. The supervisors at the waste center regularly record the volume of waste received each day. Additionally, the site is easily accessible, with wide and rough roads designed to accommodate trucks for efficient waste transportation and operational effectiveness. Based on the above information, the center complies with the Law No. 48/2018 of 13/08/2018 on Environment and regulations on required documents such EIA, RAP and others as well as Law No. 39/22001 of 13 September 2001, which established the Rwanda Utilities Regulatory Agency (RURA) for certain public utilities which stipulate that the site must effectively fenced or otherwise secured to prevent unauthorized entry.

4.2.4.7. Erosion Control and Sedimentation Measures

As mentioned earlier, the site is well-designed, with rainwater being channeled through ground drains and roof runoff collected in nearby water tanks. There is no exposure of hazardous waste to rain, which is mitigated by sedimentation measures, and the soil at the site is visibly resistant to erosion. Additionally, there is no rainwater runoff flowing outside the site. The Busogo Waste Treatment Center adheres to Law No. 39/22001 of 13 September 2001, which established the Rwanda Utilities Regulatory Agency (RURA) for certain public utilities. This law specifies that the slopes of the site must be constructed in a way that prevents significant erosion

4.2.4.8. Waste Processing

This facility has developed a comprehensive compost manual that outlines the entire process for managing domestic organic waste, covering aspects such as collection, segregation, and processing. The manual highlights the critical role of separating biodegradable materials at the household level, which is essential for effective composting. By encouraging households to segregate their organic waste, the manual promotes an efficient composting process that transforms kitchen scraps, yard waste, and other biodegradable materials into nutrient-rich compost. This approach not only reduces the volume of waste sent to landfills but also supports sustainable gardening and agriculture by providing a valuable resource that enhances soil

quality and fertility. Overall, the manual serves as a practical guide for communities to engage in environmentally friendly practices that contribute to waste reduction and resource conservation. The Busogo waste treatment comply with Law No 48/2018 of 13/08/2018 for having Environment Impact assessment. In addition, the project complies with The Ministerial Order No. 004/16.01 of 15/07/2010 on solid waste management governs proper disposal, recycling, and treatment of waste at these sites.

Picture 17: Preparation of compost manual from domestic organic waste in 90 days

Composting not only enriches the soil and improves its ability to retain water but also lessens the reliance on chemical fertilizers, which can negatively impact ecosystems. This natural recycling method effectively closes the loop in organic waste management, converting waste into a valuable resource that enhances soil fertility. As more individuals embrace composting, it leads to a decrease in overall waste production, supports biodiversity, and nurtures a healthier, more resilient environment. Consequently, composting emerges as a vital strategy for waste reduction and ecological preservation.

Picture 18: Workers segregating domestic waste wearing PPE

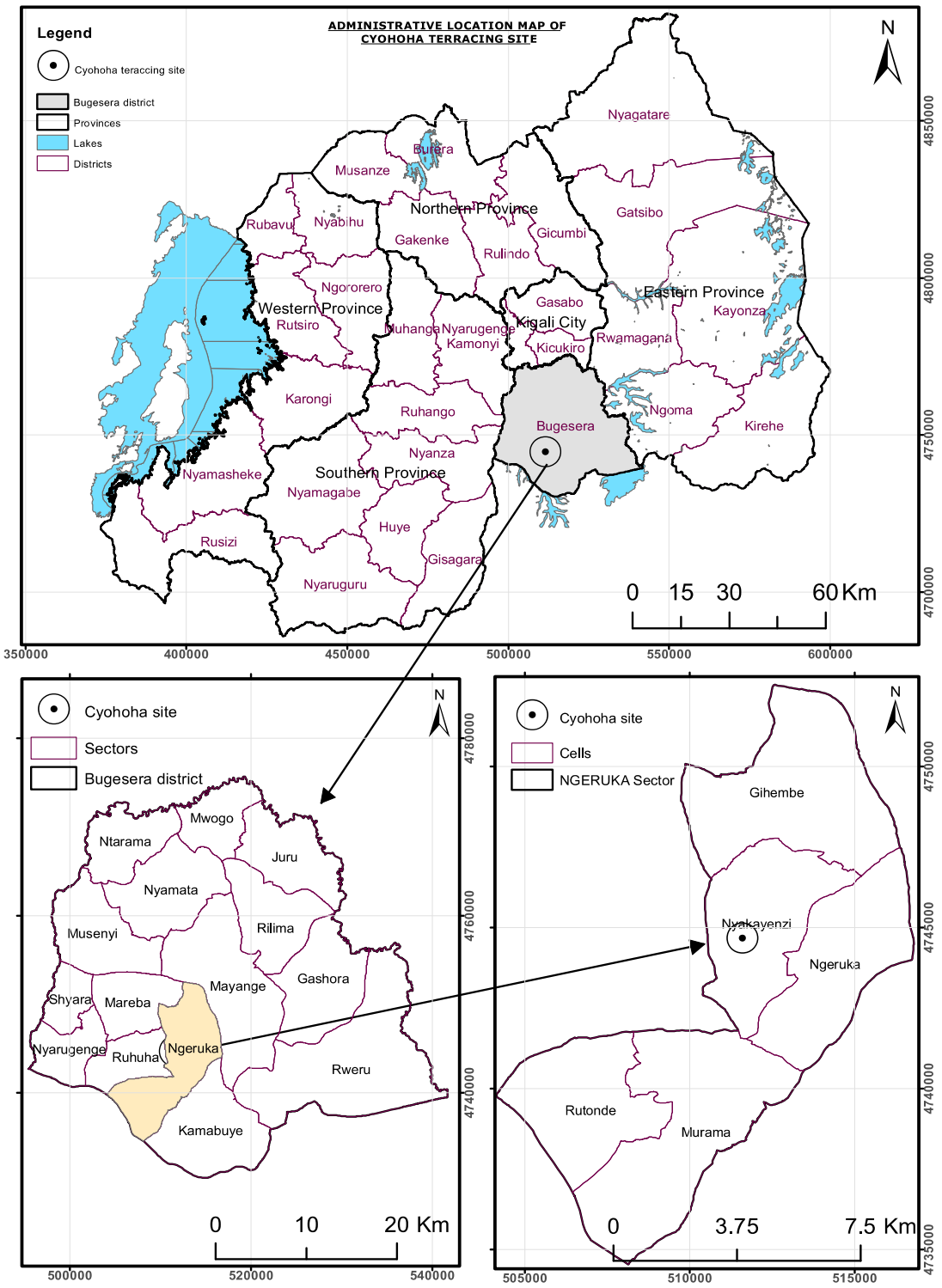
In Musanze district within Busogo waste treatment center, Inspection assessed whether all personnel have access to the appropriate PPE, including gloves, masks, boots and overalls which are essential for protecting against potential hazards associated with waste handling. The company ensure full adequacy of PPE provided to workers and they understand the importance of using protective wears/cloths and how to maintain them properly. The current situation at the dumpsite complies with the regulation for managing hazardous waste (No. 002/R/SAN/EWATSAN/RURA/2017), specifically Article 15, which mandates that service providers handling hazardous waste must supply appropriate safety equipment, including masks, safety shoes, eye protection, and other necessary gear to their employee

4.2.5. Commercialized and the Derisking for Agricultural Transformation (Terracing in Bugesera District)

4.2.5.1. Localisation

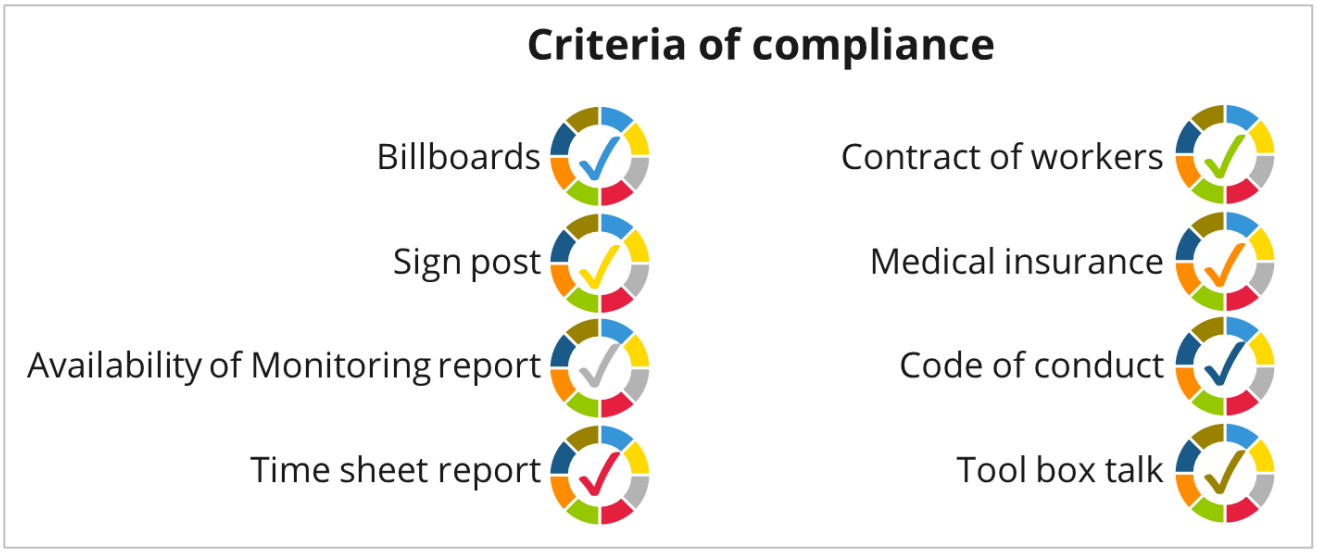
The Cyohoha Terracing site is situated in the Eastern Province, within the Bugesera District, specifically in the Ngeruka Sector and Nyakayenzi Cell, with coordinates E: 511598m, N: 4744671m, and an elevation of Z: 1451m. This project aims to protect the catchment areas of Cyohoha Lake, as indicated by the District Officer, and will encompass approximately 3,000 hectares. It includes terracing (with natural irrigation currently in progress) and hillside irrigation using mechanical methods, which have not yet commenced. The project aligns with the agricultural policy of land consolidation and the establishment of a common market. The preparation of the site is expected to be completed by 2025-2026, while adhering to the marshland buffer zone regulations. The organization and management of the terracing efforts are overseen by local authorities at the district level, allowing participation from both local and non-local citizens. Participants contribute to the implementation of the project and receive a daily wage of 4,000 Rwandan Francs for their efforts (from 7 AM to 12 PM). Additionally, a single private company is responsible for nurturing agroforestry trees and ensuring their health in their designated locations for a duration of two years.

Figure 10: Administrative Location Map of Cyohoha Terracing site



4.2.5.2. Compliance with environment and social safeguards

Figure 11: Commercialized and the derisking for agricultural transformation Compliance



The environmental audit for the Commercialized and Derisking for Agricultural Transformation project (specifically terracing in Bugesera District) indicates strong compliance across several critical criteria. The inclusion of billboards and signposts is essential for public awareness and safety, ensuring that the local population is informed about ongoing activities and potential hazards. The availability of monitoring and time sheet reports reflects a commitment to transparency and accountability, enabling continuous oversight of environmental and operational performance. These reports help in tracking project timelines and compliance with environmental standards, which is crucial for managing large-scale infrastructure projects.

Furthermore, worker-related documents such as contracts, medical insurance, and codes of conduct underscore the project's adherence to labor rights and safety regulations. These measures ensure that workers are legally protected and operate within safe conditions, minimizing risks. The tool box talks reflect the project's emphasis on continuous worker training and safety education, contributing to a safer working environment. Overall, the project demonstrates strong adherence to both environmental and social governance principles, positioning it as a well-managed initiative that integrates environmental sustainability with worker welfare.

The absence of key compliance items like a guideline site, Environmental and Social Impact Assessment (ESIA), and Resettlement Action Plan (RAP) for the Commercialized and De-risking for Agricultural Transformation (Terracing in Bugesera District) project poses serious environmental and social risks. Without a guideline site, there is no structured framework for workers and stakeholders to follow during the project, leading to inconsistencies in operations and potential non-compliance with environmental and safety standards. The lack of an ESIA means the project may have failed to assess its environmental impact adequately, increasing the risk of negative effects such as habitat destruction, water contamination, or biodiversity loss. Furthermore, the absence of a RAP suggests that the project has not addressed the social implications of the transformation, such as land displacement or loss of livelihoods, which could fuel conflicts with the local community and lead to mistrust of the project's objectives.

Additionally, the absence of critical reports and plans like the Environmental and Social Management Plan (ESMP) implementation report, waste management report, and community grievance report highlights gaps in ongoing project accountability and stakeholder engagement. Without an ESMP report, there is no way to track whether environmental safeguards are being effectively implemented, increasing the risk of soil erosion, degradation, and improper waste disposal. A missing community grievance report means that local concerns about the project may go unheard, causing frustration and potentially leading to protests or social unrest. The lack of a Gender-Based Violence (GBV) outreach plan, Personal Protective Equipment (PPE) for workers, and soil quality monitoring further exacerbates the situation. Without these, the project risks neglecting the protection of vulnerable groups, worker safety, and long-term environmental sustainability. In particular, the absence of soil erosion and quality monitoring plans could lead to accelerated land degradation, undermining the very goal of agricultural transformation by reducing the future productivity and sustainability of the terraced lands.

Picture 19: Cyohoha terraces site

4.2.5.3. Location of the Terracing Project Suitable for Terraces

The location chosen for this terracing project was primarily selected to protect Lake Cyohoha by managing its surrounding catchment area. The terraces are specifically designed to optimize benefits such as minimizing soil erosion and enhancing water retention. The project complies with the law because when selecting a location for a terracing project, it is essential to choose areas prone to soil erosion and with steep slopes that require intervention to improve agricultural productivity and prevent land degradation. According to Rwanda's MINAGRI Soil and Water Conservation Guidelines, the location must consider the slope's degree, soil type, and the risk of erosion. Terraces should follow the natural contour lines of the land to optimize water retention and reduce soil runoff.

Additionally, **Law N°43/2013 of 16/06/2013 Governing Land in Rwanda** mandates that land use and development projects, including terracing, prioritize sustainable land management. Terracing projects must avoid fragile ecosystems and areas with excessive slopes, as these could exacerbate erosion rather than mitigate it. The design and implementation should also comply

with the **Ministerial Order No 008/16.01 of 13/10/2010** on soil protection, which emphasizes the need for terracing in areas at high risk of soil erosion.

4.2.5.4. Topography and Soil Type Suitable for Terraces

The slope of the site ranges from 6.5% to 14%, and the soil at the Cyohoha terracing site appears to be sandy, which allows for high water retention while facilitating quick percolation. Although sandy soil is generally not regarded as ideal for agricultural purposes and has been significantly impacted by the terracing process, the district has committed to improving the soil's suitability for farming. In the upcoming season, there are plans to distribute lime and compost free of charge to lower-category farmers to enhance soil quality and productivity. The topography of this project complies partially with requirements since according to Practical tool on soil and water conservation measures the Slope limit: if soil depths are adequate, hand-made terraces should be employed on 7 to 25 degree (12%-47%) slopes and machine-built terraces should be employed on 7 to 20 degree (12%-36%) slopes. If the soil depths are not adequate for radical terraces, hillside ditches or other types of rehabilitation measures should be used. Radical terraces are not recommended for slopes below 7 degrees. Broad-base terraces and other simple conservation measures should be used instead.[7]

4.2.5.5. Terracing Design and Layout Plan

The district team reports that the design and layout of the terraces at the Cyohoha site follow the technical guidelines set by the Ministry of Agriculture and Animal Resources (MINAGRI) to ensure effectiveness and sustainability. The GIS team manages all related plans, while a surveyor is responsible for implementing the pre-established maps on-site. The terraces are in good physical condition. The project complies with **Law N°43/2013 Governing Land in Rwanda** mandates that land development projects, including terracing, ensure sustainable land management practices. Terracing designs must be adapted to local environmental conditions and avoid disruption of the natural landscape. The **Ministerial Order No 008/16.01 of 13/10/2010** concerning soil protection requires that terracing projects incorporate soil conservation measures in their designs, including the use of grass or vegetation strips along embankments to stabilize the soil and prevent landslides. When designing and laying out terraces, it is important to follow established technical and legal guidelines to promote sustainable land use and prevent soil erosion.

4.2.5.6. Road Accessibility

The improved murram roads are located along the site boundaries and appear to be distant from the downhill crops. However, walkways run alongside many waterways within the terrace site to facilitate pedestrian movement. Adequate road access to and within the site is essential for the efficient transportation of materials, crops, and personnel. This project complies partially because road accessibility in terracing projects is essential for transporting materials, crops, and personnel efficiently, while minimizing environmental impact. The **Law N°43/2013 of 16/06/2013 Governing Land in Rwanda** also requires that infrastructure developments, including roads, be planned in a way that promotes sustainable land management. This includes

[7] REMA(2010) Practical tools on soil and water conservation measures.

ensuring that access roads in terracing projects do not cause undue damage to the soil or the terraces, particularly by avoiding steep gradients that could lead to erosion.

4.2.5.7. Site Boundaries

The terraces site boundaries of this project are not clearly marked, it should have the presence of boundary markers, such as fences of natural barriers, to ensure they are well-maintained and effective in preventing unauthorized access. This project does not comply with the project because according to the Practical tool on soil and water conservation measures, The first step in controlling gully erosion is fencing of the gully head to protect it from grazing cattle and/or wild animals. Second, diversion ditches or waterways should be installed to divert the surface runoff away from the gully head. The waterways should be properly designed and laid out. The runoff should be properly disposed to avoid erosion. [8]

4.2.5.8. Terraces Width and Vertical Interval

During the construction and preparation of terraces in Bugesera District for the CDAT project, the width and vertical interval of the terraces were adjusted to follow contour lines and natural land features, which is why the dimensions vary without compromising performance. The terraces are designed to be wide enough to support farming activities while ensuring effective water retention by sloping toward the next embankment. On average, the terraces are 7 to 10 meters wide, with embankment heights ranging from 1.5 to 2 meters. These measurements fall within acceptable limits, supporting proper drainage and reducing soil erosion. This alignment with design specifications promotes agricultural productivity and sustainable land management. Proper alignment and spacing of terraces are key to preventing soil erosion and optimizing water retention in this project. The terraces at Cyohoha are correctly aligned with the slope's contour lines, which will slow down water runoff and enhance soil infiltration. However, the terrace widths in this project comply with national standards. According to the "Practical Tool on Soil and Water Conservation Measures," Contour bunds are earth banks, 1.5 to 2 m wide, thrown across the slope to act as a barrier to runoff, to form a water storage area on their upslope side and to break up a slope into segments shorter in length than is required to generate overland flow.[9]

Picture 20: The field looks of moderate slope, Width and intervals of terrace benches keep changing but within acceptable limits

[8] REMA (2010) Practical tool on soil and water conservation measures

[9] Idem

Picture 21: Main waterways to receive rainwater flow when infiltration excess is attained towards Cyohoha marshland & lake

4.2.5.9. Quality of Materials (Soil, Vegetations)

To ensure soil conservation, it is important to assess the quality of materials used in terrace preparation. As previously mentioned, the soil at this site is sandy and lacks strong granular cohesion, which could lead to the sliding of embankments or bands along the terrace risers. Terraces on sandy soils should be constructed with a gentle slope to reduce water velocity, which can cause erosion. The spacing between terraces depends on the steepness of the land, with gentler slopes allowing for wider spacing. The use of vegetative barriers like grass or shrubs along terrace edges can help stabilize sandy soils and reduce the risk of embankment collapse. This comply with the **Law N°70/2013 of 02/09/2013 Governing Biodiversity in Rwanda**:

Picture 22: Supervisor team says will use Cacamega grass to protect risers, as by physically seen the slope keeps deteriorating even by wind, soil is sandier and can't be compacted enough to resist. Better use appropriate measures to resist even when the rain peri

Picture 23: Natural blockers installed within waterways to delay flow as well as facilitate high infiltration, enhancing moisture levels and promoting healthy crop growth

4.2.5.10. Terrace Fills

The preparation and compaction of terrace fills ensures stability of area reserved for crops. Bands here, were manually compacted using hoe, and that shows low stability in dry seasons and noted that are not stable because of low degree of compaction and soil properties.

Terrace fills executed during dry seasons must follow specific guidelines to ensure stability and prevent erosion. According to Rwanda's **MINAGRI Soil and Water Conservation Guidelines**, dry season terrace construction requires compacting the fill material layer by layer to avoid future settlement and erosion. Additionally, vegetative cover or erosion control barriers like grass strips must be immediately planted to protect the fill from wind and water erosion. This aligns with the requirements under **Law N°43/2013 of 16/06/2013 Governing Land in Rwanda**, which mandates sustainable land management practices to preserve soil structure and prevent degradation during infrastructure projects such as terracing

4.2.5.11. Managing Vegetation

There are designated areas for vegetation, primarily on embankment risers, waterways, and some agroforestry along the base of the embankments. However, due to the ongoing dry season, planting has been postponed. The plan is to begin planting during the upcoming wet season, with species known for their agricultural benefits, such as calliandra, grevillea, and kakamega grass, to protect the risers. These plants are being prepared in tree nurseries that have been specifically set up for this terracing project by various companies.

This activity complies with regulation, because managing vegetation during terracing involves using specific guidelines to ensure the stability of the landscape and reduce erosion. According

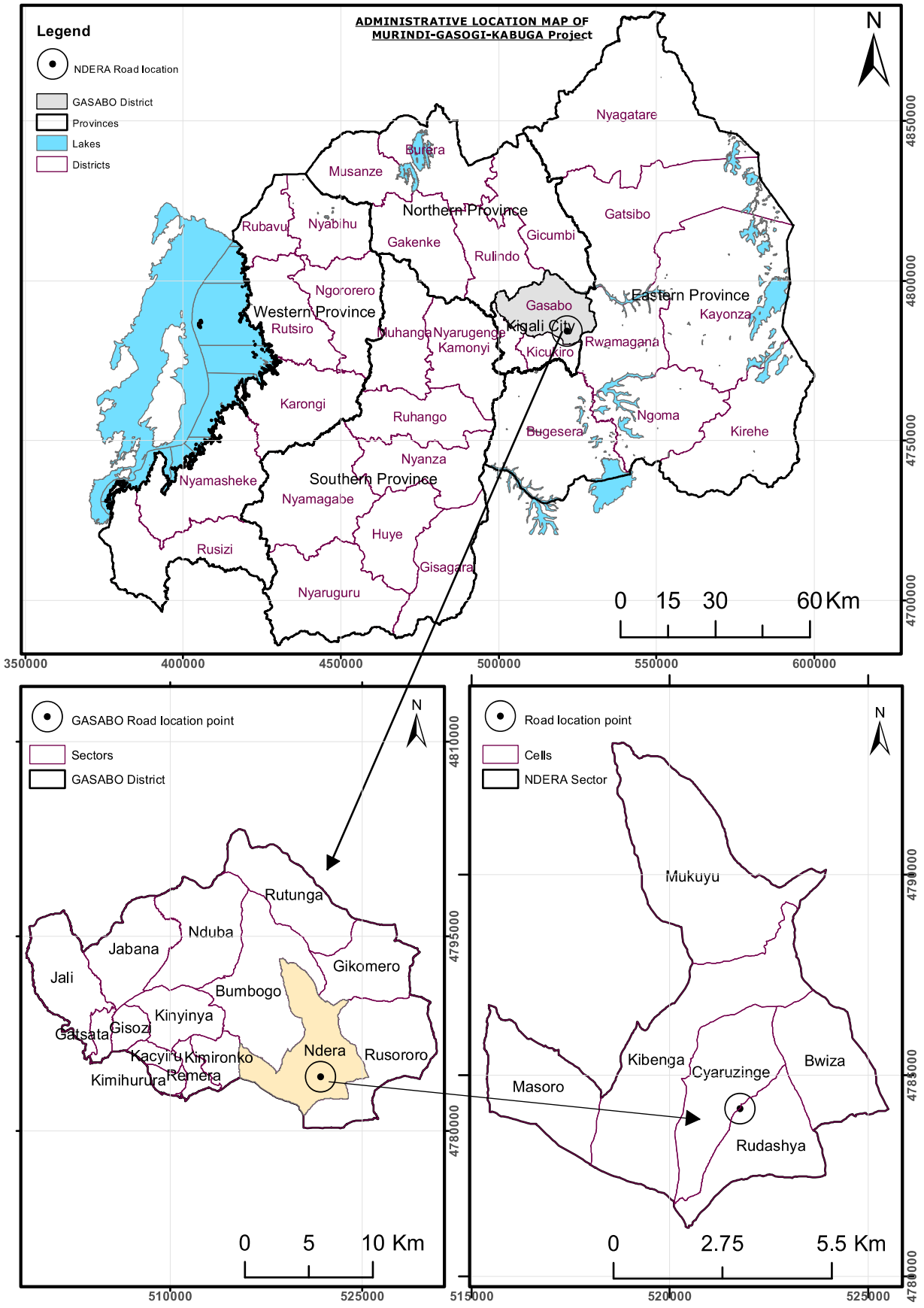
to Rwanda's **MINAGRI Soil and Water Conservation Guidelines**, vegetation such as grass strips, agroforestry species, and cover crops should be planted on embankments, risers, and along waterways to stabilize the soil and prevent erosion. The guidelines emphasize the need to integrate fast-growing, deep-rooted species like vetiver grass and agroforestry plants such as grevillea or calliandra to reinforce terrace structures. As stated in **Law N°43/2013 of 16/06/2013 Governing Land in Rwanda**, sustainable land management practices must include the protection of soil and water resources, with a focus on the preservation of vegetation to enhance long-term productivity.

4.2.6. NPD Mulindi-Gasogi-Kabuga Road

4.2.6.1. Localization

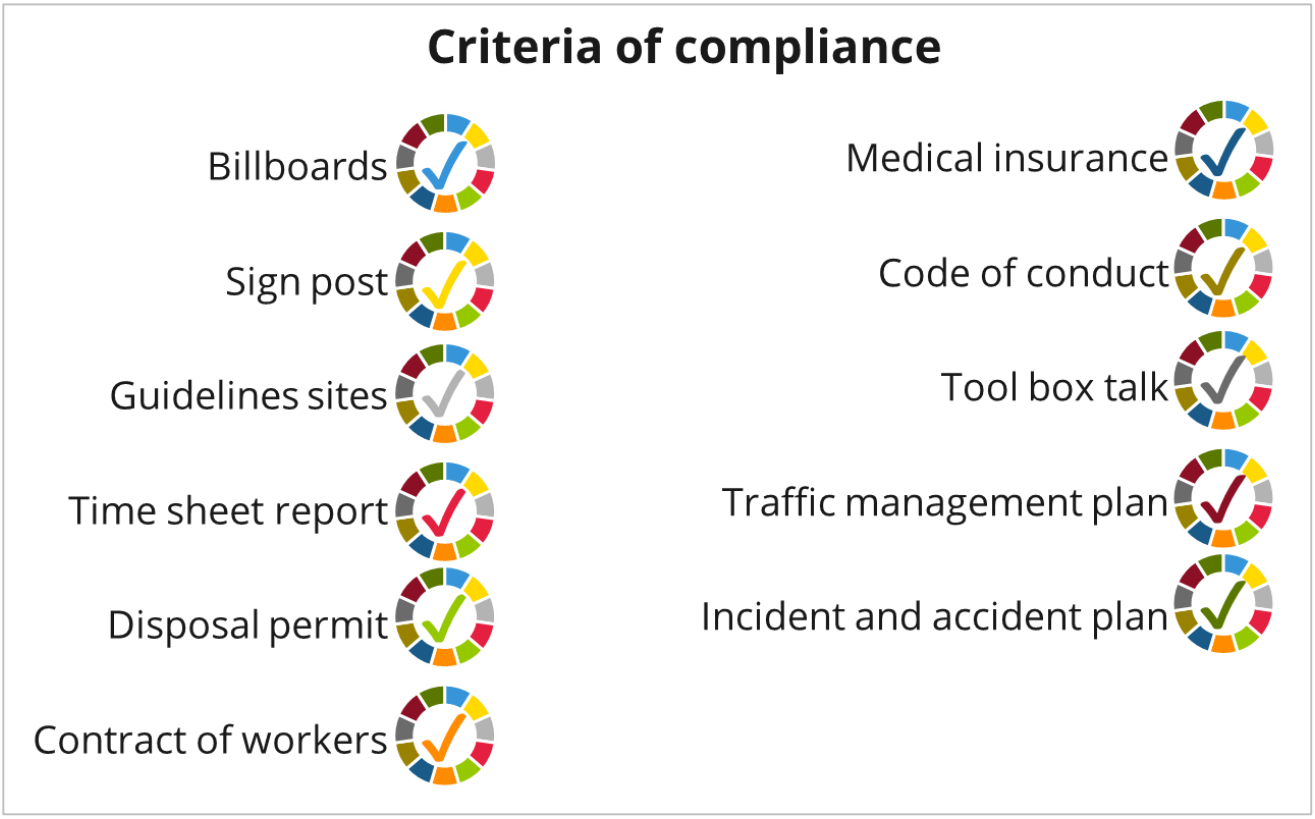
KIP/NPD Mulindi-Gasogi-Kabuga Road project located in City of Kigali, Gasabo district, E: 521775m, N: 4784175m and Z: 1500m. It will cover the distance of 10.9km. It is a district road category and was designed with 7.00m carriage way width and 1.50m shoulders width which were well respected in the implementation; and it is funded by the City of Kigali, constructed by NPD Ltd. The width of this road complies with Law No 042 of 02/08/2023 governing land and waterways transport in article 21.

Figure 12: Administrative Location Map of Mulindi-Gasogi-Kabuga Road Project



4.2.6.2. Compliance with environmental and social safeguards standards

Figure 13: NPD Mulindi-Gasogi-Kabuga road Compliance



The environmental audit for the KIP/NPD Mulindi-Gasogi-Kabuga road project demonstrates comprehensive compliance across a wide range of criteria, emphasizing both safety and operational standards. Billboards and signposts serve as crucial communication tools, ensuring that local communities are aware of the construction activities, potential hazards, and safety guidelines. The presence of time sheet reports, guidelines for sites, and a disposal permit reflect the project's commitment to environmental management and regulatory compliance. These elements help track activities and ensure that waste disposal is handled in accordance with environmental laws, reducing the project's ecological footprint.

Additionally, the inclusion of worker-related documents like contracts, medical insurance, and codes of conduct indicates a focus on safeguarding workers' rights and well-being. The toolbox talks and traffic management plan are particularly important for maintaining safety on-site and in surrounding areas, preventing accidents, and minimizing disruptions to local traffic. Furthermore, the incident and accident plans, reflect a proactive approach to risk management and community engagement. These components demonstrate the project's efforts to address concerns and mitigate potential hazards while fostering positive relations with the community.

The absence of key compliance items such as an Environmental and Social Impact Assessment (ESIA) and a Resettlement Action Plan (RAP) in the KIP/NPD Mulindi-Gasogi-Kabuga road project could have significant environmental and social consequences. Without an ESIA, the project may proceed without a full understanding of its environmental impact, leading to degradation of ecosystems, disruption of natural habitats, and potential pollution of nearby water sources. The

lack of a RAP could result in inadequate compensation and relocation plans for affected communities, leading to social unrest and grievances that can delay or halt project progress. This can damage the project's reputation and raise legal challenges.

In addition, the absence of a waste management plan and proper Personal Protective Equipment (PPE) can have severe health and safety implications. Without waste management protocols, construction waste may be improperly disposed of, leading to pollution and harmful effects on both the environment and public health. A lack of PPE and inadequate toilet facilities by sex may result in unsafe and unsanitary working conditions for the labor force, increasing the risk of accidents, injuries, and diseases. Furthermore, without an Environmental and Social Management Plan (ESMP), dust control measures, and noise control measures, the project risks exceeding permissible limits for air and noise pollution, affecting the health of both workers and surrounding communities. This could lead to fines, negative public perception, and further delays.

4.2.6.3. Road Condition

The road is still under construction; its surface condition looks good for completed segment. By visual assessments, there are no signs of deterioration such as cracks, potholes, raveling, and unevenness.

Picture 24: Asphalt wearing course finishing

4.2.6.4. Sidewalks and Paths Continuity of Sidewalks and or Bike Paths

The continuity of sidewalks is not respected as there are some segment where sidewalks are not on both sides of the road. Bike paths were not provided and it is not in the contract. Technical inspection assessed the alignment and condition of sidewalks and prove it is well geometrically aligned. As the City of Kigali is tending to be a green city, it will be better to enhance mobility for non-motorized users and encourage sustainable transportation practices by also providing like this Bike separated ways as well as conserving the environment.

4.2.6.5. Road Reserve Free and Clear Visibility

Maintaining a clear road reserve helps safe visibility for drivers and pedestrians. Technical inspection evaluated whether the road reserve is free from obstructions such as vegetation, signage, or structures that could impede sightlines. Except horizontal sharp curves observed after long tangents and land embankments, we have also seen at this location (E: 521775m, N: 4784175m and Z: 1500m), a sharp vertical summit curve on descending road segment which should be a source of so many accidents, while drivers are not observing the coming motor vehicle due to its sharpness, it will require to increase its deflection angle as well as excavating the summit till small obstacles are seen by opposite driver to ensure sight visibility. This road reserve complies with Law No 042/2023 governing land and waterways transport in its article 25.

Picture 25: No enough sight visibility at the top, dealing with existing ground levels will be effective

4.2.6.6. Safety features

Guardrails and barriers help prevent vehicles from veering off the road and reduce the severity of accidents. The supervisor says these are not provided in the contract and none observed on field.

Many of current road construction projects go with public lights. Lighting here is in the contract and they have started to install electrical poles. Their spacing & poles characteristics are ok.

Picture 26: Installed electrical poles reserved for public lights

4.2.6.7. Reflective items

Reflective items, including road markings, signs, and delineators enhance road safety by improving visibility and guiding drivers. For this project, road signs are provided, surface markings will also be done, while reflective devices will only be near the humps provided in the contract for safety and reduce the risk of accidents. The reflective item complies with the RTDA manual of road construction.[10]

4.2.6.8. Drainage

The condition and sufficiency of side drains lead to manage runoff and prevent water accumulation on road surfaces. Technical inspection assessed their construction and maintenance to ensure they are functioning properly and are adequately physically sized to handle expected water flow.

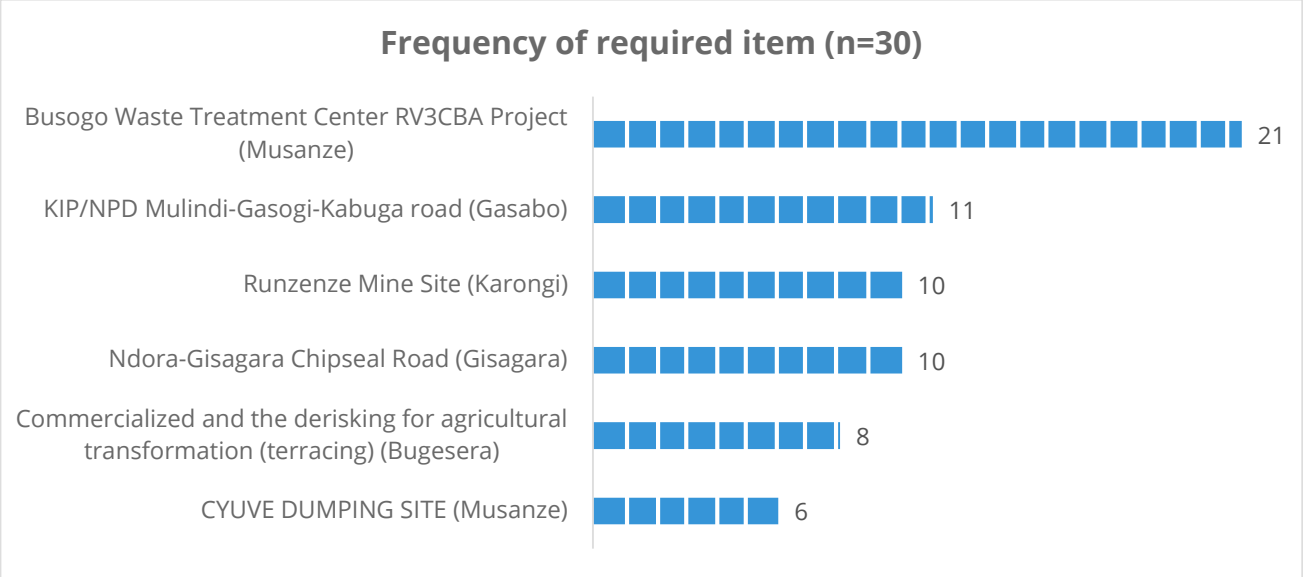
Picture 27: Collapsed side drains caused by earth pressure, long height and non-paved ditch bottom floors

Many of the bottom floors along the ditch channels of this road are either unconstructed or unpaved. This means that when it rains, water can seep into the base of the ditch walls, weakening the soil and causing the walls to collapse. Additionally, there is a shortage of cross drainages in both number and location, which has led to the construction of oversized ditches. In some areas, water is expected to accumulate to levels that could cause erosion and damage nearby properties. It was also observed that in certain sections, the ditches have steep longitudinal slopes and are quite large. This could lead to hazardous situations as large volumes of water could flow at high speeds. Installing speed breakers within the ditch floors is suggested to help manage flood risks. The large spacing between box culverts or other cross drainage points has resulted in higher ditch walls, which not only increases construction costs but also

[10] RTDA (2014) Road Pavement Design Manual

reduces the sustainability of the ditches, as greater height leads to increased earth pressure. This drainage does not comply with Law No 042/2023 of 02/08/2023 governing land and waterways transport in article 29 which stipulate that run of water from the road is conveyed into well-built water conducts which enable to prevent it from causing damage to the road and other forms of infrastructure, the environment or properties.

Figure 14: Overview compliance of public infrastructures on environmental and social justice safeguard



The figure provides an overview of various districts and the frequency of identified environmental and social justice safeguard needs related to public infrastructure projects. The data, drawn from a sample size of 30, shows varying degrees of attention required across different projects. The highest frequency of required safeguards is seen in the Busogo Waste Treatment Center in Musanze, with 21 mentions, indicating significant concern or need for compliance. Conversely, the lowest frequency is associated with the CYUVE dumping site in Musanze, at 6 mentions. Other notable entries include the Ndora-Gisagara Chipseal Road in Gisagara with 10 mentions and the KIP/NPD Mulindi-Gasogi-Kabuga road project in Gasabo with 11 mentions, pointing to moderate concerns. The agricultural transformation project in Bugesera had 8 mentions, reflecting its relatively lower safeguard needs compared to other sites. This distribution highlights the varying environmental and social risks posed by these infrastructure projects, with particular attention needed in waste management and road construction.

4.3. Negative and positive social impact and vulnerability associated with the implementation of infrastructure development projects on beneficiaries' livelihood

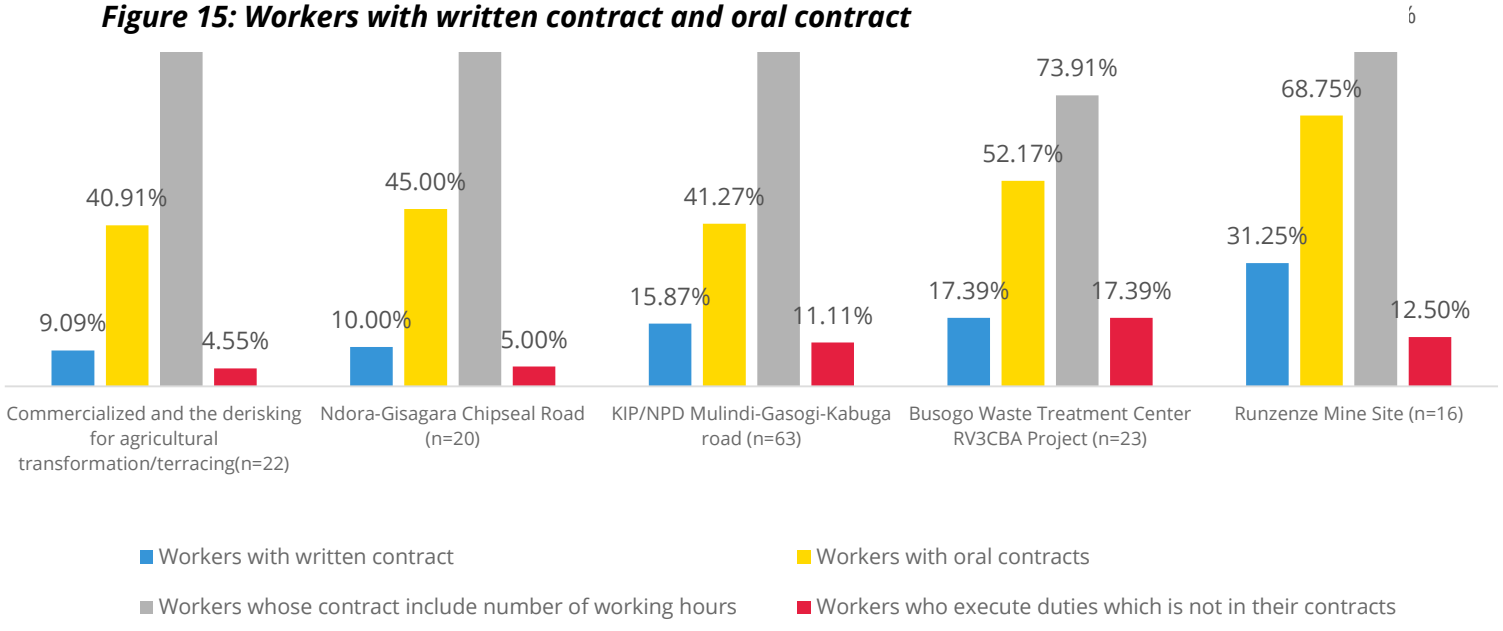
The implementation of infrastructure development projects can have both negative and positive social impacts on the livelihoods of affected communities. On the positive side, such projects may enhance access to services, create employment opportunities, and stimulate local economic growth. However, these developments can also lead to negative outcomes, including displacement, loss of land or assets, disruption of social networks, and reduced access to

essential resources. Vulnerable populations, such as women, the elderly, or those with lower incomes, may face disproportionate challenges in coping with these changes. Therefore, understanding both the benefits and risks is crucial to ensuring that the project improves livelihoods while mitigating adverse effects, particularly for vulnerable groups.

4.3.1. Working conditions in public infrastructure construction projects

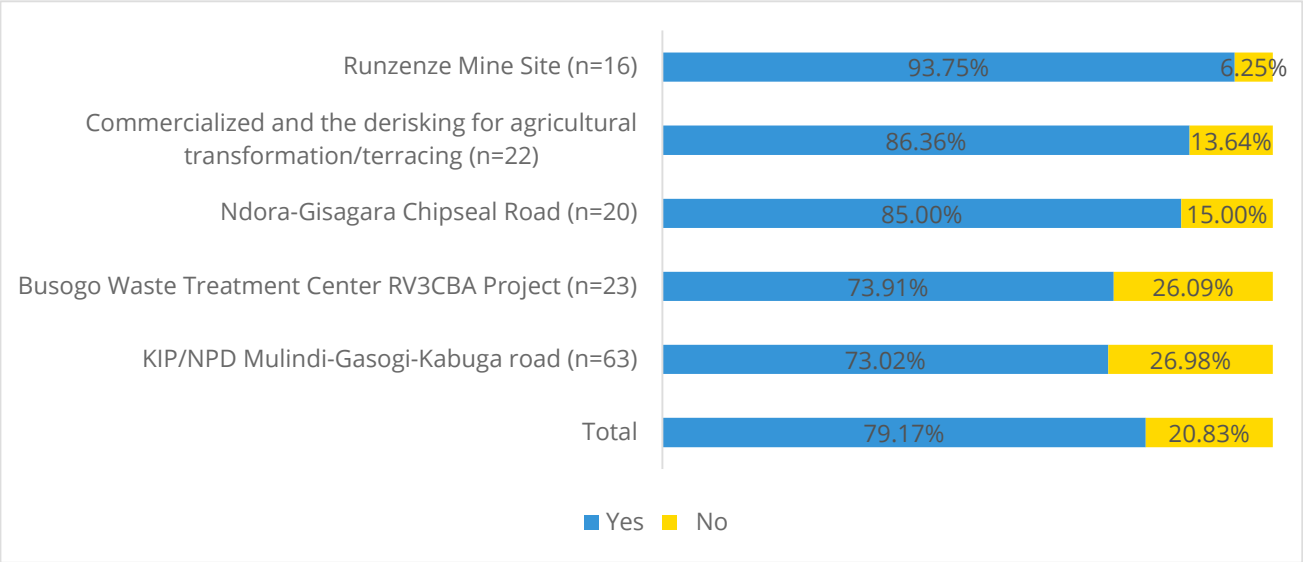
Working conditions in public infrastructure construction projects are vital to both worker well-being and project success. These conditions include safety, wages, working hours, equipment, and training. Poor conditions can result in lower productivity, increased accidents, and project delays. Addressing these challenges is essential for ensuring projects are completed efficiently, safely, and with high-quality outcomes.

Figure 15: Workers with written contract and oral contract



The results reveal key differences in employment practices across several infrastructure projects regarding contract types and working conditions. Oral contracts are far more prevalent than written ones, with the highest percentage of oral contracts at the Runzenze Mine Site (68.75%) and the lowest in the agricultural transformation project (40.91%). Written contracts, by contrast, are less common, with the Runzenze Mine Site having the highest proportion at 31.25% and Commercialized and the derisking for agricultural transformation/terracing the lowest at 9.09%. Most workers' contracts specify working hours, with compliance ranging from 73.91% in Busogo Waste Treatment Center RV3CBA Project to 88.89% on the KIP/NPD Mulindi-Gasogi-Kabuga road. However, there are discrepancies in job roles, as some workers report performing duties not outlined in their contracts, with the highest instance occurring in Busogo Waste Treatment Center RV3CBA Project (17.39%) and the lowest in Commercialized and the derisking for agricultural transformation/terracing (4.55%). This suggests a need for improved contract formalization and clearer delineation of job responsibilities across these projects.

Figure 16: Employment meetings

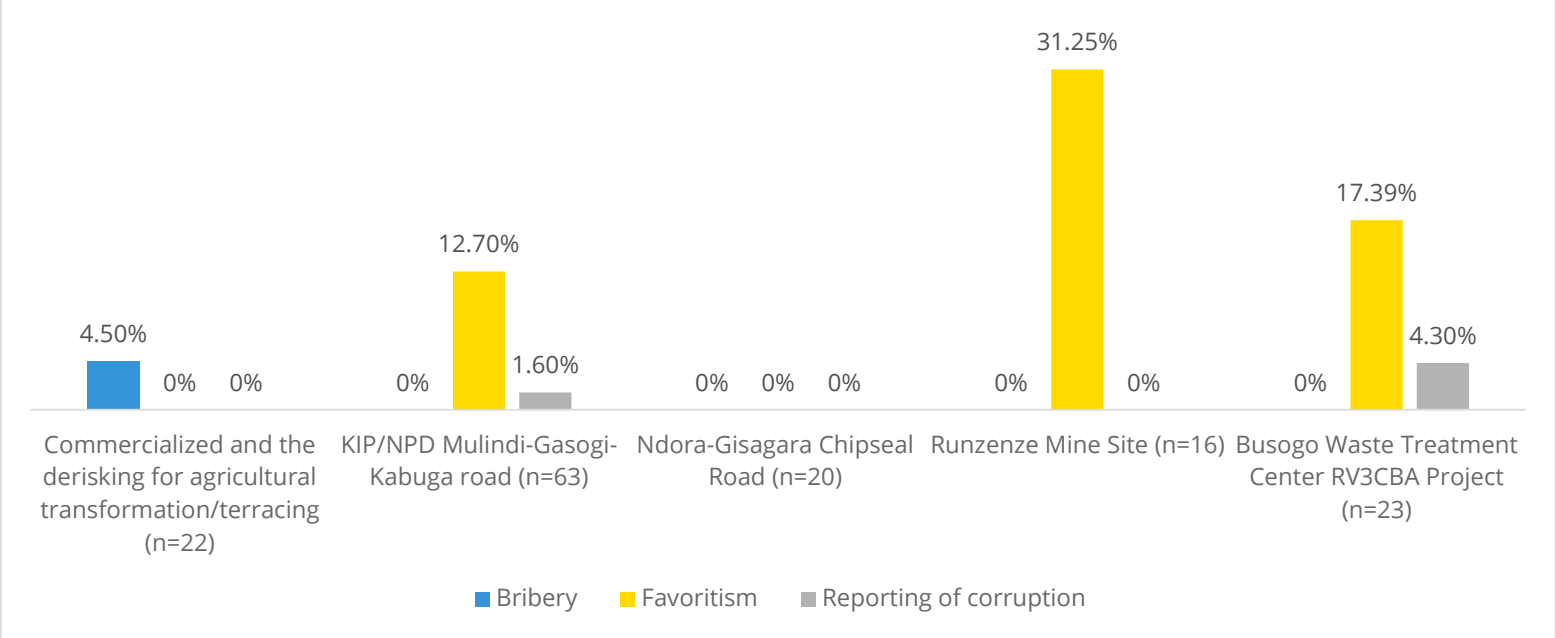


The results of the study provide insights into the frequency of employee meetings across different infrastructure projects, highlighting a strong emphasis on communication between management and workers. Overall, 79.17% of the projects hold regular meetings with employees, while 20.83% do not. The Runzenze Mine Site demonstrates the highest frequency of meetings, with 93.75% of workers participating in them, followed closely by the Bugesera terracing project (86.36%) and the Ndora-Gisagara Chipseal Road (85%). In contrast, the Busogo Waste Treatment Center and KIP/NPD Mulindi-Gasogi-Kabuga road projects show lower but still significant engagement in meetings, with 73.91% and 73.02%, respectively. This suggests a generally high level of commitment to regular communication across projects, contributing to improved employee engagement and potential safety or operational benefits.

4.3.2. Transparency and accountability in the implementation of public infrastructure development projects

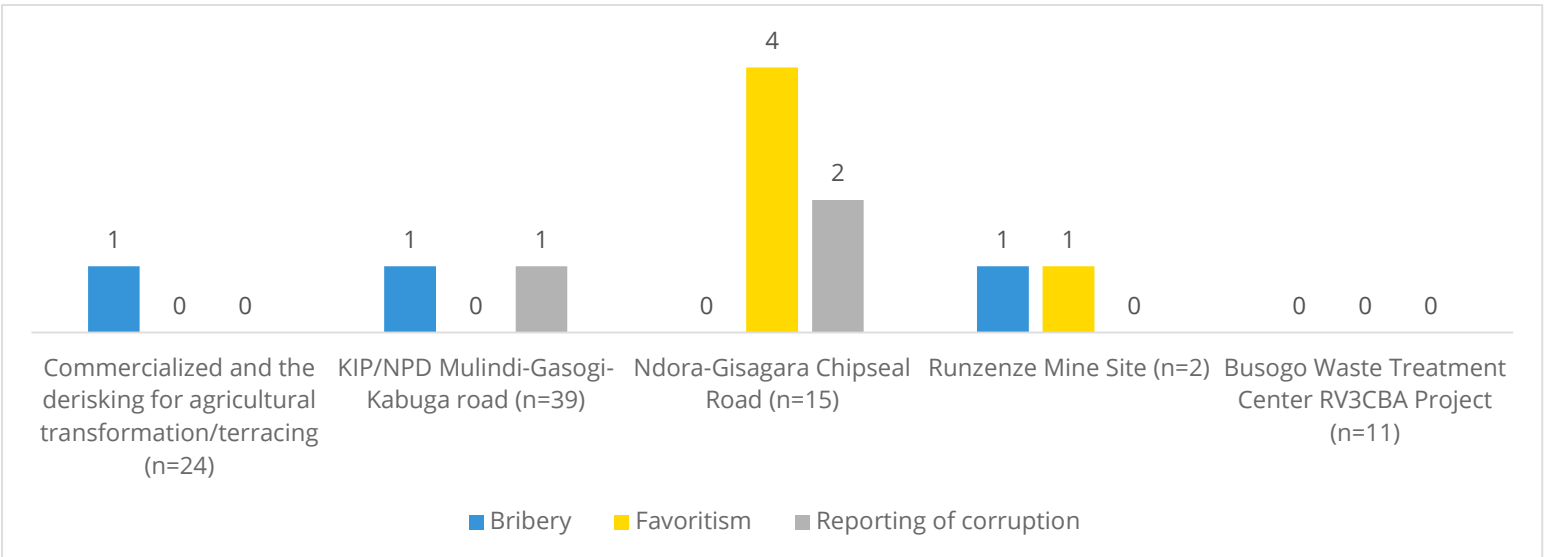
This section examines the transparency and accountability of public infrastructure projects, focusing on how openly project information is communicated and the effectiveness of accountability measures. Transparency refers to the clarity and accessibility of project plans and decisions, while accountability involves holding project implementers responsible for adhering to regulations and addressing issues. The analysis evaluates whether stakeholders, including the public, are sufficiently informed and if there are strong systems to ensure those in charge are held accountable. The findings highlight both successes and areas for improvement, aiming for fair and responsible project implementation.

Figure 17: Awareness on anti-corruption measures and types of corruption encountered by workers



The results provide an overview of corruption types and reporting practices across different public infrastructure projects. Bribery appears to be minimal, reported only in the agricultural transformation project in Bugesera at 4.5%. Favoritism, however, is more prevalent, especially at the Runzenze Mine Site, where 31.25% of workers reported experiencing it, followed by the Busogo Waste Treatment Center at 17.39% and the KIP/NPD Mulindi-Gasogi-Kabuga road project at 12.7%. Despite these instances of favoritism, the reporting of corruption remains low, with only 1.6% of workers at the Mulindi-Gasogi-Kabuga road project and 4.3% at the Busogo Waste Treatment Center reporting such issues. This indicates that while favoritism is perceived, there is a reluctance or lack of channels for formally reporting corruption across these projects.

Figure 18: Awareness of anti-corruption measures and experience of any form of corruption by Person affected by the project



The data reveals insights into the awareness of anti-corruption measures among individuals affected by various public infrastructure projects, alongside their experiences with corruption. In the project focused on agricultural transformation in Bugesera, there was minimal reported corruption, with only one instance of bribery and no reports of favoritism or corruption reporting. The KIP/NPD Mulindi-Gasogi-Kabuga road project similarly recorded one instance of bribery and one report of corruption, indicating a slight awareness or experience among the affected individuals. In contrast, the Ndora-Gisagara Chipseal Road project shows a more concerning trend, with four instances of favoritism reported and two cases of corruption reporting. The Runzenze Mine Site had one case each of bribery and favoritism, but no reporting occurred, suggesting a potential fear or lack of avenues for reporting corruption. Notably, the Busogo Waste Treatment Center reported no instances of corruption or awareness, indicating a possible disconnect between the community and the project. Overall, while some awareness exists, the data highlights gaps in both the experience of corruption and the mechanisms for reporting it across these projects.

4.3.3. Awareness of working activities about the project and being Well-Informed about Project Cut-off Date and consultation during resettlement process

Citizen participation is essential for the success of public infrastructure projects, fostering transparency, trust, and alignment with community needs. Early involvement, through consultations and decision-making, helps address potential issues, reducing conflicts and ensuring smoother implementation. It also empowers local communities by making them feel invested in the project's success. Additionally, when land and property are expropriated for such projects, the process must be fair and transparent to avoid disputes. Corruption in expropriation, such as undervaluation or favoritism, can undermine fairness, making strict oversight, transparent procedures, and independent audits critical to maintaining integrity and protecting the public interest.

Figure 19: Awareness of working activities about the project and being Well-Informed about Project Cut-off Date

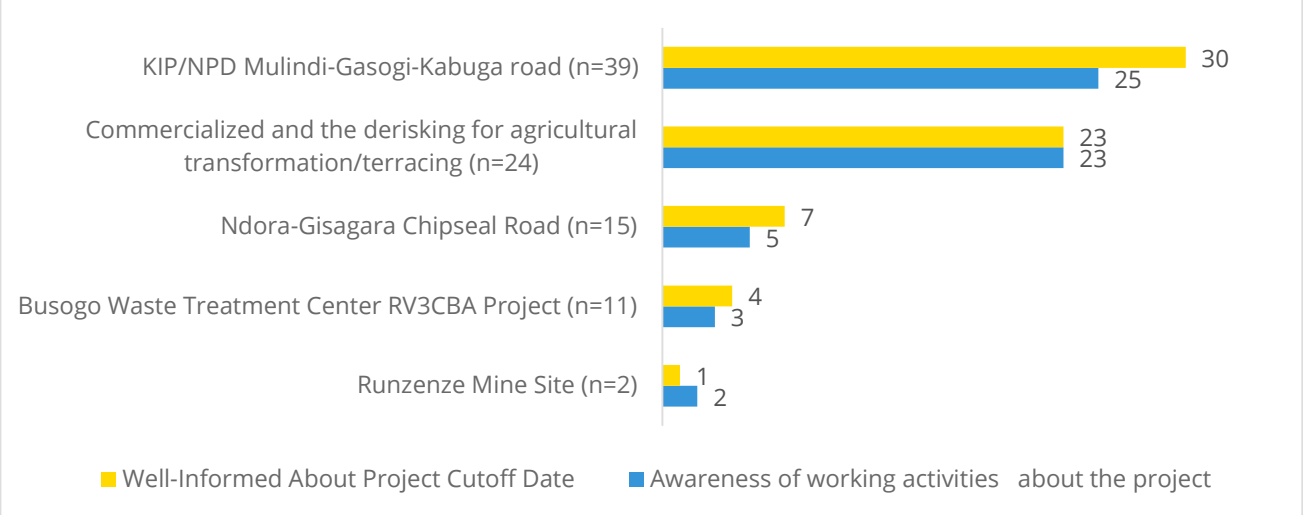
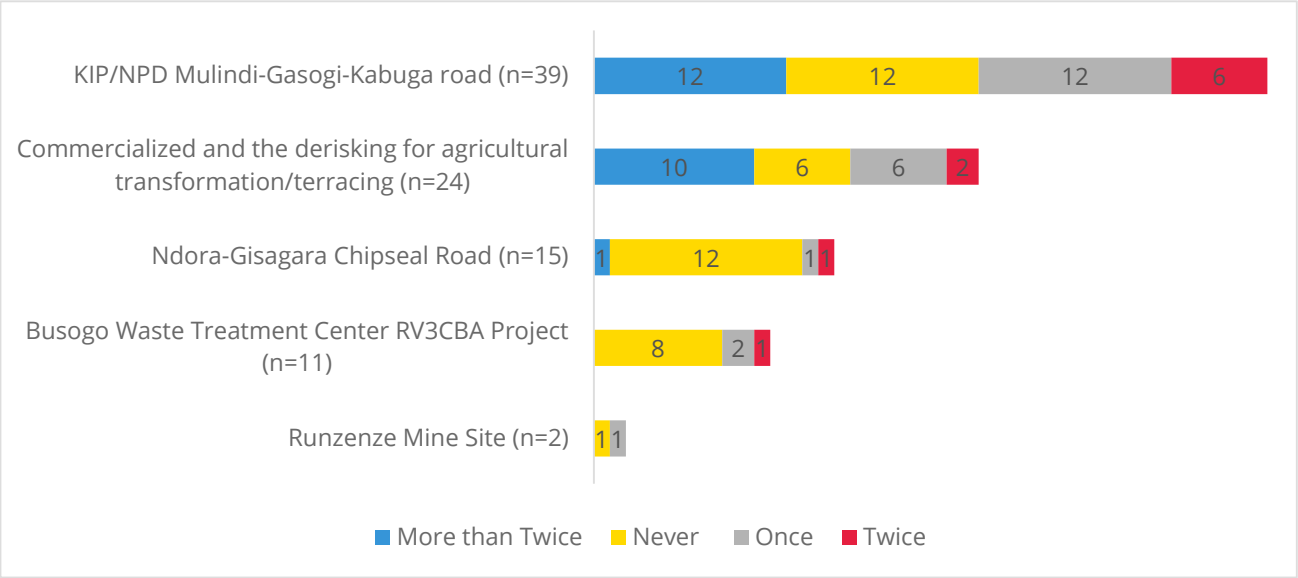


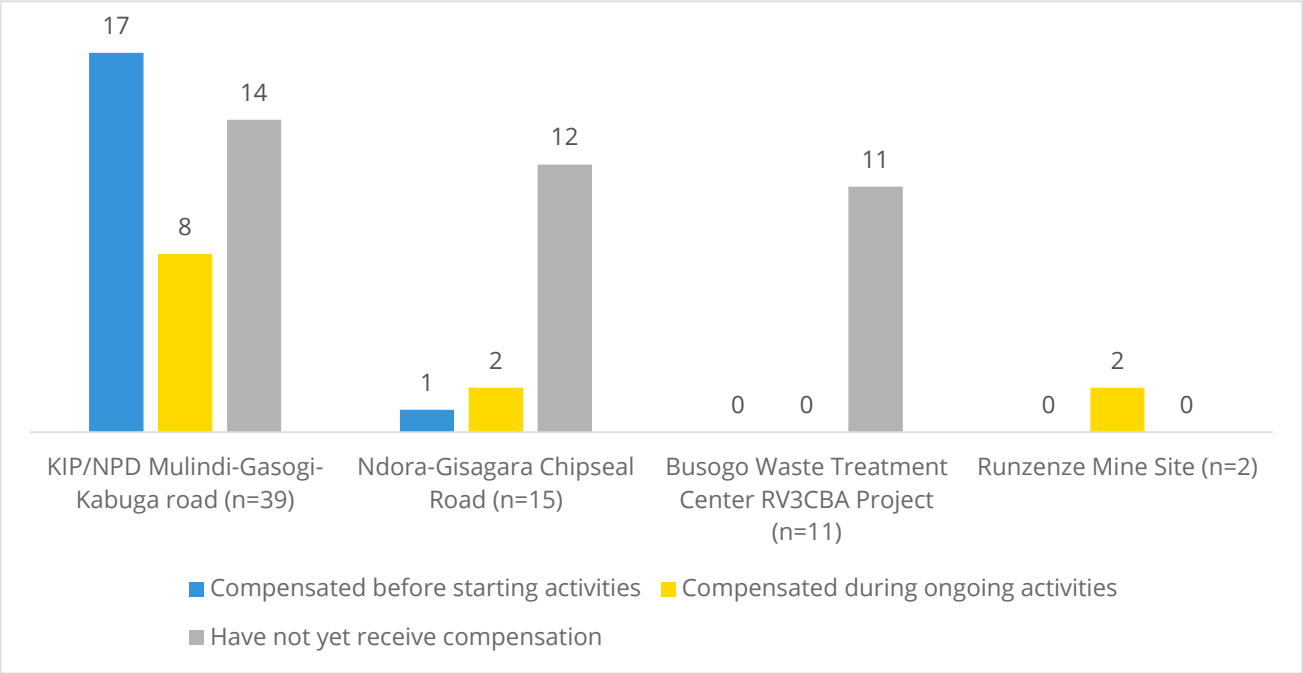
Figure 20: Consultation during resettlement process



The results of the study highlight varying levels of awareness about project activities, knowledge of the project cut-off date, and participation in consultations during the resettlement process across different infrastructure projects. Most participants in the agricultural transformation project (Bugesera) and the KIP/NPD Mulindi-Gasogi-Kabuga road project were well-informed about project activities, with 23 and 25 individuals, respectively, showing awareness. Similarly, the majority of participants in both projects were also well-informed about the project cut-off date. In terms of consultation during the resettlement process, a notable portion of respondents in these two projects participated more than twice, 10 for Commercialized and the derisking for agricultural transformation/terracing and 12 for KIP/NPD. In contrast, the Ndora-Gisagara Chipseal Road and Busogo Waste Treatment projects show significantly lower awareness and consultation engagement, with many participants never attending consultations. The Runzenze Mine Site, with only two participants, shows minimal engagement but indicates at least one individual was well-informed. Overall, the data suggests that while some projects have successfully informed and engaged participants, others may need to improve their consultation and awareness efforts during the resettlement process.

Focus Group Discussions (FGDs) from different projects reveal varying levels of communication and consultation regarding infrastructure projects. In Runzenze Mine Site, the community received information through meetings and cell offices, with specific details on how the project would start, including the use of whistles to minimize disruption. However, in Ndora-Gisagara Chipseal Road, participants reported no consultation or public announcement about the project. Instead, they observed officials measuring their assets and workers beginning construction without prior notice. In KIP/NPD Mulindi-Gasogi-Kabuga road**,** participants had a more positive experience, with clear information provided at community meetings organized by both local and city-level authorities. The community was encouraged to secure land documents to avoid issues, and there was active involvement in assisting valuators, making the project feel like a positive development.

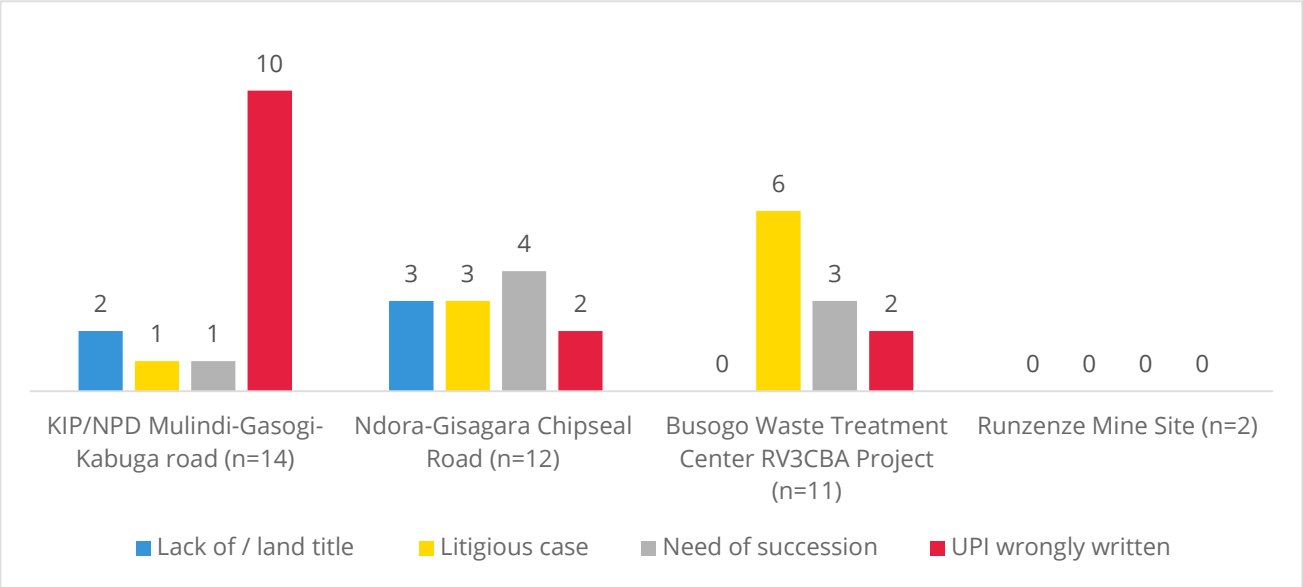
Figure 21: Compensation by project during expropriation process



The results of the study show the compensation status of individuals affected by different projects during the expropriation process. For the KIP/NPD Mulindi-Gasogi-Kabuga road project (n=39), 17 individuals were compensated before the start of activities, 8 during ongoing activities, while 14 have not yet received any compensation. In the Ndora-Gisagara Chipseal Road project (n=15), only 1 person was compensated before starting activities, 2 during the project, and the majority, 12, have yet to be compensated. At the Runzenze Mine Site (n=2), no one was compensated before the project began, but both individuals were compensated during ongoing activities. For the Busogo Waste Treatment Center RV3CBA Project (n=11), none of the affected individuals have been compensated so far. This shows a varied approach to compensation across projects, with some delays in completing payments.

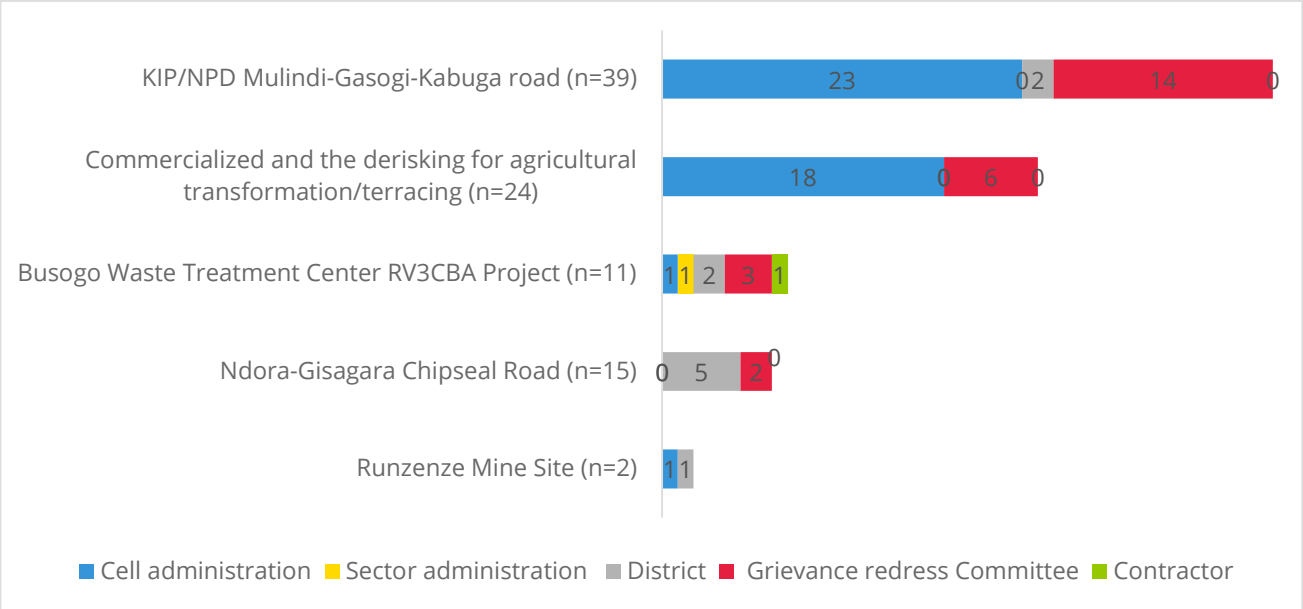
Focus group discussions (FGDs) with Project Affected Persons (PAPs) in Runzenze Mine Site revealed that compensation was swiftly provided for damaged houses, with one person receiving 2,400,000 FRW and another 1,272,500 FRW, while forests remained largely unaffected. However, PAPs expressed concerns about the lack of transparency in the valuation process for assets like trees and houses. In Ndora-Gisagara Chipseal Road, compensation for crops was paid at 150 FRW per square meter, though PAPs were unsure if this rate followed legal guidelines. One person received compensation for a damaged house and was promised renovation after the road construction, while others down the road had not yet received any compensation. PAPs also raised concerns about delays in compensation, with some still awaiting valuation and further communication after submitting their land titles to district officials.

Figure 22: Reasons of not receiving compensation



The results of the study outline the reasons for not receiving compensation in various projects. For the KIP/NPD Mulindi-Gasogi-Kabuga road project (n=14), the main issue is incorrect UPI (Unique Parcel Identifier) entries, affecting 10 people, with smaller issues related to missing land titles (2 cases). In the Ndora-Gisagara Chipseal Road project (n=12), compensation delays are more varied, with 3 cases each related to missing land titles and litigious disputes, 4 needing succession processes, and 2 with plot number or UPI issues. At the Runzenze Mine Site (n=2), no compensation delays have been reported. For the Busogo Waste Treatment Center RV3CBA Project (n=11), the main challenge is litigious cases (6), followed by issues needing succession (3), and a few cases related UPI errors (2). These factors indicate that administrative, legal, and documentation issues are significant barriers to timely compensation.

Figure 23: Individuals to whom PAP reported their complaints

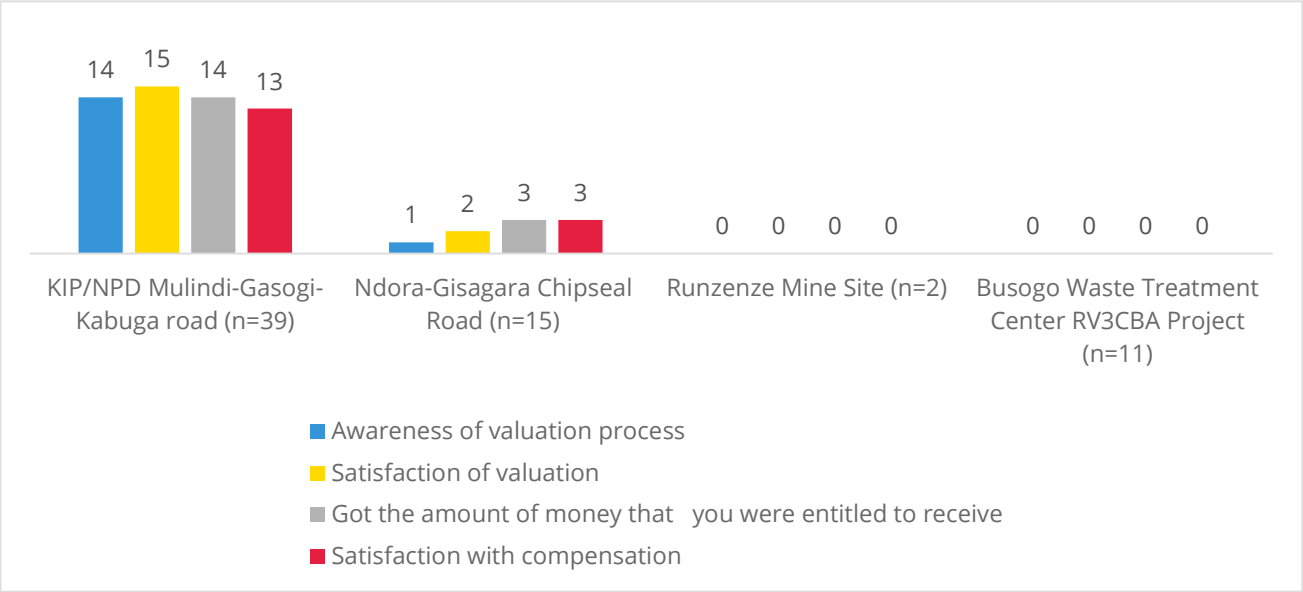


The results of the study show to whom Project Affected Persons (PAPs) reported their complaints across various projects. In the Commercialized and derisking for agricultural transformation/terracing project (n=24), most complaints were directed to the cell administration (18 cases) and a smaller number to the Grievance Redress Committee (6 cases). For the KIP/NPD Mulindi-Gasogi-Kabuga road project (n=39), the majority also reported to the cell administration (23 cases), followed by the Grievance Redress Committee (14 cases) and the district administration (2 cases). In the Ndora-Gisagara Chipseal Road project (n=15), complaints were largely directed to the district administration (5 cases), with some to the Grievance Redress Committee (2 cases). At the Runzenze Mine Site (n=2), one complaint each was reported to the cell administration and district administration. For the Busogo Waste Treatment Center RV3CBA Project (n=11), complaints were spread across cell administration (1 case), sector administration (1 case), district (2 cases), Grievance Redress Committee (3 cases), and the contractor (1 case). This distribution highlights a strong reliance on local-level authorities, particularly cell administration, and varying use of formal grievance mechanisms.

In the Commercialized and derisking for agricultural transformation/terracing project, the Grievance Redress Committee (GRC) reported that they have received training on resolving interpersonal conflicts and collaborating with local leaders and contractors. They commonly address complaints related to terracing, such as disputes over farm borders and damage to crops caused by workers. The GRC effectively resolves these issues through cooperation with village chiefs and raising awareness among workers. However, despite successfully resolving all grievances to the satisfaction of the involved parties, the GRC faces challenges due to a lack of essential tools like boots, raincoats, and communication devices. They highlighted the need for better equipment and more frequent conflict resolution training to improve their performance. Despite these limitations, the population is generally satisfied with the GRC's efforts in resolving disputes.

Participants in FGDs of PAPs in In the Ndora-Gisagara Chipseal Road project disclosed that "We don't know where to turn when it comes to appealing or questioning the compensation or expropriation decision because the person, we were supposed to consult simply told us to wait. Additionally, we weren't given any documents to prove they kept our land title, which we could use as a basis for appeal. We're also unaware of the value of the assets we lost, as outlined by the expropriation law. For future projects, we recommend that authorities consult the community before starting any infrastructure construction. These consultations should include discussions about potential challenges and provide capacity building on expropriation and environmental regulations. Currently, the project has done canalization that directs water to lower areas, damaging citizen agriculture crops.

Figure 24: Awareness of valuation process



The data on awareness of the valuation process and satisfaction with compensation shows mixed results across the districts. For the KIP/NPD Mulindi-Gasogi-Kabuga road project, 14 out of 39 respondents were aware of the valuation process, with a similar number (15) satisfied with the valuation and 14 confirming they received the compensation they were entitled to. Thirteen respondents expressed satisfaction with their compensation. In contrast, the Ndora-Gisagara Chipseal Road project had very low awareness, with only 1 respondent aware of the valuation process, though 3 were satisfied with both the compensation and receiving the amount they were entitled to. Both the Runzenze Mine Site and Busogo Waste Treatment Center projects had no awareness of the valuation process, and none of the respondents reported receiving or being satisfied with compensation. This highlight significant gaps in awareness and satisfaction, particularly in the Runzenze and Busogo project.

FGDs from Runzenze Mine Site with PAPS discussed on the steps taken for valuation of assets and disclosed that: “Once they completed the valuation of our houses, they deposited the compensation in our Sacco accounts. When we went to collect it, they informed us of the value of our houses, explaining that the valuation was based on the materials used to build them. Regarding the fairness and accuracy of the valuation, participants in the focus group shared that, while it seemed like the authorities did as they saw fit, we didn't complain because we saw others moving to better places and accepted what was offered. Since it's the government, there was no room for dispute. For future projects, those affected suggested that valuations should be done before any work begins, with clear explanations of the criteria used. Additionally, they recommended creating proper water canalization systems to prevent damage to crops.

The focus group discussion (FGD) with people affected by the project Ndora-Gisagara Chipseal Road revealed their concerns and confusion regarding the valuation of assets. Participants mentioned that some properties were destroyed and compensated, while others are still awaiting feedback despite submitting land titles. There was significant confusion about how the valuation process worked, especially regarding the measurement of crops and land. Some PAPs reported dissatisfaction with how the process was conducted, noting that valuators only took photos of their properties and left, leaving them unclear about next steps. One participant

shared frustration over water infrastructure being promised for future resolution but instead receiving an inaccessible structure. The group expressed a desire for better communication and education from the district authorities about the infrastructure projects, so the affected people fully understand the process and give informed consent without being forced into decisions.

In the focus group discussions (FGDs) with Project-Affected Persons (PAPs) in KIP/NPD Mulindi-Gasogi-Kabuga road, participants revealed their lack of prior experience with property valuation, which led to confusion during the expropriation process. After their properties were inventoried and assessed, they were informed of the values within three days, though many did not understand how the valuations were determined. While some received compensation that aligned with their property value, others received less than expected, and most found the compensation too low to afford a new property. Although an appeal option was available, many PAPs chose not to pursue it due to the anticipated cost and time required to hire an independent valuer. The group emphasized the need for greater transparency and cooperation between valuers and PAPs, as well as more time to review valuation results. Participants suggested that future projects should allow affected individuals more involvement in the process and ensure that property titles are returned promptly to enable participation in programs like applying for loans.

4.3.4. Harassment at Workplace

Figure 25: Harassment at workplace

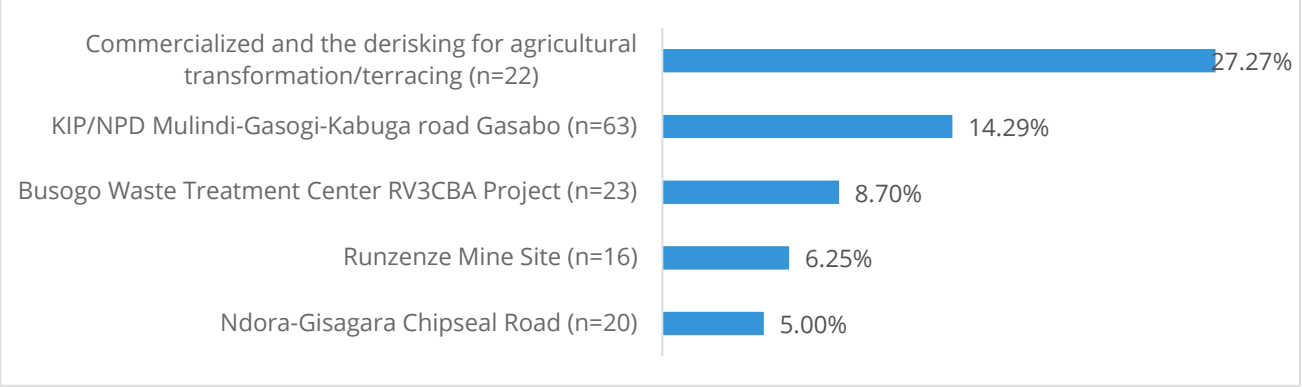
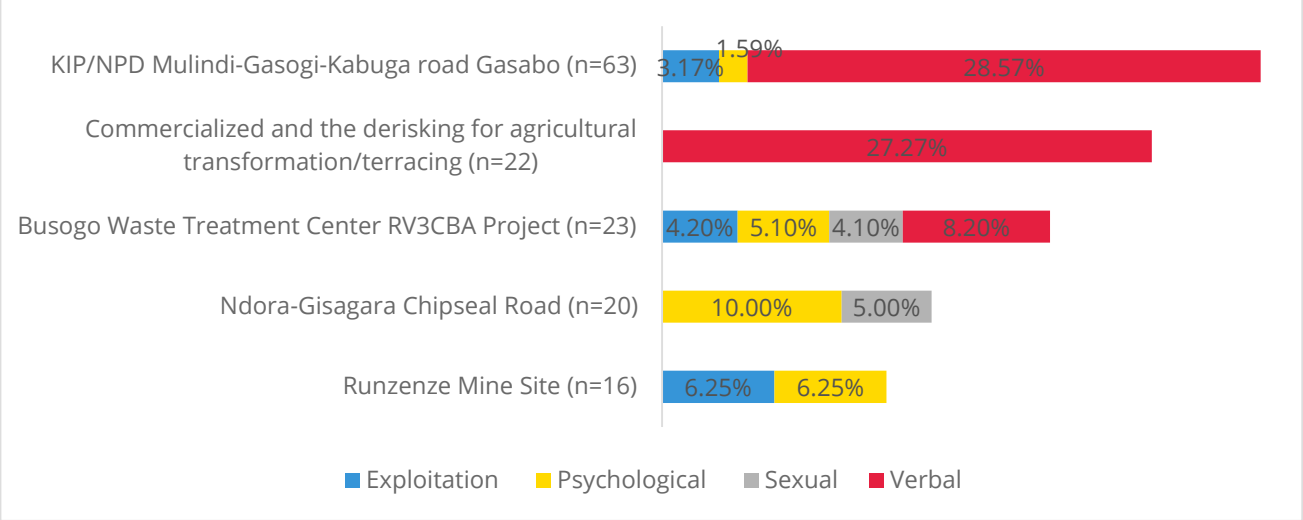


Figure 26: Kind of harassment encountered

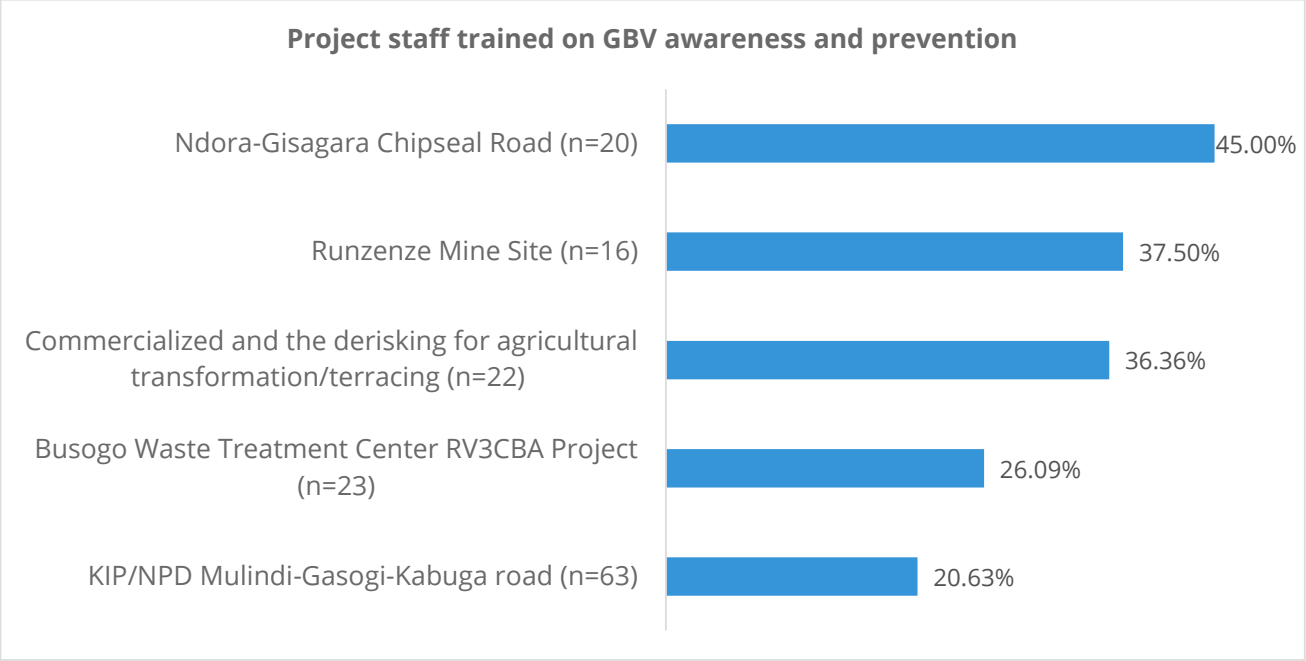


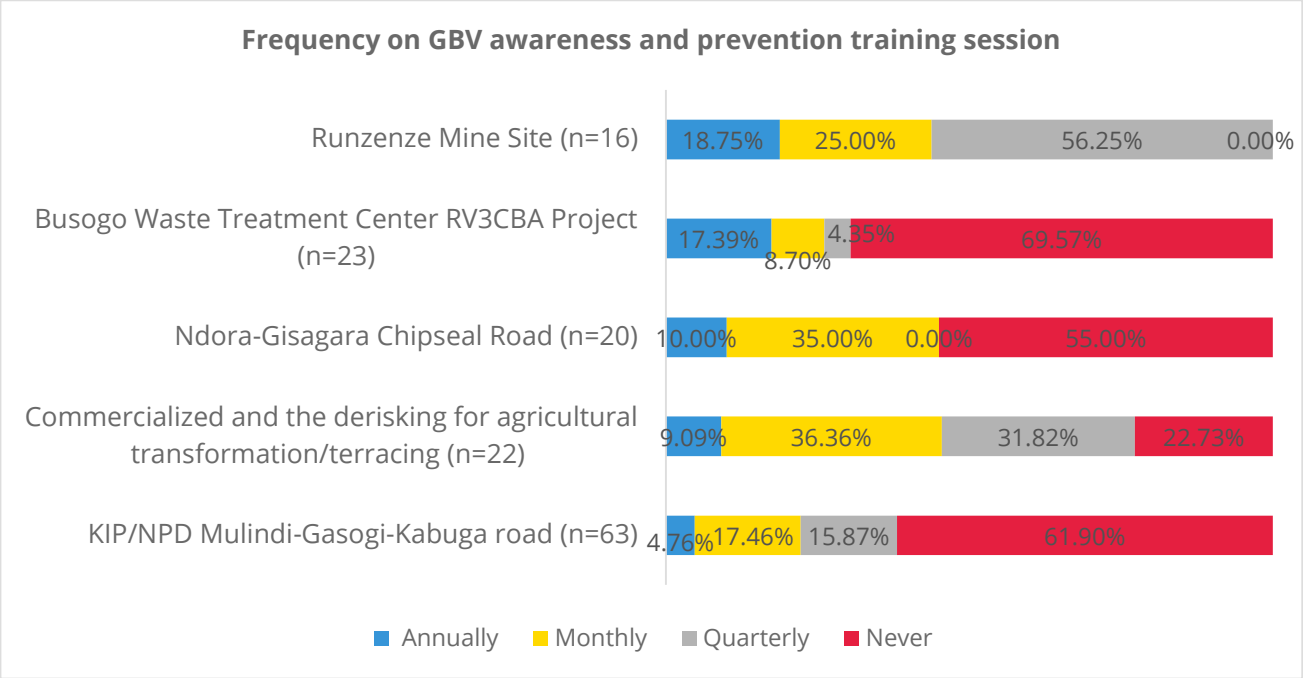
The data provides an overview of workplace harassment types encountered across different districts in infrastructure and agricultural projects. In the "Commercialized and Derisking for Agricultural Transformation/Terracing" (n=22), 27.27% of workers reported exploitation and verbal harassment, while no cases of psychological or sexual harassment were noted. For the "KIP/NPD Mulindi-Gasogi-Kabuga road" project (n=63), 14.29% of workers experienced exploitation, 3.17% psychological harassment, and 1.59% sexual harassment, with a significant 28.57% facing verbal abuse. The "Ndora-Gisagara Chipseal Road" project (n=20) showed lower exploitation rates (5%), but 10% of workers reported sexual harassment, and 5% experienced verbal harassment. At the "Runzenze Mine Site" (n=16), harassment was reported across various categories, with 6.25% reporting exploitation, psychological, and sexual harassment, but no verbal harassment cases. Finally, the "Busogo Waste Treatment Center" (n=23) indicated moderate levels of harassment, with 8.7% exploitation, around 4% psychological and sexual harassment, and 8.2% verbal abuse. The data suggests that verbal and exploitation-related harassment were the most frequent, while psychological and sexual harassment were reported at lower rates across these projects

4.3.5. Gender Based Violence prevention and Awareness

Gender-Based Violence (GBV) prevention and awareness are critical components in the planning and implementation of infrastructure development projects. These projects, while beneficial in improving physical infrastructure and community services, can inadvertently increase the risk of GBV, particularly for women and girls. Increased mobility of workers, disruption of social structures, and economic displacement can create environments where vulnerabilities are exacerbated. Therefore, incorporating GBV prevention measures, such as creating awareness, ensuring safe reporting mechanisms, and promoting gender sensitivity among workers and local communities, is essential. This approach helps safeguard the rights and dignity of all individuals, while fostering a safer and more inclusive development process.

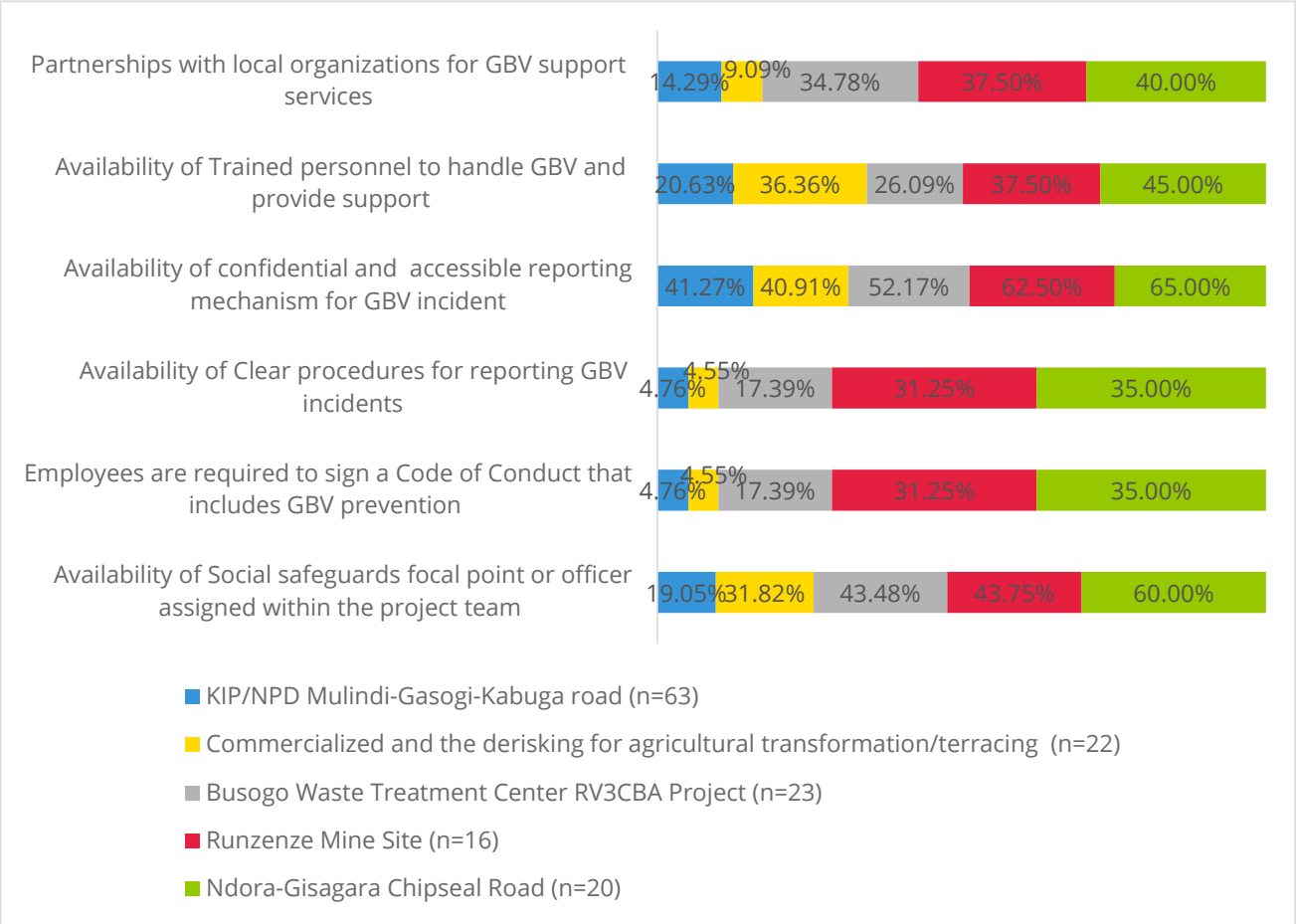
Figure 27: GBV awareness and prevention





The data on GBV (Gender-Based Violence) awareness and prevention training sessions across five districts shows varying levels of engagement. For the Commercialized and Derisking for Agricultural Transformation project, 36.36% of staff received training annually or quarterly, but 31.82% reported never receiving any training. On the KIP/NPD Mulindi-Gasogi-Kabuga road project, 61.90% of staff had never been trained, with only 20.63% trained annually. The Ndora-Gisagara Chipseal Road project exhibited a notable 55.00% of staff having never received training, while 45.00% were trained annually. In contrast, 56.25% of Runzenze Mine Site staff received training monthly, though none reported never receiving training. The Busogo Waste Treatment Center showed the highest percentage (69.57%) of staff who had never undergone GBV training, with only 26.09% receiving annual training. This variation indicates differing priorities and implementation levels of GBV prevention training across districts.

Figure 28: GBV mechanism reporting, handling and supporting



The availability of GBV (Gender-Based Violence) reporting mechanisms, handling, and support systems varies significantly across projects. In the Commercialized and Derisking for Agricultural Transformation project, only 31.82% of the staff reported the presence of a social safeguards focal point, and just 4.55% were required to sign a Code of Conduct that includes GBV prevention. The KIP/NPD Mulindi-Gasogi-Kabuga road project had similarly low figures, with only 19.05% having a focal point and 4.76% signing a GBV-inclusive Code of Conduct. In contrast, the Ndora-Gisagara Chipseal Road project shows stronger measures, with 60.00% having a focal point and 35.00% signing the Code of Conduct, along with relatively high availability of reporting mechanisms and trained personnel. Runzenze Mine Site also displayed solid support, with 43.75% having a focal point and 31.25% signing the Code. The Busogo Waste Treatment Center showed 43.48% availability of a focal point and moderate support across most areas. Overall, many of the districts lack comprehensive systems for GBV incident reporting and support, with the Ndora-Gisagara project standing out for its higher availability of mechanisms and trained persons.

5. Conclusion and Recommendations

5.1. Conclusion

The environmental assessment and social safeguards review conducted across five infrastructure projects in selected districts of Rwanda highlights crucial insights into compliance with environmental and social justice standards. The projects in question—commercialization and derisking for agricultural transformation in Bugesera, KIP/NPD Mulindi-Gasogi-Kabuga road in Gasabo, the Runzenze Mine Site in Karongi, Ndora-Gisagara Chip seal Road in Gisagara, and the Busogo Waste Treatment Center each exhibit varying degrees of adherence to relevant laws and guidelines. This conclusion synthesizes the key findings of the assessment, reflecting on compliance measures, transparency, community engagement, and the broader implications for environmental and social rights.

Beginning with the Ndora-Gisagara Chip seal road project, it is evident that while the initiative has implemented essential compliance measures such as public communication and safety protocols, significant gaps remain. The absence of critical safeguards, including the Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), and Environmental and Social Management Plan (ESMP), presents considerable risks. Such deficiencies threaten not only environmental sustainability but also the social fabric of the communities involved, raising concerns over occupational health and safety standards that remain unaddressed.

Similarly, the Runzenze Mine Site demonstrates some responsible mining practices, notably in waste management and worker safety. However, the lack of a comprehensive Environmental Impact Assessment (EIA) and Resettlement Action Plan (RAP) exposes the project to potential environmental harm and social disruption. Observations indicate inadequate erosion control measures and insufficient ecosystem restoration efforts, which could adversely impact local biodiversity and community welfare. Furthermore, non-compliance with established labor laws raises serious questions about worker rights and safety provisions.

The Cyuve Dumping Site presents a mixed picture of compliance. While it adheres to certain criteria such as sign post significant deficiencies remain, particularly regarding security measures and community health risks. The proximity of the dumping site to residential areas and the lack of effective waste management strategies contribute to potential environmental hazards and community unrest. Additionally, the absence of training on personal protective equipment (PPE) for workers further exacerbates safety concerns, undermining the project's credibility and operational integrity.

In contrast, the Busogo Waste Treatment Center showcases commendable adherence to environmental regulations, with a valid waste management permit and completed Environmental Impact Assessment (EIA). The facility's operational practices, including waste segregation and community engagement initiatives, demonstrate a commitment to sustainability and public health. However, the absence of key operational components, such as effective monitoring reports and community training programs, highlights areas for improvement that could enhance overall project sustainability and community trust.

The agricultural transformation project in Bugesera stands out for its strong emphasis on public awareness and worker safety, characterized by effective communication strategies and operational transparency. However, critical omissions, including the lack of an Environmental and Social Impact Assessment (ESIA) and soil quality monitoring, raise concerns about potential long-term impacts on the environment and community relations. This underscores the importance of integrating comprehensive environmental assessments into project planning and execution to safeguard community interests.

Across the KIP/NPD Mulindi-Gasogi-Kabuga road project, notable safety measures and operational standards are evident. Yet, the absence of vital elements such as an Environmental and Social Impact Assessment (ESIA) and waste management plans indicates significant room for improvement. The project's vulnerability to environmental degradation and potential social unrest highlights the necessity for comprehensive planning that encompasses environmental and social considerations in infrastructure development.

In summary, this assessment reveals critical insights into the interplay between environmental compliance and social safeguards across various infrastructure projects. While some projects exhibit commendable practices and adherence to regulations, widespread gaps persist, particularly concerning environmental impact assessments, community engagement, and worker safety measures. These deficiencies not only jeopardize the sustainability of individual projects but also threaten the broader goals of environmental justice and social equity. Addressing these challenges is essential for fostering resilient and sustainable infrastructure development that prioritizes the rights and well-being of affected communities.

5.2. Recommendations

Issue	Recommendation	Responsible for Implementation
Risks of environmental degradation and social inequality	Ensure development and implementation of Environmental and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), and Environmental and Social Management Plan (ESMP)	Project Developers, Implementing companies and REMA, Ministry of Environment.
Occupational health and safety violations	Establish strict adherence to occupational health and safety regulations by providing PPE and training for all workers	Project Developers, Implementing companies and MIFOTRA
Environmental risks due to poor waste management	Develop comprehensive waste management plans, ensuring compliance with national hazardous and solid waste segregation regulations.	Project Developers, Implementing companies and REMA, Ministry of Environment
Low community engagement in certain projects (e.g., Ndora-Gisagara Road, Busogo Waste Center)	Enhance communication and engagement strategies to involve affected communities in project planning and implementation.	Project Developers, Implementing companies and , District Authorities

Delays or inequalities in compensation for affected individuals.	Establish clear and transparent processes for compensation valuation and disbursement to ensure timely payments.	Project Developers, Implementing companies and Compensation Committees and Grievance Redress committee, District Authorities
Safety risks in high-risk areas (mining, construction)	Implement regular safety audits and training sessions to promote a culture of safety, accountability, and compliance.	, Project Developers, Implementing companies and RURA, MIFOTRA
Low engagement in GBV prevention efforts	Develop and implement comprehensive training programs on GBV awareness and prevention for all project staff	Project Developers, Implementing companies and , MIGEPROF, GMO and District authorities
Land use and sustainability issues	Implement best practices for land use, including soil conservation measures, to align with national laws and promote sustainability	Project Developers, Implementing companies and RAB, MINAGRI

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6. Law N°66/2018 of 30/08/2018 Regulating Labor in Rwanda, mining projects must also provide designated changing rooms and shower facilities for workers.
7. Law N°70/2013 of 02/09/2013 Governing Biodiversity in Rwanda
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Annex: Compliance with infrastructure development projects

	Criteria of compliance	**Ndora-Gisagara Chipseal Road** (Road)	**Runzenze Mine Site** (Mining)	**CYUVE DUMPING SITE**	**Busogo Waste Treatment Center RV3CBA Project**	**Commercialized and the derisking for agricultural transformation (terracing)**	**KIP/NPD Mulindi-Gasogi - Kabuga road** (Road)
1	Billboards	✓	✓	x	✓	✓	✓
2	Guidelines sites	✓	✓	x	x	x	✓
3	Sign post	✓	✓	✓	✓	✓	✓
4	Availability of ESIA	x	x	x	✓	x	x
5	Availability of RAP	x	x	x	✓	x	x
6	Availability of Occupational health and safety plan	x	x	x	✓	x	x
7	Availability of Waste management plan	x	✓	x	✓	x	x
8	Availability of GBV outreach plan	x	x	x	✓	x	x
9	Availability of Disposal permit	✓	✓	✓	✓	x	✓
10	Availability of Traffic management plan	✓	x	x	x	x	✓
11	Availability of Monitoring report	x	x	x	✓	✓	x
12	Availability of Incident and accident plan	✓	x	x	✓	x	✓
13	Availability of Community grievance report	✓	x	x	✓	**x**	✓
14	Availability of Personal protective equipment (PPE	✓	✓	x	✓	✓	x
15	Availability of Time sheet report	x	✓	✓	✓	✓	✓

16	Availability of Contract of workers	✓	x	✓	✓	✓	✓
17	Availability of Medical insurance	✓	✓	✓	✓	✓	✓
18	Availability of Code of conduct	✓	✓	x	✓	✓	✓
19	Availability of Tool box talk	✓	✓	✓	✓	✓	✓
20	Availability of First Aid tool box	x	✓	x	✓	x	x
21	Availability of Evacuation plan in case of injury/accident	x	x	x	✓	x	x
22	Availability of Toilet facilities by sex and hand washing facilities	x	✓	x	✓	x	x
23	Availability of HIV and STDs prevention awareness campaign report	x	x	x	x	x	x
24	Availability of Gender consideration for workers report	x	x	x	x	x	x
25	ESMP implementation Report	x	x	x	✓	x	x
26	Dust control measures report	x	x	x	x	x	x
27	Noise control measures report	x	x	x	x	x	x
28	Ecosystem restoration report	x	x	x	x	x	x
29	Soil quality monitoring report	x	x	x	x	x	x
30	Soil erosion measures report	x	x	x	x	x	x

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