RIBE AYE TEKO

GULU CITY COUNCIL

Gulu City Youth Climate Action Plan

(2026–2030)

Vision

A climate-resilient, green, and youth-led Gulu City where young people drive sustainable development, innovation, and environmental stewardship.

Mission

To empower youth through education, skills, green enterprise, and participatory governance in order to drive climate adaptation, mitigation, and sustainable urban transformation.

EXECUTIVE SUMMARY

Gulu City faces increasing climate risks driven by rapid urbanisation, environmental degradation, high reliance on biomass energy, and climate variability, manifested in erratic rainfall, flooding, heat stress, and ecosystem loss. At the same time, the city contributes to greenhouse gas (GHG) emissions through transport growth, waste mismanagement, deforestation, and inefficient energy use.

This Climate Action Plan (CAP) provides a structured framework for mitigation and adaptation, integrated into the Fourth Gulu City Development Plan (GCDP IV). The plan is grounded in a qualitative GHG emissions profile and a climate vulnerability assessment of fragile urban systems, following the methodology outlined in the City Climate Action Plan Training Manual and UN-Habitat guiding principles

The plan prioritizes nature-based solutions, clean energy transition, climate-resilient urban infrastructure, waste circularity, and youth-led climate action, with clear implementation arrangements, financing pathways, and a monitoring framework.

AHIMBISIBWE INNOCENT

CITY TOWN CLERK

LIST OF ACRONYMS

CAP	Climate Action Plan
CSCAF	ClimateSmart Cities Assessment Framework
EVs	Electric Vehicles
GCDP IV	Fourth Gulu City Development Plan
GEF	Global Environment Facility
GHG	Greenhouse Gas
LPG	Liquefied Petroleum Gas
MEL	Monitoring, Evaluation, and Learning
MRV	Monitoring, Reporting, and Verification
NDP IV	National Development Plan IV
NGOs	Non-Governmental Organizations
PPP	Public-Private Partnership
SDG	Sustainable Development Goal
UNFCCC	United Nations Framework Convention on Climate Change

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1. INTRODUCTION

1.1 Background

Cities occupy a central position in the global climate challenge. They concentrate population, infrastructure, economic activity, and energy use, making them major contributors to greenhouse gas emissions. At the same time, cities concentrate risk: climate hazards increasingly translate into human, economic, and ecological losses because of dense settlement patterns, overstretched infrastructure, and social inequality. For rapidly urbanising cities in low- and middle-income countries, climate change acts as a risk multiplier, amplifying existing development deficits rather than introducing isolated new problems.

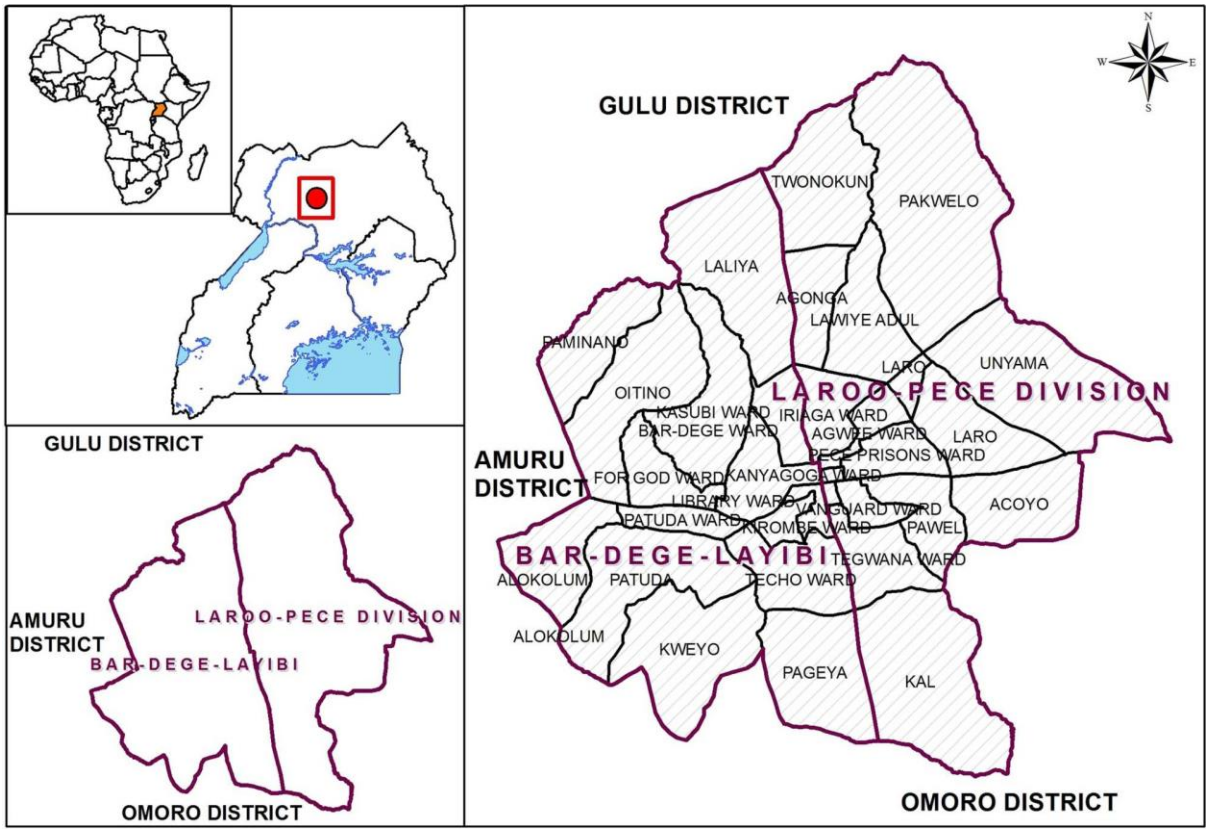

Figure 1. Map showing the location of Gulu City

Gulu City exemplifies this condition. As a secondary city in Northern Uganda, Gulu has experienced accelerated urban growth over the past two decades, driven by post-conflict recovery, rural–urban migration, regional trade, and the city's emerging role as an administrative and service hub. This growth has occurred faster than the expansion of planned infrastructure, environmental management systems, and formal employment opportunities. As a result, the city's exposure to climate-related shocks and stresses has increased at while its adaptive capacity remains constrained.

The dominant climate hazards affecting Gulu City include flooding, rising temperatures and heat stress, seasonal water scarcity, and progressive environmental degradation. Short-duration, high-intensity rainfall events increasingly overwhelm drainage systems, leading to

flooding in low-lying areas and informal settlements, road damage, contamination of water sources, and heightened public health risks. At the same time, prolonged dry periods affect water availability, urban agriculture, and household food security. Rising average temperatures and the urban heat island effect place additional strain on vulnerable populations, particularly children, older persons, outdoor workers, and residents of densely built, poorly ventilated housing.

Environmental degradation further compounds these risks. Wetland encroachment, deforestation for fuelwood and charcoal, and the loss of urban green spaces have reduced the city's natural capacity to buffer against floods and heat. Solid waste accumulation, including dumping in drainage channels and wetlands, worsens flood impacts while increasing methane emissions and public health hazards. These environmental pressures are closely linked to poverty, limited access to clean energy, and weak enforcement of land-use controls, demonstrating that Gulu City's climate vulnerability is structural rather than episodic.

Socio-economic factors intensify climate risk. Youth constitute a large share of Gulu City's population, yet youth unemployment and underemployment remain high. Limited livelihood opportunities push many young people into informal economic activities that are highly sensitive to climate variability, such as petty trade, urban agriculture, and casual transport services. Informal settlements continue to expand, often in environmentally fragile areas such as wetlands and floodplains, where access to basic services is limited and exposure to climate hazards is highest. Gender and disability dimensions intersect with these challenges, as women, girls, and persons with disabilities face disproportionate barriers to mobility, income security, and access to services during climate shocks.

Despite these challenges, Gulu City also possesses significant opportunities for climate-responsive development. Its status as a growing secondary city enables early integration of climate considerations into urban planning, infrastructure investment, and service delivery, before high-carbon, high-risk development patterns become locked in. The city's youthful population represents a potential driver of innovation, labour, and community-based climate solutions if effectively engaged. In addition, the presence of wetlands, rivers, and peri-urban agricultural land provides a foundation for nature-based solutions that deliver both adaptation and mitigation benefits.

Recognising the systemic nature of climate risk, Gulu City has adopted an approach that integrates climate action into its core development framework rather than treating it as a standalone environmental agenda. In line with international best practice, climate action in Gulu City is mainstreamed into local development planning through the Fourth Gulu City Development Plan (GCDP IV), which serves as the city's principal strategic and investment planning instrument for the period 2025/26–2029/30. GCDP IV explicitly includes a Natural Resources, Environment, Climate Change, Land and Water Management Programme, providing an institutional and policy foundation for coordinated climate action.

This mainstreaming approach reflects a shift from reactive disaster response toward anticipatory, risk-informed urban development. Climate considerations are embedded across multiple sectors within GCDP IV, including urban planning, transport, housing, energy, waste

management, water services, agriculture, and human capital development. By doing so, the city recognises that climate resilience and low-emission development are not parallel objectives but prerequisites for sustainable economic growth, service delivery, and social stability.

The inclusion of climate change within GCDP IV also aligns Gulu City with broader national and international frameworks. At the national level, the plan supports Uganda's commitments under the National Climate Change Policy and the National Development Plan by translating high-level objectives into local actions. At the international level, it contributes to the goals of the Paris Agreement and Sustainable Development Goal 13 by promoting emissions reduction, climate resilience, and adaptive capacity at the urban scale. Importantly, this alignment enhances the city's eligibility for climate finance, technical assistance, and partnership opportunities by demonstrating the existence of an actively used, publicly endorsed climate strategy.

This Climate Action Plan builds directly on the foundations established by GCDP IV. It does not introduce a parallel planning process or new institutional architecture. Instead, it operationalises the city's climate-related commitments already articulated in its development plan, translating them into a structured set of mitigation and adaptation actions, implementation arrangements, and monitoring mechanisms. The plan adopts a whole-of-city perspective, recognising the interdependence of environmental systems, infrastructure networks, economic activities, and social conditions.

By grounding climate action in GCDP IV, Gulu City positions itself to address immediate climate risks while shaping a long-term development trajectory that is resilient, inclusive, and environmentally sustainable. The background conditions outlined above underscore the urgency of this effort and establish the rationale for a comprehensive, integrated Climate Action Plan tailored to the city's specific risks, capacities, and development priorities.

1.2 Definition of City Climate Action Plan

A City Climate Action Plan is a strategic, implementation-oriented framework that defines how a city reduces greenhouse gas emissions while strengthening resilience to climate impacts in a measurable and accountable manner. For Gulu City, this plan is shaped by a unique post-war recovery context in which rapid urban growth, environmental degradation, and high youth unemployment intersect with escalating climate risks. Following decades of conflict in Northern Uganda, the city has absorbed a large youth population seeking livelihoods, stability, and a sense of participation in rebuilding their communities. Climate action, therefore, functions not only as an environmental necessity but as a vehicle for social and economic transformation.

This Climate Action Plan prioritises youth as central actors in both mitigation and adaptation. It focuses on four strategic priority areas: restoration of forest cover to reduce emissions and heat stress; promotion of energy efficiency through youth-led production and adoption of biomass briquettes and clean cookstoves; protection and restoration of wetlands to reduce

flooding and safeguard water resources; and sustained climate awareness campaigns designed and delivered by young people at the community level.

objectives:

- to restore a defined number of hectares of degraded forest and wetland areas within five years.
- to reduce household reliance on charcoal by a measurable percentage through clean cooking solutions by 2030.
- to engage a targeted number of youths in paid climate action projects annually.
- and to deliver structured awareness campaigns reaching clearly defined urban communities.

By aligning climate priorities with post-war recovery and youth empowerment, the plan ensures climate action delivers tangible co-benefits in employment, public health, environmental protection, and inclusive urban development.

2. POLICY AND INSTITUTIONAL FRAMEWORK

2.1 Policy Alignment

Gulu City's Climate Action Plan is anchored in a multi-level policy framework that links global climate commitments, national development priorities, and local planning instruments. This alignment ensures that climate action at the city level is legitimate, coherent, and implementable, while also positioning the city to access climate finance, partnerships, and technical support. The framework recognises that cities are critical delivery points for national and international climate goals, translating high-level commitments into concrete actions that affect daily lives.

2.1.1 International Policy Alignment

At the international level, the Climate Action Plan aligns with the Paris Agreement, which commits countries to limit global temperature rise to well below 2°C above pre-industrial levels and to pursue efforts to limit warming to 1.5°C. Although Uganda's commitments under the Paris Agreement are nationally determined, their achievement depends heavily on action at sub-national and urban levels. Gulu City contributes to these goals by prioritising low-emission development pathways, particularly in energy use, land use, waste management, and ecosystem restoration, while simultaneously strengthening adaptive capacity to climate impacts such as floods, heat stress, and water insecurity.

The plan also directly supports Sustainable Development Goal 13 (Climate Action), which calls for urgent action to combat climate change and its impacts. In line with SDG 13, Gulu City's Climate Action Plan integrates mitigation, adaptation, capacity building, and awareness raising into a single framework. Importantly, the plan recognises the cross-cutting nature of climate action, linking SDG 13 with other goals such as decent work (SDG 8), sustainable cities and communities (SDG 11), good health and well-being (SDG 3), and life on land (SDG 15). By embedding youth-led climate initiatives, forest and wetland restoration, and clean energy solutions, the plan operationalises global commitments through locally relevant, people-centred actions.

2.1.2 National Policy Alignment

At the national level, the Climate Action Plan aligns with Uganda Vision 2040, which articulates the country's long-term aspiration to transform Ugandan society from a peasant to a modern and prosperous nation. Vision 2040 identifies climate change, environmental degradation, and inefficient energy use as major threats to sustainable development. It emphasises sustainable natural resource management, increased energy efficiency, and human capital development as key pillars of transformation. Gulu City's focus on ecosystem restoration, clean cooking solutions, and youth engagement directly supports these priorities by safeguarding environmental assets while building productive skills and livelihoods for the next generation.

The plan also aligns with National Development Plan IV (NDP IV), which provides the medium-term framework for Uganda's development agenda. NDP IV emphasises climate resilience, green growth, and inclusive economic development, recognising climate change as

a binding constraint to poverty reduction and service delivery. Urban centres are identified as engines of growth but also as hotspots of climate vulnerability. Gulu City's Climate Action Plan responds to this by integrating climate resilience into urban infrastructure, land-use management, and service provision, while leveraging youth-driven climate action as a pathway to employment and social inclusion.

Furthermore, the plan is consistent with Uganda's National Climate Change Policy, which provides the overarching framework for coordinated climate action across sectors and levels of government. The policy calls for mainstreaming climate change into national and local development planning, promoting low-carbon development, enhancing adaptive capacity, and strengthening institutional coordination. By embedding climate action within the city's development planning processes and establishing clear institutional roles for implementation and monitoring, Gulu City operationalises the policy's principles at the local level.

Overall, this policy alignment ensures that Gulu City's Climate Action Plan is not an isolated initiative, but a coherent component of Uganda's national and international climate response. It strengthens vertical integration between global commitments, national strategies, and local action, while creating a credible foundation for mobilising resources, engaging partners, and delivering measurable climate and development outcomes.

2.2 Institutional Arrangement

The successful implementation of Gulu City's Climate Action Plan depends on a clear, functional, and context-appropriate institutional framework. Consistent with the guidance provided in the City Climate Action Plan Training Manual and firmly grounded in the institutional structures and implementation arrangements outlined in the Fourth Gulu City Development Plan (GCDP IV), Gulu City will operationalise climate action through a two-tier institutional arrangement: the City Climate Coordination Cell and the City Climate Stakeholder Committee. This arrangement builds directly on existing governance systems rather than creating parallel structures, ensuring feasibility, ownership, and sustainability.

GCDP IV emphasises integrated planning, programme-based implementation, and coordinated service delivery across sectors, recognising that complex development challenges such as environmental degradation, climate change, urbanisation, and youth unemployment cannot be addressed in isolation. Climate change is explicitly positioned within the Natural Resources, Environment, Climate Change, Land and Water Management Programme, while also cutting across infrastructure, health, urbanisation, and human capital programmes. The proposed institutional arrangement translates this integrated planning logic into an operational mechanism for climate action.

a) City Climate Coordination Cell

The City Climate Coordination Cell will serve as the central technical mechanism for coordinating, implementing, and monitoring climate-related actions in Gulu City. In line with GCDP IV's institutional arrangements for plan implementation, the Cell will be embedded within the City Technical Planning Committee framework and will draw its membership from

existing sector departments that have direct mandates related to climate-sensitive urban systems.

The Cell will comprise designated focal officers from the Departments of Environment and Natural Resources, Urban Planning, Works and Transport, Health and Water, and Community Development. These departments are already identified in GCDP IV as lead actors in addressing environmental management, urban infrastructure, public health, and community livelihoods, all of which are central to climate mitigation and adaptation.

The Department of Environment and Natural Resources will provide technical leadership on ecosystem management, forest cover restoration, wetland protection, climate change coordination, and environmental compliance. This role aligns directly with GCDP IV priorities on reversing environmental degradation, restoring wetlands, increasing tree cover, and strengthening enforcement against encroachment. The Urban Planning Department will ensure that climate considerations are integrated into land-use planning, zoning, development control, and the implementation of the Physical Development Plan, as emphasised in GCDP IV's focus on sustainable urbanisation and controlled city expansion.

The Works and Transport Department will lead on climate-resilient infrastructure, including road construction with adequate drainage, flood mitigation measures, and the promotion of non-motorised transport. These responsibilities reflect GCDP IV investments in integrated transport infrastructure and the need to protect roads and public assets from flood damage. The Health and Water Department will address climate-related public health risks, water supply reliability, sanitation, and environmental health, building on GCDP IV's recognition of the links between climate variability, disease patterns, and service delivery. The Community Development Department will play a critical role in community mobilisation, behaviour change, youth engagement, and livelihood-oriented climate interventions, including clean cooking, briquette production, and community awareness campaigns.

The primary responsibility of the City Climate Coordination Cell will be to oversee the implementation of the Climate Action Plan in accordance with GCDP IV. This includes translating climate priorities into annual departmental work plans, aligning climate actions with the city's programme-based budgeting framework, and ensuring that climate-related investments are reflected in sector budgets and projects. The Cell will also coordinate interdepartmental planning and implementation, recognising that climate risks such as flooding, waste management failures, and heat stress span multiple sectors.

In addition, the Coordination Cell will be responsible for monitoring, evaluation, and reporting on climate actions, using the Monitoring, Evaluation, and Learning (MEL) systems already established under GCDP IV. This function is essential for tracking progress, supporting evidence-based decision-making, and meeting reporting requirements to development partners and climate finance mechanisms. The Cell will also serve as the main interface between Gulu City and external stakeholders, including national ministries, development partners, and funding programmes, ensuring coherent communication and coordination.

b) City Climate Stakeholder Committee

Complementing the technical and administrative role of the City Climate Coordination Cell, the City Climate Stakeholder Committee will provide a participatory, advisory, and accountability function. GCDP IV places strong emphasis on stakeholder engagement, community participation, and partnership with civil society, the private sector, and cultural institutions as prerequisites for successful plan implementation. The Stakeholder Committee operationalises these principles in the context of climate action.

The Committee will include representatives of youth, civil society organisations, academia, the private sector, and cultural and community leaders. Youth representation is particularly critical given that GCDP IV identifies youth unemployment, social vulnerability, and limited economic opportunities as major development challenges. Young people constitute a significant proportion of Gulu City's population and are both disproportionately affected by climate impacts and central to long-term resilience and innovation. Their inclusion ensures that climate actions create pathways for skills development, green livelihoods, and meaningful civic engagement.

Civil society organizations bring extensive experience in community mobilization, post-conflict recovery, environmental conservation, and social accountability. Their participation enhances outreach, transparency, and feedback mechanisms, especially in informal settlements and vulnerable communities highlighted in GCDP IV. Academic institutions provide technical expertise, research capabilities, and data analysis, supporting evidence-based planning and learning. Private sector players are crucial for scaling climate solutions, such as clean cookstoves, briquettes, waste recycling, and energy-efficient technologies, in line with GCDP IV's focus on private–sector–led growth. Cultural and community leaders play a vital role in legitimizing climate initiatives, resolving land and resource-use conflicts, and aligning traditional norms with environmental stewardship.

The Stakeholder Committee will advise on prioritizing and designing climate actions, review implementation progress, and provide feedback to the City Climate Coordination Cell and city leadership. It will also serve as a platform for sharing information and coordinating among non-state actors, reducing duplication and enhancing collective ownership.

Together, the City Climate Coordination Cell and the City Climate Stakeholder Committee create an institutional framework that reflects Gulu City's development realities as outlined in GCDP IV. By combining strong internal coordination with inclusive stakeholder participation, this structure ensures that climate action is integrated, accountable, and responsive to community needs, especially those of young people, while remaining firmly rooted in the city's statutory planning and governance systems.

3. BASELINE ASSESSMENTS

3.1 Climate Risk Profile

The climate risk profile of Gulu City is grounded in the Fourth Gulu City Development Plan (GCDP IV) and observed climatic trends in Northern Uganda. Rather than isolated hazards, climate risks in Gulu manifest as interconnected stresses that interact with rapid urbanisation, post-war land-use patterns, environmental degradation, and socio-economic vulnerability. This section presents the core risks using conceptual and spatial visual aids that reflect urban systems and planning realities, rather than generic imagery.

3.1.1 Increased Frequency of Short-Duration, High-Intensity Rainfall

GCDP IV reports a shift from evenly distributed seasonal rainfall toward shorter, more intense rainfall events. These rainfall patterns generate high surface runoff, overwhelm drainage infrastructure, and reduce groundwater recharge. The risk is most pronounced in areas with compacted soils, paved surfaces, and limited green cover.

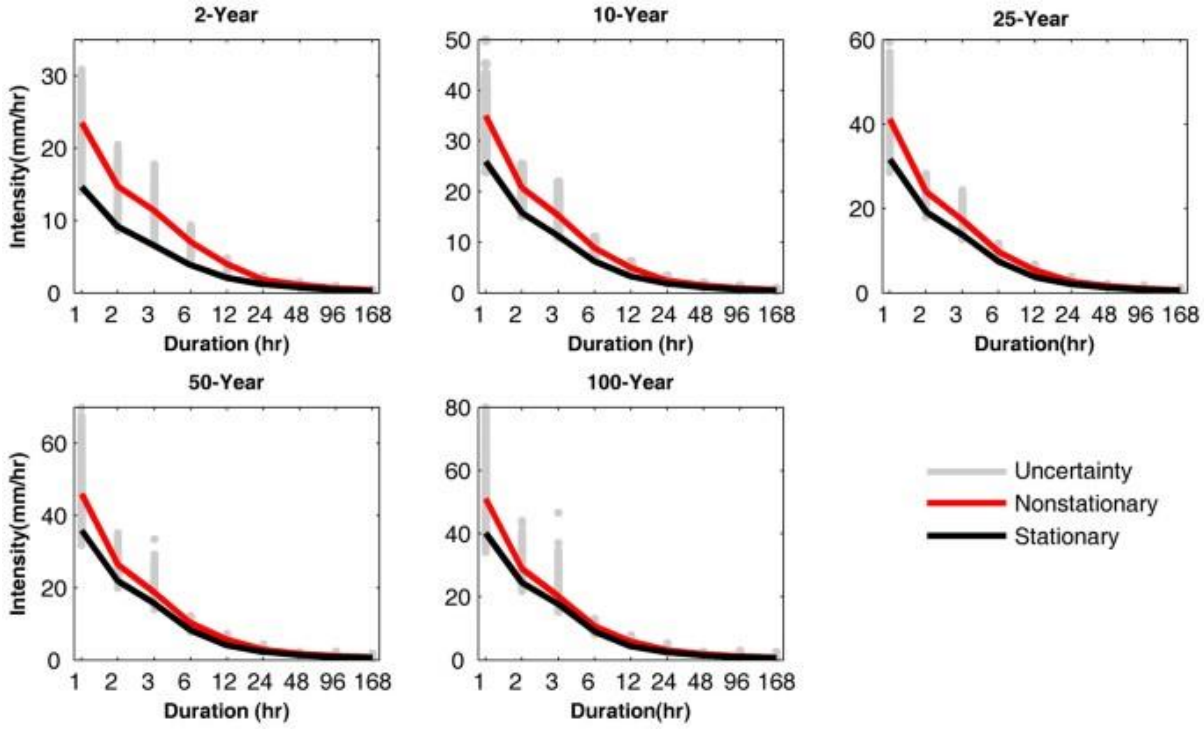

Figure 2. Graph showing the rainfall intensity–duration relationship related to Gulu City

The intensity–duration relationship illustrates how rainfall events are becoming more intense over shorter periods. In Gulu City, this directly translates into flash flooding, erosion, and damage to roads and public infrastructure, while simultaneously reducing the effectiveness of rainfall for agriculture and water storage.

3.1.2 Flooding in Low-Lying and Wetland-Adjacent Settlements

Flooding represents the most immediate climate hazard affecting Gulu City. According to GCDP IV, urban expansion, particularly in the post-conflict period, has increasingly occurred in wetlands, floodplains, and natural drainage corridors due to land pressure and limited planned housing. These areas experience recurrent inundation during heavy rainfall events.

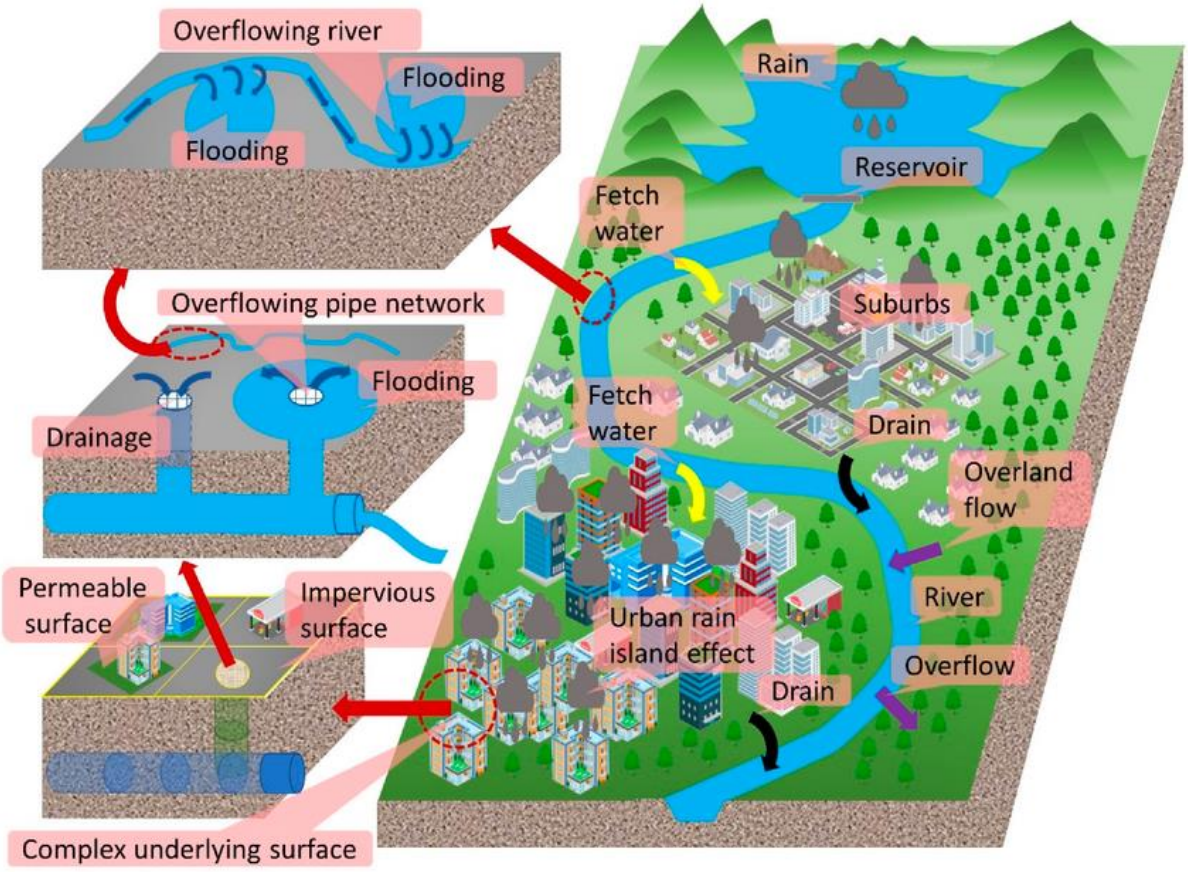

Figure 3. Illustration of wetlands and low-lying areas function as natural flood buffers.

The visual illustrates how wetlands and low-lying areas function as natural flood buffers. When settlements encroach into these zones, floodwaters are displaced into residential areas, increasing damage, displacement, and public health risks. Flooding in Gulu is therefore both a climate hazard and a land-use management issue.

3.1.3 Rising Urban Temperatures and Heat Stress

Rising average temperatures and more frequent hot days are increasing heat stress in Gulu City. GCDP IV links this trend to declining tree cover, expansion of impervious surfaces, and dense housing layouts, particularly in informal settlements with limited ventilation and shade.

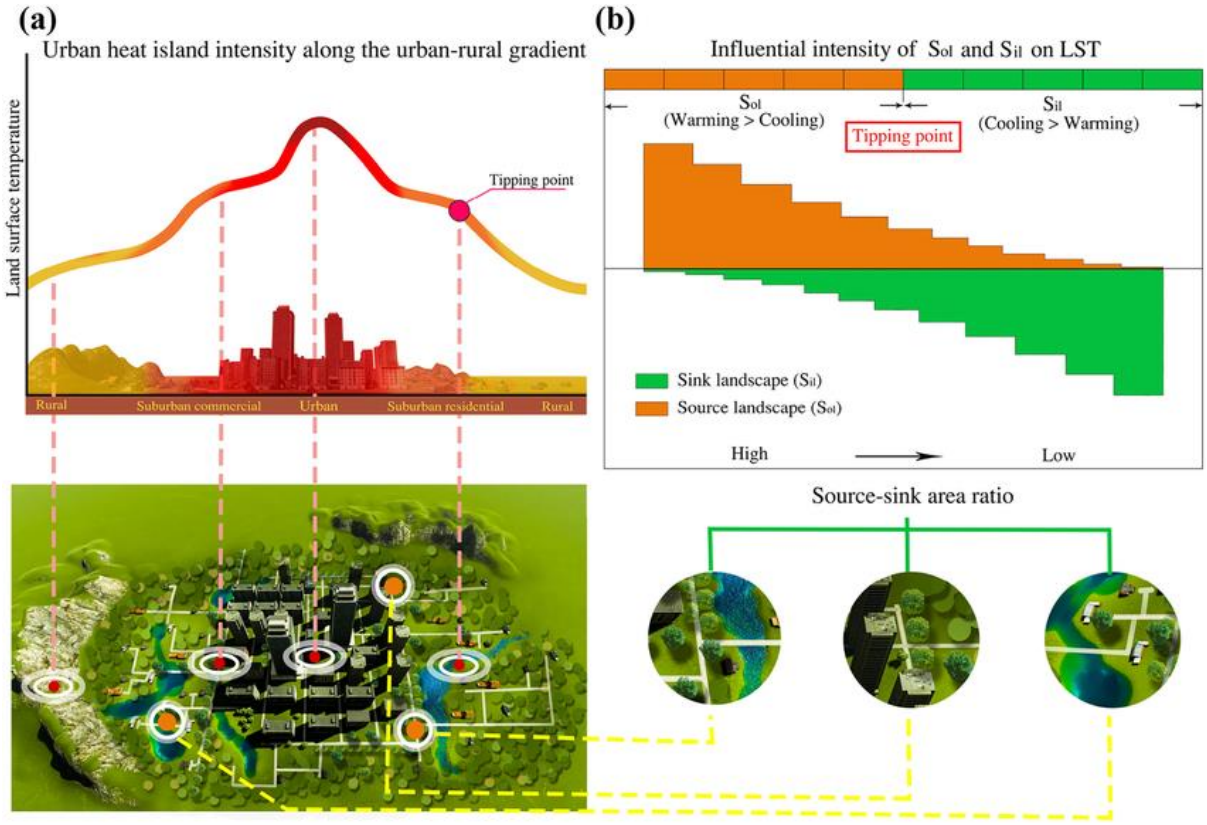

Figure 4. Schematic representation of the built-up environment related to Gulu City

The schematic shows that built-up areas with low vegetation retain heat more than green areas. In Gulu City, reduced forest and urban tree cover exacerbates heat stress, increasing health risks, lowering labour productivity, and raising household energy needs.

3.1.4 Degradation of Wetlands and Forest Reserves

Environmental degradation is identified in GCDP IV as a critical driver of climate vulnerability. Wetlands and forest reserves have been progressively degraded by settlement expansion, charcoal production, fuelwood harvesting, and weak enforcement of environmental regulations. These ecosystems historically regulated floods, moderated temperatures, and supported livelihoods.

3.1.5 Increased Food and Water Insecurity During Dry Spells

Climate variability has intensified dry spells, affecting water availability and food production in both urban and peri-urban areas. GCDP IV notes that a significant proportion of households depend on small-scale urban agriculture and climate-sensitive food supply chains, making them highly vulnerable to rainfall variability.

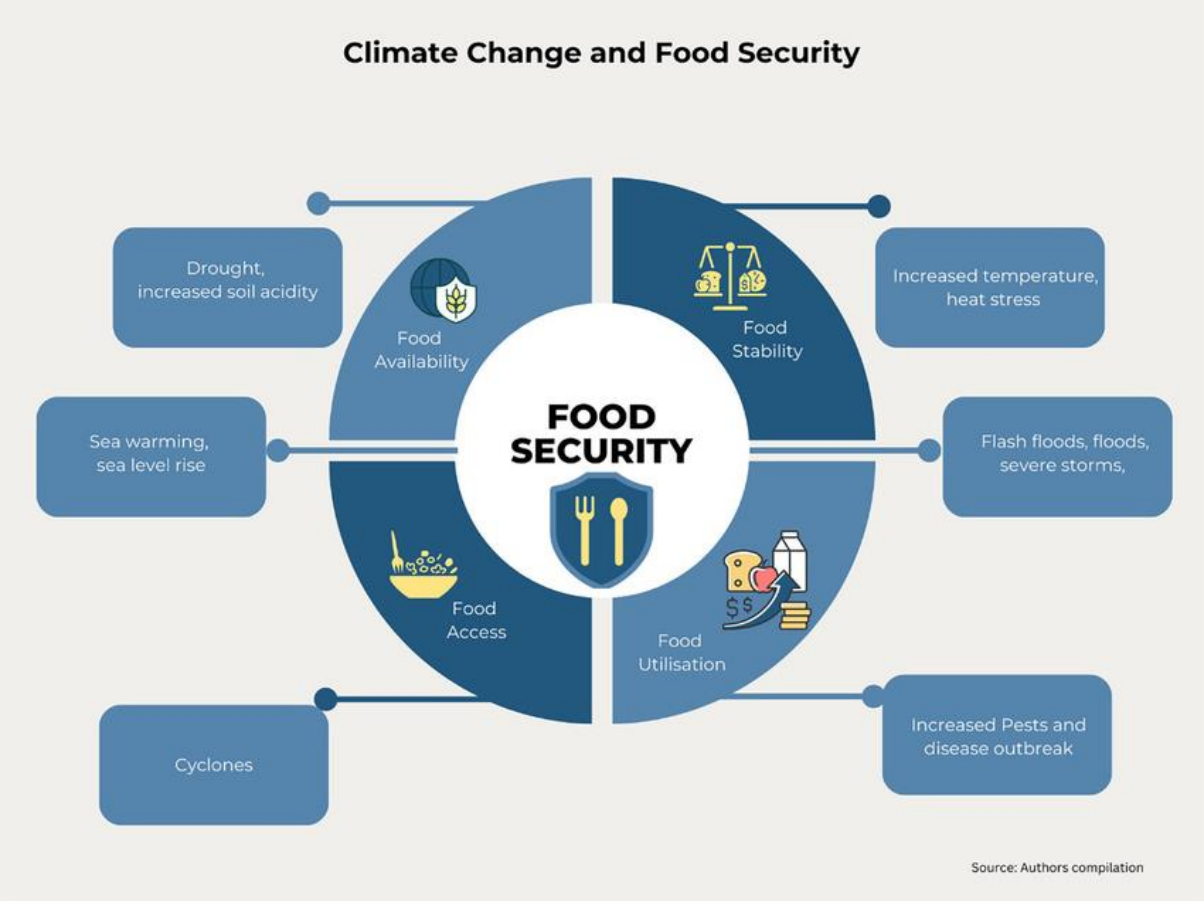

Figure 5. Representation of how reduced rainfall and higher temperatures disrupt the water supply

The visual illustrates how reduced rainfall and higher temperatures disrupt water supply and food production. In Gulu City, this increases household vulnerability, particularly among youth, women, and low-income households, and places additional strain on urban services during dry periods.

3.2 Integrated Risk Perspective

Taken together, these risks demonstrate that climate vulnerability in Gulu City is systemic. Flooding, heat stress, ecosystem degradation, and food and water insecurity reinforce one another and disproportionately affect informal settlements and young populations. This baseline assessment establishes the justification for prioritising forest cover restoration, wetland protection, energy efficiency, and community-based climate action as core pillars of the city's Climate Action Plan, as articulated in GCDP IV.

3.2.1 Fragile Urban Systems (Vulnerability Assessment)

Following the Siliguri methodology, the following systems are identified as highly vulnerable:

Urban systems	Key climate stress
Solid waste management	Blocked drains, methane and CO_2
Water supply	Seasonal shortages
Transport infrastructure	Flood damage, heat
Public health	Heat stress, vector diseases
Ecosystems (wetlands, forests and open spaces)	Encroachment, loss

Youth, informal settlement residents, women, and persons with disabilities are the most vulnerable groups.

3.2.2 Qualitative GHG Emissions Profile

To effectively address Gulu City's greenhouse gas (GHG) emissions profile and identify the major sources contributing to climate change, the following qualitative assessment based on the Climate Smart Cities Assessment Framework (CSCAF) and other relevant data points highlights key sectors:

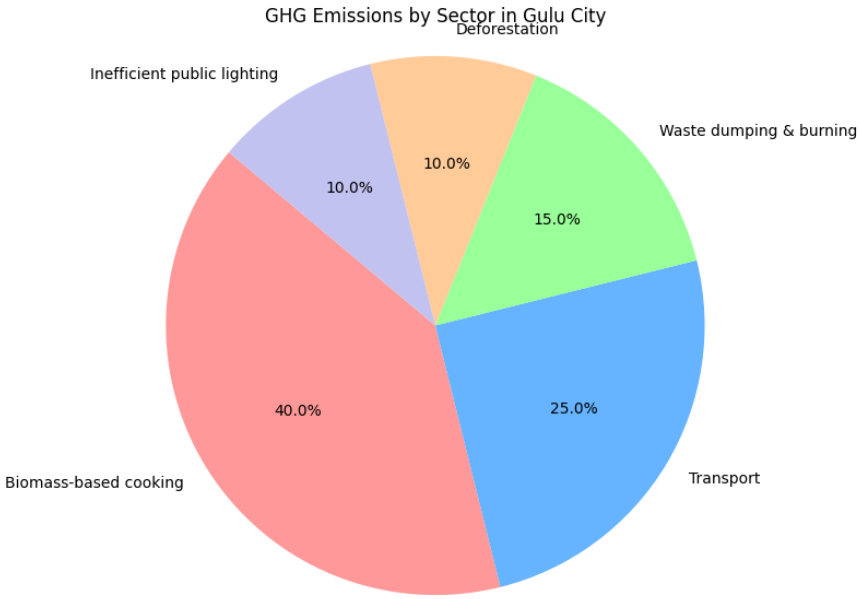

Figure 6. Estimated GHG Emissions by Sector in Gulu City

3.2.3 Biomass-based Cooking (Charcoal/Firewood):

In Gulu, as in much of Uganda, biomass (charcoal and firewood) remains the predominant cooking fuel for households. This reliance contributes significantly to deforestation, as forests are cleared to meet the demand for firewood and charcoal. Not only does this activity release carbon dioxide (CO_2), but it also generates other harmful pollutants such as particulate matter and carbon monoxide. This issue is exacerbated by the rural population's dependence on biomass for both cooking and heating, especially in low-income areas. Additionally, inefficient cooking methods, such as open fires or traditional stoves, increase emissions per unit of energy

consumed. As Gulu City's population grows, so does demand for fuelwood, leading to higher emissions.

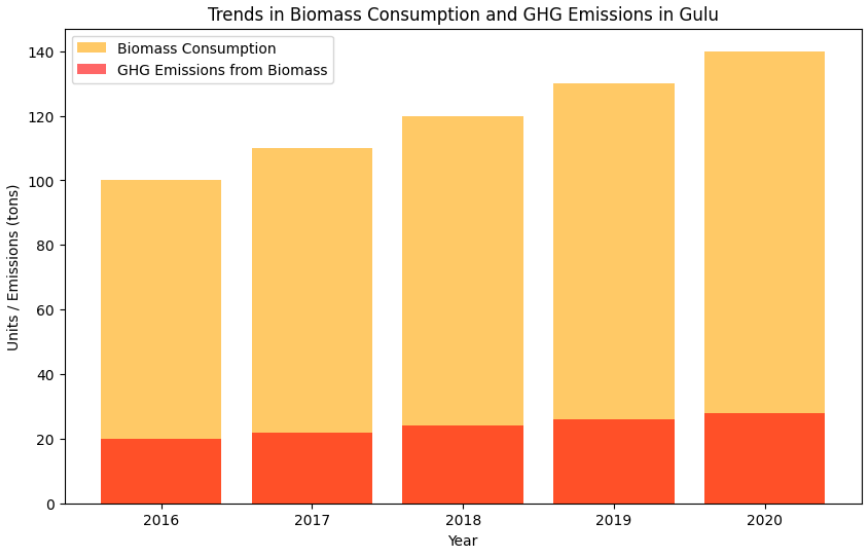

Figure 7. The trends in Biomass Consumption and GHG Emissions in Gulu City

Promotion of cleaner cooking technologies, such as efficient stoves and alternative fuels like biogas or LPG, is critical. The city's efforts to reduce GHG emissions from biomass-based cooking can include providing incentives for the adoption of clean cookstoves, promoting the use of compressed briquettes made from waste materials, and educating households on the environmental and health impacts of traditional cooking methods.

3.2.4 Transport (Boda-bodas, Minibuses):

The transport sector in Gulu, particularly the extensive use of boda-bodas (motorcycle taxis) and minibuses, contributes significantly to urban air pollution and GHG emissions. Most boda-bodas run on gasoline, a fossil fuel that emits carbon dioxide when burned. The minibuses that ply Gulu's roads are also typically powered by diesel engines, which are highly polluting.

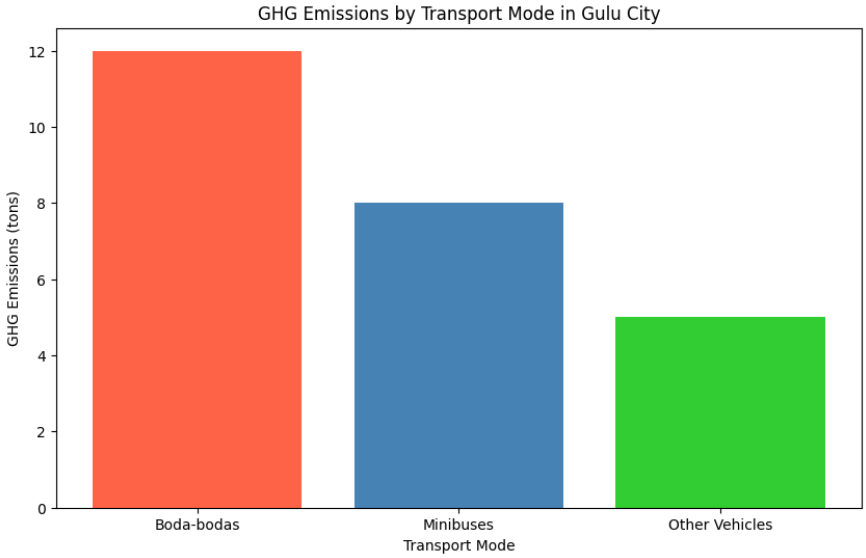

Figure 8. Estimated GHG Emissions by various transport modes in Gulu City

Promoting cleaner transport solutions, such as electric boda-boda and public transport vehicles, is an essential mitigation action. This can be achieved by developing infrastructure for electric mobility, such as charging stations, and by offering incentives to transition from fossil-fuel-powered vehicles to electric alternatives. Additionally, the implementation of non-motorized transport infrastructure (e.g., dedicated bicycle and pedestrian lanes) can reduce the need for motorized trips.

3.2.5 Open Waste Dumping and Burning:

Open dumping of waste and uncontrolled burning of refuse are widespread practices in Gulu, contributing to air pollution, the release of methane (a potent greenhouse gas), and the release of other harmful chemicals. This issue is particularly pronounced in informal settlements and unplanned areas where waste collection services are insufficient or non-existent. Open burning of waste, often including plastics and other non-biodegradable materials, releases toxic gases into the atmosphere and exacerbates respiratory health problems among residents.

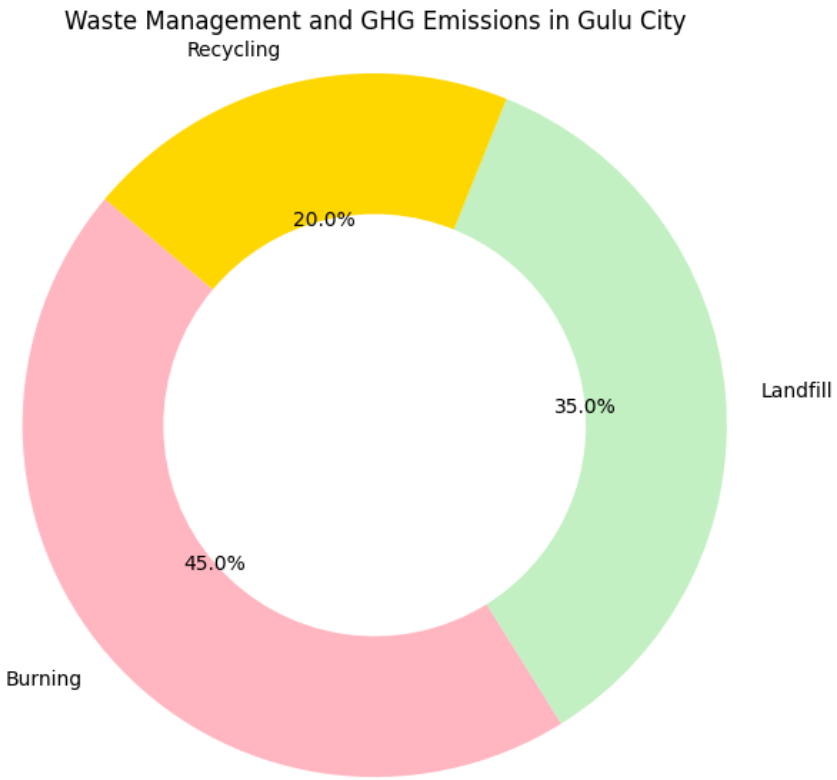

Figure 9. Waste Management and Estimated GHG Emissions in Gulu City

Addressing waste management is essential for reducing GHG emissions in Gulu. This includes transitioning to more sustainable waste management practices such as recycling, waste segregation, and composting organic waste. Establishing formalized waste collection systems and creating awareness around the importance of proper waste disposal and the dangers of open burning can help mitigate this issue. Additionally, the establishment of waste-to-energy projects could reduce reliance on landfill sites and generate renewable energy.

3.2.6 Deforestation and Land-Use Change:

Gulu City has experienced significant deforestation, primarily driven by the demand for firewood and land for agriculture. This land-use change not only reduces the capacity of local ecosystems to act as carbon sinks but also increases the risk of soil erosion, disruption of the water cycle, and biodiversity loss.

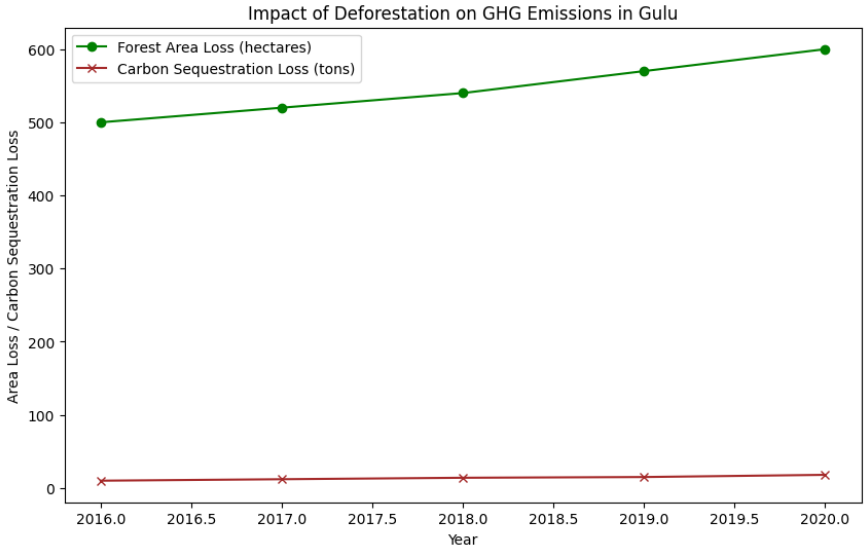

Figure 10. The impact of deforestation on the GHG emissions scenario in Gulu City

To combat deforestation, Gulu City needs to invest in reforestation and afforestation programs, focusing on restoring degraded lands and expanding urban green spaces. Strengthening policies for sustainable land use, promoting agroforestry, and creating incentives for communities to plant and protect trees can reduce deforestation rates. Additionally, encouraging the development of alternative livelihoods, such as beekeeping or ecotourism, can reduce reliance on land clearing for agriculture.

3.2.7 Inefficient Public Lighting and Buildings:

Gulu's public infrastructure, particularly street lighting and public buildings, remains inefficient in energy use. Much of the city's public lighting still relies on traditional incandescent bulbs or non-LED lights, which consume more electricity. Similarly, public buildings are often poorly insulated and use outdated heating and cooling systems, contributing to higher energy consumption and associated emissions.

Transitioning to energy-efficient lighting systems, such as LED bulbs, and installing solar-powered streetlights can significantly reduce energy demand in Gulu City. Retrofitting public buildings with energy-efficient technologies, improving insulation, and promoting energy-saving practices across all sectors will also help reduce overall GHG emissions. Furthermore, the city's urban planning initiatives should integrate green building codes and energy-efficient designs to curb emissions from the building sector.

The qualitative GHG emissions profile for Gulu highlights key areas that need targeted interventions to mitigate climate change. By addressing emissions from biomass-based cooking, transport, waste management, deforestation, and public infrastructure, Gulu can take meaningful steps toward reducing its carbon footprint. These actions, supported by policies, investments in clean technologies, and community engagement, will contribute to the city's long-term climate resilience and sustainability.

4. CLIMATE ACTION STRATEGY

4.1 Mitigation Actions

4.1.1 Energy & Buildings

i. Expansion of the grid and off-grid solar energy

Gulu City will expand both grid and off-grid solar installations to improve energy access, reduce reliance on biomass and kerosene, and lower emissions. The city will facilitate partnerships with energy providers, create incentives for solar adoption, and implement distributed solar systems in areas with unreliable grid access.

ii. Solarisation of public facilities

Key public facilities such as schools, health centres, and government buildings will be equipped with solar panels. This initiative will reduce operational costs, increase energy security, and demonstrate the feasibility of renewable energy for other sectors.

iii. Promotion of clean cooking technologies

To reduce reliance on wood fuel and charcoal, Gulu City will promote clean cookstoves and briquettes. The local government will engage with private-sector partners to establish local production units for clean cookstoves and provide incentives for households and businesses to adopt these technologies.

iv. Energy-efficient Street lighting

Gulu will replace traditional street lighting with energy-efficient LED lights. This will reduce energy consumption, lower local government costs, and contribute to the city's carbon footprint. This transition will be achieved through public-private partnerships and financing models that enable gradual rollouts.

4.1.2 Transport

a) Non-motorised transport infrastructure

The city will develop infrastructure to promote walking and cycling, such as dedicated bike lanes and wider pedestrian pathways, especially in urban areas with high pedestrian traffic. This will reduce dependence on motorised transport, reduce emissions, and alleviate traffic congestion.

b) Traffic management and road greening

Traffic management measures will include the introduction of coordinated traffic flow systems, especially in congested areas. Road greening, with tree planting along roadsides, will not only beautify the city but also help mitigate urban heat stress, improve air quality, and increase carbon sequestration.

c) Promote electric mobility for city fleets

Gulu will pilot the use of electric vehicles (EVs) in public transport and local government fleets. By deploying EVs along Lacor Road, Unyama Road, Kampala Road, and Moroto Road, the city aims to reduce urban air pollution and serve as an example for private-sector adoption. The pilot phase will involve assessing infrastructure needs, such as charging stations.

4.1.3 Waste

i. Composting of organic waste

Gulu City will implement a composting programme to convert organic waste into useful products such as fertiliser. The city will encourage households, businesses, and institutions to segregate organic waste and create community-based composting hubs.

ii. Recycling and waste segregation

Gulu will establish source segregation at waste and encourage recycling of materials such as plastics and metals. The city will also establish recycling facilities and partnerships with waste management companies, ensuring that the recyclable waste does not end up in landfills.

iii. Controlled disposal and dumpsite remediation

Existing waste disposal sites will be monitored and rehabilitated to prevent further environmental contamination. The city will invest in landfill waste burden through partners that will sort, compost, and recover valuable materials.

4.2 Adaptation Actions

4.2.1 Ecosystems & Nature-Based Solutions

a) Wetland demarcation and restoration

Gulu will initiate the protection and restoration of wetlands, especially in flood-prone areas. The city will work with environmental agencies to restore degraded wetlands, enforce land-use policies, and educate the public on the importance of wetlands for flood control and water filtration.

b) Urban tree planting and green corridors

The city will develop green corridors along roads, rivers, and public spaces. These green areas will improve urban resilience to heat stress, enhance biodiversity, and mitigate air pollution. Local schools, community groups, and businesses will be involved in tree-planting initiatives.

c) Protection of river buffers

Gulu will implement zoning regulations to prevent encroachment on riverbanks. By enforcing buffer zones along rivers, the city will mitigate flooding risks, improve water quality, and restore habitat for local wildlife.

4.2.2 Water & Flood Management

i. Drainage rehabilitation

The city will invest in rehabilitating existing drainage infrastructure to prevent flooding. This will include desilting drains, installing new drainage systems in high-risk areas, and improving stormwater management to ensure better water flow during heavy rainfall.

ii. Flood-risk mapping

Gulu will develop and implement flood-risk mapping tools to identify vulnerable areas. These maps will guide urban planning and inform the public about flood risks. The maps will also help in prioritising flood mitigation projects.

iii. Rainwater harvesting

The city will promote rainwater harvesting systems, especially in public institutions and informal settlements. By encouraging the installation of rainwater harvesting tanks, Gulu can reduce dependence on the already overburdened water supply system during dry spells.

4.2.3 Food Systems

a) Climate-smart urban agriculture

Gulu will promote urban agriculture using climate-smart techniques, such as drought-resistant crops, organic farming, and water-efficient irrigation systems. These efforts will improve food security, reduce transportation emissions, and provide fresh produce to urban residents.

b) Youth-managed community gardens/tree nurseries

The city will support youth-led community gardens where young people can engage in sustainable farming practices and raise seedlings. These gardens will provide local food, create jobs, and foster community involvement in climate change mitigation and adaptation.

c) Irrigation and water-efficient practices

The city will implement water-efficient agricultural practices such as drip irrigation and rainwater harvesting for farming communities. These practices will reduce water consumption in agriculture and ensure that crops can thrive during dry periods, contributing to food security.

5. YOUTH-LED CLIMATE ACTION (CROSS-CUTTING)

Gulu City's approach to addressing climate change acknowledges the critical role of youth as key drivers of innovation, action, and community engagement. This strategy aligns with the Youth Climate Action Fund model, which emphasizes youth as co-implementers of climate solutions rather than mere beneficiaries. By empowering young people, Gulu City not only addresses climate risks but also creates opportunities for economic empowerment, skill development, and social cohesion. The following strategies will be employed to ensure that youth are integral to every step of the city's climate action effort.

5.1 Youth Microgrants for Climate Projects

Youth-led projects are essential for fostering creativity and developing sustainable solutions to local climate challenges. Gulu City will establish a Youth Microgrant Program to fund youth-driven climate initiatives. The grants will support small-scale projects focused on sustainable agriculture, waste management, renewable energy, and conservation. These projects will be designed and led by youth groups, ensuring solutions are contextually relevant and rooted in young people's lived experiences.

Implementation:

- **Application Process:** Open calls for proposals will be announced, inviting youth groups and organisations to submit innovative climate solutions.
- **Capacity Building:** Workshops and mentorship programs will be provided to help youth develop the technical and managerial skills needed to manage their projects successfully.
- **Fund Allocation:** Microgrants will be tiered based on the scope of the project, with clear criteria for project selection. Successful projects will receive seed funding, and follow-up support will be provided to ensure sustainability.

This approach encourages innovation, builds leadership, and empowers young people to lead their communities in tackling climate change.

5.2 Open Innovation Calls Led by the Mayor

The Mayor will play a pivotal role in galvanising youth participation through Open Innovation Calls that invite young innovators to submit proposals for climate action initiatives. These calls will encourage creative solutions across clean energy, environmental education, green entrepreneurship, and sustainable waste management. By integrating youth voices into local governance, Gulu City will ensure that climate action is inclusive and reflective of the priorities of the younger population.

Implementation:

- **Launch of Calls:** The Mayor's office will coordinate public events and media campaigns to announce and publicize open innovation calls.
- **Selection Criteria:** Submissions will be evaluated based on their feasibility, impact, and scalability, with priority given to projects that directly engage the broader community.
- **Support for Ideas:** The city will provide technical and financial support to help youth innovators transform their ideas into actionable projects, offering mentorship, networking opportunities, and access to funding.

These innovation calls will establish a clear channel for youth to propose solutions while fostering a sense of ownership and accountability for Gulu's climate agenda.

5.3 Youth-Led Tree Planting, Composting, and Clean-Ups

Youth groups will be at the forefront of hands-on climate action activities, including tree planting, composting, and community clean-ups. These activities will directly address critical environmental issues, including deforestation, waste management, and ecosystem restoration. In addition to the environmental benefits, these initiatives will provide educational opportunities, creating a sense of community and stewardship among young people.

Implementation:

a) **Tree Planting Campaigns:** Targeted efforts will be made to restore urban green spaces and protect local forests through large-scale youth-led tree planting campaigns. Schools, youth clubs, and local organisations will be engaged to plant native species of trees in strategic locations across the city.
b) **Composting Initiatives:** Youth will manage community-based composting stations that reduce waste and improve soil quality for local farming. This will not only help mitigate landfill emissions but also provide a sustainable source of organic fertiliser.
c) **Clean-Up Events:** Regular clean-up drives will be organised in collaboration with local environmental NGOs and the City Council. These events will target key waste-prone areas, such as markets, bus stations, and flood-prone zones, to reduce pollution and raise public awareness of waste segregation.

These initiatives will empower youth to take direct action on climate issues and create tangible environmental improvements in Gulu City.

5.4 Climate Awareness and Data Collection

Raising awareness about the impacts of climate change and the importance of sustainable practices is a key element of Gulu's youth-led climate action strategy. Youth will be engaged in climate awareness campaigns and data collection to inform policy, monitor climate impacts, and educate the broader community.

Implementation:

- **Awareness Campaigns:** Youth-led campaigns will focus on educating the public about climate change, the importance of reducing carbon footprints, and how to adopt more sustainable lifestyles. These campaigns will leverage social media, workshops, and community radio to reach diverse audiences.
- **Data Collection and Monitoring:** In partnership with local universities, research institutions, and environmental organisations, youth will be involved in collecting data on local climate impacts such as temperature changes, rainfall patterns, and pollution levels. This data will be used to assess the effectiveness of climate interventions and inform future planning.
- **Collaborations with Schools:** Schools will be key partners in raising awareness. Climate clubs and competitions will be organised in schools to promote youth engagement and knowledge-sharing on climate-related issues.

By involving youth in data collection and awareness efforts, Gulu City will create a generation of informed citizens who can make evidence-based decisions about climate action.

The integration of youth-led initiatives into Gulu City's climate action strategy is essential for building a resilient, sustainable, and inclusive city. By positioning young people as co-implementers rather than passive beneficiaries, Gulu will foster innovation, community engagement, and long-term sustainability. These actions will not only empower youth but also provide them with the tools and opportunities to shape their city's climate future. As leaders in both practical action and policy advocacy, youth will be pivotal in driving Gulu’s climate transformation.

6. IMPLEMENTATION STRATEGY

6.1 Financing

The successful implementation of Gulu City's climate action plan requires robust and diversified financing sources. This strategy outlines the mechanisms for securing financial resources to support both immediate and long-term climate goals. The financing strategy is designed to ensure that climate action is sustainable and embedded into the city's broader development trajectory.

6.1.1 Mainstreaming Climate Actions into GCDP IV Budget

Gulu City will integrate climate actions into the GCDP IV budget, ensuring that climate change is considered in all relevant sectors, including transport, agriculture, energy, and urban planning. This mainstreaming approach will allocate a dedicated portion of the city's budget to climate-related projects, including infrastructure improvements, ecosystem restoration, and clean energy initiatives. Each department will be responsible for incorporating climate objectives into its annual budget and work plans, ensuring that climate action is prioritized across the entire city administration.

6.1.2 Development Partner Support

Gulu City will actively seek support from development partners, including international donor organizations, climate funds, and multilateral agencies. These partners can provide both technical and financial support for large-scale projects, particularly in areas like renewable energy, climate resilience, and sustainable agriculture. Gulu will develop proposals aligned with international climate frameworks, such as the Green Climate Fund and the Global Environment Facility (GEF), to secure funding for high-impact initiatives. In addition, partnerships with NGOs and international organizations can enhance knowledge exchange and capacity building.

6.1.3 Private Sector Participation

Engaging the private sector is crucial for scaling up climate solutions. Gulu City will work with businesses, local enterprises, and industries to implement climate-friendly practices and technologies. The private sector can play a role in financing projects, such as renewable energy installations, waste recycling facilities, and sustainable urban development. The city will create incentives for businesses to invest in green technologies through tax breaks, subsidies, and public-private partnerships (PPPs). Encouraging local entrepreneurs to innovate and invest in sustainable practices will also create new job opportunities and stimulate the green economy.

6.1.4 Carbon Finance Opportunities (Long-Term)

As part of its long-term strategy, Gulu City will explore carbon finance opportunities to generate additional revenue for climate projects. This includes participating in carbon offset programs and mechanisms such as the Carbon Credit Market, where the city can sell carbon credits generated from activities like reforestation, waste management, and renewable energy initiatives. Over time, the city can build a sustainable stream of funding through carbon credits, making it possible to finance climate adaptation and mitigation projects without relying solely on external aid.

6.2 Phasing

The implementation of Gulu City's climate action plan will be phased over time, with clear milestones and timelines to ensure actions are prioritized by urgency and available resources. The phased approach will also allow for adjustments based on outcomes, ensuring continuous improvement and responsiveness to emerging challenges.

6.2.1 Short-term (1–2 Years): Quick-Win, Community-Based Actions

In the short term, Gulu City will focus on quick-win, community-based actions that can be implemented rapidly, providing immediate benefits to residents and demonstrating the city's commitment to addressing climate change. These actions will focus on:

- Community-driven climate education and awareness through youth-led campaigns, workshops, and public information sessions.
- Small-scale tree planting initiatives and clean-up drives in local neighbourhoods to engage the community in tangible climate actions.
- Installation of energy-efficient street lighting and public facilities powered by solar energy.
- Waste segregation and composting projects, focusing on high-impact areas like markets and residential neighbourhoods.

These actions will involve local communities, build capacity, and create momentum for larger projects.

6.2.2 Medium-term (3–5 Years): Infrastructure and Ecosystem Restoration

Over the medium term, Gulu City will shift its focus to more structural and systemic projects that require greater investment and longer development timelines. These initiatives will lay the foundation for long-term climate resilience:

- Rehabilitation of key urban infrastructure, including drainage systems to mitigate flooding, and road upgrades that incorporate climate resilience.
- Ecosystem restoration projects, such as reforestation, wetland restoration, and urban greening, to reduce carbon emissions and improve environmental services.

- Climate-smart agriculture initiatives will be expanded to support local farmers with water-efficient irrigation systems, drought-resistant crops, and sustainable land management practices.
- Scaling up renewable energy solutions, such as expanding the solarization of public buildings and establishing off-grid solar solutions in remote areas.

These medium-term actions will build Gulu's resilience to climate impacts while advancing its transition to a low-carbon, sustainable economy.

6.2.3 Long-term: Institutionalization and Scale-up

The long-term phase focuses on institutionalizing climate actions and scaling up successful projects. This phase will ensure that climate action is embedded in the city's planning processes and becomes a permanent part of Gulu's development trajectory:

- Mainstreaming climate considerations into all city planning and policy-making processes. Climate change will be incorporated into zoning laws, building codes, and development regulations to ensure that future growth is sustainable.
- Large-scale infrastructure projects, such as the development of an integrated public transport system powered by clean energy, the expansion of waste-to-energy facilities, and large-scale renewable energy projects like solar farms and biogas plants.
- Strengthening local governance and institutional capacity to manage climate risks, monitor progress, and engage stakeholders. This will include establishing a dedicated climate change department within the city government and training city staff on climate adaptation and mitigation measures.
- Engagement in international climate finance mechanisms, securing funding from global climate funds, carbon markets, and bilateral donors for large-scale, transformative projects.

The long-term vision will position Gulu as a model city for climate resilience, sustainable urbanization, and green economic development in East Africa.

The implementation strategy for Gulu City's climate action plan is grounded in diverse financing options, clear, phased actions, and long-term institutional integration. By mainstreaming climate action into the city's planning and leveraging various funding sources, Gulu City will ensure that its climate initiatives are financially sustainable, inclusive, and impactful. The phased approach will allow the city to scale up successful projects, improve urban resilience, and reduce Gulu City's carbon footprint, ultimately positioning it as a leader in local climate action at the local level.

7. MONITORING, REPORTING, AND VERIFICATION (MRV)

The successful implementation of Gulu City's Climate Action Plan (CAP) hinges on robust monitoring, reporting, and verification (MRV) systems that ensure transparency, accountability, and adaptive management. The MRV framework will be based on the guidelines outlined in the Climate Action Plan Training Manual, ensuring that climate actions are tracked, evaluated, and reported effectively.

7.1 Annual Climate Action Reporting

Gulu City will provide an annual report on climate actions, summarising progress towards the goals set out in the Climate Action Plan. This report will include updates on key initiatives, challenges encountered, and adjustments made to meet evolving climate realities. The report will be publicly accessible, fostering transparency and enabling continuous engagement from all stakeholders.

7.2 Output and Outcome Indicators

To track the effectiveness of climate interventions, Gulu City will define a set of output and outcome indicators. These indicators will measure:

- **Trees planted** (e.g., hectares of reforested land, number of trees planted in urban areas)
- **Waste diverted** (e.g., volume of organic waste composted, quantity of recyclables collected)
- **Households reached** (e.g., number of households adopting clean cookstoves or benefiting from solar energy)

These indicators will align with GCDP IV's broader development metrics, ensuring consistency across sectors.

7.3 Integration into City MEL Systems

Monitoring and evaluation of climate actions will be integrated into Gulu City's existing Monitoring, Evaluation, and Learning (MEL) systems. This integration will streamline data collection, reporting, and analysis across departments, ensuring that climate data informs decision-making. Additionally, the city will use digital tools to monitor real-time data and improve reporting accuracy.

7.4 Public Disclosure to Ensure Transparency

To maintain public trust and engagement, Gulu City will ensure regular public disclosure of progress on climate action. This includes publishing the annual climate action report, holding public forums to discuss achievements and challenges, and providing accessible online dashboards that allow residents and stakeholders to view up-to-date information on climate initiatives. Transparent reporting will build public confidence in the city's climate actions and encourage greater community involvement.

8. CONCLUSION

This Climate Action Plan positions Gulu City on a transformative low-emission, climate-resilient development pathway. By aligning with the goals outlined in the Fourth Gulu City Development Plan (GCDP IV), the plan integrates climate actions into the city's core governance and development structures, ensuring that climate resilience and sustainable growth become the foundation of future urban development.

The plan's emphasis on infrastructure investment, ecosystem restoration, and governance reform addresses both the physical and institutional dimensions of climate adaptation and mitigation. Central to this strategy is youth leadership, which drives innovation, community engagement, and job creation. The city's focus on youth-driven climate solutions ensures that climate action is inclusive, benefiting all residents, especially those most vulnerable to climate risks.

Through its combination of practical interventions, stakeholder engagement, and ongoing monitoring, Gulu City will not only mitigate climate risks but also harness climate action as a driver of inclusive, sustainable urban development. The city is transitioning from a climate risk response approach to a proactive, opportunity-driven strategy that fosters resilience, equity, and growth for future generations.

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Appendix 1: Estimated 5 Years Budget

Category	Action	Estimated Cost
1. Energy & Building	Expansion of Grid and Off-Grid Solar Energy	2,200,000,000
	Solarisation of Public Facilities (schools, health centers, etc.)	1,550,000,000
	Promotion of Clean Cooking Technologies (cookstoves, briquettes)	1,500,000,000
	Energy-efficient Street Lighting (LED replacement, infrastructure)	1,200,000,000
Sub Total		**6,450,000,000**
2. Transport	Non-motorised Transport Infrastructure	350,000,000
	Road Greening	150,000,000
	Promotion of Electric Mobility for City Fleets	500,000,000
Sub Total		**1,000,000,000**
3. Waste Management	Composting of Organic Waste (community composting hubs), awareness creation	800,000,000
	Recycling and Waste Segregation (facilities, partnerships, awareness creation)	350,000,000
	Controlled Disposal and Dumpsite Remediation (landfill management)	2,000,000,000
Sub Total		**3,150,000,000**
4. Ecosystems & Nature-Based Solutions	Wetland Demarcation and Restoration (restoration efforts, policies)	500,000,000
	Urban Tree Planting and Green Corridors (tree planting, green areas)	500,000,000
	Protection of River/Stream Buffers (zoning, enforcement, education)	500,000,000
Sub Total		**1,500,000,000**

5. Water & Flood Management	Drainage Rehabilitation (desilting, new drainage systems)	300,000,000
	Flood-Risk Mapping (development of tools, implementation)	100,000,000
	Rainwater Harvesting (systems for public institutions, settlements)	500,000,000
Sub Total		**900,000,000**
6. Food Systems	Climate-Smart Urban Agriculture (drought-resistant crops, irrigation)	600,000,000
	Youth-managed Community Gardens/Tree Nurseries (youth-led projects)	600,000,000
Sub Total		1,200,000,000
Grand Total		**14,200,000,000**