ASSESSMENT OF THE DECENTRALIZATION OF ENVIRONMENTAL SERVICES IN RWANDA

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ABBREVIATIONS AND ACRONYMS

- **AU** – African Union
- **CSOs** – Civil Society Organizations
- **DDEA** – Deputy District Executive Administrator
- **DDS** – District Development Strategy
- **EAC** – East African Community
- **ESIA** – Environmental and Social Impact Assessment
- **FCDO** – Foreign, Commonwealth and Development Office
- **FDIs** – Foreign Direct Investments
- **FGDs –** Focus Group Discussions
- **FONERWA** – Fonds National de l'Environnement au Rwanda (now Rwanda Green Fund)
- **GIS** – Geographic Information System
- **HGIs** – Home-Grown Initiatives
- **ICT** – Information and Communication Technology
- **INKI** – Indi Ntambwe mu Kwiyubakira Igihugu
- **JADF** – Joint Action Development Forum
- **KIIs** – Key Informant Interviews
- MINALOC – Ministry of Local Government
- **MINEDUC** – Ministry of Education
- **NbS** – Nature-based Solutions
- **NDCs** – Nationally Determined Contributions
- **NPA** – Norwegian People's Aid
- **NST2** – National Strategy for Transformation (Phase Two)
- **PPPs** – Public-Private Partnerships
- **PWDs** – Persons with Disabilities
- **RFA** – Rwanda Forestry Authority
- **REMA** – Rwanda Environment Management Authority
- **RMI** – Rwanda Management Institute
- **RTDA** – Rwanda Transport Development Agency
- **SDGs** – Sustainable Development Goals
- **SEA** – Strategic Environmental Assessment
- **TI-Rwanda** – Transparency International Rwand

ACKNOWLEDGEMENTS

The assessment of the Status of the Decentralisation in the Environmental Sector was conducted by Transparency International Rwanda (TI-Rw), under the framework of the Project “Indi Ntambwe mu Kwiyubakira Igihugu (INKI)”, funded by the Foreign Commonwealth Development Office (FCDO)The project, implemented by a consortium of NGOs that includes Transparency International Rwanda, the Institute of Research and Dialogue for Peace (IRDP), Health Development Initiative (HDI), Collectif des Ligues et Associations de Défense des Droits de l'Homme au Rwanda (CLADHO) and Tubibe Amahoro (TA), and led by the Norwegian People’s Aid (NPA) aimed to strengthen CSOs' contributions to evidence-based discussions on Rwanda’s sectoral decentralisation process and its implementation.

NPA, as the Lead Partner, provided overall coordination and spearheaded the development of the Decentralisation Assessment Framework (DAF), a CSO-led methodological tool for measuring the sectoral decentralisation process and the quality of reforms. The DAF guided this assessment across the health, environment, and agriculture sectors.

This is to acknowledge the inputs of technical teams, both local and international, in TI Rw, IRDP, HDI, CLADHO, TA, and in NPA, that made possible the realization of this important assessment. We also take this opportunity to thank local authorities in the districts, decentralised health facilities and, at national level, different authorities in MoH, MINALOC, MINECOFIN, and other institutions that contributed information and views that led to the realisation of this assessment. We extend our sincere gratitude to the team of consultants; Pr. Faustin Gashayija, Mr. Reverien Interayamahanga and Mr. Louis Mazimpaka and the team of enumerators that collected data from the field.

EXECUTIVE SUMMARY

This executive summary provides a detailed overview of the findings from the environmental decentralization assessment conducted in five districts of Rwanda: Gasabo, Musanze, Bugesera, Karongi, and Gisagara. The assessment, undertaken under the INKI project ("Indi ntambwe mu Kwiyubakira Igihugu – An Extra Mile in State Building"), aimed to evaluate the decentralization process in Rwanda's environmental sector, with a focus on local governments' capacity to manage climate risks, service delivery, and sustainable development. The project is crucial in assessing Rwanda's progress in achieving the objectives set under the Paris Agreement and other national climate goals.

▪ BACKGROUND AND CONTEXT

Rwanda's commitment to addressing climate change and ensuring environmental sustainability is underpinned by its decentralization policy, which aims to transfer responsibilities for managing the environment from the central government to local governments. This approach is pivotal to achieving the country's climate goals, especially those outlined in its Nationally Determined Contributions (NDCs) under the Paris Agreement. The goal of this assessment is to evaluate the progress, challenges, and opportunities in Rwanda's environmental decentralization process. Specifically, the study focuses on the capacity of local governments to implement environmental policies, manage climate risks, and promote sustainable development at the district level. The findings aim to provide actionable insights that will strengthen local environmental governance and enhance Rwanda's resilience to climate change.

This assessment was conducted within the framework of the INKI project, focusing on the environmental decentralization process in five target districts: Gasabo, Musanze, Bugesera, Karongi, and Gisagara. These districts were selected as key areas for assessing the impact of decentralization in Rwanda's environmental governance and climate action efforts. Through the INKI project, the goal is to evaluate how local governments in these districts are managing environmental resources, implementing national climate policies, and engaging communities in climate resilience and sustainable development activities.

By conducting this assessment, the project seeks to provide actionable insights into the effectiveness of environmental decentralization, identify key challenges, and offer recommendations to improve local environmental governance. The findings are intended to inform both local and national policy, ensuring that Rwanda's decentralization efforts lead

to greater transparency, enhanced accountability, and better governance in the environmental sector.

▪ METHODOLOGY

The assessment employed a mixed-methods approach to collect both qualitative and quantitative data. This included a comprehensive desk review of national environmental strategies, policies, and reports. In-depth interviews were conducted with key district officials, including Vice Mayors, Environmental Officers, and other relevant stakeholders, to capture insights into local governance structures and their capacity to manage environmental responsibilities. Additionally, Focus Group Discussions (FGDs) with community members provided valuable perspectives on the effectiveness of environmental initiatives and the barriers to successful decentralization. Data were analyzed thematically to identify key trends, challenges, and opportunities across five districts: Gasabo, Musanze, Bugesera, Karongi, and Gisagara.

▪ KEY FINDINGS

The findings are organized into four major dimensions, which reflect the core aspects of environmental decentralization in Rwanda:

1. Stock taking status of devolved, deconcentrated and delegated in the environmental sector in Rwanda

The policy and legal framework provide for the decentralization of environmental services and the role of local governments in the management of these services. The National Environment and Climate Change Policy (2019), National Decentralization Policy (2021) and the Law Nº 065/2021 governing the District are among core policy and legal instrumnets in this regard.

The environmental decentralization assessment identified a mix of services already decentralized and those proposed for further decentralization in Rwanda. Services that have been partially decentralized include land use planning, land registration, and land title printing. Although these functions are managed at the local level, final approvals still remain centralized with the National Land Authority (NLA) and other government agencies, leading to delays in service delivery. Other services like land dispute resolution is similarly decentralized but still face challenges in full local management. Additionally, services such as wetland management, public forest harvesting licenses, and environmental and social

impact assessments (ESIA) are identified as areas where decentralization could be expanded. Local governments are currently involved in these services to some extent, but greater involvement in decision-making, planning, and implementation is needed. The proposed further decentralization of these services is aimed at improving responsiveness to local environmental needs, enhancing governance, and ensuring that environmental policies and projects are better tailored to the unique challenges and opportunities at the district and sector levels.

2. Capacity Development of Decentralised Entities and Decentralising Entities in Environmental Sector

- **Transfer of Environmental Responsibilities from Central to Local Levels**

A significant finding from the assessment is the variation in how environmental responsibilities are transferred from the central government to local governments. Gasabo, benefiting from the centralized budget under the City of Kigali Law (nº 22/2019), has streamlined this process, improving coordination with city-level authorities. However, districts outside Kigali, such as Musanze and Bugesera, face financial constraints, which affect their capacity to implement national policies effectively. While Gasabo shows success in transferring environmental responsibilities, Musanze and Bugesera struggle with limited resources and expertise at the sector level.

- **Need for Dedicated Environmental Officers at the Sector Level**

Across all five districts, the need for dedicated environmental officers at the sector level was consistently emphasized. In Gasabo, sector officers manage urban greening and waste management, effectively implementing policies on climate resilience. However, in Musanze and Bugesera, sector officials often juggle multiple roles, hampering their ability to focus on critical environmental issues such as eco-tourism and flood management. Districts such as Gasabo have recognized the importance of dedicated officers, highlighting the need for specialized personnel in sectors such as eco-tourism, biodiversity conservation, and flood risk management.

- **Training and Capacity Building of Environmental Staff**

Training is a key factor in improving local capacity for environmental management. Gasabo has invested in GIS, urban planning, and waste management training, but continuous training in climate resilience and sustainable agriculture is necessary. In Musanze and Bugesera, sector officials would benefit from specialized training in areas such as eco-

tourism management and climate adaptation. The need for capacity-building programs is especially pressing in these districts, as they face significant climate risks that require technical expertise.

3. Sectoral Decentralisation and Service Delivery in Environmental Sector

- **Sound Intergovernmental Relations Framework:**

The assessment reveals that while Gasabo benefits from consolidated budget coordination, other districts such as Musanze, Bugesera, and Karongi face challenges due to financial autonomy. These districts struggle to coordinate across sectors to implement environmental policies effectively. Effective coordination between central and local governments is essential for addressing climate change and achieving sustainable development, which requires stronger intersectoral communication and planning.

- **Service Delivery in Environmental Management:**

Service delivery related to environmental management has been effective in some districts, such as Gasabo and Karongi, which have made strides in urban greening and disaster preparedness. However, Musanze and Bugesera face difficulties due to resource constraints, a lack of specialized officers, and weak coordination among sectors. Gasabo's successful implementation of urban resilience projects serves as a model for other districts to follow. Effective service delivery requires not only adequate funding but also technical expertise and intersectoral coordination.

4. Fiscal and Financial Decentralisation and Management in the Environmental Sector

- **Cumulative Volume of Mobilized Finance for Environmental Projects:**

The availability of external funding has played a critical role in enabling local governments to implement climate resilience and environmental management projects. Gasabo, Musanze, and Karongi have successfully mobilized external funding through collaborations with JADF, Rwanda Green Fund, and international donors. However, Bugesera has had limited access to external funds, hindering its ability to scale up climate adaptation projects.

- **Percentage of National Environmental Budget Allocated to Local Governments:**

The percentage of the national environmental budget allocated to local governments is a key factor in determining the financial capacity of districts. Gasabo benefits from the

consolidated budget system, which allows for better coordination of resources. In contrast, districts such as Musanze, Bugesera, and Karongi face financial constraints due to lower percentages allocated to environmental projects. For instance, Gasabo received 485,670,000 RWF for environmental projects in the fiscal year 2024-2025, while Musanze received 1,046,390,826 RWF in 2023/2024, representing 2.37% of the district's total budget.

- **Proportion of Allocated Funds Effectively Utilized:**

All districts have made efforts to utilize allocated funds effectively. Gasabo, Musanze, and Karongi reported 100% utilization of their environmental budgets. However, in Bugesera, the utilization of funds is sometimes delayed due to administrative bottlenecks. Timely and effective utilization of funds is crucial for implementing climate adaptation projects and ensuring the successful completion of disaster preparedness programs.

- **Availability of External Funding for Local Environmental Initiatives:**

Gasabo, Musanze, and Karongi have successfully secured external funding for their environmental projects, including partnerships with international donors and climate finance mechanisms. Bugesera, however, has faced challenges in accessing sufficient funding, which limits its ability to scale up environmental initiatives.

- **Number of Projects Developed and Financed for NDC Implementation:**

The implementation of Nationally Determined Contributions (NDCs) is central to achieving climate goals. Gasabo has developed several projects aligned with the NDCs, including urban greening, flood management, and climate resilience. Musanze has focused on eco-tourism and biodiversity conservation, while Bugesera has prioritized flood management and soil conservation. However, the assessment did not capture the total number of projects but rather provided examples of key initiatives developed by the districts as part of NDCs.

- **Central Government Institutions Transferring Funds to Decentralized Entities for Environmental Protection:**

The decentralization of funds for environmental protection has been effective in some districts, with support from institutions such as REMA and FONERWA. These institutions have provided financial resources to local governments to implement climate adaptation projects and disaster preparedness programs.

- **Green Jobs Created Through the Implementation of Green Projects:**

Several green projects across the districts have contributed to job creation in the environmental sector. In Gasabo, urban greening and tree planting projects have provided employment opportunities for local residents. Similarly, Karongi and Musanze have seen the creation of green jobs through disaster preparedness and eco-tourism initiatives.

5. Local Economic and Sustainable Development in Environmental Sector

- **Leveraging Local Assets for Green Development:**

Gasabo and Gisagara have leveraged available land for green development, such as tree planting and sustainable agriculture. In Gasabo, large tracts of land in sectors such as Jali and Rusororo have been identified for urban greening, contributing to the city's climate resilience. This highlights the importance of land availability for scaling up green projects that align with Rwanda's national climate goals.

- **Adoption of Nature-Based Solutions (NbS):**

The use of nature-based solutions (NbS) has been widespread across the districts, particularly in Karongi and Musanze. Community-led terracing and afforestation efforts have been used to mitigate soil erosion, while Gasabo has utilized drones to monitor illegal construction in flood-prone areas. These NbS are cost-effective and help communities adapt to climate change by reducing environmental risks while promoting sustainable livelihoods.

- **Climate Resilience and Adaptation:**

Musanze, Bugesera, and Karongi have developed strong climate adaptation strategies, but the implementation of these strategies has been hindered by limited financial resources and specialized staff. Karongi has focused on flood prevention, particularly in areas surrounding Lake Kivu, while Musanze and Bugesera have implemented measures to address soil erosion and flood risks. These districts are making progress, but additional funding and technical capacity are needed to fully implement climate adaptation plans.

6. Challenges identified

The key challenges identified in the study include:

- Financial Constraints: Limited and delayed financial allocations for environmental projects impede the effective implementation of climate adaptation and mitigation strategies.

- Lack of Specialized Staff: The absence of dedicated environmental officers at the sector level in several districts limits the ability to address climate risks and implement local policies effectively.
- Weak Coordination: Environmental governance remains fragmented across sectors, with insufficient coordination between agriculture, forestry, water management, and other sectors.
- Limited Access to Climate Data: Districts face challenges in accessing accurate, real-time climate data and advanced forecasting tools, which hampers effective disaster preparedness and climate resilience planning.
- Low Community Engagement: Although efforts to involve vulnerable groups (e.g., women, youth, PWDs) in environmental decision-making are growing, there is still limited community participation, particularly in project design and planning.
- Limited decentralization of some key environmental services

7. Opportunities Identified

Several opportunities were identified to strengthen environmental decentralization:

- Strong Multi-Stakeholder Partnerships: Partnerships between local governments, international donors, and civil society organizations have proven effective in securing funding and technical support for environmental projects. For example, in Gasabo, JADF and international donors have supported urban greening and flood management.
- Community Engagement: Increasing community involvement in environmental initiatives, particularly through youth and women's participation, has enhanced local ownership and sustainability of projects. For instance, Bugesera's youth-led tree planting initiative demonstrated the potential for grassroots-driven climate action.
- Available Land and Resources: Some districts, such as Gasabo and Gisagara, have significant amounts of underutilized land that can be leveraged for environmental projects such as tree planting, soil conservation, and eco-friendly infrastructure development.
- Integration of National Climate Goals: The integration of Rwanda's Nationally Determined Contributions (NDCs) into local planning frameworks has facilitated the

alignment of local projects with national climate targets. This alignment enhances vertical coherence and opens avenues for accessing global climate finance.

▪ RECOMMENDATIONS

Based on the findings, the study recommends:

1. Revise existing policies to allow for the complete transfer of decision-making authority and responsibilities to local governments, reducing the bottlenecks caused by centralized approvals. By decentralizing these critical services, local governments will be better positioned to address climate risks and drive sustainable development at the community level.
2. Increasing Financial Support: Local governments should receive more timely and substantial financial resources to support environmental projects. This includes exploring innovative financing mechanisms such as climate bonds and expanding partnerships with donors such as Rwanda Green Fund.
3. Capacity Building for Sector-Level Officers: Specialized training programs should be developed for sector-level environmental officers, particularly in eco-tourism, biodiversity conservation, and disaster preparedness.
4. Improving Coordination across Sectors: Stronger coordination between environmental and other relevant sectors (agriculture, forestry, water management) is essential for integrated climate action.
5. Enhancing Climate Data Access: Investment in climate data tools and early warning systems is necessary to improve disaster preparedness and climate resilience.
6. Increasing Community Participation: Local governments should involve community members more actively in the design and implementation of environmental projects, ensuring that interventions are locally relevant and sustainable.

By addressing these recommendations, local governments can play a central role in strengthening Rwanda's climate resilience and achieving sustainable development at the local level.

▪ CONCLUSION

The assessment highlights the progress made by local governments in Rwanda in implementing environmental decentralization, particularly in the areas of climate adaptation

and sustainable development. While Gasabo benefits from a centralized budget system and external funding, districts such as Musanze, Bugesera, and Karongi face challenges related to limited financial resources, lack of specialized staff, and gaps in coordination. The findings suggest that increasing financial allocation to local governments, enhancing capacity-building efforts for sector-level staff, and improving coordination between central and local authorities are essential for advancing environmental decentralization.

1. INTRODUCTION

1.1. Context and Background

This Decentralisation Assessment Framework (DAF) has been developed in the context of the "Indi Ntambwe mu Kwiyubakira Igihugu (INKI) Project – An Extra Mile in State building". The project takes the form of a consortium bringing together three (3) organisations seasoned in governance and decentralisation: Norwegian People's Aid (NPA), Transparency International Rwanda (TI-RW), and the Institute of Research and Dialogue for Peace (IRDP). NPA is the Lead Partner, and the idea to develop a CSO-led methodological framework to measure decentralisation process and quality of reforms were the initiative of NPA, while IRDP is leading this component, and the project is funded by the Foreign Commonwealth Development Office (FCDO).

The overall objective of the project is to strengthen CSOs' abilities to meaningfully contribute to more inclusive, effective and accountable planning, design and implementation of relevant government policies and institutional practices in Rwanda. The assignment aims to design and develop, based on internationally benchmarked standards and best practices, a comprehensive methodological framework for measuring the quality and progress of decentralisation in Rwanda, focusing on the key aspects or dimensions of decentralisation.

Rwanda has made notable strides in decentralizing its environmental sector, with the goal of strengthening local governance, increasing community participation, and enhancing environmental resilience. Key policies such as the National Decentralization Policy (2000) and the Environment and Climate Change Policy (2019) underscore the importance of decentralization and climate action. Institutions such as the Rwanda Environment Management Authority (REMA) and District Environmental Officers have been central to implementing these policies at the local level. Community-driven initiatives, including Green Projects and Umuganda, have also made substantial contributions to environmental management at the grassroots level.

However, environmental governance has not yet been fully decentralized in line with the Prime Minister's 2024 Order. Rwanda's vulnerability to environmental degradation highlights the urgent need to evaluate and enhance the decentralization process. In this context, TI-Rwanda commissioned this study to assess the progress, challenges, and gaps in

environmental decentralization, offering actionable recommendations for improving the process and ensuring sustainable environmental outcomes for all Rwandans.

1.2. Background and context to the decentralization assessment in environment

1.2.1. Introduction

Decentralization is a multifaceted concept that encompasses various strategies and frameworks for distributing authority and resources from central governments to lower levels, such as state or provincial authorities and municipalities. The evolution of decentralization can be traced back to a political necessity for accountability, particularly in environmental management contexts, as highlighted by (Mody, 1970). This redistribution of power allows local governments to assume responsibilities for service delivery, operating under central guidelines and often leading to more tailored approaches to meet local needs. Administrative decentralization, which shifts functions from central offices to local field offices, is a critical component that enhances the capacity of local entities to manage public services effectively. The political landscape can significantly influence how these decentralization processes are structured and implemented, emphasizing the role of leadership in facilitating accountability and governance at lower levels (Rossi and Sørensen2022).

The rise of political decentralization, particularly in the 1980s and 1990s, has incited widespread discussions regarding its definition and optimal models of implementation. (Oosterveer & Van Vliet, 2010) argue that while many African governments embraced this trend to improve public service delivery, the absence of a universally accepted model has led to disparate outcomes across countries. These variations stem from differing degrees of administrative capacity and stakeholder involvement, often framed within the context of democratization and community participation. The interplay between decentralization and public management is complex, with its success hinging on the ability of local actors to make decisions that reflect the specific needs of their communities. As such, examining decentralization requires not only an understanding of its structural elements but also a robust analysis of the political dynamics that drive or inhibit effective local governance. By

exploring these frameworks, one can decipher the nuances that delineate successful decentralization efforts from those that fail to meet their intended objectives.

1.2.2. Brief review of the decentralization theories in the environment sector

Decentralization is a tool that seeks to engender twenty-first century governance, based on the four principles of choice, accountability, participation, and transparency, to address the failures arising from a centralized governance regime that prevailed in many nations of the world (Mody, 1970). While these principles are notionally universal and are pursued at various levels by governments worldwide, municipalities are posited as the preferred institutional level for instilling effectiveness, legitimacy, and a sense of ownership into governance reforms driven by these principles.

Decentralization theories in the environment sector emphasize the redistribution of authority, responsibility, and resources from central governments to lower levels of administration, such as regional or local governments, to improve environmental governance. One central theory is the **subsidiarity principle**, which asserts that environmental decisions should be made at the most immediate or local level capable of addressing the issues effectively. This enhances responsiveness to local ecological conditions and promotes citizen participation in environmental management. The principle of subsidiarity represents a comprehensive approach to governance that is both layered and nuanced, standing in contrast to the more rigid theory of fiscal decentralisation. This fundamental concept centers on the distribution of financial responsibilities, accountability, and decision-making authority among the various levels of government and administrative entities. Such a clear distinction highlights a crucial ongoing balance between local control, which empowers communities to manage their affairs, and the essential need for coherent and overarching fiscal strategies that guide these local efforts. These overarching strategies play a pivotal role in not only fostering equitable development across diverse regions but also in ensuring effective resource management and allocation amidst varying local circumstances and needs. By delving deeper into and understanding this intricate and nuanced relationship between subsidiarity and fiscal decentralisation, we can truly appreciate how both concepts significantly contribute to the overall governance framework, ultimately creating a more responsive and responsible system of governance that serves the public good efficiently. (Kumar, 2021)

Another relevant framework is the **polycentric governance theory**, which highlights the benefits of having multiple, overlapping centers of decision-making authority. In the

environmental context, this allows for experimentation, learning, and innovation at different governance levels, encouraging adaptive and context-specific solutions. Polycentric governance offers a versatile framework for addressing complex environmental management challenges. Unlike centralized governance models, polycentric systems involve multiple centers of decision-making authority at varying scales, from local communities to international bodies. This approach acknowledges that environmental issues are intricate and often transcend geographical and jurisdictional borders, necessitating collaboration across different sectors and levels of governance. The polycentric model fosters resilience and adaptability by enabling diverse stakeholders, each with their specific knowledge and expertise, to participate in decision-making processes. This multiplicity not only disperses power but also encourages innovative solutions tailored to specific environmental contexts. (Heinen et al.2022)

1.2.3. Rationale of environmental decentralization

The rationale for decentralization in the environment sector stems from the belief that local governments and communities are better positioned to understand and respond to their unique environmental challenges. By transferring authority and responsibilities from the central government to sub-national levels, decentralization promotes more tailored, context-specific decision-making. Local actors often possess intimate knowledge of ecological dynamics, resource use patterns, and socio-economic factors, which can lead to more effective planning and implementation of environmental policies. Moreover, decentralization enhances accountability, as decision-makers are closer to the people they serve, thereby fostering transparency and community participation in natural resource management.

Decentralization also improves efficiency in environmental governance by reducing bureaucratic delays and allowing for quicker, more flexible responses to local issues such as deforestation, soil erosion, and waste management. It facilitates the integration of traditional knowledge and local innovations, which can complement scientific approaches to environmental protection. Furthermore, by empowering local governments with fiscal and administrative autonomy, decentralization can strengthen environmental stewardship, promote inter-sectoral coordination, and mobilize local resources and partnerships. Ultimately, it helps align environmental

sustainability with local development priorities, contributing to more resilient and inclusive environmental outcomes. (Mody, 1970).

1.2.4. Evolution of decentralization in the environment sector

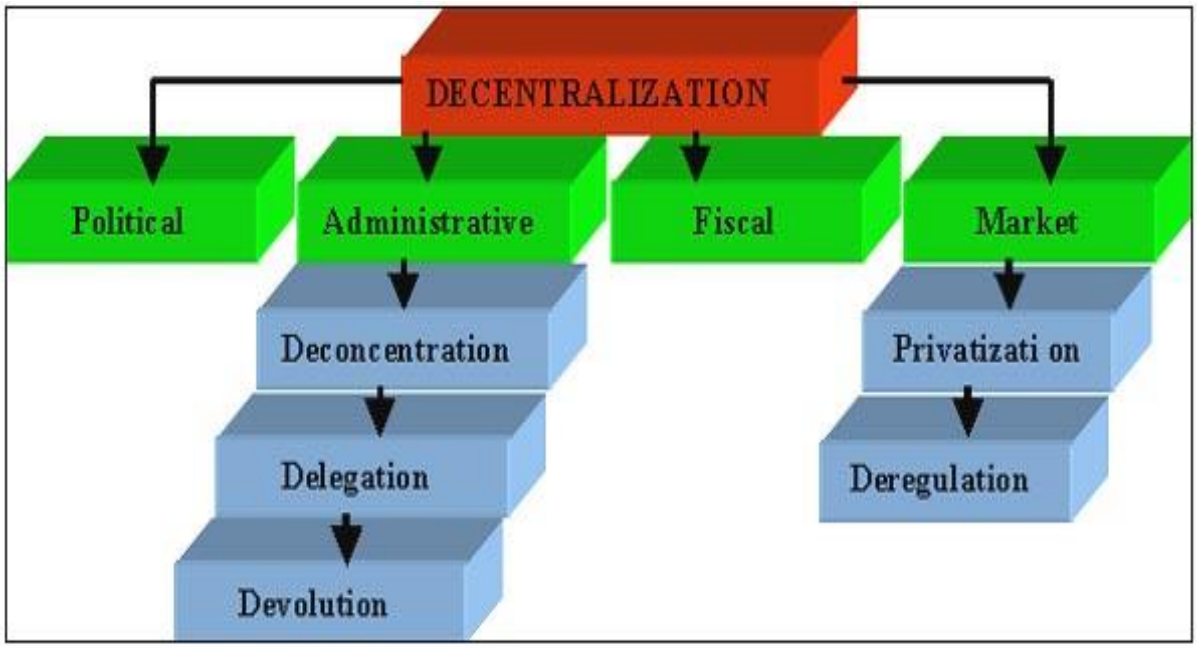
Decentralization in the environment sector evolved as part of broader governance reforms that gained momentum globally in the 1980s and 1990s, driven by calls for greater democratization, efficiency, and community participation in public administration. Initially, environmental management was highly centralized, with decisions made at the national level. However, this top-down approach often proved ineffective in addressing local environmental issues, especially in diverse ecological contexts. As environmental degradation and resource conflicts grew more visible, the need for localized solutions became apparent, leading to the gradual delegation of authority and responsibilities to regional and local governments.

The shift was also influenced by international development agendas, including the 1992 Rio Earth Summit, which emphasized sustainable development and the role of local communities in environmental stewardship. Institutions such as the World Bank and UN agencies began promoting decentralized natural resource management as a way to improve governance and empower marginalized populations. Over time, many countries incorporated decentralization into their environmental policies and legal frameworks, enabling local actors to manage forests, water, land, and biodiversity. This evolution has fostered more inclusive, adaptive, and context-responsive environmental governance models across various regions.

1.2.5. Forms of environmental decentralization

In environmental governance, decentralization takes several distinct forms, each reflecting how authority, responsibility, and resources are distributed across levels of government. These forms are commonly categorized into **political, administrative, fiscal, and market decentralization**, and each has unique implications for environmental management (Food and Agriculture Organization of the United Nations, 2002):

Figure 1: Forms of environmental decentralization



1. **Political Decentralization** involves transferring decision-making powers to elected local governments or councils. This allows local communities to influence environmental priorities through democratic processes. For example, locally elected bodies may set rules for forest use or enforce land-use planning regulations, making governance more accountable and responsive to local needs.
2. **Administrative Decentralization** assigns implementation and management responsibilities to lower tiers of government. In the environmental sector, this may include devolving functions such as environmental impact assessments, waste management, or forest protection to district or municipal authorities. This form enhances operational efficiency and service delivery close to affected areas.

(i) **deconcentration**, which consists of redistribution of decision-making authority and financial and management responsibilities among different levels of the central government. This form is often considered the weakest form of decentralization.

(ii) **delegation:** through delegation central governments transfer responsibility for decision-making and administration of public functions to semi-autonomous organizations not wholly controlled by the central government, but ultimately accountable to it (e.g., sub-national housing authorities, transportation authorities, regional development corporations); and

(iii) **devolution:** in a devolved system, local governments have clear and legally recognized geographical boundaries over which they exercise authority and within which they perform public functions (e.g. raising revenues, investment decisions). It is this type of administrative decentralization that underlies most political decentralization.

3. **Fiscal Decentralization** allows sub-national governments to raise and manage their own revenues, including through environmental taxes, user fees, or transfers. This can support environmental investments, such as reforestation projects or waste treatment infrastructure, provided that adequate financial autonomy and capacity exist.
4. **Market or Economic Decentralization** shifts some functions to private or non-governmental actors, such as community-based organizations or cooperatives managing natural resources. This is often seen in community forestry, watershed user associations, or environmental service provision, where users have a stake in conservation and benefit-sharing. It can take two different forms:

(i) **privatization** which means allowing private enterprises to perform functions that had previously been monopolized by government, or contracting out the provision or management of public services or facilities to commercial enterprises, or still financing public sector programmes through the capital market and allowing private organizations to participate; and

(ii) **deregulation** which consists of transferring services provision or production activities previously owned or regulated by the public sector to competing private organizations (e.g., electricity or broadcasting provided by various and competing companies).

Trends and practices globally show a growing emphasis on participatory approaches, co-management systems, and multi-level governance, often combining these decentralization types. Successful implementation often hinges on clear legal mandates, institutional capacity, intergovernmental coordination, and meaningful community engagement.

Environmental decentralization, when well-designed, supports adaptive management and sustainable development.

1.2.6. Legal, policy and institutional framework of the decentralization philosophy in the environment sector in Rwanda.

In Rwanda, the decentralization philosophy is deeply embedded in the country's legal, policy, and institutional frameworks, particularly in the environment sector. The government has adopted a multi-tiered governance model that empowers local governments to plan, implement, and monitor development and environmental programs. The legal foundation for decentralization was laid by the **Law No. 87/2013 on Decentralization**, which grants administrative and financial autonomy to local government entities. This law is complemented by the **Organic Law on Environmental Protection (2005, revised in 2018)**, which establishes the framework for sustainable environmental governance, including the roles of decentralized entities.

According to the (Official Gazette no. Special of 21/09/2018, 2018), the State, decentralized entities, and local communities share key responsibilities in the protection, conservation, and promotion of the environment. The State is mandated to integrate environmental concerns into all development planning processes and to ensure that environmental protection is upheld in land use, biodiversity conservation, energy utilization, and project assessment (Articles 21–33). Decentralized entities are required to implement national environmental policies, ensure community participation, and enforce environmental regulations at the local level (Article 39). Local communities, for their part, are expected to engage in environmental protection efforts, comply with environmental laws, and participate in community-based environmental committees (Articles 40–41). These collective obligations aim to foster sustainable development, prevent environmental degradation, and ensure the well-being of current and future generations.

(The Government of Rwanda, 2023) under the NST2 emphasizes environmental decentralization as a pivotal strategy for sustainable development and climate resilience in Rwanda. It highlights the critical role of decentralized governance structures in implementing environmental protection, natural resource management, and disaster risk reduction at the local level. By mainstreaming environment and climate change concerns into local planning processes - such as through Strategic Environmental Assessment (SEA) and Environmental and Social Impact Assessment (ESIA) - the strategy ensures that districts and sectors adopt climate-proofed policies and practices. Local governments and communities are empowered

to manage forests, rehabilitate wetlands, and implement flood control measures, reinforcing a bottom-up approach to environmental governance. Furthermore, decentralized entities are tasked with mobilizing climate finance and overseeing local-level implementation of national strategies, such as the Green Growth and Climate Resilience Strategy. This inclusive, localized approach is designed to foster community ownership, improve responsiveness to local environmental challenges, and drive Rwanda's broader goals under Vision 2050.

The Governance and Decentralisation Sector Strategic Plan (2024–2029) outlines a clear commitment to environment decentralisation as a key strategy to ensure sustainable development and climate resilience in Rwanda. The plan emphasizes the integration of environmental and climate change considerations into local governance structures, encouraging local governments to embed climate adaptation and mitigation efforts into their planning and decision-making processes. This includes the implementation of green growth initiatives, environmental screening of infrastructure projects, and localized disaster preparedness. Districts are expected to build institutional and community capacities to manage environmental challenges through training, digital tools, and collaboration with national agencies like Meteo Rwanda and REMA. Furthermore, local authorities will play a critical role in mobilizing communities around the socio-economic benefits of green settlements and ensuring adherence to environmental regulations such as Environmental and Social Impact Assessments (ESIA). By decentralizing environmental governance, the strategy seeks to foster grassroots ownership, improve responsiveness to localized climate threats, and support Rwanda's broader transition to a climate-resilient and low-carbon economy by 2050.

On the policy side, environmental decentralization in Rwanda is an integral component of the broader decentralization framework, which aims to empower local governments and communities to play an active role in governance and sustainable development. The National Decentralization Policy (2021) and **Green Growth and Climate Resilience Strategy (2011)** highlight those decentralizing environmental responsibilities enables local governments to better integrate environmental sustainability into local planning, service delivery, and economic development. This includes promoting green growth, ensuring climate resilience, and mainstreaming environmental considerations into sectoral policies and budgets at the local level. By aligning decentralization with Rwanda's Vision 2050 and the National Strategy for Transformation, the policy reinforces the importance of participatory governance, where local entities are entrusted with managing natural resources and implementing environmental regulations. It emphasizes citizen engagement, accountability, and local

innovation in environmental protection, ensuring that environmental governance is responsive to community needs and contributes to equitable and sustainable development.

The **National Environment and Climate Change Policy** of Rwanda underscore the importance of environmental decentralisation as a key opportunity for effective policy implementation. Decentralisation in this context refers to the delegation of environmental governance responsibilities from central to local government entities, enabling greater responsiveness to local environmental conditions and empowering communities. Rwanda leverages its strong decentralised governance system to enhance environmental management through local-level planning, implementation, and monitoring. By integrating environmental and climate change considerations into District Development Strategies (DDS), the policy ensures that local authorities are active participants in sustainable development. This structure enhances accountability, promotes citizen engagement, and allows for tailored responses that reflect the unique ecological and socio-economic realities of different regions. Thus, decentralisation is not only a governance reform but also a practical tool to achieve inclusive and resilient environmental outcomes across the country (Ministry of environment, Rwanda , 2019)

These policies outline how districts are responsible for integrating environmental sustainability into their development plans through tools like **District Development Strategies (DDS)** and **Imihigo (performance contracts)**. Environmental planning is mainstreamed into these processes to ensure accountability and alignment with national goals.

Institutionally, several bodies work together to implement decentralized environmental governance. The **Rwanda Environment Management Authority (REMA)** plays a central coordination and regulatory role.

The Rwanda Environment Management Authority (REMA) Strategic Plan for 2022–2027 outlines the institution's commitment to implementing Rwanda's environmental policies and advancing the country's green growth agenda. The plan is built around six strategic outcomes aligned with national priorities and the Sustainable Development Goals (SDGs), focusing on areas such as improved air and water quality, sustainable land use, effective waste management, climate change mitigation and adaptation, and institutional capacity strengthening. The document highlights REMA's role in coordinating and regulating environmental protection efforts, ensuring environmental mainstreaming across sectors,

and promoting innovation and data-driven decision-making (The Rwanda Environment Management Authority (REMA) Strategic Plan 2022–2027, 2021).

To achieve its vision of a clean and healthy environment supporting a sustainable and climate-resilient economy, REMA prioritizes inter-agency collaboration, stakeholder engagement, and enhanced community awareness. The strategic plan also addresses cross-cutting issues like gender equality, youth engagement, and digital transformation in environmental governance. Additionally, REMA aims to strengthen its internal systems, monitoring and evaluation mechanisms, and partnerships with regional and international bodies. The plan presents a results-based framework with measurable targets and financial planning, ensuring accountability and progress tracking over the five-year period. While **district environmental officers** and **sector-level staff** are tasked with local implementation and monitoring. In addition, partnerships with civil society organizations, cooperatives, and community-based groups support participatory environmental management, reinforcing Rwanda's commitment to local empowerment and sustainability.

1.2.7. Empirical Literature: review of the status of decentralization in the environment sector in Rwanda: critical review of reports, academic articles, and papers

The status of environmental decentralisation in Rwanda reflects a growing, yet still evolving, approach to inclusive and localized environmental governance. According to the UNEP report "Rwanda: From Post-Conflict to Environmentally Sustainable Development", Rwanda has established a foundational environmental governance framework that includes institutional, policy, and legal components. The ongoing decentralisation process is viewed as a vital opportunity to promote community-based environmental management, particularly at the local level, where engagement had been historically weak. However, despite this opportunity, the implementation of decentralised environmental management remains constrained by limited resources, weak institutional capacity, and the need for further technical and financial support. Strengthening local environmental governance through capacity-building, resource mobilisation, and clearer enforcement mechanisms is essential to fully realise the benefits of decentralisation in enhancing environmental sustainability and resilience in Rwanda. (United Nations Environment Programme)

1.2.7.1. Stock-taking of deconcentrated, delegated, and devolved functions and the plans in terms of functional assignment in environment

Environment decentralisation in Rwanda emphasizes the integration of environmental and climate change considerations into all levels of governance and development planning. The Governance and Decentralisation Sector Strategic Plan (2024–2029) mandates local governments to mainstream climate resilience and environmental sustainability in their policies and service delivery, including infrastructure development, local economic planning, and public financial management. This involves empowering districts to assess environmental impacts, enforce regulations, implement green projects, and build community awareness. Local entities are also expected to collaborate with national institutions to disseminate weather information and promote organized, climate-safe settlements. Complementing this, sector-specific guidelines support mainstreaming environmental objectives into budgeting and project planning, ensuring that environmental sustainability becomes an integral part of decentralized governance for long-term national development.

The Musanze District 2022/2023 Imihigo Progress Report reflects strong performance in the environmental sector, particularly in land and forest restoration efforts. The district successfully constructed 20 hectares of radical terraces and 648.74 hectares of progressive terraces, meeting 100% of its targets to combat soil erosion. Additionally, 41.8 hectares of degraded forest were rehabilitated, and 5 kilometers of riverbanks were protected with bamboo plantations. Agroforestry was also a key achievement, with 5,391 trees planted against a target of 5,274 (102.2% accomplishment). These efforts indicate a committed and structured approach to sustainable land management, forest conservation, and climate resilience in the district.

Table 1: SWOT analysis of environmental decentralization in Rwanda

Strengths	Weakness	Opportunities	Threats
1. **Strong Policy and Legal Frameworks** Rwanda has robust policies including the National Decentralization Policy, National Environment Law,	1. **Limited Technical and Human Capacity** Many local entities lack skilled personnel in environmental planning, impact	1. **Growing International and Domestic Climate Financing** Access to green funds and climate finance (e.g., GCF, REMA partnerships)	1. **Climate Change Impacts** Increasing frequency of floods, droughts, and land degradation poses significant challenges to local

and sector-specific environmental mainstreaming guidelines that support environmental decentralization. 2. **Political Will and Vision Alignment** There is high-level commitment from the Government of Rwanda to decentralization and environmental sustainability, aligning with Vision 2050, SDGs, and AU Agenda 2063. 3. **Institutional Structures at Local Levels** Decentralized entities such as Districts, Sectors, and Cells are well-structured to integrate environmental concerns into planning and service delivery. 4. **Community Engagement through Home-Grown Initiatives (HGIs)** Initiatives like Umuganda and Imihigo enhance local participation in environmental projects such as reforestation, waste	assessments, and project implementation. 2. **Inadequate Fiscal Resources** Environmental functions are often underfunded at the local level due to limited own-source revenues and over-reliance on earmarked central transfers. 3. **Weak Intersectoral Coordination** Fragmented responsibilities between central and local governments can lead to inefficiencies in implementing environmental policies. 4. **Low Digital Infrastructure for Monitoring** Limited ICT penetration at lower administrative levels hampers environmental data collection, analysis, and evidence-based decision-making. 5. **Inconsistent Enforcement of Environmental Regulations** Local entities often struggle with enforcing national environmental	can boost local environmental initiatives. 2. **Public-Private Partnerships (PPPs)** Opportunities to engage the private sector in waste management, renewable energy, and eco-tourism at the local level. 3. **Regional Integration and Cross-Border Cooperation** EAC Vision 2050 and regional programs encourage coordinated environmental protection efforts across borders. 4. **Technological Innovations** Adoption of ICT tools for early warning systems, GIS for land use planning, and mobile applications for citizen reporting of environmental violations. 5. **Capacity-Building Initiatives** National institutions like Rwanda Management Institute (RMI) and international development partners offer technical assistance	capacity and resources. 2. **Rapid Urbanization and Land Pressure** Expansion of informal settlements and agricultural encroachment on protected areas threatens sustainable land and resource management. 3. **Dependency on Donor Funding** Over-reliance on external funding can undermine sustainability and long-term ownership of environmental programs at the local level. 4. **Policy Incoherence or Overlap** Unclear mandates between national and local entities may result in conflicting priorities and duplication of efforts. 5. **Environmental Crimes and Non-Compliance** Illegal logging, mining, and improper waste disposal persist in some regions, overwhelming local enforcement capacity.

management, and land conservation. 5. **Improved Service Delivery Capacity** Local governments are increasingly capable of delivering services, including those related to climate adaptation, waste management, and environmental monitoring.	standards due to limited authority or capacity.	and training for local governments.	

The SWOT analysis of environmental decentralization in Rwanda, derived from the literature review, reveals a robust foundation but also highlights critical areas for improvement. On the strength side, the country benefits from strong policy and legal frameworks that provide a solid foundation for decentralization. Literature identifies key policies like the National Decentralization Policy, National Environment Law, and sector-specific guidelines as crucial in supporting environmental decentralization. The political will and alignment with national vision documents such as Vision 2050 and SDGs, as noted in the literature, have created a conducive environment for decentralizing environmental management. Furthermore, institutional structures at the local level, such as well-established districts, sectors, and cells, are critical in integrating environmental concerns into planning and service delivery, which is confirmed by the reviewed studies. The literature also emphasizes the role of community engagement through Home-Grown Initiatives (HGIs) like Umuganda and Imihigo, which have proven effective in encouraging local participation in environmental projects, including reforestation, waste management, and land conservation. This broad-based engagement contributes significantly to improved service delivery capacity in sectors like climate adaptation, waste management, and environmental monitoring.

However, the literature also highlights key weaknesses that hinder the effectiveness of environmental decentralization. One of the most prominent issues is the limited technical and human capacity at the local level. According to various studies, many local entities lack the required skills in environmental planning, project implementation, and impact assessments, which creates a gap in the capacity to effectively address environmental challenges. Inadequate fiscal resources are another significant challenge identified in the literature. Local governments, often over-reliant on central transfers, lack sufficient own-

source revenues to fund environmental functions. This financial constraint limits the ability of local governments to scale up environmental projects. The literature also notes weak intersectoral coordination, with fragmented responsibilities between central and local governments often leading to inefficiencies and overlaps in policy implementation. Furthermore, low digital infrastructure at the local level hampers the effective collection and use of environmental data for decision-making, which has been cited as a limitation in numerous studies on environmental governance. Finally, the inconsistent enforcement of environmental regulations, particularly at the local level, is a recurring weakness in the literature, as local authorities often lack both the capacity and the authority to fully enforce national environmental standards.

The literature also identifies several opportunities for advancing environmental decentralization. Growing international and domestic climate financing, such as access to green funds and partnerships with organizations like REMA, is frequently highlighted in studies as a key enabler of local environmental initiatives. Additionally, public-private partnerships (PPPs) in sectors like waste management, renewable energy, and eco-tourism are viewed as viable ways to engage the private sector in local environmental governance. The regional integration and cross-border cooperation, particularly under the EAC Vision 2050, presents opportunities for coordinated environmental efforts, as highlighted in regional environmental studies. Technological advancements, especially in ICT tools for early warning systems and GIS for land use planning, are seen as transformative solutions in the literature for enhancing local environmental governance. Additionally, capacity-building initiatives from national institutions such as the Rwanda Management Institute (RMI) and international development partners offer the potential for strengthening local governance capacities.

However, the literature also highlights several threats to environmental decentralization. The impacts of climate change, including increased floods, droughts, and land degradation, are increasingly identified in studies as overwhelming local capacity and resources, presenting significant challenges to the progress of decentralization. The rapid urbanization and land pressure from expanding informal settlements and agricultural encroachment on protected areas threaten sustainable land management, as mentioned in various studies. Another significant threat highlighted in the literature is dependency on donor funding, which risks undermining the sustainability of local environmental projects. Policy incoherence or overlap between national and local authorities has been cited in numerous studies as a challenge that can lead to conflicting priorities and duplicated efforts in environmental governance.

Finally, environmental crimes and non-compliance, such as illegal logging, mining, and improper waste disposal, persist in some regions, making enforcement efforts difficult, as identified in the literature.

In conclusion, while the literature reveals that Rwanda has made considerable progress in environmental decentralization, the identified weaknesses, such as limited capacity, inadequate resources, and weak coordination, need to be addressed. The opportunities for growth through climate financing, technological innovation, and PPPs should be maximized to overcome these challenges. However, the literature emphasizes that careful attention must be paid to external threats like climate change, urbanization, and environmental crimes to ensure the success and sustainability of Rwanda's decentralized environmental governance.

1.3. Problem statement and study justification

Rwanda has established a robust legal and policy framework to protect the environment and combat climate change. Central to this framework is the National Constitution of 2003 (revised in 2023), which guarantees the right to a clean environment in Article 22 and mandates its protection in Article 53. This is supported by the National Environment and Climate Change Policy (2019), which aims to build a climate-resilient nation. The National Strategy for Transformation (NST2), approved in 2024, highlights environmental sustainability as a core development goal, emphasizing climate resilience and a low-carbon economy.

Despite these frameworks, Rwanda faces significant challenges in decentralizing environmental governance. While the central government has made progress, local governments continue to struggle with implementing decentralized environmental functions. The roles and responsibilities of central and local governments remain unclear, and local governments often lack the financial resources and technical capacity necessary to manage environmental issues effectively. The reduction in the environmental budget from 10% to 8% for the 2024/25 fiscal year underscores these limitations.

This study seeks to assess decentralization in environmental governance, with a focus on local governance, financial resources, and institutional capacity. It aims to provide recommendations for improving the decentralized environmental management process, thereby supporting Rwanda's long-term environmental and climate resilience goals.

1.4. Objectives and Scope of the Study

The main purpose of this assessment is to evaluate the progress of decentralization in the environmental sector. The study focused on the following objectives:

- Assess the institutional and organizational capacity of local governments in managing environmental functions, with emphasis on staff capacity, climate risk adaptation integration, early warning technologies, and the inclusion of gender and marginalized groups in environmental policies.
- Take stock of the status of devolved, deconcentrated and delegated functions in the environmental sector, possible overlaps in functional responsibility assignments between Central Government and Local Government institutions and determine the degree of the sector's alignment with relevant national decentralisation principles;
- Evaluate the effectiveness of intergovernmental coordination and service delivery in the environmental sector, particularly about integrating climate-related functions, environmental safeguards in infrastructure development, and community participation in decision-making.
- Examine the mobilization and utilization of financial resources for environmental and climate change initiatives at the local level, including the effectiveness of financing programs and the creation of green jobs.
- Assess the integration of climate action and environmental management strategies in local government planning frameworks, with a focus on community-driven climate adaptation initiatives, green investment strategies, and preparedness for climate-related disasters.
- Identify opportunities and challenges in implementing decentralized environmental sector functions and propose actionable recommendations to improve decentralization processes for enhanced environmental governance outcomes.

1.5. Key research questions

The study will address the following guiding research questions:

- What institutional and organizational capacities are available for local governments in managing environmental functions, and how do they align with citizen-centered,

technology-driven development, gender representation, and inclusivity at the sector and district levels?

- How effective is the coordination between central government ministries and local governments in delivering climate-related functions, integrating environmental safeguards in infrastructure development, and involving communities in environmental decision-making?
- How effectively are financial resources mobilized and utilized at the local level for environmental and climate change initiatives, and to what extent have green jobs and financing programs contributed to local environmental sustainability?
- How well are climate action and environmental management strategies integrated into local government planning frameworks, and what role do community-driven initiatives and green investments play in preparing for climate-related disasters?
- What are the key opportunities and challenges in implementing the decentralization of environmental functions at the local level, and how can the decentralization process be improved to enhance environmental service delivery?

1.6. Key Concepts

- **Decentralisation:** The transfer of authority and responsibility from central government to local governments, aimed at improving governance, service delivery, and responsiveness to local needs.
- **Carbon Market:** Carbon pricing mechanisms that enable governments and non-state actors to trade greenhouse gas emission credits to achieve climate targets cost-effectively. The two main types are compliance and voluntary carbon markets.
- **Climate Change:** A change in climate attributed directly or indirectly to human activity, altering the composition of the global atmosphere, and impacting natural climate variability.
- **Environmental Governance:** Refers to interventions that aim to change environmental-related incentives, knowledge, institutions, decision-making, and behaviors. It involves a set of regulatory processes, mechanisms, and organizations through which political actors influence environmental actions and outcomes.

1.7. Relevance of the Study

This study is crucial for evaluating Rwanda's decentralization efforts in environmental governance. While local governments have made progress, they still face challenges in implementing policies on environmental protection and climate change. By assessing the

effectiveness of decentralization at the local level, the study will highlight strengths, weaknesses, and opportunities, offering actionable recommendations to enhance local capacity, funding, and role clarity to improve decentralization's impact on environmental sustainability.

The study aligns with Rwanda's Vision 2050 and NST2 goals for climate resilience and sustainable development. It will provide valuable insights into local government management of environmental issues and assess the adequacy of financial resources for climate change adaptation. The findings will inform policies that equip local governments to address climate risks and promote a green economy, supporting Rwanda's transition to a low-carbon, climate-resilient economy.

2. METHODOLOGY

The methodology for this assessment was designed to provide a comprehensive understanding of the decentralization progress in Rwanda's environmental sector. The study used a multi-method approach to capture diverse perspectives from local stakeholders, assess institutional capacity, and evaluate the effectiveness of decentralized governance. The data collection process was structured around three primary methods: a **desk review**, **semi-structured Key Informant Interviews (KIIs)**, and **Focus Group Discussions (FGDs)**. These methods were aimed at exploring both qualitative and quantitative aspects of decentralization, providing a balanced, multi-source view of the challenges, successes, and gaps in environmental governance at the local level.

2.1. Desk Review

The desk review was the first phase of the assessment and provided the foundation for understanding the policy and institutional context of decentralization in Rwanda's environmental sector. The review focused on key documents, including national strategies, policies, and reports relevant to decentralization and environmental governance. These included:

- **Vision 2050**: Analyzing Rwanda's long-term goals for environmental sustainability and decentralization.
- **National Decentralization Policy (2021)**: Examining its implementation in the environmental sector and its impact on local governments.
- **Environment and Climate Change Policy (2019)**: Understanding how decentralization intersects with climate resilience and environmental protection efforts.
- **National Strategy for Transformation (NST2)**: Assessing how the strategy guides decentralized environmental governance.
- **Reports from REMA and related institutions**: These documents provided insights into how decentralization has been applied within environmental management frameworks.
- **District Reports/Bugdets:** Localized insights on decentralization progress at the district level.

The desk review provided the necessary context for interpreting primary data from the KIIs and FGDs, allowing for a nuanced understanding of the decentralization landscape.

2.2. Key Informant Interviews (KIIs)

Key Informant Interviews were conducted with district-level officials and experts to gather detailed, firsthand insights into the implementation of environmental decentralization policies. The interviews followed a semi-structured format, ensuring flexibility while focusing on the core themes of the study. The KIIs targeted district vice mayors for economic affairs to understand the governance frameworks, resource allocation, and coordination between central and local governments in the environmental sector. Interviews with selected national actors such as MoE, RFA and Rwanda Meteorology Agency were very important to this study.

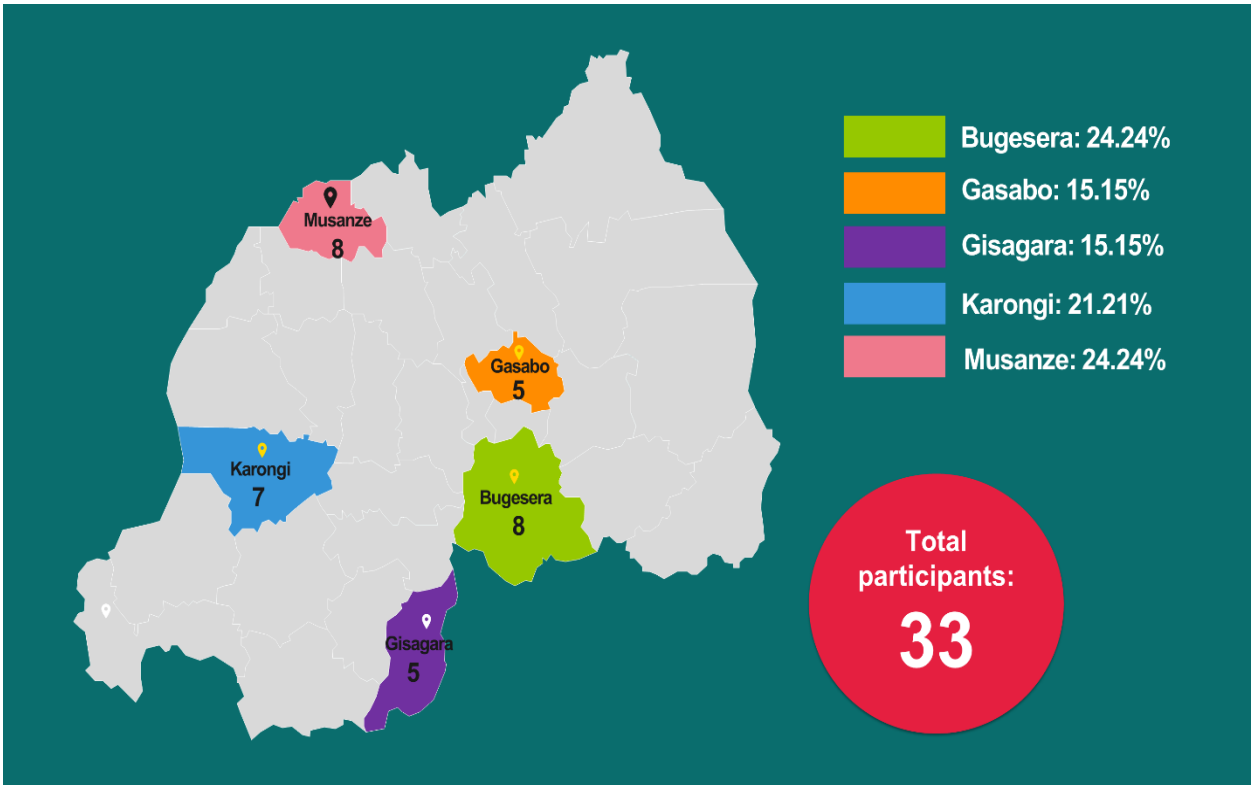
The interviews allowed the research team to delve into the institutional, resource, and coordination issues that local governments face in implementing decentralized environmental policies. The responses provided qualitative data on the challenges and opportunities of decentralization in the environmental sector.

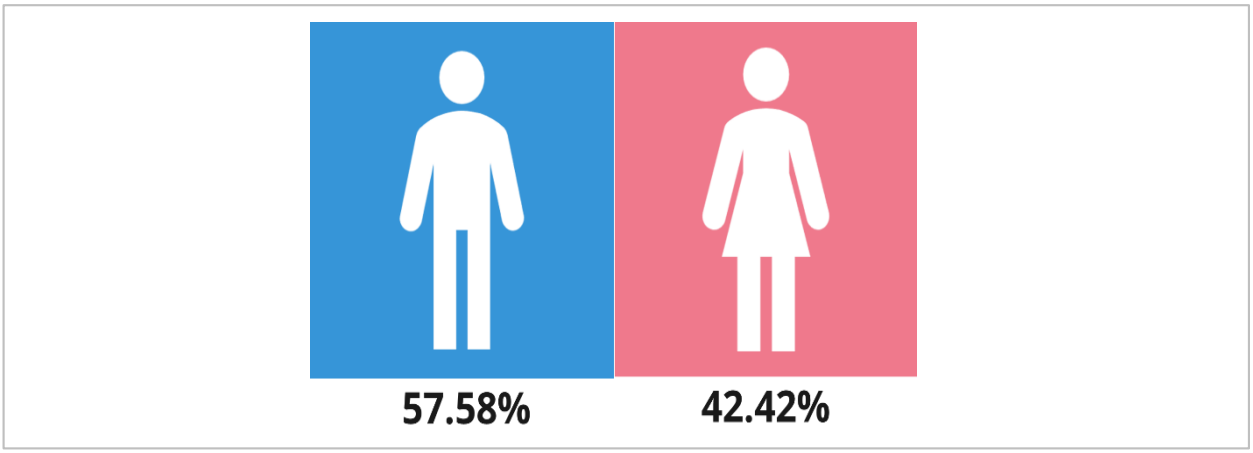
2.3. Focus Group Discussions (FGDs)

Focus Group Discussions were conducted across the five selected districts to capture the views and experiences of local community members and stakeholders. A total of 10 FGDs were organized, with two per district:

- **Community members**: One FGD per district was held with community members, ensuring diversity in participation (men, women, youth, and marginalized groups). These discussions focused on perceptions of decentralized environmental governance, service delivery, and the effectiveness of local environmental programs.

Figure 2: Distribution of community members in FGDs





- **District officials**: The second FGD in each district targeted local leaders and stakeholders, including RFA, agronomists, environment management officers, and district planning officers. These discussions explored the coordination between local governments and central ministries, resource allocation, and local governance challenges. The discussions were facilitated by the consultants and documented with the support of note-takers. The FGDs provided valuable insights into local-level experiences with decentralized environmental governance, allowing participants to

voice their concerns and suggestions for improvement. Table 2 outlines the categories of district officials per district.

Table 2: Distribution of district leaders/officils who participated in FGDs and KIIs

District	Participants in FGD	Participants in KII	Total
Bugesera	1. Environmental Management Officer	1.Vice-Mayor Economic Affairs	5
	2. Agronomist		
	3. Director of Planning, M&E		
	4. Director of Agriculture and Natural Resources		
Gasabo	1. Land Management Officer (Acting officer)	1. Deputy District Executive Administrator (DDEA).	3
	2. Forestry Officer (Acting officer)		
Gisagara	1. Environmental Management Officer	1.Vice-Mayor Economic Affairs	5
	2. Agronomist		
	3. Director of Planning, Monitoring, and Evaluation		
	4. Director of Agriculture and Natural Resources		
Karongi	1. Agronomist	1.Vice-Mayor Economic Affairs	4
	2. Director of Planning, Monitoring, and Evaluation Officer		
	3. Environmental Management Officer		
Musanze	1. Director of Agriculture and Natural Resources.	1.Vice-Mayor Economic Affairs 2. KII with Environment and Social Safeguard Officer in the school construction project implemented by MINEDUC.	5
	2. Environmental Management Officer.		
	3. Director of Planning, Monitoring, and Evaluation Officer.		
Total			22

2.4. Data Analysis

The data collected from the desk review, KIIs, and FGDs were analyzed using **thematic analysis**. The analysis identified recurring themes, patterns, and key insights related to decentralization in environmental governance. The analysis also incorporated **triangulation** to cross-check findings from different data sources, ensuring the validity and reliability of the results. This approach provided a well-rounded perspective on decentralization progress and challenges.

2.5. Reporting

The findings from the data analysis were synthesized into this comprehensive preliminary report, with a particular emphasis on each of the 5 districts. The report included an executive summary, detailed sections on the methodology, key findings, and actionable recommendations. The recommendations focused on strengthening local capacity, enhancing financial management, and improving coordination between local and central governments to enhance environmental governance at the local level.

The final report will be validated through feedback from stakeholders, ensuring that the recommendations were practical and aligned with the needs and realities of local governance.

2.6. Quality Assurance

To ensure the accuracy and reliability of the study, quality assurance measures were implemented throughout the research process:

- Tool development and review: The data collection tools (KII and FGD protocols) were reviewed and refined based on feedback from TI-Rwanda and INKI project stakeholders coordinated by NPA.
- Data verification: Data were systematically verified through triangulation to ensure consistency and reliability.
- Training: Data collectors were trained on the tools and ethical standards, ensuring high-quality data collection.
- Ongoing monitoring: The research process was regularly monitored by the research team and TI-Rwanda to ensure alignment with the study's objectives and quality standards.

2.7. Ethical considerations

Ethical considerations were paramount in this study. All participants were:

- Verbal informed about the study's purpose and their right to voluntarily participate or withdraw at any time without consequence.
- Provided with verbal informed consent before participating in interviews or FGDs.
- Ensured confidentiality through anonymized data collection and secure storage of sensitive information.

These ethical practices helped foster trust with participants, ensuring the integrity of the study and the credibility of its findings.

2.8. Limitations of the study

This study was primarily limited to the analysis of environmental decentralization in selected districts and did not comprehensively cover all administrative levels or sectors involved. The scope was intentionally narrowed to ensure depth in analyzing the roles of local governments, budget allocations, and institutional coordination. However, this means that findings may not fully capture sectoral variations or national-level policy nuances, potentially limiting the generalizability of the conclusions across all districts or ministries.

The study was conducted within a constrained timeframe, which affected the breadth of stakeholder engagement and the duration available for data collection, analysis, and validation. As a result, some interviews were abbreviated, and the opportunity to conduct extended follow-up discussions with key institutional actors was limited. This time pressure may have also restricted the exploration of long-term trends or historical comparisons that could have enriched the analysis. Nonetheless, the findings presented offer a valid and practical reflection of the current decentralization landscape within the available time.

3. ASSESSMENT FINDINGS

This chapter explores the critical dimensions of environmental decentralization in Rwanda, focusing on how local governments are empowered to manage climate risks and promote sustainable development. The chapter is structured around four major areas: capacity development of decentralized entities to manage environmental responsibilities, sectoral decentralization and its impact on service delivery in the environmental sector, fiscal and financial decentralization and how financial resources are mobilized and managed for environmental projects, and local economic and sustainable development in the environmental sector, which examines how local economic strategies align with national climate goals. By analyzing these dimensions, the chapter highlights both the successes and challenges faced by local governments in implementing effective climate action, ensuring long-term resilience, and achieving sustainable environmental management at the district level.

3.1. Stock taking status of devolved, deconcentrated and delegated in the environmental sector in Rwanda

3.1.1. Introduction

In keeping with the decentralization agenda of Rwanda to bring services closer to the people and have as many services as possible decentralized, as articulated in several national policy documents and laws, this exercise takes stock of services which are currently centralized in the the environment sector, by listing an inventory of all services which are currently centralized, with a view to determining and outlining their potential for decentralization.

This exercise is an essential part of the decentralization process in Rwanda. It helps in understanding how responsibilities in the environmental sector are distributed, with an eye toward empowering local governments to play a more significant role in managing environmental functions. This process involves determining which services are centralized, delegated, deconcentrated, or devolved. By analyzing these services, the country can ensure that local governments have the capacity to manage critical environmental functions, such as land management, natural resource conservation, and climate change adaptation.

From a methodological perspective, this identification and assessment process has been a highly participatory endeavor, bringing together key stakeholders from across Rwanda's

local governance and environmental sectors. Officials from seven districts, along with representatives from the Rwanda Environment Management Authority (REMA) and the Ministry of Local Government (MINALOC), participated in a workshop organized at the Institute of Research and Dialogue for Peace (IRDP). This workshop was an essential part of the pre-validation process for the findings of the Decentralization Assessment Framework, where participants collectively reviewed, discussed, and provided input on the proposed identification of services for further decentralization in the environmental sector. The engagement of these diverse local and national actors ensured that the process was not only inclusive but also reflective of the realities on the ground, strengthening the relevance and accuracy of the findings.

3.1.2. Defining key terms

- **Decentralization**[1] involves the transfer of a range of powers, responsibilities, and resources from central government to subnational governments, defined as legal entities elected by universal suffrage and having some degree of autonomy. In other words, "Decentralization is usually referred to as the transfer of powers from central government to lower levels in a political-administrative and territorial hierarchy (Crook and Manor 1998, Agrawal and Ribot 1999).
- **Delegation**[2] refers to a slighter form of decentralization than devolution and involves transferring some decision-making and administrative authority for well-defined and specific tasks from the central government to semi-autonomous lower-level units, such as state-owned enterprises, or urban and regional development corporations. However, accountability and control over that function remains the responsibility of the delegating entity. Or it can be transfer of managerial responsibility for specified functions to other public organizations outside normal central government control, whether provincial or local government or parastatal agencies" (Ferguson and Chandrasekharan).
- **Deconcentration** involves a geographic displacement of power from the central government to units based in regions. That is, the deconcentrated state services are part of the National administration and represent the central government at the

[1] Crook, R. and Manor, J. 1998. Democracy and Decentralisation in South Asia and West Africa. Cambridge University Press, Cambridge. See also Agrawal, A and Ribot J. 1999. Accountability in Decentralization: A Framework with South Asian and West African Environmental Cases. The Journal of Developing Areas 33: 473-502.

[2] Ferguson, I. and Chandrasekharan, C. Paths and Pitfalls of Decentralization for Sustainable Forest Management: Experiences of the Asia-Pacific Region

territorial level as opposed to subnational governments. Thus [3], administrative decentralization, i.e. a transfer to lower-level central government authorities, or to other local authorities who are upwardly accountable to the central government" (Ribot 2002 in Larson).

- **Devolution**[4] is a subcategory and stronger form of decentralization which consists of the transfer of powers from the central government to lower-level autonomous governments, which are legally constituted as separate levels of government. Furthermore, "The transfer of rights and assets from the centre to local governments or communities. All these processes occur within the context of national laws that set the limits within which any decentralised or devolved forest management occurs" (Sayer et al.).

3.1.3. Decentralization and the Environmental Sector

The National Decentralization Policy (2021) recognizes decentralization as a tool to improve public service delivery, making services more accessible to citizens. The policy highlights the need for local governments to play an expanded role in managing environmental resources, ensuring sustainable development, and promoting climate resilience at the local level. This is particularly relevant in the environmental sector, where managing natural resources, protecting biodiversity, and addressing climate change at the grassroots level are crucial.

The National Environment and Climate Change Policy (2019) further underscore the role of local governments in managing environmental resources. This policy emphasizes decentralization by enabling local authorities to take the lead in implementing national environmental strategies. The policy sets out the expectation that local governments will integrate climate change adaptation and environmental sustainability into their district development plans (DDS) and sector-specific strategies.

For instance, land use planning is one of the critical services that has been partially decentralized to local governments. Districts and sectors are now responsible for land planning and implementation, though the final approval remains with the National Land Authority (NLA) and other central government agencies. This structure helps reduce delays

[3] Larson, A.M. Democratic Decentralization in the Forestry Sector: Lessons Learned from Africa, Asia and Latin America

[4] Sayer, J.A., Elliott, C., Barrow, E., Gretzinger, S., Maginnis, S., McShane, T., and Shepherd, G. The Implications for Biodiversity Conservation of Decentralized Forest Resources Management

by allowing local governments to approve land use plans within their jurisdictions but also highlights the challenge of maintaining efficiency when certain approvals remain centralized.

Similarly, land registration and title printing have been partially decentralized, but approval from provincial or central authorities is still required. This creates bottlenecks and inefficiencies in the registration process, which could be alleviated if these services were fully devolved to local governments. The full decentralization of these processes would enhance service delivery and reduce delays for local residents seeking land titles.

The National Environment and Climate Change Policy (2019) and National Decentralization Policy (2021) together provide a framework that empowers local governments to take a leading role in managing natural resources and implementing climate change adaptation strategies. However, centralized control over certain functions, such as land registration and wetland management, limits the potential for local governments to fully execute their mandates and effectively manage environmental services.

3.1.4. Delegation and Deconcentration in Environmental Services

In terms of delegation, certain services such as environmental audits and environmental and social impact assessments (ESIA) are still controlled centrally by agencies such as REMA and RDB. However, it is clear that a delegated model, where the local governments play a more significant role in overseeing these services at the district and sector levels, would improve engagement with local stakeholders and increase responsiveness to environmental challenges.

For example, wetland management and the use of wetland areas have been identified as crucial services for decentralized management. Currently, the Ministry of Environment (MoE) retains centralized control over wetland management, but local authorities, including districts and sectors, should be more involved in the decision-making process. There is significant potential to devolve this responsibility to local governments, with the support of MoE in establishing frameworks for effective management. This would ensure that local communities who are directly impacted by the wetlands' use are part of the decision-making process.

Additionally, public forest harvesting licenses and authorization for forest clearing are also services that could be better managed at the local level. Currently, Rwanda Forest Authority (RFA) manages these activities centrally. Devolving these responsibilities could allow local

authorities to better regulate forest use, prevent illegal activities, and ensure that local ecosystems are preserved in line with sustainable development goals.

3.1.5. Devolution in Practice

The Law Nº 065/2021 governing the district strengthens the argument for devolution, as it provides districts with the legal authority to elaborate strategies for preserving infrastructure and the environment (Article 31). Similarly, the Vice Mayor for Economic Development, according to Article 36, is tasked with following up on the implementation of these strategies. This devolutionary shift empowers local governments to act as key agents in implementing environmental conservation policies and practices.

However, while the legal framework for devolution exists, the practical application at the sector level remains underdeveloped. The involvement of local governments in climate change adaptation and natural resource management is still limited, and more needs to be done to equip local government entities with the resources and capacities required to effectively manage these critical services.

Overall, the proposed services for future decentralization in Rwanda's environmental sector involve transferring critical environmental functions from central authorities to local governments. These services include land use planning, land registration, and land title printing (the two latter services currently decentralized but requiring provincial authority approvals), which are currently centralized but identified for decentralization to improve efficiency and reduce delays at the provincial and central levels. By decentralizing these services, local authorities can better manage land use, expedite registration, and provide timely land titles for residents.

Other services such as land dispute resolution, wetland management, forest harvesting licenses, and environmental and social impact assessments are also earmarked for decentralization, with local governments tasked with overseeing implementation. Public forest clearing licenses, ecological conservation, and water resource management services are similarly considered for decentralization to empower local authorities to handle environmental preservation directly. The goal is to improve responsiveness, localize decision-making, and ensure that resources are managed sustainably at the grassroots level. By decentralizing these functions, the local governments can better tailor environmental policies and services to the unique needs of their communities while contributing to national goals of sustainable development and climate resilience. The transfer of these

responsibilities will ensure that local communities are more directly involved in environmental governance and management. Annex 2 provides a detailed outline of environmental services proposed for decentralization.

3.1.6. Key Gaps and Opportunities for Improvement

One of the critical gaps identified in this process is capacity building for local governments. Many districts and sectors lack the technical expertise and resources to fully assume responsibility for environmental services. This includes training on complex environmental issues such as ecosystem restoration, climate resilience, and sustainable natural resource management. There is a need for further investment in local capacity building, especially in areas where technical skills and knowledge are required to handle complex environmental issues effectively.

Additionally, resource mobilization remains a significant challenge. Many local governments face financial constraints that hinder their ability to manage decentralized environmental services. The National Green Fund, alongside other financing mechanisms, plays a key role in addressing this challenge. However, there is still a need for better coordination and support to local authorities to help them access these funds and use them efficiently.

From the foregoing, for effective transfer of environmental responsibilities to local government, it is important to consider the following strategies:

1. Enhanced training and capacity development: Local authorities, particularly environmental officers, need targeted training on environmental governance, climate change adaptation, and natural resource management to effectively execute their responsibilities.
2. Increased financial support: Local governments should be supported with increased funding for environmental management initiatives. This includes both national budget allocations and external funding opportunities through international climate finance mechanisms.
3. Clarifying roles and responsibilities: A clear delineation of roles and responsibilities between central, district, and sector levels is necessary to avoid confusion and overlapping functions. This will improve efficiency in the delivery of environmental services.
4. Strenghtened monitoring and accountability: The central government should establish mechanisms for monitoring and evaluating the performance of local

governments in managing decentralized environmental services. This could include periodic assessments, feedback loops, and accountability mechanisms to ensure local governments meet the required environmental standards.

Conclusion

The transfer of environmental responsibilities from central to local levels is crucial for enhancing the effectiveness of Rwanda's environmental governance. By decentralizing more services such as land use planning, wetland management, and forest resource management, local governments can become more responsive to local environmental needs. However, challenges in capacity building, resource mobilization, and financial support remain. Strengthening these areas will ensure that the decentralization of environmental responsibilities is successful and contributes to Rwanda's broader environmental sustainability goals.

3.2. Capacity Development of Decentralised Entities and Decentralising Entities in the Environmental Sector

Decentralization in Rwanda's environmental sector is essential to ensure that local governments can take on responsibilities for managing natural resources, addressing climate risks, and promoting sustainable development. This process involves transferring responsibilities from the central government to local authorities at the district and sector levels, with a focus on enhancing the capacity of local institutions and improving the technical expertise of staff. This section examines key aspects of capacity development within decentralized entities, including how environmental responsibilities are transferred, the need for dedicated staff at local levels, and the capacity-building needs of these staff members.

3.2.1. Institutional and Organizational Capacity of Local Governments towards Environmental Functions

Transfer of Environmental Responsibilities from Central to Local Levels

As highlighted in the preceding section, the transfer of environmental responsibilities from central to local governments is a key component of Rwanda's decentralization policy, aimed

at improving service delivery and enhancing local engagement with environmental governance. This process, supported by policies like the **National Decentralization Policy (2021)** and the **National Environment and Climate Change Policy (2019)**, empowers local authorities to manage critical environmental functions such as climate resilience, natural resource conservation, and land management at the grassroots level. However, challenges remain in terms of **human resource capacity**, **financial constraints**, and **technical capabilities**, which hinder the effective implementation of decentralized services. While decentralization has made progress, full devolution of environmental responsibilities, improved coordination across sectors, and capacity building are essential for local governments to effectively execute their environmental mandates and contribute to Rwanda's sustainable development and climate resilience goals.

In Gasabo, the Deputy District Executive Administrator (DDEA) emphasized the critical role of centralized coordination in the new structure. "We receive detailed environmental guidelines from REMA and the Ministry. However, with the new law and the consolidated budget for the City, our focus is shifting to coordination with the City's planning office, while ensuring that sector-level officers have the necessary resources to implement policies." This statement highlights the advantage of centralized budget coordination under the new City of Kigali Law (nº 22/2019), which consolidates the city's budget, improving coordination and resource-sharing across Gasabo.

In contrast, Musanze faces challenges with the transfer of responsibilities due to the lack of specialized officers at the sector level. The Vice Mayor pointed out the need for sector-level officers who specialize in eco-tourism and biodiversity conservation. "Having a dedicated environmental officer at the sector level would help streamline our efforts in eco-tourism and conservation. Currently, sector officials lack the expertise to effectively address environmental issues."

Similarly, Bugesera faces difficulties because there are no dedicated environmental units at the sector level, leaving sector officials to juggle environmental management alongside other responsibilities. A Bugesera district official stated, "In our district, the lack of a dedicated environmental officer in each sector makes it harder to implement projects effectively. Our staff members juggle several responsibilities, which prevents us from addressing environmental issues with the urgency they require."
In Karongi, the district has a dedicated focus on Lake Kivu, and its disaster preparedness efforts benefit from strong coordination between local authorities and REMA for flood

prevention and sustainable land use. However, sector-level officers still face capacity gaps that hinder their ability to implement local environmental strategies effectively.

Quote from Gasabo DDEA:

- "We receive detailed environmental guidelines from REMA and the Ministry. However, with the new law and the consolidated budget for the City, our focus is shifting to coordination with the City's planning office, while ensuring that sector-level officers have the necessary resources to implement policies."
-

Quote from Musanze Vice Mayor:

- "Having a dedicated environmental officer at the sector level would help streamline our efforts in eco-tourism and conservation. Currently, sector officials lack the expertise to effectively address environmental issues."

Quote from Bugesera District Official:

- "In our district, the lack of a dedicated environmental officer in each sector makes it harder to implement projects effectively. Our staff members juggle several responsibilities, which prevents us from addressing environmental issues with the urgency they require."

Example from Gisagara:

- Gisagara has successfully adapted national policies on climate-smart agriculture and soil conservation, with sector officers actively involved in soil erosion management and sustainable farming practices, which has improved local environmental governance.

The transfer of environmental responsibilities is working well in Gasabo, where the City of Kigali Law enables better coordination between the city-level authorities and district offices, enhancing the effective implementation of national policies. However, Musanze and Bugesera are still facing challenges due to the lack of specialized environmental officers at the sector level, which impacts the districts' ability to implement policies effectively. While Musanze needs more officers to handle eco-tourism and biodiversity, Bugesera struggles to address climate adaptation and flood management due to overburdened officials. The establishment of dedicated officers at the sector level would help overcome these barriers and enhance policy implementation in these districts.

On the onther hand, the MINALOC official illustrates both progress and persistent challenges in the decentralization of environmental governance in Rwanda. “While the Ministry of Local Government (MINALOC) plays a facilitative role by mandating the decentralization process and coordinating with other ministries, such as the Ministry of Environment appointing representatives to guide the process; actual service delivery remains inconsistent. The example given, where a resident from Nyamasheke must travel long distances to Kigali to obtain a simple tree-cutting permit, underscores a policy-practice gap. It highlights the need for comprehensive sector-specific guidelines, rules, and regulations to accompany decentralization mandates. Without such operational clarity, local governments remain disempowered and citizens face undue burdens accessing environmental services, contradicting the very principles of decentralization and local empowerment”.

The Ministry of Environment (MoE) plays a pivotal role in aligning Rwanda’s decentralization agenda with national environmental goals. “It develops and disseminates environmental policy guidelines to local entities, particularly districts by ensuring their integration into District Development Strategies (DDS) and action plans. As the lead institution for environmental coordination, MoE oversees the harmonization of key national documents such as Vision 2025, NST2, the Nationally Determined Contributions (NDCs), Sector Strategic Plans (SSPs), and DDSs. It ensures that sector regulations respond to real challenges and that mobilized resources, including funding from the Green Climate Fund (GCF) and Global Environment Facility (GEF), directly support community-beneficial projects. The ministry collaborates with other ministries like MINALOC and MININFRA to reinforce local environmental governance and participates in platforms like JDAF and local environmental committees. Additionally, MoE works with related sectors such as mining and infrastructure to enforce environmental compliance, ensuring a unified and accountable governance system across decentralized levels”. Highlighted by MoE official

The findings imply that the decentralization of environmental responsibilities has the potential to significantly improve local governance and climate resilience. However, for environmental decentralization to be fully effective, it is essential that districts, particularly those outside Kigali, invest in dedicated environmental officers at the sector level.

The lack of specialized staffing in Musanze and Bugesera should be addressed through targeted recruitment and capacity development to ensure that these districts have the necessary expertise to implement environmental policies effectively. In the case of Gasabo, while the consolidated budget has facilitated better coordination, it is essential that

resources are distributed equitably to ensure that sector-level officers have the tools and support they need to execute their roles. For Karongi, strengthening sector-level capacity for disaster preparedness and flood mitigation will be critical, particularly given the vulnerability of Lake Kivu and its surrounding communities.

In the future, local governments across all districts should prioritize sector-level environmental officers, focus on specialized training, and ensure that resources are adequately allocated to address specific environmental challenges. Additionally, community awareness about the role of RWANDA GREEN FUND (formerly FONERWA) and other funding mechanisms will enhance the effectiveness of these projects by fostering greater community participation and ownership.

Need for Dedicated Environmental Officers at the Sector Level

The need for dedicated environmental officers at the sector level is critical across all five districts, as local officials emphasize the importance of specialized staff to manage environmental issues more effectively. In Gasabo, the Deputy DDEA acknowledged that the sector-level officers are crucial for addressing urban environmental challenges such as flooding, waste management, and climate resilience. The specialized officers help translate national policies into localized actions, ensuring that sector-level policies are tailored to the specific needs of each area.

In Musanze, the Vice Mayor highlighted the gap in eco-tourism and biodiversity conservation expertise, which hinders the district's ability to implement policies effectively.

> "Having a dedicated environmental officer at the sector level would help streamline our efforts in eco-tourism and conservation. Currently, sector officials lack the expertise to effectively address environmental issues," Vice Mayor Economic Affairs, Musanze District.

In Bugesera, the lack of dedicated environmental officers at the sector level is a significant barrier to the effective management of climate risks and environmental challenges.

> Sector-level staff would play a critical role in monitoring and responding to environmental issues in real time. Being closer to the community, they can promptly identify and address illegal activities such as unauthorized logging and land grabbing

> and provide timely advice and support to residents. Their familiarity with disaster-prone areas would also enhance early warning and response efforts. We recommend that this function be formally integrated into the district's organizational structure, supported by adequate capacity and resources. Environmental officers should be equipped with motorcycles to facilitate fieldwork and improve their reach and effectiveness (Vice-Mayor Economic Affairs, Bugesera)

In the waords of another distrcitc official, "In our district, the lack of a dedicated environmental officer in each sector makes it harder to implement projects effectively. Our staff members juggle several responsibilities, which prevents us from addressing environmental issues with the urgency they require."

In Karongi, while dedicated officers manage Lake Kivu's ecosystem, there is still a need to expand the number of specialized officers to cover other environmental challenges, such as land management and flood prevention in the district's other vulnerable areas.

The results highlight a clear trend across all five districts regarding the need for dedicated environmental officers at the sector level. Gasabo stands out as a positive example, where sector officers successfully manage urban environmental challenges, such as flooding, waste management, and climate resilience. However, districts such as Musanze and Bugesera show significant gaps in capacity, as sector-level officials are overburdened with multiple roles and lack the necessary specialized expertise to tackle eco-tourism, biodiversity conservation, and climate adaptation. Karongi demonstrates a more focused approach on Lake Kivu, but still faces capacity limitations in addressing other critical environmental challenges such as land management and flood prevention.

The findings indicate that the lack of specialized environmental officers in several districts hampers the effective implementation of national environmental policies and climate adaptation strategies. In Gasabo, sector officers play a key role in translating national policies into localized actions, ensuring policy alignment with local needs. In contrast, Musanze, Bugesera, and Karongi are experiencing challenges due to the absence of dedicated officers. These gaps limit the ability of districts to address environmental issues such as eco-tourism, biodiversity, soil erosion, and flooding, which require specialized knowledge and continuous monitoring.

The findings imply that, to improve environmental governance, districts need to prioritize the appointment of dedicated environmental officers at the sector level. These officers should be equipped with the necessary resources, including training, specialized knowledge, and mobility support (e.g., motorcycles) to enhance fieldwork and improve access to remote areas. Investing in sector-level staffing will enable districts to better manage local climate risks, environmental challenges, and community engagement. Additionally, local governments must ensure that these officers are properly resourced to carry out tasks such as monitoring illegal activities, disaster risk management, and policy implementation, ultimately improving local resilience and supporting sustainable development at the community level.

Training and Capacity Building of Environmental Staff at the Sector Level

Training is essential for ensuring that sector-level officers have the necessary skills and knowledge to manage environmental issues effectively. In Gasabo, sector officers have been trained in GIS, urban planning, and waste management, which has enhanced the district's ability to manage urban environmental challenges such as flooding and waste management. However, continuous training in areas such as climate resilience and sustainable agriculture is needed to address emerging environmental challenges.
In Musanze, sector officers would benefit from specialized training in eco-tourism management, biodiversity conservation, and climate adaptation to better address the district's focus on eco-tourism. Similarly, Bugesera requires training in flood management, disaster preparedness, and climate resilience to tackle the district's challenges with flooding and soil erosion.

Quote from Gasabo DDEA:

- "Although we have trained some of our staff in GIS and urban planning, continuous training in areas such as climate resilience and sustainable agriculture is essential for improving our response to environmental challenges."

Gasabo District Official:

- "Such a staff should hold a university degree, ideally in environmental studies. Those from other fields may lack the necessary expertise and should receive targeted training. Key areas include sanitation, waste management, water harvesting, erosion control, forestry, mining, and climate change mitigation, along with understanding the city's environmental structure."

Quote from Gisagara District Official:

- “Working with the community at the grassroots level requires the ability to manage people with varying levels of knowledge. It’s important to know how to work with them effectively”.

Quote from Gisagara District Official:

- "The training in climate-smart agriculture has been valuable in improving land management and addressing soil erosion. However, we still require more technical training in climate change adaptation and resource management."

Example from Karongi:

- Karongi has conducted disaster preparedness training for sector officers, focusing on flood risk management and land use planning to mitigate the risks associated with Lake Kivu and surrounding areas.

Quotes from Minaloc:

> “The Ministry of Local Government (MINALOC) plays a pivotal role in strengthening capacity-building for local authorities in environmental management in Rwanda. As the entity responsible for coordinating territorial administration, promoting good governance, and supporting socio-economic development, MINALOC ensures that decentralization efforts in the environmental sector are effectively supported. This includes facilitating collaboration between ministries; particularly the Ministry of Environment (MoE) and key stakeholders such as RALGA, NESA, and REMA during the implementation of environmental training and technical support programs. For these capacity-building initiatives to be impactful and sustainable, MINALOC must be proactively engaged and informed, allowing it to coordinate efforts, eliminate duplication, and ensure alignment with national governance frameworks and decentralization policies. This coordination is essential to empower local governments with the knowledge, tools, and institutional backing needed for effective environmental stewardship”. Stated by Minaloc staff”.

Quote from MoE

The Ministry of Environment (MoE) actively supports capacity building at the local government level, partnering with organizations like GIZ, which provides substantial funding for these initiatives. Through its agency REMA, the MoE operates an Environmental

Education Department focused on enhancing institutional and community capacity to implement the Nationally Determined Contributions (NDCs). This includes earmarked funding of €120,000 for environmental education and €500,000 for strengthening institutional capacity. Furthermore, the Rwanda Green Fund (FONERWA) has launched a dedicated facility called "Intego", designed specifically to help local governments access financing for environmental project implementation, thereby enhancing their ability to meet sustainability and climate goals.

The data reveals a clear trend across the five districts: training and capacity building are vital for sector-level officers to effectively manage environmental challenges. Gasabo leads in training investments, particularly in GIS, urban planning, and waste management, which have strengthened the district's ability to tackle urban environmental issues such as flooding and waste management. However, the need for continuous training in emerging areas such as climate resilience and sustainable agriculture is recognized. In Musanze, the focus on eco-tourism and biodiversity conservation requires specialized training to enhance climate adaptation and management of these unique environmental assets. Similarly, Bugesera faces pressing challenges in flood management, soil erosion, and disaster preparedness, making it clear that targeted training in these areas is crucial. Gisagara's success with climate-smart agriculture and soil conservation further emphasizes the importance of specialized training in land management and climate change adaptation.

The findings suggest that there is an urgent need for sector-level officers across all districts to receive specialized training tailored to their local environmental challenges. While Gasabo has made progress by investing in GIS and urban planning training, it also recognizes the need to enhance climate resilience skills. In Musanze, eco-tourism management and biodiversity conservation require targeted expertise, and Bugesera requires training in flood management and disaster preparedness. Gisagara demonstrates that climate-smart agriculture training is already yielding positive results, but more technical training is required to address climate adaptation effectively. The consistent call for targeted training from district officials underlines the importance of capacity building to improve the effectiveness of environmental governance at the local level.

The findings imply that investing in targeted training programs for sector-level officers is essential for enhancing local environmental governance and climate resilience. Gasabo, Musanze, Bugesera, and Gisagara should continue to prioritize capacity building in areas such as climate resilience, eco-tourism, soil conservation, and disaster risk management.

Gisagara's success provides a useful example for other districts to focus on agriculture-related training. Additionally, creating specialized training programs tailored to each district's unique environmental challenges will strengthen local capacities, improve policy implementation, and support Rwanda's broader climate goals.

Conclusion

The successful decentralization of environmental responsibilities in Rwanda requires strong institutional frameworks, dedicated environmental officers, and specialized training for local staff. Gasabo has made significant progress in implementing climate resilience strategies through effective coordination and well-trained officers. However, Musanze and Bugesera face challenges due to a lack of dedicated environmental officers at the sector level, hindering their ability to address key climate risks. Karongi has made strides in managing Lake Kivu's ecosystem with specialized officers but still needs expanded training in disaster preparedness and land management. Gisagara has effectively addressed soil erosion and agriculture-based adaptation, but further capacity-building is needed. In summary, strengthening sector-level capacity across all districts with dedicated staff and targeted training is crucial for improving local environmental governance and ensuring effective climate adaptation.

3.2.2. Local authorities are equipped to face climate related risks, hazards and disasters

Leveraging Climate Change Vulnerability Assessments and Disaster Atlases for District Adaptability

The use of climate change vulnerability assessments and disaster atlases is critical for local authorities to identify climate risks, assess the vulnerability of local communities, and implement appropriate disaster preparedness and resilience strategies. These tools provide valuable insights that help local governments make informed decisions about climate adaptation and risk mitigation.

Gasabo district has shown a strong capacity for using vulnerability assessments to manage urban flood risks and heat island effects caused by rapid urbanization. Through the disaster atlas, Gasabo has identified flood-prone areas and prioritized investments in stormwater

management and green infrastructure. These interventions aim to improve climate resilience in urban neighborhoods, addressing the rising challenges of urban flooding due to climate change.

In Karongi, the district leverages vulnerability assessments to manage the risks posed by Lake Kivu, especially regarding flooding and soil erosion. The disaster atlas is used to map flood-prone areas and evacuation routes, making it easier to implement flood prevention strategies. This is particularly crucial given the district's proximity to the lake, which increases its vulnerability to flooding during periods of heavy rainfall.

Musanze uses vulnerability assessments to address the significant risk of landslides in its hilly regions, especially near Volcanoes National Park. The data gathered helps inform land management plans, with a particular focus on avoiding over-exploitation of natural resources that could increase landslide risks. These strategies are essential for ensuring safety and sustainability in eco-tourism areas, where environmental preservation and disaster risk management are intrinsically linked.

In Bugesera, vulnerability assessments have highlighted the risks of flooding around Lake Rweru and Lake Cyohoha, which are subject to seasonal flooding. The district has flood-prevention strategies in place, including the implementation of early warning systems to alert communities of impending floods. These early warnings are crucial for agricultural cooperatives and local businesses in flood-prone areas, allowing them to prepare and adapt to changing conditions.

Gisagara has effectively used climate vulnerability assessments to promote soil conservation and climate-smart agriculture in areas most affected by soil erosion. By identifying vulnerable zones through the disaster atlas, Gisagara has implemented agriculture-focused adaptation strategies, reducing the negative impacts of soil degradation and flooding on the livelihoods of local farmers.

Quote from Gasabo DDEA:

- "The vulnerability assessments and disaster atlas have been invaluable tools for identifying high-risk zones. They have guided our urban planning and helped prioritize areas in need of climate-resilient infrastructure."

Quote from Karongi District Official:

- "We rely on the disaster atlas to predict potential floods and plan evacuation routes. Given the lake's proximity, it is essential to be prepared for rising water levels during heavy rainfall."

Quote from Musanze District Official:

- "We rely on the data from vulnerability assessments to identify landslide-prone areas and implement strategies to mitigate the risk. It also guides our eco-tourism development to ensure both environmental sustainability and safety."

Example from Gisagara:

- Gisagara has successfully integrated climate vulnerability assessments into its soil conservation programs to mitigate soil erosion and flooding.

The results reveal a clear trend in the use of vulnerability assessments and disaster atlases across the five districts, guiding climate adaptation and disaster risk management strategies. Gasabo has effectively used these tools to prioritize stormwater management and green infrastructure to address urban flooding, while Karongi utilizes the disaster atlas to plan flood mitigation and evacuation routes around Lake Kivu. In Musanze, the focus is on landslide prevention through detailed assessments of vulnerable areas. Bugesera has implemented early warning systems for seasonal flooding, and Gisagara integrates climate vulnerability assessments into soil conservation and climate-smart agriculture strategies, addressing both environmental degradation and livelihoods.

These findings suggest that vulnerability assessments and disaster atlases are vital tools for local governments to address specific climate risks and enhance community resilience. The use of these tools has allowed districts such as Gasabo, Karongi, and Musanze to proactively manage climate impacts such as flooding and landslides. However, the success of these efforts depends on the availability of technical expertise, financial resources, and coordination with agencies such as REMA and Rwanda Green Fund.

The findings imply that districts should continue to invest in data-driven decision-making to strengthen their climate resilience strategies. Gasabo, Karongi, and Musanze provide examples of how effective adaptation measures can be when based on vulnerability assessments. Future actions should focus on expanding early warning systems, scaling up

successful interventions, and strengthening community engagement to ensure the effective implementation of climate resilience plans.

Decentralization of METEO/REMA/RFA/ Rwanda Green Fund and Effectiveness of Local Sub-Stations

The decentralization of climate-related agencies such as METEO, REMA, RFA, and RWANDA GREEN FUND has enhanced local authorities' capacity to address climate-related hazards effectively. These agencies provide essential climate data that supports disaster preparedness, weather forecasting, and climate adaptation planning.

In Gasabo, the REMA sub-station has been a vital resource for real-time data on weather patterns, which helps local authorities manage urban flood risks and implement climate adaptation strategies. This data is crucial for managing stormwater systems and planning for future climate risks. Similarly, Karongi relies heavily on REMA sub-stations for lake-level monitoring in Lake Kivu, enabling the district to plan for flooding and disaster evacuation.

In Musanze, the REMA sub-station plays a key role in supporting eco-tourism and biodiversity conservation efforts by providing weather data for tourism operators. However, Musanze's reliance on the sub-station is hindered by the lack of precision tools to address landslide risks, which is a major challenge given the district's mountainous terrain.
In Bugesera, although REMA's sub-station provides some support, there is still a gap in the accuracy and customization of the climate data provided. The sub-station in Bugesera is not fully equipped to handle flood monitoring and lacks the necessary advanced instruments for accurate data collection.

In Gisagara, the REMA sub-station has been useful for supporting climate-smart agriculture by providing real-time data on precipitation and weather patterns. This data helps farmers plan their planting schedules and manage soil conservation efforts.
Quote from Gasabo District officials:

- "We rely on REMA's sub-station to help us develop and implement climate adaptation strategies. Their data provides the foundation for planning our response to urban climate risks."

Quote from Musanze District Official:

- "Our sub-station mainly focuses on eco-tourism and biodiversity. While the data is useful, we still need more precise tools to manage the full spectrum of climate risks, especially in rural areas prone to landslides."

Quote from Karongi District Official:

- "In Karongi, we rely on REMA's sub-station to manage the risks around Lake Kivu. Their data allows us to plan for flood prevention and disaster response more effectively."

Example from Gisagara:

- Gisagara uses weather data from the REMA sub-station to support agricultural planning and soil conservation programs, ensuring sustainable farming practices and climate resilience in agricultural communities.

Quote from RFA:

- The Rwanda Forestry Authority (RFA), based in Huye District in the Southern Province, is a geographically decentralized institution that works with public and private stakeholders to enhance forest productivity and combat soil erosion. RFA is responsible for forest resource planning, issuing and monitoring harvesting licenses and permits, and enforcing legal compliance, including imposing administrative fines. It also manages the privatization process for public forest resource utilization, ensures the distribution of high-quality seeds and seedlings—including indigenous and agroforestry species—and provides technical and emergency advisory services. Seed production is regulated by RFA through its laboratories in Gatsibo and Huye to maintain quality standards.

The results show that the decentralization of key climate-related agencies such as METEO, REMA, RFA, and Rwanda Green Fund has significantly improved the local capacity to address climate-related hazards. In Gasabo, the REMA sub-station plays a critical role by providing real-time weather data, which supports the district's stormwater management systems and climate adaptation strategies. Similarly, Karongi uses REMA's sub-station for lake-level monitoring of Lake Kivu, which is crucial for flood management and disaster response planning. In Musanze, while the sub-station supports eco-tourism and biodiversity conservation, there is a notable gap in precision tools for managing the landslide risks prevalent in the district's mountainous terrain. Bugesera faces challenges with the accuracy

and customization of data from its sub-station, limiting its ability to manage flooding effectively. In Gisagara, the sub-station is instrumental in supporting climate-smart agriculture, aiding farmers in soil conservation and weather-dependent planning.

These findings indicate that REMA's decentralized sub-stations are a valuable resource for local governments, enabling them to make informed decisions and plan for climate-related challenges such as flooding, landslides, and agriculture management. However, the effectiveness of these sub-stations varies across districts. Gasabo and Karongi benefit from real-time data that aids climate adaptation and disaster preparedness, while Musanze and Bugesera still face challenges due to the lack of precise instruments and limited data customization. This underscores the need for investment in improved technologies and precision tools to enhance the functionality of climate monitoring systems at the local level.

The findings suggest that to further strengthen climate resilience, local governments must prioritize the improvement of REMA's sub-stations by investing in advanced tools for accurate climate data collection and real-time monitoring. Gasabo, Karongi, and Gisagara offer examples of how the data provided by sub-stations can inform effective climate planning and response strategies. However, Musanze and Bugesera need to address the gap in precision instruments to improve climate risk management. Future actions should focus on enhancing the technical capacity of sub-stations, ensuring they are equipped to handle local-specific climate risks, and expanding community access to climate data to improve disaster preparedness and sustainable agricultural practices.

Customization of METEO Information at the District Level

Customizing Meteo information to meet local needs is critical for improving climate resilience and disaster preparedness. By tailoring weather data to address specific climate risks in each district, local authorities can more effectively manage disasters and climate-related impacts.

In Gasabo, Meteo data is customized to address urban flooding and stormwater management, using high-precision instruments to track precipitation levels and provide timely alerts for flood events. In Karongi, Meteo data is essential for monitoring water levels in Lake Kivu, allowing local authorities to manage flood risks and plan evacuations.

Musanze, however, lacks the customized weather data needed to manage landslide risks in its mountainous areas. The current tools are not sufficient to predict landslides and eco-tourism disruptions, which is a critical issue for a region that heavily relies on eco-tourism. In Bugesera, Meteo information is not customized adequately for flood risk management, and the lack of precision tools leaves the district vulnerable to flooding and soil erosion.

Quote from Gasabo DDEA:

- "The ability to tailor Meteo data for our district has greatly improved our planning for flood management and climate resilience. Real-time data allows us to take action before the worst impacts are felt."

Quote from Musanze Vice Mayor:

- "In Musanze, the weather data we receive is useful, but we need more precise tools, especially given the unique risks posed by the mountainous terrain and eco-tourism activities."

Example from Karongi:

- Karongi uses customized Meteo data to monitor water levels in Lake Kivu, allowing the district to plan flood prevention and climate adaptation measures.

Quote from Meteo Rwanda:

- Rwanda Meteorology Agency (Meteo Rwanda), serves as the country's primary provider of climate data, supporting climate-related research and sectoral planning, particularly in agriculture. Although its core services are centralized at its Kigali head office, Meteo Rwanda facilitates access to climate information at the community level through seasonal forecasts shared via MINALOC and disseminated to provinces and districts. To enhance accessibility, the agency operates a toll-free number for agricultural meteorological inquiries and supports surveys and research. As part of its decentralization strategy, Meteo Rwanda has established 14 district-level substations, which deliver the same weather data and services as the central office. Furthermore, the deployment of automatic meteorological stations reflects the agency's commitment to delivering real-time, accurate, and localized climate information to the public.

The results indicate a clear trend in the customization of Meteo data to address local climate risks across the five districts. Gasabo has effectively customized weather data to manage

urban flooding and stormwater systems, utilizing high-precision instruments to track precipitation levels and issue timely flood alerts. Karongi, situated near Lake Kivu, uses customized Meteo data to monitor water levels, which allows for more effective flood risk management and evacuation planning. Musanze, however, faces challenges, as it lacks precision tools to manage landslide risks in the mountainous terrain, which is vital given the region's reliance on eco-tourism. Bugesera also struggles due to the lack of customized weather data, especially for flood risk management and soil erosion, leaving the district vulnerable to these challenges.

The findings suggest that customizing Meteo data is crucial for enhancing climate resilience and disaster preparedness. In Gasabo and Karongi, the ability to tailor weather data has greatly improved local disaster management efforts and climate adaptation strategies. However, Musanze and Bugesera face significant gaps in data precision, which impedes their ability to manage landslide risks and flooding effectively. These gaps in weather forecasting tools underline the need for advanced meteorological instruments and real-time data collection to ensure that local authorities can effectively respond to climate-related hazards.

These findings also highlight that to strengthen disaster preparedness and climate resilience, districts such as Musanze and Bugesera must invest in more precise meteorological tools and improve weather data customization for landslide and flood management. Gasabo and Karongi have shown that customized Meteo data can significantly improve climate risk management, and these practices should be scaled up across all districts. Future actions should focus on investing in advanced meteorological instruments, ensuring real-time data collection, and providing training for local authorities to effectively use this data to mitigate climate risks and enhance community resilience.

Conclusion

The integration of climate vulnerability assessments, disaster atlases, and customized Meteo data has enabled Gasabo, Karongi, and Gisagara to strengthen their disaster preparedness and climate resilience efforts. However, Musanze and Bugesera still face challenges due to insufficient data collection tools and limited capacity at local sub-stations. To improve local climate resilience and disaster management, it is essential to expand and customize climate data systems and invest in advanced monitoring tools across all districts.

3.2.3. Gender, Representation, and Inclusiveness

Gender Mainstreaming and Accountability in Environmental Management Policies, Planning, and Strategies

Gender mainstreaming plays a critical role in ensuring that environmental policies are not only inclusive but also effective in addressing the unique needs of both women and men. Across all five districts, efforts to integrate gender into environmental planning and decision-making have been visible, with a growing recognition of the need for equal representation in climate resilience programs and natural resource management.

In Gasabo, the Deputy District Executive Administrator (DDEA) emphasized that gender inclusivity in environmental governance is key to ensuring the success of urban greening and climate resilience programs. "We are ensuring that both men and women are equally represented in environmental decision-making, particularly in urban greening projects, waste management, and climate resilience programs. Women's involvement in these areas has proven to be highly beneficial, as they bring unique perspectives, especially in addressing the daily environmental challenges faced by families."

Musanze has made a concerted effort to involve women in eco-tourism and biodiversity conservation. The Vice Mayor of Musanze emphasized the importance of women's engagement in eco-tourism, which is a central economic driver in the district. "We are encouraging more women to participate in eco-tourism initiatives and biodiversity conservation activities. Women have a vital role in managing natural resources, and we are integrating their perspectives into tourism development plans."

In Bugesera, district officials highlighted the importance of women's involvement in climate-smart agriculture. "Women in our district are deeply involved in agriculture, and their involvement in decision-making processes around climate adaptation is crucial for ensuring that climate-smart agriculture initiatives are successful," said a Bugesera district official.

Karongi emphasized the role of women in disaster risk management, especially in flood-prone areas. "In Karongi, we work with local women's groups to prepare them for potential flooding and landslides. Their participation in disaster risk reduction activities has significantly improved the community's resilience to climate-related hazards," explained a Karongi district official.

In Gisagara, women's participation has been pivotal in soil conservation and climate-smart agriculture initiatives. A Gisagara district official explained, "We ensure that women farmers are actively involved in soil conservation projects and climate-smart agriculture practices, ensuring their voices are heard in sustainability strategies."

Quote from Gasabo DDEA:

- "We are ensuring that both men and women are equally represented in environmental decision-making, particularly in urban greening projects, waste management, and climate resilience programs. Women's involvement in these areas has proven to be highly beneficial, as they bring unique perspectives, especially in addressing the daily environmental challenges faced by families."

Quote from Musanze Vice Mayor:

- "We are encouraging more women to participate in eco-tourism initiatives and biodiversity conservation activities. Women have a vital role in managing natural resources, and we are integrating their perspectives into tourism development plans."

Quote from Bugesera District Official:

- "Women in our district are deeply involved in agriculture, and their involvement in decision-making processes around climate adaptation is crucial for ensuring that climate-smart agriculture initiatives are successful."

Quote from Karongi District Official:

- "In Karongi, we work with local women's groups to prepare them for potential flooding and landslides. Their participation in disaster risk reduction activities has significantly improved the community's resilience to climate-related hazards."

Quote from Gisagara District Official:

- "We ensure that women farmers are actively involved in soil conservation projects and climate-smart agriculture practices, ensuring their voices are heard in sustainability strategies."

The results indicate a clear and growing trend toward gender mainstreaming in environmental governance across all five districts. In Gasabo, the Deputy District Executive

Administrator (DDEA) emphasized the importance of equal gender representation in urban greening and climate resilience programs. The district has seen tangible benefits from women's involvement in environmental decision-making, particularly in addressing daily environmental challenges faced by families. In Musanze, the Vice Mayor underscored the importance of involving women in eco-tourism and biodiversity conservation, both critical drivers of the district's economy. This aligns with the findings that women's participation is central to natural resource management and eco-tourism development. Bugesera and Karongi also demonstrate gender inclusivity, with women playing key roles in climate-smart agriculture and disaster risk management, respectively. Gisagara provides another example where women farmers are actively engaged in soil conservation and climate-smart agriculture initiatives, ensuring that their voices are integral to sustainability strategies.

The findings show that gender inclusivity in environmental policies and programs is increasingly being recognized as a driver of success in climate resilience and natural resource management. Gasabo's success in urban greening and climate resilience projects demonstrates the positive outcomes of equal gender representation in decision-making. Musanze, Bugesera, Karongi, and Gisagara also show that involving women in resource management, eco-tourism, agriculture, and disaster risk management contributes to more effective and sustainable environmental governance. However, the integration of gender perspectives varies across districts, with some areas requiring further efforts to institutionalize gender inclusivity in local policies and project planning.

The findings imply that to strengthen environmental governance and climate resilience, local governments should continue to prioritize gender equality in environmental decision-making. Encouraging more female participation in eco-tourism, agriculture, and disaster risk management will help address local environmental challenges more effectively. In particular, Gasabo, Musanze, Bugesera, Karongi, and Gisagara should focus on scaling up gender-responsive policies, ensuring that women's perspectives are fully integrated into environmental programs. Moreover, continuous capacity building for women in environmental sectors, along with resource allocation, will enhance sustainability and community resilience. Local governments must also ensure that gender-sensitive budgeting is implemented to support women-led projects and increase female participation in environmental decision-making at all levels.

Ensuring the Inclusion of Vulnerable Groups in Environmental Planning

The inclusion of vulnerable groups in environmental planning - specifically youth, elderly individuals, and people with disabilities (PWDs) - ensures that climate resilience strategies cater to the needs of all community members. These groups often bear the brunt of climate impacts, and their participation is essential for creating sustainable and equitable environmental policies.

In Gasabo, youth are increasingly involved in eco-tourism and environmental awareness campaigns, with an emphasis on utilizing their energy and creativity. A Gasabo community member shared, "We are encouraging youth to participate in eco-tourism programs and environmental awareness campaigns because they have a lot of energy and ideas to help solve environmental challenges in our communities."

In Musanze, youth participation in eco-tourism is vital, given the district's focus on biodiversity and resource management. A Musanze community member explained, "If more youth were involved in eco-tourism, they would better understand how to conserve the environment, because they are the ones who manage the resources such as water and firewood in the community."

Bugesera also focuses on empowering youth through climate-smart agriculture. "We have a lot of youth who are active in farming, and if we trained them in climate-smart agriculture, they could improve their productivity and help the whole community adapt to climate change," said a Bugesera community member.

In Karongi, elderly individuals face increased vulnerability to floods and landslides. A Karongi community member emphasized, *"The elderly are often the first to be affected when flooding or landslides occur. We need to ensure they are included in disaster risk reduction activities and that their needs are considered in planning climate resilience programs."

In Gisagara, PWDs are actively involved in disaster preparedness and climate adaptation strategies. This claim is supported by these quotes from community members in FGD in Gisagara District,

- "We work with the elderly and people with disabilities, who are given opportunities to work through the VUP (Vision 2020 Umurenge Program) to maintain roads. The elderly have an active role, especially in public works. They provide ideas during community meetings, and youth also compete to work on the roads. For example,

youth planted bamboo along streams in the Mamba sector, Gishubi, Muganza, Mukindo, Mugombwa, Kigembe, and Nyanza. This helps in preventing soil erosion.

- Elderly people, starting from around 65 years, in Mugombwa are actively involved in road cleaning. They go out early in the morning to clear roads, which also benefits the environment.
- Both women, youth, and people with disabilities regularly meet and discuss their issues, which are then communicated to the authorities. For instance, youth had voiced their concern about how trees were only given to the elderly, and not to others. A partner called Duhozanye responded by providing mixed tree seedlings and avocados, which were then distributed across all sectors. However, there was an issue with mobilization as not all communities participated

Quote from Gasabo FGD Participant:

- "We are encouraging youth to participate in eco-tourism programs and environmental awareness campaigns because they have a lot of energy and ideas to help solve environmental challenges in our communities."

Quote from Musanze FGD Participant:

- "If more youth were involved in eco-tourism, they would better understand how to conserve the environment because they are the ones who manage the resources such as water and firewood in the community."

Quote from Bugesera FGD Participant:

- "We have a lot of youth who are active in farming, and if we trained them in climate-smart agriculture, they could improve their productivity and help the whole community adapt to climate change."

Quote from Karongi FGD Participant:

- "We have environmental management committees from Kigali down to the village level, including youth, women, and people with disabilities. They were previously inactive due to lack of support, but now they are becoming active".

- "The elderly are often the first to be affected when flooding or landslides occur. We need to ensure they are included in disaster risk reduction activities and that their needs are considered in planning climate resilience strategies."

The results show a clear trend of increased participation of vulnerable groups - youth, the elderly, and people with disabilities (PWDs) - in environmental planning and climate adaptation efforts across the five districts. Gasabo, Musanze, and Bugesera have particularly focused on empowering youth through initiatives such as eco-tourism, agriculture, and climate-smart projects. In Gasabo, the active participation of youth in environmental awareness campaigns and eco-tourism programs is seen to leverage their energy and creativity for solving local environmental challenges. In Musanze, the focus on eco-tourism is crucial, as youth are directly engaged in managing resources such as water and firewood, which are critical to the district's sustainable development. In Bugesera, youth involvement in climate-smart agriculture aims to increase productivity and climate resilience.

In Karongi, the elderly, who are highly vulnerable to flooding and landslides, are included in disaster risk management activities, particularly in flood-prone areas. Their participation ensures that vulnerable populations are considered in climate resilience strategies. Gisagara stands out by integrating PWDs into disaster preparedness and climate adaptation initiatives, with active participation in public works such as road maintenance. These actions not only provide economic benefits to these communities but also help reduce vulnerability to climate risks such as soil erosion and flooding.

Quote from MINALOC

- The MINALOC staff reinforces that;" Rwanda's commitment to inclusive governance, highlighting that all government policies and strategies especially in the environmental sector are designed to benefit men, women, youth, the elderly, and persons with disabilities. Inclusiveness is not limited to passive beneficiaries; it extends to active citizen engagement across the policy cycle, from planning and decision-making to implementation. Specifically, environmental initiatives are structured to ensure community involvement and ownership, which is critical for sustainability and accountability. The use of feedback mechanisms further strengthens this inclusiveness by allowing citizens to voice concerns, suggest improvements, and monitor outcomes. This approach aligns with Rwanda's broader decentralization and citizen-centered service delivery frameworks, ensuring that no one is left behind in national development efforts".

These findings indicate that gender-sensitive and inclusive environmental governance is becoming a core element of climate resilience in these districts. Youth, elderly people, and

PWDs have critical roles to play in climate adaptation, from eco-tourism and agriculture to disaster preparedness and risk management. However, challenges remain in ensuring inclusive governance, with targeted training and leadership roles still necessary to empower these groups. Despite some progress in community engagement, more efforts are needed to fully integrate vulnerable groups in decision-making processes and to provide appropriate resources for them to participate effectively in environmental planning.

The findings imply that to further strengthen inclusive environmental governance, districts should prioritize the inclusion of vulnerable groups in climate adaptation efforts. Gasabo, Musanze, and Bugesera should continue empowering youth in eco-tourism, agriculture, and climate adaptation projects, while Karongi must enhance the elderly's involvement in disaster management, ensuring their inclusion in flood mitigation activities. Gisagara should continue to build on its success with PWDs, integrating them more deeply into disaster risk management programs. Ultimately, to fully leverage the potential of vulnerable groups, it is essential to invest in leadership development, capacity-building, and resources that enable these groups to contribute meaningfully to climate resilience and environmental governance.

Conclusion

Incorporating gender and vulnerable groups, such as youth, the elderly, and PWDs, is vital for equitable and effective environmental decentralization in Rwanda. Women's participation in environmental decision-making, especially in Gasabo, Musanze, and Bugesera, has been central to climate resilience efforts in areas such as waste management, eco-tourism, and agriculture. In Karongi, women's groups have played a key role in disaster preparedness. These districts have also integrated youth, elderly individuals, and PWDs into climate adaptation and risk management programs.

Despite progress, there is still a need to expand leadership opportunities and capacity-building for women and marginalized groups. Investing in gender-inclusive policies and training will empower these groups to take on leadership roles, strengthening Rwanda's environmental governance and climate resilience. This inclusive approach is essential for sustainable development and addressing the challenges of climate change.

3.3. Sectoral Decentralisation and Service Delivery in the Environmental Sector

Sectoral decentralization in the environmental sector seeks to empower local governments to effectively manage environmental services, including climate change mitigation, natural resource management, and sustainable development. The goal is to enable districts and sectors to implement national policies and strategies tailored to their unique regional challenges. This includes managing key environmental issues such as waste management, flood prevention, soil conservation, eco-tourism, and climate adaptation.

The focus of this dimension is to explore how effectively local authorities are able to provide essential environmental services and implement climate resilience strategies in their communities. It also examines the coordination between central and local governments, service delivery mechanisms, and the adequacy of resources and staffing to manage environmental challenges. Understanding the gaps in service delivery, as well as the strengths and weaknesses of sectoral decentralization, will provide insights into how these processes can be improved to ensure effective climate resilience and sustainable environmental management.

These elements are crucial for understanding how sectoral decentralization in Rwanda's environmental sector functions and its impact on local climate resilience and sustainable development. By examining these aspects, the section aims to shed light on the progress and barriers that affect service delivery in the environmental sector.

Sound Intergovernmental Relations Framework for Environmental Management and Climate-related Functions

Effective intergovernmental coordination between central authorities and local governments is essential for the successful implementation of environmental policies and climate resilience strategies at the local level. In Rwanda, the decentralization process aims to ensure that local governments are empowered to manage environmental services, but the coordination between central and local authorities plays a crucial role in ensuring that national strategies are properly adapted to the needs of the local population.

In Gasabo, the Deputy District Executive Administrator (DDEA) explained the advantages of the City of Kigali Law (nº 22/2019), which provides a consolidated budget for the entire city, including the districts. "With the new law, we now have a consolidated budget for the city,

which improves coordination and resource allocation across districts. This has helped us implement national policies more effectively at the sector level."

However, Musanze faces challenges in coordinating eco-tourism and biodiversity conservation policies. The Vice Mayor noted, "At times, there is a gap between district-level implementation and central government coordination. More structured frameworks are needed to ensure that eco-tourism and biodiversity conservation efforts are executed effectively."

Bugesera also experiences coordination challenges, particularly in flood management and climate adaptation. A Bugesera district official mentioned, "We have had difficulties aligning climate adaptation projects with national frameworks. There is a need for better communication and coordination channels between local governments and central authorities."

Karongi has been successful in disaster risk management, particularly concerning the Lake Kivu ecosystem. A Karongi district official emphasized, "We work closely with REMA and other central bodies to monitor water levels in Lake Kivu and implement disaster preparedness plans. This collaboration has helped us to build community resilience to climate-related risks, particularly flooding."

Quote from Gasabo DDEA:

- "With the new law, we now have a consolidated budget for the city, which improves coordination and resource allocation across districts. This has helped us implement national policies more effectively at the sector level."

Quote from Musanze Vice Mayor:

- "At times, there is a gap between district-level implementation and central government coordination. More structured frameworks are needed to ensure that eco-tourism and biodiversity conservation efforts are executed effectively."

Quote from Bugesera District Official:

- "We have had difficulties aligning climate adaptation projects with national frameworks. There is a need for better communication and coordination channels between local governments and central authorities."

Quote from Karongi District Official:

- "We work closely with REMA and other central bodies to monitor water levels in Lake Kivu and implement disaster preparedness plans. This collaboration has helped us to build community resilience to climate-related risks, particularly flooding."

Quote from Minaloc official:

> A key concern raised by a MINALOC staff member underscores a critical governance issue: “the misconception that decentralization is solely the responsibility of MINALOC, rather than a whole-of-government mandate. This perspective, held by some sector ministries, undermines the collective ownership needed for effective decentralization. The staff rightly emphasizes that: “decentralization is a national priority of the Government of Rwanda, intended to ensure that all public policies, including environmental ones, serve the interests of local citizens. Environmental policies are meant to be citizen-centered, and their success relies on active collaboration across ministries, with MINALOC acting as a coordinator rather than the sole executor. Failing to integrate decentralization responsibilities across all government entities weakens service delivery and disconnects national strategies from local realities. This highlights the urgent need for a shared accountability framework, where all ministries see themselves as part of a unified effort to serve and empower communities

Effective intergovernmental coordination is essential for the success of sectoral decentralization in the environmental sector. While Gasabo benefits from the City of Kigali’s consolidated budget, enabling effective coordination and resource-sharing, Musanze and Bugesera struggle with gaps in coordination, particularly when it comes to eco-tourism and climate adaptation projects. Karongi has demonstrated how collaboration with central agencies can improve disaster preparedness and climate resilience, particularly in areas at risk of flooding.

Service Delivery in the Environmental Sector: Waste Management, Climate Mitigation, and Adaptation

Effective service delivery in environmental management, particularly in waste management, climate mitigation, and climate adaptation, is a central pillar of sectoral decentralization. Local governments are responsible for providing these services, but the capacity of local authorities to deliver them is influenced by sector-level staffing, resource availability, and the coordination with central agencies.

In Gasabo, strong coordination with the City of Kigali's planning office has allowed the district to implement urban greening and waste management projects effectively. The DDEA highlighted, "Gasabo has effectively addressed urban environmental issues such as flooding and waste management, supported by the consolidated city budget. The focus on urban greening and climate resilience has helped us improve service delivery in environmental management."

In Musanze, sector-level officers struggle with eco-tourism and biodiversity conservation initiatives due to a lack of specialized staff. A Musanze community member stated, "If more youth were involved in eco-tourism, they would better understand how to conserve the environment because they are the ones who manage the resources such as water and firewood in the community."

In Bugesera, climate-smart agriculture has been prioritized, but sector-level officers face difficulties due to lack of expertise in flood management and disaster risk reduction. A Bugesera district official remarked, "The lack of sector-level environmental officers makes it harder to deliver critical services such as flood management and soil conservation."

Karongi, with its focus on flood management due to Lake Kivu's proximity, has made strides in disaster preparedness. The district official stated, "We have a dedicated team monitoring flood risks and managing water levels in Lake Kivu. This collaboration with REMA and other agencies has been instrumental in ensuring that we are better prepared for floods and other disasters."

Gisagara has focused on climate-smart agriculture and soil conservation to mitigate environmental degradation. A Gisagara community member noted, "Through climate-smart agriculture training, we are able to improve our land management practices and adapt to changing weather patterns. However, we still need more support for specialized training in disaster risk management."

Quote from Gasabo DDEA:

- "Gasabo has effectively addressed urban environmental issues such as flooding and waste management, supported by the consolidated city budget. The focus on urban greening and climate resilience has helped us improve service delivery in environmental management."

Quote from Bugesera District Official:

- "The lack of sector-level environmental officers makes it harder to deliver critical services such as flood management and soil conservation."

Quote from Musanze Vice Mayor:

- "Despite the district's emphasis on eco-tourism, we still face challenges due to the lack of dedicated staff who specialize in this area. Effective policy implementation is hindered without the right expertise at the sector level."

Quote from Karongi District Official:

- "We have a dedicated team monitoring flood risks and managing water levels in Lake Kivu. This collaboration with REMA and other agencies has been instrumental in ensuring that we are better prepared for floods and other disasters."

Quote from Gisagara Community Member:

- "Through climate-smart agriculture training, we are able to improve our land management practices and adapt to changing weather patterns. However, we still need more support for specialized training in disaster risk management."

Quote from Minaloc staff:

MINALOC reveals a key inconsistency in Rwanda's environmental decentralization framework where Minaloc staff revealed that: "local governments are tasked with implementing environmental activities, such as tree planting through community service programs like Umuganda, yet they lack authority over basic service delivery decisions, such as issuing tree-cutting permits. This centralization of decision-making even for localized issues undermines the principle of subsidiarity and limits the responsiveness of district administrations to local environmental needs. It reflects a broader structural issue where implementation is decentralized but control remains

centralized, creating delays, inefficiencies, and citizen dissatisfaction. For decentralization to be meaningful, local governments must be granted real authoritynot just responsibilities backed by the regulatory tools, human resources, and budget to manage environmental issues comprehensively at the local level".

The ability of local authorities to provide effective environmental services depends on having dedicated staff with the appropriate specialization and expertise. Gasabo has successfully implemented urban greening and waste management initiatives, supported by strong coordination and the City of Kigali's consolidated budget. In contrast, Musanze and Bugesera continue to struggle with eco-tourism and climate adaptation programs due to gaps in sector-level staffing and specialized knowledge. Karongi has successfully implemented disaster risk management strategies due to its strong collaboration with central agencies and dedicated teams.

The districts' experiences highlight the need for dedicated environmental officers, sector-specific training, and strong intergovernmental coordination to ensure effective service delivery in the environmental sector. Musanze, Bugesera, and Gisagara should prioritize sector-level staffing and specialized training to enhance their climate resilience and sustainable development efforts.

Conclusion

The sectoral decentralization of environmental management and service delivery in Rwanda is a critical step toward climate resilience and sustainable development. Gasabo has demonstrated how strong intergovernmental coordination and resource sharing can lead to successful policy implementation, while Musanze, Bugesera, and Gisagara face challenges related to staffing and resource allocation. Karongi exemplifies the importance of disaster preparedness and flood management in areas facing climate risks. For further progress, it is essential to invest in dedicated sector-level officers, training programs, and improving coordination to ensure that local authorities can effectively address climate risks and deliver environmental services.

3.4. Fiscal and Financial Decentralisation and Management in the Environmental Sector

The fiscal and financial decentralization process in the environmental sector aims to empower local governments to manage their resources effectively to address environmental challenges, climate change, and sustainable development. For local authorities to implement climate adaptation strategies and disaster management plans, it is essential to have clear access to financial resources allocated from the national budget and external climate funds. This section will examine the allocation, effectiveness, and utilization of financial resources for environmental initiatives in Gasabo, Musanze, Bugesera, Karongi, and Gisagara, exploring how well the districts are equipped financially to address local environmental challenges.

Fiscal and financial decentralization plays a crucial role in enabling local governments to effectively manage the resources required for implementing environmental policies, climate adaptation strategies, and sustainable development programs. By decentralizing financial responsibilities, local authorities are empowered to address the unique environmental challenges they face, such as climate change impacts, natural resource management, and disaster preparedness.
This section will examine the mobilization of finance for climate and environmental projects, how financial resources are allocated to local governments, and the effectiveness of their utilization. It will also explore the role of external funding, such as support from international donors, climate finance initiatives, and collaborations with institutions such as Rwanda Green Fund and JADF, in supporting local environmental initiatives.

Key elements covered:

1. Cumulative Volume of Mobilized Finance for Environment and Climate Change
2. Percentage of National Environmental Budget Allocated to Local Governments
3. Proportion of Allocated Funds Effectively Utilized
4. Availability of External Funding for Local Environmental Initiatives
5. Number of Projects Developed and Financed for NDC Implementation
6. Central Government Institutions Transferring Funds to Decentralized Entities for Environmental Protection
7. Green Jobs Created through the Implementation of Green Projects

1. Cumulative Volume of Mobilized Finance for Environment and Climate Change

The cumulative volume of mobilized finance for environmental and climate change projects is a critical factor in enabling local governments to implement climate adaptation strategies and address environmental challenges. Financial resources from international climate funds, government allocations, and private investments are essential to support sustainable development projects, such as eco-tourism, climate-smart agriculture, disaster management, and biodiversity conservation. The ability of local governments to mobilize finance determines their capacity to build climate resilience, enhance sustainability, and tackle the impacts of climate change effectively.

The mobilized finance includes funding from both domestic sources, such as national budget allocations, and international sources, including climate finance mechanisms such as Rwanda Green Fund, JADF, foreign aid, and global climate funds. This finance allows districts to address the funding gaps needed for projects that improve environmental management at the local level.

- Gasabo has effectively mobilized external finance for its urban greening and flood management programs. The DDEA shared, "We have mobilized funds through international donors and climate finance mechanisms for projects focused on urban greening, tree planting, and flood management. These efforts contribute significantly to building urban resilience and combating climate change."
- Musanze has attracted international funding for eco-tourism and biodiversity conservation, though it has struggled to scale up these initiatives. The Vice Mayor explained, "We have received some external funding for eco-tourism and biodiversity projects, but more investment is needed to fully scale these initiatives and meet our climate resilience goals."
- Bugesera has faced challenges in mobilizing external finance but has managed to secure some funding through Rwanda Green Fund for climate adaptation projects. A Bugesera district official shared, "While we have not directly accessed external funds from organizations such as IREME, we have worked with Rwanda Green Fund on certain projects, particularly for flood management and climate adaptation. However, the level of support is still insufficient."
- Karongi has mobilized external funding for its disaster preparedness and flood management programs, particularly focusing on Lake Kivu's water levels. The Karongi district official stated, "We've secured international finance for disaster preparedness,

specifically targeting flood mitigation programs. This funding has been pivotal in helping us manage Lake Kivu's flooding risks."

- Gisagara has received external funding for climate-smart agriculture and soil conservation, but additional investment is required to expand these programs. A Gisagara community member commented, "While we have received some funds for climate-smart agriculture, we need more support to fully scale up our soil conservation efforts."

- Minaloc staff clarified that: "The failure to implement Article 57 of Law No. 048/2023 of 05/09/2023, which mandates the allocation of 5% of national revenues to districts, represents a significant breach in Rwanda's decentralization framework. Despite being legally enshrined, this commitment has been ignored across four consecutive fiscal years, undermining both financial autonomy and service delivery capacity at the local government level. This persistent gap not only contradicts the principles of fiscal decentralization but also weakens public trust and hinders effective implementation of citizen-centered policies, including those in the environmental sector. As a result, districts remain constrained in fulfilling delegated responsibilities, such as environmental management, infrastructure development, and community service provision. If left unaddressed, this noncompliance risks stalling Rwanda's broader decentralization agenda and could perpetuate structural inequalities in local governance and service equity".

The cumulative volume of mobilized finance for environmental projects is crucial for local governments to address climate resilience and sustainable development needs. Gasabo, with its consolidated city budget, has successfully mobilized external finance through international donors and climate finance mechanisms. Musanze, despite having some funding for eco-tourism and biodiversity conservation, faces gaps in securing sufficient financial resources to scale these programs effectively. Bugesera, while benefiting from Rwanda Green Fund, still faces challenges in mobilizing adequate external funds for large-scale climate adaptation projects, especially in flood management and soil conservation. Karongi has been successful in securing external funding for disaster preparedness and flood mitigation, particularly around Lake Kivu, but the financial requirements for long-term climate resilience still require further mobilization. Gisagara, despite some progress in climate-smart agriculture and soil conservation, needs more external funding to scale these programs and address broader climate adaptation goals.

In conclusion, the mobilization of finance plays a critical role in enabling local governments to implement climate resilience projects. While Gasabo and Karongi have shown success in securing external finance, Musanze, Bugesera, and Gisagara must continue to work on attracting more resources to ensure the successful implementation of their climate adaptation strategies and sustainable development projects. Further investments in external funding, alongside improved capacity building for financial management and project implementation, will enable these districts to meet their climate and environmental goals more effectively.

2. Percentage of National Environmental Budget Allocated to Local Governments

The percentage of the national environmental budget allocated to local governments plays a critical role in determining the financial capacity of districts to implement environmental policies, climate adaptation programs, and sustainable development projects. Adequate allocation allows local authorities to address climate change, disaster preparedness, eco-tourism, and other environmental challenges at the grassroots level. While some districts benefit from a consolidated budget (as in Gasabo), others, especially in the provinces, rely on financial autonomy to allocate funds for their own environmental programs.
This section explores how much of the national environmental budget is allocated to local governments and provides an analysis of how these funds are utilized to meet the climate adaptation goals and sustainable development targets set by the government.

Table 3: Percentage of National Environmental Budget Allocated to Local Governments

		Total Budget		**Environmental Budget**		**Percentage of Environmental budget**	
S/n	District(s)	2023-2024	2024-2025	2023-2024	2024-2025	2023-2024	2024-2025
1	Bugesera	41,709,883,919	42,722,947,927	1,570,431,518	1,580,749,073	3.7%	3.7%
2	Gisagara	32,753,076,496	32,805,176,012	1,179,785,027	1,213,791,512	3.7%	3.7%
3	Karongi	38,622,144,559	38,575,029,623	822,651,679	1,353,983539	2.13%	3.51%
4	Musanze	44,177,254,532	46,208,664,933	1,046,390,826	526,138,698	2.36%	1.14%

Source: consutant's compilation 2025

- Gasabo benefits from the consolidated budget system introduced under the City of Kigali Law (nº 22/2019). This law consolidates the budget for all districts in Kigali and allocates a portion of the national environmental budget for environmental management programs, including urban greening, tree planting, and waste management. For the fiscal year 2024-2025, the total environmental budget for Gasabo is 485,670,000 RWF. Gasabo DDEA commented, "The City of Kigali allocates a significant portion of the budget to environmental programs, allowing us to focus on urban greening and flood management projects. However, we still need more funds to scale these initiatives."

- In Musanze District, the total district budget for the fiscal year 2023/2024 is FRW 44,177,254,532, with the environmental budget amounting to FRW 1,046,390,826, representing approximately 2.37%. While acknowledging that the country is still in the development phase, the allocation reflects a commitment to environmental sustainability, and we are optimistic that this share will grow over time. For the fiscal year 2024/2025, the total district budget is FRW 46,208,664,933, with the environmental budget at FRW 526,138,698, which accounts for about 1.14%. Despite the decrease in percentage, we remain confident that the environmental budget will continue to rise as the country advances in its development journey. According to the Vice Mayor, Economic Affairs, "We are committed to eco-tourism and biodiversity conservation, and the 2.37% of the budget allocated to environmental management reflects this commitment. However, the funds are not sufficient to fully meet the growing demand for climate adaptation projects. We are still on the journey, and we believe it will increase over time."

- Bugesera shows a stable environmental budget allocation of 3.7% across both fiscal years, with a slight increase in total district budget from RWF 41.7 billion in 2023–2024 to 42.7 billion in 2024–2025. The environmental budget rises modestly from RWF 1.57 billion to RWF 1.58 billion, reflecting a sustained commitment to environmental priorities without a significant shift in fiscal emphasis. This consistency may indicate a well-structured environmental program or stagnant sectoral expansion. A Bugesera district official explained, "We receive about 3.7% of the total budget for environmental protection, which supports flood management and soil conservation.

However, more funding is needed to tackle climate adaptation and disaster preparedness."

- Karongi demonstrates a significant increase in environmental budget share, jumping from 2.13% in 2023–2024 to 3.51% in 2024–2025. While the total district budget remains nearly unchanged (RWF 38.62 billion to 38.57 billion), the environmental budget sees a sharp rise from RWF 822 million to RWF 1.35 billion. This suggests a renewed or expanded focus on environmental programming, possibly in response to new policy initiatives, rising ecological challenges, or catch-up from previous underinvestment. A Karongi district official shared, "While we receive 2.13% in the current fiscal year, we have seen an increase in the environmental budget for 2024/2025, which will enable us to better address disaster preparedness and flood management."

- Gisagara mirrors Bugesera's pattern with environmental allocations consistently at 3.7% of the total district budget. The overall district budget increases marginally from RWF 32.75 billion to RWF 32.80 billion, while the environmental budget rises from RWF 1.18 billion to RWF 1.21 billion. This consistency suggests prioritization of environment-related activities at a stable level, but it may also point to limited growth in funding compared to evolving environmental needs or risks in the area. A Gisagara district official explained, "We allocate 3.7% of our budget to climate-smart agriculture and soil conservation programs. While this is helpful, we still require additional funding to scale these programs."

The results show that the percentage of the national environmental budget allocated to local governments varies significantly across the five districts, with some districts benefiting from consolidated funding (e.g., Gasabo) and others relying on financial autonomy (e.g., Musanze, Bugesera, Karongi, and Gisagara). The findings show that local governments in Rwanda face varying levels of financial allocation for environmental projects, with Gasabo benefiting from a centralized budget system that facilitates better coordination of funds.
However, Musanze, Bugesera, Karongi, and Gisagara all face challenges due to relatively low percentages of the total budget allocated to environmental projects. Although these districts show a commitment to environmental sustainability, especially in sectors such as eco-tourism, climate-smart agriculture, and disaster preparedness, the limited financial allocation hampers their ability to fully address climate adaptation challenges.

Additionaly, the issue highlighted reflects a fundamental contradiction within Rwanda's decentralization framework: "districts are required to sign performance contracts (Imihigo) committing to deliver on development and service delivery objectives, yet they lack adequate financial resources to fulfill these obligations. This situation violates the core decentralization principle that "functions follow finances," meaning that responsibilities transferred to local governments must be accompanied by the corresponding financial means. The mismatch between commitments and funding capacity not only undermines effective implementation of decentralized services; particularly in critical sectors like environment, infrastructure, and social development but also erodes accountability and the credibility of performance-based governance. For decentralization to be meaningful and results-oriented, equitable and predictable budget allocations must align with devolved functions, ensuring districts are empowered to meet their responsibilities and the expectations of their citizens". Minaloc staff added.

The fact that these budgets only cover direct allocations for environmental projects and do not include broader sectors such as agriculture, mining, or forestry highlights the multisectoral nature of environmental governance, which requires intersectoral funding to effectively address climate change mitigation and adaptation. The challenge in accurately assessing the spending on environmental decentralization stems from the multisectoral nature of environmental governance, where funding for climate change mitigation and adaptation often spans across various sectors such as agriculture, mining, and forestry. The direct allocations for environmental projects, such as urban greening, flood management, and soil conservation, capture only a fraction of the financial commitment to environmental goals, leaving out crucial contributions from other sectors. For example, initiatives sucha s climate-smart agriculture and eco-tourism require funding from agriculture and tourism sectors, while flood management involves investments in water management and land use planning. This makes it difficult to pinpoint the exact financial allocation for environmental decentralization. To address this, there is a need for intersectoral coordination and holistic financial tracking, where environmental goals are integrated into every sector's budget and reporting systems, ensuring comprehensive investment in climate resilience and sustainability.

These findings imply that the percentage of national environmental budgets allocated to local governments is an important factor in enabling districts to implement climate adaptation programs and sustainable development projects. While Gasabo's model of centralized coordination and resource sharing is effective, districts outside Kigali should

increase funding to address pressing climate risks such as flooding, soil erosion, and eco-tourism challenges. To strengthen local governance, future budget allocations should consider the multisectoral nature of climate adaptation, ensuring that environmental projects are adequately funded across all sectors. Additionally, financial support for districts should be accompanied by capacity-building efforts to ensure that local authorities can effectively utilize the available funds for disaster preparedness, sustainable agriculture, and community resilience.

Conclusion

The analysis highlights that while some districts, such as Gasabo, benefit from the centralized budget system under the City of Kigali Law (nº 22/2019), others, particularly those outside Kigali, face challenges with relatively low environmental budget allocations. These budgets only cover direct environmental projects, leaving out crucial contributions from sectors such as agriculture, mining, and forestry, which are integral to climate change mitigation and adaptation. This emphasizes the multisectoral nature of environmental governance, where comprehensive funding from various sectors is necessary to tackle climate risks effectively. Despite these challenges, the need for intersectoral coordination and holistic financial tracking remains critical, ensuring that climate adaptation projects and sustainable development initiatives are adequately funded across sectors. Districts should focus on enhancing financial support, building local capacity, and implementing effective climate resilience strategies to ensure better management of environmental risks at the local level. To address these challenges, it is crucial for local governments to continue advocating for greater funding, both internally and externally, and ensure that funds are effectively allocated and utilized to meet environmental goals and climate resilience targets.

3. Proportion of Allocated Funds Effectively Utilized

The proportion of allocated funds that are effectively utilized is a critical indicator of financial management efficiency in local governments. Ensuring that the allocated budget is fully utilized is essential for the successful implementation of environmental policies, climate resilience programs, and sustainable development initiatives. Effective utilization of funds ensures that local governments can meet their climate adaptation goals, implement disaster management programs, and address environmental challenges without unnecessary delays or financial waste. In this section, we examine how effectively each district has used its allocated environmental budget to implement environmental management projects.

- Gasabo has been successful in utilizing 100% of its allocated funds for urban greening and flood management projects. The DDEA emphasized, "We make sure that the funds allocated to urban greening and flood management are fully spent, and the projects are carried out according to plan. There is 100% utilization of the budget, ensuring that all contracted work is completed." This full utilization of the allocated funds has enabled Gasabo to implement key projects such as tree planting along urban roads and the rehabilitation of public spaces.
- Musanze reports 100% utilization of the funds allocated for eco-tourism and biodiversity conservation initiatives. The Vice Mayor stated, "Although we face some challenges in staffing and resource allocation, the funds we received for eco-tourism and biodiversity were fully utilized. These efforts include the expansion of the Volcanoes National Park and the restoration of bamboo plantations." However, the district faces staffing challenges that limit the impact of these projects. Despite full fund utilization, there is a need for more technical expertise at the sector level to scale up the projects.
- Bugesera has also reported 100% utilization of the environmental budget for the 2023/2024 fiscal year. A Bugesera district official shared, "The allocated funds for flood management and soil conservation were fully used, addressing key climate risks in our district. However, our ability to scale these initiatives is limited by the lack of dedicated environmental staff at the sector level." The district's effective use of funds highlights the importance of dedicated human resources to implement climate resilience projects more effectively.
- Karongi reported 100% utilization of its environmental funds for the 2023/2024 fiscal year. The Karongi district official noted, "We have fully utilized our allocated funds for disaster preparedness and flood management, particularly in response to the risks posed by Lake Kivu. These funds have been essential in implementing early warning systems and flood mitigation programs." The full utilization of funds has allowed Karongi to strengthen its disaster response capabilities, especially for communities living near Lake Kivu.
- Gisagara has achieved 100% utilization of the allocated funds for climate-smart agriculture and soil conservation programs. A Gisagara community member commented, "The funding we received for soil conservation and water management was fully used for projects such as creating terraces and installing rainwater harvesting systems in local communities. However, we need more resources to expand these projects." The district’s success in utilizing its allocated funds

demonstrates the potential for improving climate resilience through sustainable farming practices.

The proportion of allocated funds effectively utilized in each district demonstrates a strong commitment to implementing environmental management and climate adaptation projects. Gasabo, Musanze, Bugesera, Karongi, and Gisagara all report 100% fund utilization, reflecting good financial management practices. However, challenges such as staffing gaps, coordination issues, and resource limitations continue to affect the efficiency and impact of these projects.

In particular, Musanze and Bugesera face staffing challenges that limit the scalability of projects, despite full fund utilization. Karongi and Gasabo, with their dedicated officers and strong financial management, have demonstrated the successful implementation of disaster management and urban resilience projects. Gisagara, while successfully utilizing its allocated funds, still faces resource constraints that limit the expansion of its climate-smart agriculture and soil conservation efforts.

In conclusion, while the 100% utilization of funds across all districts indicates strong financial management, there is still a need for specialized staffing, capacity building, and further investment in local climate resilience projects. Local governments must continue to focus on scaling up successful initiatives and addressing staffing gaps to maximize the impact of their climate adaptation and environmental management programs.

4. Availability of External Funding for Local Environmental Initiatives

The availability of external funding plays a crucial role in enabling local governments to implement climate resilience and environmental management projects. This funding comes from a variety of sources, including international donors, climate finance mechanisms, and collaborations with local institutions such as Ireme Invest, JADF, and Rwanda Green Fund. These partnerships provide local governments with the financial resources needed to address environmental challenges, such as disaster risk management, eco-tourism, biodiversity conservation, and sustainable agriculture.

In this section, we will explore how each district has accessed external funding for environmental initiatives and the impact of these funds on local projects. This will include a focus on Ireme Invest, JADF, and other collaborative funding mechanisms that provide critical support for environmental sustainability at the local level.

- Gasabo has mobilized external funding through JADF and other collaborative initiatives. The DDEA explained, "We have partnered with JADF and several international donors to fund urban greening and flood management projects. These collaborations have helped us implement key projects such as tree planting, rehabilitation of public spaces, and stormwater systems." Gasabo's collaboration with JADF and other partners has been instrumental in securing funding for sustainable development and climate resilience initiatives.
- Musanze has worked with JADF and Rwanda Green Fund to secure funding for eco-tourism and biodiversity conservation projects. The Vice Mayor shared, "We have benefited from Rwanda Green Fund for eco-tourism and biodiversity conservation projects. Through JADF, we have received support for tree planting and community-based conservation efforts." However, the district faces challenges in accessing additional external funding to scale its eco-tourism initiatives.
- Bugesera has had limited access to external funding from Ireme Invest but has benefited from JADF in implementing projects related to flood management and soil conservation. A Bugesera district official explained, "While we have not worked directly with Ireme, we have collaborated with JADF to implement flood management and soil conservation projects. JADF has been instrumental in bringing partners to the district for disaster risk management and climate adaptation."
- Karongi has benefited from external funding for disaster preparedness and flood management, particularly through collaborations with JADF and other partners. A Karongi district official shared, "We have worked with JADF and Rwanda Green Fund to secure funding for disaster preparedness and flood management. This funding has been crucial in building community resilience against flood risks associated with Lake Kivu."
- Gisagara has worked with JADF on soil conservation and climate-smart agriculture initiatives. A Gisagara community member shared, "Through JADF, we have received support for soil conservation and climate-smart agriculture projects, such as terracing and tree planting. However, we still need additional external funding to scale up these efforts."

The availability of external funding plays a pivotal role in enabling local governments to implement climate resilience and environmental management projects, particularly in the face of limited local resources. Across the five districts, JADF, Ireme Invest, and the Rwanda Green Fund have been key contributors to supporting environmental sustainability. In Gasabo, JADF and other international donors have helped fund urban greening and flood

management projects, including tree planting, public space rehabilitation, and stormwater systems. The DDEA of Gasabo highlighted that these partnerships have been vital in securing the resources needed to tackle urban environmental challenges. Similarly, Musanze has worked with JADF and the Rwanda Green Fund to secure funds for eco-tourism and biodiversity conservation projects, although the district faces challenges in scaling its initiatives due to limited external funding opportunities.

In Bugesera, while there has been limited direct collaboration with Ireme Invest, the district has received significant support from JADF for flood management and soil conservation projects. A district official emphasized that JADF has been instrumental in connecting the district with external partners for disaster risk management and climate adaptation efforts. Karongi also benefited from external funding, particularly for disaster preparedness and flood management, thanks to its partnerships with JADF and Rwanda Green Fund. The funding has been essential in enhancing community resilience against flood risks associated with Lake Kivu. Finally, Gisagara has leveraged JADF support for soil conservation and climate-smart agriculture projects, though the district still faces challenges in securing additional funding to scale these efforts.

These findings highlight that external funding has become crucial for local authorities to effectively implement climate adaptation and sustainability projects. The collaboration with JADF, Rwanda Green Fund, and Ireme Invest has allowed districts to enhance their capacity to manage environmental risks such as flooding, soil erosion, and eco-tourism development. However, the dependency on external funding also underscores the challenges that some districts face in accessing consistent and sufficient financial support. For instance, while Gasabo and Karongi have seen significant support from these external sources, Musanze and Bugesera have encountered barriers to scaling their environmental projects, mainly due to limited funding opportunities for eco-tourism and biodiversity conservation initiatives.

The findings imply that future actions should focus on expanding access to external funding and fostering stronger partnerships between local governments and funding bodies. While Gasabo and Karongi serve as models for successful external collaboration, Musanze, Bugesera, and Gisagara must work to diversify their funding sources and strengthen their partnership networks. In particular, increasing access to funding for eco-tourism, biodiversity conservation, and climate adaptation is vital for these districts. Ensuring sustained funding for local environmental initiatives will enable these districts to address climate risks more effectively and build long-term resilience.

Conclusion

The availability of external funding is a key enabler of climate adaptation and environmental protection efforts across Rwanda's local governments. While Gasabo has demonstrated success in securing funds through JADF and other international donors, Musanze, Bugesera, Karongi, and Gisagara face challenges in accessing adequate external support to meet the growing demand for environmental projects. Moving forward, local governments should focus on strengthening their collaboration with external partners to ensure that financial resources are available for implementing climate adaptation strategies, disaster management plans, and sustainable development programs.

5. Number of Projects Developed and Financed for NDC Implementation

The implementation of Nationally Determined Contributions (NDCs) is central to achieving climate goals under the Paris Agreement. For local governments in Rwanda, the number of projects developed and financed for NDC implementation is an important indicator of their commitment to climate resilience and sustainable development. These projects typically focus on climate adaptation, disaster management, eco-tourism, biodiversity conservation, and sustainable agriculture.
The ability of local governments to develop and finance projects that align with the NDCs reflects their capacity to integrate climate goals into local development planning. This section explores the number and types of projects each district has developed in alignment with Rwanda's NDCs and how they are financed and implemented.

Gasabo has developed several projects that are in alignment with the NDCs, focusing on urban greening, flood management, and climate resilience. The DDEA shared, "We have implemented several projects such as tree planting along urban roads, stormwater management, and flood mitigation to align with the NDCs. These projects have been financed through the City's consolidated budget and external funding from international donors." Key projects include the reforestation of urban areas and the construction of green infrastructure to improve climate resilience in flood-prone areas.

In Musanze District, a number of eco-tourism and biodiversity conservation projects have been developed and are aligned with NDC goals. The Vice Mayor highlighted, "We have developed several projects, including the expansion of Volcanoes National Park, the Mukungwa Eco-Park, and bamboo planting along the Mukungwa River. These projects are

directly aligned with the NDCs on biodiversity and climate change mitigation. Funding for these projects has come from Rwanda Green Fund, JADF, and collaborations with international donors."

Bugesera has developed flood management and soil conservation projects as part of its NDC implementation efforts. A Bugesera district official shared, "We have developed and financed projects focused on flood risk management and soil conservation, which directly contribute to climate adaptation in our district. These projects have been funded by local budget allocations and partnerships with JADF and external donors."

In Karongi, flood prevention and disaster preparedness projects have been developed to align with the NDCs, especially in areas around Lake Kivu. A Karongi district official shared, "We have implemented several projects, including flood mitigation and disaster preparedness programs around Lake Kivu to align with NDC targets. These projects were financed with support from REMA and Rwanda Green Fund, in addition to local government resources."

Regarding Gisagara District, they have developed climate-smart agriculture and soil conservation projects in line with NDC goals. A Gisagara community member shared, "We have worked on several projects, including climate-smart farming and soil conservation, which are aligned with the NDCs. These initiatives are funded through local resources and JADF collaborations."

The findings show that local governments across the five districts have developed several projects aligned with Rwanda's Nationally Determined Contributions (NDCs), focusing on climate adaptation, disaster management, eco-tourism, biodiversity conservation, and sustainable agriculture. In Gasabo, projects such as urban greening, tree planting, stormwater management, and flood mitigation reflect a strong commitment to climate resilience and the NDCs. These projects were funded through both the City's consolidated budget and external sources. Similarly, Musanze has focused on eco-tourism and biodiversity conservation with projects such as the expansion of Volcanoes National Park and bamboo planting along the Mukungwa River. These initiatives were supported by the Rwanda Green Fund, JADF, and international donors, showing effective collaboration for climate change mitigation. Bugesera has prioritized flood management and soil conservation, with projects financed through local budget allocations and partnerships with JADF and external donors. Karongi has focused on flood prevention and disaster

preparedness in flood-prone areas around Lake Kivu, utilizing support from REMA and the Rwanda Green Fund. Finally, Gisagara has developed climate-smart agriculture and soil conservation projects, supported by local resources and collaborations with JADF.

While all districts are developing projects aligned with NDC goals, the key differences lie in the specific areas of focus and the scale of implementation. Musanze's focus on eco-tourism and biodiversity conservation is crucial for aligning with both climate goals and the district's local economic development, while Gasabo, benefiting from centralized resources, has greater financial flexibility for urban resilience projects. Bugesera and Gisagara face challenges in scaling up their climate adaptation projects due to resource limitations, especially in more rural areas. Overall, the number of NDC-related projects is an important indicator of local governments' efforts to integrate climate goals into development plans, but additional resources and technical capacity are needed to fully implement and expand these initiatives.

However, the assessment was not able to capture the total number of projects developed and financed for NDC implementation. Instead, the districts provided examples of key projects they have undertaken, which highlight the diverse approaches to meeting climate goals. The lack of comprehensive data on the total number of projects makes it difficult to quantify the full extent of NDC implementation at the local level. Despite this, the examples provided clearly illustrate the alignment of local projects with national climate goals. Each district is addressing climate change and environmental sustainability through a combination of local budget allocations and external funding, ensuring a multi-source approach to financing climate resilience projects.

The findings imply that while local governments have made progress in implementing NDC-aligned projects, there remains a need for better tracking and reporting of all projects undertaken at the local level to fully understand the scope of NDC implementation. Districts such as Gasabo and Musanze, which have successfully collaborated with external partners, should continue strengthening these relationships to expand the scale of their climate adaptation and sustainability initiatives. Meanwhile, Bugesera, Karongi, and Gisagara should explore further partnerships and funding mechanisms to scale up their projects and ensure that climate change and environmental sustainability remain central to local development agendas.

Conclusion

The assessment findings underscore that local governments in Rwanda are actively developing and implementing projects aligned with the Nationally Determined Contributions (NDCs). These projects span across various sectors, including climate adaptation, disaster management, eco-tourism, biodiversity conservation, and sustainable agriculture. Districts such as Gasabo and Musanze have made significant strides in collaborating with external partners, securing funding, and executing key projects such as urban greening and eco-tourism. However, while these efforts are commendable, challenges remain, particularly in Bugesera, Karongi, and Gisagara, where scaling up climate adaptation projects is hindered by limited resources. The findings suggest that there is a need for improved tracking and reporting of all projects developed under the NDCs. This would provide a clearer picture of the overall progress in climate resilience at the local level. To address existing challenges, districts should focus on strengthening collaborations with external funding bodies, as Gasabo and Musanze have done successfully, and expand resource mobilization to scale up projects in Bugesera, Karongi, and Gisagara. More importantly, local governments need technical support and capacity building to ensure that the projects they implement are sustainable and effectively contribute to climate adaptation and environmental sustainability.

6. Central Government Institutions Transferring Funds to Decentralized Entities for Environmental Protection (e.g., REMA, Rwanda Green Fund)

The transfer of funds from central government institutions, such as REMA (Rwanda Environment Management Authority) and Rwanda Green Fund (Rwanda Green Fund), to decentralized entities is a crucial mechanism for ensuring that local governments have the financial resources needed to address environmental challenges. These funds are intended to support climate adaptation, disaster management, sustainable land use, and natural resource conservation at the district and sector levels. The availability of these funds allows local governments to implement environmental policies, meet climate goals, and enhance community resilience.

In this section, we will explore how REMA, Rwanda Green Fund, and other central government institutions have transferred funds to decentralized entities and assess how these funds are being utilized for environmental protection initiatives. This will also highlight the challenges and successes that local governments have experienced in accessing and effectively utilizing these funds.

- Gasabo benefits from REMA and Rwanda Green Fund funding for urban greening and flood management programs. The DDEA shared, "We receive funding from Rwanda Green Fund for green infrastructure projects such as tree planting and urban greening. REMA has also supported us in implementing flood management strategies, particularly in high-risk areas." The collaboration with REMA and Rwanda Green Fund has allowed Gasabo to implement a variety of climate resilience and sustainable development initiatives.
- Musanze has received support from REMA for its eco-tourism and biodiversity conservation projects. The Vice Mayor shared, "We have worked with REMA to fund eco-tourism initiatives in Volcanoes National Park, as well as biodiversity protection efforts along the Mukungwa River. We have also received funding through Rwanda Green Fund for sustainable land management projects." These funds have been used to strengthen biodiversity and eco-tourism in the district, although Musanze still faces challenges in securing additional funds for scaling these projects.
- Bugesera has also collaborated with Rwanda Green Fund and REMA for flood management and soil conservation projects. A Bugesera district official stated, "We have worked closely with Rwanda Green Fund for funding flood management projects and soil conservation initiatives. REMA has also helped fund some of our environmental protection activities." However, Bugesera has faced challenges in accessing sufficient funding for large-scale climate adaptation projects.
- Karongi has received substantial support from REMA and Rwanda Green Fund for disaster preparedness and flood mitigation programs, particularly related to Lake Kivu. A Karongi district official shared, "We have received funding from REMA and Rwanda Green Fund to implement disaster preparedness programs and flood mitigation strategies, particularly around Lake Kivu. This funding has been crucial for enhancing community resilience."
- Gisagara has worked with JADF and Rwanda Green Fund on climate-smart agriculture and soil conservation projects. A Gisagara community member shared, "We have worked with JADF and Rwanda Green Fund to receive funding for climate-smart agriculture projects. These funds have helped us implement soil conservation techniques and water management strategies." However, Gisagara requires more support to scale these initiatives.

The role of central government institutions such as REMA and Rwanda Green Fund in transferring funds to decentralized entities is central to local governments' ability to address

environmental challenges. Gasabo has successfully accessed funds from Rwanda Green Fund and REMA for urban greening and flood management, which have contributed to climate resilience in urban areas. Similarly, Musanze has used REMA and Rwanda Green Fund funding for eco-tourism and biodiversity conservation, demonstrating the positive impact of central government support on sustainable tourism and conservation efforts. However, Bugesera and Gisagara face challenges in accessing sufficient funding from REMA and Rwanda Green Fund, particularly for large-scale climate adaptation projects.

Karongi stands out for its effective use of REMA and Rwanda Green Fund funds to manage disaster preparedness and flood risks around Lake Kivu, showcasing how central government support can enhance disaster risk management in vulnerable areas. While external funding is crucial for the success of environmental projects, some districts still face challenges related to fund access, resource allocation, and project scale-up.

Conclusion

The transfer of funds from central government institutions, such as REMA and Rwanda Green Fund, plays a crucial role in enabling local governments to address environmental protection challenges effectively. Gasabo, Musanze, Karongi, Bugesera, and Gisagara have all benefited from central funding, but the availability and effectiveness of these funds vary across districts. To improve climate resilience and disaster preparedness efforts, local governments should focus on strengthening collaboration with central institutions, ensuring equitable funding allocation, and addressing gaps in resource mobilization for large-scale projects.

7. Green Jobs Created through the Implementation of Green Projects

The creation of green jobs is a central pillar of sustainable development and climate resilience at the local level. Green jobs, which focus on activities that contribute to environmental sustainability such as eco-tourism, renewable energy, climate-smart agriculture, natural resource management, and disaster risk reduction, provide local communities with livelihoods while also addressing environmental challenges. These jobs help local economies grow in a sustainable manner, empowering communities to actively participate in climate change mitigation and adaptation efforts.
In Rwanda, the emphasis on green jobs has been integrated into district-level environmental projects, supported by both national initiatives and external funding. This section explores

how local governments in the five districts are generating green jobs through climate-related projects and environmental initiatives. Across the five districts, the assessment suggests the following:

- Gasabo has created green jobs primarily through urban greening and waste management projects. The DDEA shared, "Through urban greening and tree planting initiatives, we have created jobs in landscaping, tree nursery management, and waste management. These efforts provide local residents with employment opportunities, especially in areas such as tree planting and maintaining green spaces." These jobs have provided sustainable livelihoods for the local community, contributing to the district's environmental resilience.
- Musanze has created green jobs through its eco-tourism and biodiversity conservation projects. The Vice Mayor shared, "We've created green jobs for local youth and women in eco-tourism, tour guiding, and hospitality services. Biodiversity conservation projects also provide jobs in areas such as tree planting and wildlife protection. The collaboration with local communities has helped strengthen their role in managing eco-tourism and natural resources." These green jobs are pivotal to supporting sustainable tourism in the district, particularly in Volcanoes National Park.
- Bugesera has created green jobs through climate-smart agriculture and soil conservation programs. A Bugesera district official explained, "Through climate-smart agriculture programs, we've created jobs in sustainable farming, land management, and soil conservation. These efforts are helping our farmers improve yields while reducing the impact of climate change on agricultural production." Additionally, the district has implemented community-based projects focused on flood prevention and soil erosion control, which have also provided employment opportunities in construction, tree planting, and community mobilization.
- Karongi has created green jobs through disaster preparedness programs and flood mitigation projects. A Karongi district official shared, "We've created jobs for local residents through disaster preparedness and flood management projects, particularly around Lake Kivu. Jobs include water level monitoring, land use planning, and community outreach. These jobs have helped enhance community resilience to flood risks."
- Gisagara has focused on soil conservation and climate-smart agriculture to create green jobs. A Gisagara community member shared, "The projects we've been involved in, such as terracing, tree planting, and water management, have provided jobs for

local youth and women. We've also received training on climate-smart farming, which has helped us improve our agricultural productivity."

The creation of green jobs across all five districts demonstrates how environmental projects can provide livelihood opportunities while simultaneously addressing climate resilience and sustainable development. Gasabo has effectively created green jobs in urban greening and waste management, improving urban resilience while creating employment for local residents. Musanze's focus on eco-tourism and biodiversity conservation has provided substantial employment opportunities in tourism-related sectors, aligning with its focus on eco-tourism as a driver of sustainable economic development.

In Bugesera, climate-smart agriculture and soil conservation projects have created green jobs that contribute to food security and sustainable land management. Karongi's disaster preparedness and flood mitigation projects have created employment in community-based resilience building efforts, particularly in flood-prone areas around Lake Kivu. Gisagara has also created green jobs through soil conservation and climate-smart agriculture, improving the livelihoods of farmers while enhancing climate adaptation.

Despite the successes in job creation, challenges remain, particularly in terms of scaling up green job initiatives in rural areas such as Gisagara and Bugesera. More resources are needed to expand the reach of these projects and ensure that green jobs are sustainable in the long term.

Conclusion

The creation of green jobs is a key component of Rwanda's environmental and climate resilience efforts. Gasabo, Musanze, Karongi, Gisagara, and Bugesera have made significant strides in creating green jobs in sectors such as eco-tourism, sustainable agriculture, soil conservation, and disaster preparedness. These initiatives have provided sustainable livelihoods for local communities while addressing climate challenges. However, to maximize the impact of green job creation, there is a need for additional investments in skills training, capacity building, and financial resources to ensure that these jobs remain sustainable and contribute to long-term environmental goals.

3.5. Local Economic and Sustainable Development in the Environment

The core focus of local economic and sustainable development in the environmental sector is to integrate environmental protection and economic growth through sustainable practices that support both local livelihoods and climate resilience. Sustainable development in this context refers to ensuring that economic activities contribute positively to environmental sustainability and that environmental concerns are central to economic planning. This dimension aims to empower local communities to achieve sustainable development through green jobs, eco-tourism, renewable energy, climate-smart agriculture, and natural resource management, all of which contribute to climate resilience.

In the context of decentralization, local governments are key players in shaping sustainable economic models that not only provide livelihood opportunities but also ensure the long-term sustainability of natural resources. Decentralizing economic development and environmental management ensures that local communities are directly involved in the decision-making process, which strengthens ownership and accountability for environmental outcomes.

This section explores the integration of economic development and environmental sustainability in local governments' strategies, focusing on the local economic impact of environmental projects, the role of green technologies, and the development of sustainable livelihoods in the five districts. It also highlights the importance of these elements in fostering climate resilience and ensuring environmentally sound economic growth at the local level.

3.5.1. Level of Local Capacity for Climate Financing and Partnership Development, especially to Attract Foreign Direct Investment (FDIs) and the Private Sector

The ability of local governments to mobilize climate financing and form strategic partnerships with external donors, private sector actors, and Foreign Direct Investment (FDI) is a key determinant of their capacity to implement climate resilience projects and environmental protection strategies. Partnerships with the private sector and international organizations can provide crucial resources for green technologies and sustainable development initiatives. This includes financing for projects that focus on renewable energy, energy efficiency, green infrastructure, climate-smart agriculture, and eco-tourism.

The adoption of green technologies at the local level is essential for reducing greenhouse gas emissions (GHGEs), supporting climate adaptation, and promoting sustainable

development. This section examines how local governments across the five districts have built their capacity for attracting climate finance, formed partnerships, and implemented green technologies to reduce GHGEs and drive sustainable development.

Overall, the assessment shows that local government in Rwanda are successfully building their capacity to attract climate finance and form strategic partnerships with the private sector, international donors, and FDIs. These partnerships have enabled them to implement green technologies and climate resilience projects across various sectors, such as eco-tourism, agriculture, disaster management, and infrastructure. This capacity-building is essential for reducing greenhouse gas emissions and promoting sustainable development at the local level.

- Gasabo has developed strong partnerships with both local and international organizations to mobilize climate finance for green technologies. The DDEA shared, "We have focused on integrating green technologies into urban planning, such as solar street lighting, rainwater harvesting systems, and green infrastructure. We also collaborate with private sector actors and FDIs to implement climate-resilient infrastructure projects, which have helped us reduce GHG emissions in the urban sector." Gasabo has leveraged these partnerships to implement solar energy projects, such as solar-powered streetlights, and green infrastructure in urban areas.
- Musanze has worked to attract FDIs for its eco-tourism and biodiversity conservation projects. The Vice Mayor emphasized, "We have partnered with international donors and private companies to fund eco-tourism projects and biodiversity protection programs, such as sustainable forestry and renewable energy projects for local communities. These efforts are aimed at reducing GHG emissions from deforestation and promoting eco-friendly tourism." The district has successfully integrated solar energy solutions for community-based eco-tourism initiatives, showcasing the potential of green technologies to foster both economic growth and environmental protection.
- Bugesera has made efforts to attract external investments for climate-smart agriculture and soil conservation projects, with some support from JADF. A Bugesera district official shared, "We are working to develop green technologies for climate-smart farming, such as drip irrigation systems and rainwater harvesting. These technologies help us reduce GHG emissions from traditional farming methods while improving the efficiency of water use and boosting crop yields." Bugesera has also

collaborated with local organizations to introduce clean cooking stoves in rural areas, reducing carbon emissions from wood-burning stoves.

- Karongi has focused on green technologies in disaster management and flood mitigation. A Karongi district official shared, "We are implementing green technologies in flood prevention, such as the construction of eco-friendly water channels and the planting of vegetation along rivers to reduce soil erosion. We have also integrated sustainable building materials in resilience projects, contributing to reduced GHG emissions in flood-prone areas." Karongi has partnered with international organizations to implement these green technologies, particularly in sustainable water management systems and flood mitigation measures.
- Gisagara has implemented green technologies in soil conservation and climate-smart agriculture. A Gisagara community member explained, "We are implementing rainwater harvesting systems, drip irrigation, and solar-powered pumps for irrigation. These green technologies reduce GHG emissions from traditional farming while improving water management and productivity." Gisagara has also partnered with international donors and local organizations to finance these projects, which have helped farmers, adapt to climate change and improve agricultural resilience.

The level of local capacity for attracting climate finance and private sector investments varies across the districts. Gasabo stands out for its robust partnerships with both the private sector and international donors, which have enabled the implementation of green technologies in urban planning and climate resilience projects. The integration of solar-powered infrastructure and green technologies has helped Gasabo reduce GHG emissions in urban areas.

Musanze has also made strides in integrating eco-tourism and biodiversity conservation into its economic strategy, leveraging private sector investments for sustainable tourism and renewable energy projects. However, more focus on scaling these efforts through additional FDIs and private sector investments is necessary to expand the impact of these green technologies.

In Bugesera, the emphasis on climate-smart agriculture and soil conservation demonstrates the district's efforts to adopt green technologies that reduce GHG emissions and promote sustainable farming practices. The district faces challenges in securing additional external investments to expand these initiatives. Similarly, Karongi has successfully integrated green technologies for disaster management and flood mitigation, but further investments in

sustainable building materials and water management systems are necessary to improve climate resilience.

Gisagara has successfully integrated green technologies in climate-smart agriculture and soil conservation projects. However, the district requires more support in securing external funding and private sector partnerships to expand its green technology initiatives and achieve greater climate adaptation and environmental sustainability.

The assessment reveals significant progress in local economic and sustainable development within the context of environmental decentralization, particularly in the realm of climate financing and partnerships. Local governments in Rwanda are increasingly building their capacity to attract climate finance and develop strategic partnerships with international donors, the private sector, and Foreign Direct Investment (FDI). These partnerships are crucial for mobilizing the resources needed to implement green technologies and sustainable development initiatives, such as renewable energy, green infrastructure, eco-tourism, and climate-smart agriculture. By fostering such collaborations, local governments are not only reducing greenhouse gas emissions (GHGEs) but also enhancing local economic growth through the promotion of environmentally sustainable projects. This is evident in the diverse range of initiatives across the districts, including Gasabo's solar-powered streetlights and urban green infrastructure, Musanze's eco-tourism and renewable energy solutions, and Bugesera's climate-smart agricultural practices.

Moreover, the integration of green technologies at the local level is a vital component of Rwanda's environmental decentralization strategy, aligning local development with national and global climate goals. The efforts in Karongi, which focus on sustainable water management and flood mitigation, and Gisagara's adoption of rainwater harvesting and solar-powered irrigation systems, are prime examples of how local governments are leveraging green technologies to support climate adaptation and environmental protection. These initiatives not only contribute to the reduction of GHG emissions but also enhance the resilience of local communities to climate impacts. The ability of local governments to form and maintain partnerships with private and international actors further accelerates the implementation of these projects, demonstrating how decentralized environmental governance can drive sustainable economic development and contribute to broader national climate objectives.

Conclusion

The local capacity for climate financing and the adoption of green technologies in the five districts shows significant progress in integrating sustainable development goals and climate

action into local government operations. While Gasabo and Musanze have been successful in attracting private sector investments and FDIs, other districts such as Bugesera, Karongi, and Gisagara still face challenges in scaling their green technologies due to limited resources and financial constraints. Moving forward, local governments need to continue strengthening their partnerships with external donors, private sector partners, and international institutions to mobilize more resources and effectively implement green technologies that contribute to climate resilience and sustainable development.

3.5.2. Climate Resilience and Adaptation

The Local Government's Planning and Preparedness for Floods, Droughts, and Environmental Degradation

The local government's ability to plan and prepare for floods, droughts, and environmental degradation is central to climate resilience. Effective planning includes assessing local climate risks, implementing adaptation strategies, and ensuring the community's capacity to respond to climate hazards. Preparation involves developing disaster management plans, enhancing infrastructure, and creating community-based preparedness programs to mitigate the impacts of floods, droughts, and environmental degradation.

In Rwanda, local governments must also address flooding caused by heavy rainfall and soil erosion exacerbated by deforestation and climate change. This section explores how local governments are planning and preparing for these environmental risks, with an emphasis on the integration of climate resilience into local governance frameworks.

Overall, the findings reveal that local governments in Rwanda are actively planning and preparing for climate-related risks, such as floods, droughts, and environmental degradation, within the context of environmental decentralization. Effective climate resilience strategies are being integrated into local governance frameworks, with a focus on disaster management and adaptation measures tailored to specific district needs.

Gasabo has developed stormwater management systems to address urban flooding, especially in high-risk zones. The DDEA shared, "We are continuously improving our stormwater systems and urban drainage channels to prevent flooding. Our efforts also include green infrastructure, such as tree planting and green spaces, to absorb excess water and reduce urban heat islands." Gasabo's climate resilience strategy also integrates flood risk management into urban planning, ensuring that new developments are climate-resilient.

In Musanze, the district focuses on landslides, particularly in hilly areas near Volcanoes National Park. The Vice Mayor noted, "We have integrated landslide risk management into our district plans, using vulnerability assessments to identify high-risk areas. We also focus on soil conservation, reforestation, and drainage improvements to reduce the impact of heavy rainfall." Musanze's preparation for landslides includes community-based early warning systems and disaster risk reduction programs, ensuring that residents are prepared for seasonal climate hazards.

Concerning Bugesera, the district has a significant focus on flood management due to its proximity to Lake Rweru. A Bugesera district official shared, "We have developed flood management strategies that include early warning systems and disaster response plans. These plans are informed by vulnerability assessments to understand flood risks and prepare communities accordingly." Bugesera is also working on soil erosion control to prevent the degradation of agricultural land.

Karongi District, located near Lake Kivu, has developed comprehensive flood risk management strategies. A Karongi district official explained, "We rely on early warning systems to predict floods and implement evacuation plans. These systems have been particularly important around Lake Kivu, where water level fluctuations are common." Karongi has also focused on community-based flood mitigation, such as water diversion channels and land use planning.

- Gisagara: In Gisagara, droughts and soil erosion are key concerns. A Gisagara community member stated, "We are focusing on climate-smart agriculture and soil conservation to improve water retention and prevent soil erosion. These efforts are part of our community preparedness to deal with climate change impacts, especially during the dry season."

The local government's planning and preparedness for floods, droughts, and environmental degradation vary significantly across districts. Gasabo is focusing on urban flooding with comprehensive stormwater systems and green infrastructure, while Musanze has prioritized landslide risk management, particularly through soil conservation and community-based early warning systems. Bugesera is focused on flood risk management, integrating soil erosion control and disaster preparedness in its planning.

Karongi's focus on Lake Kivu makes flood mitigation and disaster preparedness particularly important. Gisagara has focused on climate-smart agriculture and soil conservation, addressing droughts and soil erosion. The common thread across all districts is the need for

community engagement in disaster preparedness, early warning systems, and climate resilience efforts.

Despite some successes, all districts face challenges in scaling up and sustaining these climate resilience initiatives. Local governments must continue to integrate climate risk management into their development plans, ensuring that community engagement and technical capacity are strengthened.

Integration of Nature-Based Solutions such as Eco Disaster Risk Reduction to Manage Risks in Urban and Rural Areas

Nature-based solutions (NbS) offer sustainable ways to manage climate risks and environmental degradation by harnessing the power of natural ecosystems to protect communities and ecosystems. These solutions include reforestation, wetland restoration, coastal protection, soil conservation, and green infrastructure, which help mitigate the impacts of climate change by using nature's capacity to absorb carbon emissions, reduce flood risks, and stabilize ecosystems.

Integrating nature-based solutions into local governance can significantly enhance climate resilience while providing economic benefits through the creation of green jobs and the protection of natural resources. This section explores how local governments have integrated nature-based solutions into their climate adaptation strategies.

The assessment findings suggest that local governments in Rwanda are increasingly integrating nature-based solutions (NbS) into their climate adaptation strategies to manage risks in both urban and rural areas. These solutions leverage natural ecosystems to mitigate the impacts of climate change, reduce environmental degradation, and enhance climate resilience.

Gasabo has implemented several nature-based solutions, such as urban greening, tree planting, and green infrastructure to manage flood risks. The DDEA explained, "We have integrated nature-based solutions such as tree planting and green spaces to manage stormwater and reduce urban heat islands. These initiatives have been instrumental in improving the urban environment and reducing the impacts of flooding."

Musanze has focused on reforestation and biodiversity conservation as nature-based solutions for climate adaptation. The Vice Mayor shared, "We have focused on reforestation and the restoration of degraded lands, which provides soil stabilization, reduces erosion, and increases water retention in the soil. This is a crucial element of our climate adaptation strategy."

Bugesera has used terracing and vegetative cover as nature-based solutions to combat soil erosion and flooding. A Bugesera district official explained, "We are working with communities to build terraces and use vegetative cover to reduce soil erosion and enhance water retention. These efforts have improved agricultural productivity and reduced the impact of floods."

Karongi has focused on wetland restoration and lake ecosystem management as nature-based solutions for disaster risk reduction. In the words of a Karongi district official, "We have restored wetlands around Lake Kivu to reduce flooding and soil erosion, while also improving water quality. These efforts have been essential for climate resilience in flood-prone areas."

Gisagara has used agroforestry and terracing as nature-based solutions to manage soil erosion and improve water management. According to a community member in the district, "Through agroforestry and terracing, we have been able to reduce soil erosion and improve agricultural productivity. These solutions help us adapt to the changing climate and mitigate the effects of droughts."

Overall, the assessment reveals that across all five districts, nature-based solutions are being used to enhance climate resilience and adaptation to climate risks. Gasabo focuses on urban greening and tree planting to address flooding, while Musanze uses reforestation and land restoration to mitigate soil erosion and land degradation. Bugesera integrates terracing and vegetative cover to prevent soil erosion and enhance water retention, while Karongi restores wetlands to manage flooding and protect Lake Kivu's ecosystem. Gisagara implements agroforestry and terracing to improve soil conservation and water management.

These efforts demonstrate the effectiveness of nature-based solutions in climate adaptation and disaster risk reduction.

However, the scaling up of these solutions requires additional financial resources, technical capacity, and community engagement to ensure long-term sustainability. Furthermore, integrating nature-based solutions into local governance frameworks should be supported by data-driven decision-making and long-term planning to maximize their impact on climate resilience.

Conclusion

The integration of nature-based solutions into local climate resilience strategies is critical for managing the effects of climate change and environmental degradation. While districts such as Gasabo, Musanze, Bugesera, Karongi, and Gisagara have made significant progress in

adopting these solutions, more financial resources and technical support are needed to expand these efforts and address climate risks effectively. By scaling up these nature-based solutions and integrating them into long-term development plans, local governments can enhance their climate resilience and contribute to sustainable development in Rwanda.

3.5.3. Number of Local Initiatives to Raise Awareness and Empower Marginalized Communities through Climate Adaptation/Green Investment Strategies

- Support the development of local profiles and addressing how adaptations can be incorporated into LG systems, ensuring their institutionalisation

Integration of Local Profiles and Adaptations into LG Systems

The integration of local profiles and climate adaptation strategies into local government systems is crucial for ensuring that climate action is context-specific and tailored to the unique challenges faced by each community. Local profiles refer to understanding the specific climate risks, vulnerabilities, and adaptive capacities of communities, while climate adaptation plans ensure that the local government has strategies in place to manage these risks.

Overall, the assessment reveals that local governments in Rwanda are making significant progress in integrating local profiles and climate adaptation strategies into their planning systems, which is critical for enhancing long-term climate resilience. By conducting vulnerability assessments and creating local profiles, these governments are tailoring climate adaptation strategies to the specific needs of each district, ensuring that the most vulnerable populations are prioritized. This localized approach to climate action enables more effective decision-making and empowers communities to actively participate in climate resilience efforts. However, challenges remain in terms of resource allocation, technical capacity, and scaling up these efforts across all districts, highlighting the need for additional capacity building, funding, and collaboration with external stakeholders to strengthen and expand these efforts.

- Gasabo has integrated local profiles into its urban planning and climate resilience strategies. The DDEA shared, "We use vulnerability assessments to identify climate risks and create local profiles for our communities. This helps us tailor our climate

adaptation plans to the specific needs of each sector, ensuring that the most vulnerable populations are prioritized."

- Musanze integrates local profiles into its eco-tourism and biodiversity conservation strategies. The Vice Mayor explained, "We have integrated eco-tourism strategies into our district planning, using local profiles to identify key areas of biodiversity and vulnerability. This helps us target climate adaptation efforts where they are most needed, such as soil conservation and land restoration in vulnerable areas."
- Bugesera uses local profiles to address flooding and soil erosion in its climate adaptation strategies. A Bugesera district official mentioned, "By conducting vulnerability assessments, we can integrate local profiles into our flood management and soil conservation programs. This helps us tailor our solutions to the unique challenges in our communities."
- Karongi has developed climate adaptation plans using local profiles to manage flood risks and disaster preparedness around Lake Kivu. A Karongi district official shared, "We have developed disaster preparedness plans by creating local profiles of flood-prone areas around Lake Kivu. These profiles help us plan early warning systems and evacuation routes for communities at risk."
- Gisagara integrates local profiles into its climate-smart agriculture and soil conservation programs. A Gisagara community member shared, "We have worked with the district to create local profiles of our agricultural areas, which help us implement soil conservation techniques and manage water resources more effectively."

The integration of local profiles into local government systems is critical for tailoring climate adaptation strategies to the specific needs of each district. Gasabo, Musanze, Bugesera, Karongi, and Gisagara have made strides in using vulnerability assessments and local profiles to inform climate resilience and adaptation plans. This localization of climate action ensures that communities are not only involved but also empowered to make decisions about how they can adapt to climate risks. The successful integration of local profiles into planning systems enhances climate resilience by ensuring that climate actions are designed with a deep understanding of local realities.

However, there remain challenges related to resource allocation, technical capacity, and scaling up these efforts across all districts. Strengthening the integration of local profiles into

planning systems will require additional capacity building, funding, and collaboration with external stakeholders.

Conclusion

The integration of local profiles into climate adaptation planning is crucial for ensuring that local governments can effectively address the specific climate risks faced by their communities. Gasabo, Musanze, Bugesera, Karongi, and Gisagara have made significant progress in integrating local profiles into their climate strategies, ensuring that vulnerable populations are prioritized and tailored adaptation solutions are implemented. Moving forward, local governments must continue to build their technical capacity, improve data collection, and strengthen community engagement to ensure the institutionalization of climate adaptation plans at the local level.

Incorporation of NDCs in District Action Plan

Incorporating NDCs into local government action plans involves aligning climate adaptation and mitigation strategies with the national climate goals as outlined in Rwanda's Nationally Determined Contributions (NDCs). This process ensures that local governments are actively contributing to the national climate agenda, focusing on reducing emissions, building resilience to climate impacts, and promoting sustainable developmentThis section explores how local governments in the five districts have successfully incorporated NDCs into their action plans, and the mechanisms they use to ensure that climate actions are effective and measurable.

The general finding highlights that local governments in the five districts are effectively incorporating the country's Nationally Determined Contributions (NDCs) into their district action plans, aligning local climate adaptation and mitigation strategies with national climate goals. This process ensures that local governments contribute actively to the national climate agenda, focusing on reducing emissions, building resilience to climate impacts, and promoting sustainable development.

- Gasabo has embedded NDC commitments in urban planning and green infrastructure projects, ensuring that green spaces and sustainable urban planning are part of their climate action. The DDEA stated, "We have integrated NDCs into our urban development strategy. This includes tree planting, flood management, and green infrastructure that align with national climate goals."

- Musanze incorporates eco-tourism and biodiversity conservation into its NDC implementation efforts. The Vice Mayor shared, "We work closely with REMA to align our eco-tourism and biodiversity efforts with national climate commitments. Our forest restoration projects directly contribute to carbon sequestration and sustainable land management."
- Bugesera integrates climate-smart agriculture into its NDC implementation. A Bugesera district official explained, "We have made climate-smart agriculture a central part of our NDC strategy, focusing on soil conservation and sustainable farming practices that contribute to climate adaptation."
- Karongi has incorporated disaster risk management and flood mitigation into its NDC-related activities. A Karongi district official shared, "Our flood risk management strategy, which includes wetland restoration and early warning systems, is fully aligned with NDC goals for climate adaptation and disaster risk reduction."
- Gisagara integrates soil conservation and climate-smart farming into its NDC framework, with a strong focus on local agricultural resilience. A Gisagara community member commented, "Our soil conservation techniques and climate-smart agriculture are directly linked to NDC targets, which focus on increasing food security and climate resilience in rural areas."

The integration of NDCs into local government action plans is an important step in aligning local actions with national climate commitments. Gasabo, Musanze, Bugesera, Karongi, and Gisagara have demonstrated success in embedding climate goals into their planning frameworks. Gasabo and Musanze are particularly advanced in eco-tourism and biodiversity conservation, while Bugesera, Karongi, and Gisagara focus on agriculture, disaster preparedness, and soil conservation to ensure climate resilience.

Despite these positive steps, there are challenges in fully integrating NDCs into all aspects of local governance, particularly in resource-constrained districts. Ensuring that NDCs are fully implemented at the local level requires more investment in technical capacity, financial resources, and data-driven decision-making.

Conclusion

The successful integration of NDC-related commitments into local governance frameworks is crucial for achieving Rwanda’s climate goals. Gasabo, Musanze, Bugesera, Karongi, and

Gisagara have made significant progress in incorporating climate action into their Imihigo action plans, but further efforts are needed to scale up these initiatives. Capacity building, financial resources, and collaboration with external partners will be essential to accelerate progress and ensure that local governments fully contribute to national climate commitments.

Ensuring the Population Is Involved in Planning of Projects Submitted to Rwanda Green Fund

Ensuring that local communities are actively engaged in the planning and formulation of environmental projects funded by Rwanda Green Fund is crucial for fostering ownership and ensuring that these projects meet community needs. While local governments in Rwanda have made strides in engaging communities in climate resilience and sustainable development projects, many communities remain unaware of Rwanda Green Fund 's role in funding these initiatives. The involvement of marginalized groups in climate adaptation projects is essential for achieving inclusive and effective climate action.

This section will highlight the community participation in the planning of Rwanda Green Fund -funded projects across the five districts, including community awareness and the degree of involvement of local populations.

The general finding reveals that while local governments in Rwanda have made significant strides in involving communities in the planning and implementation of environmental projects, there is a notable gap in awareness regarding Rwanda Green Fund 's role in funding these initiatives. Communities are actively engaged in climate resilience and disaster risk reduction projects, but most members remain unaware that Rwanda Green Fund is a key funding source. Instead, local authorities and JADF are seen as the primary partners and funders. This communication gap poses a challenge to ensuring that communities fully understand the role of external funding in supporting climate adaptation efforts. Increased awareness and transparency about Rwanda Green Fund 's involvement are essential for empowering communities, fostering project ownership, and ensuring the sustainability of climate-related initiatives at the local level.

- Gasabo has engaged the community in green infrastructure projects, but many community members are unaware of Rwanda Green Fund's role in funding these projects. The DDEA shared, "We consult with the community during tree planting and green spaces projects, but many are not fully aware that Rwanda Green Fund provides funding. The community is more familiar with local authorities and JADF as

the main funders." A community member from Gasabo explained, "I know that we are planting trees and working on green spaces, but I had no idea that Rwanda Green Fund was involved in funding it. We often see JADF working with us directly, so we associate the funding with them." This suggests that while community involvement is high, Rwanda Green Fund 's role in funding is not clearly communicated.

- Musanze also faces a similar situation, where community members have limited knowledge about Rwanda Green Fund 's funding. The Vice Mayor shared, "Our eco-tourism and biodiversity conservation projects are heavily community-driven, but Rwanda Green Fund ’s involvement is not widely known in the communities. We need to work on educating the population about the role of Rwanda Green Fund in supporting these projects." A community member from Musanze stated, "We help with planting trees and protecting our forests, but I didn’t know Rwanda Green Fund was behind some of the funding. I thought it was all coming from local authorities and JADF." This illustrates a need for greater awareness and communication regarding Rwanda Green Fund 's contribution to local climate adaptation projects.
- Bugesera faces a similar challenge in engaging communities in Rwanda Green Fund -funded projects. A Bugesera district official stated, "We work with the local communities on soil conservation and flood management, but the role of Rwanda Green Fund is not clear to most people. The community is more familiar with JADF and local government as funders of these initiatives." A Bugesera community member expressed, "We have worked on projects to prevent soil erosion and manage floods, but we were never told about Rwanda Green Fund supporting these activities. We thought it was all funded by JADF." This demonstrates that Rwanda Green Fund 's role is not visible to the community, despite being involved in funding critical environmental projects.
- Karongi’s community is similarly unaware of Rwanda Green Fund ’s role in disaster preparedness and flood mitigation. A Karongi district official stated, "We have involved communities in disaster risk reduction and flood mitigation programs, but Rwanda Green Fund ’s involvement is not widely understood. The communities see local authorities and JADF as the main partners." A Karongi community member shared, "We work on flood prevention projects and early warning systems, but we didn’t know Rwanda Green Fund was involved in providing support. It was mostly through local authorities and JADF." This reflects a disconnect between community participation and external funding sources.

- Gisagara similarly faces a lack of awareness about Rwanda Green Fund's contribution to soil conservation and climate-smart agriculture projects. A Gisagara community member said, "We have been involved in soil conservation and agriculture projects, but we didn't know Rwanda Green Fund was involved. We have always worked with local authorities and JADF." This indicates a gap in communication regarding the funding sources for climate resilience projects.

The lack of awareness about Rwanda Green Fund 's role in funding environmental projects is a key issue across the five districts. While local governments have been successful in engaging communities in climate adaptation and disaster risk reduction projects, most community members do not recognize Rwanda Green Fund as a funding source. Instead, they are more familiar with local authorities and JADF as the primary partners and funders of climate-related projects.

This points to a significant communication gap that needs to be addressed. Community awareness about Rwanda Green Fund's funding mechanisms is crucial for increasing transparency, empowering communities, and ensuring that local populations understand the importance of external funding in supporting climate adaptation efforts. Furthermore, better communication about the role of Rwanda Green Fund will help foster greater ownership of climate projects by ensuring that communities understand how they contribute to national climate goals.

Conclusion

Community involvement in the planning and formulation of Rwanda Green Fund - funded projects is critical for ensuring the sustainability and effectiveness of climate adaptation and disaster risk reduction initiatives. Gasabo, Musanze, Bugesera, Karongi, and Gisagara have successfully engaged communities in climate resilience projects, but the lack of awareness about Rwanda Green Fund 's role in funding these initiatives highlight the need for better communication.

Local governments should prioritize educating communities about Rwanda Green Fund's contribution to climate adaptation projects to increase transparency, improve community ownership, and ensure long-term project sustainability. Through increased community engagement, Rwanda Green Fund can become a more recognized partner in climate action at the local level, enabling local populations to fully participate in Rwanda's climate resilience efforts.

3.6. Discussion of the findings

This section presents a detailed discussion of the study's key findings on environmental decentralization in Rwanda, drawing comparisons with existing national and international literature, and highlighting the study's fourfold contribution to empirical knowledge, theoretical advancement, practical policy-making, and methodological innovation.

- **Key findings**

The findings of this study underscore the significant strides that local governments in Rwanda have made in decentralizing environmental responsibilities, but also highlight several areas that require improvement. First, the capacity development of decentralized entities has been successful in some districts, particularly Gasabo, where urban planning and climate resilience projects are well-coordinated. However, several districts still face challenges due to the lack of dedicated environmental officers at the sector level, which hinders their ability to effectively manage eco-tourism, biodiversity conservation, and climate adaptation strategies. Sectoral decentralization has also shown progress, particularly in disaster preparedness and flood management in Karongi, but gaps remain in the capacity of sector officers to deliver essential services effectively in other districts. Fiscal and financial decentralization has allowed districts to mobilize funds for environmental projects, but resource constraints continue to limit the scale and impact of many initiatives, especially in rural areas. Lastly, local economic and sustainable development efforts have been integrated with environmental goals, but the scaling of climate-smart agriculture and eco-tourism remains a challenge due to inadequate funding and technical expertise.

This study identifies several key findings regarding environmental decentralization in Rwanda:

1. Capacity development: Districts such as Gasabo have effectively integrated environmental officers, enabling robust climate resilience initiatives. However, other districts face challenges due to insufficient environmental staffing at the sector level.
2. Sectoral decentralization: While some districts have improved service delivery in areas such as flood management, others struggle with the capacity of sector officers to manage essential services effectively.
3. Fiscal and financial decentralization: Financial decentralization has allowed districts to mobilize funds for environmental projects. However, resource constraints continue to limit the scale and impact of many initiatives, especially in rural areas.

4. Local economic and sustainable development: Initiatives such as climate-smart agriculture and eco-tourism have contributed to both environmental resilience and local economic growth. However, scaling up these efforts requires more targeted support and investment.

- **Comparison with other studies**

The findings of this study align with existing literature on decentralization in the environmental sector. For instance, the findings from our assessment of environmental decentralization in Rwanda resonate with and complement several insights drawn from international and national studies. Firstly, our study aligns with Nsabimana's thesis (Nsabimana, 2016), which underscores the compounded challenges faced by local environmental management due to weak institutional capacity, insufficient decentralization of mandates, and limited community participation. Our assessment echoed these constraints, especially in rural districts where local authorities lacked technical skills, financial resources, and logistical support to implement environmental policies effectively. Both our findings and Nsabimana's study highlighted the importance of inter-organizational collaboration, better community involvement, and practical knowledge for successful policy implementation.

Secondly, international empirical studies - such as those by Ghazala Aziz and Hussam Bakoben (2024) on environmental decentralization and green growth in China - reveal that decentralization can both empower local responses and exacerbate disparities if local capacity is weak or policy coherence is lacking. These findings mirror our own observations: districts that had dedicated staff, mobility (e.g., motorcycles), and coordination with environmental projects demonstrated stronger environmental monitoring and enforcement. Conversely, sectors without such support faced implementation gaps and unregulated exploitation of resources.

Thirdly, our assessment complements Garcia-Valiñas' water policy research in Spain, (Garcia & Maria, 2005) which concluded that decentralization is efficient only when externalities are internalized and inter-jurisdictional spillovers are managed. In Rwanda, however, we found that cross-sectoral and inter-district environmental challenges (e.g., watershed management, deforestation, mining) are often under-coordinated. Without central government oversight and incentives, local plans rarely integrate broader ecological concerns. Therefore, our findings reinforce the argument that decentralization must be coupled with central support, cross-boundary planning, and performance-based accountability to achieve sustainable environmental governance.

Moreover, our assessment findings corroborate Stefania Lovo's research on environmental decentralization in India, particularly regarding the uneven capacity of subnational entities to enforce environmental policies (Lovo, 2018). In Rwanda, similar dynamics were observed: some districts had access to trained environmental officers, sector-level coordination mechanisms, and support from development partners, while others lacked basic infrastructure and technical tools such as climate vulnerability maps or updated disaster risk atlases. Lovo's analysis revealed that disparities in enforcement and institutional quality across Indian states influenced the spatial distribution and compliance behavior of polluting firms. such as wise, in Rwanda, communities and district officials reported that limited enforcement at sector level encouraged illegal practices such as unauthorized mining and tree cutting, undermining broader environmental objectives. These insights emphasize the need for harmonized decentralization strategies that consider not only legal delegation but also differentiated implementation capacities across local governments.

Additionally, the findings of Cai and Guo (2023) in the Chinese context - where they found a U-shaped relationship between environmental decentralization and pollution - offer a valuable lens through which to interpret the Rwandan experience. In our study, we found that moderate levels of decentralization enabled districts to mobilize local actors, plan activities aligned with national strategies, and adopt community-driven nature-based solutions. However, where decentralization was excessive or poorly supported, environmental governance suffered due to a lack of expertise, coordination, and oversight. This affirms the importance of a balanced decentralization model that grants local governments the flexibility to respond to specific ecological conditions while maintaining a coherent national regulatory and accountability framework. In sum, our findings suggest that Rwanda's decentralization of environmental functions holds great potential but must be supported by strategic investments in local capacity, intergovernmental coordination, and inclusive participation - principles also underscored in both global and comparative academic literature.

However, this study extends existing findings by providing district-specific insights into the successes and challenges of environmental decentralization in Rwanda. It emphasizes that while some districts have made significant progress in mobilizing resources, others continue to face significant capacity and resource gaps. This study also contrasts with other studies that argue for more centralized management in environmental governance, showing that decentralization can be effective when adequately supported by local capacity-building and intergovernmental coordination.

- **Fourfold contribution of the study findings**

This study makes a fourfold contribution to the field of decentralized environmental governance in Rwanda by addressing empirical gaps, advancing theoretical understanding, informing practical reforms in post-conflict settings, and demonstrating the methodological utility of the Decentralization Assessment Framework (DAF).

Emprically, this assessment offers a timely and context-specific empirical contribution by filling a critical knowledge gap on how environmental decentralization is functioning at the district level in post-genocide Rwanda. While much of the existing literature has focused on fiscal or administrative aspects of decentralization in health and education, little attention has been given to decentralized environmental governance - particularly in how it intersects with climate resilience, institutional coordination, and citizen engagement. By gathering data from five diverse districts (Bugesera, Gasabo, Gisagara, Karongi, and Musanze), this study unveils the actual state of local environmental service delivery, including both promising practices and persistent implementation bottlenecks. It brings forward grounded evidence from citizens, district staff, and sector stakeholders on how decentralization unfolds in practice - something previously underexplored in Rwanda's environmental policy discourse.

Theoretically, the study contributes to decentralization theory by demonstrating how environmental decentralization behaves in a post-conflict governance context characterized by rapid institutional reforms, evolving state-society relations, and strong central oversight. Un such as classical decentralization theory, which assumes a stable political and institutional environment, this study shows that in post-conflict settings such as Rwanda, decentralization unfolds as a hybrid model - simultaneously advancing local autonomy while maintaining centralized performance controls and normative frameworks. The findings extend existing theory by highlighting how decentralization must accommodate historical legacies of fragility, including unequal capacities across territories, trust deficits, and the need for top-down oversight to ensure equity and environmental protection. This offers theoretical insight into how decentralization must be adapted not just to technical functions but also to the political settlement and peacebuilding needs of fragile states.

From a policy and practice standpoint, the findings offer direct implications for strengthening the quality of decentralization in Rwanda and similar conflict-affected contexts. The study shows that merely assigning environmental responsibilities to districts without investing in sector-level staffing, budget autonomy, or data systems results in institutional gaps and fragmented service delivery. Practical recommendations derived from the study include revising the district organograms to include dedicated environmental staff at the sector level, improving inter-agency coordination, and developing tailored capacity-building programs. These findings are particularly relevant for countries navigating post-

conflict decentralization, where the balance between local empowerment and state cohesion is delicate. The study thus serves as a diagnostic and planning tool for national institutions such as REMA, MINALOC, and MINAGRI as they refine decentralization frameworks in light of climate change and sustainable development goals.

Methodologically, the study demonstrates the value of the Decentralization Assessment Framework (DAF) in systematically measuring the quality and progress of decentralized service delivery in the environmental sector. By combining institutional mapping, citizen perspectives, and district-level performance data, the DAF enabled a multi-dimensional analysis across five domains: capacity, service delivery, financing, local development, and challenges/opportunities. Its adaptability to the environmental sector - traditionally viewed as cross-cutting and institutionally complex - highlights the framework's utility beyond its initial use in agriculture and health. The approach also allowed for district-specific nuances to emerge, supporting comparative analysis while respecting local contexts. As such, this study contributes to the methodological literature on applied governance diagnostics in decentralization, particularly in under-researched, post-conflict, and environmentally vulnerable contexts.

In conclusion, this study provides valuable insights into the role of decentralization in addressing climate risks and promoting sustainable development at the local level in Rwanda. The findings confirm existing literature while extending it with district-specific data and insights into the challenges faced by post-conflict communities. The study's empirical, theoretical, practical, and methodological contributions provide important lessons for other countries undergoing similar processes.

3.7. Challenges and lessons learnt

- **Major challenges**

Local governments and community members face several challenges in the process of environmental decentralization. These challenges include:

1. Inadequate and delayed financial resources: The most frequently mentioned challenge across all districts was the limited and often delayed allocation of financial resources for environmental activities. Many districts, particularly those outside Kigali, face the challenge of insufficient financial resources allocated to environmental programs, which hampers their ability to address climate adaptation, eco-tourism, and biodiversity

conservation effectively. While Gasabo benefits from a consolidated budget through the City of Kigali's centralized system, this limits its financial autonomy and flexibility in planning and implementation. Similarly, Bugesera allocated approximately 3.5% of its total budget to environmental projects, but the funds are often inadequate and delayed, affecting the timely execution of seasonal interventions such as tree planting and erosion control. This lack of sufficient and timely financial resources disrupts both short-term interventions and long-term strategic planning, hindering effective climate resilience and environmental management across the districts.

2. Lack of specialized staff at the sector level: A significant challenge across multiple districts, such as Musanze, Bugesera, and Karongi, is the absence of dedicated environmental officers at the sector level. Sector officials often juggle multiple roles, which detracts from their ability to focus on pressing environmental issues such as eco-tourism, biodiversity conservation, and flood management. In most districts, environmental responsibilities are assigned to agronomists, veterinary officers, or general administrators, who often lack the necessary technical expertise or time to address environmental concerns effectively. Participants, especially in Bugesera and Gasabo, strongly recommended including dedicated environmental officers in the staffing structure at the sector level and equipping them with motorcycles to facilitate field mobility. Without such personnel, real-time monitoring of illegal activities such as logging, quarrying, or wetland encroachment remains weak, and service delivery is delayed. The lack of specialized staff hampers effective policy implementation and limits the districts' capacity to manage climate risks effectively.

3. Inadequate access to specialized climate data and tools: The inability to access customized climate data and advanced forecasting tools is a challenge for districts such as Musanze and Bugesera, particularly when managing landslide risks and flooding. Without accurate, real-time data, local authorities struggle to implement disaster preparedness strategies and respond effectively to climate-related hazards.

4. Coordination challenges across sectors: Environmental issues are inherently multisectoral, involving agriculture, mining, forestry, and water management, among others. Local governments often face difficulties in coordinating across sectors to ensure that climate change mitigation and adaptation are integrated into all development plans. This lack of coordination leads to fragmented environmental governance, making it harder to address climate change effectively.

5. Limited external funding: While some districts have successfully secured external funding through collaborations with JADF, REMA, and the Rwanda Green Fund, others, such as Bugesera, struggle to access adequate financial support for their environmental projects. The lack of sustained external funding limits the capacity of local governments to scale up climate adaptation initiatives, impacting their ability to build long-term resilience.

6. Community awareness and participation particulary at the design phase: Community members, especially in rural areas, often lack awareness of climate change and environmental policies. Additionally, there is a gap in their participation in environmental decision-making. This affects the effectiveness of climate adaptation programs and undermines the integration of local knowledge into environmental governance. Despite efforts to involve vulnerable groups such as youth, women, and the elderly, the lack of comprehensive community engagement particularly at the project design phase, remains a barrier to effective climate resilience at the grassroots level. Most community members interviewed indicated that they were rarely involved in the design of climate-related projects submitted to funding bodies such as Rwanda Green Fund. In Gasabo, for example, residents had never heard of Rwanda Green Fund or participated in any proposal development processes. In Bugesera, although some households benefited from stoves and fruit trees distributed by partner organizations, they had not been involved in shaping the priorities or design of those projects. This top-down approach limits local ownership, reduces the relevance of interventions, and can compromise long-term sustainability.

7. Weak enforcement and oversight of environmental regulations: Despite the existence of environmental laws and policies, enforcement remains uneven, and violations persist. Participants across districts reported persistent violations, including unauthorized tree cutting, informal mining, and construction in wetlands or forested zones. In Gasabo, for instance, district officials reported delays of up to five months in processing tree-cutting permits, which led to citizen frustration and encouraged illegal activities. Similarly, in Gisagara and Karongi, respondents highlighted weak enforcement mechanisms and limited follow-up on violations, contributing to land degradation and increased risk of disasters.

8. Limited decentralization of key enevironmental services: While some functions, such as land use planning and registration, have been partially decentralized, many critical environmental responsibilities remain centralized. This limits the effectiveness of local

governments in fully managing environmental resources and implementing climate adaptation strategies at the grassroots level.

9. Limited access to environmental data and early warning tools: The lack of access to localized environmental data and early warning tools significantly undermines climate preparedness and adaptation planning. While Meteo Rwanda operates several stations, many are inadequately staffed or poorly equipped, and most district officers and communities rely on general or anecdotal information. In Bugesera, officials acknowledged that they had no access to disaster atlases or climate vulnerability assessments and instead relied on experience to guide decisions. This data gap limits the ability to anticipate, prevent, or respond to environmental risks such as floods, landslides, or droughts.

10. Climate-induced stresses and limited adaptive capacity: Climate-induced stresses such as prolonged droughts and erratic rainfall were reported as pressing concerns, particularly in Bugesera, where the topography and high sun exposure severely affect agricultural productivity. The district lacks sufficient irrigation infrastructure and drought-resistant farming systems, leading to repeated crop failure and heightened food insecurity. Community members stressed the need for more support in acquiring affordable irrigation tools, improved seeds, and training on climate-smart agriculture.

11. Low awareness of carbon markets and green technologies: Another persistent challenge is the low awareness and limited engagement of district officials and communities in emerging climate finance and innovation mechanisms. Many local actors were unfamiliar with the concept of the carbon market or how to access financing for green technologies. In both Bugesera and Gasabo, even senior district officials admitted that they had no practical understanding of how carbon trading works or how it could be integrated into district planning and budgeting. This knowledge gap prevents districts from tapping into potentially transformative funding streams and technologies.

These challenges point to the need for stronger financial planning, specialized training, and better coordination across sectors, and increased community participation to ensure that environmental decentralization leads to sustainable climate adaptation and effective environmental management at the local level.

- **Some Lessons Learned**

The lessons learned from the assessment of the environmental decentralization process in Rwanda highlight the critical factors that contribute to effective climate resilience and sustainable environmental management at the local level. These lessons emphasize the importance of dedicated staffing, financial resources, data utilization, multisectoral collaboration, community participation, and continuous capacity building in addressing environmental challenges.

1. Importance of dedicated environmental staff: The lack of dedicated environmental officers at the sector level has been a recurring challenge across districts such as Musanze, Bugesera, Gisagara and Karongi. A key lesson is that dedicated staff are essential for implementing and monitoring environmental projects effectively. These officers not only bring specialized knowledge to address specific challenges (e.g., eco-tourism, flood management, soil conservation) but also enhance the local capacity to manage climate risks. The involvement of sector-level officers allows for better coordination and a targeted approach to local environmental issues.
2. Financial autonomy and resource mobilization: Gasabo's experience with the consolidated budget system under the City of Kigali Law (nº 22/2019) highlights the benefits of a unified funding structure, enabling better coordination and resource-sharing. However, the limited funding faced by districts such as Musanze and Bugesera underscores the importance of financial autonomy alongside external funding. Districts should explore new funding sources and strengthen partnerships with external donors (such as JADF, Rwanda Green Fund, and Ireme Invest) to address resource gaps and scale up climate adaptation projects.
3. Data and technology for disaster preparedness: The use of climate vulnerability assessments and disaster atlases has proven valuable in districts such as Gasabo and Karongi for improving disaster preparedness and climate risk management. The lesson here is that access to customized weather data and advanced forecasting tools is critical for managing local climate risks, especially in flood-prone areas and disaster-prone zones. Investing in technology and data collection systems ensures that local authorities can make informed decisions and respond proactively to environmental hazards.
4. Multisectoral collaboration: The multisectoral nature of environmental challenges, such as the need for coordination between agriculture, tourism, forestry, and water management, requires cross-sector collaboration. The lack of intersectoral

coordination often leads to fragmented environmental governance. A key lesson is that integrated development planning is necessary to ensure that environmental sustainability is embedded across all sectors. Future strategies should focus on promoting multisectoral partnerships and holistic financial tracking to ensure comprehensive climate resilience.

5. Community participation and empowerment: Effective community engagement is essential for the success of climate resilience programs. Districts such as Gisagara and Karongi have benefited from the active involvement of women, youth, and people with disabilities in environmental governance and disaster risk management. The lesson here is that inclusive governance, where marginalized groups are involved in decision-making and implementation, leads to more equitable and effective climate adaptation. Moreover, enhancing community awareness and participation fosters a sense of ownership, which is crucial for long-term sustainability.
6. Capacity building: Continuous training and capacity-building efforts are essential for local officials to keep up with the evolving environmental challenges. Districts such as Gasabo have demonstrated the importance of investing in technical training (e.g., in GIS, urban planning, climate resilience) to equip staff with the necessary skills for implementing environmental policies. Expanding training programs in areas such as climate adaptation, eco-tourism management, and disaster preparedness will enable local authorities to enhance their response to climate risks and improve environmental governance.

These lessons underscore the need for a holistic approach to environmental decentralization, focusing on specialized staffing, financial mobilization, intersectoral collaboration, and community engagement to build climate-resilient and sustainable local governments.

3.8. Major Opportunities in local environmental governance and climate action

Rwanda's local environmental governance presents significant opportunities for enhancing climate action and sustainable development. These opportunities are driven by collaborative efforts among local governments, community members, and various stakeholders, including development partners and civil society organizations. This section highlights key opportunities that can contribute to the effectiveness of environmental decentralization and

climate resilience at the local level. These include multi-stakeholder partnerships, active community engagement, the availability of natural resources, the integration of national climate commitments into local planning, and the adoption of nature-based solutions (NbS).

1. Strong multi-stakeholder partnerships

One of the most significant opportunities emerging from the data is the presence of strong partnerships between local governments and a diverse set of stakeholders. These include government agencies such as REMA and RTDA, development partners such as Rwanda Green Fund, ARCOS, CDAT, and APSAC, as well as civil society and faith-based organizations. These partners have provided technical and financial assistance, training, and material support. For instance, in Bugesera District, ARCOS and CDAT, through coordination with JADF, facilitated terracing and reforestation over 700 hectares in Mareba, Ngeruka, and Ruhuha. In Gasabo, Rwanda Green Fund funded the Green City Project in Kinyinya, and several partners such as KOICA, Prime Biodiversity, and AVEGA supported tree planting, biodiversity restoration, and public garden rehabilitation. These partnerships not only enhance the capacity of local entities to implement environmental initiatives but also ensure the integration of community voices and sustainability in interventions.

2. Active and inclusive community engagement

Community members - women, youth, people with disabilities, and the elderly – are increasingly and actively participating in planning and implementing environmental initiatives. In Bugesera, the COMBIO cooperative - led by youth - successfully planted indigenous and medicinal trees across 34 hectares. In Gasabo, residents participated in Umuganda activities that included trench digging, waste management, and tree planting, while people with disabilities engaged in vegetable gardening and afforestation near Nyamata. These examples demonstrate a growing environmental consciousness and willingness to contribute at the grassroots level. This community ownership strengthens the decentralization process and promotes long-term environmental stewardship.

3. Availability of land and natural resources

Districts such as Gasabo and Gisagara also reported the availability of underutilized land that could be leveraged for environmental initiatives. In Gasabo, sectors such as Jali, Bumbogo, Rusororo, and Gikomero were identified as having large tracts of land that could be used for tree planting, sustainable agriculture, and infrastructure aligned with the Kigali master plan.

The availability of such space presents an important physical asset for scaling up green projects and planning eco-friendly settlements as urbanization expands.

4. Integration of national climate commitments into local planning

There has been commendable progress in mainstreaming climate goals into local government planning. Environmental targets - such as tree planting, soil erosion control, and forest restoration - are now embedded in district Imihigo and annual performance contracts. Both Bugesera and Gasabo districts confirmed that their planning frameworks incorporate Rwanda's Nationally Determined Contributions (NDCs), and implementation is monitored regularly. This alignment ensures vertical coherence between national and local actions on climate change and opens avenues for accessing global climate finance.

5. Adoption of Nature-Based Solutions (NbS)

Districts employ a variety of nature-based solutions to manage disaster risks and support sustainable livelihoods. Local governments promote measures such as terracing, rooftop rainwater harvesting, tree planting, and household-level adaptation practices. For example, in Karongi and Musanze, community-led terracing and afforestation efforts were reported to help mitigate soil erosion. In Gasabo, drones are used to monitor illegal constructions in flood-prone areas, while in Bugesera, irrigation systems have been established for farmers near lakes and wetlands. These approaches are cost-effective, context-appropriate, and environmentally sustainable, reducing communities' vulnerability while promoting ecosystem services.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. General Conclusion

Environmental decentralization in Rwanda has emerged as a critical strategy for advancing sustainable development and addressing the country's climate resilience needs. As Rwanda continues to implement its climate adaptation and mitigation goals, local governments play a central role in transforming national policies into practical, localized actions. However, while significant progress has been made in empowering local authorities to manage environmental challenges, challenges related to financial resource allocation, staffing, data accessibility, and intersectoral coordination remain persistent. These challenges hinder local governments' ability to effectively implement climate resilience projects and broader environmental management strategies.

The assessment highlights that many districts face challenges with insufficient financial resources. Some areas benefit from centralized budgeting, like Gasabo, while others, particularly outside Kigali, struggle with limited local budgets that fail to fully meet the growing environmental management demands. The lack of specialized staff at the sector level, particularly in Musanze, Bugesera, and Karongi, also complicates efforts to address key issues such as eco-tourism, biodiversity conservation, and flood management. In addition, the inadequate access to critical climate data and forecasting tools further constrains local governments' ability to implement timely and informed disaster preparedness strategies.

Despite these challenges, there are notable opportunities to advance environmental decentralization. Active partnerships with organizations such as JADF, Rwanda Green Fund, and other local and international donors have provided essential funding and technical support for climate action. Furthermore, increasing levels of community participation, particularly from youth, women, and people with disabilities, demonstrate the potential for grassroots involvement in climate governance. Local resources, including underutilized land, also offer a significant opportunity for expanding green projects and environmental infrastructure, which can enhance resilience and sustainable land management practices.

Looking ahead, Rwanda's environmental governance will need to continue addressing these gaps by enhancing financial allocations, strengthening sector-level staffing, improving access to climate data, and fostering intersectoral coordination. The success of the country's climate action goals hinges on its ability to integrate climate resilience strategies into all sectors of governance and promote inclusive, community-driven approaches to environmental

management. The adoption of nature-based solutions, combined with greater attention to marginalized groups, will be crucial in achieving a sustainable and equitable environmental future.

4.2. Recommendations

Environmental decentralization in Rwanda is an essential component of the country's strategy to address climate change and promote sustainable development. The effective implementation of environmental policies at the local level depends on the availability of adequate financial resources, specialized staff, access to climate data, and strong community engagement. While progress has been made, various challenges remain, including limited financial resources, inadequate staffing, and gaps in data access, all of which hinder the full realization of climate resilience goals. This section provides key recommendations to address these challenges, aiming to strengthen the capacity of local governments and ensure the successful decentralization of environmental management.

Table 4: Recommendations

Issue	Recommendation	Responsible actor
1. Insufficient financial resources	Urgently increase financial allocations to environmental projects, especially in rural areas, ensuring that districts have adequate funds to implement climate adaptation strategies. Dedicated budget lines should be created to ensure consistent funding for environmental resilience programs. Develop more innovative environmental projects to attract more funding.	MINECOFIN, REMA, JADF, Local governements
2. Delayed financial resources	Reform financial disbursement processes to ensure that funds allocated for environmental initiatives are released on time. Implement financial management systems that track real-time spending and budget execution. This will minimize delays and ensure effective implementation of projects.	MINECOFIN Local governments, REMA
3. Lack of specialized staff at the sector level	Establish a clear staffing framework that includes dedicated environmental officers at the sector level. These officers should be specialized in key areas such as eco-tourism, flood management, and biodiversity conservation. Support them with field mobility tools	Ministry of Local Government, District authorities

	(e.g., motorcycles) to improve their outreach and effectiveness.	
4. Limited decentralization (delegation and devolution) of some environmental services	Revise existing policies to allow for the complete transfer of decision-making authority and responsibilities to local governments, reducing the bottlenecks caused by centralized approvals. For effective decentralization of these services, the following strategies are vital.	MoE, MINALOC
	Enhance training and capacity development: Local authorities, particularly environmental officers, need targeted training on environmental governance, climate change adaptation, and natural resource management to effectively execute their responsibilities.	REMA, RDB and Local government
	Increase financial support: Local governments should be supported with increased funding for environmental management initiatives. This includes both national budget allocations and external funding opportunities through international climate finance mechanisms.	
	Strengthen intergovernmental coordination and clarifying roles and responsibilities at the central, district, and sector levels will also ensure smooth implementation and enhance the responsiveness of local authorities to environmental challenges.	
	Improve monitoring and accountability: The central government should establish mechanisms for monitoring and evaluating the performance of local governments in managing decentralized environmental services. This could include periodic assessments, feedback loops, and accountability mechanisms to ensure local governments meet the required environmental standards.	
5. Inadequate access to specialized climate data and tools	Invest in advanced meteorological tools and climate data systems, including real-time disaster forecasting. Equip local governments with the necessary technology to analyze local climate risks and monitor environmental conditions more accurately. Additionally, train sector officers to interpret and act upon this data effectively.	Meteo Rwanda, REMA, Local governments

6. Coordination challenges across sectors	Establish intersectoral task forces or coordination platforms at the district level to integrate environmental goals into all relevant sectors such as agriculture, forestry, tourism, and water management. Create joint action plans for shared environmental challenges to ensure synergy in climate adaptation strategies across sectors.	REMA, MINAGRI, MININFRA, Local governments
7. Limited external funding	Pursue international funding opportunities, including green climate funds and partnerships with global donors like the Green Climate Fund. Strengthen collaborations with financial institutions like IREME Invest and JADF to leverage external financial support for large-scale environmental projects.	REMA, District authorities, JADF
8. Community awareness and participation (particularly at the design phase)	Implement comprehensive community engagement frameworks that actively involve local residents from the design phase of environmental projects. Encourage participatory planning where communities, especially vulnerable groups, provide input on climate adaptation strategies. This ensures that the interventions are context-specific and locally owned.	REMA, District authorities, CSOs
9. Weak enforcement and oversight of environmental regulations	Strengthen environmental law enforcement by increasing penalties for violations and enhancing monitoring and reporting systems at the district level. Provide capacity-building programs for environmental officers to enable more effective enforcement of land use policies, anti-logging regulations, and wetland protection laws.	Minsitry of Environment (MoE), REMA, Local governments, Ministry of Justice
10. Limited access to environmental data and early warning tools	Expand the network of early warning systems to ensure that all districts have access to localized climate data. Provide training for local authorities and community members on how to use these tools to predict and respond to environmental risks. Meteo Rwanda should ensure that data accuracy and timeliness meet the needs of local authorities.	Meteo Rwanda, REMA, Local governments
11. Climate-induced stresses and limited adaptive capacity	Scale up support for climate-smart agriculture by providing financial incentives, training, and resources for the adoption of climate-resilient farming practices. Local governments should partner with agriculture-focused organizations to deliver irrigation systems and drought-	MINAGRI, REMA, Local governments

	resistant crops to improve food security and community resilience to climate change.	
12. Low awareness of carbon markets and green technologies	Launch national campaigns to educate district authorities and community members on carbon markets and green technologies. Provide targeted training programs for local governments on how to access climate financing mechanisms and integrate green technologies into development plans.	REMA, MINECOFIN, Meteo Rwanda, CSOs

The proposed recommendations focus on addressing the key challenges identified in the environmental decentralization process across the districts. Financial resources are central to enabling effective climate resilience projects, and therefore, timely financial planning and increased financial allocations are essential. Local governments must also enhance their capacity by investing in specialized staff who are dedicated to environmental management and trained in specific sectors like eco-tourism and biodiversity conservation. This will ensure effective policy implementation at the sector level. Strengthening data access and coordination across sectors will lead to more comprehensive climate adaptation strategies, ultimately improving the management of local environmental risks.

Furthermore, community engagement and inclusive decision-making are paramount to the success of climate adaptation efforts. Involving vulnerable groups such as women, youth, and people with disabilities ensures that the solutions are locally tailored, equitable, and effective in achieving sustainable environmental management. By expanding external funding opportunities, particularly from international climate finance sources, local governments will have the necessary resources to scale up projects that are aligned with national climate goals. Finally, the improvement of enforcement mechanisms will ensure that environmental regulations are adhered to, which will lead to better long-term environmental outcomes.

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ANNEXES

ANNEX 1: Data Collection Tools (English & Kinyarwanda)

1. Interview Guide for District Vice Mayor Economic

Capacity Development of Decentralised Entities and Decentralising Entities in the Environmental Sector

1. How are environmental services transferred from the district to the sector level? Ni gute serivisi zijyanye n'ibidukikije zoherezwa/zigezwa ku rwego rw'umurenge ziva ku rwego rw'akarere?
2. At what level (District/Sector) would environmental services be better delivered? Is there a need for staff in charge of the environment at the sector level? Hagati y'urwego rw'akarere n'urw'umurenge, ni he mubona serivise z'ijyanye n'ibidukijije zatangwa neza? Ese haba hakenewe abakozi bashinzwe ibidukikije ku rwego rw'umurenge?
3. What is needed in terms of training and capacity development of such staff? Ni iki gikenewe mu bijyanye n'amahugurwa n'ubundi bushobozi by'abo bakozi?
4. How are local authorities leveraging from climate change vulnerability assessment and disaster atlas for district's adaptability? Ni gute ubuyobozi bw'ibanze/akarere bukoresha isesengura ry'ibibazo byihariye by'ubumenyi ku mihindagurikire y'ikirere (climate change vulnerability assessment) n'ikarita y'ibiza (disaster atlas) kugira ngo hafatwe ingamba zikwiye mu karere?
5. How are gender voices actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'abagore n'abagabo/abahungu n'abakobwa byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije muri aka karere?
6. How are the youth voices actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'urubyiruko byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije muri aka karere?
7. How are the voices living with disabilities and the elderly actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'abafite ubumuga n'abageze mu za bukuru byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije muri aka karere?

Sectoral Decentralisation and Service Delivery in the Environmental Sector/ Decentralisation y'Ibikorwa na Serivisi mu rwego rw'Ibidukikije

1. How effective is the coordination between the Ministry of Infrastructure (MININFRA) and REMA (Rwanda Environment Management Authority) on development projects? Ni ku kihe kigero ihuzabikorwa (coordination) hagati ya Minisiteri y'Ibikorwa Remezo (MININFRA) na REMA (Ikigo cy'Igihugu gishinzwe Ibidukikije) mu mishanga y'iterambere rikorwa neza?
2. How does this affect local governments? Ibi bigira ingaruka/umusaruro wuhe mu nzego z'ibanze?
3. How is implementation done at the central level between RTDA, REMA, and districts? Ese ishyirwamubikorwa rigenda rite ku rwego rw'akarere? Ese haba hari imikoranire hagati y'aka karere na RTDA ndetse na REMA?
4. How do infrastructure development projects integrate environmental and social safeguards (ESIA, ESMP)? Ni gute imishinga yo guteza imbere ibikorwa remezo yita ku mategeko n'amabwiriza yo kurengera ibidukikije no gusigasira imibereho y'abantu?
5. To what extent is the community involved in the implementation of environmental and social safeguarding measures? Ni ku kihe kigero abaturage bagira uruhare mu gushyira mu bikorwa ingamba zo kurengera ibidukikije no gusigasira imibereho y'abantu?

Fiscal and Financial Decentralisation and Management in the Environmental Sector

1. How are environmental fines and penalties applied by decentralised entities? Ni gute ibihano n'amafaranga y'amande ku myitwarire ibangamiye ibidukikije bishyirwa mu bikorwa n'inzego z'ibanze?
2. How is the Carbon tax applied in local entities? Ni gute umusoro wa karuboni ushyirwa mu bikorwa mu nzego z'ibanze?
3. How is the Carbon market applied and how does it affect consumers' behaviour? Ni gute isoko rya karuboni rikora kandi rifite ingaruka /umusaruro bihe ku myitwarire y'abaturage?

4. What is the percentage of environmental budget allocated to local government? Ingengo y'imari igenerwa ibikorwa byo kurengera ibidukikije mu nzego z'ibanze iri kw'ijanisha rya kangahe?
5. What is the proportion of allocated funds effectively utilised? Ni uruhe rugero (proportion) rw'amafaranga yagenwe akoreshwa neza ?
6. Have you ever benefited on environmental external/ internal facilities from Ireme or a JADF member? If yes, to what extent? Ese mwigeze mukura inyungu mu bikorwaremezo by'umushinga Ireme cyangwa umunyamuryango wa JADF? Niba ari yego, bigezehe?
7. How many Projects have been developed and financed for National Determined Commitments (NDC) implementation? Ni imishinga ingahe yateguwe kandi ikabona inkunga mw'ishyirwamu mukorwa ry'Imihigo y'Igihugu mu rwego rwo kurengera ibidukikije no guhangana n'imihindagurikire y'ikerere (National Determined Commitments)?
8. Have you ever prepared any Bankable proposal that has attracted Rwanda Green Fund funding? Ese mwigeze mutegura umushinga wemewe ku buryo wagize amahirwe yo kubona inkunga ya Rwanda Green Fund?
9. How much do you receive from central government for environmental protection projects? Ni amafaranga angahe akarere kanyu gahabwa na Leta (ku rwego rw'igihugu) mu gufasha imishinga yo kurengera ibidukikije?
10. Which green jobs were created through the implementation of Green Projects? Ni imirimo ingahe yahanzwe mu rwego rw'imishinga igamije kurengera ibidukikije n'imihindagurikire y'ikirere muri aka karere?

Local Economic and Sustainable Development in Environmental Sector

1. What are the green technologies being implemented at local level aimed at reducing (GHGEs) greenhouse gas emissions? Ni iyihe mishanga y'ikoranabuhanga mushyira mu bikorwa mu nzego z'ibanze igamije kugabanya imyuka ihumanya ikirere
2. Which nature base solutions do you use to reduce the disaster risks in your area? Ni ubuhe buryo bwa kamere mukoresha mu kugabanya ibyago by'ibiza muri aka karere?
3. How prepared are you towards disaster risk reduction (landslides, drought of Floods Volcanoes eruption and other natural Hazards)? Ni gute mwiteguye kugabanya

ibyago by'ibiza (inkangu, amapfa, imyuzure, iruka ry'ibirunga, n'ibindi biza by'ibidukikije)?

4. Which mechanism do you use to accommodate Nationally Determined Contributions (NDC) -in your action plan? Ni ubuhe buryo mukoresha mu kwinjiza Imihigo y'Igihugu mu bijyanye no gukemura ibibazo by'imihindagurikire y'ikirere (Nationally Determined Contributions) mw'igenamibikorwa ryanyu?

Challenges and opportunities

1. Ni ayahe mahirwe mubona ahari mu gukomeza kunoza imicungire y'ibidukikije mu nzego z'ibanze?
2. Ni gute kwegereza abaturage ubuyobozi kubyerekeye imicungire y'ibidukikije byanoza serivisi z'ibidukikije mu nzego z'ibanze?
3. Ni ibihe bibazo/imbogamizi abayobozi b'inzego z'ibanze muhura nabyo mu micungire y'ibidukikije no guhangana n'imihindagurikire y'kirere?
4. Ni izihe nzitizi abaturage bahura nazo mu kwitabira imicungire y'ibidukikije mu rwego rwo kwegereza abaturage ubuyobozi?
5. Mubona ari iki cyakorwa ngo kwegereza Abaturage Ubuyobozi mu bijyanye n'imicungire y'ibidukikije birusheho kuzana impinduka mu nzego z'ibanze?

FGD Duide with NAFA, Agronomist, Environment Management Officer, Director of Planning (at District Level)

Capacity Development of Decentralised Entities and Decentralising Entities in the Environmental Sector

1. How are environmental services transferred from the district to the sector level? Ni gute serivisi zijyanye n'ibidukikije zoherezwa/zigezwa ku rwego rw'umurenge ziva ku rwego rw'akarere?
2. At what level (District/Sector) would environmental services be better delivered? Is there a need for staff in charge of the environment at the sector level? Hagati y'urwego rw'akarere n'urw'umurenge, ni he mubona serivise z'ijyanye n'ibidukijije zatangwa neza? Ese haba hakenewe abakozi bashinzwe ibidukikije ku rwego rw'umurenge?
3. What is needed in terms of training and capacity development of such staff? Ni iki gikenewe mu bijyanye n'amahugurwa n'ubundi bushobozi by'abo bakozi?
4. How are local authorities leveraging from climate change vulnerability assessment and disaster atlas for district's adaptability? Ni gute ubuyobozi bw'ibanze/akarere bukoresha isesengura ry'ibibazo byihariye by'ubumenyi ku mihindagurikire y'ikirere (climate change vulnerability assessment) n'ikarita y'ibiza (disaster atlas) kugira ngo hafatwe ingamba zikwiye mu karere?

5. Is METEO Rwanda decentralized? If yes, how well are its sub-stations at local level equipped? Ese METEO Rwanda ifite amashami mu nzego z'ibanze? Niba ari yego, ayo mashami afite ibikoresho bihagije?
6. Is the Meteo information customized at district level? Ese METEO Rwanda itangaza amakuru yihariye ya buri karere?
7. How accurate is available information to allow local govt to mitigate environmental related disasters? Niba ari yego ayo makuru atangwa aba yizewe n'inzego z'ibanze ku kigero kingana iki ku bijyanye no gukumira Ibiza kiterwa n'imihindagurikire y'ikirere?
8. How are gender voices actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'abagore n'abagabo/abahungu n'abakobwa byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije muri aka karere?
9. How are the youth voices actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'urubyiruko byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije muri aka karere?
10. How are the voices living with disabilities and the elderly actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'abafite ubumuga n'abageze mu za bukuru byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije muri aka karere?

Sectoral Decentralisation and Service Delivery in the Environmental Sector/
Decentralisation y'Ibikorwa na Serivisi mu rwego rw'Ibidukikije

1. How effective is the coordination between the Ministry of Infrastructure (MININFRA) and REMA (Rwanda Environment Management Authority) on development projects? Ni ku kihe kigero ihuzabikorwa (coordination) hagati ya Minisiteri y'Ibikorwa Remezo (MININFRA) na REMA (Ikigo cy'Igihugu gishinzwe Ibidukikije) mu mishanga y'iterambere rikorwa neza?
2. How does this affect local governments? Ibi bigira ingaruka/umusaruro wuhe mu nzego z'ibanze?
3. How is implementation done at the central level between RTDA, REMA, and districts? Ese ishyirwamubikorwa rigenda rite ku rwego rw'akarere? Ese haba hari imikoranire hagati y'aka karere na RTDA ndetse na REMA?
4. How do infrastructure development projects integrate environmental and social safeguards (ESIA, ESMP)? Ni gute imishinga yo guteza imbere ibikorwa remezo yita ku mategeko n'amabwiriza yo kurengera ibidukikije no gusigasira imibereho y'abantu?

5. To what extent is the community involved in the implementation of environmental and social safeguarding measures? Ni ku kihe kigero abaturage bagira uruhare mu gushyira mu bikorwa ingamba zo kurengera ibidukikije no gusigasira imibereho y'abantu?

Fiscal and Financial Decentralisation and Management in the Environmental Sector

1. How are environmental fines and penalties applied by decentralised entities? Ni gute ibihano n'amafaranga y'amande ku myitwarire ibangamiye ibidukikije bishyirwa mu bikorwa n'inzego z'ibanze?
2. How is the Carbon tax applied in local entities? Ni gute umusoro wa karuboni ushyirwa mu bikorwa mu nzego z'ibanze?
3. How is the Carbon market applied and how does it affect consumers' behaviour? Ni gute isoko rya karuboni rikora kandi rifite ingaruka /umusaruro bihe ku myitwarire y'abaturage?
4. What is the percentage of environmental budget allocated to local government? Ingengo y'imari igenerwa ibikorwa byo kurengera ibidukikije mu nzego z'ibanze iri kw'ijanisha rya kangahe?
5. What is the proportion of allocated funds effectively utilised? Ni uruhe rugero (proportion) rw'amafaranga yagenwe akoreshwa neza ?
6. Have you ever benefited on environmental external/ internal facilities from Ireme or a JADF member? If yes, to what extent? Ese mwigeze mukura inyungu mu bikorwaremezo by'umushinga Ireme cyangwa umunyamuryango wa JADF? Niba ari yego, bigezehe?
7. How many Projects have been developed and financed for National Determined Commitments (NDC) implementation? Ni imishinga ingahe yateguwe kandi ikabona inkunga mw'ishyirwamu mukorwa ry'Imihigo y'Igihugu mu rwego rwo kurengera ibidukikije no guhangana n'imihindagurikire y'ikerere (National Determined Commitments)?
8. Have you ever prepared any Bankable proposal that has attracted Rwanda Green Fund funding? Ese mwigeze mutegura umushinga wemewe ku buryo wagize amahirwe yo kubona inkunga ya Rwanda Green Fund?

9. How much do you receive from central government for environmental protection projects? Ni amafaranga angahe akarere kanyu gahabwa na Leta (ku rwego rw'igihugu) mu gufasha imishinga yo kurengera ibidukikije?
10. Which green jobs were created through the implementation of Green Projects? Ni imirimo ingahe yahanzwe mu rwego rw'imishinga igamije kurengera ibidukikije n'imihindagurikire y'ikirere muri aka karere?

Local Economic and Sustainable Development in Environmental Sector

1. What are the green technologies being implemented at local level aimed at reducing (GHGEs) greenhouse gas emissions? Ni iyihe mishanga y'ikoranabuhanga mushyira mu bikorwa mu nzego z'ibanze igamije kugabanya imyuka ihumanya ikirere
2. Which nature base solutions do you use to reduce the disaster risks in your area? Ni ubuhe buryo bwa kamere mukoresha mu kugabanya ibyago by'ibiza muri aka karere?
3. How prepared are you towards disaster risk reduction (landslides, drought of Floods Volcanoes eruption and other natural Hazards)? Ni gute mwiteguye kugabanya ibyago by'ibiza (inkangu, amapfa, imyuzure, iruka ry'ibirunga, n'ibindi biza by'ibidukikije)?
4. How do you incorporate local profiles and addressing adaptations into LG systems, ensuring their institutionalisation????
5. Which mechanism do you use to accommodate Nationally Determined Contributions (NDC) -in your action plan? Ni ubuhe buryo mukoresha mu kwinjiza Imihigo y'Igihugu mu bijyanye no gukemura ibibazo by'imihindagurikire y'ikirere (Nationally Determined Contributions) mw'igenamibikorwa ryanyu?

Challenges and opportunities

1. Ni ayahe mahirwe mubona ahari mu gukomeza kunoza imicungire y'ibidukikije mu nzego z'ibanze?
2. Ni gute kwegereza abaturage ubuyobozi kubyerekeye imicungire y'ibidukikije byanoza serivisi z'ibidukikije mu nzego z'ibanze?
3. Ni ibihe bibazo/imbogamizi abayobozi b'inzego z'ibanze muhura nabyo mu micungire y'ibidukikije no guhangana n'imihindagurikire y'kirere?
4. Ni izihe nzitizi abaturage bahura nazo mu kwitabira imicungire y'ibidukikije mu rwego rwo kwegereza abaturage ubuyobozi?
5. Mubona ari iki cyakorwa ngo kwegereza Abaturage Ubuyobozi mu bijyanye n'imicungire y'ibidukikije birusheho kuzana impinduka mu nzego z'ibanze?

2. Focus Group Discussion (FGD) Guide for Community Members

Capacity Development of Decentralised Entities and Decentralising Entities in the Environmental Sector

1. How are gender voices actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'abagore n'abagabo/abahungu n'abakobwa byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije?
2. How are the youth voices actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'urubyiruko byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije?
3. How are the voices living with Disabilities and the elderly actively integrated in the formulation of environmental management policies, planning and strategies? Ni gute ibitekerezo by'abafite ubumuga n'abageze mu za bukuru byitabwaho mw'itegurwa rya politiki, gahunda n'ingamba z'ibidukikije?

Sectoral Decentralisation and Service Delivery in the Environmental Sector

1. How do you manage your waste (for rural District)? Ni gute mucunga imyanda/ibishingwe mu karere kanyu (uturere tw'icyaro)?
2. Which waste management services do you reiceive (Urban District)? How effective are those waste management services? Ni izihe serivisi zo gucunga imyanda muhabwa (mu Karere k'umujyi)? Izo serivisi zikora neza ku kihe kigero?
3. How many awareness campaigns did you receive on Environmental issues in the last 12 months? Ni ibikorwa bingahe by'ubukangurambaga ku bibazo by'ibidukikije n'imihindagurikire by'ikirere mwakorewe mu mezi 12 ashize?
4. How effective is service delivery in environmental management – is it able to minimise environmental impact while ensuring sustainable practices in waste management and community resilience to climate change? Ni ku kihe kigero serivisi zitangwa mu micungire y'ibidukikije zitangwa neza? Ese zishobora kugabanya ingaruka ku bidukikije, zinimakaza imyitwarire irambye mu micungire y'imyanda/ibishingwe, n'ubudaheranwa bw'abaturage ku mihindagurikire y'ikirere?

Local Economic and Sustainable Development in Environmental Sector

1. Have you ever been consulted in planning and formulation of the project submitted to Rwanda Green Fund? If yes, what your level of involvement? Ese mwigeze mugira uruhare mu itegurwa ry'umushinga woherejwe muri Rwanda Green Fund ngo uterwe inkunga? Niba ari yego, uruhare rwanyu rungana rute?

Challenges and opportunities

1. Ni izihe nzitizi muhura nazo mu mu kugira uruhare muri gahunda zo kurengera ibidukikije no guhangana n'imihindagurikire y'ikirere mu gace mutuyemo?
2. Ni gute izi nzitizi zishobora gukemurwa kugira ngo uruhare rwanyu mu gucunga ibidukikije rurusheho kuba rwiza?
3. Ni izihe ngaruka nziza cyangwa mbi gahunda yo kwegereza abaturage ubuyobozi mu bijyanye n'ibidukikije yagize mu gace mutuyemo?
4. Ni ayahe mahirwe mubona ahari mu kunoza imicungire y'ibidukikije no guhangana n'imihindagurikire y'ibihe mu gace mutuyemo?
5. Ni ibihe bibazo(imbogamizi) muhura nabyo mu kungukira muri gahunda/imishinga yo kurengera ibidukikije no guhangana n'ihindagurika ry'ikirere mu gace mutuyemo?

ANNEX 2: Environmental services proposed for future decentralisation

S/N	Sector Service[5]	Service providers	Centralized	Potential for future decentralization [6]	Delegated	Deconcentrated	Devolved	Rationale
Subsector 1. LAND								
01	Land Use Planning	NLA, MINISTRIES, AGENCIES, Districts, CoK	PD	**1**				Efficient land use
02	Land registration	NLA, CoK Districts, Province Sectors, Cells	PD	**4**		**X**		Time saving because there are pending approvals at provincial level. One registrar per 3 districts in the province, and one per district in the CoK
03	Land titles printing	NLA, CoK Districts, Province Sectors, Cells	PD	**4**			**X**	
04	Payment of land taxes	RRA, Districts	PD	**1**				
05	Authorization to bury toxic wastes	REMA	C	**1**				

[5] **You can list the Services in this column and for other columns just tick or use any symbol**.

[6] **1: Not needed 2: Low potential 3: Moderate potential 4: High potential**

- if the potential is marked as anything other than 1(not needed) then the type of proposed decentralisation should be marked with an x and the reasoning for it set out in the rationale column. If it is marked 1(not needed) then the type of decentralisation need not be completed, but the reasoning for why it must remain centralised should be indicated in the rationale column.

06	Technical support and advise to all inquiries in relation to environment	REMA	PD	**1**				
07	Land disputes resolution	NLA, CoK, Districts,& courts	PD	**4**			**X**	
07	Addressing grievances by citizens for issues with impact beyond local control (E.g. Tree cutting, waste management technical support)	REMA	C	**1**				
08	Certificate for environmental and social impact assessment	RDB & REMA	C	**3**		**X**		Public hearing involving district and sector where project is implemented are needed (experts need endorsement from LG)
09	Environment Audit	REMA	C	**3**		**X**		
10	Mining and industrial quarries authorization	RMB	C	**3**	**X**			
11	Plastic bag use permit	REMA	C	**1**				
12	Wetland management/use permit	MoE	C	**1**				

	Public forest harvesting license	**RFA**	C	**3**	**X**			
13	Public Forest clearing license	RFA/MoE	C	**1**				Private for management
14	Forest products exportation license	RFA	C	**1**				
15	Ecological conservation and restoration (e.g. zoo)	RDB	C	**1**				
16	Authorization for a concession for the utilization of water	RWB	C	**3**	**X**			
17	Issue permit to users of water resources	RWB	C	**3**	**X**			
18	Approving plans for site rehabilitation, water storage and its distribution channels	RWB/WASAC	C	**3**	**X**			
19	Use of buffer zones for investment or any other purposes	RDB/REMA	PD	**3**	**X**			

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