

DISASTER RISK MANAGEMENT PLAN

NANSANA MUNICIPALITY, WAKISO DISTRICT

2025-2030

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Executive summary

Disasters have become more frequent in Nansana Municipality, resulting in significant property and life losses. The disasters faced are both natural and human-induced. The municipality is prone to multiple hazards, including hydrometeorological (floods, drought, strong winds), technological (road accidents, fires), and biological (pests and diseases), among others. The hazards associated with climate change include erratic rainfall, shifting seasons, widespread degradation of natural resources (forests, wetlands, and riverbanks), and poor land-use planning, which together lead to frequent deaths, property damage, and revenue loss. The Disaster Risk Management Plan for Nansana Municipality (2025-2030) has been developed to strengthen the integration of DRM into plans and budgets, increase budgetary allocations, and enhance investments in disaster risk reduction.

The objectives of this disaster risk management plan are:

1. To establish a disaster risk management baseline, tracking progress in Nansana Municipality
2. To provide disaster risk reduction strategies that address key vulnerabilities, and build adaptive capacities and resilience at all levels
3. To facilitate disaster risk decision-making
4. processes, with guidance related to budgeting, stakeholder engagement, resource mobilization, and dissemination of disaster information
5. To promote and strengthen disaster preparedness by increasing public awareness and integrating disaster risk management into broader policies

This plan was developed through a consultative process, indicating that it was stakeholder-driven. The steps undertaken to create this plan included stakeholder consultations (at the municipal, division, and ward levels), analysis of multi-hazards, and validation of vulnerabilities. The process was entirely participatory, suggesting that the development of the plan, vision, objectives, and disaster risk reduction was stakeholder-led. The participants were selected in accordance with principles of fairness, equity, gender, and social inclusion.

The hazards that occur in Nansana Municipality are categorized into four classes:

1. Hydro-meteorological hazards (drought, floods, windstorms, hailstorms, and lightning)
2. Geological hazards (earthquakes)
3. Biological hazards (crop pests, livestock parasites, and human/animal diseases)
4. Technological hazards (road accidents, fires)

The Nansana Disaster Management plan is structured around six key Result Areas (i.e., profiling of disaster risks, vulnerability, and losses/damages; strengthening disaster governance structures; enhancing environmental protection to mitigate disasters; promoting disaster preparedness, response, and recovery measures; supporting community resilience to manage disasters; strengthening disaster early warning systems), each with clearly defined outcomes, outputs, and to address specific disaster risks and vulnerabilities within the municipality. The plan also identifies hotspot divisions, outlines short-, medium-, and long-term actions, and assigns institutional responsibilities to ensure effective and accountable implementation.

Forward

The rapid urbanisation and socioeconomic development of Nansana Municipality, while bringing prosperity, simultaneously intensify our exposure to a complex array of hydrometeorological and anthropogenic hazards. Recognizing this imperative, I present the Nansana Disaster Risk Management (DRM) Plan for the period 2025-2030 with profound commitment. This plan represents a strategic paradigm shift from purely reactive disaster response to a proactive, integrated, and systemic approach to risk reduction.

This strategic document is meticulously designed to strengthen disaster risk resilience by institutionalising DRM principles across all municipal sectors. Our primary objectives are multifaceted: to help mobilise resources by presenting a compelling, evidence-based case for catalytic public and private investment, leveraging Public-Private Partnerships (PPPs), and ensuring dedicated budgetary allocations for resilience-building initiatives; to strengthen disaster risk coordination through the formal establishment of a multi-sectoral platform ensuring vertical and horizontal integration across government tiers and non-state actors; and to create widespread DRM awareness by cultivating a robust culture of safety and participatory risk communication among residents and businesses.

We confirm that the Nansana DRM Plan 2025-2030 is fully compliant and harmonised with superior policy frameworks, including the Sendai Framework for Disaster Risk Reduction (2015–2030), the national aspirations articulated in Uganda Vision 2040, the objectives outlined in the National Development Plan (NDP) IV, the global targets of the Sustainable Development Goals (SDGs), and our own Municipal Development Plan.

I call upon all stakeholders—political leaders, technical staff, development partners, the private sector, and, most crucially, the citizens of Nansana—to collaborate fully in executing this vital plan. By working together, we will ensure Nansana Municipality is not only a place of opportunity but also a resilient community prepared to confront and successfully navigate future hazards.



Regina Bakitte Nakkazzi Musoke

Her Worship, Mayor
Nansana Municipality

Acknowledgement

The successful finalization and adoption of the Nansana Municipality Disaster Risk Management (DRM) Plan (2025-2030) represents a profound institutional milestone in advancing multi-hazard risk mitigation and urban resilience. This strategic planning instrument would not have been possible without the catalytic financial support and sustained technical engagement from our principal development partners. We extend our deepest gratitude to the World Bank for its instrumental funding provided through the Greater Kampala Metropolitan Area Urban Development Program (GKMA-UDP). This strategic intervention underscores the critical role of external financial mechanisms in strengthening municipal institutions and enabling the formulation of high-impact, actionable DRM frameworks necessary for sustainable urban development in the Greater Kampala Metropolitan Area.

We acknowledge, with profound appreciation, the rigorous technical stewardship demonstrated by the internal municipal technical staff and the contracted specialized consultants. Their commitment to meticulous data synthesis, vulnerability assessment, and the formulation of evidence-based sectoral strategies has been paramount in translating complex risk matrices into this coherent, executable framework.

Further appreciation is extended to the municipal leadership, including both the elected council and administrative body, whose unwavering policy oversight and consistent political guidance ensured the Plan's vertical alignment with national and local priorities, thereby guaranteeing the requisite institutional legitimacy for its implementation.

While the planning phase has concluded, the critical imperative now shifts to the full implementation of the strategic actions articulated in this document. We earnestly call upon all stakeholders, including national government entities, continued engagement from development partners, the private sector, and the populace, to sustain the momentum established during the plan's development. Maintaining a cohesive commitment to resource mobilization and active participation is fundamental to achieving comprehensive urban resilience and realizing the intended resilience dividend for Nansana Municipality over the five-year planning horizon.



Tandeka Festo
Municipal Clerk
Nansana Municipality

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Acronyms

DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
GHG	Greenhouse Gas Emission
NDC	Nationally Determined Contribution
RCP	Representative Concentration Pathway
UNFCCC	United Nations Framework Convention on Climate Change
WASH	Water Sanitation and Hygiene
NEMA	National Environmental Management Authority
GIS	Geographical Information Systems
ToR	Terms of Reference
EWS	Early Warning Systems
SPI	Standardized Precipitation Index

CHAPTER ONE: INTRODUCTION

1.1 Background

Disasters have become more frequent in Nansana Municipality, resulting in significant property and life losses. The disasters faced are both natural and human-induced. The municipality is prone to multiple hazards, including hydrometeorological (floods, drought, strong winds), technological (road accidents and fires), and biological (pests and diseases), among others. The hazards associated with climate change include erratic rainfall, shifting seasons, widespread degradation of natural resources (forests, wetlands, and riverbanks), and poor land-use planning, which together lead to frequent deaths, property damage, and revenue loss.

Historically, over the past 20 years, hazard occurrences in the municipality have been low because the population was sparse, natural resources were intact, and there were few informal settlements; solid waste management was also efficient, unlike today. The urban communities continue to face similar hazards year in and year out. For example, a fire outbreak occurred in Nansana West I Zone, Nansana Municipality, Wakiso District, on September 2, 2024, and approximately 15% of the municipality is prone to floods as of 2025. To inform this process, the Disaster Risk Management Plan for Nansana Municipality aligns well with the aspirations of the Sendai Framework for Disaster Risk Reduction (2015-2030) which is a UN global agreement to reduce disaster risk and losses in lives, livelihoods, and health by addressing economic, physical, social, cultural, and environmental assets; Uganda Vision 2024; National Development Plan IV and Nansana Municipal Council Development Plan 2020-2021/2024-2025. This plan is expected to increase investment in disaster risk management, strengthen disaster risk governance, expand multi-hazard profiling, and enhance disaster preparedness, response, and recovery within the municipality. Previously, to increase adaptive capacity to multiple hazards, the municipality has mobilised financial resources, planted trees to restore degraded private and public lands, developed a mobile phone application to monitor climate change actions, and installed energy-efficient cooking stoves in schools.

Despite the promotion of disaster risk reduction initiatives, multi-hazard reoccurrences persist in Nansana Municipality due to limited budgetary allocations, the absence of disaster coordination structures and DRM plans, and a lack of anticipatory actions. Secondly, although Wakiso District has a multi-hazard, risk, and vulnerability profile, a disaster risk management plan for Nansana Municipality has not been developed. The profile was not hinged on the pillars of the Sendai Framework, and its scope of coverage was limited to multi-hazard exposure and vulnerability. This plan bridges this information gap, by demonstrating hazard exposure and vulnerabilities experienced by different elements at risk and key priority result areas (Profiling of disaster risks, vulnerability and losses/damages; strengthening disaster governance structures; enhancing environmental protection to mitigate disasters; Promoting disaster preparedness, response and recovery measures; supporting community resilience to manage disasters; strengthening disaster early warning systems).

Against this background, this Disaster Risk Management Plan for Nansana Municipality has been developed to strengthen DRM integration across plans and budgets, increase budgetary allocations, and enhance investments in disaster risk reduction.

1.2 Objectives

The objectives of this disaster risk management plan are:

6. To establish a disaster risk management baseline, tracking progress in Nansana Municipality
7. To provide disaster risk reduction strategies that address key vulnerabilities, and build adaptive capacities and resilience at all levels
8. To facilitate disaster risk decision-making processes, with guidance related to budgeting, stakeholder engagement, resource mobilization, and dissemination of disaster information
9. To promote and strengthen disaster preparedness by increasing public awareness and integrating disaster risk management into broader policies

1.3 Vision of the plan

Vision Statement:

“A disaster resilient municipality that can reduce vulnerabilities of life, property, and livelihoods through strengthened preparedness, response, and recovery”

1.4 Significance of the Plan

Establishing resilient infrastructure systems capable of withstanding natural and human-induced hazards like floods and storms. Nansana is highly vulnerable to floods, windstorms, and lightning, which damage essential infrastructure, including roads, schools, health centers, and power lines. The plan prioritizes risk-informed design standards, flood-proof infrastructure, and climate-resilient upgrades to protect public assets and ensure uninterrupted service delivery during and after disasters.

Enhancing community awareness of disaster risks, prevention strategies, and emergency response to cultivate a culture of preparedness. Community-level knowledge of disaster risks and preventive actions remains low, particularly in informal settlements in Nansana Municipality. Many residents are unaware of evacuation routes, first-aid procedures, or who to contact during emergencies. The DRM plan promotes public education, school-based campaigns, and local drills that build a prepared citizenry capable of taking early action, reducing panic, and minimizing casualties during hazard events.

Developing reliable, community-based early warning systems to provide timely alerts and actionable information during hazard events. Nansana currently lacks structured early warning systems. Residents often receive flood or storm warnings late or not at all. Establishing automatic weather stations, SMS alert systems, community radio networks, and localized hazard mapping under the DRM plan will enable the timely dissemination of alerts, allowing households, schools, and businesses to act before disasters strike.

Involving local communities, vulnerable groups, and stakeholders in disaster planning, decision-making, and response operations. Groups such as women, youth, persons with disabilities, and informal settlers are disproportionately affected by disasters due to limited access to information, mobility constraints, and economic dependence on climate-sensitive sectors. The DRM plan ensures these voices are included in risk mapping, response planning, and decision-making, enhancing equity and ensuring that interventions are locally appropriate and inclusive.

Implementing adaptive strategies and ecosystem-based solutions that address climate-induced hazards and reduce vulnerability. Nansana has experienced severe degradation of wetlands and forests, which once served as natural buffers against floods. More than 83% of wetlands are either encroached upon or degraded. The DRM plan will support nature-based solutions like wetland restoration, urban greening, and riverbank stabilization to manage floodwaters, reduce runoff, and restore ecological balance, while also supporting biodiversity and long-term sustainability.

Strengthening coordination and partnerships among local government departments, NGOs, and community organizations for rapid, effective emergency response. Disaster response in Nansana is often fragmented due to limited coordination between sectors (e.g., health, infrastructure, and environment) and external partners. The DRM plan will formalize coordination structures, such as Municipal Disaster Committees, and response protocols, thereby enabling integrated action, efficient resource sharing, and timely deployment of relief and rescue operations.

Protecting livelihoods and supporting economic recovery following disasters through financial services, social safety nets, and green job opportunities. Disasters in Nansana disproportionately impact low-income households and informal workers, destroying assets and disrupting livelihoods, particularly in agriculture, trade, and waste management. The DRM plan will support post-disaster recovery financing and green employment initiatives (e.g., in waste recycling or tree planting) to reduce long-term vulnerability and restore economic stability.

1.5 Planning Process

This plan was developed through a consultative process, indicating that it was stakeholder-driven. The steps undertaken to create this plan included stakeholder consultations (at the municipal, subdivision, and parish levels), analysis of multi-hazards, and validation of vulnerabilities. The process was entirely participatory, suggesting that the development of the plan, vision, objectives, and disaster risk reduction was stakeholder-led. The participants were selected in accordance with principles of fairness, equity, gender, and social inclusion.

The time frame for this plan is 2025-2030, aligning with Uganda's Updated Nationally Determined Contribution (NDC) and the National Disaster Risk Management.

While developing this plan, the datasets collected and analysed to demonstrate disaster risk management included meteorological (rainfall and temperature), socioeconomic, digital elevation model, rivers, health, schools, roads, and water sources, among others. The results are presented as maps, tables, and graphs that display climate change mitigation and adaptation options and adaptive capacities within Nansana Municipal.

1.6 Policy, Regulatory and Planning Frameworks

This plan focuses on addressing disaster risks through sectoral, catchment, and local planning. It aims to reduce vulnerabilities to natural and human-made disasters, enhance disaster preparedness and response mechanisms, and build community resilience. The frameworks emphasize the development of disaster-resilient infrastructure and systems. Table I presents the policy, regulatory, and planning frameworks that support disaster management and adaptation strategies.

Table 1: Strategies, International and national policy and regulatory frameworks

Frameworks, Policies, Plans and Acts			Relevance to Climate actions
International Frameworks			
United Nations Framework Convention on Climate Change (UNFCCC) 1992(Article 4)			Uganda signed and ratified the UNFCCC in 1992. The UNFCCC primarily focuses on developing NDCs, promotes the integration of climate change into national planning, and enables access to international climate finance, capacity building, and technology to align actions with global climate goals, thereby strengthening institutional frameworks for coordinated climate action.
The Sendai Framework for Disaster Risk Reduction (2015-2030) (Priority 2)			The Sendai Framework emphasizes the need to reduce disaster risks exacerbated by climate change, including droughts, floods, and extreme weather events. It encourages the integration of DRR into climate change policies and plans. To build climate resilience, improve EVWS, and ensure climate adaptation efforts reduce vulnerability to climate-related disasters.
The United Nations Convention to Combat Desertification (1994) (Article 2)			The UNCCD focuses on promoting sustainable land management practices that prevent desertification, land degradation, and drought; implementing climate-resilient agricultural practices, improving soil health, and restoring degraded lands; mitigating the impacts of climate change, enhancing carbon sequestration, and increasing agricultural productivity in vulnerable areas, to contribute to climate adaptation and greenhouse gas reduction.
The Paris Agreement (2015) (Article 2)			The Paris Agreement is a core in limiting global temperature rise to well below 2°C and pursuing efforts to stay within 1.5°C; it guides the formulation and implementation of NDCs, which outline sector-specific strategies for climate mitigation and adaptation; enhances access to international climate finance, capacity building and technology transfer, and supports the transition to a low-carbon and climate-resilient development pathway.
Kyoto Protocol (2005) (Article 12.2 -12.6)			The Kyoto Protocol's primary focus is on reducing greenhouse gas emissions through the implementation of emission-reduction projects, access to climate finance, and the promotion of low-carbon technologies. Supporting climate action goals is easy through the Clean Development Mechanism CDM.
Sustainable Development Goals (2015) (SDG 13: Climate Action)			The SDGs, specifically Goal 13 (Climate Action), focus on strengthening resilience and adaptive capacity to climate-related hazards; promoting the integration of climate change measures into national policies, strategies, and planning; encouraging access to climate

Frameworks, Policies, Plans and Acts		Relevance to Climate actions
		finance, investing in renewable energy, and promoting sustainable land and resource use to achieve a low-carbon, climate-resilient future.
African Union Agenda (2063) (Chapter 2, Aspiration I)		Focuses on promoting a prosperous and sustainable Africa by supporting inclusive green growth, environmental sustainability, and climate-resilient economies; advocating for renewable energy adoption, sustainable land use, and climate-smart agriculture; encouraging regional cooperation and resource mobilization to tackle climate change effectively.
IGAD Initiatives on Drought & Desertification Strategy (2021-2025) (Pillar I)		The strategy focuses on promoting climate-resilient agriculture, sustainable land management, ecosystem restoration, addressing land degradation, and reducing vulnerability to climate shocks, promoting cross-border collaboration, capacity building, and the use of climate-smart practices, contributing to greenhouse gas reduction, enhanced adaptive capacity, and improved food security in drought-prone areas.
UN 2030 Agenda (Goal 13: Climate Action)		The agenda adopted in 2015 outlines 17 SDGs, with Goal 13 (Climate Action) calling for urgent action to combat climate change and its impacts. It guides the integration of climate change into national planning, encourages resilient development, and supports access to international climate finance and technology.
The Ramsar Convention on Wetlands (1971) (Articles 3.1,4)		The Ramsar Convention promotes the conservation and wise use of wetlands, which advocates for carbon storage, climate regulation, and biodiversity conservation by buffering climate impacts and supporting climate-resilient livelihoods, including fishing, eco-tourism, and sustainable agriculture.
National Planning frameworks		
Uganda Vision (2040) (Chapter 5, section 5.9)		The Vision acknowledges climate change as a hindrance to development and promotes a shift to a green economy focused on low-carbon development, renewable energy, and sustainable natural resource use. It also supports the integration of climate change adaptation and mitigation across all sectors of the economy to ensure long-term sustainability.
Fourth National Development Plan		NDPIV focuses on integrating climate change into national and local development plans. It promotes sustainable use of natural resources, environmental protection, and low-emission development pathways. It has supported investment in climate-smart technologies and encourages coordination among sectors to strengthen climate resilience.
Updated Nationally Determined Contribution (2022) (Page iii)		The Updated NDC outlines the country's enhanced commitment to reduce greenhouse gas emissions by 24.7% by 2030, with a focus on sectors including agriculture, energy, forestry, and waste management. It promotes transition to clean energy, climate-smart agriculture, and afforestation, while advocating for inclusive participation and gender-responsive approaches.
Uganda Disaster Preparedness Plan (2005 – 2009)		Although it was developed before Uganda's formal climate change policy frameworks, the plan indirectly supports climate goals by strengthening national capacity to prepare for climate-related hazards such as floods and droughts.

Frameworks, Policies, Plans and Acts		Relevance to Climate actions
National Disaster Risk Management (DRM) Plan (2011 – 2028)		The DRM Plan supports the country's climate resilience efforts by promoting risk-informed development planning. It acknowledges the growing impact of climate-induced hazards, including droughts, floods, and landslides, and advocates for adaptation measures that reduce long-term vulnerability to climate change.
NRM manifesto (2021 – 2026) (Section 3, page 277)		The Manifesto highlights the importance of sustainable natural resource management as a foundation for Uganda's future development. It profiles a commitment to climate-smart agriculture, which aims to enhance productivity while minimizing environmental degradation. It promotes the adoption of innovative technologies to reduce carbon emissions and improve environmental sustainability. It also calls for integrating climate change adaptation and mitigation strategies across all sectors, including agriculture, energy, infrastructure, and transport, to ensure climate resilience in both urban and rural communities.
Uganda National Adaptation Programmes of Action (2007)		NAPA establishes a strategic approach to climate change adaptation by identifying the most vulnerable communities and sectors. It focuses on actions that enhance resilience in sectors including health, agriculture, and water resources. It proposes adaptation measures, including promoting drought-resistant crops, improving water storage, and enhancing EWS for extreme weather events.
Health Development Sector Plan (2015-2020)		The plan recognizes the growing impact of climate change on public health, primarily through climate-sensitive diseases such as cholera, malaria, and waterborne diseases. It underscores the need for climate adaptation strategies to protect health systems and improve healthcare access for vulnerable populations. The plan also supports initiatives such as vector control in malaria-prone areas and the strengthening of health sector capacity to manage climate-related health crises.
The Water Action Plan (1995)		The plan focuses on improving water resource management by ensuring sustainable water use amid growing climate change impacts. It emphasizes the development of water infrastructure, water conservation, and the promotion of efficient irrigation practices, all of which are important for adapting to climate-induced water scarcity and drought. It also advocates for better management of wetlands to improve water retention and resilience to climate-related shifts in water availability.
National Policies		
The 1995 Constitution of Uganda (1995) (XIII. Protection of natural resources, XXVII. The environment)		The Constitution establishes the foundation for environmental protection, recognizing the duty of the state and its citizens to safeguard natural resources, including water, land, wetlands, and biodiversity. It requires that development be ecologically sustainable, supporting climate action by providing a legal basis to integrate environmental and climate considerations into national and local policies.
National Environment Management Policy (2014) (Chapter 3)		NEMP establishes a framework to integrate climate considerations and environmental sustainability into Uganda's development agenda by promoting the sustainable use of natural resources, supporting climate

Frameworks, Policies, Plans and Acts		Relevance to Climate actions
		change mitigation and adaptation measures, and advocating for the integration of climate issues into sectoral plans, policies, and budgets. NEMP encourages the mobilization of financial and technical resources for environmental protection and resilience building.
Uganda National Land Policy (2013) (Chapter 6,6.7,6.10(150-152)		The policy advocates climate-resilient land-use planning by promoting sustainable land management practices that prevent degradation and enhance productivity. It encourages protection of fragile ecosystems, including forests, wetlands, and mountainous areas, which are crucial for carbon sequestration and climate regulation. The policy also emphasizes integrating climate change adaptation strategies into land tenure and utilization systems.
Uganda National Climate Change Policy (2015) (Page v, Section 3)		The policy is a central framework for addressing climate change, guiding both mitigation and adaptation efforts, promoting low-carbon development, encouraging sustainable energy use, and advocating for integration of climate change into all national and sectoral plans; supports green economy initiatives and provides direction for mobilizing climate finance, research, and technology transfer to build national climate resilience.
Disaster Preparedness and Management Policy (2010) (Section 1.1.4.9)		Although the policy primarily focuses on disaster management, it also recognizes the increasing climate-related hazards, including floods, droughts, and landslides, and their impacts; promotes the mainstreaming of climate change adaptation into disaster risk reduction strategies, and supports actions that build community resilience to the long-term effects of climate change.
The Uganda Forestry Policy (2001) (Policy statement 7, section 1.2.3,1.2.6)		The policy seeks to promote sustainable forest management for climate change mitigation through biodiversity conservation and carbon sequestration, and to encourage afforestation, reforestation, and the restoration of degraded forest ecosystems, all of which reduce greenhouse gas emissions and enhance climate resilience across landscapes.
The Water Statute (1995)		The Water Statute advocates sustainable use, conservation, efficient water use, protection of water resources, and resilience-building in water supply systems, which are key to climate adaptation. It establishes the legal basis for an integrated water resources management (IWRM) approach to ensure water availability amidst changing climate patterns.
The Gender Policy (2007) (Section 5.4)		The policy primarily emphasizes equity and inclusiveness in climate change planning and response. It recognizes that women and men experience climate impacts differently and promotes the integration of gender perspectives into environmental and climate policies; it advocates for women's participation in climate actions, mainly in sectors including agriculture, water, and energy, which are highly climate-sensitive
National Acts		
National Forestry and Tree Planting Act (2003)		The Act establishes a legal framework that prioritizes the sustainable expansion of forests and their management to mitigate climate change

Frameworks, Policies, Plans and Acts	Relevance to Climate actions
(Section 2 (a -h), sections 37,39).	through carbon sequestration. It also promotes afforestation, tree planting, and reforestation in degraded areas, and supports the conservation of natural forest reserves to reduce greenhouse gas emissions and protect biodiversity.
National Climate Change Act (2021) (Section 3(a -e))	The Act primarily seeks to address climate change. It mandates integrating climate change into all national and sectoral plans, policies, and budgets. It has established institutional structures for climate governance, enforces commitments under international agreements (e.g. the Paris Agreement), and promotes emissions tracking, low-carbon development, and climate finance mechanisms to support climate-resilient growth.
National Disaster Preparedness and Management Act (2021)	The Act supports climate change adaptation by integrating disaster risk reduction (DRR) into national development plans, thereby helping address the vulnerabilities of sectors such as water resources, agriculture, and health to climate change impacts, including droughts and floods. The Act enhances Uganda's capacity to prepare for and manage climate-induced hazards, thereby promoting community sustainability through EWS, resource mobilization, and adaptive measures.
The National Environment Act (NEA) (2019) (Page 9)	The NEA provides a framework for environmental management which emphasizes sustainable development and the integration of environmental concerns into national planning. It established the NEMA, a coordinating, monitoring, regulatory, and supervisory body for ecological activities. The Act seeks to address emerging environmental issues, including climate change, by promoting strategic environmental assessments and the management of hazardous chemicals.
The National Water Policy (1999) (Sections 4.1,4.3.3 ,6.4,7.2)	The policy provides a framework that prioritizes sustainable management and development of water resources. It has promoted IWRM to adapt to climate variability and ensure the equitable and efficient use of water across all sectors. It also supports water conservation and sustainable water supply for rain-fed agricultural production affected by climate change. It addresses the need for efficient water use across industries and urban areas to reduce their carbon and water footprints.
The Water Act, Cap. 152 (1997) (Section 4 (a-d)).	The Act establishes a framework for the use, protection, and management of water resources. It supports climate adaptation efforts by ensuring that water use across agricultural, domestic, industrial, and energy production is sustainable. This helps mitigate the impacts of climate change by maintaining the availability and integrity of water resources.
Land Act, 1998 (as amended), Cap. 227.(Part III Sections 42,43,44,45)	The Act establishes a framework for land tenure, including customary, freehold, mailo, and leasehold; ownership, and management. Although the Act does not explicitly address climate change issues, but it encourages sustainable land-use practices and long-term investments

Frameworks, Policies, Plans and Acts	Relevance to Climate actions
	in land conservation, which are essential in climate change mitigation and adaptation strategies.
The Local Governments Act (1997) (Second schedule, Part 2, item 15, Sections 30,31,32)	The Act entrusts local governments with managing natural resources within their jurisdictions. It empowers local authorities to implement environmental policies and programs customized to their specific contexts, facilitating more effective responses to climate change challenges; LGs can develop and enforce ordinances related to environmental conservation, promote sustainable land use practices, and engage communities in climate adaptation initiatives, enabling grassroots-level climate action, fostering resilience and sustainable development.
Public Finance Management Act, 2015 (Section 9(1), (3), (5), (6), (7), (8))	PFMA integrates climate change into planning and budgeting through prudent financial management, ensuring efficient allocation of resources to climate-related initiatives and enabling the government to fund climate adaptation and mitigation programs that build resilience to climate impacts.
The National Water & Sewerage Corporation Act. 1995(Section 4)	The policy gave rise to the establishment of the National Water and Sewerage Corporation (NWSC). The NWSC has been responsible for the provision of piped water and focuses on expanding water and sewerage services in large and small urban centres. In this context, the Act supports the implementation of IWRM, encourages the sustainable management and conservation of water resources, and enhances climate resilience in urban areas by helping communities adapt to climate change impacts, such as altered precipitation patterns and water scarcity.

1.7 Institutional Analysis

Disaster Management Structure

The government's responsibility for disaster management lies within the Office of the Prime Minister. This mandate is executed through the Department of Relief, Disaster Preparedness, and Management, the lead agency for disaster preparedness and management.

The department coordinates the country's risk reduction, prevention, preparedness, mitigation, and response actions. However, the policies emphasise that these mandates must be executed in consultation with line ministries, humanitarian and development partners, Local Governments, and the Private sector Figure 1.

The Minister responsible for disaster preparedness and management reports to the President. In consultation with the Cabinet, the president declares an area or the nation in a state of disaster. The Cabinet is the body that produces government policy and advises the President on disaster management.

The Cabinet's standing committee is the Ministerial Policy Committee (MPC), which handles cross-sectoral matters related to disaster preparedness and management. The purpose is to ensure that disaster preparedness and management are mainstreamed in Uganda's governance.

The Disaster Management Policy also establishes an Inter-Agency Technical Committee comprising focal point technical officers from line ministries, UN agencies, NGOs, and other relevant stakeholders. The Permanent Secretary of the Office of the Prime Minister chairs the committee.

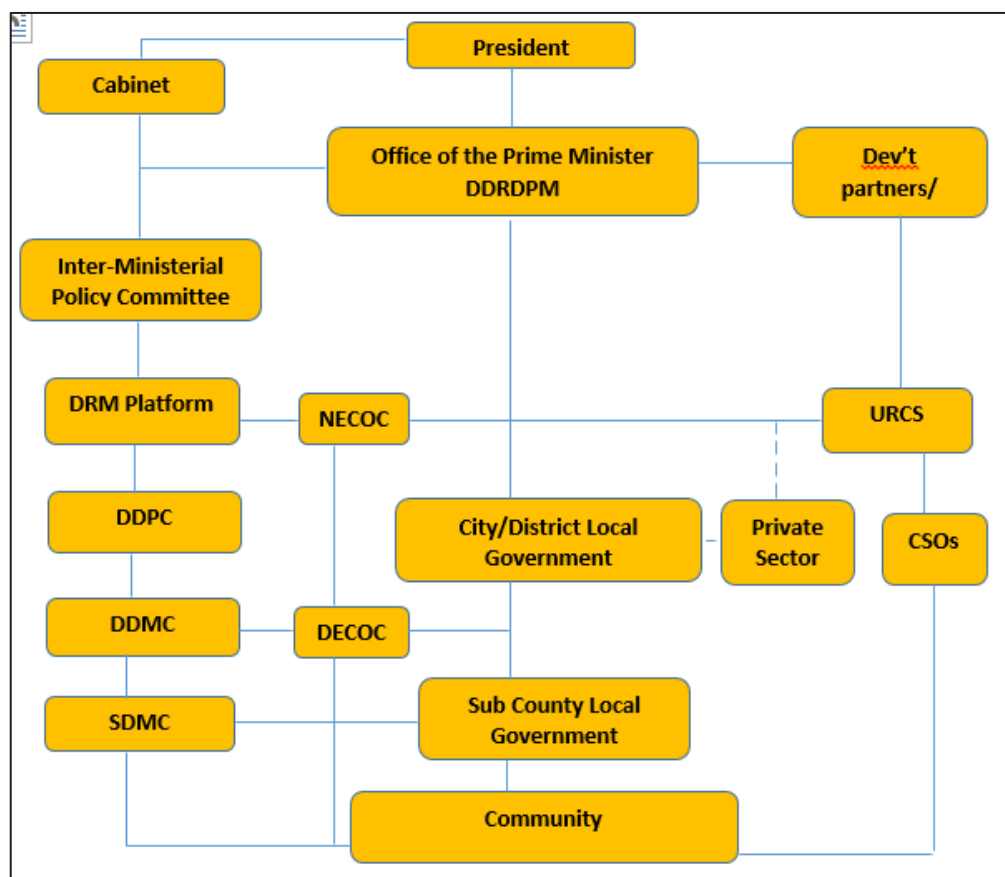


Figure 1: Disaster risk management in Uganda

National Emergency Coordination and Operations Centre (NECOC)

NECOC was established by an Act of Parliament to ensure a rapid response to emergencies. It is part of the National Disaster Preparedness and Management Institutional Structure, fully established and operational under the Department of Relief, Disaster Preparedness, and Management.

The 24/7hr centre is headed by an Assistant Commissioner or Senior Army commander at the rank of Brigadier to coordinate emergencies. The Mission is to ensure the Government's rapid response to emergencies, effective coordination of resources, and strong support for recovery by issuing timely warnings, mobilising adequate response, and recording and acting on damage and loss information.

It is also linked to all police stations, with police officers seconded from the signal unit supporting communication and information gathering. NECOC is activated during an imminent disaster and deactivated afterward. Activation entails scaling up the operations nationally and getting relevant personnel or technocrats from different ministries, MDAs, and partners. These convene in the NECOC to operate as one team until the disaster ends. Deactivation entails returning officers to their MDAs after the catastrophe and scaling down NECOC operations.

NECOC is responsible for coordinating and networking with government emergency response institutions, including the fire brigade, Police, Rapid Response Units, UPDF Emergency Support Units, the Uganda Red Cross Society, hospital emergency units, and private emergency firms. However, NECOC reports to the Department of Relief, Disaster Preparedness, and Management, and is “directly linked to the Uganda Police Operations Centre and all district police stations.

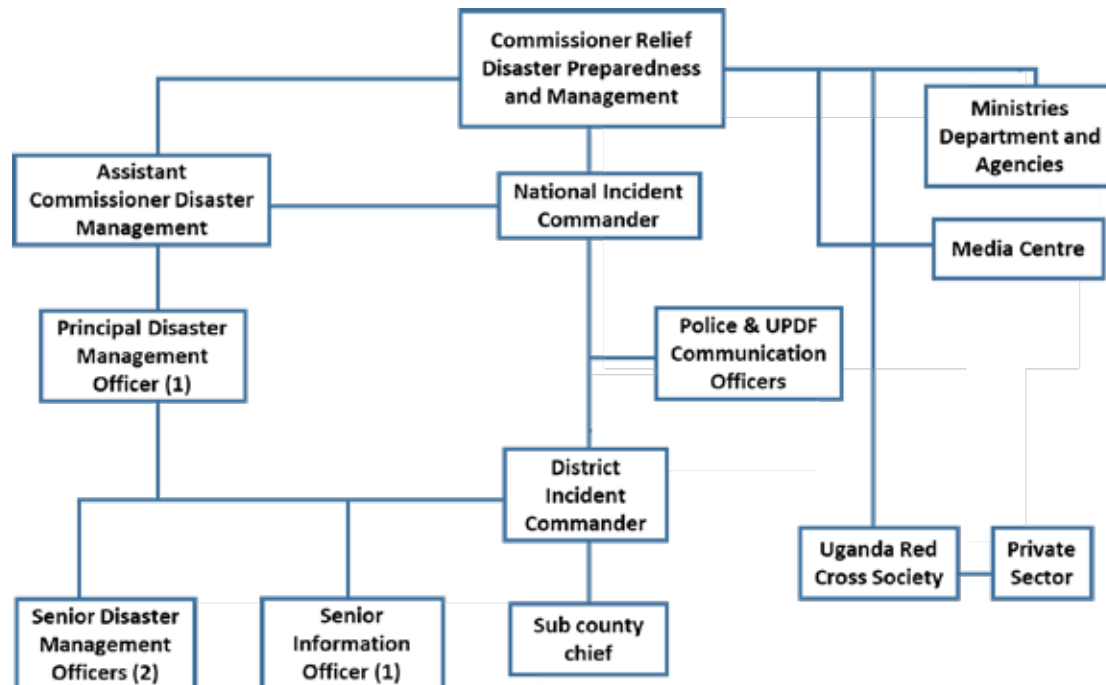


Figure 2: National Emergency Coordination and Operations Centre

At the district level, the Uganda Police established a District Emergency Coordination and Operations Centre, to be located at the district police station and reporting to the NECOC. There will also be a District Disaster Policy Committee (DDPC).

In every city, there will be a City Disaster Policy Committee (CDPC) and a City Disaster Preparedness and Management Technical Committee (CDP&TC). The City Mayor will run the CDPC, while the City Town Clerk will run the CDP&TC.

Furthermore, there will also “be a Municipal Disaster Policy Committee in every municipality of the country. There shall also be a Town Disaster Policy Committee in every Town Council”.

At the village level, a Village Disaster Management Committee will reach the local communities. The Village Disaster Management Committee is chaired by the village’s Local Council chairperson, and its other members will include all adult village members.

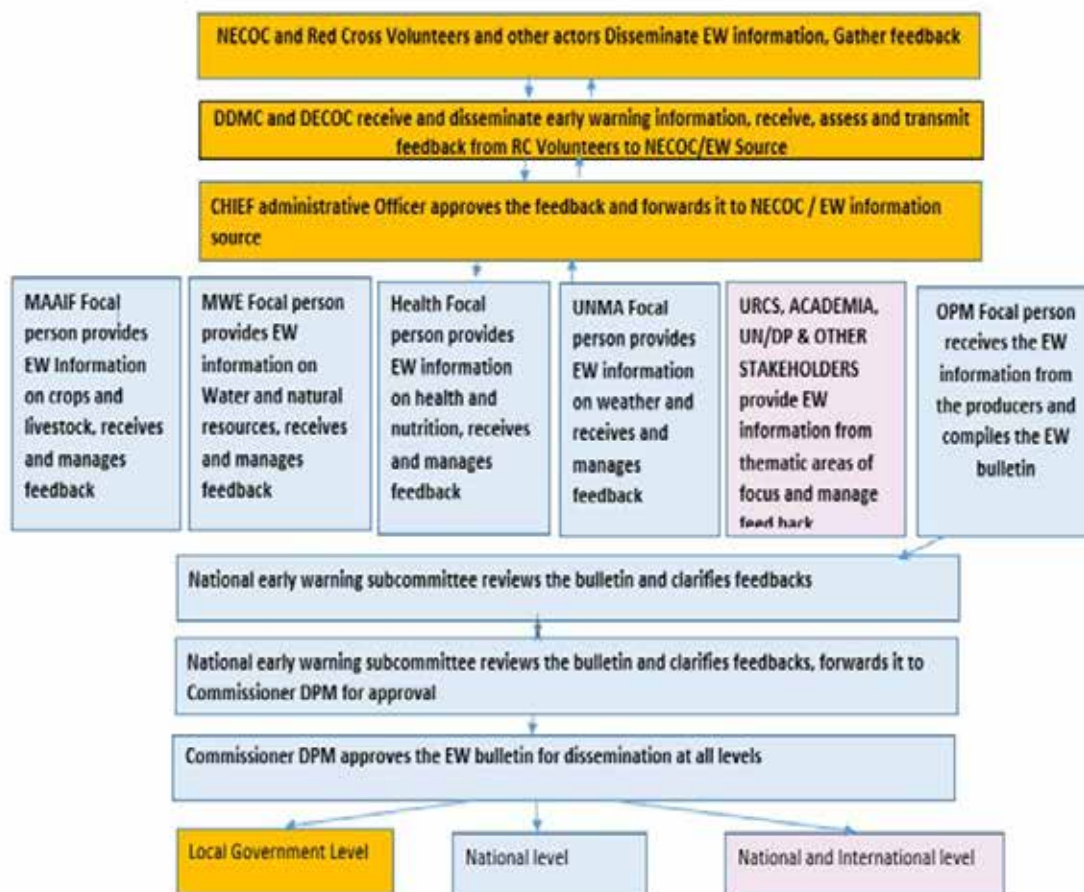


Figure 3: Early warning dissemination structure

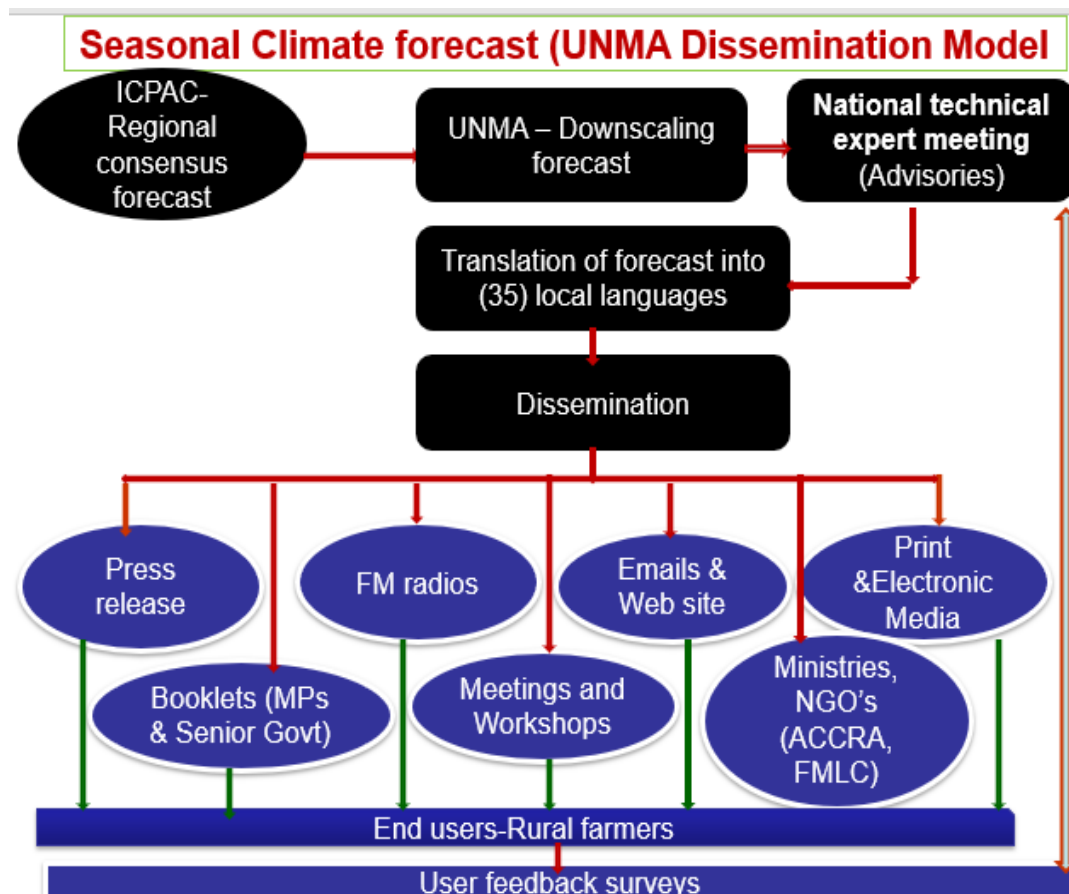


Figure 4: Seasonal climate forecast model



Figure 5: Poor waste disposal in Nabweru division

1.8 Strengths, weaknesses, opportunities, and threats to disaster management in the municipality

Strengths

1. There is a technical staff that is responsible for DRM
2. They are mandated to enforce the law. This enables the municipality to ensure that the public responds to appropriate DRR measures
3. The community is willing to participate in DRM
4. They have environment and natural resources committees at the divisions

Opportunities

1. Location- the municipal is accessible
2. There is political will
3. Availability of capacity building workshops from partners such as NEMA
4. Availability of stakeholders and projects to support DRR such as GKMA-UDP
5. Presence of a coordination body through the Nansana Municipal Council in place

Weakness

1. There is limited spatial data on disasters
2. Limited involvement of communities in DRM
3. Construction of non-resilient structures to disasters
4. Low technical capacities to do real time assessment after disasters
5. Discrepancies between political commitment and implementation
6. Poor supervision and monitoring of climate adaptation activities
7. Inadequate financial resources at the Nansana Municipal Council and divisions.

Threats

1. Lack of early warning systems
2. Absence of a disaster management committee at the municipal council
3. There is no data about the magnitude of disasters
4. Political interference in DRR, such as wetland restoration
5. High corruption tendencies

1.9 Challenges faced in disaster risk management

The critical challenges faced in the management of disasters in the Nansana Municipal Council are listed below:

1. Insufficient funds to manage disasters
2. Technical capacity to manage disasters is limited
3. Poor attitude of communities towards DRR
4. The human resources are also lacking, especially in the divisions
5. Limited availability of resources, e.g., trucks and wheel loaders
6. Lack of early warning systems

CHAPTER TWO: MULTI-HAZARD, RISK AND VULNERABILITY PROFILE

2.1 Introduction

The hazards that occur in Nansana Municipality are categorized into four classes;

1. Hydro-meteorological hazards (drought, floods, windstorms, hailstorms, and lightning)
2. Geological hazards (earthquakes)
3. Biological hazards (pests, parasites, and diseases)
4. Technological hazards (road accidents, fires)

2.2 Hydro-meteorological hazards

Hydro-meteorological hazards are processes or phenomena of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (UNDRR, 2009). They include both hydrological (water-related) and meteorological (weather-related) hazards. Examples of hydro-meteorological hazards in Nansana Municipality include floods, drought, hailstorms, lightning, and windstorms.

Drought Hazard

Drought is defined as a recurrent feature of the climate that occurs when there is an extended period of abnormal deficiency in precipitation (relative to what is considered normal) (Sivakumar & Wilhite, 2002). Drought in Nansana Municipality has been attributed to environmental degradation, mainly the cutting down of trees, and the encroachment of wetland ecosystems. The impacts of drought include water crisis, reduced crop and livestock productivity, and increased food prices. The warmer temperatures also favour the survival of some pests and parasites, leading to increased pest, parasite, and disease populations.

In August 2021, a prolonged drought led to water shortages in areas like Maganjo, Katooke, Kagoma, and Kawanda. Residents resorted to using alternative water sources, such as swamps, ponds, and boreholes, which are often contaminated with domestic animal waste. This practice led to an increase in waterborne disease cases due to contaminated water. Children were particularly at risk, as they were sometimes sent to fetch water from these unsafe sources, exposing them to dangers like drowning and exploitation.

Drought in Nansana Municipality was assessed using the Standardized Precipitation Index (SPI). Rainfall data (1994-2024) from CHIRPS (Climate Hazards Group InfraRed Precipitation with Station data) was used to compute the SPI. The SPI was calculated using the Drought Indices Calculator (DrinC). Drought was then categorized based on SPI values as described by Guttman (1999); and McKee et al. (1993).

The largest portion of the municipality (64.5%) is at low drought risk. However, wards such as Maganjo, Migadde, Ttikalu, Gombe, Mwererwe, Wambale, and Wamirongo; are exposed to moderate drought hazard (**Figure 6**).

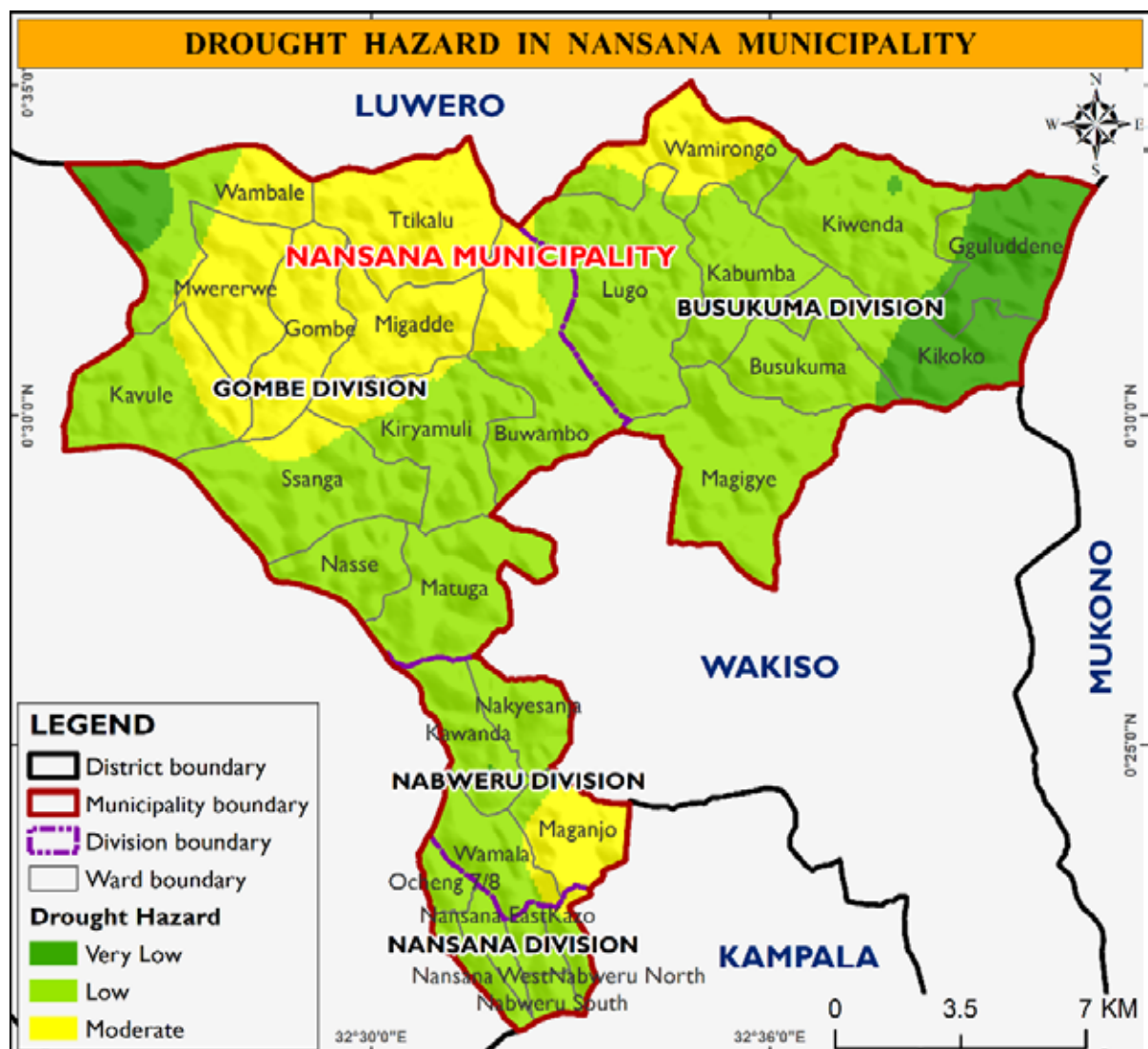


Figure 6: Drought hazard zonation in Nansana Municipality

Flood Hazard

Flooding is an overflow of water that submerges land that is usually dry (Farida & Maswanku, 2022). The floods in Nansana Municipality are primarily attributed to climate change, deforestation, wetland encroachment, municipal waste disposal in drainage channels, and increased farming along the riverbanks. The impacts of floods in Nansana Municipality include loss of lives; destruction of houses and household property; destruction of croplands; contamination of water sources; destruction of WASH facilities and infrastructure such as health centres, schools, roads, bridges, and culverts. The most significant portion of the municipality (26.3%) is exposed to moderate-intensity flooding.

The heavy rains in May 2023 caused flooding of the River Mayanja, affecting areas in Wakiso District, including parts of Nansana. The floods cut off several roads and disrupted transportation, highlighting the vulnerability of infrastructure to extreme weather events.

Flooding in Nansana Municipality was delineated using HEC-GeoRAS. The input datasets included rainfall, elevation, land use/cover, and stream geometry data. The flood extents were then categorized into flood hazard intensities based on water depth: very high (>2m), high (1.5m-2m),

moderate (1m-1.5m), and low (0.5m-1m). **Table 2** shows the flood hotspots identified by community members across the divisions of Nansana Municipality.

Table 2: Flood hotspots in Nansana Municipality

Divisions	Busukuma	Nabweru	Nansana	Gombe
Hotspots	Kattabaana, Kasangati, Nasirye, Bulesa, Butera, Namawata, Kabonge-Buyaga, Kigemezi-Buwanuka, Nabutiti, Bukemba-Kabanyolo, Bulyankuyege-Butera, Namulonge TC	Kawempe B, Tula, Kisumu, Kakira, Nabweru Division Head Quarters, Wamala	Katalemwa, Katoogo, Lubigi, Bwaise, Kibwa, Katooke, Kazo, Lugoba-kazinga, Bujjagaali, Kabumbi	Watindo Wambale, Semuto, Ngalomyambe, Kavule, Gombe

The flood hazard hotspots in Nansana Municipality are presented in **Figure 7**.

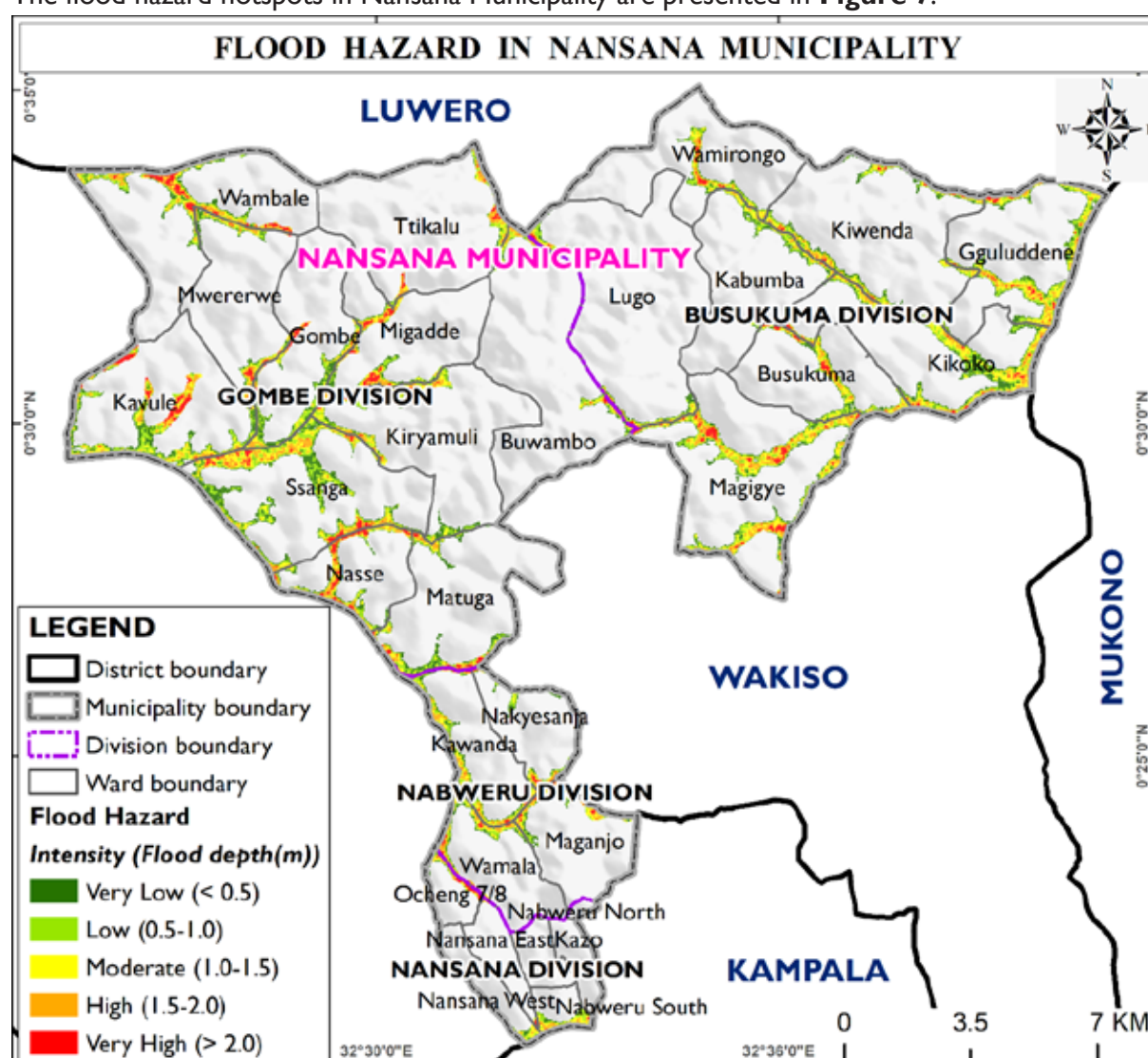


Figure 7: Flood hazard zonation in Nansana Municipality

Hailstorm Hazard

Hail is a form of solid precipitation. It consists of balls or irregular lumps of ice, each of which is called a hailstone. Hailstones consist primarily of water ice and measure between 0.2 inches and 6 inches in diameter. Hail develops when rising air in a thunderstorm, known as the updraft, lifts water droplets high into the atmosphere where temperatures are below freezing. This causes water droplets to form hailstones before they fall to earth.

The stronger the updraft, the larger the hailstones can become before succumbing to the pull of gravity and falling to the earth's surface. Depending on their intensity, hailstorms can destroy crops and cause temporary damage to WASH infrastructure (such as water points and latrines). The entire municipality is moderately vulnerable to hailstorm hazard (**Figure 8**).

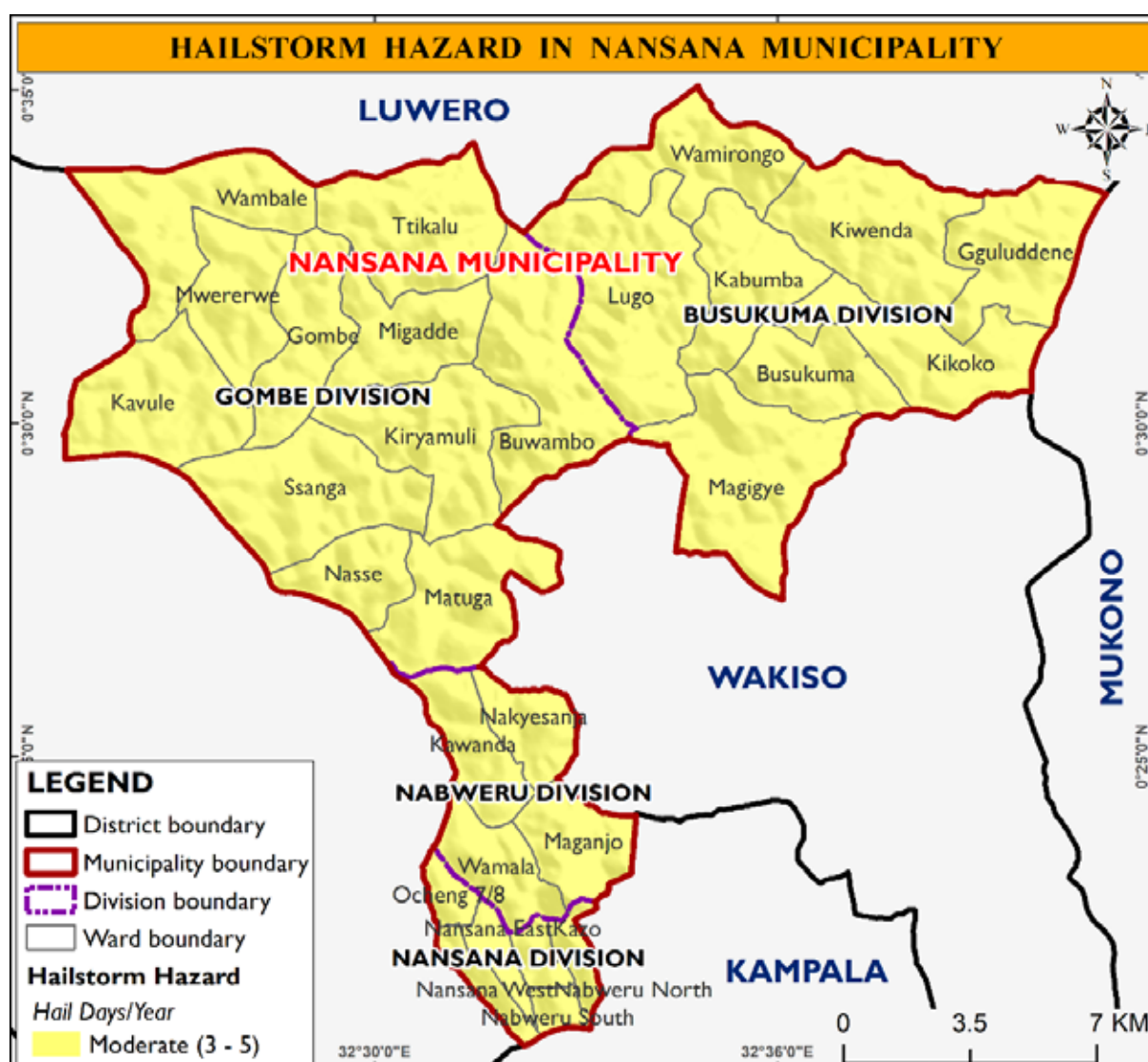


Figure 8: Hailstorm hazard zonation in Nansana Municipality

Data Source: OPM, 2019

Lightning Hazard

Lightning is the occurrence of a natural electrical discharge of very short duration and high voltage between a cloud and the ground or within a cloud (Agrawal & Nigam, 2014). The frequencies and severities of lightning incidents have increased, resulting in significant loss of life and property. Lightning happens under favourable conditions, where electrical discharges occur from a charge centre in a cloud either to: (i) the induced charge on the earth, (ii) the charge centres of another cloud, or (iii) a charge centre of the same cloud.

Thunder day data were used to profile lightning, and this was supplemented with Over-shooting Tops (OT) data acquired from the NASA Meteosat Second Generation (MSG) 3km-resolution Spin-Enhanced Visible Infrared Imager (SEVIRI). The lightning hazard zonation was generated based on flashes per square kilometre per year and classified as low, moderate, and high (**Table 3**).

Table 3: Lightning hazard intensity scale

Intensity Class	OT Counts/month	Flash density (strikes/yr/km ²)
High	10-15	50-75
Moderate	5-10	10-50
Low	2-5	< 10

The largest area of Nansana Municipality (40.9%) is exposed to a moderate lightning hazard. However, some regions of Wamirongo ward, Busukuma division, are exposed to high lightning hazard (**Figure 9**).

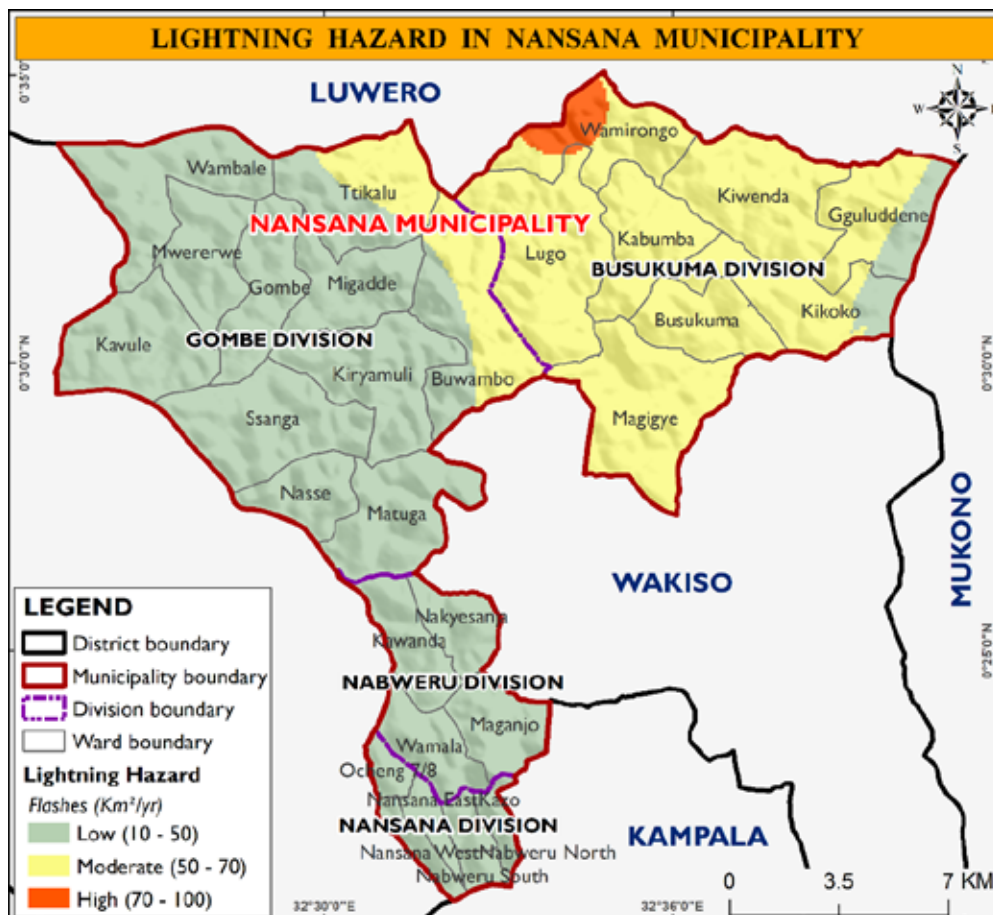


Figure 9: Lightning hazard zonation in Nansana Municipality

Windstorm Hazard

Wind is the perceptible natural movement of air. Differences in atmospheric pressure cause wind. When atmospheric pressure differs, air moves from higher to lower pressure, creating winds of varying speeds. The impacts of windstorms in Nansana Municipality include air pollution, the spread of human diseases, uprooting of trees, and considerable structural damage to buildings, power and telephone lines, communication masts, and other urban infrastructure.

In March 2023, a mighty windstorm swept through Nansana Municipality, lasting less than an hour and resulting in widespread power outages and water supply disruptions due to fallen power poles and trees. This highlights Nansana Municipality's vulnerability to windstorms and the need to implement robust infrastructure and emergency preparedness measures to mitigate their impact.

The assessment adopted Morjani's (2011) wind-speed modelling approach to develop the windstorm hazard for Nansana Municipality. Wind speed data for the municipality was obtained from the climate engine for the period 1994-2024. The spatial distribution of wind hazard intensity was determined using kriging interpolation and the Beaufort wind scale (**Table 4**).

Table 4: Beaufort wind hazard intensity scale

Beaufort scale	Description	Wind speed (m/s)	Conditions	Windstorm Hazard Class
6	Strong breeze	10.8-14.5	Large tree branches/crops in motion; whistling heard in electric/telegraph wires; difficulty using umbrellas	Very low
7	High wind, moderate gale	14.6-20.0	Whole trees in motion; difficulty when walking against the wind	Low
8	Gale	20.1-22.0	Twigs break off trees; generally, impedes progress	Moderate
9	Strong/severe gale	22.1-28.0	Can cause slight structural damages	High
10	Storm, whole gale	> 28.1	Trees/crops uprooted; considerable structural damage, may be accompanied by widespread damage	Very high

The largest portion of the municipality (83%) is exposed to a very low windstorm hazard, particularly in the Gombe and Busukuma divisions. Nansana division and some sections of Nabweru division are exposed to moderate windstorm hazard (**Figure 10**).

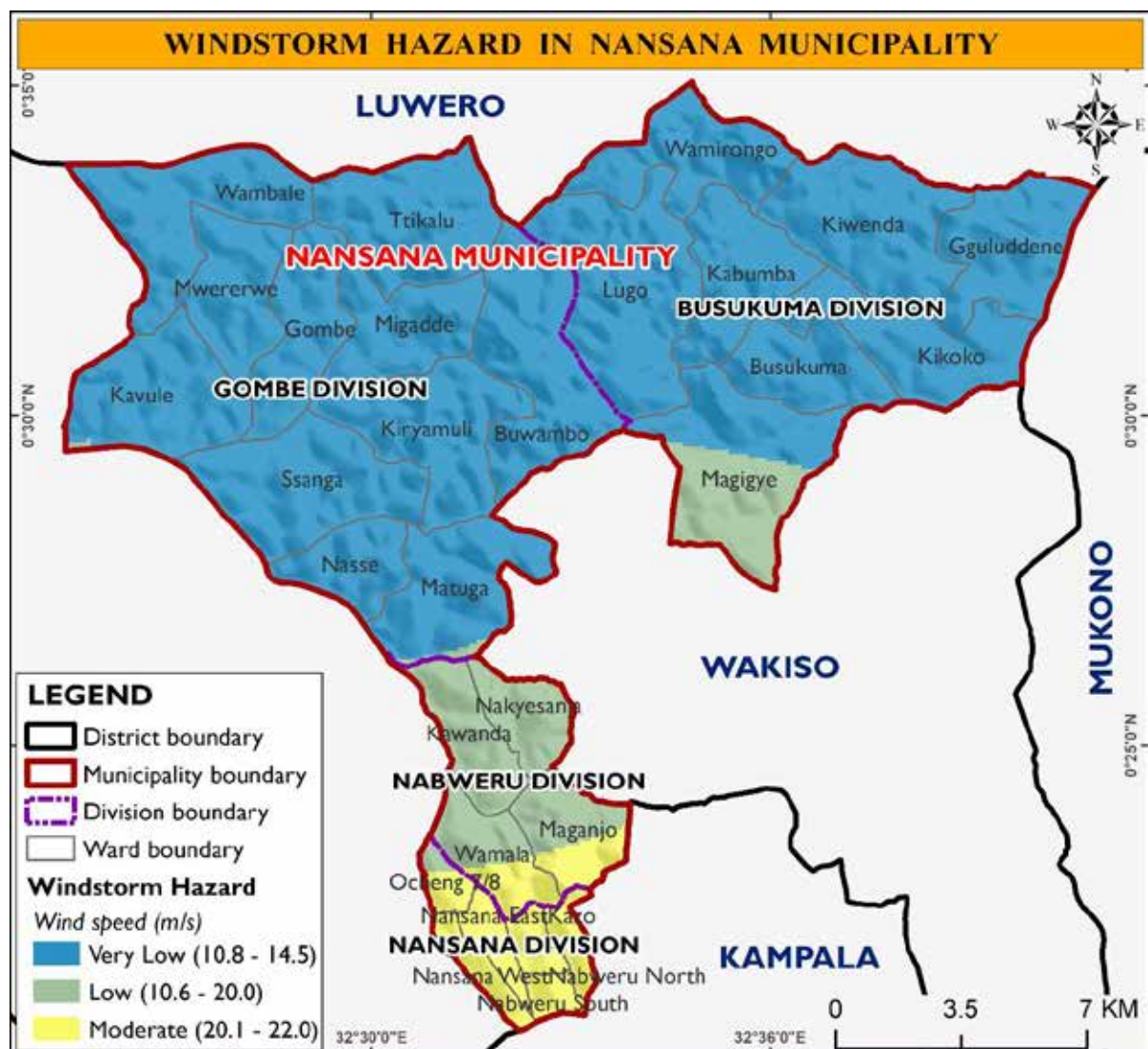


Figure 10: Windstorm hazard zonation in Nansana Municipality

2.3 Geological hazards

Geological hazards are geological processes or phenomena that may cause loss of life, injury, or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (UNDRR, 2009). They originate from the Earth's internal processes or from surface and subsurface geological conditions and may include earthquakes and volcanic eruptions.

Earthquake Hazard

An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. The seismicity of an area refers to the frequency, type, and size of earthquakes experienced over time. Earthquakes are measured using observations from seismometers. The more numerous earthquakes with magnitudes less than 5 reported by national seismological observatories are mostly measured on the local magnitude scale, also known as the Richter scale. At the Earth's surface, earthquakes manifest themselves by shaking and sometimes the displacement of the ground. Earthquakes are caused mainly by rupture of geological faults, but also by other events such as volcanic activity, landslides, mine blasts, and nuclear tests. An earthquake's point of initial rupture is called its focus or hypocentre. The epicentre is the point at ground level directly above the hypocentre. Nansana Municipality experiences moderate seismic shaking (Figure 11).

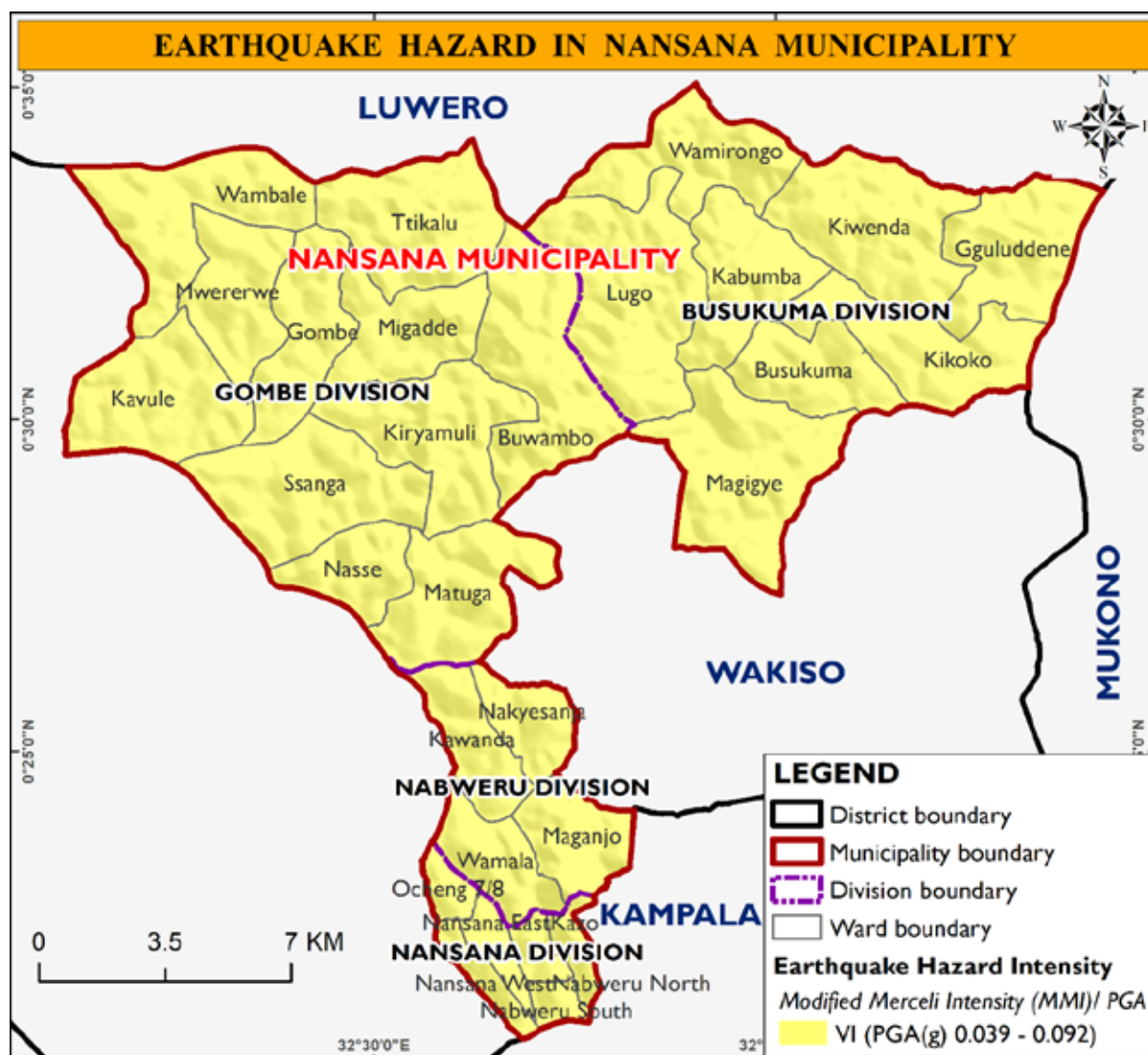


Figure 11: Earthquake hazard zonation in Nansana Municipality

Data Source: OPM, 2019

2.4 Biological hazards

Biological hazards refer to processes or phenomena of organic origin or conveyed by biological vectors, including exposure to pathogenic microorganisms, toxins, and bioactive substances, which may cause loss of life, injury, illness, or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (UNDRR, 2009). Examples include outbreaks of epidemic diseases, plant or animal contagion, and insect or other animal plagues and infestations. In addition to animals and crops, the communities in the municipality have been ravaged by epidemics such as COVID-19, Cholera, and malaria.

Pests, parasites, and diseases

A pest is any organism that spreads disease, causes destruction, or otherwise constitutes a nuisance, such as rodents or weeds (Najam & Alam, 2023). In Nansana Municipality, pests, parasites, and diseases have been attributed to poor farming practices, climate change impacts (drought & floods), unregulated cross-boundary movement of animals and planting materials, the

introduction of new crop and animal varieties, monoculture, poor photoinhibition, and invasive alien species.

Some of the typical crop pests in Nansana Municipality include stalk borer, fall armyworm, aphids, and caterpillars, which cause diseases such as banana bacterial wilt (BBW), maize streak virus, wilts and leaf spots, anthracnose, and rosette disease. In addition, the common animal parasites include ticks, tsetse flies, *helminths* that cause diseases such as East Coast fever, *cowdriosis*, *anaplasmosis*, *trypanosomosis*, and *helminthiasis*.

Common epidemics affecting livestock in the municipality include foot-and-mouth disease, contagious bovine pleuropneumonia, and lumpy skin disease virus, among others. Pests, parasites, and diseases have resulted in reduced crop and livestock yields, food insecurity, and loss of life. These occur throughout the year in the municipality but are more prevalent during the dry season, as the dry season favours their survival and hence multiplication. Pests, parasites, and diseases are very common in Busukuma and Gombe divisions (**Figure 12**).

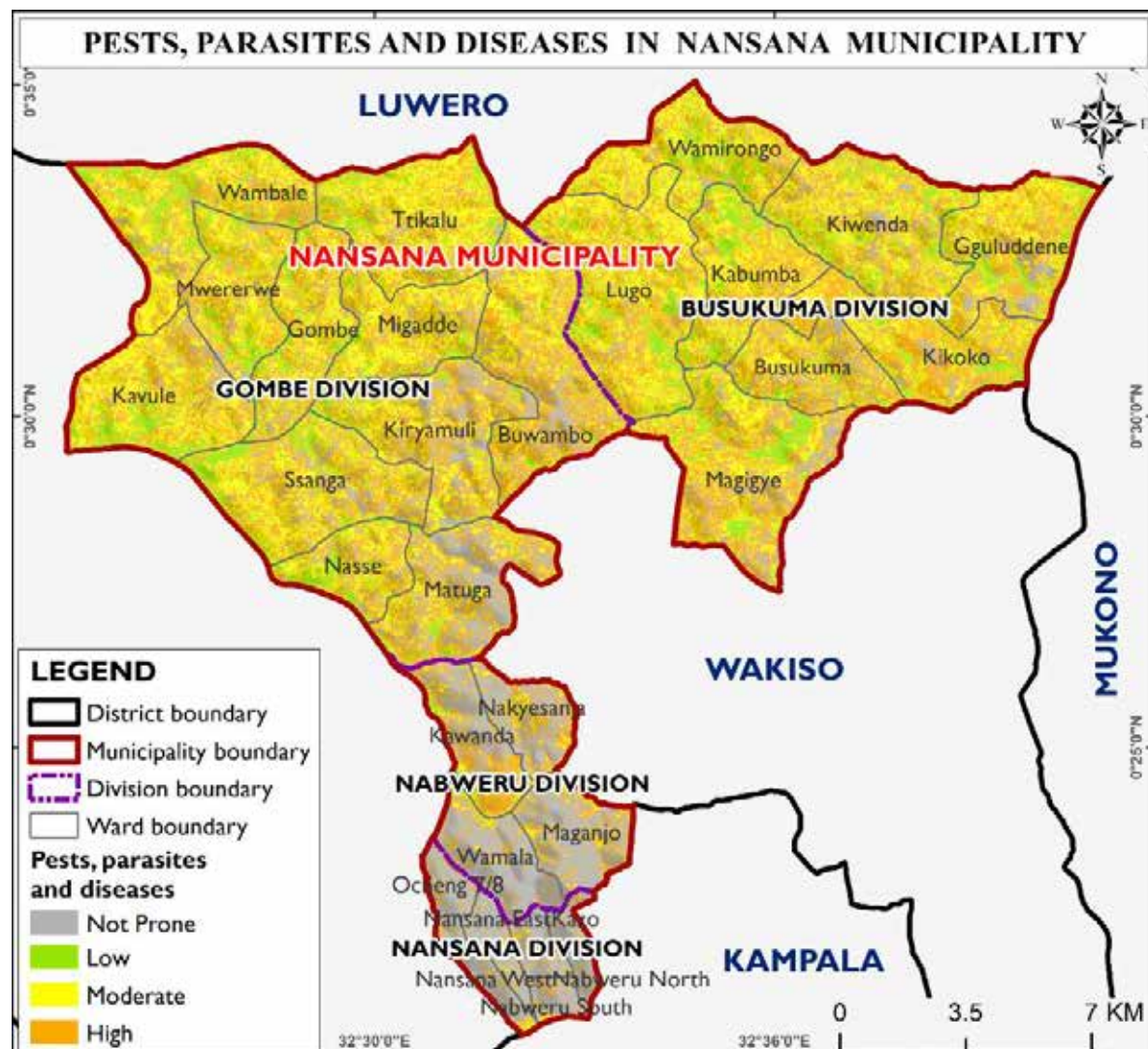


Figure 12: Pests, parasites and diseases in Nansana Municipality

2.5 Technological hazards

Technological hazards refer to hazards originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures, or specific human activities that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (UNDRR, 2009). Examples include industrial pollution, toxic waste, dam failures, fires, and transport accidents. Road accident hazards are presented below, given the availability of spatial data.

Road accidents

Road accidents are unexpected, unintended events on a road or highway involving at least one moving vehicle that result in injury, death, or property damage (Anderson, 2024). Road accidents are attributed to overspeeding, poor road network, reckless driving, alcohol consumption, overloading, community illiteracy, the absence of road signs, narrow roads, and poor mechanical condition of vehicles and motorcycles. Road accidents are common along both major and feeder roads.

These incidents result in loss of lives (both human and livestock), disability, and destruction/loss of property. Road accidents occur throughout the year; however, the peak period usually coincides with road construction, festivals, and public holidays such as Christmas, Easter, Eid al-Fitr, and Independence Day. Key hotspots of road accidents are located in Nansana, Kawaala Junction, Kagoma-Maganjo, Matugga Trading Centre, Sanga, Kavule Town Council, Magigye, Busukuma Town Council, Namulonge Town Council, and Kiwenda.

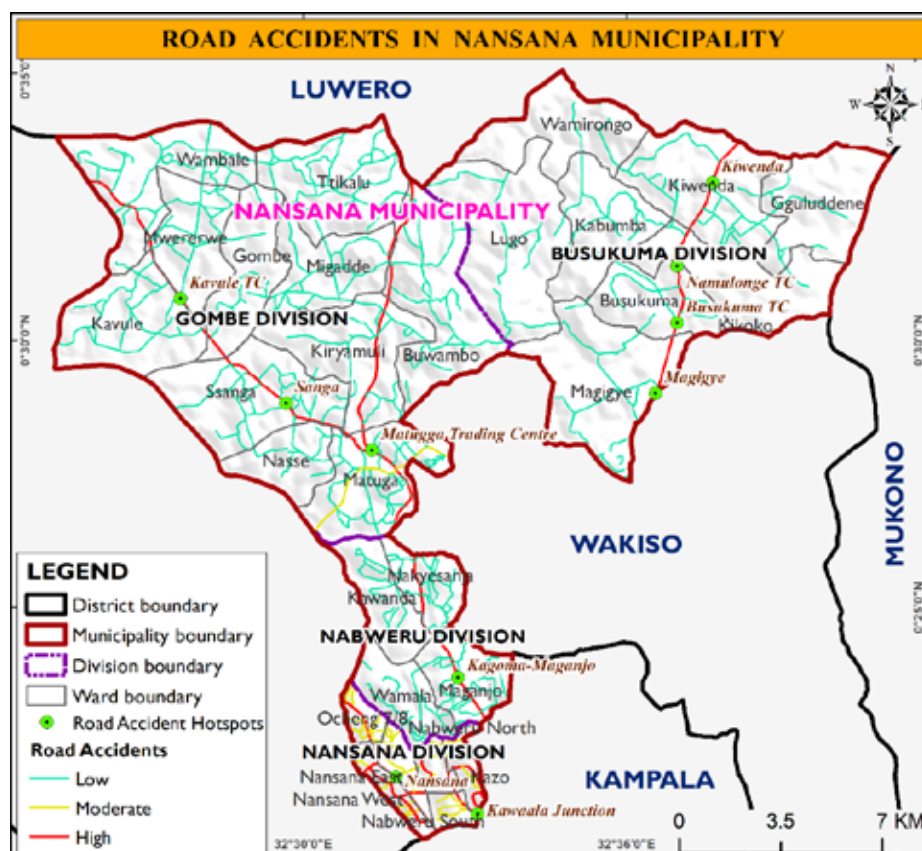


Figure 13: Road accidents hotspots in Nansana Municipality

2.6 Exposure Assessment

Exposure is the situation of people, infrastructure, housing, production capacities, and other tangible human assets located in hazard-prone areas (UNISDR, 2017). The criterion considered for exposure assessment of elements at risk was location in moderate, high, and very high hazard intensities (OPM, 2019). Exposure of the elements at risk was done based on the availability of spatial datasets. **Table 5** presents the exposure of elements to multi-hazards in Nansana Municipality.

Table 5: Elements exposed to multi-hazards in Nansana Municipality

No	Multi-Hazards	Elements exposed
1.	Drought	People, livestock, farmlands, water sources, rivers, and vegetation
2.	Earthquake	People, livestock, buildings, bridges and culverts, roads, schools and health facilities
3.	Floods	People, livestock, farmlands, roads, bridges and culverts, homesteads, schools, health facilities, buildings and water sources
4.	Hailstorms	People, farmlands and livestock
5.	Lightning	People, homesteads, livestock, schools and health centres
6.	Pests, parasites and diseases	Farmlands, livestock and vegetation
7.	Road accidents	People, vehicles/ motorcycles, livestock and buildings
8.	Windstorms	People, farmlands, homesteads, schools and health centres

Exposure of elements to drought hazard: The assessment showed that 73,200 people (22%) in Nansana Municipality are exposed to the drought hazard, whereas 260,059 people (78%) are not. The most significant proportion of the human population exposed to the drought hazard is in the Nabweru (56.25%) and Gombe (30.2%) divisions. The wards most affected by drought include Maganjo, Ttikalu, Gombe, Migadde, Mwererwe, and Wamirongo (**Figure 14**).

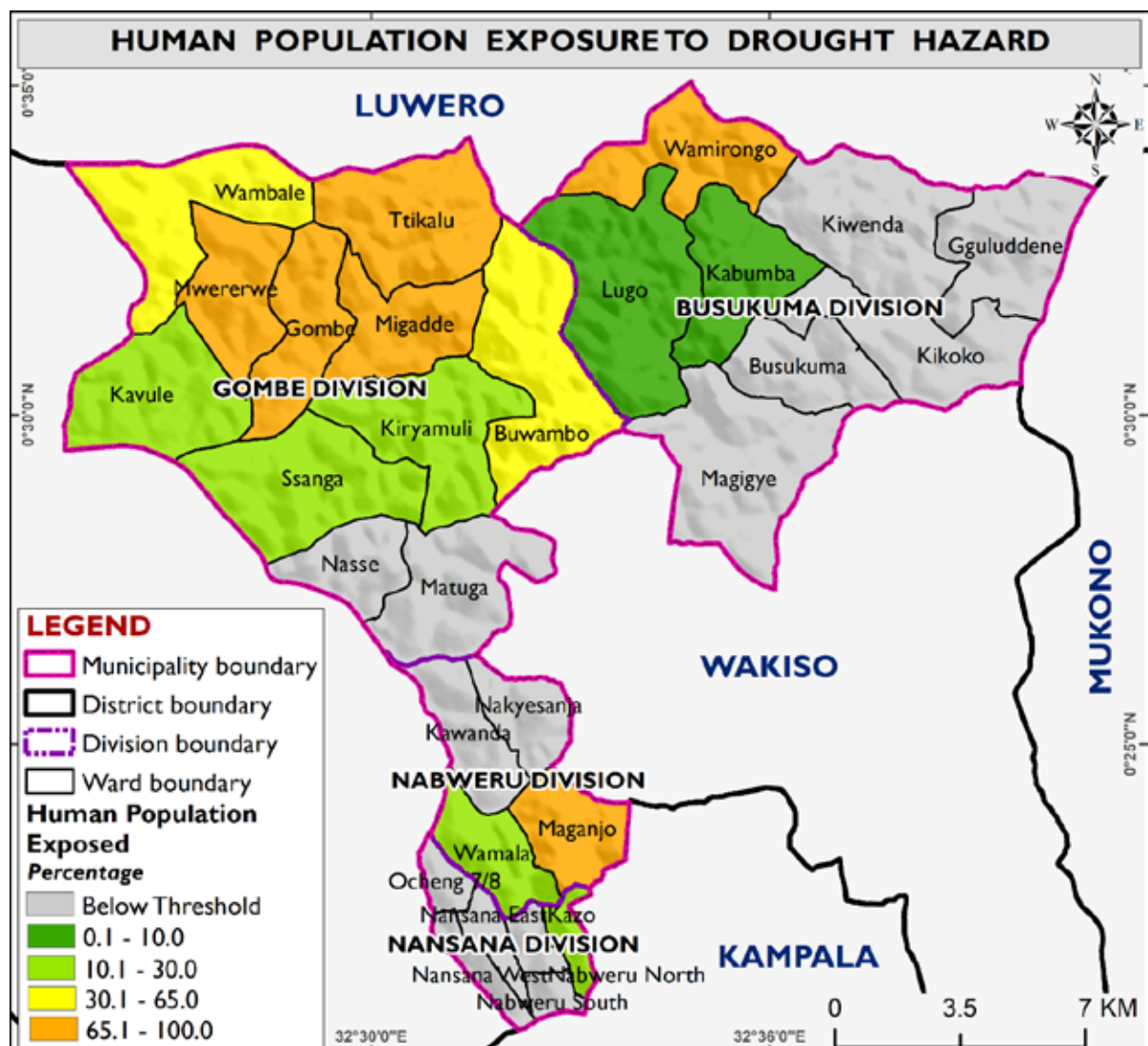


Figure 14: Exposure of human population to drought hazard in Nansana Municipality

A total of 26.8 Km² (25.2%) of farmland is exposed to drought hazard in Nansana Municipality. Gombe (43.3%) and Nabweru (21.3%) divisions have the biggest proportion of farmlands exposed to drought hazard (**Figure 15**).

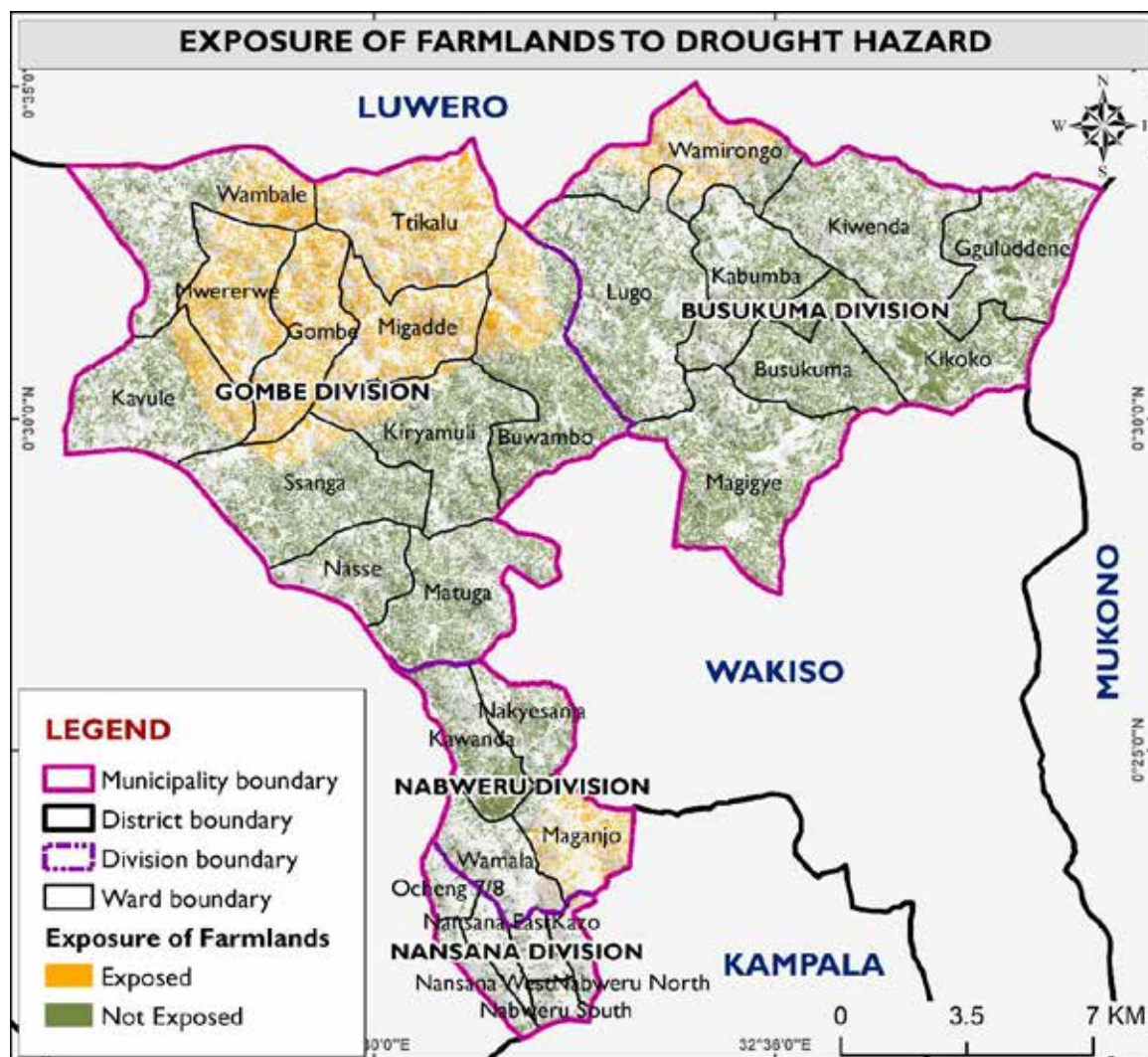


Figure 15: Exposure of farmlands to drought hazard in Nansana Municipality

In Nansana Municipality, 253 water sources (37.2%) are exposed to drought hazard in Nansana Municipality. Nabweru (59.8%) and Gombe (40.1%) divisions have the biggest proportion of water sources exposed to drought hazard (**Figure 16**).

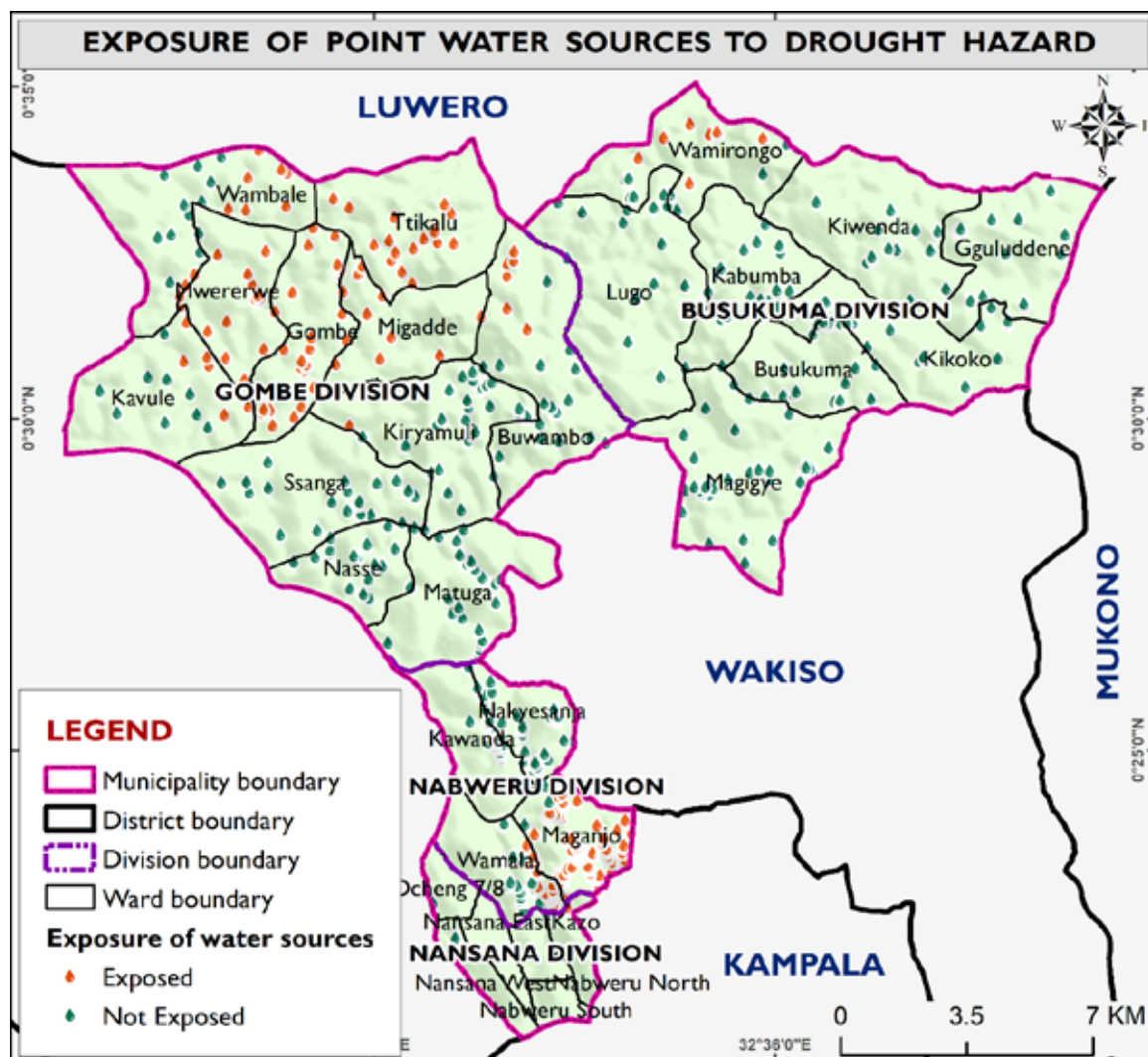


Figure 16: Exposure of water sources to drought hazard in Nansana Municipality

In terms of rivers, 38.1 kilometers (25%) of rivers are exposed to drought whereas 114.4 kilometers (75%) are not exposed to drought hazard. Gombe (46%) and Nabweru (18.6%) divisions have the biggest percentage of rivers exposed to drought hazard (Figure 17).

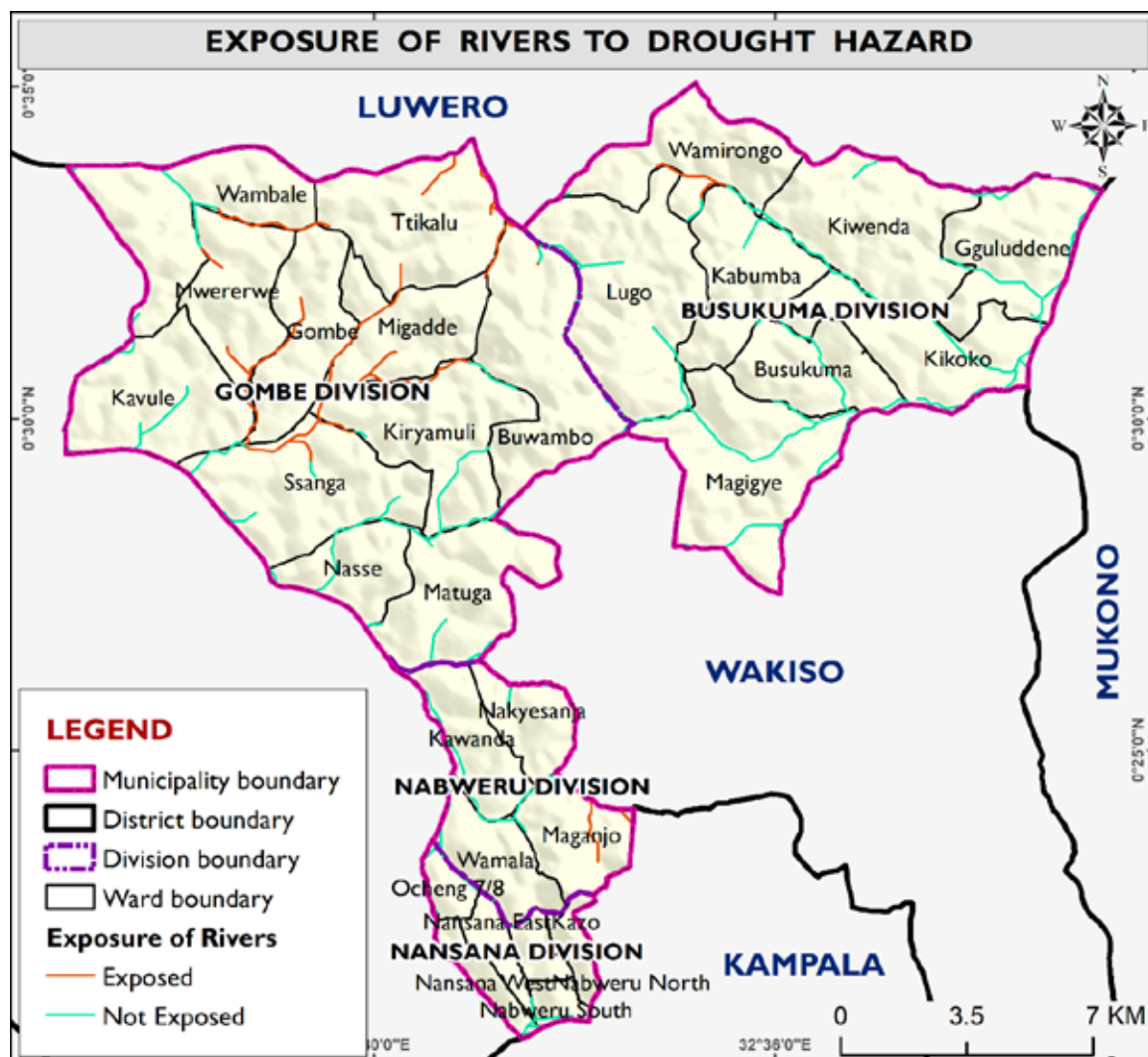


Figure 17: Exposure of rivers to drought hazard in Nansana Municipality

Exposure of elements to earthquake hazard: All the people (100%) in Nansana Municipality are exposed to earthquakes. The wards with the biggest population exposed to earthquakes include Maganjo, Kazo, Matugga, Nansana East, Nansana West, Nabweru North, Nabweru South, and Ochieng (Figure 18).

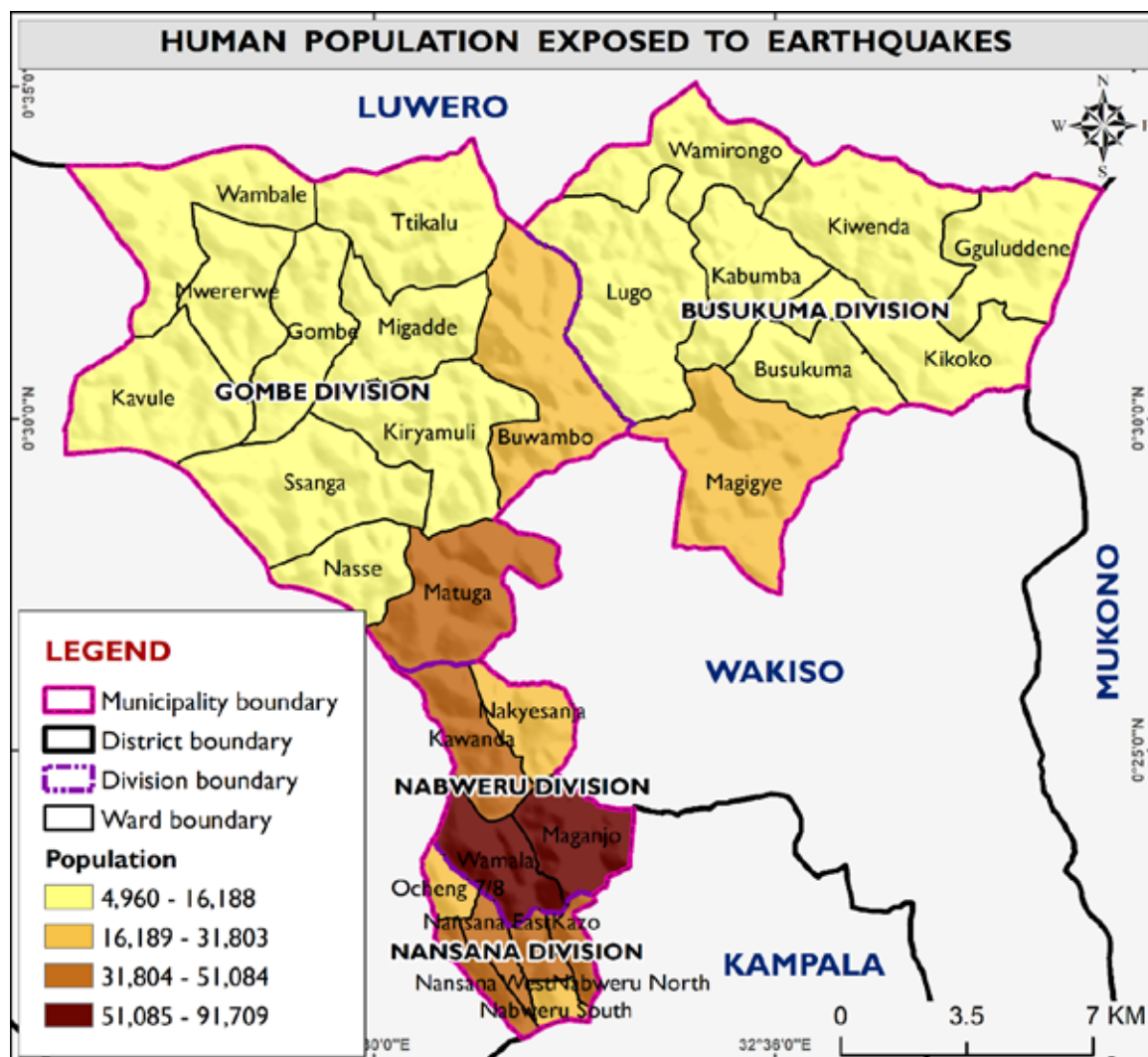


Figure 18: Exposure of human population to earthquake hazard

All the 149,614 buildings (100%) in Nansana Municipality are exposed to earthquakes. The biggest percentage of buildings exposed to earthquakes in Nansana Municipality are found in Nansana (32.6%) and Gombe (28.5%) divisions (**Figure 19**).

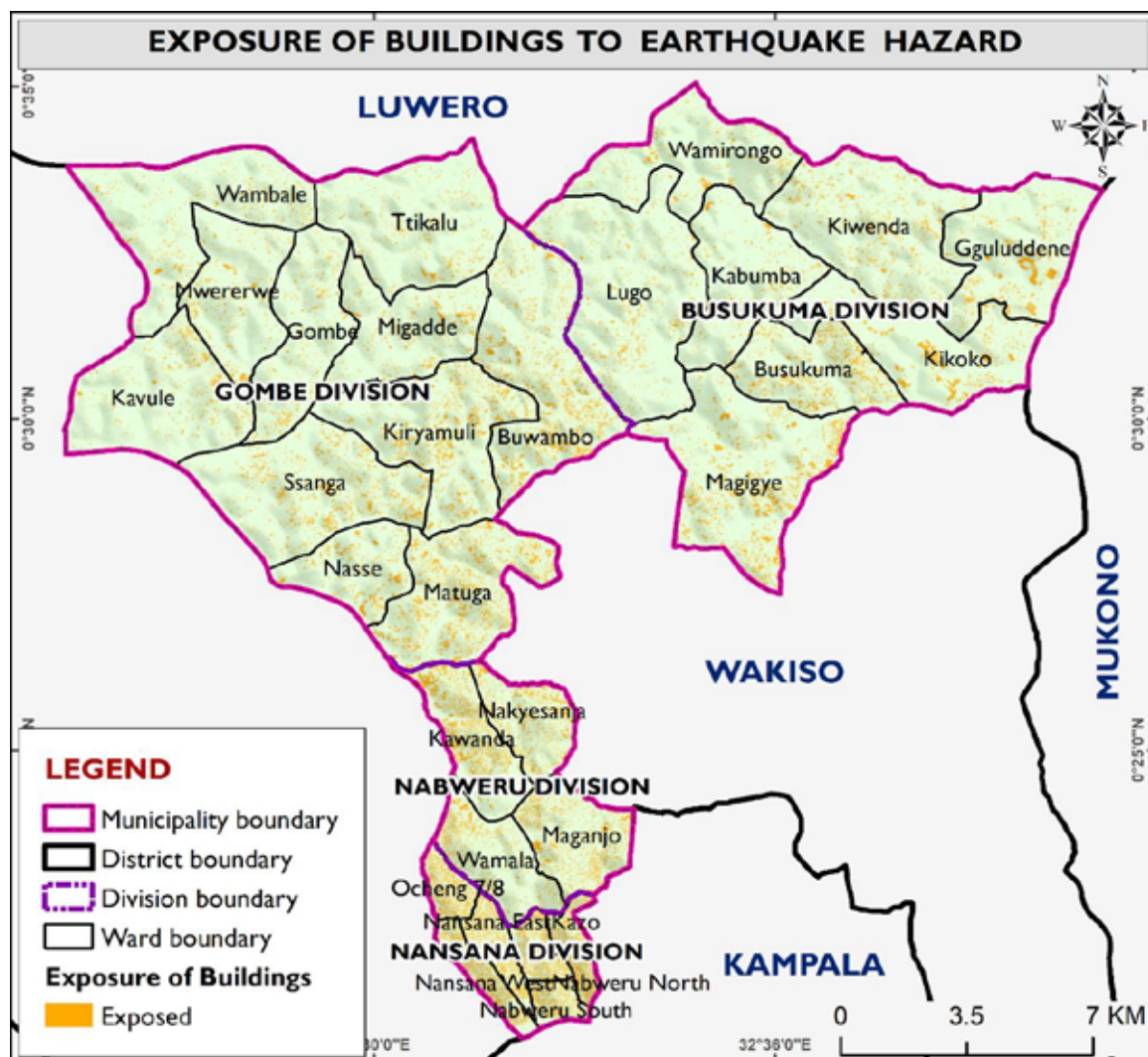


Figure 19: Exposure of buildings to earthquake hazard

All the 346 schools (100%) in Nansana Municipality are exposed to earthquakes. Nansana (31.5%) and Nabweru (31.2%) divisions have the biggest proportion of schools exposed to earthquakes in Nansana Municipality (**Figure 20**).

The wards with high sensitivity to multi-hazards (i.e., drought, windstorms) include Lugo, Magigye, Busukuma, Kiwenda, Nansana East, Nabweru North, and Nansana East (**Figure 42**).



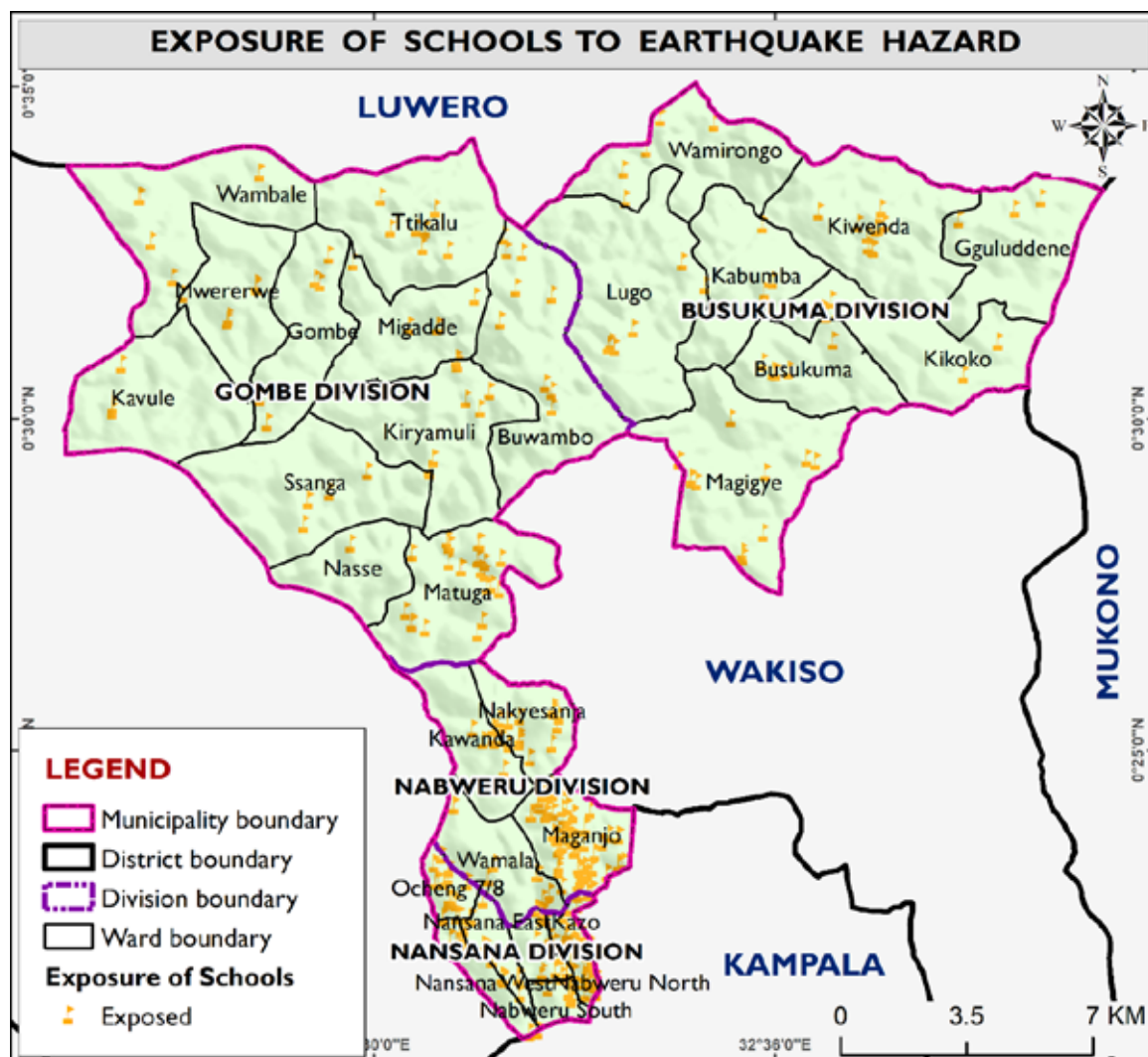


Figure 20: Exposure of schools to earthquake hazard

All the 102 government health facilities (100%) in Nansana Municipality are exposed to earthquakes. Nansana (41.2%) and Nabweru (30.4%) divisions have the biggest proportion of government health facilities exposed to earthquakes in Nansana Municipality (**Figure 21**).

floods, hailstorms, lightning, and
sanja, Maganja, Wamala, Nansana



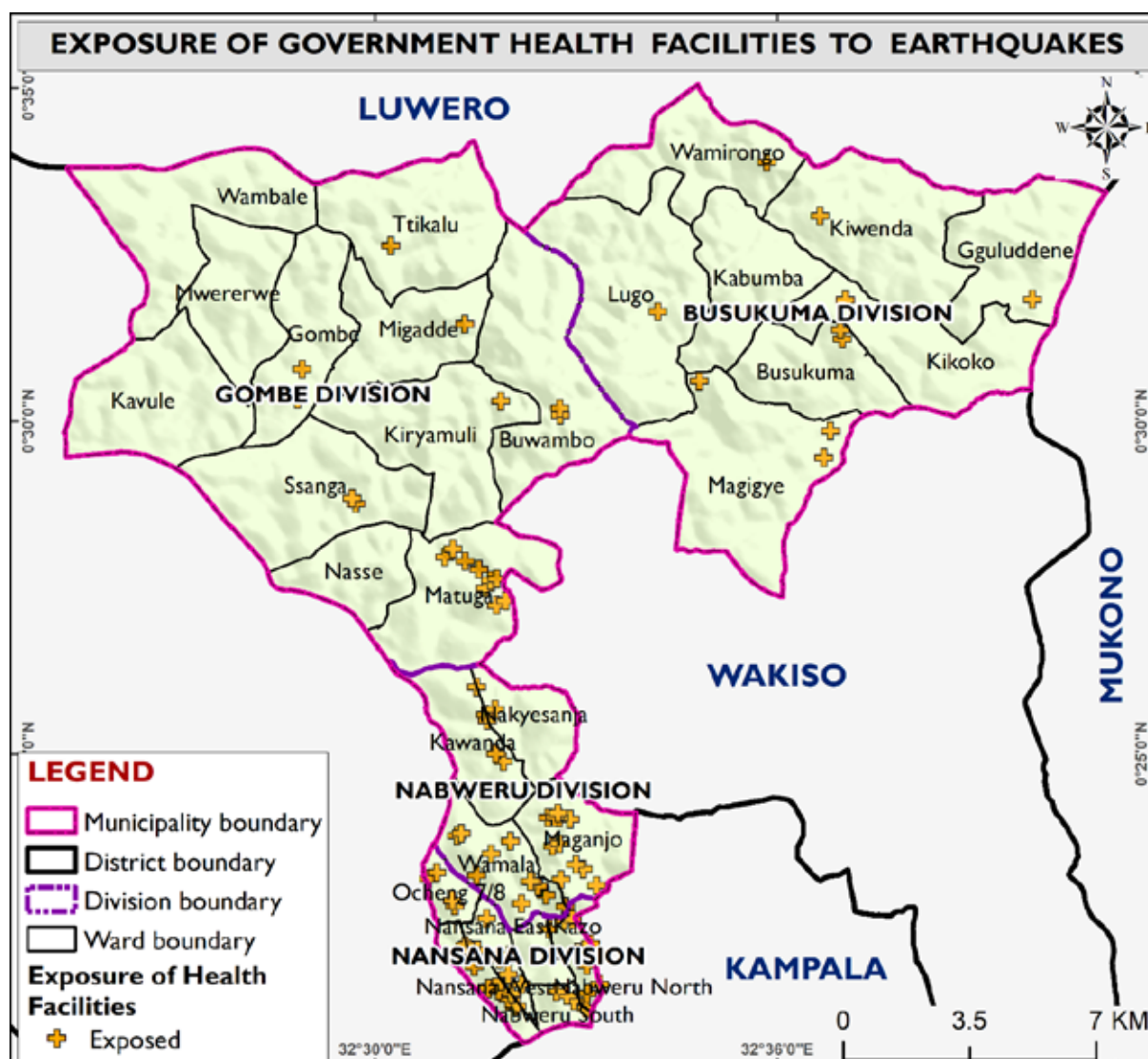


Figure 21: Exposure of health facilities to earthquakes in Nansana Municipality

Exposure of elements to flood hazard: A total of 23,944 people (7.2%) are exposed to floods whereas 309,315 people (92.8%) are not exposed to floods. Busukuma (9.2%) and Nabweru (9.3%) divisions have the biggest percentage of human population exposed to floods. The wards with the biggest proportion of human population exposed to floods include Nabweru South, Nasse, Magigye, and Kikoko (Figure 22).

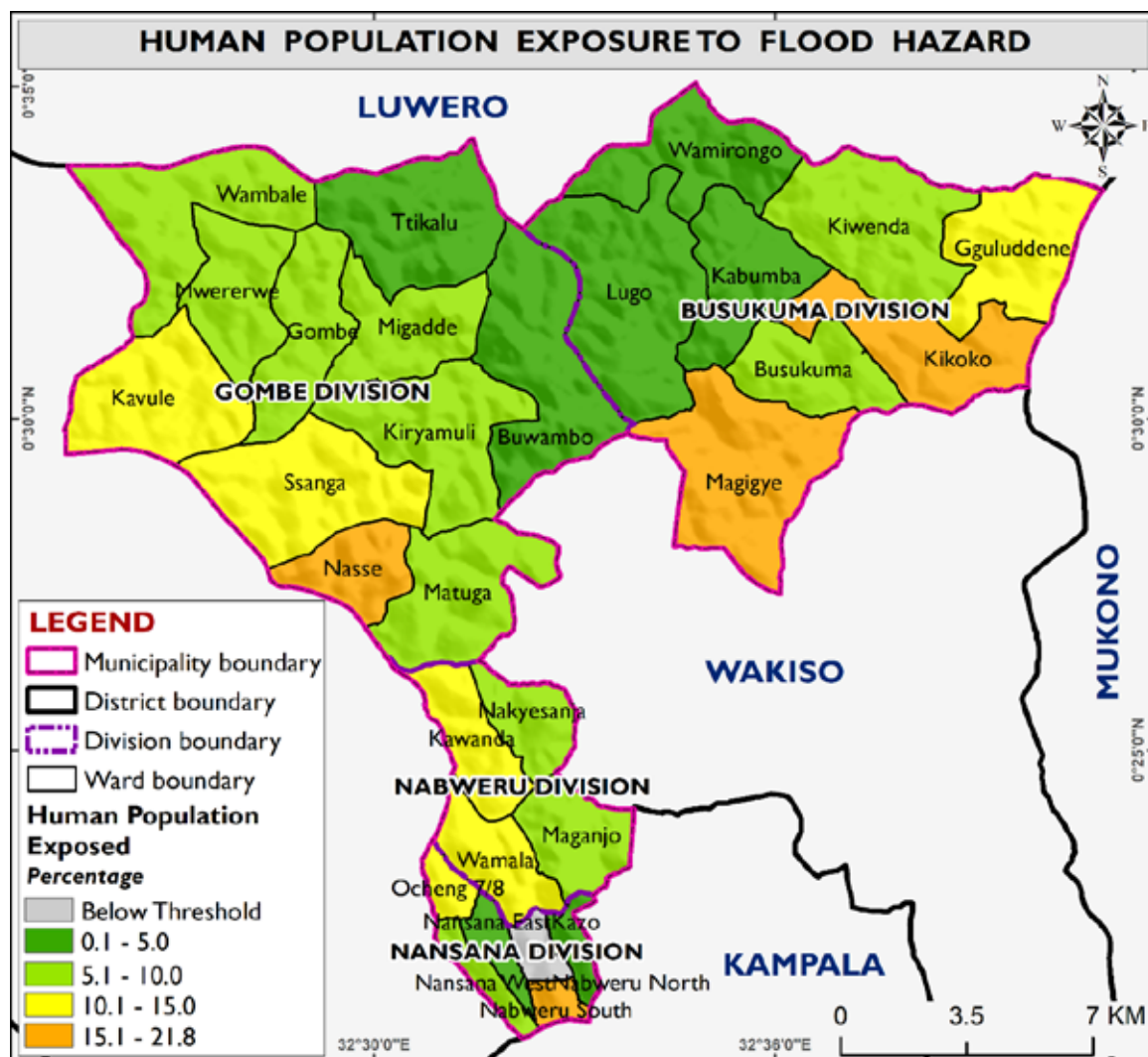


Figure 22: Exposure of human population to flood hazard in Nansana Municipality

The analysis showed that 9 schools (2.6%) in Nansana Municipality are exposed to floods, whereas 337 schools (97.4%) are not exposed to floods. Nansana division (4.6%) has the most significant percentage of schools exposed to floods (**Figure 23**). Schools such as Light Nyange Quality School and Alliance High School in Ochieng 7/8 ward as well as Standard Parents Namungoona P/S in Nansana West; are highly exposed to floods.

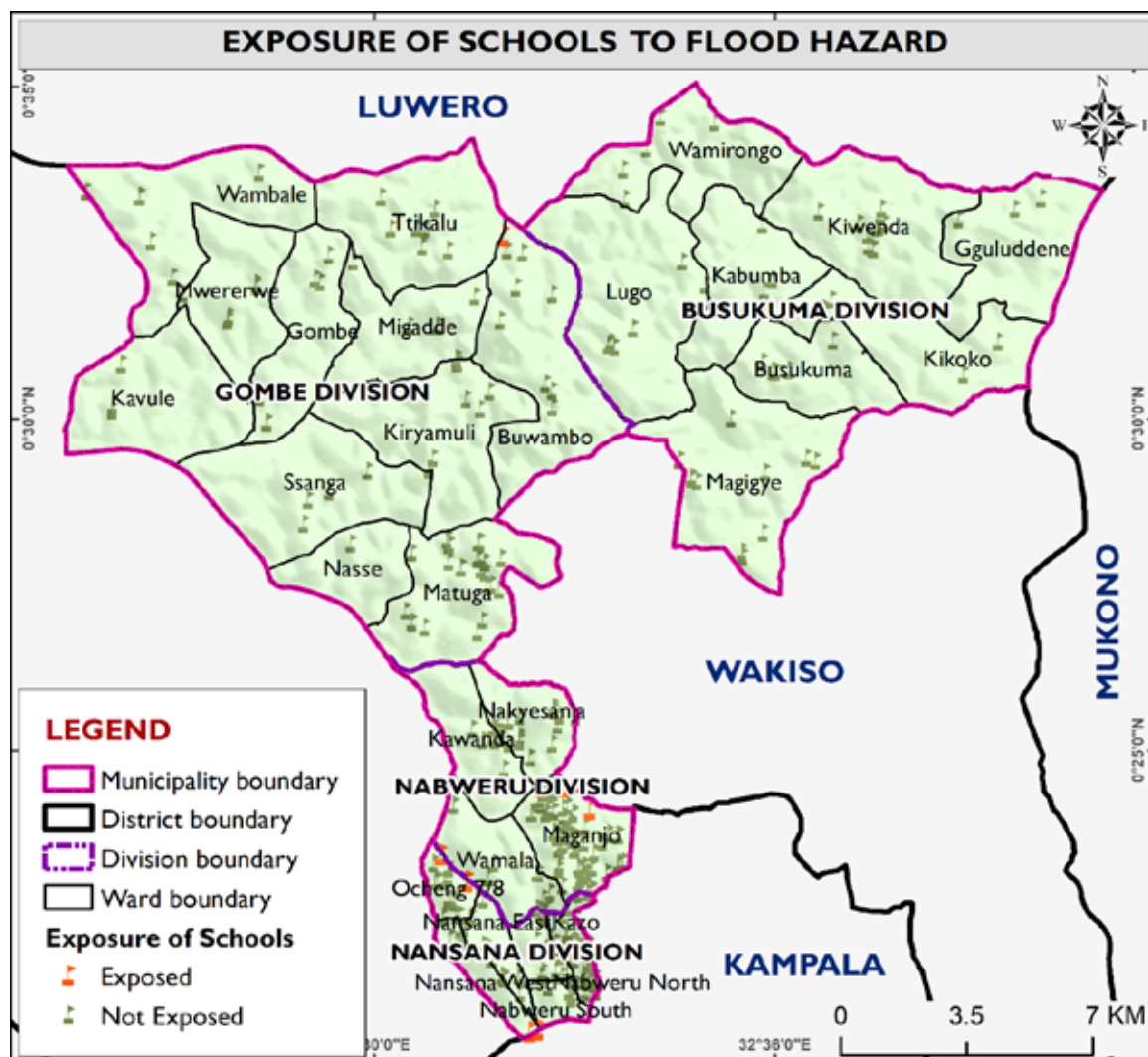


Figure 23: Exposure of schools to flood hazard in Nansana Municipality

In Nansana Municipality, 8.4 Km² (7.9%) of farmland is exposed to flood hazard. Nabweru (13.3%) and Nansana (12.2%) divisions have the biggest proportion of farmlands exposed to flood hazard (Figure 24). All the health facilities (100%) in Nansana Municipality are not exposed to flood hazard (Figure 24).

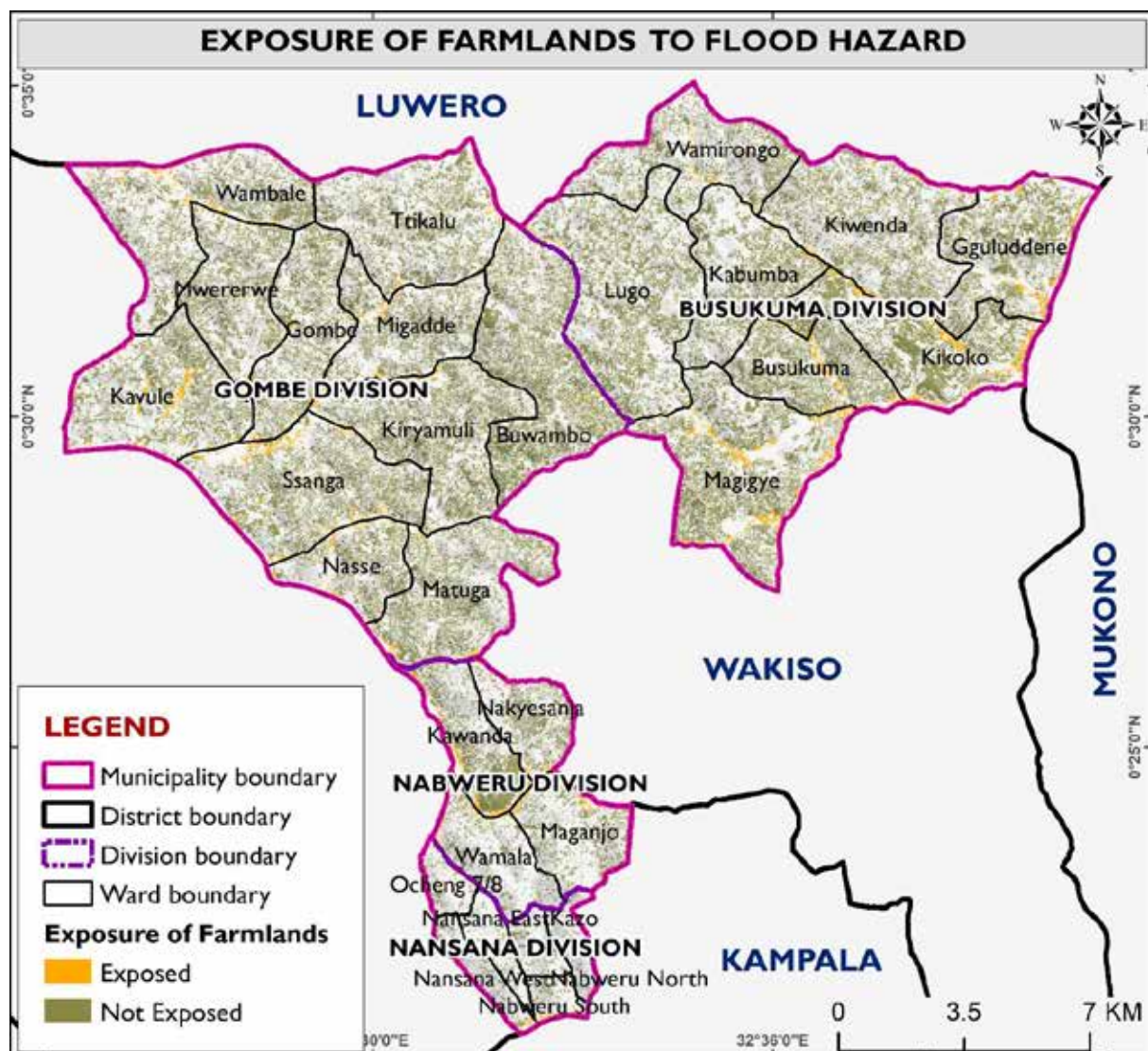


Figure 24: Exposure of farmlands to floods in Nansana Municipality

All the government health facilities (100%) in Nansana Municipality are not exposed to flood hazard (**Figure 25**).

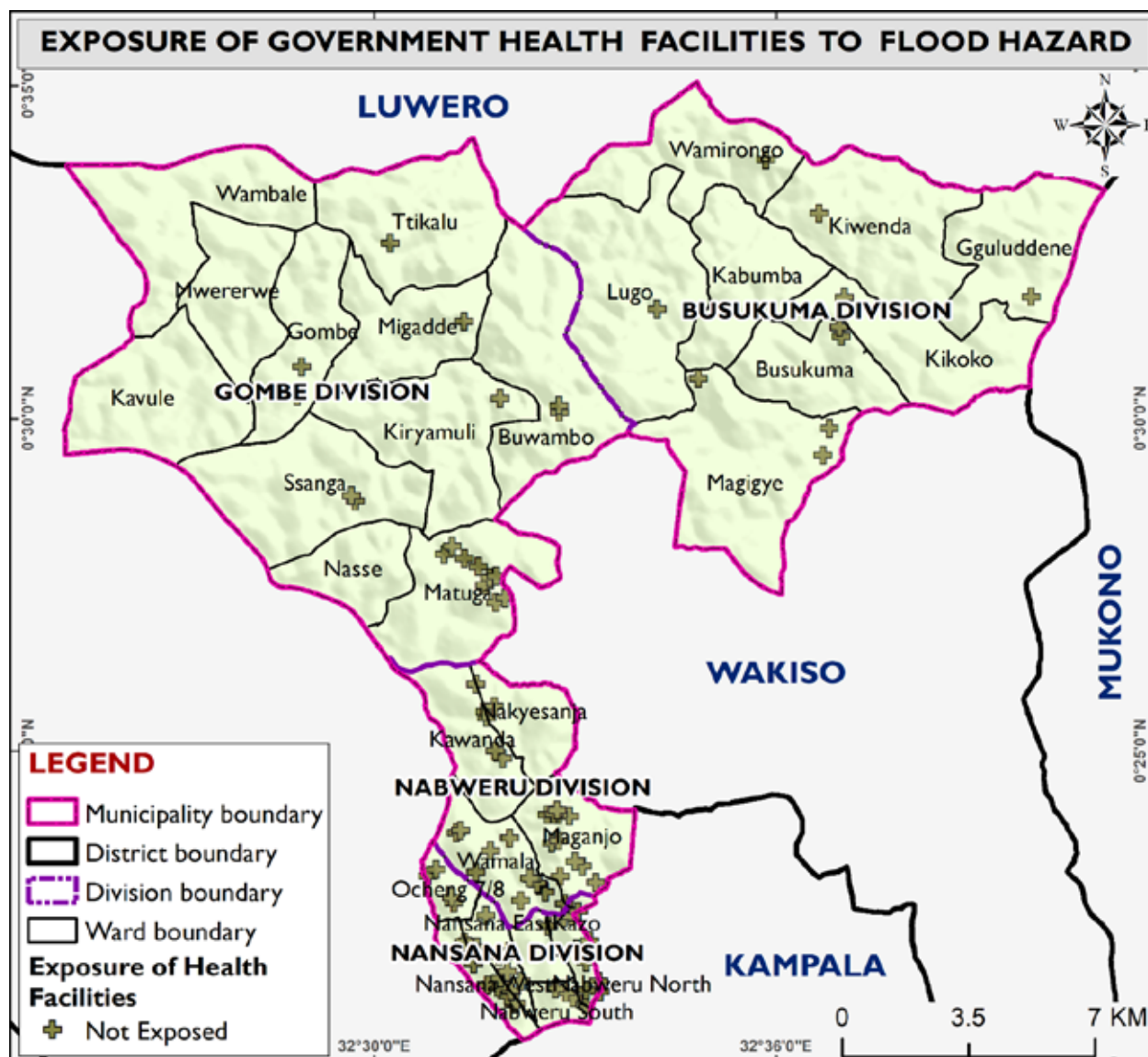


Figure 25: Exposure of government health facilities to flood hazard in Nansana Municipality

The analysis showed that 7,566 buildings (4.9%) are exposed to flood hazard, whereas 147,906 buildings (95.1%) are not. The Nabweru (6.9%) and Busukuma (6.1%) divisions have the highest proportions of buildings exposed to flooding (**Figure 26**).

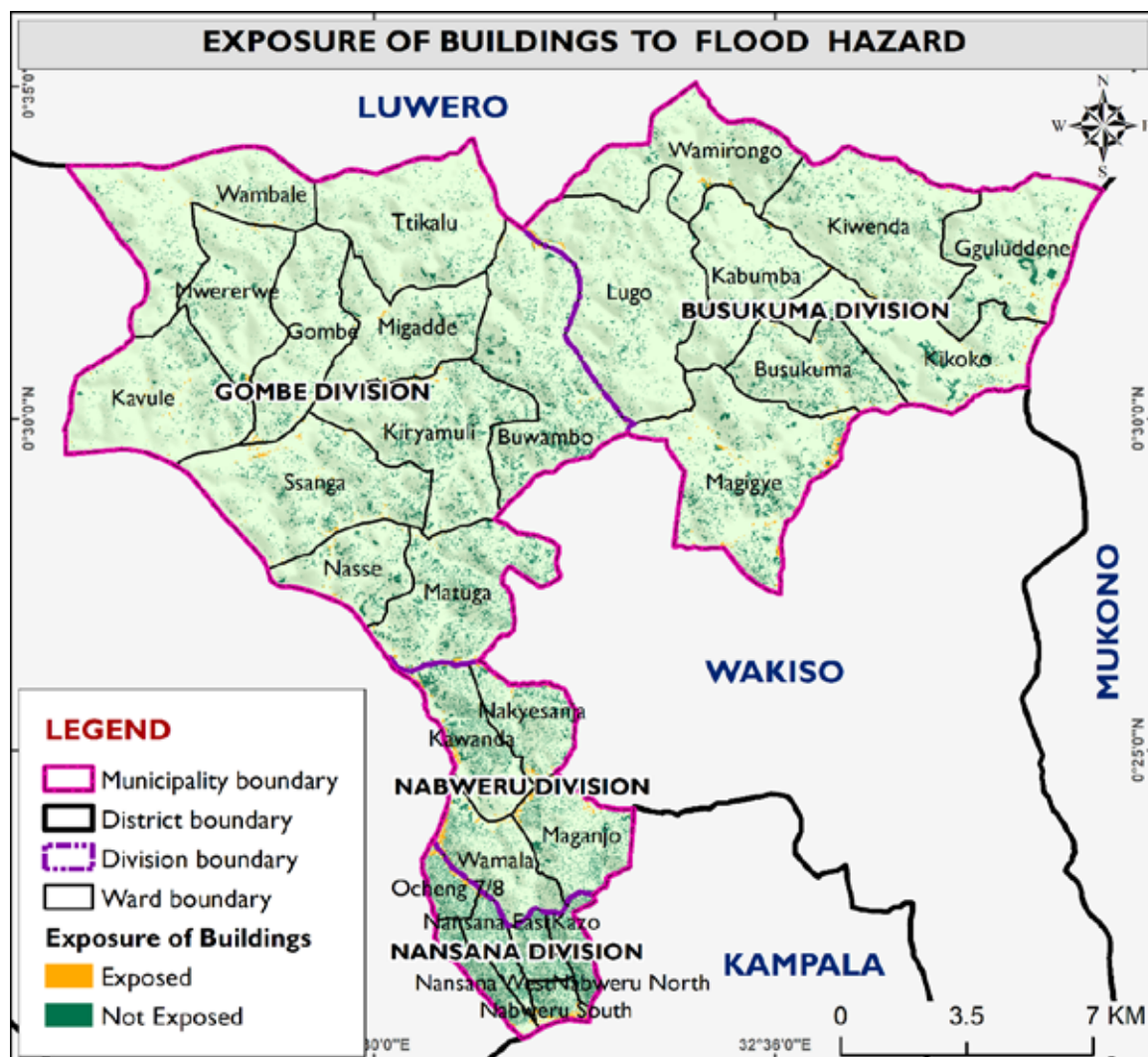


Figure 26: Exposure of buildings to flood hazard in Nansana Municipality

The assessment showed that 14.4 kilometers (3%) of roads in Nansana Municipality are exposed to flooding, whereas 461.5 kilometers (97%) are not. The Nabweru (3.9%) and Busukuma (3.0%) divisions have the highest proportion of roads exposed to flooding in Nansana Municipality (Figure 27).

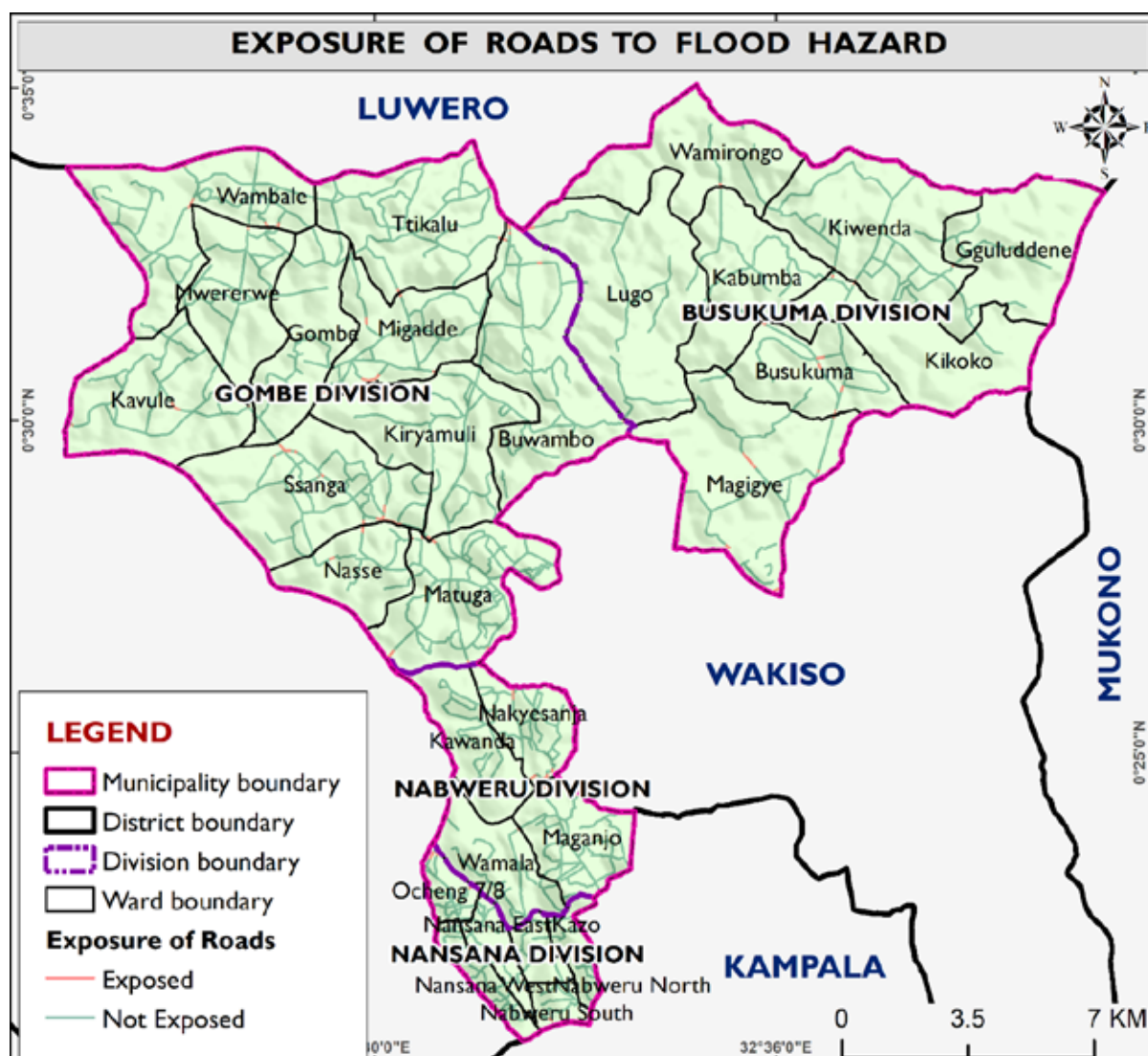


Figure 27: Exposure of roads to flood hazard in Nansana Municipality

A total of 20 water sources (2.9%) are exposed to floods, whereas 663 water sources (97.1%) are not exposed to flood hazard (Table 15). The largest share of water sources exposed to flooding in Nansana Municipality is located in the Gombe (5.3%) and Nabweru (2.1%) divisions (Figure 28).

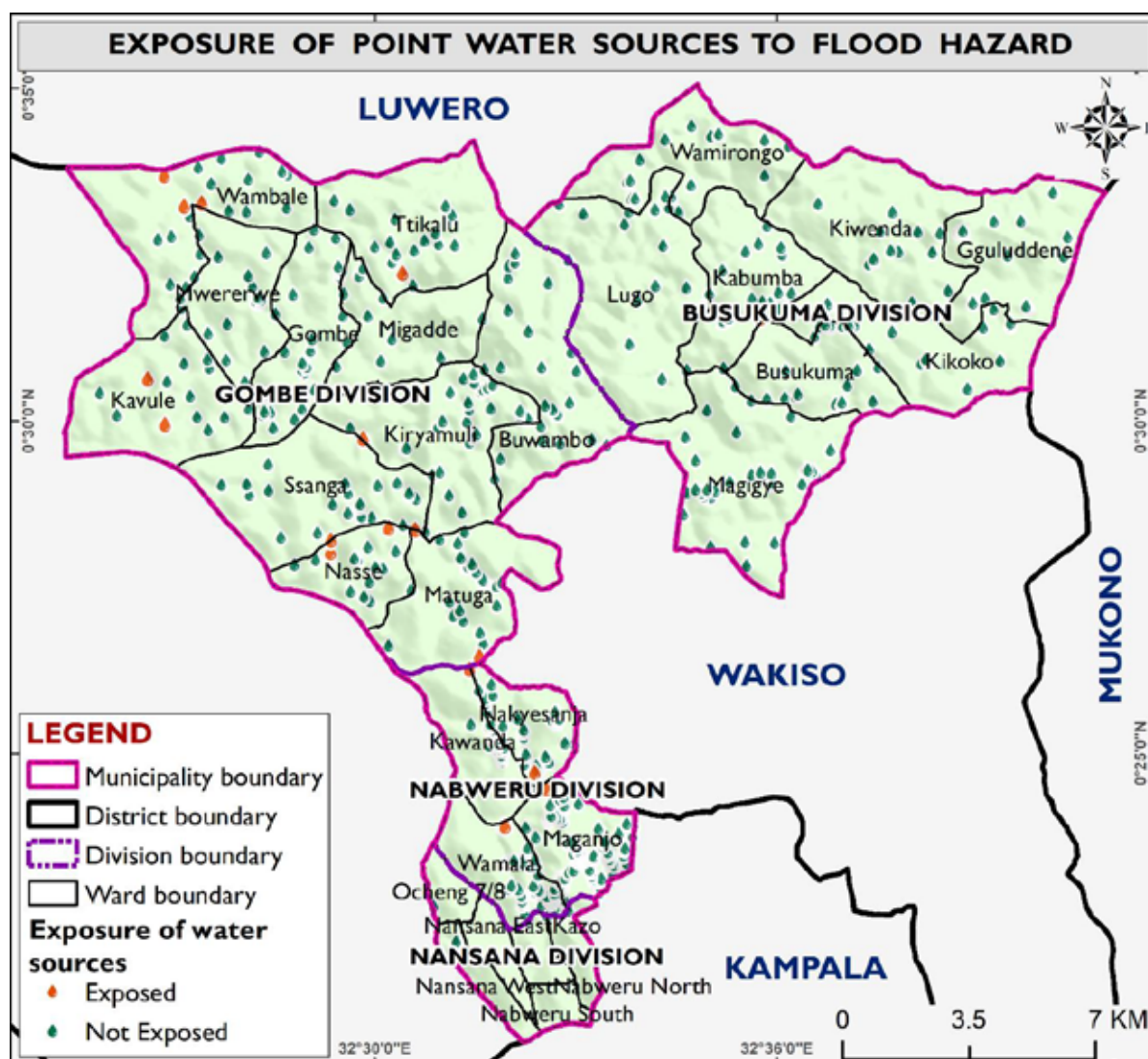


Figure 28: Exposure of water sources to floods in Nansana Municipality

Exposure of elements to hailstorm hazard: All the people (100%) in Nansana Municipality are exposed to hailstorm hazard. The wards with the most significant population exposed to hailstorms include Maganjo, Kazo, Matugga, Nansana East, Nansana West, Nabweru North, Nabweru South, and Ochieng (Figure 29).

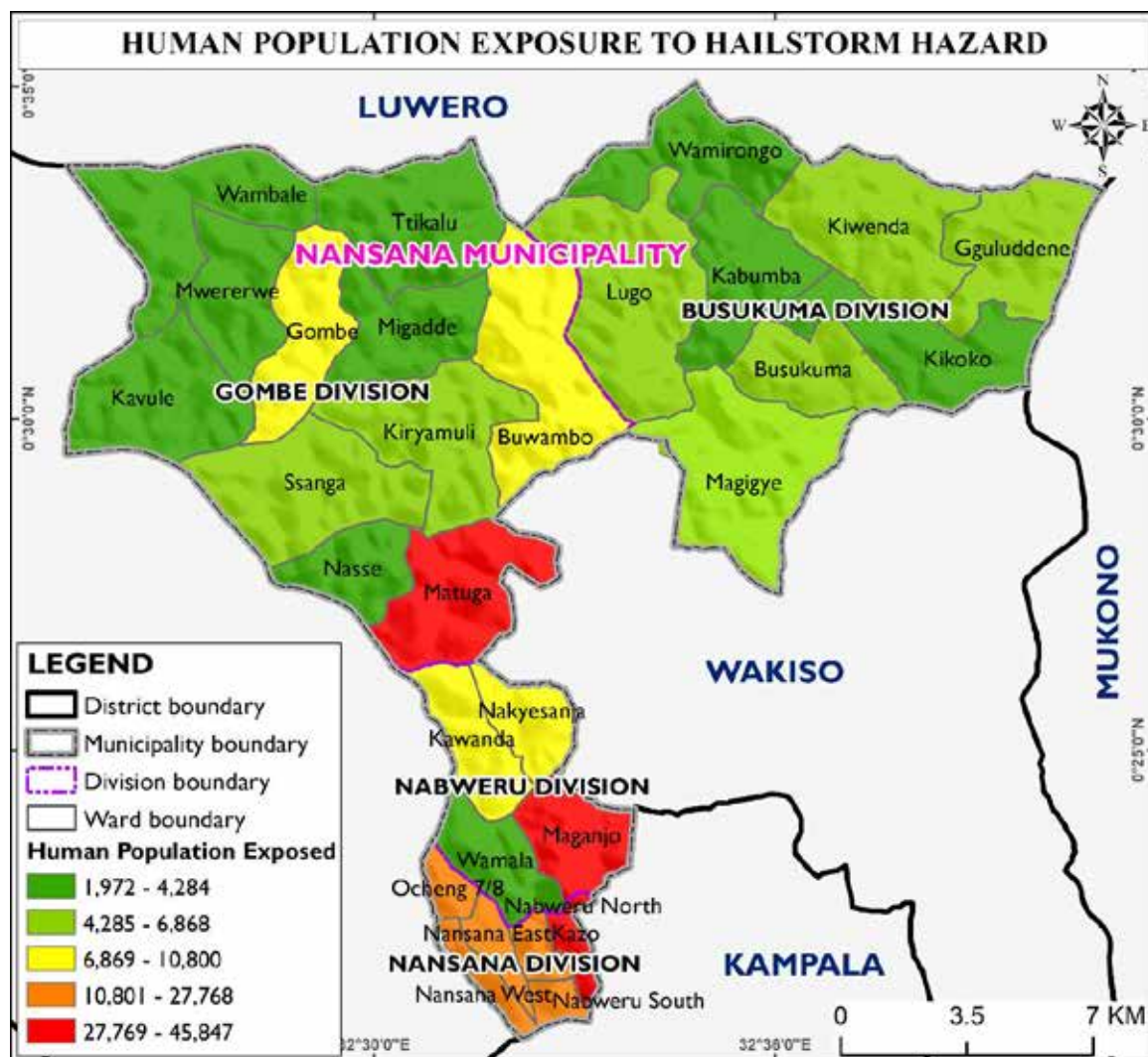


Figure 29: Exposure of human population to hailstorms in Nansana Municipality

All farmland (100%) in Nansana Municipality is exposed to the hailstorm hazard. The Gombe (52.4 Km²) and Busukuma (43.9 Km²) divisions have the largest areas of farmland exposed to hailstorms (Figure 30).

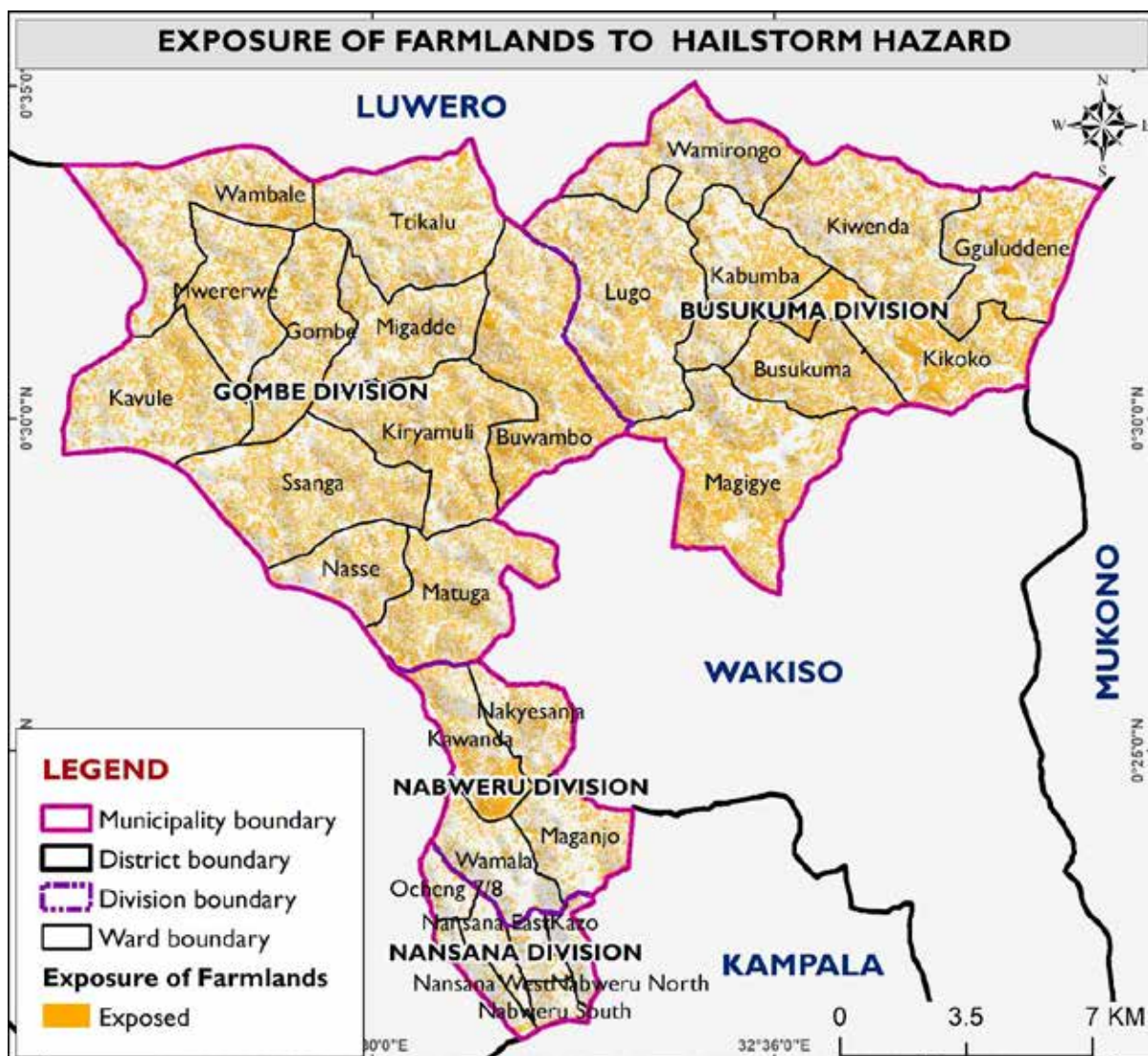


Figure 30: Exposure of farmlands to hailstorm hazard

Exposure of elements to lightning hazard: In Nansana Municipality, 43,988 people (13.2%) are exposed to lightning hazard, whereas 289,271 people (86.8%) are not. Individuals exposed to lightning hazards are located in the Busukuma (94.7%) and Gombe (10.2%) divisions. The wards with high exposure to lightning include Magigye, Busukuma, Kikoko, Kiwenda, Kabumba, Lugo, and Wamirongo (**Figure 31**).

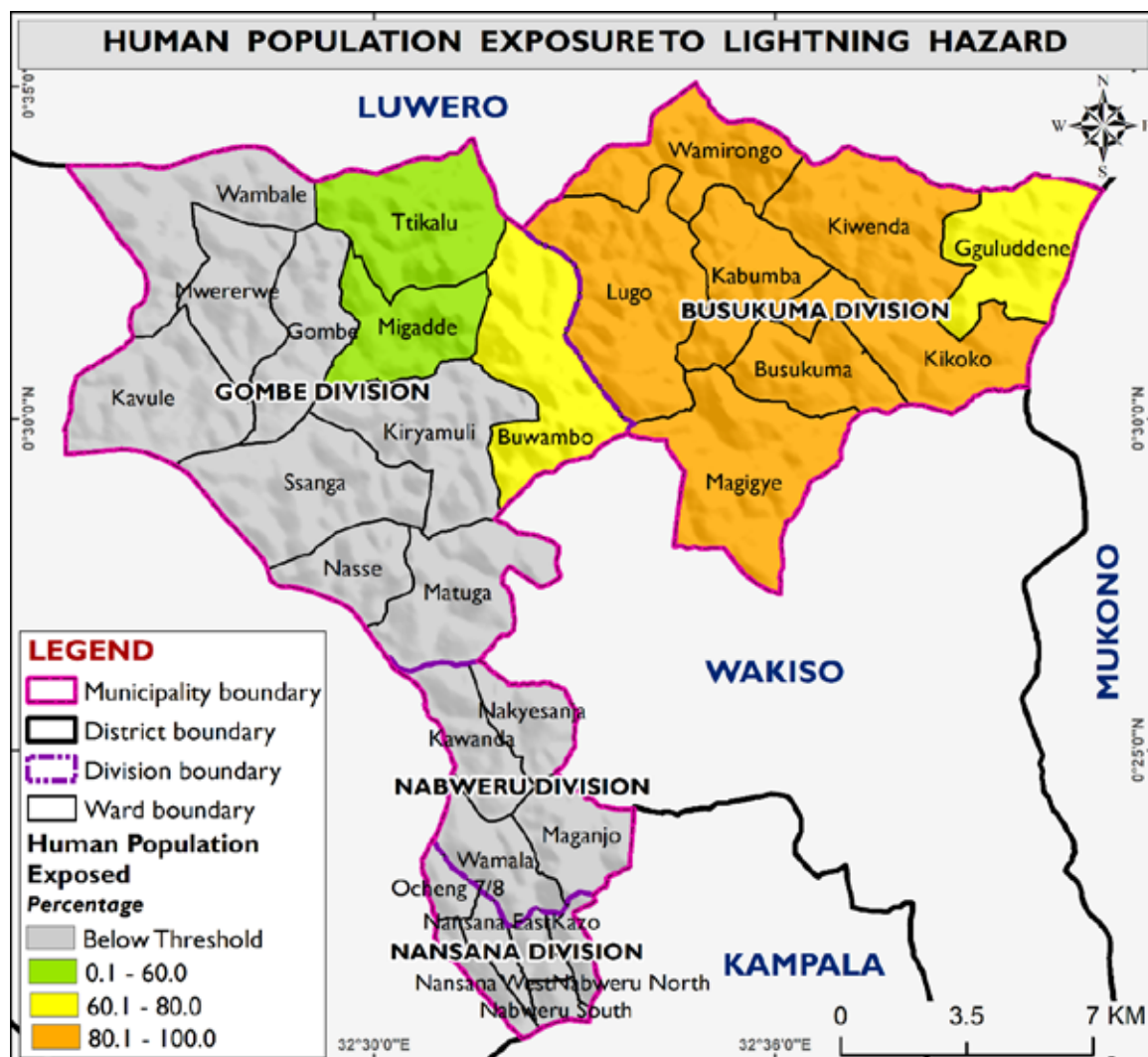


Figure 31: Exposure of human population to lightning hazard

A total of 32,731 buildings (22%) are exposed to lightning hazard, while 116,272 buildings (78%) are not exposed to this hazard. Buildings exposed to lightning are found in the Busukuma (95.3%) and Gombe (14.2%) divisions (**Figure 32**).

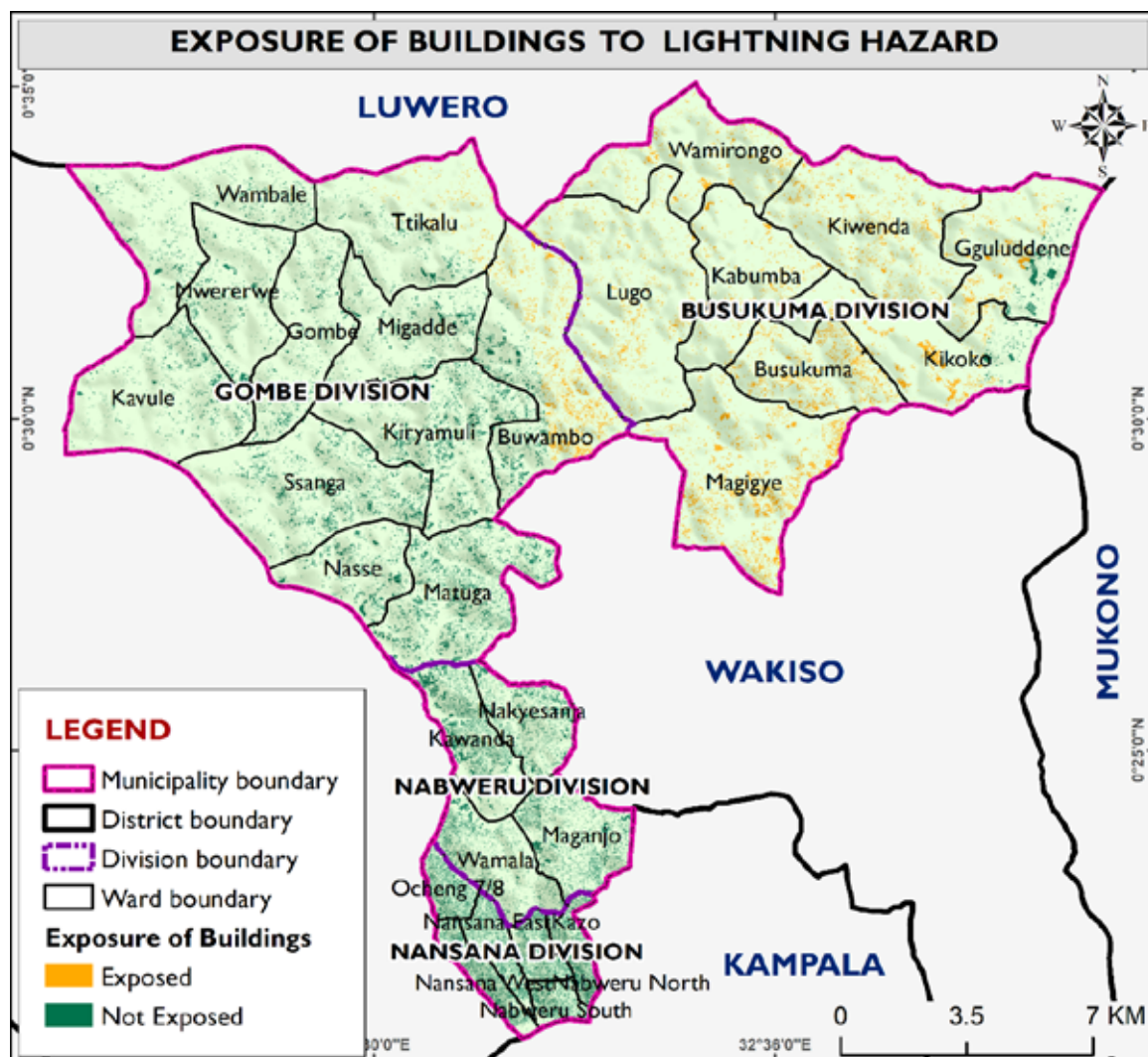


Figure 32: Exposure of buildings to lightning hazard

In terms of schools, 59 schools (17.2%) are exposed to lightning hazard in Nansana Municipality, whereas 284 schools (82.8%) are not exposed to this hazard. The schools exposed to lightning in Nansana Municipality are located in Busukuma (98%) and Gombe (13.9%) divisions (**Figure 33**).

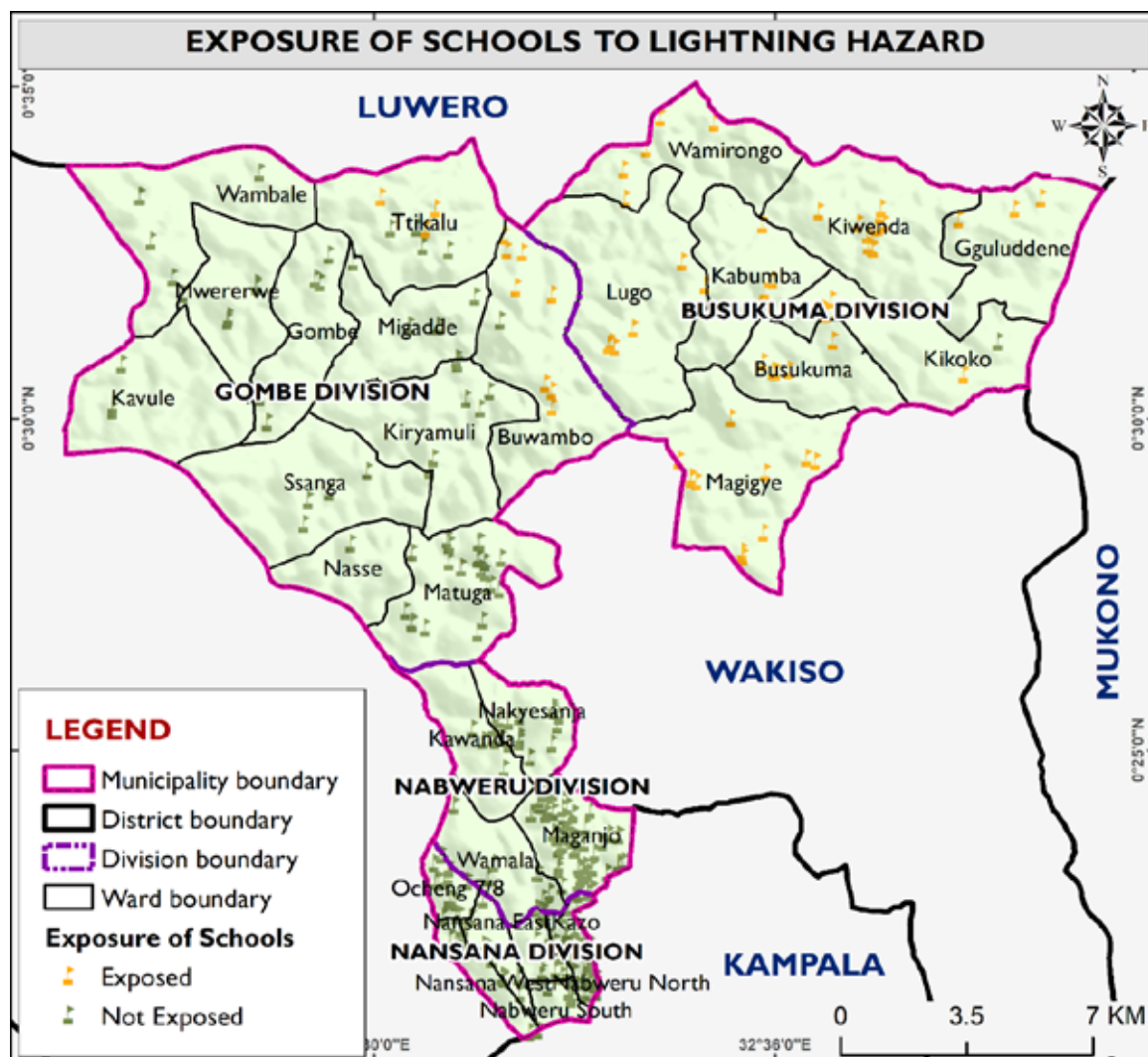


Figure 33: Exposure of schools to lightning hazard

The assessment showed that 11 health facilities (11%) in Nansana Municipality are exposed to lightning, whereas 89 health facilities (89%) are not exposed to this hazard. The proportion of exposed health facilities to lightning is highest in the Busukuma (90%) and Gombe (10.5%) divisions (Figure 34).

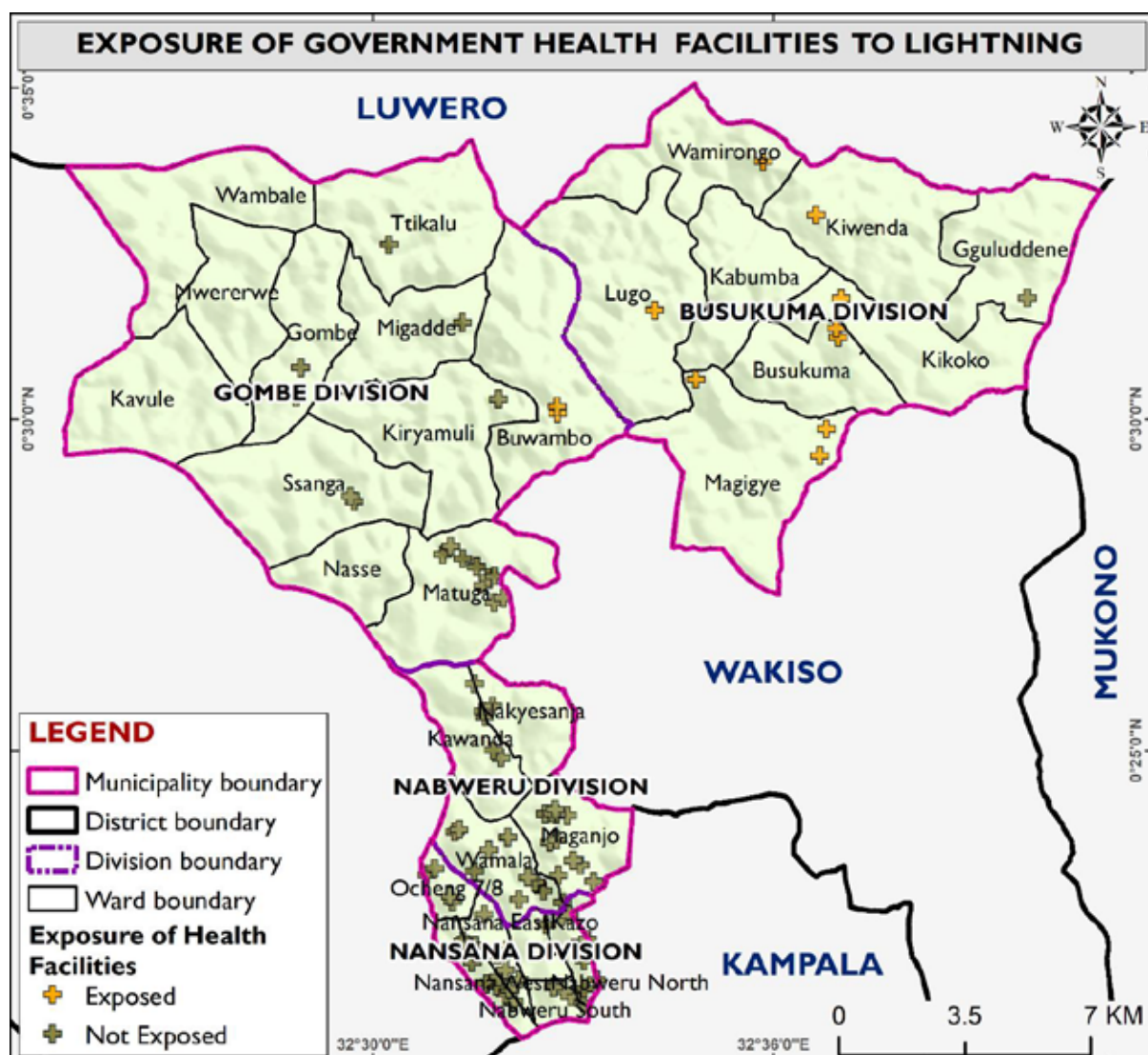


Figure 34: Exposure of health facilities to lightning in Nansana Municipality

Exposure of elements to pests, parasites, and diseases: All the farmlands in Nansana Municipality are exposed to crop pests and diseases. The biggest proportion of farmlands exposed to crop pests and diseases are found in Gombe (49%) and Busukuma (41%) divisions (**Figure 35**).

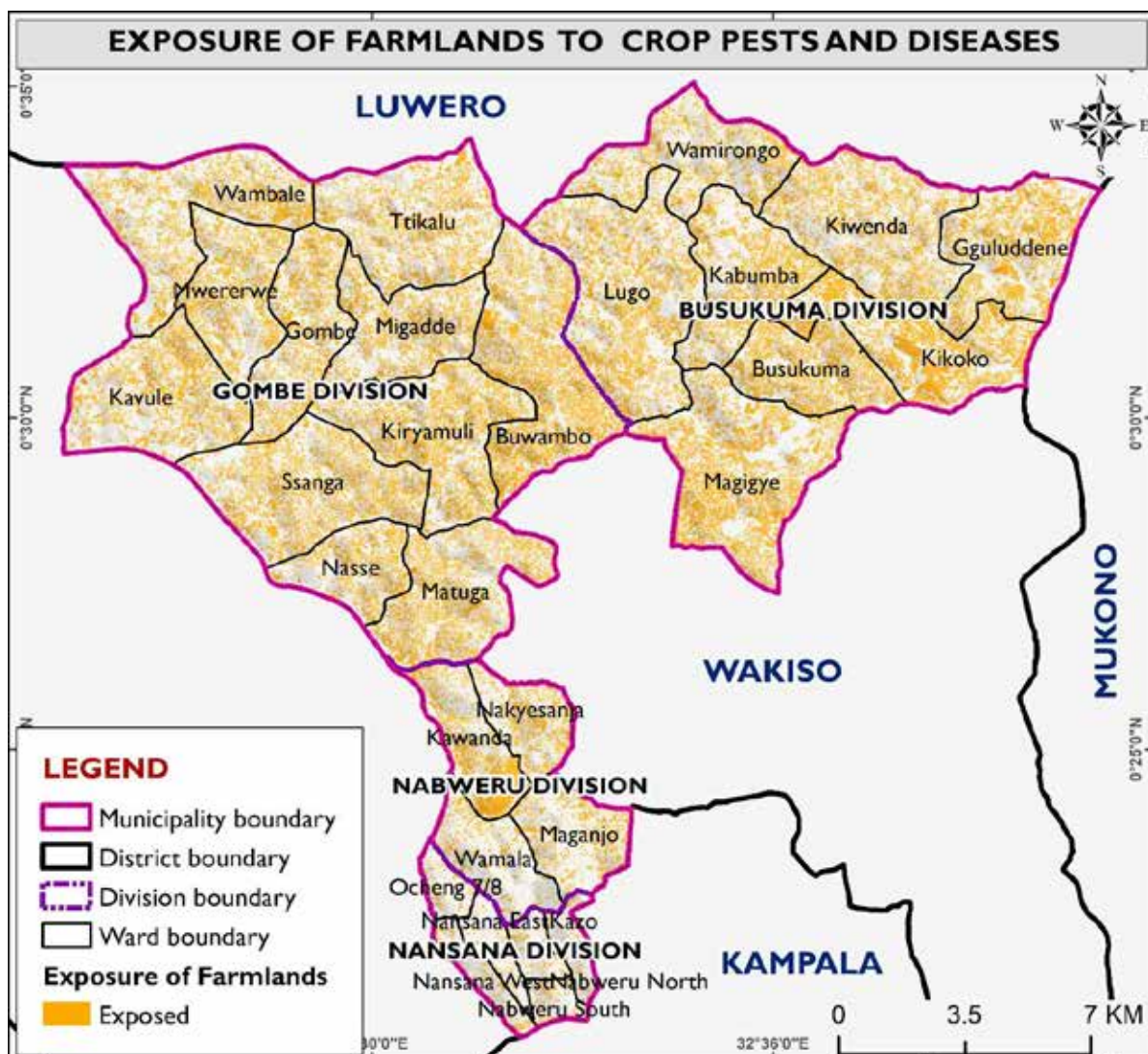


Figure 35: Exposure of farmlands to crop pests and diseases in Nansana Municipality

Exposure to road accidents: All people (100%) in Nansana Municipality are exposed to road accidents. The wards with the most significant population exposed to road accidents include Maganjo, Kazo, Matugga, Nansana East, Nansana West, Nabweru North, Nabweru South, and Ochieng (Figure 36).

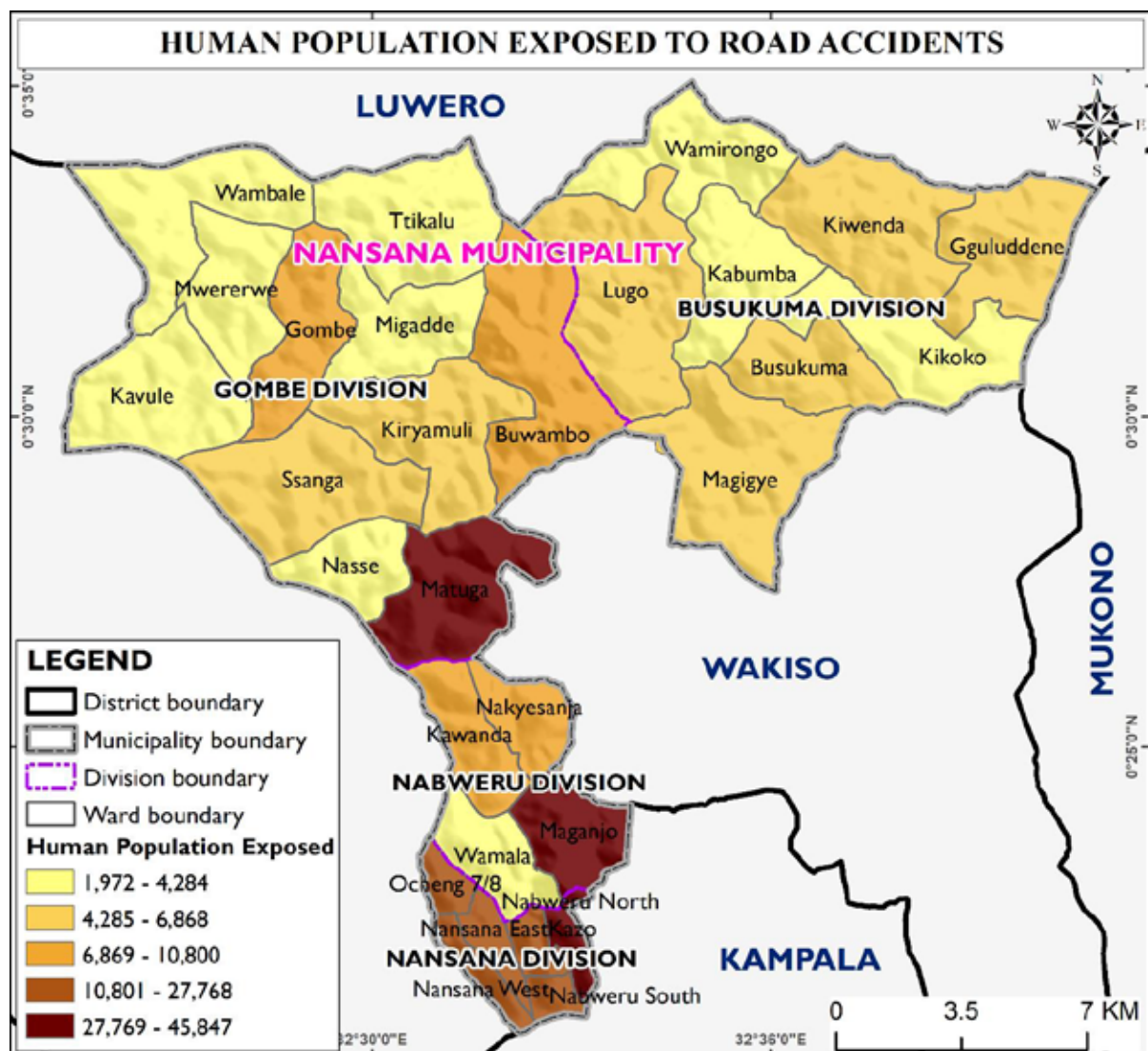


Figure 36: Human population exposed to road accidents in Nansana Municipality

Exposure of elements to windstorms: The analysis showed that 156,969 people (47.1%) in Nansana Municipality are exposed to windstorm hazard, whilst 176,290 people (52.9%) are not exposed to windstorms. The human population exposed to windstorms is found in Nansana (96.4%) and Nabweru (25.4%) divisions. The wards with the most significant proportion of human population exposed to windstorms include Kazo, Nabweru North, Nabweru South, Nansana East, and Nansana West (**Figure 37**).

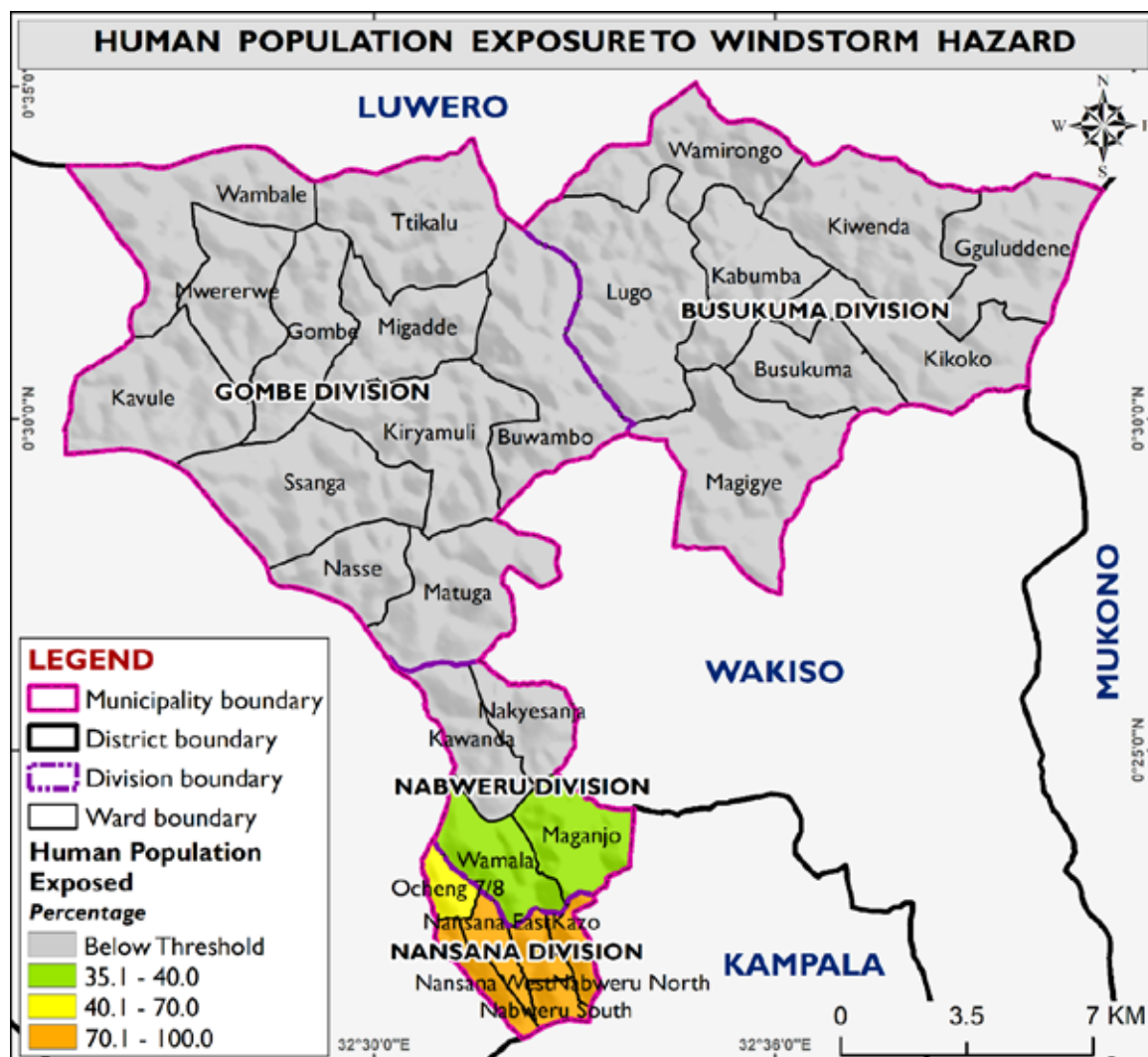


Figure 37: Human population exposed to windstorms in Nansana Municipality

A total of 8.4 Km² (7.9%) of farmland is exposed to windstorm hazard in Nansana Municipality. The Nabweru (13.3%) and Nansana (12.2%) divisions have the highest proportions of farmland exposed to windstorm hazard (**Figure 38**).

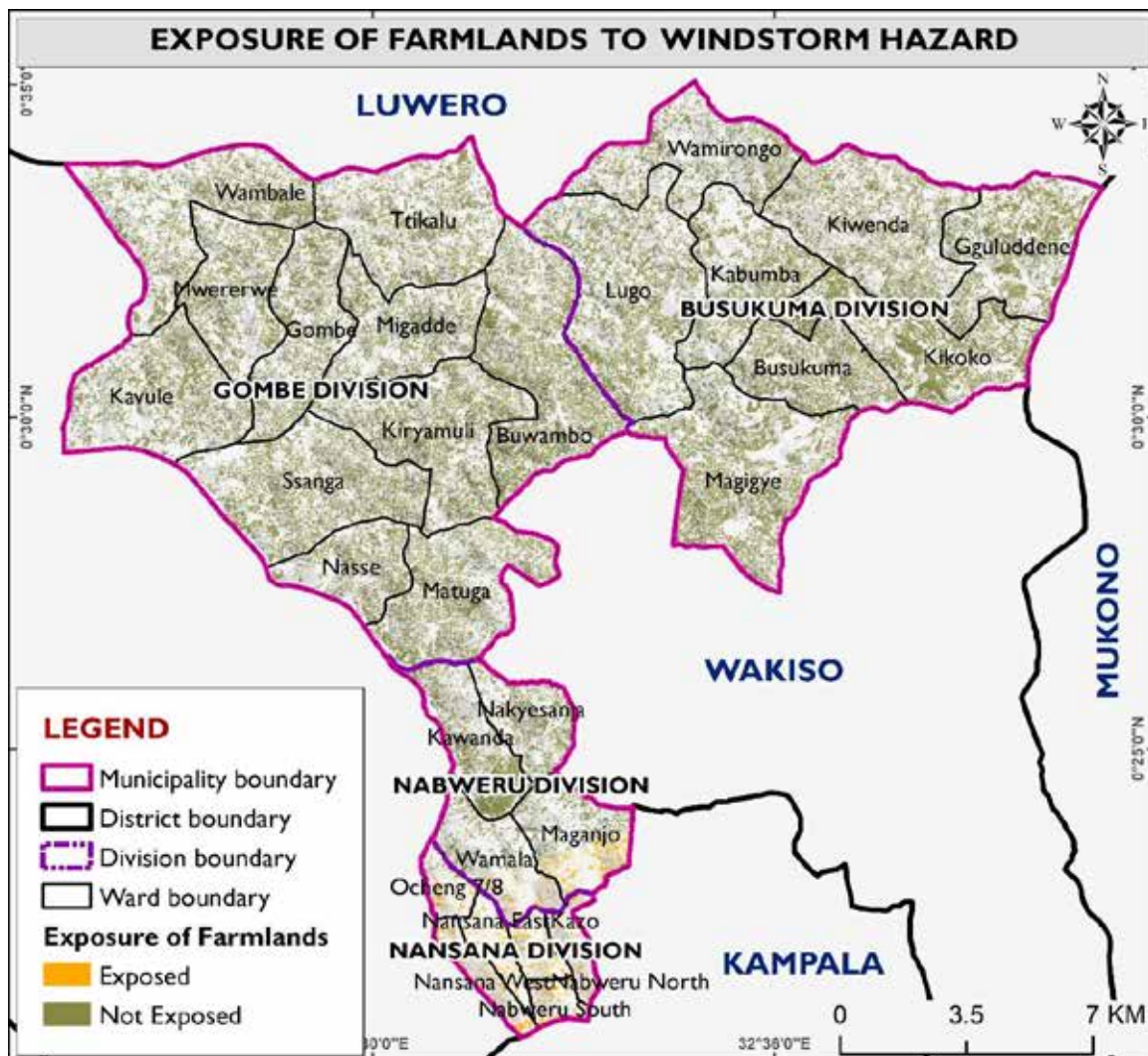


Figure 38: Exposure of farmlands to windstorms in Nansana Municipality

In Nansana Municipality, 138 schools (40.2%) are exposed to windstorms, whereas 205 schools (59.8%) are not exposed to this climate hazard. The schools exposed to windstorms in Nansana Municipality are located in Nansana (96.3%) and Nabweru (31.8%) divisions (**Figure 39**).

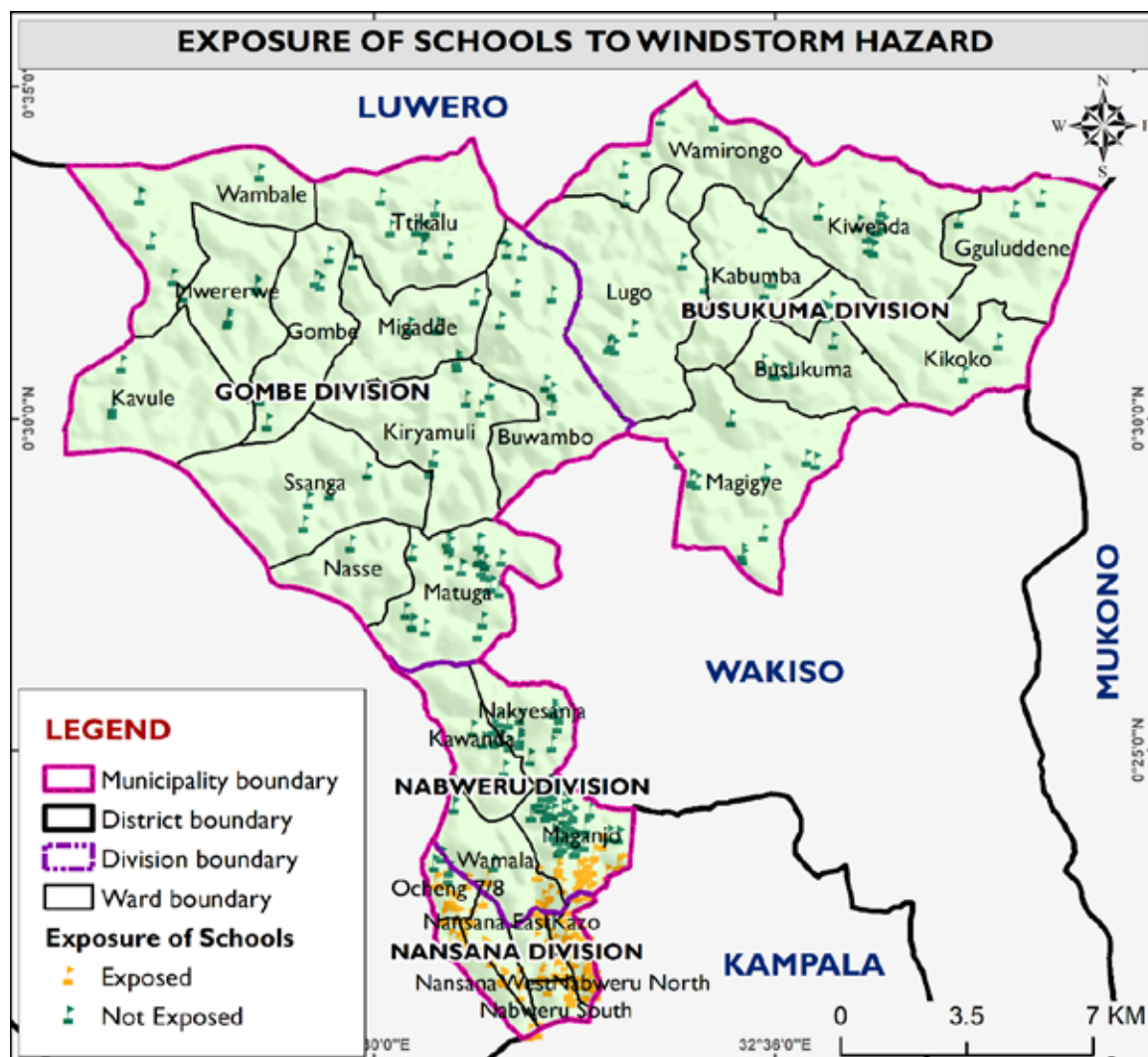


Figure 39: Exposure of schools to windstorms in Nansana Municipality

The analysis showed that 51 government health facilities (51%) are exposed to windstorms in Nansana Municipality, while 49 government health facilities (49%) are not exposed to this hazard. The government health facilities exposed to windstorms are located in Nansana (95%) and Nabweru (41.9%) divisions (**Figure 40**).

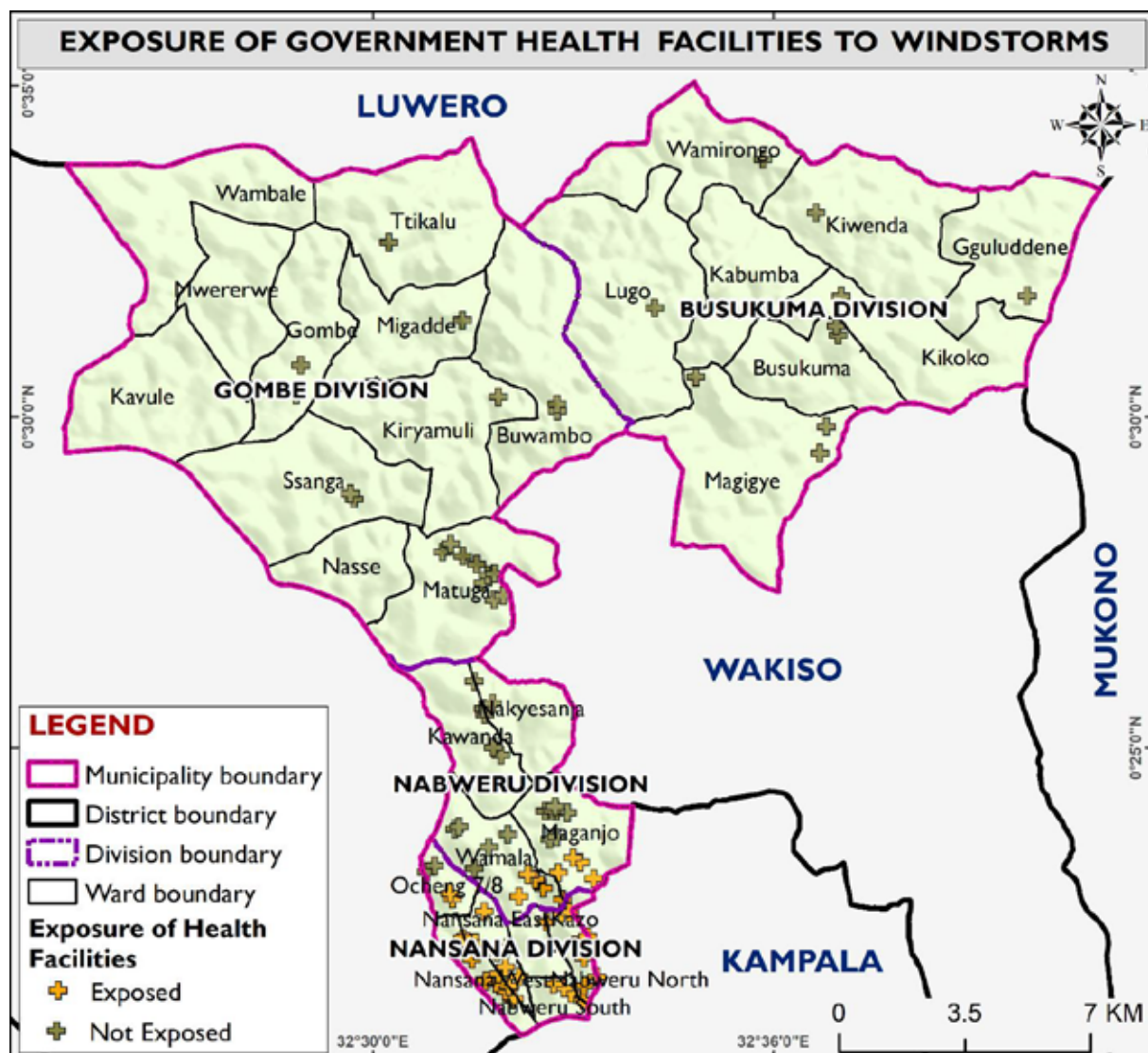


Figure 40: Exposure of government health facilities to windstorms in Nansana Municipality

2.7 Vulnerability and Risk Assessment in Nansana Municipality

Vulnerability to climate change refers to the degree to which a system, community, or individual is susceptible to, and unable to cope with, the adverse impacts of climate change, including climate variability and extremes (IPCC, 2014). Vulnerability is shaped by physical, social, economic, and political factors that affect how prepared and resilient individuals or communities are to climate-related hazards. Vulnerability is a function of exposure, the sensitivity of a household or livelihood to the stress associated with that exposure, and the adaptive capacity to recover from the impacts of that exposure.

$$\text{Vulnerability} = (\text{Exposure} * \text{Sensitivity}) - \text{Adaptive Capacity}$$

Multi-hazard exposure in Nansana Municipality

Multi-hazard profiling considers more than one hazard in a given place and the interrelations between these hazards, including their simultaneous or cumulative occurrence and their potential interactions. The assessment showed that the subcounties that have a high level of exposure (more than 80 percent) to all the hazards in Nansana Municipality include Magigye, Wamirongo, Migadde, Kawanda, Gombe, Ssanga, Maganjo, and Ttikalu (**Figure 4I**).

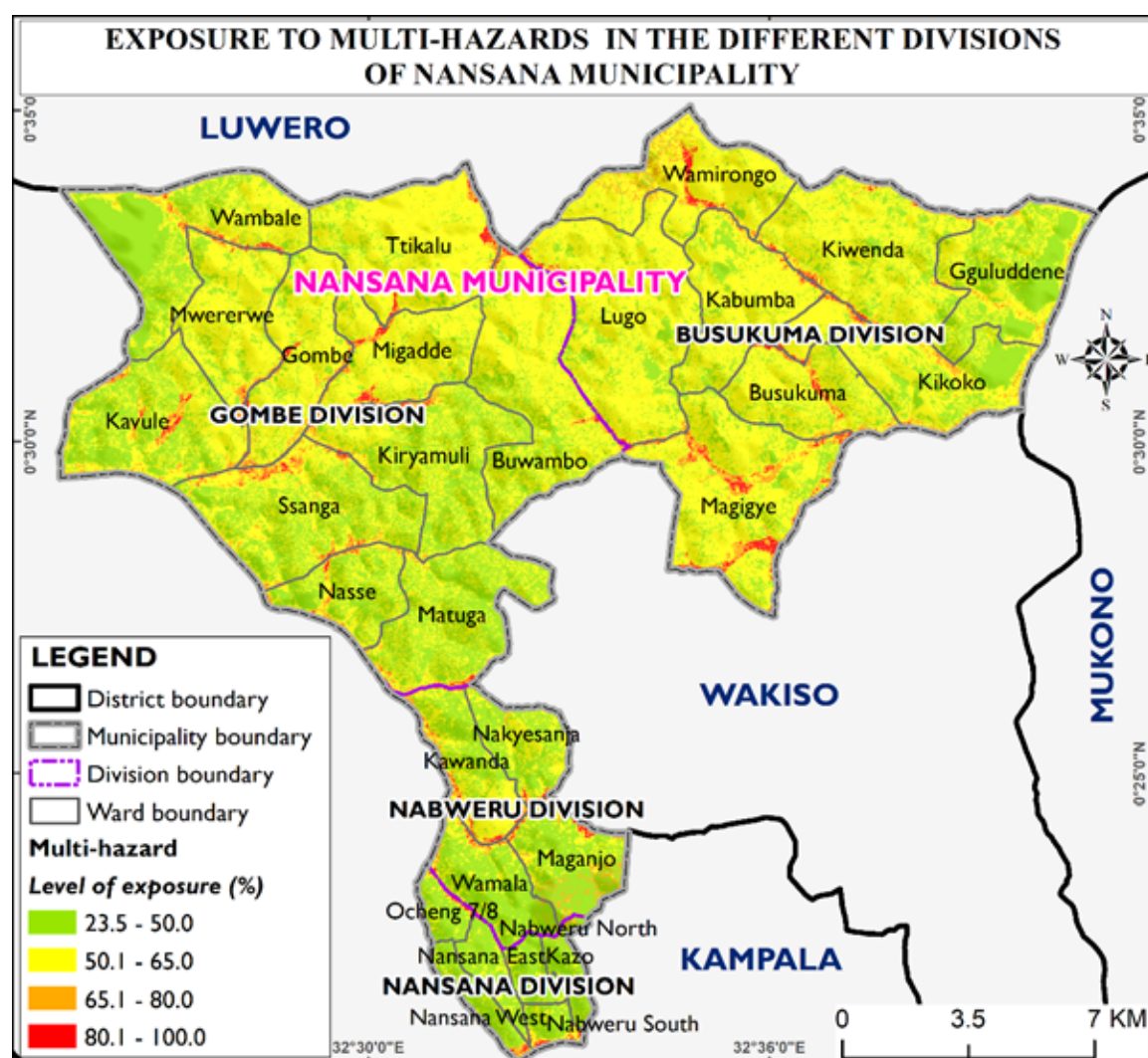


Figure 4I: Exposure to multi-hazards in the different divisions of Nansana Municipality

Sensitivity of communities to multi-hazards

Sensitivity refers to socio-economic or demographic characteristics that can make individuals susceptible to the adverse effects of exposure (Declet-Barreto et al., 2020). The sensitivity indicators that were assessed at the ward level are presented in **Table 6**. These indicators were ranked, weighed, and normalized to produce the sensitivity index.

Description of sensitivity indicators

Access to health services reflects a community's capacity to prevent, respond to, and recover from climate-related health impacts, including heat stress, disease outbreaks, and injuries from extreme weather. Community awareness and preparedness reflect the extent to which individuals and groups understand climate risks and their capacity to respond promptly. Riverside degradation denotes the reduced capacity of freshwater ecosystems to absorb and adapt to climate change, thereby increasing the vulnerability of communities that rely on these rivers for water, food, and livelihoods. Dependence on climate-sensitive sectors underscores how heavily communities rely on industries such as agriculture, fisheries, and tourism, which are directly affected by climate variability, thereby increasing vulnerability to disruptions from extreme weather events, changing temperatures, and shifting ecosystems. Dependency on surface water reveals how reliant communities are on rivers, wetlands, and reservoirs that are highly vulnerable to a changing climate, increasing their risk of water scarcity and reduced water quality under climate stress. The design and capacity of drainage systems determine how well a community can manage increased rainfall, flooding, and storm surges; inadequate or poorly maintained systems heighten vulnerability to climate-induced water-related hazards.

Housing quality reflects how well homes protect occupants from climate-related hazards, such as floods, with poor-quality housing increasing the risk of damage, displacement, and health impacts during climate shocks. Income levels influence a community's capacity to prepare for, respond to, and recover from climate impacts; lower-income populations often lack the resources needed for adaptation, increasing their vulnerability to climate-related risks. High-density areas can amplify the effects of climate hazards, such as heatwaves and disease spread, while straining infrastructure and emergency response systems, thereby increasing overall community vulnerability. Unemployment reflects limited economic resilience and reduced access to resources, making individuals and communities less able to adapt to or recover from climate-related events such as floods. Wetland degradation weakens the natural buffers that wetlands provide against climate impacts such as flooding, storm surges, and drought, reducing ecosystem resilience and increasing the vulnerability of both human and ecological communities that depend on them.

Table 6: Sensitivity indicators to multi-hazards in Nansana Municipality

Divisions	Wards	Access to health services	Community awareness and preparedness	Degradation of rivers	Dependency on climate-sensitive sectors	Dependency on surface water	Drainage systems	Housing quality	Income levels	Population density	Unemployment	Wetland degradation	Total
Nansana	Kazo	4	3	0	3	3	4	3	4	5	2	0	31
Nansana	Nabweru North	4	3	0	3	3	3	2	4	5	2	5	34
Nansana	Nabweru South	4	3	0	3	3	3	2	4	5	2	2	31
Nansana	Nansana East	4	3	0	3	3	2	4	4	4	3	5	35
Nansana	Nansana West	4	3	0	2	3	2	3	4	5	2	3	31
Nansana	Ocheng 7/8	3	3	1	3	4	2	2	4	4	2	5	33
Nabweru	Kawanda	4	3	0	2	3	3	4	4	3	3	3	32
Nabweru	Maganjo	4	3	4	2	2	2	3	4	4	3	4	35
Nabweru	Nakyesanja	3	3	3	3	3	3	4	4	3	3	4	36
Nabweru	Wamala	4	3	3	3	3	3	4	4	1	3	4	35
Busukuma	Busukuma	5	3	3	2	1	1	5	4	3	3	5	35
Busukuma	Gguluddene	3	3	2	3	3	3	3	3	2	3	3	31
Busukuma	Kabumba	2	3	2	3	3	2	3	3	2	3	5	31
Busukuma	Kikoko	2	3	3	3	4	3	2	4	2	3	4	33
Busukuma	Kiwenda	4	3	4	2	1	1	4	4	3	3	5	34
Busukuma	Lugo	4	3	4	5	3	2	3	4	2	3	5	38
Busukuma	Magigye	4	3	5	5	3	3	4	3	3	3	4	40
Busukuma	Wamirongo	2	3	2	5	4	3	2	2	2	3	5	33
Gombe	Buwambo	5	3	0	3	1	3	3	4	3	2	4	31
Gombe	Gombe	4	3	0	4	1	3	3	3	3	3	5	32
Gombe	Kavule	3	3	0	4	1	3	3	3	3	3	3	29

Divisions	Wards	Access to health services	Community awareness and preparedness	Degradation of rivers	Dependency on climate-sensitive sectors	Dependency on surface water	Drainage systems	Housing quality	Income levels	Population density	Unemployment	Wetland degradation	Total
Gombe	Kiryamuli	3	3	0	4	1	5	3	4	2	2	5	32
Gombe	Matugga	4	3	3	2	1	3	3	4	4	2	4	33
Gombe	Migadde	4	3	0	3	1	3	3	3	2	3	5	30
Gombe	Mwererwe	2	3	0	4	1	3	3	3	2	3	5	29
Gombe	Nasse	3	3	0	3	1	3	3	3	2	2	2	25
Gombe	Ssanga	2	3	4	5	1	3	3	4	3	2	3	33
Gombe	Ttikalu	4	3	0	4	1	3	3	3	2	2	5	30
Gombe	Wambale	2	3	0	5	1	3	3	3	2	3	5	30
		KEY: 0=Not Available; 1=Very Low; 2=Low; 3=Moderate; 4=High; 5=Very High											

Source: Key Informant Interviews, 2025

The wards with high sensitivity to multi-hazards (i.e., drought, floods, hailstorms, lightning, and windstorms) include Lugo, Magigye, Busukuma, Kiwenda, Nakyesanja, Maganjo, Wamala, Nansana North, and Nansana East (Figure 42).

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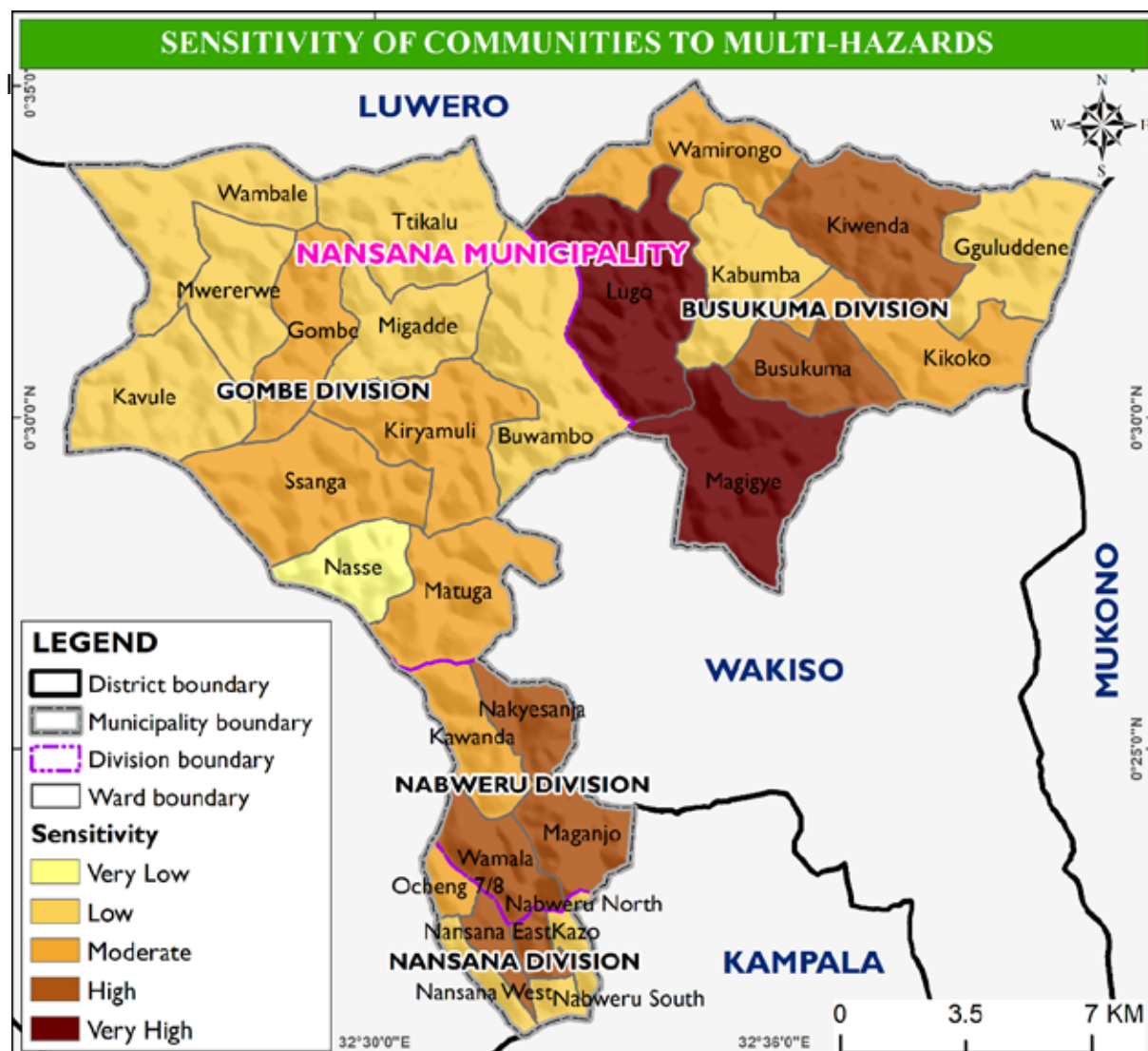


Figure 42: Sensitivity of communities to multi-hazards in Nansana Municipality

Adaptive capacity of communities to multi-hazards

Adaptive capacity is defined as the ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences of climate change (IPCC, 2023). The adaptive capacity indicators assessed at the ward level are presented in **Table 7**. These adaptive capacity indicators were ranked, weighted, and normalized to produce the adaptive capacity index.

Description of adaptive capacity indicators

Access to clean water and sanitation ensures that communities can maintain good health and hygiene, reducing the risk of waterborne diseases during extreme weather events and enabling better resilience to climate-induced health challenges. Access to credit allows individuals and communities to invest in resilience-building measures, such as climate-smart agriculture, infrastructure improvements, and emergency preparedness, providing the financial resources needed to recover from and adapt to climate-related disruptions. Access to early warning information enables communities to prepare for and respond effectively to climate-related hazards, such as storms, floods, or heatwaves, by providing timely alerts and guidance that help reduce risks, protect lives, and minimize damage. Access to renewable energy provides communities with a sustainable and reliable energy source, reducing dependence on fossil fuels, minimizing greenhouse gas emissions, and enhancing resilience by ensuring energy availability during climate-related disruptions such as storms and power outages.

Awareness of climate risks and adaptation practices reflects how well individuals and communities understand climate-related challenges and the actions they can take to mitigate risks, enabling them to make informed decisions and implement strategies that enhance resilience to changing climate conditions. Diverse livelihood options provide communities with multiple sources of income and resources, enabling them to withstand climate shocks better and adapt by shifting to more resilient economic activities when needed. Higher levels of education enable individuals and communities to better understand climate risks, access information, and adopt effective adaptation strategies, thereby enhancing their ability to respond to and recover from climate-related challenges. Extension services provide farmers, communities, and local businesses with essential knowledge, skills, and resources to adopt climate-resilient practices, improve productivity, and better cope with changing climate conditions. Good environmental management practices promote sustainable resource use, reduce environmental degradation, and enhance ecosystem resilience, enabling communities to better withstand and adapt to climate impacts.

Robust and well-maintained healthcare systems improve a community's ability to respond to climate-related health challenges, such as heatwaves, disease outbreaks, and extreme weather events, by providing timely medical care, disease prevention, and emergency services. Proper waste disposal helps prevent environmental degradation, reduces the risk of disease outbreaks, and ensures cleaner, healthier living conditions, enabling communities to withstand better the health and environmental impacts of climate change, such as flooding. Rainwater harvesting provides an alternative and supplemental water source, reducing dependence on traditional sources such as rivers, especially during the dry season. Strong, connected communities are better able to share resources, information, and support during climate events, helping individuals and groups recover more quickly and effectively from climate impacts. Urban greening initiatives enhance cities' resilience by increasing green spaces, improving air quality, reducing heat-island

effects, and providing natural buffers against extreme weather, helping communities better cope with climate-related challenges. Wetland and ecosystem restoration enhances the natural capacity of wetlands to absorb the impacts of climate change, such as flooding, while supporting biodiversity, improving water quality, and strengthening the resilience of communities that rely on these ecosystems.

Table 7: Adaptive capacity indicators to multi-hazards in Nansana Municipality

Divisions	Wards	Access to clean water and sanitation	Access to credit	Access to early warning information	Access to renewable energy e.g., solar	Awareness of climate risks and adaptation practices	Diverse livelihood options	Education levels	Extension services	Good environmental management practices	Healthcare infrastructure	Proper waste disposal	Rainwater harvesting	Social networks	Urban greening initiatives	Wetland and ecosystem restoration	Total
Nansana	Kazo	3	3	2	3	3	2	2	3	2	1	2	3	3	1	0	33
Nansana	Nabweru North	2	3	2	3	3	2	2	3	2	2	2	2	3	2	0	33
Nansana	Nabweru South	2	3	2	3	3	2	2	3	1	1	2	2	3	2	0	31
Nansana	Nansana East	3	3	1	3	3	3	3	3	2	2	2	2	3	2	0	35
Nansana	Nansana West	3	3	1	3	3	3	3	3	2	2	2	2	3	2	0	35
Nansana	Ocheng 7/8	2	3	1	2	3	2	3	2	2	1	2	1	2	2	0	28
Nabweru	Kawanda	4	3	4	2	3	4	4	3	2	4	3	4	3	4	2	49
Nabweru	Maganjo	4	3	4	2	3	4	4	3	2	4	4	3	3	3	2	48
Nabweru	Nakyesanja	3	3	3	3	3	2	3	3	3	3	2	3	3	4	2	43
Nabweru	Wamala	3	3	3	3	3	4	3	3	3	3	2	4	3	4	2	46
Busukuma	Busukuma	4	3	3	2	2	3	2	2	3	4	3	3	3	2	2	41
Busukuma	Gguluddene	2	2	2	2	2	3	2	2	3	2	2	2	2	2	2	32
Busukuma	Kabumba	2	2	3	2	2	3	3	3	3	3	2	2	2	2	2	36
Busukuma	Kikoko	3	3	2	2	2	3	3	3	3	2	2	2	2	2	2	36
Busukuma	Kiwenda	4	4	3	2	2	4	3	3	3	4	3	3	2	2	2	44
Busukuma	Lugo	2	3	2	2	2	2	3	3	3	3	3	2	3	2	2	37
Busukuma	Magigye	4	3	3	3	2	4	3	3	3	4	3	3	3	2	2	45
Busukuma	Wamirongo	2	2	2	2	2	3	2	1	3	2	2	1	2	2	2	30
Gombe	Buwambo	4	3	2	2	3	4	4	4	3	5	2	4	3	3	3	49
Gombe	Gombe	3	3	2	2	3	3	3	4	3	4	3	4	3	4	3	47
Gombe	Kavule	3	3	2	2	3	4	3	4	3	2	2	4	3	3	3	44
Gombe	Kiryamuli	3	3	2	2	3	4	3	4	3	2	3	4	3	3	3	45
Gombe	Matugga	2	3	2	2	3	4	4	3	3	4	2	3	3	1	2	41
Gombe	Migadde	3	3	2	2	3	3	3	4	3	4	2	4	3	3	3	45

Divisions	Wards	Access to clean water and sanitation	Access to credit	Access to early warning information	Access to renewable energy e.g., solar	Awareness of climate risks and adaptation practices	Diverse livelihood options	Education levels	Extension services	Good environmental management practices	Healthcare infrastructure	Proper waste disposal	Rainwater harvesting	Social networks	Urban greening initiatives	Wetland and ecosystem restoration	Total
Gombe	Mwererwe	3	3	2	2	3	3	3	4	3	2	3	4	3	3	3	44
Gombe	Nasse	3	3	2	2	3	3	3	4	3	2	3	4	3	2	3	43
Gombe	Ssanga	3	3	2	2	3	4	3	4	3	2	1	4	3	2	2	41
Gombe	Ttikalu	3	3	2	2	3	3	3	4	3	4	3	4	3	3	3	46
Gombe	Wambale	3	3	2	2	3	2	3	4	3	2	4	4	3	4	3	45
KEY: 0=Not Available; 1=Very Low; 2=Low; 3=Moderate; 4=High; 5=Very High																	

Source: Key Informant Interviews, 2025

The wards with very high adaptive capacity to multi-hazards (i.e., drought, floods, hailstorms, lightning, and windstorms) include Gombe, Buwambo, Kawanda, and Maganjo (**Figure 43**). On the other hand, Ocheng 7/8, Nansana East, Kazo, Nabweru South, Wamirongo, and Gguluddene have a very low adaptive capacity to multi-hazards.

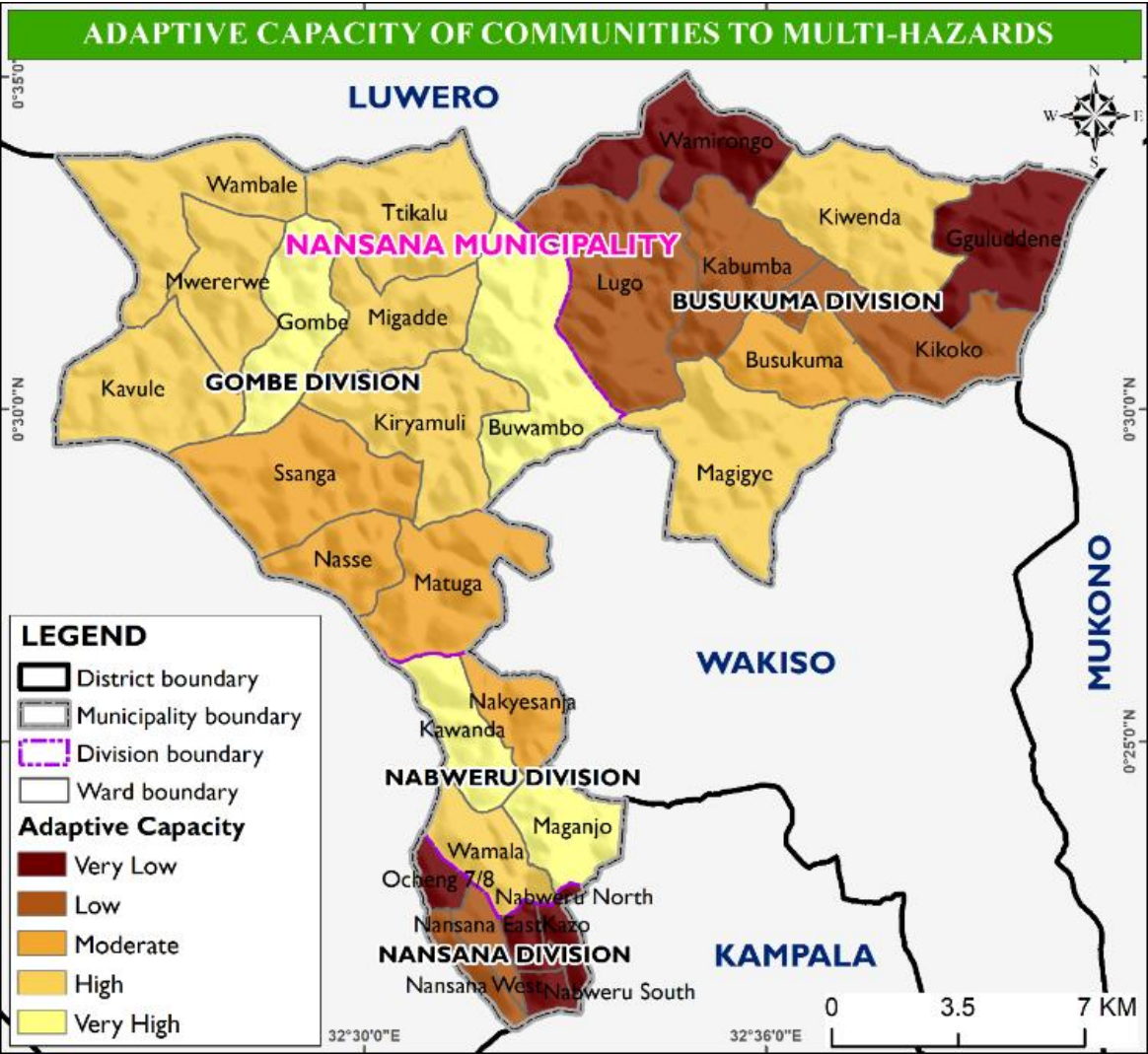


Figure 43: Adaptive capacity of communities to multi-hazards in Nansana Municipality

Vulnerability of communities to multi-hazards

The communities in Nansana Municipality that are highly vulnerable to multi-hazards (i.e., drought, floods, hailstorms, lightning, and windstorms) are located in Wamirongo, Lugo, Ocheng 7/8, Nansana East, Gguluddene, Magigye, Kikoko, Busukuma, and Ssanga (**Figure 44**).

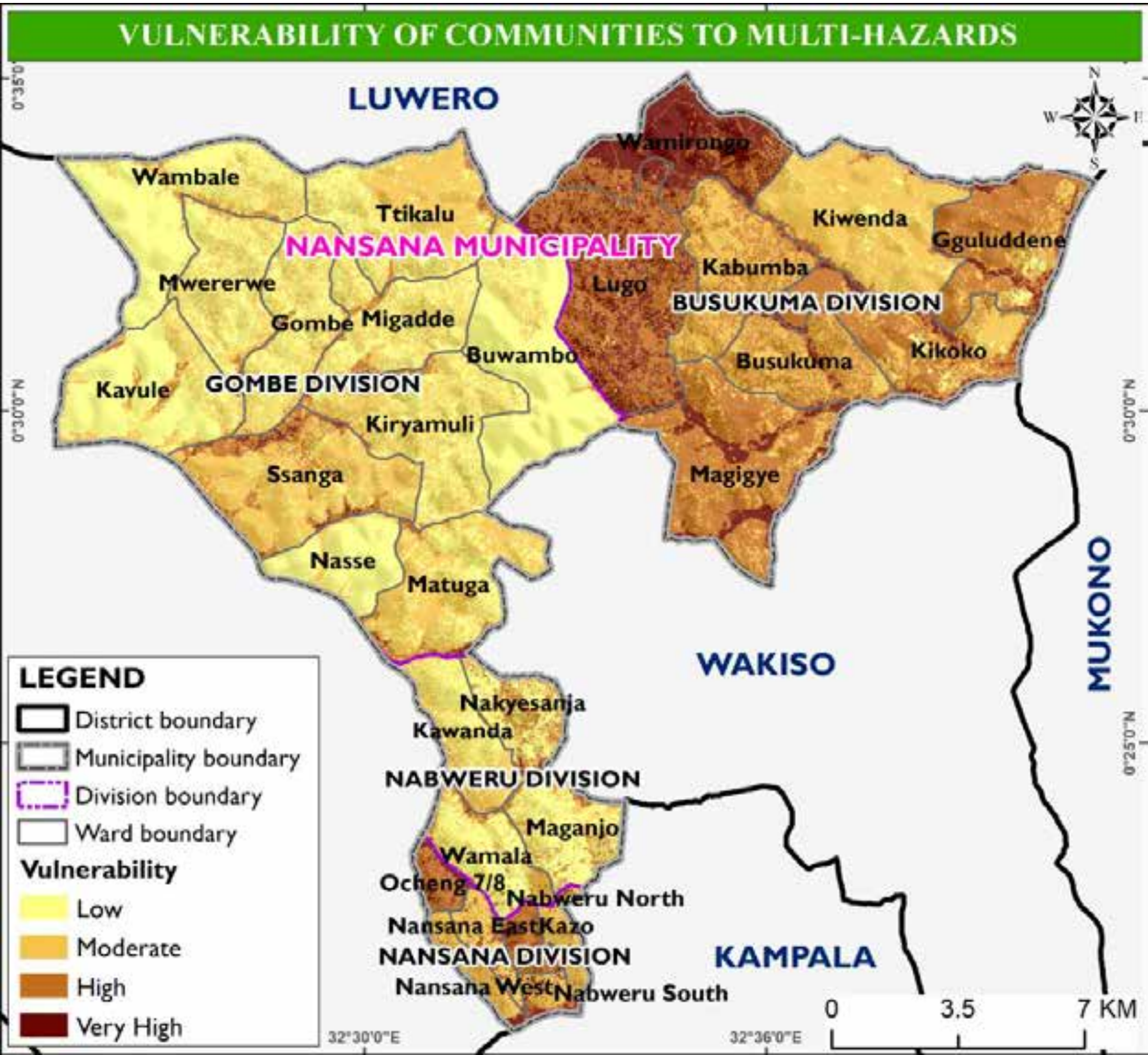


Figure 44: Vulnerability of communities to multi-hazards in Nansana Municipality

2.8 Risk of communities to multi-hazards

Disaster risk is expressed as the likelihood of loss of life, injury, or destruction and damage from a disaster in a given period (UNISDR, 2017). Disaster risk is widely recognized as the consequence of the interaction between a hazard and the characteristics that make people and places vulnerable and exposed (**Figure**).



Figure 46: The risk matrix
Source: de Brito et al., 2017

The multi-hazards experienced in Nansana Municipality were combined, weighed, and normalized to produce the hazard index. The populations of the communities in the different wards were considered the exposed groups. The population was normalized to create the exposure index. The hazard, exposure, and vulnerability indices were analyzed and normalized to produce the risk index, which was mapped at the subcounty level. Risk assessment indicated that the wards at high risk of multi-hazards in Nansana Municipality include Maganjo, Kazo, Nansana East, Matugga, Magigye, and Wamirongo (**Figure 45**).

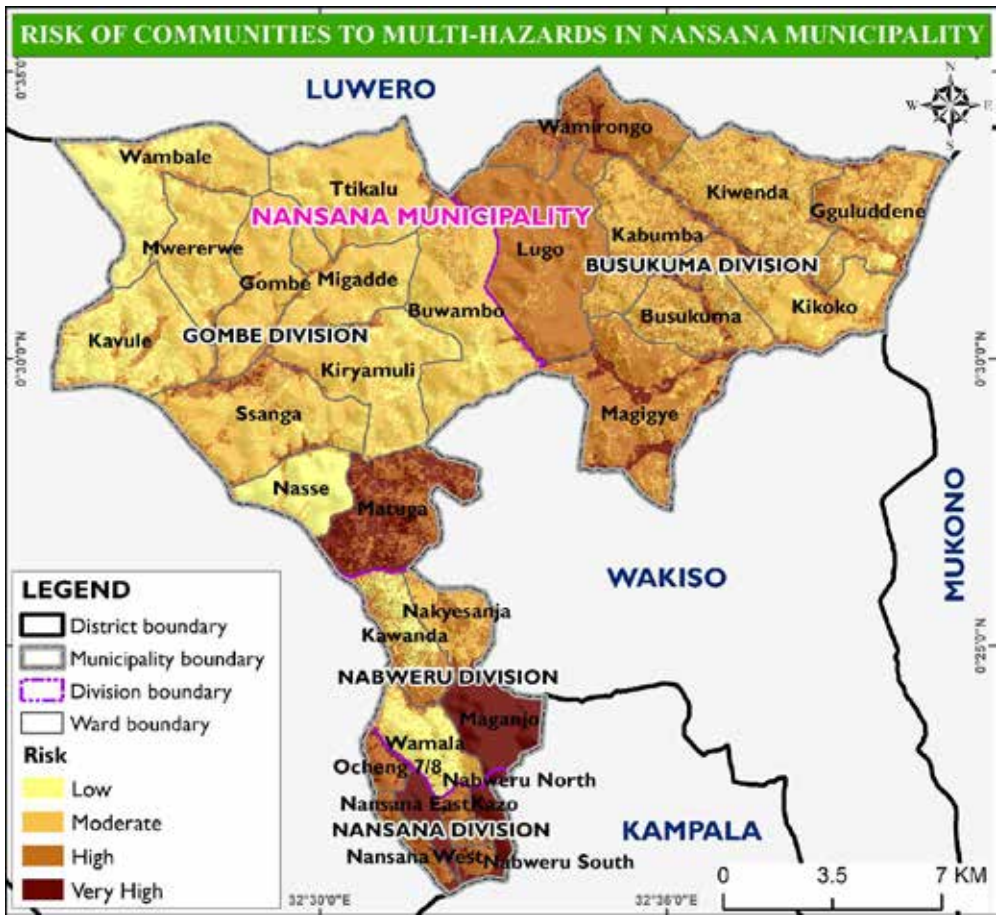


Figure 45: Risk of communities to multi-hazards in Nansana Municipality

CHAPTER THREE: DISASTER RISK MANAGEMENT OPTIONS

3.1 Introduction

The Nansana Disaster Management actions are structured around six key result areas (**profiling of disaster risks, vulnerability, and losses/damages; strengthening disaster governance structures; enhancing environmental protection to mitigate disasters; promoting disaster preparedness, response, and recovery measures; supporting community resilience to manage disasters; and strengthening disaster early warning systems**), each with clearly defined outcomes and outputs to address specific disaster risks and vulnerabilities within the municipality. The plan also identifies hotspot divisions, outlines short-, medium-, and long-term actions, and assigns institutional responsibilities to ensure effective and accountable implementation.

3.2 Result Areas

3.2.1 Profiling of disaster risks, vulnerability, and losses/damages

Nansana Municipality is highly susceptible to a variety of hazards, with floods, windstorms, lightning, and drought being the most significant. This result area addresses the need for systematic profiling of disaster risks by mapping hazard-prone areas, identifying socially and economically vulnerable groups, and compiling records of past damages and recovery costs. Such evidence-based profiling enables more effective targeting of resources, risk-informed budgeting, and the prioritization of preparedness and response measures across all municipal sectors.

Outcome

Disaster risks, vulnerabilities, and losses are well understood to guide evidence-based planning and action.

Output

The outputs are

1. Community-driven risk profiling carried out in high-risk neighborhoods of Nansana Municipality through participatory hazard mapping, vulnerability and capacity assessments, and documentation of local knowledge to inform planning and early action.
2. Standardised post-disaster loss and damage assessments systematically conducted in the municipality following climate- and weather-related events to quantify impacts on lives, livelihoods, infrastructure, and ecosystems and to guide recovery, compensation, and risk-reduction investments.
3. Disaster and climate risk information integrated into Nansana Municipality's development plans, sectoral strategies, and budgets through risk-informed guidelines, screening tools, and strengthened coordination across departments with communities.

Disaster Risk Reduction Actions

Short-term actions:

Action 1: Engage communities in identifying flood-prone areas through lived experience to enhance local relevance and ownership of disaster data.

Action 2: Develop multi-hazard risk maps using GIS to provide spatial visualization of risk zones.

Action 3: Conduct historical disaster analysis by scrutinizing records of past events (floods, windstorms), their frequency, and impacts to understand patterns and better prepare for recurrence.

Action 4: Identify vulnerable groups (women, the elderly, and PWDs) to ensure that disaster preparedness plans prioritize the needs of those with the least capacity to respond and recover.

Action 5: Train divisions in post-disaster assessment to build local capacity to assess and report damages quickly and accurately following disaster events.

Action 6: Standardize reporting tools to ensure consistent data collection across wards and divisions for aggregation and analysis.

Action 7: Train planners in risk-sensitive planning to build technical capacity to integrate DRM principles into development decisions.

Medium-term actions:

Action 1: Update risk profiles annually to reflect emerging risks and development patterns, thereby maintaining up-to-date preparedness strategies.

Action 2: Develop a disaster loss database to centralize data on property damage, injuries, displacement, and economic losses to support planning, insurance schemes, and relief budgeting.

Action 3: Monitor economic and health impacts to track indirect and long-term consequences (e.g., school closures, disease outbreaks) to inform multisectoral response.

Action 4: Establish data-sharing protocols to promote coordination among departments, NGOs, and community groups, thereby improving the reliability and utility of disaster data.

Action 5: Incorporate risk profiles into physical planning to prevent development in high-risk zones and to support resilient zoning decisions.

Action 6: Use vulnerability data to prioritize projects to guide investment toward critical infrastructure and services for at-risk communities

Action 7: Align climate and DRR in municipal planning to ensure coherence between climate adaptation efforts and disaster risk management.

Action 8: Conduct periodic planning reviews to keep disaster and climate considerations active in municipal processes and allow course correction.

3.2.2 Strengthening disaster governance structures

The vulnerability assessment revealed that while disaster impacts are recurrent and intensifying, institutional preparedness and coordination in Nansana remain weak and fragmented. There are gaps in leadership, policy enforcement, and budget allocations for DRR, especially at the division level. Furthermore, many sectors, including health, urban planning, and education, lack mainstreamed disaster risk frameworks. This result area aims to establish formal disaster coordination committees at both the municipal and division levels to facilitate multi-stakeholder coordination, ensure clear mandates and accountability, and mainstream DRR into physical development planning and budgeting processes.

Outcome

Functional and inclusive disaster governance systems are established to coordinate and enforce DRR.

Outputs

Outputs are

1. Climate change and disaster risk management coordination structures, including multi-stakeholder committees, technical working groups, and community focal persons, established and operationalised at municipal and lower local government levels in the Municipality to guide, coordinate and monitor adaptation actions
2. Municipal by-laws, ordinances and policy guidelines in the municipality reviewed, developed and enforced to mainstream climate change, disaster risk reduction and environmental sustainability into all sectors and development decisions
3. Institutional and human capacities for climate change adaptation and disaster risk management strengthened in through targeted trainings, mentoring, provision of tools and systems, and knowledge-sharing platforms for political leaders, technical staff, and community structures.

Disaster Risk Reduction Actions

Short-term actions:

Action 1: Form a municipal disaster task force to coordinate disaster preparedness and response across sectors at the municipal level.

Action 2: Set up Division Disaster Committees to decentralize responsibility to local divisions, enabling faster and more context-specific action.

Action 3: Develop TORs for governance structures clarifying roles, responsibilities, and accountability of DRM actors.

Action 4: Appoint DRR focal persons in each division to champion risk reduction efforts.

Action 5: Align municipal planning with national policy to ensure local strategies.

Action 6: Enforce land use laws in risk zones to prevent construction and infrastructure development in wetlands or floodplains.

Action 7: Design and implement structured training programmes for elected leaders, technical staff, and community representatives on disaster governance.

Action 8: Organise regular tabletop simulation exercises for municipal leaders, technical staff and community leaders in high-risk areas to practice coordinated response to priority hazards.

Action 9: Develop user-friendly DRR and disaster governance training manuals and job aids tailored to local leaders and community structures.

Medium-term actions:

Action 1: Establish partnerships with NGOs to bring technical expertise and resources from development partners to support local efforts.

Action 2: Develop DRR bylaws to provide a legal basis for disaster risk management activities, enforcement, and compliance.

Action 3: Review existing disaster-related ordinances to update outdated regulations to reflect current hazards and planning frameworks.

Action 4: Establish and strengthen participatory governance mechanisms, including multi-stakeholder forums, community barazas, feedback and grievance channels, and the representation of vulnerable groups on committees.

Action 5: Integrate DRR into departmental work plans-support all municipal departments and lower local governments to review and update their annual work plans and budgets

Action 6: Establish a structured, recurring disaster risk reduction training programme and integrate it into staff induction, annual capacity-building plans, and leadership orientations.

3.2.3 Enhancing environmental protection to mitigate disasters

Nansana Municipality has experienced widespread environmental degradation, with over 83% of wetlands encroached upon or degraded, particularly along the Lubigi and Nakyasanja wetlands. This has significantly reduced the capacity of natural ecosystems to buffer floods and absorb stormwater, resulting in increased flood frequency and intensity in areas such as Kawempe and Kyebando. The destruction of vegetation cover, coupled with poor solid waste management, further exacerbates drainage blockage and disaster risk. This result area prioritizes ecosystem restoration, urban greening, and community-led conservation efforts as key components of disaster mitigation. It also promotes the enforcement of environmental laws to prevent further degradation and encourages sustainable land and water use practices. Healthy ecosystems serve as natural defenses against disasters, and their protection is central to the municipality's long-term resilience.

Outcome

Ecosystems are restored and protected to buffer disaster risks and enhance resilience.

Outputs

The outputs are

1. Community education and participation in environmental and climate action strengthened in the municipality through targeted awareness campaigns, school and neighbourhood dialogues, and support to local groups to plan and implement restoration and waste-management activities.
2. Degraded wetlands, riverbanks, green spaces, and other critical ecosystems in the municipality restored and conserved through replanting, controlled use, soil and water conservation measures, and community co-management to safeguard biodiversity and ecosystem services.
3. Enforcement of environmental regulations in the municipality strengthened through regular inspections, permitting and monitoring systems, and application of sanctions and incentives to ensure compliance with standards on land use, waste management, and pollution control.

Disaster Risk Reduction Actions

Short-term actions:

Action 1: Conduct environmental awareness campaigns using community meetings, radio shows, social media, posters, and drama to educate residents on waste management.

Action 2: Work with the education department and school administrations to integrate ecosystem and climate education into school timetables, clubs, and learning materials.

Action 3: Organise youth-led tree planting and care initiatives through schools, youth groups, and faith-based organisations.

Action 4: Identify and train local conservation stewards (community volunteers, leaders and CBOs) on basic ecosystem management, monitoring, reporting and community mobilisation to support protection of wetlands, riverbanks, and green spaces.

Action 5: Establish partnerships with local radio, TV, print, and digital media to produce regularly and air programmes, talk shows, and messages on environmental conservation, climate risks, and community responsibilities.

Action 6: Identify and map degraded hill slopes and eroded areas and implement reforestation and soil-and-water conservation measures (tree planting, terracing, grass strips) in collaboration with landowners and community groups.

Action 7: Demarcate, clear, and restore degraded wetland sections through removal of illegal activities, replanting of indigenous species, and restoration of natural water flows.

Action 8: Strengthen regulation and monitoring of sand mining and wetland use by issuing clear guidelines, conducting regular inspections, and enforcing permits, fines, and closures for noncompliant operators.

Action 9: Conduct GIS mapping and physical demarcation of wetlands, riverbanks, and green corridors, installing visible beacons and signposts and sharing maps with communities and enforcement teams.

Action 10: Build the capacity of municipal and lower local government enforcement teams on relevant laws, inspection procedures, evidence gathering, and case management for environmental offenses.

Medium-term actions:

Action 1: Support farmers and peri-urban households to adopt agroforestry by providing seedlings, technical extension, and demonstration plots that integrate trees with crops and livestock to improve soil health, microclimate, and livelihoods.

Action 2: Develop/update and implement integrated catchment management plans for key rivers and drainage systems.

Action 3: Operationalise and enforce penalties for illegal dumping, open burning of waste, and encroachment on wetlands and protected areas through fines, prosecutions, and closure of non-compliant facilities.

Action 4: Draft, consult on, and enact municipal ordinances, bylaws, and guidelines that promote green building, sustainable land use, pollution control, waste reduction, and nature-based solutions.

Action 5: Integrate ecosystem-based disaster risk reduction (protection of wetlands, green buffers, and urban forests) into municipal and lower local government development plans, budgets, and infrastructure projects.

3.2.4 Promoting disaster preparedness, response, and recovery measures

Disasters in Nansana Municipality often cause sudden and severe disruptions, with floods damaging roads, displacing families, and straining health services. Yet the municipality lacks clear emergency preparedness plans, first-responder training, and pre-positioned supplies. Many communities, particularly in flood-prone divisions such as Nabweru and Nansana Central, report delayed responses and the absence of evacuation procedures. This result area is critical for establishing standard operating procedures for different hazard types, developing evacuation routes, training community health teams and responders, and preparing post-disaster recovery mechanisms. By strengthening preparedness systems, the municipality can minimize loss of life, reduce service disruptions, and ensure rapid, organized recovery efforts that protect vulnerable populations and infrastructure.

Outcome

Capacity for effective preparedness, coordinated response, and timely recovery is improved.

Outputs

Outputs are;

1. Emergency preparedness in the municipality strengthened through development and regular updating of contingency plans, pre-positioning of essential supplies, simulation drills, and training of municipal staff, first responders, and community structures.
2. Coordinated disaster response systems covering early activation protocols, incident command structures, communication channels, and logistics arrangements established and operationalised in the municipality to ensure timely, efficient support during climate- and hazard-related emergencies.
3. Climate- and risk-informed recovery and rehabilitation programmes designed and implemented in the municipality to restore and upgrade damaged infrastructure, livelihoods, and social services after disasters, with a focus on building back better and protecting vulnerable groups.

Disaster Risk Reduction Actions

Short-term actions:

Action 1: Plan and conduct periodic multi-hazard simulation drills (e.g. floods, fires, disease outbreaks) for municipal staff, schools, health facilities, and communities in high-risk areas to test contingency plans, clarify roles, and improve coordination in real emergencies.

Action 2: Develop, update, and disseminate hazard-specific contingency and evacuation plans for priority neighbourhoods and public institutions, indicating safe routes, assembly points, roles, and communication protocols in user-friendly formats and local languages.

Action 3: Train and equip community health teams and selected volunteers in basic first aid, psychological first aid, and emergency referral procedures, and integrate them into local emergency response structures to support timely assistance during incidents.

Action 4: Develop and adopt clear municipal standard operating procedures (SOPs) for emergency preparedness, early warning, response, and recovery to guide all departments and partners during crises.

Action 5: Identify, train, and organise local volunteers in high-risk communities into response teams, assign clear roles, and integrate them into municipal emergency structures to support search-and-rescue, first aid, crowd control, and information dissemination during emergencies.

Action 6: Form multidisciplinary rapid-response teams at the municipal and division levels, comprising technical officers, health workers, enforcement personnel, and trained volunteers, with clear activation protocols, duty rosters, and basic equipment to respond quickly to disaster events.

Action 7: Design and adopt standardised damage and needs assessment tools and templates (forms, mobile data-collection tools, and checklists) for use by municipal staff and community teams to quickly capture and report the impacts and priority needs after disasters.

Medium-term actions:

Action 1: Identify strategic safe locations and preposition essential emergency supplies (first aid kits, stretchers, water purification tablets, tarpaulins, emergency food rations, and basic tools - to enable rapid assistance to affected households.

Action 2: Establish and operationalise emergency units at the division and lower local government levels, designate focal persons, define roles and responsibilities, and equip them with basic communication tools to coordinate preparedness and response activities.

Action 3: Establish and maintain reliable multichannel communication lines (hotlines, WhatsApp groups, radio calls, SMS trees, and public address systems) that link municipal departments, first responders, lower local governments, and community leaders to coordinate information flow before, during, and after crises.

Action 4: Procure and strategically allocate essential rescue equipment (stretchers, ropes, life jackets, ladders, fire extinguishers, personal protective equipment, and boats where relevant) to municipal and community response teams to enable safe and effective rescue operations.

Action 5: Coordinate the mobilisation, prepositioning, and distribution of context-appropriate relief packages (food, NFIs, WASH items, shelter materials, and dignity kits) to disaster-affected households, prioritising vulnerable groups and ensuring transparent targeting and reporting.

Action 6: Incorporate disaster recovery and “build back better” measures into municipal and lower local government development plans, budgets, and sector work plans, including rehabilitation of damaged infrastructure, livelihood support, and risk-reducing upgrades.

Action 7: Develop and implement a monitoring framework and field follow-up system to track the progress and quality of post-disaster rehabilitation work, livelihood support, and social recovery, and to document lessons learned to inform future responses.

Long-term:

Action 1: Set up and operationalise a municipal disaster recovery and contingency fund with clear guidelines for resource mobilisation, allocation, and accountability to finance rapid recovery, rehabilitation, and resilience-building interventions after shocks.

3.2.5 Supporting community resilience to manage disasters

In Nansana municipality, many residents, especially informal workers, smallholder farmers, and low-income households, depend on climate-sensitive livelihoods and live in high-risk zones without adequate safety nets. Disasters can wipe out their incomes and assets, perpetuating poverty and vulnerability. This area focuses on empowering communities through livelihood diversification, green job creation, and social protection mechanisms such as cash-for-work and microinsurance. It also supports inclusive planning, where youth, women, and marginalized groups participate in local DRR decision-making. Enhancing community knowledge and behaviour change around disaster risks enables residents to anticipate, withstand, and recover from shocks with greater autonomy and less reliance on external aid. Resilient communities are the frontline of defence and recovery, and their empowerment is central to sustainable DRM.

Outcome

Communities are empowered to anticipate, cope with, and recover from disasters

Outputs

Outputs are;

1. Livelihood resilience of vulnerable households and groups in the Municipality strengthened through diversification of income sources, climate-smart skills training, access to green enterprise opportunities, and improved market linkages to reduce sensitivity to climate shocks and stresses.
2. Shock-responsive social safety systems, including cash or in-kind support, public works schemes, community savings, and insurance mechanisms, established and operationalised in Nansana Municipality to protect vulnerable populations before, during, and after climate-related crises.
3. Community awareness of climate risks, available support mechanisms, and adaptive livelihood options increased in the Municipality through targeted outreach, dialogues, information campaigns, and use of local structures and media channels.

Disaster Risk Reduction Actions

Short-term actions:

Action 1: Support households and community groups to adopt climate-smart farming and green enterprises (e.g., drought-tolerant crops, kitchen gardens, poultry, waste recycling, and clean energy businesses) through demonstrations, extension services, and start-up inputs.

Action 2: Facilitate training, coaching, and linkages that enable vulnerable households to diversify income sources beyond climate-sensitive activities (e.g., adding petty trade, services, and crafts) to reduce dependence on climate-exposed livelihoods.

Action 3: Conduct participatory mapping and maintain an updated database of vulnerable groups (elderly, PWDs, child-headed households, refugees) and available support services to guide targeted preparedness, response, and recovery interventions.

Action 4: Build the capacity of community caregivers, peer support groups, and CBOs in basic psychosocial support, protection, referral pathways, and household-level DRR to strengthen community-based care systems.

Action 5: Organise and deliver psychosocial support services, including counselling, group debriefings, and referrals for individuals and families affected by disasters, with special attention to children, women, and other vulnerable groups.

Action 6: Hold regular community barazas (public dialogues) in villages and parishes to discuss local risks, review past events, agree on priority DRR actions, and provide feedback on ongoing interventions.

Action 7: Engage local radio stations, religious leaders, cultural leaders, and other influencers to disseminate DRR messages, early warnings, and information on available support using simple, locally understood formats.

Action 8: Translate DRR and climate adaptation materials, early warning messages, and guidance into the main local languages (Luganda) spoken in the municipality to ensure broad understanding and inclusion.

Medium-term actions:

Action 1: Design and deliver targeted training programmes for youth and women on green and climate-resilient jobs such as solar installation, improved cookstove production, urban agriculture, waste collection, and recycling to increase employability and incomes.

Action 2: Identify vulnerable households and connect them to existing social protection schemes, humanitarian assistance, savings groups, and insurance products to cushion them from the impacts of climate shocks and stresses.

Action 3: Partner with microfinance institutions, SACCOs, and VSLA groups to design and provide accessible, affordable microcredit facilities for community-led climate-resilient projects and small green businesses.

Action 4: Formalise the role of community disaster volunteers by establishing clear selection criteria, terms of reference, reporting lines, and regular trainings, and recognising them within municipal DRR structures.

Action 5: Support community development committees and local councils to incorporate DRR and climate adaptation priorities into their community action plans, budgeting, and project implementation.

Action 6: Develop age-appropriate, child-friendly DRR materials (posters, storybooks, games, and comics) and integrate them into school activities and child-focused spaces to build children's risk awareness.

Action 7: Organise annual disaster awareness days at the municipal and division levels, with exhibitions, drills, and school competitions, to sustain public attention and commitment to DRR and climate resilience.

3.2.6 Strengthening disaster Early Warning Systems (EWS)

The assessment highlighted that most early warning systems in Nansana are either non-existent or ineffective, with residents often receiving little or no advance notice of disasters, particularly floods and storms. The absence of localized weather monitoring and a structured dissemination network limits the ability of both institutions and households to take timely action. This result area promotes the development of localized hazard monitoring, including automated weather stations and GIS-based risk prediction tools, and the use of multi-channel communication, such as SMS alerts, radio, and community megaphones. It also focuses on building community capacity to interpret and respond to warnings, thereby ensuring the system is people-centered. Integrating EWS into municipal planning supports a shift from reactive to proactive disaster management, saving lives, reducing losses, and enhancing trust in local governance.

Outcome

Timely and accessible early warning systems are established to save lives and protect assets.

Outputs

Outputs are;

1. Systems, tools, and capacities for collecting, managing, and analysing climate, disaster risk, socio-economic, and environmental data strengthened in the municipality to generate evidence for planning, monitoring, and reporting on adaptation and resilience actions.
2. Internal and external communication systems, including standard reporting formats, feedback channels, and multi-platform information sharing (meetings, SMS, radio, and social media), adopted and used by municipal departments and community structures to share timely climate- and risk-related information.
3. Institutional integration of climate change and disaster risk management promoted in the municipality through joint planning and budgeting processes, harmonised guidelines and M&E frameworks, and regular coordination across sectors and levels of local government.

Disaster Risk Reduction Actions

Short-term actions:

Action 1: Establish simple systems for communities to regularly record and report local risk observations (e.g., unusual river levels, cracks, storms, pest outbreaks) and to integrate these observations with scientific data to improve hazard monitoring and forecasting.

Action 2: Select and train focal persons from municipal departments, divisions, and communities to operate weather stations, maintain equipment, record observations, and report data using standard forms or mobile tools.

Action 3: Set up protocols and partnerships to disseminate early warning messages and advisories via bulk SMS, community SMS trees, and local radio stations to reach households, institutions, and key local actors quickly.

Action 4: Install noticeboards, sirens, or digital displays in strategic public locations, such as markets, schools, health centres, taxi parks, and worship centres, to disseminate current warnings, instructions, and safety tips.

Action 5: Translate early warning messages and recommended actions into major local languages spoken in the municipality and disseminate them through trusted local channels to ensure all groups easily understand them.

Action 6: Organise periodic multi-stakeholder drills that simulate receipt of warnings and response actions across communities, schools, health facilities, and municipal departments to test and improve the EWS.

Medium-term action:

Action 1: Identify climate-risk hotspots and public institutions (schools, health centres, municipal offices) and install low-cost community weather stations to collect real-time rainfall, temperature, and wind data for early warning and local decision-making.

Action 2: Work with technical partners to develop and apply simple hazard prediction tools and models (e.g., flood risk thresholds, rainfall triggers, heat index) using historical and real-time data to anticipate priority hazards.

Action 3: Connect municipal early warning systems to national meteorological services and relevant regional/global platforms so that the municipality receives and relays timely, validated forecasts, alerts, and advisories.

Action 4: Develop and adopt clear, hazard-specific early-warning protocols (e.g., for floods, storms, heatwaves, disease outbreaks) that specify thresholds, responsible institutions, actions to be taken, and timelines.

Action 5: Integrate early-warning roles, actions, and response triggers into sector plans and standard operating procedures (e.g., for health, education, work, and the environment) so that each department knows how to respond when alerts are issued.

Action 6: Conduct annual reviews of the early warning system to assess timeliness, coverage, understanding, and response behaviour, and use the findings to strengthen tools, messages, and institutional arrangements.

Action 7: Include specific budget lines in municipal and divisional work plans to cover the installation, operation, maintenance, and upgrading of early-warning equipment, communication channels, training, and drills.

Long-term actions:

Action 1: Design or adapt a simple mobile application or USSD/SMS-based system that allows residents, leaders, and service providers to receive alerts, view risk information, and report local incidents from their phones.

Action 2: Draft, consult on, and adopt a municipal early warning policy or guideline that defines mandates, coordination mechanisms, information flows, and minimum standards for early warning and early action.

3.3 Implementation Plan

Table 8: Implementation plan for Disaster Risk Management

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
RESULT AREA: I. Profiling of Disaster Risks, Vulnerability, and Losses/Damages							
Outcome I: Disaster risks, vulnerabilities, and losses are well understood to guide evidence-based planning and action	Output I.1 Community-risk profiling driven risk promoted	1. Involve communities in identifying flood-prone areas based on lived experience to increase local relevance and ownership of disaster data.	Entire municipality	S			NMC, OPM
		2. Develop multi-hazard risk maps using GIS to provide spatial visualization of risk zones.	Municipality-wide	S			NMC, Academia
		3. Conduct historical disaster analysis by scrutinizing records of past events (floods, windstorms), their frequency, and impacts to understand patterns and better prepare for recurrence.	Entire municipality	S			NMC
		4. Identify vulnerable groups (women, elderly, and PWDs) to ensure that disaster preparedness plans prioritize the needs of those with the least capacity to respond and recover.	All divisions	S			MoGLSD, NMC
		5. Update risk profiles annually to reflect new risks and development patterns to maintain	Municipality-wide		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		up-to-date preparedness strategies.					
	Output 1.2 Loss and damage assessment undertaken	1. Develop a disaster loss database to centralize data on property damage, injuries, displacement, and economic losses to support planning, insurance schemes, and relief budgeting.	Nansana HQ		M		NMC
		2. Train divisions in post-disaster assessment to build local capacity to assess and report damages quickly and accurately following disaster events.	All divisions	S			NMC, OPM
		3. Monitor economic and health impacts to track indirect and long-term consequences (e.g., school closures, disease outbreaks) to inform multisectoral response.	Nabweru, Busukuma		M		NMC, MoH
		4. Standardize reporting tools to enable consistency in data collection across wards and divisions for aggregation and analysis.	Entire municipality	S			NMC
		5. Establish data-sharing protocols to promote coordination among departments, NGOs, and community groups to improve	All divisions		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		the reliability and utility of disaster data.					
	Output 1.3 Disaster risk integration into planning promoted	1. Include risk profiles in physical planning to prevent development in high-risk zones and support resilient zoning decisions.	Municipality-wide		M		NMC, MoLHUD
		2. Use vulnerability data to prioritize projects to guide investment toward critical infrastructure and services for at-risk communities.	Gombe, Kawanda		M		NMC
		3. Align climate and DRR in municipal planning to ensure coherence between climate adaptation efforts and disaster risk management.	Entire municipality		M		NMC
		4. Train planners in risk-sensitive planning to build technical capacity to integrate DRM principles into development decisions.	Nansana HQ	S			NMC
		5. Conduct periodic planning reviews to keep disaster and climate considerations active in municipal processes and allow course correction.	Entire municipality		M		NMC
RESULT AREA 2: Strengthening Disaster Governance Structures							

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DRR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
Outcome 2: Functional and inclusive disaster governance systems is established to coordinate and enforce DRR.	Output 2.1 Coordination structures established	1. Form a municipal disaster task force to coordinate disaster preparedness and response across sectors at the municipal level.	Nansana HQ	S			NMC, OPM
		2. Set up Division Disaster Committees to decentralize responsibility to local divisions, enabling faster and more context-specific action.	All divisions	S			NMC
		3. Develop TORs for governance structures clarifying roles, responsibilities, and accountability of DRM actors.	Municipality-wide	S			NMC
		4. Appoint DRR focal persons in each division to champion risk reduction efforts.	Each division	S			NMC
		5. Establish partnerships with NGOs to bring technical expertise and resources from development partners to support local efforts	Municipality-wide		M		NMC
	Output 2.2 Legal and policy frameworks strengthened	1. Develop DRR bylaws to provide a legal basis for disaster risk management activities, enforcement, and compliance.	Municipality-wide		M		NMC, MoLHUD
		2. Review existing disaster-related ordinances to update outdated	Municipality-wide		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		regulations to reflect current hazards and planning frameworks.					
		3. Align municipal planning with national policy to ensure local strategies.	Entire municipality	S			NMC, OPM
		4. Enforce land use laws in risk zones to prevent construction and infrastructure development in wetlands or floodplains.	Nabweru, Kawanda	S			NEMA, NMC
		5. Establish and strengthen participatory governance mechanisms such as multi-stakeholder forums, community barazas, feedback and grievance channels, and representation of vulnerable groups in committees	All divisions		M		NMC
	Output 2.3 strengthened	Capacity	1. Design and implement structured training programmes for elected leaders, technical staff and community representatives on disaster governance	Each division	S		NMC
			2. Organise regular tabletop simulation exercises for municipal leaders, technical staff and community leaders in high-risk areas to practise	All divisions	S		NMC, OPM

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		coordinated response to priority hazards					
		3. Integrate DRR into departmental work plans—support all municipal departments and lower local governments to review and update their annual work plans and budgets	Entire municipality		M		NMC
		4. Develop user-friendly DRR and disaster governance training manuals and job aids tailored to local leaders and community structures	Municipal HQ	S			NMC
		5. Establish a structured, recurring disaster risk reduction training programme and integrate it into staff induction, annual capacity-building plans and leadership orientations	All divisions		M		NMC, MoLG
RESULT AREA 3: Enhancing Environmental Protection to Mitigate Disasters							
Outcome 3: Ecosystems are restored and protected to buffer disaster risks and enhance resilience.	Output 3.1 Community education & participation improved	1. Conduct environmental awareness campaigns using community meetings, radio shows, social media, posters, and drama to educate residents on waste management.	All divisions	S			NEMA, NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		2. Work with education department and school administrations to integrate ecosystem and climate education into school timetables, clubs, and learning materials,	Entire municipality	S			MoES, NMC
		3. Organise youth-led tree planting and care initiatives through schools, youth groups, and faith-based organisations,	Gombe, Busukuma	S			NMC
		4. Identify and train local conservation stewards (community volunteers, leaders and CBOs) on basic ecosystem management, monitoring, reporting and community mobilisation to support protection of wetlands, riverbanks and green spaces	Each division	S			NMC, NGOs
		5. Establish partnerships with local radio, TV, print, and digital media to regularly produce and air programmes, talk shows, and messages on environmental conservation, climate risks, and community responsibilities.	Municipality-wide	S			NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
	Output 3.2 Restoration & ecosystem services enhanced	1. Identify and map degraded hill slopes and eroded areas and implement reforestation and soil-and-water conservation measures (tree planting, terracing, grass strips) in collaboration with landowners and community groups.	Busukuma, Nabweru	S			NFA, NMC
		2. Demarcate, clear, and restore degraded wetland sections through removal of illegal activities, replanting of indigenous species, restoration of natural water flows.	Kawanda, Lubigi	S			NEMA
		3. Support farmers and peri-urban households to adopt agroforestry by providing seedlings, technical extension, and demonstration plots that integrate trees with crops and livestock to improve soil health, microclimate, and livelihoods.	Gombe, Kazo		M		MAAIF, NFA
		4. Strengthen regulation and monitoring of sand mining in the Nansana wetland area by issuing a Municipal Climate guidelines on sand mining and Resources Department. The task force will include technical officers from key departments (Works, Health, Education, Physical Planning, Community Development, etc.).	Nansana Division	S			NEMA, NMC

3.5 Implementation arrangements

The Nansana Municipal Council (NMC) is the lead implementing agency for both the Climate Action and Disaster Risk Management Plans. To ensure effective wetland use, a Municipal Climate and Disaster Risk Management Taskforce will be established, guided by the National Resources Department. The task force will include technical officers from key departments (Works, Health, Education, Physical Planning, Community Development, etc.).

Its core functions will include:

1. Oversight of plan implementation
2. Resource mobilization
3. Monitoring and evaluation (M&E)

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		permits, fines, and closures for noncompliant operators.					
		5. Develop/update and implement integrated catchment management plans for key rivers and drainage systems.	All divisions		M		MoWE
	Output Environmental compliance enforced	3.1 1. Conduct GIS mapping and physical demarcation of wetlands, riverbanks, and green corridors, installing visible beacons and signposts and sharing maps with communities and enforcement teams.	Nabweru, Wamala	S			NEMA
		2. Build the capacity of municipal and lower local government enforcement teams on relevant laws, inspection procedures, evidence gathering, and case management for environmental offenses.	All divisions	S			NMC
		3. Operationalise and enforce penalties for illegal dumping, open burning of waste, and encroachment on wetlands and protected areas through fines, prosecutions, and closure of non-compliant facilities.	All divisions		M		NEMA, NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		4. Draft, consult on, and enact municipal ordinances, bylaws, and guidelines that promote green building, sustainable land use, pollution control, waste reduction, and nature-based solutions.	Municipality-wide		M		NMC
		5. Integrate ecosystem-based disaster risk reduction (protection of wetlands, green buffers, and urban forests) into municipal and lower local government development plans, budgets, and infrastructure projects.	Entire municipality		M		NMC, MoLHUD
RESULT AREA 4: Promoting Disaster Preparedness, Response, and Recovery Measures							
Outcome 4: Capacity for effective preparedness, coordinated response, and timely recovery is improved	Output 4.1 Emergency preparedness strengthened	1. Plan and conduct periodic multi-hazard simulation drills (e.g., floods, fires, disease outbreaks) for municipal staff, schools, health facilities, and communities in high-risk areas to test contingency plans, clarify roles, and improve coordination in real emergencies.	All divisions	S			NMC, OPM
		2. Identify strategic safe locations and pre-position essential	Municipal HQ		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		emergency supplies (first aid kits, stretchers, water purification tablets, tarpaulins, emergency food rations, and basic tools) to enable rapid assistance to affected households.					
		3. Develop, update and disseminate hazard-specific contingency and evacuation plans for priority neighbourhoods and public institutions, indicating safe routes, assembly points, roles and communication protocols in user-friendly formats and local languages	Gombe, Kawanda	S			NMC
		4. Set up and operationalise emergency units at division and lower local government levels, designating focal persons, defining roles and responsibilities, and equipping them with basic communication tools to coordinate preparedness and response activities	All divisions		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		5. Train and equip community health teams and selected volunteers in basic first aid, psychological first aid and emergency referral procedures, and integrate them into local emergency response structures to support timely assistance during incidents	Entire municipality	S			MoH, NMC
	Output 4.2 Disaster response systems established	1. Develop and adopt clear municipal standard operating procedures (SOPs) for emergency preparedness, early warning, response, and recovery to guide all departments and partners during crises.	Entire municipality	S			OPM, NMC
		2. Establish and maintain reliable multi-channel communication lines (hotlines, WhatsApp groups, radio calls, SMS trees and public address systems) linking municipal departments, first responders, lower local governments and community leaders to coordinate information flow before, during and after crises	Municipality-wide		M		NMC, MoICT

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		3. Identify, train and organise local volunteers in high-risk communities into response teams, assign clear roles, and integrate them into municipal emergency structures to support search-and-rescue, first aid, crowd control, and information dissemination during emergencies.	Each division	S			NMC
		4. Form multi-disciplinary rapid response teams at municipal and division levels comprising technical officers, health workers, enforcement personnel, and trained volunteers—with clear activation protocols, duty rosters, and basic equipment to respond quickly to disaster events.	Nabweru, Nansana	S			NMC
		5. Procure and strategically allocate essential rescue equipment (stretchers, ropes, life jackets, ladders, fire extinguishers, personal protective equipment, and boats	Municipal HQ		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		where relevant) to municipal and community response teams to enable safe and effective rescue operations.					
	Output 4.3 Recovery and rehabilitation implemented	1. Design and adopt standardised damage and needs assessment tools and templates (forms, mobile data-collection tools, checklists) for use by municipal staff and community teams to quickly capture and report the impacts and priority needs after disasters.	All divisions	S			NMC
		2. Coordinate the mobilisation, prepositioning, and distribution of context-appropriate relief packages (food, NFIs, WASH items, shelter materials, and dignity kits) to disaster-affected households, prioritising vulnerable groups and ensuring transparent targeting and reporting.	Nabweru, Busukuma		M		NMC, OPM
		3. Incorporate disaster recovery and “build back better” measures into municipal and lower local government	Entire municipality		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		development plans, budgets, and sector work plans, including rehabilitation of damaged infrastructure, livelihoods support, and risk-reducing upgrades.					
		4. Set up and operationalise a municipal disaster recovery and contingency fund with clear guidelines for resource mobilisation, allocation, and accountability to finance rapid recovery, rehabilitation, and resilience-building interventions aftershocks.	Municipal HQ	L			NMC
		5. Develop and implement a monitoring framework and field follow-up system to track progress and quality of post-disaster rehabilitation works, livelihood support, and social recovery, and to document lessons for improving future responses.	All divisions		M		NMC
RESULT AREA 5: Supporting Community Resilience to Manage Disasters							

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
Outcome 5: Communities are empowered to anticipate, cope with, and recover from disasters	Output 5.1 Livelihood resilience enhanced	1. Support households and community groups to adopt climate-smart farming and green enterprises (e.g. drought-tolerant crops, kitchen gardens, poultry, waste recycling, and clean energy businesses) through demonstrations, extension services, and start-up inputs.	Gombe, Busukuma	S			MAAIF, NMC
		2. Design and deliver targeted training programmes for youth and women on green and climate-resilient jobs such as solar installation, improved cookstove production, urban agriculture, waste collection, and recycling to increase employability and incomes.	Nabweru, Nansana		M		NMC, MoGLSD
		3. Facilitate training, coaching, and linkages that enable vulnerable households to diversify income sources beyond climate-sensitive activities (e.g. adding petty trade, services, crafts) to reduce dependence on climate-exposed livelihoods.	Gguluddene, Kazo	S			NMC, NGOs

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		4. Identify vulnerable households and connect them to existing social protection schemes, humanitarian assistance, savings groups and insurance products to cushion them from the impacts of climate shocks and stresses.	All divisions		M		MoGLSD
		5. Partner with microfinance institutions, SACCOs and VSLA groups to design and provide accessible, affordable micro-credit facilities for community-led climate-resilient projects and small green businesses.	Municipality-wide		M		NMC, MoFPED
	Output 5.2 Social safety systems established	1. Conduct participatory mapping and maintain an updated database of vulnerable groups (elderly, PWDs, child-headed households, refugees) and available support services to guide targeted preparedness, response, and recovery interventions.	Entire municipality	S			NMC, MoGLSD
		2. Build the capacity of community caregivers, peer-support groups,	All divisions	S			MoH, NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		and CBOs on basic psychosocial support, protection, referral pathways, and household-level DRR to strengthen community-based care systems.					
		3. Organise and deliver psychosocial support services, including counselling, group debriefings and referrals for individuals and families affected by disasters, with special attention to children, women and other vulnerable groups.	All divisions	S			MoH, NGOs
		4. Support community development committees and local councils to incorporate DRR and climate adaptation priorities into their community action plans, budgeting and project implementation.	All divisions		M		NMC
		5. Formalise the role of community disaster volunteers by establishing clear selection criteria, terms of reference, reporting lines and regular trainings, and recognising them	All divisions		M		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DRR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		within municipal DRR structures.					
	Output 5.3 Community awareness improved	1. Hold regular community barazas (public dialogues) in villages and parishes to discuss local risks, review past events, agree on priority DRR actions and provide feedback on ongoing interventions.	Gombe, Busukuma	S			NMC
		2. Engage local radio stations, religious leaders, cultural leaders and other influencers to disseminate DRR messages, early warnings and information on available support using simple, locally understood formats.	Entire municipality	S			NMC
		3. Translate DRR and climate adaptation materials, early warning messages and guidance into the main local languages spoken in the municipality to ensure broad understanding and inclusion.	Municipality-wide	S			NMC
		4. Develop age-appropriate, child-friendly DRR materials (posters, storybooks, games, and comics)	All divisions		M		MoES, NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		and integrate them into school activities and child-focused spaces to build risk awareness among children.					
		5. Organise annual disaster awareness days at municipal and division levels with exhibitions, drills, and school competitions to sustain public attention and commitment to DRR and climate resilience.	All divisions		M		NMC
RESULT AREA 6: Strengthening Disaster Early Warning Systems (EWS)							
	Output collection enhanced	6.1 & Data analysis	1. Identify climate-risk hotspots and public institutions (schools, health centres, municipal offices) and install low-cost community weather stations to collect real-time rainfall, temperature and wind data for early warning and local decision-making	Nabweru, Gombe		M	UNMA, NMC
Outcome 6: Timely and accessible early warning systems is established to save lives and protect assets.			2. Establish simple systems for communities to regularly record and report local risk observations (e.g. unusual river levels, cracks, storms, pest outbreaks) and integrate this information with scientific data	All divisions	S		NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		to improve hazard monitoring and forecasts.					
		3. Select and train focal persons from municipal departments, divisions and communities on operating weather stations, maintaining equipment, recording observations and reporting data using standard forms or mobile tools.	Each division	S			UNMA, NMC
		4. Work with technical partners to develop and apply simple hazard prediction tools and models (e.g. flood risk thresholds, rainfall triggers, heat index) using historical and real-time data to anticipate priority hazards.	Municipal HQ		M		UNMA, Academia
		5. Connect municipal early warning systems to national meteorological services and relevant regional/global platforms so that Nansana Municipality receives and relays timely, validated forecasts, alerts, and advisories.	Municipality-wide		M		UNMA

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
	Output Communication systems adopted	6.2 1. Set up protocols and partnerships to disseminate early warning messages and advisories via bulk SMS, community SMS trees, and local radio stations to reach households, institutions, and key local actors quickly.	Entire municipality	S			MoICT, NMC
		2. Install noticeboards, sirens, or digital displays in strategic public places such as markets, schools, health centres, taxi parks, and worship centres to share current warnings, instructions, and safety tips.	All divisions	S			NMC
		3. Translate early warning messages and recommended actions into major local languages spoken in the municipality and disseminate them through trusted local channels to ensure they are easily understood by all groups.	Entire municipality	S			NMC
		4. Design or adapt a simple mobile application or USSD/SMS-based system that allows residents, leaders, and service providers to	Municipality-wide			L	MoICT, NMC

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		receive alerts, view risk information, and report local incidents from their phones.					
		5. Develop and adopt clear, hazard-specific early warning protocols (for floods, storms, heatwaves, disease outbreaks, etc.) specifying thresholds, responsible institutions, actions to be taken, and timelines.	All divisions		M		NMC
	Output 6.3 Institutional integration promoted	1. Integrate early warning roles, actions and response triggers into sector plans and standard operating procedures (e.g. for health, education, works, environment) so that each department knows how to act when alerts are issued.	All municipal departments		M		NMC
		2. Organise periodic multi-stakeholder drills that simulate receipt of warnings and response actions across communities, schools, health facilities, and municipal departments to test and improve the EWS.	Gombe, Nansana	S			NMC, OPM

Result Areas & Outcomes	Outputs/Objectives	Actions to enhance DDR	Priority areas/Divisions or Parishes	Short-term	Medium-term	Long-term	Responsibility
		3. Carry out annual reviews of the early warning system assessing timeliness, coverage, understanding, and response behaviour and use the findings to strengthen tools, messages, and institutional arrangements.	Municipality-wide		M		NMC
		4. Include specific budget lines in municipal and divisional work plans to cover installation, operation, maintenance, and upgrading of early warning equipment, communication channels, training, and drills.	Municipal HQ		M		NMC
		5. Draft, consult on and adopt a municipal early warning policy or guideline that defines mandates, coordination mechanisms, information flows and minimum standards for early warning and early action.	Municipality-wide			L	NMC, MoICT

3.4 Costing of Disaster Management Actions

Table 2 outlines the estimated financial resources required to implement key disaster management interventions between 2026 and 2030. The table presents the estimated costs by result area, key action, and year, providing a structured basis for planning, budgeting, and resource mobilization.

Table 9: Costing of disaster management actions

Result Area	Key Action	2026	2027 UGx	2028	2029	2030	Total
1. Risk Profiling	Develop multi-hazard risk maps	20,000,000	5,000,000	-	-	-	25,000,000
	Establish disaster loss database	15,000,000	-	-	-	-	15,000,000
	Conduct vulnerability assessments	5,000,000	5,000,000	-	-	-	10,000,000
	Train staff on risk profiling	6,000,000	3,000,000	-	-	-	9,000,000
	Integrate risk data into plans	3,000,000	3,000,000	-	-	-	6,000,000
2. Governance Structures	Form disaster committees	3,000,000	1,500,000	1,500,000	-	-	6,000,000
	Develop DRR bylaws	7,000,000	-	-	-	-	7,000,000
	DRR training for leaders	5,000,000	5,000,000	-	-	-	10,000,000
	Appoint focal persons	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
	Integrate DRR into work plans	2,000,000	1,000,000	1,000,000	500,000	500,000	5,000,000
3. Environmental Protection	Wetland restoration	10,000,000	7,000,000	6,000,000	4,000,000	3,000,000	30,000,000
	Tree planting campaigns	8,000,000	4,000,000	4,000,000	2,000,000	2,000,000	20,000,000
	Community sensitization	5,000,000	3,000,000	2,000,000	1,000,000	1,000,000	12,000,000
	Enforce environmental bylaws	5,000,000	3,000,000	2,000,000	1,000,000	1,000,000	12,000,000
	Agroforestry promotion	8,000,000	5,000,000	4,000,000	2,000,000	1,000,000	20,000,000
4. Preparedness & Response	Simulation drills	4,000,000	2,000,000	2,000,000	1,000,000	1,000,000	10,000,000
	Emergency supplies stockpile	30,000,000	10,000,000	5,000,000	3,000,000	2,000,000	50,000,000
	Contingency and evacuation plans	5,000,000	3,000,000	1,000,000	500,000	500,000	10,000,000
	Form response teams	6,000,000	4,000,000	3,000,000	1,000,000	1,000,000	15,000,000

Result Area	Key Action	2026	2027 UGx	2028	2029	2030	Total
	Train CHWs in emergency response	6,000,000	2,000,000	1,000,000	500,000	500,000	10,000,000
5. Community Resilience	Livelihood support	50,000,000	40,000,000	30,000,000	20,000,000	10,000,000	150,000,000
	Social protection linkages	2,000,000	1,000,000	1,000,000	500,000	500,000	5,000,000
	DRR education in schools	6,000,000	4,000,000	2,500,000	1,500,000	1,000,000	15,000,000
	DRR volunteer groups	2,000,000	1,000,000	1,000,000	500,000	5,000,000	5,000,000
	Public dialogues (barazas)	5,000,000	3,000,000	2,000,000	1,000,000	1,000,000	12,000,000
6. Early Warning Systems	Install weather stations	20,000,000	5,000,000	3,000,000	1,000,000	1,000,000	30,000,000
	SMS, radio alerts	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
	Develop municipal EWS app	20,000,000	-	-	-	-	20,000,000
	Train staff on EWS	5,000,000	2,000,000	2,000,000	500,000	5,000,000	10,000,000
	EWS simulation drills	4,000,000	2,000,000	2,000,000	1,000,000	1,000,000	10,000,000
Total (UGX)		390,000,000	150,000,000	97,000,000	50,000,000	38,000,000	625,000,000

seedlings, technical extension, and demonstration plots that integrate trees with crops and livestock to improve soil health, microclimate, and livelihoods.

3.5 Implementation arrangements

The Nansana Municipal Council (NMC) is the lead implementing agency for both the Climate Action and Disaster Risk Management Plans. To ensure effective implementation, a Municipal Climate and Disaster Risk Management Taskforce will be established, guided by the National Resources Department. The task force will include technical officers from the departments of (Mining, Health, Education, Physical Planning, Community Development, etc.).

4. Strengthen regulation and monitoring of sand mining and use by a Municipal Climate and Disaster Risk Management Taskforce, guided by the National Resources Department (Mining, Health, Education, Physical Planning, Community Development, etc.).

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Its core functions will include:

1. Oversight of plan implementation
2. Resource mobilization
3. Monitoring and evaluation (M&E)
4. Reporting to the Town Clerk

At the division level, coordination will be led by Environment and Natural Resources Committees, along with Sanitation and Health Committees that will:

1. Facilitate community mobilization
2. Support local DRR awareness and enforcement
3. Channel feedback to the Municipal Taskforce

Note: There is currently no functional early warning system (EWS) or a municipal disaster committee, highlighting the urgent need for institutional strengthening.

3.6 Roles of stakeholders

Table 10: Roles of stakeholders

Stakeholders	Roles
NMC (technical & political wings)	Planning, coordination, and enforcement
NEMA	Technical guidance on environmental protection and regulation
UNMA	Provision of weather forecasts and early warning data
MWE	Technical support in water and environmental infrastructure
NGOs & Development Partners	Financial and technical assistance (e.g., YCAF, GKMA-UDP)
CBOs & Community Groups	Community mobilization and local implementation
Academic & Research Institutions	Research, risk profiling, and M&E
Private Sector	Investment in green infrastructure and innovation
Religious and Cultural Leaders	Raise awareness and mobilize communities.
Women, Youth, and Farmers' Groups	Promote local resilience and preparedness
Schools and Media Houses	Educate and share risk information.
Civil Society and Traditional Knowledge Keepers	Advocate and share traditional practices
Donor Agencies (e.g., UNDP, GIZ)	Fund and support DRM efforts.

3.7 Resource mobilization

The implementation of the risk management plan requires sustainable and diverse funding mechanisms. Current and proposed sources include:

Existing Sources:

1. Local Revenue: Emergency budgeting (ad hoc and reactive)
2. Youth Climate Action Fund (YCAF): Project-specific interventions
3. Development Partner Grants: Training, infrastructure, and EWS systems

Future Strategies:

1. Integration of DRR budgeting into annual municipal development plans
2. Mobilizing private sector investment through PPPs
3. Applying for national DRR funds and sectoral allocations (via OPM, MoLG, MoWE)
4. Establishment of community disaster contingency funds
5. Seeking climate adaptation financing from international donors (e.g., Green Climate Fund)
6. Despite these options, the municipality faces severe budget limitations, inadequate staffing, and limited equipment such as wheel loaders, all of which hinder effective disaster response

3.8 Mechanism to Disseminate Climate Information

Currently, climate information dissemination is minimal and dependent on UNMA, with key gaps in localized early warning capabilities.

Current Practice:

1. Communities receive general forecasts via radio and TV
2. No localized EWS for floods, droughts, or heat waves
3. Poor community preparedness due to weak communication channels

Proposed Enhancements

The aim is to transition from a reactive to a proactive disaster preparedness culture across all divisions.

Mechanism	Description
Community-Based EWS	Installation of automatic weather stations and creation of control rooms
Multi-channel Communication	SMS alerts, radio messages, public address systems, loudspeakers in trading centers
Language and Format Accessibility	Translate alerts into local languages and inclusive formats (visual/audio for PWDs)
Real-time Updates	Use of mobile apps, WhatsApp groups, and dashboards for rapid alerts
Public Awareness	Regular community drills, radio talk shows, and DRR education in schools

CHAPTER FOUR: MONITORING, EVALUATION, AND LEARNING

4.1 Introduction

Effective implementation of DRR plan requires a strong and inclusive Monitoring, Evaluation, and Learning (MEL) system. The MEL framework will ensure that progress is systematically tracked, outcomes are evaluated, and valuable lessons are documented and integrated into future planning and decision-making processes.

The specific objectives of the MEL include:

- i. Track the progress and performance of disaster risk management interventions across all result areas and actions.
- ii. Generate timely, reliable, and evidence-based information to inform decision-making, resource allocation, and policy adjustments.
- iii. Promote accountability among implementing institutions and partners for the effective delivery of DRR actions.
- iv. Document and disseminate lessons learned, best practices, and community experiences to strengthen institutional knowledge and adaptive capacities.
- v. Support inclusive participation by integrating feedback from communities, local committees, NGOs, academia, and other stakeholders into ongoing disaster management planning and implementation.

4.2 Institutional responsibility

To achieve the objectives of the MEL, a coordinated structure has been established, assigning clear roles and responsibilities to key actors at different levels of the municipal system. These actors range from municipal leadership and departmental focal persons to grassroots community representatives, technical experts, and development partners. Each actor plays a distinct and complementary role, contributing to the overall effectiveness, accountability, and responsiveness of climate actions within the municipality.

Table 11: MEL structure and Roles

Actor	Role in MEL
Municipal Climate & Disaster Taskforce	Overall coordination, MEL oversight, progress reporting, and consolidation of monitoring data.
Departmental Focal Persons	Track and report on sector-specific DRR indicators, compile departmental reports, and support data verification.
Division-level Disaster Committees	Collect local data, monitor community-level actions, support grassroots reporting, and mobilize feedback.
Community Representatives and Volunteers	Participate in community monitoring, provide feedback, and report localized disaster risks and impacts.
Academia & Research Institutions	Provide technical backstopping, develop monitoring tools, conduct independent evaluations, and contribute to data analysis.
Development Partners	Support financing, technical assistance, joint evaluations, and capacity building in MEL processes.

5.3 MEL indicators

Indicator Type	Examples
Input Indicators	Number of disaster reduction projects funded, staff trained
Output Indicators	Number of trees planted, early warning systems installed
Outcome Indicators	Reduction in flood and drought impacts
Impact Indicators	Improved food security

4.3 Tools and approaches

1. Quarterly progress reports
2. Annual review workshops
3. Community scorecards
4. GIS and remote sensing
5. Mobile-based data collection (e.g., KoboToolbox)
6. Before-and-after assessments

4.4 Learning and Feedback Mechanisms

1. Community feedback sessions at division level
2. Knowledge-sharing workshops with stakeholders
3. Integration of indigenous knowledge into adaptation strategies
4. Documentation of success stories and lessons learned

4.5 Reporting and communication

1. Regular reports submitted to the Municipal Council
2. Annual DRR implementation progress reports shared with stakeholders
3. Dashboards or portals for real-time tracking (to be developed)
4. Public briefings via radio, community meetings, and social media

4.6 Adaptive Management

1. Use MEL findings to revise strategies and reallocate resources
2. Identify underperforming interventions for redesign or discontinuation
3. Integrate climate projections and emerging data to update plans

4.7 Risk Management

Potential implementation risks include limited funding, inadequate financing for MEL activities, inconsistent data quality and incomplete reporting, limited technical capacity among local actors, delays in technology infrastructure development (EWS apps, databases), and low community participation. Risk mitigation strategies include:

1. Diversified financing and partnerships
2. Strengthening local ownership and participation
3. Institutionalizing disaster risk in municipal policies
4. Regular scenario planning and adaptive management approaches

Table 12: Monitoring, Evaluation and Learning Framework

Outcome/Result Area	Outputs	Indicators	Means of Verification	Baseline (2025)	2026	2027	2028	2029	2030
Profiling disaster risks	Multi-hazard risk maps	No. of updated risk maps produced	GIS maps, planning reports	2	4	6	8	10	12
	Disaster loss database	Database operational	Database access/logs	No	Yes	Yes	Yes	Yes	Yes
	Staff trained in risk profiling	No. of staff trained	Training reports, attendance sheets	10	20	30	40	50	60
	Vulnerability assessments	No. of assessments completed	Assessment reports	2	5	8	11	14	17
	Risk data integration in planning	% of plans informed by risk data	Planning documents	20%	40%	50%	60%	70%	80%
Strengthening governance	Functional disaster committees	No. of committees formed	Committee TORs, minutes	1	3	4	5	5	5
	DRR bylaws developed	Bylaws passed and gazetted	Official gazette	0	1	1	1	1	1
	Trained leaders	No. of leaders trained	Training reports	5	10	15	20	25	30
	Focal persons appointed	No. of focal persons assigned	Appointment letters	0	3	3	3	3	3
	DRR integrated in departments	No. of departments with DRR in plans	Work plans	1	3	4	5	5	5
Environmental protection	Wetlands rehabilitated	Area (in hectares) restored	Site reports, satellite imagery	1	5	10	15	20	25
	Trees planted & survived	No. of trees	Field reports, GPS data	1,000	3,000	5,000	7,000	9,000	11,000
	Community sensitization events	No. of events held	Event reports	5	10	15	20	25	30
	Environmental enforcement actions	No. of enforcement actions taken	Enforcement logs	2	6	8	10	12	15

Outcome/Result Area	Outputs	Indicators	Means of Verification	Baseline (2025)	2026	2027	2028	2029	2030
Preparedness and response	Farmers adopting agroforestry	No. of farmers	Extension reports	10	30	50	70	90	110
	Simulation drills conducted	No. of drills	Drill reports	1	3	5	7	9	11
	Contingency plans developed	No. of divisions with plans	Plan documents	1	2	3	4	5	5
	Emergency items stockpiled	% pre-positioned	Stock inventory	30%	50%	60%	70%	80%	90%
	Emergency response teams formed	No. of functional teams	Team rosters, reports	0	2	3	4	5	5
Community resilience	CHWs trained in first aid	No. of CHWs trained	Training reports	10	20	30	40	50	60
	Livelihood support	No. of households supported	Beneficiary lists	20	50	80	110	140	170
	Linked to social protection	No. of vulnerable groups enrolled	Social program data	5	15	25	35	45	55
	DRR education promoted	No. of schools with DRR curriculum	School records	2	4	6	8	10	12
	Community DRR volunteers trained	No. of volunteers	Volunteer rosters	10	20	30	40	50	60
Early warning systems	Community dialogues held	No. of barazas	Dialogue reports	3	6	9	12	15	18
	Weather stations installed	No. of stations	Installation reports	1	3	5	7	9	11
	Alerts disseminated	% of population reached	Monitoring system, feedback	30%	50%	60%	70%	80%	90%
	EWS app developed	App developed and functioning	App logs	No	Yes	Yes	Yes	Yes	Yes
	Focal persons trained	No. of staff trained	Training reports	5	10	15	20	25	30

Outcome/Result Area	Outputs	Indicators	Means of Verification	Baseline (2025)	2026	2027	2028	2029	2030
	EWS drills conducted	No. of communities involved	Drill reports	2	4	6	8	10	12

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