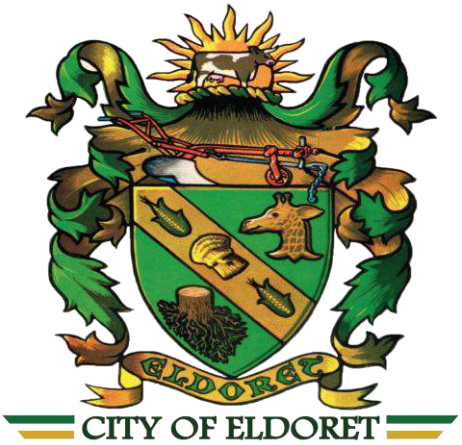
CITY OF ELDORET

URBAN CLIMATE RISK PROFILE 2026



URBAN CLIMATE RISK PROFILE

2026

Prepared by:

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Foreword

Eldoret City stands at a pivotal moment in its urban development journey. As one of Kenya's fastest-growing municipalities, our city faces both tremendous opportunities and pressing challenges none more urgent than the escalating risks posed by climate change. From increasingly erratic rainfall patterns and urban flooding to prolonged droughts and heat stress, the impacts of climate variability are no longer distant projections as they are unfolding in real time across our neighborhoods, infrastructure, and livelihoods.

This Urban Climate Risk Profile provides a comprehensive, evidence-based assessment of Eldoret's exposure, vulnerability, and adaptive capacity across key sectors. It draws on local data, stakeholder consultations, and scenario modeling to illuminate the risks we face under different climate futures. More importantly, it offers a roadmap for resilience highlighting priority actions, investment needs, and policy directions that align with our County Integrated Development Plan (CIDP), Kenya's Vision 2030, and global climate commitments.

We recognize that building urban resilience is not the work of government alone. It requires coordinated efforts across communities, private sector actors, academic institutions, and development partners. This profile is both a call to action and a tool for collaboration—designed to inform planning, guide investments, and empower all stakeholders to contribute meaningfully to a climate-smart Eldoret.

On behalf of the Municipality of Eldoret, I extend my gratitude to all contributors and reaffirm our commitment to inclusive, sustainable urban development. Together, we can transform climate risk into opportunity and ensure a thriving future for generations to come.

Signed,

City Manager
City of Eldoret
February 2026

Executive Summary

The Urban Climate Risk Profile for Eldoret City (2026) provides a comprehensive overview of the city's climate-related vulnerabilities and future risks. It highlights Eldoret's rapid urbanization, growing population, and economic transformation, all of which are occurring alongside increasing climate variability. The profile aims to guide urban planning, resilience strategies, and adaptation investments by assessing current and projected hazards, exposure levels, and vulnerabilities.

The assessment identifies five major hazards: flooding and stormwater overload, drought and water scarcity, extreme heat and the urban heat island effect, landslides and soil erosion, and public health risks. These hazards are already affecting infrastructure, populations, and ecosystems, with risks projected to escalate significantly by 2050 and 2100 under both moderate (SSP2-4.5) and high-emission (SSP5-8.5) scenarios. Informal settlement residents and vulnerable groups face the highest risks, while critical infrastructure such as drainage, water supply, transport, and energy systems are expected to move from medium to very high-risk levels over time.

Eldoret's geographic and environmental setting—particularly the River Sosiani corridor, plateau topography, and sensitive ecosystems—heightens exposure to flooding, erosion, and water stress. Ecosystem degradation, including deforestation and wetland encroachment, further reduces natural resilience. At the same time, socio-economic vulnerabilities such as poverty, high dependency ratios, and limited household coping capacity compound the risks, especially for marginalized urban populations.

Governance structures, including the City Board, City Manager, and specialized units for planning, environment, infrastructure, and finance, play a central role in integrating climate risk into development frameworks. Strong community networks and relatively high literacy levels provide opportunities for effective climate communication and adaptation. Economically, Eldoret is transitioning into a smart city and industrial hub, with major investments in manufacturing, logistics, and renewable energy. However, these transformations also increase climate pressures through land-use changes, densification, and rising resource demands.

The profile concludes that Eldoret's climate risks are systemic and escalating, requiring urgent and coordinated action. Key adaptation solutions include ecosystem restoration, resilient infrastructure upgrades, inclusive planning for vulnerable groups, and institutional strengthening. By leveraging its economic growth and smart city initiatives, Eldoret has the opportunity to embed climate resilience into its urban transformation, safeguarding livelihoods, infrastructure, and ecosystems against future climate impacts

Summary of Hazard Risks for Eldoret City

Eldoret faces increasing climate and environmental risks that are projected to intensify significantly by 2050 and become severe to very high by 2100 under both moderate (SSP2-4.5) and high-emissions (SSP5-8.5) scenarios. Flooding, drought, extreme heat, soil erosion, and public health hazards pose escalating threats to infrastructure systems, vulnerable populations, and ecological assets. Informal settlements and marginalized populations are consistently identified as the most exposed groups across all hazards.

Flooding and Stormwater Overload Risks

Flooding and stormwater overload currently pose moderate risks to most infrastructure systems, including drainage, transport networks, social facilities, and emergency services. However, risk levels are projected to rise to high by 2050 and very high by 2100, reflecting increased rainfall intensity and inadequate drainage capacity.

Stormwater drainage systems and water and wastewater infrastructure are particularly vulnerable due to limited capacity and blockage from solid waste. Transport networks and economic infrastructure face increasing disruption risks from flooding, while emergency services may experience operational delays during extreme storm events.

Urban residents face growing exposure, but risks are especially severe for informal settlement residents and vulnerable groups who often occupy flood-prone areas with inadequate drainage. Natural systems, including urban green and blue infrastructure and peri-urban agricultural areas, face escalating degradation risks from erosion, waterlogging, and sedimentation.

Drought and Water Scarcity Risks

Drought and water scarcity present a moderate and rising threat**,** particularly affecting water supply systems, energy generation, and agricultural productivity. Water and wastewater management systems face increasing pressure due to reduced water availability and rising demand, with risks projected to become very high by 2100.

Energy systems face growing vulnerability as water shortages affect hydropower and cooling systems. Economic and social infrastructure, including schools and health facilities, will experience service delivery challenges during prolonged drought periods.

Peri-urban and agricultural systems face the most severe impacts due to crop failure risks and declining soil moisture. Informal settlement residents and vulnerable populations are particularly exposed due to limited access to reliable water supplies and adaptive resources.

Extreme Heat and Urban Heat Island Risks

Extreme heat and urban heat island effects are emerging risks that are expected to intensify significantly. Transport systems, energy supply, social infrastructure, and emergency services currently face moderate risks, which are projected to rise to very high levels by 2100**.**

Heat stress will increase energy demand for cooling, strain electricity infrastructure, and accelerate deterioration of roads and built infrastructure. Water and waste management systems will face operational challenges due to increased evaporation, odor generation, and accelerated waste decomposition.
Populations in high-density and informal settlements face the highest risk due to limited ventilation, lack of green cover, and heat-retaining building materials. Urban green infrastructure will become increasingly critical in mitigating heat impacts, while blue infrastructure may face reduced cooling capacity due to water scarcity.

Landslides and Soil Erosion Risks

Landslides and soil erosion pose moderate current risks, particularly in peri-urban and agricultural zones, but risks are projected to escalate to very high levels by 2100 due to increased rainfall intensity and land degradation.
Stormwater drainage systems, transport corridors, and water infrastructure are vulnerable to sedimentation, structural damage, and service disruption. Agricultural lands face soil fertility loss and productivity decline.
Informal settlements and marginalized populations located on unstable slopes or degraded land are at high risk of displacement and property damage. Urban green and blue infrastructure face degradation risks due to sedimentation and altered hydrological flows.

Public Health Risks

Public health risks are already significant and are expected to intensify due to climate change, inadequate waste management, flooding, and water contamination. Solid waste management, stormwater systems, and wastewater infrastructure face increasing risks that could lead to disease outbreaks and environmental contamination.
Flooding and heat events increase vector-borne diseases, while poor waste management contributes to air and water pollution. Social infrastructure, particularly health facilities, will experience increased demand during extreme events.

Urban populations face rising health risks, but informal settlements and vulnerable groups remain the most exposed due to overcrowding, poor sanitation, and limited healthcare access. Environmental degradation of green and blue infrastructure further exacerbates health risks by reducing ecosystem services that support clean air and water.

Cross-Cutting Insights

Across all hazards, risks are projected to increase significantly over time, emphasizing the need for proactive climate resilience planning. Infrastructure systems are highly interdependent, meaning disruptions in drainage, water, energy, and transport can cascade into broader service failures.

Vulnerable populations, particularly informal settlement residents, face disproportionate risks due to socio-economic constraints and exposure to hazard-prone areas.

Natural assets play a crucial role in mitigating climate risks, yet they are increasingly threatened by environmental degradation.

Strengthening urban resilience through improved stormwater management, climate-sensitive infrastructure planning, ecosystem restoration, inclusive service provision, and improved solid waste management will be essential to reducing future risks and safeguarding sustainable urban development

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List of Acronyms

RCRA	Rapid Climate Risk Assessment
UCRP	Urban Climate Risk Profile
CIDP	County Integrated Development Plan
CCAP	Climate Change Action Plan
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
KMD	Kenya Meteorological Department
NEMA	National Environment Management Authority
WRA	Water Resources Authority
KURA	Kenya Urban Roads Authority
KPLC	Kenya Power and Lighting Company
KPC	Kenya Pipeline Company
ELDOWAS	Eldoret Water and Sanitation Company
MTRH	Moi Teaching and Referral Hospital
UEP	Urban Economic Plan
NOREB	North Rift Economic Bloc
PPP	Public-Private Partnership
EPZ	Export Processing Zone
GIS	Geographic Information System
CBD	Central Business District
NMT	Non-Motorized Transport
PWD	Persons with Disabilities
CBOs	Community-Based Organizations
NGOs	Non-Governmental Organizations
FBOs	Faith-Based Organizations
KUSP II	Kenya Urban Support Program Phase II
IPCC	Intergovernmental Panel on Climate Change
SSP2-4.5	Shared Socioeconomic Pathway 2, Moderate Emissions Scenario
SSP5-8.5	Shared Socioeconomic Pathway 5, High Emissions Scenario

1. Context

1. Objective

This Urban Climate Risk Profile aims to comprehensively assess and document Eldoret City's climate-related risks by identifying current and projected climate hazards, analyzing patterns of exposure and vulnerability across sectors, populations, and geographic areas, and evaluating existing adaptive capacities. The profile seeks to provide a robust evidence base to inform climate-resilient urban planning, land-use management, and infrastructure development; support the design and prioritization of inclusive climate adaptation and mitigation interventions; enhance institutional coordination and decision-making; and strengthen the city's capacity to reduce climate-related losses, protect livelihoods, improve service delivery, and promote sustainable, resilient urban development in the face of climate variability and change.

1.2 Urban Context

Geographic area

Eldoret city is situated within the western Kenyan highlands, west of the Great Rift Valley, on the Uasin Gishu Plateau. The area is generally flat but exhibits gentle undulations toward the eastern, western, and southern sections, particularly along the River Sosiani corridor. The municipality lies at an average altitude of approximately 2,084 m above sea level, with elevations ranging from about 2,200 m at higher points to around 2,005 m at River Sosiani, which forms the lowest point and primary drainage channel.

This topographic setting increases the municipality's exposure to surface runoff accumulation and localized flooding, particularly in low-lying areas along River Sosiani and its tributaries. The natural inclination of the Central Business District toward the river further heightens flood risk during periods of intense rainfall.

Climatic Conditions and Climate Variability

Eldoret experiences a cool, temperate highland climate, strongly influenced by altitude. Mean annual rainfall is approximately 1,100 mm, ranging between 1,000 mm and 1,250 mm. Rainfall occurs mainly during the long rains (April–August) and short rains (October–December), with peak rainfall in April/May and July/August. The driest period extends from November to March.

Rainfall variability, including short dry spells within the rainy season and increasing intensity of storm events, poses climate risks related to urban flooding, drainage system overload, and soil erosion, particularly in riparian and wetland areas. Average daytime temperatures remain moderate at about 23.6°C; however, rising temperature trends may increase heat stress in densely built-up areas and affect water availability.

Climatic conditions are influenced by dry continental air masses from the Sahara (November–March), moist monsoon winds from the Indian Ocean (April), and the Congo airstream (from July), which is associated with strong winds and convectional storms. These systems contribute to climate extremes, including heavy rainfall events and strong winds that can damage infrastructure.

Geological and Soil Characteristics and Climate Sensitivity

The municipality is underlain by tertiary volcanic rocks, with localized basement system rock outcrops. Soils are predominantly red loam, red clay, brown clay, and brown loam. While these soils support agriculture and urban development, some areas are susceptible to erosion and waterlogging, particularly where vegetation cover has been removed.

Increased rainfall intensity linked to climate change may accelerate soil erosion along slopes, riverbanks, and construction sites, increasing sedimentation in River Sosiani and wetlands, thereby reducing their natural flood-regulation capacity.

1.2.3 Hydrology, Ecosystems, and Nature-Based Climate Regulation

Eldoret city lies within the Lake Victoria catchment. River Sosiani is the primary river system traversing the municipality and plays a critical role in stormwater drainage. Additional hydrological features include Chepkoilel River, Marura Wetland, seasonal streams (Elengerin, Sergoit, Olare Onyokie), and the Two Rivers Dam, which provides water storage for urban and peri-urban areas.

Sensitive ecosystems—including riparian reserves, wetlands, and seasonal waterways—provide essential ecosystem services for climate resilience, such as flood attenuation, groundwater recharge, temperature regulation, and biodiversity conservation. However, these ecosystems face pressure from urban expansion, pollution, and encroachment, increasing vulnerability to climate-induced flooding and ecosystem degradation.

Forests, Green Spaces, and Urban Climate Resilience

Green infrastructure within the municipality includes arboretums managed by the County Government, Kenya Forest Service, and the University of Eldoret, as well as a Kenya Wildlife Service conservancy within the town center. These green spaces contribute to urban cooling, carbon sequestration, and stormwater regulation.

Kapseret Forest (approximately 1,349.5 ha), located on the municipal periphery and managed by Kenya Forest Service, plays a vital role in climate regulation. However, degradation through illegal logging and replacement of indigenous species with exotics has reduced its effectiveness as a climate buffer, increasing the municipality's vulnerability to climate variability.

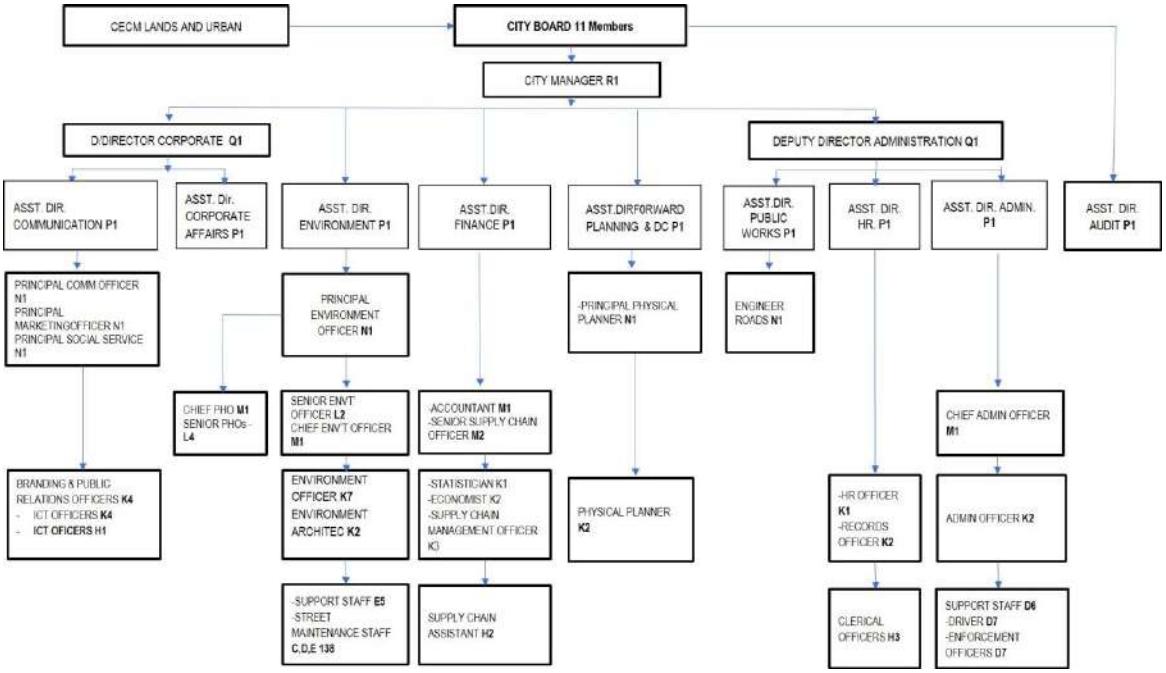
Implications for Urban Climate Risk Management

The physiographic and environmental characteristics of Eldoret city indicate high sensitivity to climate-related hazards, particularly flooding, ecosystem degradation, and water stress. Protecting and restoring riparian zones, wetlands, forests, and urban green spaces, alongside improved drainage and land-use planning, is critical for enhancing urban climate resilience and reducing long-term climate risk.

1.0.1. Governance Structure

Eldoret is a major urban centre in western Kenya and the administrative headquarters of Uasin Gishu County. It was officially conferred city status on August 15, 2024, making it one of Kenya's newer cities. The city has experienced rapid population growth and increasing demand for infrastructure, services, and climate-resilient development. Eldoret serves as an economic hub with significant agricultural, educational, and commercial activities.

Governance of Eldoret City is guided by the City Charter under the Urban Areas and Cities Act, which establishes formal roles for the City Board, City Manager, and relevant departments in planning, service delivery, and infrastructure development.



Key Parties in Urban Planning & Climate Risk Profiling

Roles in Climate Risk Profiling & Integrated Development Planning

Physical Planning & Urban Development

- Provides technical leadership for spatial planning and urban development frameworks.
- Integrates climate risk information into development plans including the IDP.

Environment / Climate Change Unit

- Collects and synthesizes climate data and vulnerability assessments.
- Supports preparation of the Urban Climate Risk Profile by identifying hazards and exposure.

Infrastructure & Disaster Management

- Supplies infrastructure risk and resilience data (e.g., drainage and stormwater systems).
- Helps map assets and hazards for risk profiling.

Finance & Economic Planning

- Ensures planning documents (climate risk profile, IDP) align with resource allocation and budgeting cycles.

City Board

- Reviews and approves strategic planning documents including the IDP and inputs from climate risk assessments.

City Manager

- Coordinates technical teams, drives plan development, and ensures stakeholder engagement.

1.0.2. Socio-economic Context

Literacy, a key factor in adaptive capacity, stood at 91% in Uasin Gishu County (KNBS 2015/16), slightly below the national rate of 94%. Higher literacy levels facilitate access to climate information and adoption of resilient practices. The county's dependency ratio, measuring the non-working population (ages 0–14 and 65+) relative to the working-age group (15–64), was 78.6, indicating a moderate economic burden that may limit household capacity to cope with climate-related shocks. Poverty affects about 41% of the population, or roughly 215,445 people, highlighting high vulnerability to climate hazards, especially for resource-poor urban households.

Culturally, Uasin Gishu is dominated by the Kalenjin, particularly the Nandi and Keiyo, though Swahili and English are widely spoken.

Traditional family structures, social cohesion, and respect for elders remain strong, providing potential channels for community-based adaptation and risk communication. Age-based social organization and initiation rites foster community solidarity, which can support collective climate action.

Traditional livelihoods are largely agro-pastoral, combining crop cultivation (maize, sorghum, millet) and livestock rearing. In urban areas, these have diversified to include trade, services, and informal employment. Understanding these economic patterns is critical, as climate impacts on food systems, water availability, and livelihoods directly affect urban resilience. Social norms, including communal decision-making and marriage practices, reflect strong community networks that can be leveraged in urban climate risk planning.

1.0.3. Economic Context

In 2026, Eldoret city is transitioning into its new role as Kenya's fifth city, characterized by rapid urbanization, infrastructure modernization, and a shift toward a 24-hour economy.

Current Economic Context (2026)

- **Rapid Urban Growth:** Eldoret's population is estimated at approximately 504,000 in 2026, growing at an annual rate of about 4.14%. It is recognized as the fastest-growing investment hub in the North Rift region.
- **Diverse Economic Base:** While rooted in agriculture—serving as a primary hub for maize, wheat, and dairy—the city has diversified into healthcare (Moi Teaching and Referral Hospital), education (Moi University), and industry (textiles like Rivatex).
- **Infrastructure Transformation:** The city is currently implementing a "Smart City" plan featuring adaptive LED streetlights with integrated CCTV and a fiber-optic network to support a 24-hour economy.
- **Financial Hub:** Eldoret hosts over 50 financial institutions and serves as the headquarters for the North Rift Economic Bloc (NOREB), enhancing its status as a regional commercial center.
- **Fiscal Pressures:** Elevation to city status has led to increased costs for residents, including higher business permit fees, land rates, and water tariffs aimed at raising Sh2.2 billion for infrastructure development.

Projected Economic Outlook (2026–2030)

- Industrial Expansion: The development of a major manufacturing hub/EPZ is projected to create approximately 50,000 direct jobs and 250,000 indirect jobs, particularly in agro-processing and logistics.
- **Real Estate Boom:** Land values are projected to continue "shooting up" as city boundaries expand to include areas like Kapseret, attracting large-scale commercial developers.
- **Logistics & Connectivity:** Projections include the declassification of the Northern Corridor as a transit route to decongest the CBD and the construction of a dual carriageway linking the city to Eldoret International Airport.
- **Investment Attraction:** City status is expected to unlock higher levels of national and international funding (such as through KUSP II) and attract global public-private partnerships (PPPs).
- **Sustainability Goals:** By 2030, Eldoret aspires to be Kenya's most "liveable city," utilizing renewable energy to reduce public lighting costs by 50% and tapping into the global carbon credit market.

1.4 Land-use Context

2026, Eldoret city is implementing a multi-phased land use transformation designed to transition it from a market town into a sustainable "Smart City" and regional industrial hub.

1. Current Land Use Context (2026)

The city's land use is currently defined by three strategic focus areas (FA) aimed at high-density development and urban regeneration.

- **Residential (Dominant):** Continues to be the largest land use, driven by a population growing at 4.14% annually. Large former agricultural tracts (e.g., EATEC land) have been converted into residential zones.

- **Commercial (CBD Focus):** Concentrated in the urban core, undergoing "CBD Regeneration" to include high-rise landmark towers and dedicated non-motorized transport (NMT) zones.
- **Institutional & Infrastructure:** Major clusters include MTRH (Health) and Moi University (Education), along with new 24-hour infrastructure like the Champions Market.

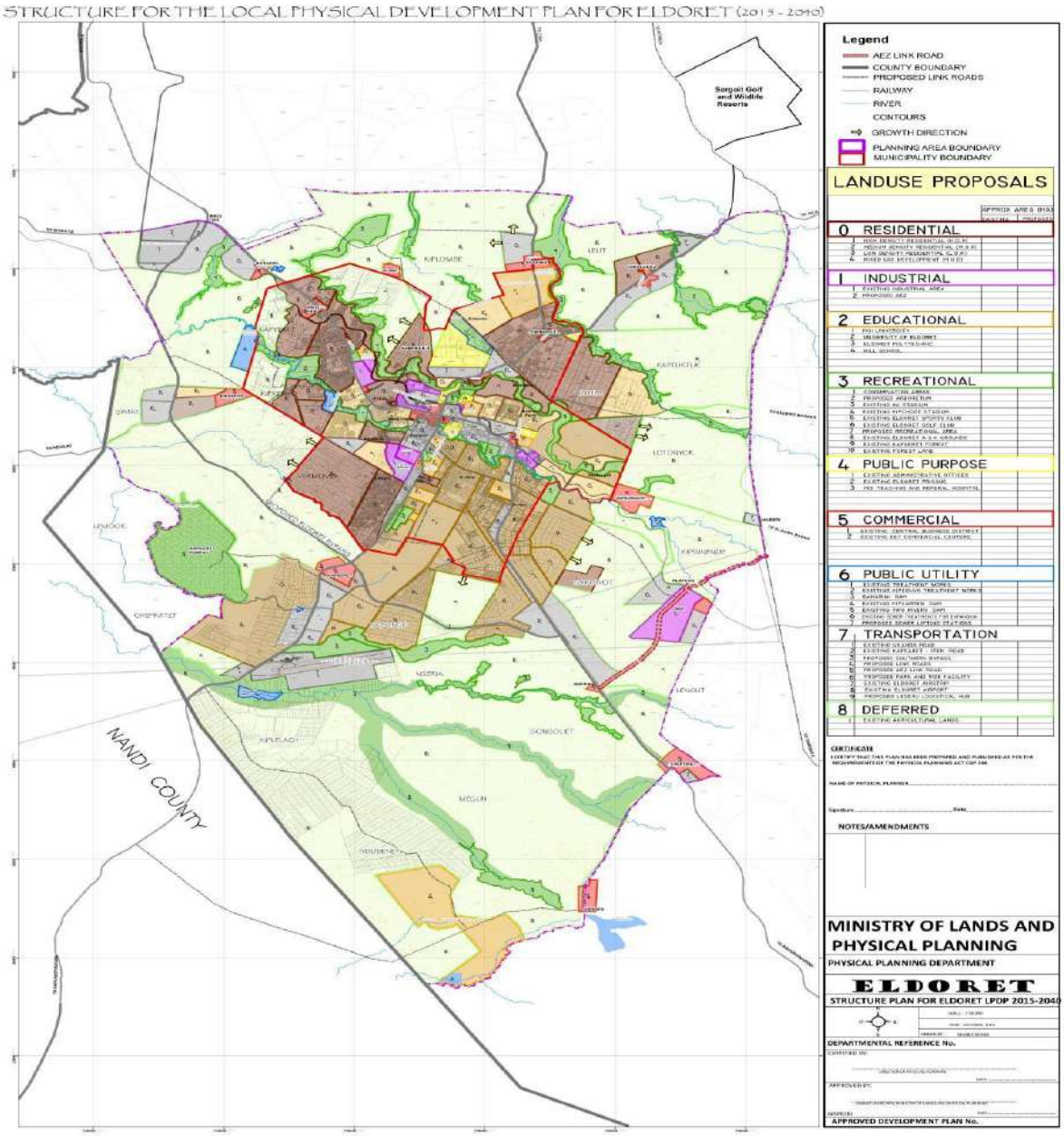
2. Projected Land Use Trends (2026–2030+)

The Urban Economic Plan (UEP) and the City Charter project a shift toward densification and industrial specialization.

- **Industrial Expansion (Focus Area 2):** The designated ICDC site to the South is being developed as a regional Eco-Industrial Hub, providing light industrial space and a logistical hub to decongest the CBD.

- **Smart City Growth:** Projected 2030 scenarios show the integration of vertical green spaces and a "15-minute transport hub" to optimize urban density.
- **Agricultural Declassification:** While residents expressed concern over farmlands, the city is projecting to expand boundaries toward Kapsaret and Leseru to accommodate an urban area expected to reach 154 km^2 by 2029.
- **Skyline Transformation:** New zoning allows for buildings up to 17-20 floors, significantly increasing floor-area ratios in the CBD.

CURRENT ELDORET CITY LAND USE PLAN



3. Strategic Land Use Framework

According to the Eldoret Final Draft Plan (2026), future development follows three tiers:

1. Immediate (Years 1–2): CBD regeneration, expansion of the NMT network, and smart street lighting.
2. Medium Term (Years 5–10): Development of the Regional Eco-Industrial Hub and Eastern Bypass connectivity.
3. Long Term (Years 10+): Expansion into Leseru and Kapsaret sites as new urban secondary centers.

- **Key Stakeholders & Inclusiveness**

Stakeholder engagement was a core part of preparing an Urban Climate Risk Profile (UCRP) because climate risks affect different groups in different ways. The process is usually participatory and structured, and it happens at several stages as outlined below:

1. Stakeholder Identification and Mapping

Relevant stakeholders are first identified and mapped based on their roles, influence, and vulnerability to climate risks. These typically include:

1. County and City Government Departments

a. Environment: Lead climate hazard monitoring, biodiversity protection, and pollution control. Provide baseline environmental data for risk profiles.
b. Planning: Integrate climate risk into land use, zoning, and urban development plans. Ensure resilience is mainstreamed in spatial planning.
c. Water: Assess water resource vulnerability, manage supply systems, and plan for drought/flood resilience.
d. Health: Track climate-sensitive diseases, heat stress, and public health risks. Develop adaptation strategies for hospitals and clinics.
e. Disaster Management: Coordinate early warning systems, emergency response, and community preparedness.
f. Infrastructure: Evaluate vulnerability of roads, drainage, housing, and utilities. Prioritize resilient construction and retrofitting.

2. National Government Agencies and Regulators

a. Provide policy frameworks (e.g., climate change acts, building codes).
b. Supply technical data (meteorology, hydrology, agriculture).
c. Regulate compliance with environmental standards.
d. Channel national funding and coordinate with county governments.

3. Community Leaders, Residents' Associations, Informal Settlement Representatives

a. Offer local knowledge of hazards and vulnerabilities.
b. Mobilize residents for participatory risk mapping.
c. Advocate for equitable adaptation measures in marginalized areas.
d. Strengthen trust between government and communities.

4. Private Sector Actors

i. **Utilities**: Ensure resilient energy and water supply systems.
ii. **Developers**: Adopt climate-smart construction standards.
iii. **Transport Operators**: Plan for disruptions and contribute to resilient mobility systems.
iv. **Industries**: Reduce emissions, manage waste, and invest in adaptation technologies.

5. Civil Society Organizations, NGOs, CBOs, Faith-Based Groups

a. Facilitate community awareness and training.
b. Implement grassroots adaptation projects.
c. Advocate for vulnerable groups (women, youth, informal workers).
d. Faith-based groups provide moral leadership and mobilize resources for resilience.

6. Academia, Research Institutions, Climate Experts

a. Generate localized climate models and hazard scenarios.
b. Provide evidence-based recommendations for policy and planning.
c. Train professionals and build technical capacity.
d. Monitor and evaluate adaptation interventions.

7. Development Partners and Donors

a. Fund climate resilience projects and infrastructure.
b. Provide technical assistance and global best practices.
c. Support capacity building and institutional strengthening.
d. Encourage alignment with international frameworks (SDGs, Paris Agreement).

8. Business Community

a. Invest in resilient supply chains and climate-smart enterprises.
b. Support insurance and financial products for risk management.
c. Partner with government on public-private adaptation initiatives.

9. Special Interest Groups (e.g., Hindu, Islam)

a. Mobilize faith-based networks for awareness and action.
b. Provide social safety nets during climate shocks.

c. Advocate for ethical stewardship of the environment.
d. Strengthen inclusivity by ensuring diverse voices in resilience planning.

This ensures inclusive representation, especially of vulnerable and marginalized groups.

2. Inception and Sensitization Meetings

At the beginning of the process, inception meetings were held to:

a. Explain the purpose and scope of the Urban Climate Risk Profile
b. Build a common understanding of climate risks and urban vulnerability
c. Agree on roles, timelines, and expectations
d. Secure stakeholder buy-in and ownership

These meetings help align the UCRP with existing city plans and policies.

3. Participatory Data Collection

Stakeholders are actively involved in gathering both qualitative and quantitative data through:

a. Key informant interviews with technical officers and sector leads
b. Community consultations and focus group discussions
c. Participatory risk mapping and hazard identification
d. Sharing of local knowledge on historical climate events, impacts, and coping strategies

Community input is especially valuable in identifying localized risks such as flooding hotspots, heat stress areas, or water shortages.

4. Validation of Climate Risks and Vulnerabilities

Draft findings on climate hazards, exposure, and vulnerability are shared with stakeholders through validation workshops.

a. Stakeholders review and confirm identified risks
b. Gaps and inaccuracies are corrected
c. Sector-specific vulnerabilities are refined
d. Priority risk areas and populations are agreed upon

This step strengthens the accuracy and credibility of the profile.

5. Co-development of Risk Reduction and Adaptation Options

Stakeholders jointly propose and prioritize adaptation and resilience measures, such as:

a. Urban planning and zoning interventions
b. Infrastructure upgrades
c. Nature-based solutions
d. Early warning and disaster preparedness measures
e. Policy and institutional reforms

This ensures proposed actions are practical, locally relevant, and implementable.

6. Integration with Policy and Planning Frameworks

Technical officers and decision-makers are engaged to align the UCRP with:

a. County Integrated Development Plans (CIDPs)
b. City spatial plans and master plans
c. Climate Change Action Plans (CCAPs)
d. Disaster Risk Management frameworks

This promotes mainstreaming of climate risk into development planning.

7. Feedback, Communication, and Dissemination

Once finalized, the Urban Climate Risk Profile is shared widely with stakeholders through:

a. Public forums and stakeholder briefings
b. Simplified summaries for communities
c. Policy briefs for leaders and planners

Stakeholder feedback is documented and informs future updates of the profile.

8. Continuous Engagement and Learning

Engagement does not end with the report. Stakeholders remain involved in:

a. Monitoring climate risks and impacts
b. Updating the profile over time
c. Supporting implementation of adaptation actions

In summary, stakeholders were engaged through a participatory, inclusive, and iterative process that build local ownership, improves data quality, and ensures the Urban Climate Risk Profile is practical for decision-making and climate-resilient urban development.

	High Influence – Low Interest *(Key players who have power over decisions but may not be directly engaged unless sensitized)* ● County Executive Committee Members (non-environment sectors) ● County Treasury / Finance Department ● National Government line ministries (not climate-focused)	**High Influence – High Interest** *(Core stakeholders – must be closely engaged and involved throughout)* ● County Department of Environment and Climate Change ● City Management / Municipal Board ● County Department of Physical and Urban Planning ● County Disaster Risk Management Unit

	• Major utility boards (water, electricity) • Large private developers and real estate investors • Transport and infrastructure authorities	• Water and Sanitation Departments / Utilities • Public Health Department • National Environment Management Authority (NEMA) • Meteorological Department (e.g. Kenya Meteorological Department) • Development partners supporting climate or urban programs
	Low Influence – Low Interest *(Stakeholders with limited power and limited engagement unless awareness is raised)* • General urban residents not in high-risk areas • Small informal traders outside climate hotspot zones • Some community groups with limited climate awareness • Local institutions not directly linked to urban services	**Low Influence – High Interest** *(Highly affected and motivated stakeholders – critical for local knowledge)* • Residents of informal settlements and flood-prone areas • Community-based organizations (CBOs) • Women, youth, elderly, and persons with disabilities groups • Small-scale farmers and urban livestock keepers • Faith-based organizations involved in community support • Local NGOs working on environment, health, or livelihoods

Table 2: Stakeholder identification summary

Stakeholder Mapping for Eldoret City

1. Government and Public Institutions

Table 2.1: Government and Public Institutions

Stakeholder	Role in Climate Risk Profiling	Influence	Interest
Eldoret City Management / Municipal Board	Overall coordination, policy direction, approval of outputs	High	High

Uasin Gishu County Dept. of Environment & Climate Change	Technical lead, data provision, climate analysis	High	High
County Dept. of Physical & Urban Planning	Spatial data, land-use planning integration	High	High
County Disaster Risk Management Unit	Risk identification, preparedness planning	High	High
County Dept. of Water, Irrigation & Sanitation	Flood, drainage, and water stress data	High	High
County Dept. of Health	Climate-related health impacts data	Medium	High
County Dept. of Roads, Transport & Public Works	Infrastructure exposure and vulnerability	High	Medium
County Treasury & Economic Planning	Resource allocation, budgeting	High	Medium

2. National Government Agencies

Table 2.2**:** National Government Agencies

Stakeholder	Role		Influence	Interest
Kenya Meteorological Department (KMD)	Climate data, projections, trends		High	High
National Environment Management Authority (NEMA)	Environmental regulation, compliance		High	Medium
Ministry of Environment, Climate Change & Forestry	Policy alignment, national guidance		High	Medium
Water Resources Authority (WRA)	River basin and flood management data		Medium	High
Kenya Urban Roads Authority (KURA)	Urban road infrastructure data		Medium	Medium

3. Utilities and Parastatals

Stakeholder	Role	Influence	Interest
Eldoret Water and Sanitation Company (ELDOWAS)	Water supply, sewerage, flood risk input	High	High
Kenya Power & Lighting Company (KPLC)	Power infrastructure vulnerability	Medium	Medium
Kenya Pipeline Company (KPC)	Critical infrastructure risk	Medium	Medium

Table 2.3: Utilities and Parastatals

4. Non-State Actors (Civil Society, NGOs, Academia)

Table 2.4: Non-State Actors (Civil Society, NGOs, Academia)

Stakeholder	Role	Influence	Interest
Local & International NGOs (climate, environment, DRR)	Community engagement, vulnerability data	Medium	High
Community-Based Organizations (CBOs)	Local knowledge, participatory mapping	Low	High
Faith-Based Organizations	Community mobilization and awareness	Low	Medium
Universities & Research Institutions (e.g. Moi University)	Research, data analysis, validation	Medium	High

5. Private Sector

Table 2.5: Private sector

Stakeholder	Role	Influence	Interest
Real Estate Developers	Urban growth and exposure trends	High	Medium
Industrial Area Associations	Risk to economic assets	Medium	Medium
Transport Operators (PSVs, logistics firms)	Climate impact on mobility	Medium	Low
Insurance Companies	Risk modeling and loss data	Medium	Medium

6. Communities and Vulnerable Groups

Table 2.6: Communities and vulnerable groups

Stakeholder	**Role**	**Influence**	**Interest**
Residents of flood-prone and informal settlements	**Lived experience of climate risks**	**Low**	**High**
Women, Youth, Elderly, PWD groups	**Social vulnerability perspectives**	**Low**	**High**
Urban farmers and informal traders	**Livelihood vulnerability insights**	**Low**	**High**

Stakeholder Influence–Interest Summary (Matrix View)

- High Influence – High Interest:
  City Management, Environment & Climate Change Dept., Planning Dept., DRM Unit, ELDOWAS, KMD
- High Influence – Low/Medium Interest:
  County Treasury, Roads & Infrastructure Dept., Real Estate Developers
- Low Influence – High Interest:
  Informal settlement residents, CBOs, women & youth groups, urban farmers
- Low Influence – Low Interest:
  General public outside risk hotspots

Figure 3. Stakeholder engagement

2. Hazard Assessment

The Hazard Assessment section identifies and evaluates the key climate-related hazards that pose risks to Eldoret City. It examines historical and projected trends in rainfall, temperature, drought, and water availability to determine the frequency, intensity, and potential impact of each hazard. By analyzing these indicators using local meteorological, hydrological, and environmental data, the assessment categorizes hazards into low, medium, and high levels. This provides a foundation for understanding the city's exposure to climate risks and informs the development of targeted adaptation and resilience strategies.

Key Climate Hazards

For **Eldoret City**, the key climate hazards were identified based on its geography, climate patterns, and urban infrastructure. Based on available data and common climate risks in Uasin Gishu County, the main hazards are:

1. **Urban Flooding (Pluvial & Riverine Flooding)** – Caused by heavy rainfall, inadequate drainage, and river overflow, especially in low-lying urban areas.
2. **Extreme Rainfall Events** – Short-duration, high-intensity rainfall leading to flash floods and damage to infrastructure.
3. **Heat Stress / Rising Temperatures** – Increasing frequency of hot days and heatwaves affecting health, energy demand, and productivity.
4. **Drought / Prolonged Dry Spells** – Extended periods of below-average rainfall affecting agriculture, water supply, and livelihoods.
5. **Water Stress / Water Scarcity** – Reduced water availability due to over-extraction, erratic rainfall, and population growth.

Table 2.1 Hazard screening for Eldoret City

Hazard	Hazard Likely (Y/N)	Significant Impact (Y/N)	High Priority (Y/N)	Key Hazard (Y/N)
Heat Stress				
Average surface temperature increase	Y	Y	Y	Y
Average ocean temperature increase	Y	Y	Y	Y
Extreme heat	Y	Y	Y	Y
Marine heatwaves	N	N	N	N
Average surface temperature during winter	Y	Y	N	N
Extreme cold (e.g., cold spells, frost)	Y	Y	N	N
Snowfall and ice storms	N	N	N	N

Changes in precipitation patterns	Y	Y	Y	Y
Pluvial (surface level) flooding, including flash flooding and urban flooding	Y	Y	Y	Y
Fluvial (river) flooding	Y	Y	Y	Y
Sea level rise	N	N	N	N
Coastal flooding, including storm surges	N	N	N	N
Waterlogging	Y	Y	Y	Y
Drought (meteorological, hydrological)	Y	Y	Y	Y
Groundwater salinization	N	N	N	N
Saline intrusion	N	N	N	N
Wildfires & bushfires	Y	Y	N	N
Extreme wind	Y	Y	N	N
Tropical cyclones	N	N	N	N
Sand and dust storms	Y	Y	N	N
Hailstorms	Y	Y	N	N
Landslides	Y	Y	N	N
Coastal erosion	N	N	N	N
Gully erosion	Y	Y	Y	Y
Ocean acidification	N	N	N	N
Subsidence	Y	Y	N	N
Earthquakes	Y	Y	N	N
Volcanos	N	N	N	N

** These hazards, if present, can be highly impactful and are therefore included in the screening step, as they may significantly influence the urban planning informed by this urban climate risk profile.*

Climate Indicators and Hazard Thresholds

Table 2.2. Climate indicators and hazard thresholds

Key Hazard *Climate indicators and hazard thresholds selected for the assessment*	**Climate indicator**	**Data source**	**Threshold**		
			Low	**Medium**	**High**
Urban Flooding (Pluvial & Riverine)	Daily rainfall intensity, river water level	Kenya Meteorological Dept., County Drainage Dept., Historical flood records	<30 mm/day or river < 50% bankfull	30–50 mm/day or river 50–90% bankfull	>50 mm/day or river > bankfull
Extreme Rainfall Events	Maximum 24h rainfall	KMD, Satellite rainfall datasets	<35 mm/day	35–50 mm/day	High: >50 mm/day
Heat Stress / Rising Temperatures	Maximum daily temperature, number of heatwave days	KMD, Local weather stations	Max temp <32°C, <3 heatwave days/year	32–36°C, 3–5 heatwave days/year	>36°C, >5 heatwave days/year
Drought / Prolonged Dry Spells	Consecutive dry days, soil moisture deficit	KMD, FAO,County Agricultural Department	<10 consecutive dry days	10–20 consecutive dry days	>20 consecutive dry days
Water Stress / Water Scarcity	Monthly water availability vs demand,	County Water Dept., Kenya Water	Water availability >80% of demand	50–80% of demand	<50% of demand

	reservoir levels	Resources Authority

Source: Kenya Meteorological Department (KMD), IPCC AR6 Climate Projections, World Bank Climate Change Knowledge Portal

Current Hazard Levels and Climate Projections

3.1 National and downscaled climate change projections

Climate change has increased the frequency and magnitude of extreme weather events in Kenya that have led to loss of lives, diminished livelihoods, reduced crop and livestock production, and damaged infrastructure, among other adverse impacts. Below is the climate change projections over years (USAID, 2018).

3.1.1 Temperature

In response to increasing greenhouse gas (GHG) concentrations, air temperature over Kenya is projected to rise by 1.2 to 3.2 °C (very likely range) by 2080 relative to the year 1876, depending on the future GHG emissions scenario (Figure 6). Compared to pre-industrial levels, median climate model temperature increases over Kenya amount to approximately 1.4°C in 2030 and 1.7 °C in both 2050 and 2080 under the low emissions scenario RCP2.6. Under the medium/high emissions scenario RCP6.0, median climate model temperature increases amount to 1.3 °C in 2030, 1.6 °C in 2050 and 2.2 °C in 2080

For Eldoret City, the hazard level is considered moderate to high due to its exposure to multiple climate-related risks such as flooding from heavy rainfall, droughts affecting water supply and agriculture, and increasing urban heat stress. The city's rapid urbanization, coupled with informal settlements and inadequate drainage infrastructure, amplifies vulnerability to these hazards.

Climate projections indicate that average temperatures in Eldoret are expected to rise steadily over the coming decades, with increases of about 1.5–2.0°C by mid-century under moderate emission scenarios. This warming trend will likely intensify heatwaves, alter rainfall patterns, and exacerbate water stress, while also influencing agricultural productivity and public health outcomes. These projections underscore the need for proactive adaptation measures in urban planning, water management, and health systems to safeguard Eldoret's resilience

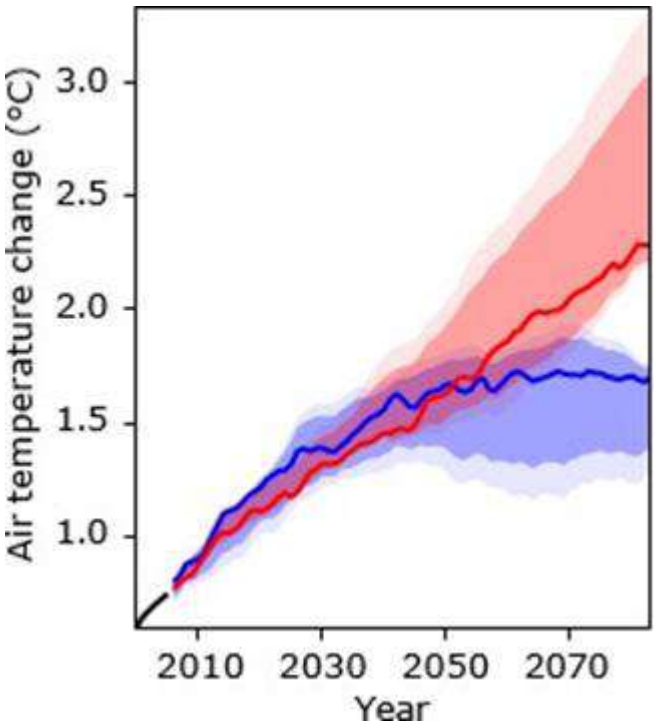


Figure 6: Air temperature projections for Kenya for different GHG emissions scenarios

3.1.1 Very hot days

In line with rising mean annual temperatures, the annual number of very hot days (days with daily maximum temperature above 35 °C) is projected to rise substantially and with high certainty, in particular over central and eastern Kenya (Figure 7). Under the medium/high emissions scenario RCP6.0, the multi-model median, averaged over the whole country, projects 25 more very hot days per year in 2030 than in 2000, 36 more in 2050 and 59 more in 2080. In some parts, especially in northern and eastern Kenya, this amounts to about 300 days per year by 2080

For Eldoret City, the hazard level related to very hot days is rising, though historically the city's high-altitude location has moderated extreme heat. With ongoing climate change, projections show a significant increase in the frequency and intensity of very hot days (days exceeding 30°C). By mid-century, under moderate emission scenarios, Eldoret could experience two to three times more very hot days annually compared to the historical baseline.

This shift will heighten risks of heat stress in vulnerable populations, strain on water and energy systems, and reduced agricultural productivity, especially for dairy and maize which are sensitive to heat extremes. Urban areas with limited green cover and poor ventilation—such as informal settlements—will be disproportionately affected. These projections emphasize the need for heat action plans, climate-smart urban design, and improved public health preparedness to safeguard Eldoret's resilience against rising temperatures

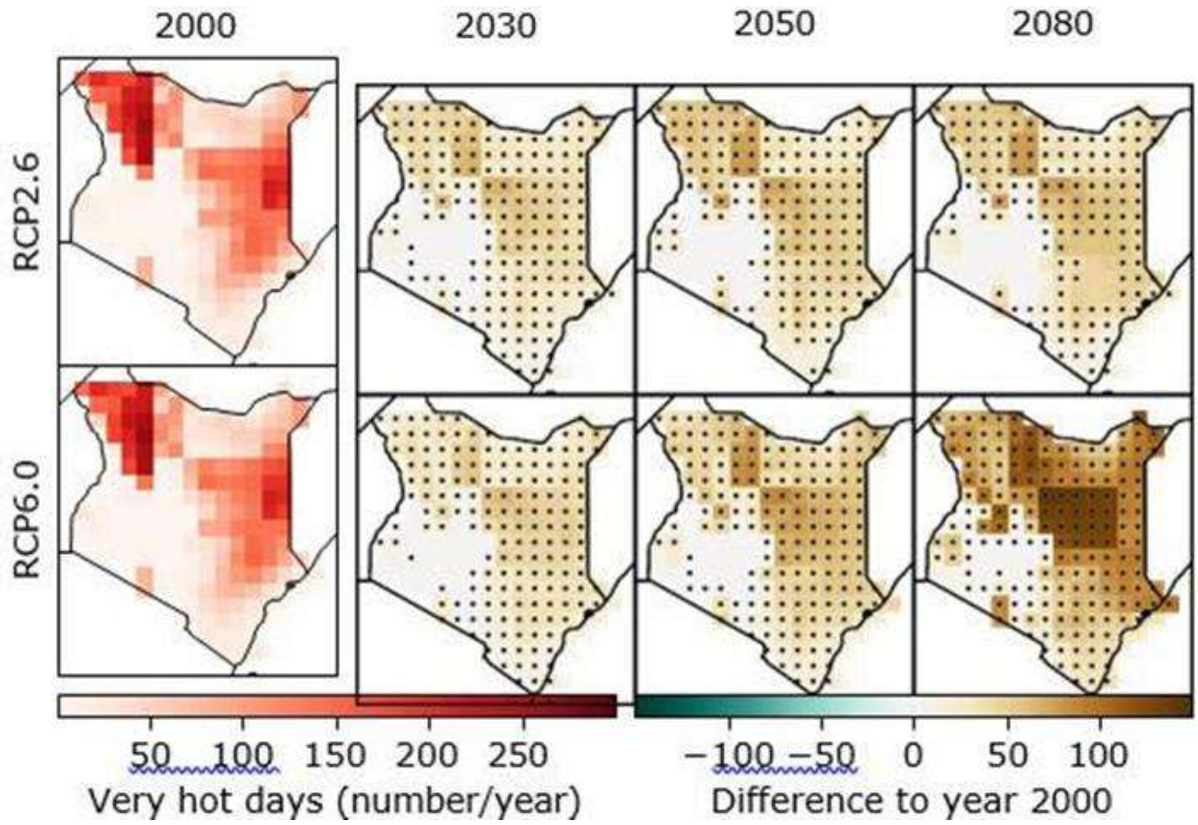


Figure 5: Projections of the annual number of very hot days (daily maximum temperature above 35 °C) for Kenya for different GHG emissions scenarios.

3.1.1 Precipitation

Future projections of precipitation are less certain than projections of temperature change due to high natural year-to-year variability (Figure 8). Out of the three climate models underlying this analysis, one model projects no change to a slight decrease in mean annual precipitation over Kenya under RCP6.0, while the other two models project an increase under the same scenario. Under RCP2.6, median model projections indicate a slight in- crease towards the year 2030 but an overall decrease towards the end of the century. Under RCP6.0, the projected precipitation increase is likely to intensify after 2050, reaching 53 mm per year at the end of the century compared to year 2000. Higher concentration pathways suggest an overall wetter future for Kenya.

For Eldoret City, the hazard level related to precipitation is moderate to high, driven by increasingly erratic rainfall patterns. Historically, Eldoret has benefited from relatively reliable rainfall that supports agriculture, but climate change projections show greater variability—shorter, more intense rainfall events alongside prolonged dry spells. This raises risks of urban flooding, particularly in areas with poor drainage and informal settlements, as well as drought stress that threatens water supply and agricultural productivity.

Climate projections suggest that Eldoret will experience more frequent extreme rainfall events by mid-century, with heavier downpours concentrated in shorter periods. This intensification increases flood hazard, soil erosion, and contamination of water sources, while also complicating

water resource management. Conversely, longer dry spells between rains will heighten drought risk, affecting both rural and urban livelihoods. These shifts underscore the need for integrated water resource management, resilient drainage infrastructure, and community-based flood preparedness to reduce vulnerability and strengthen resilience

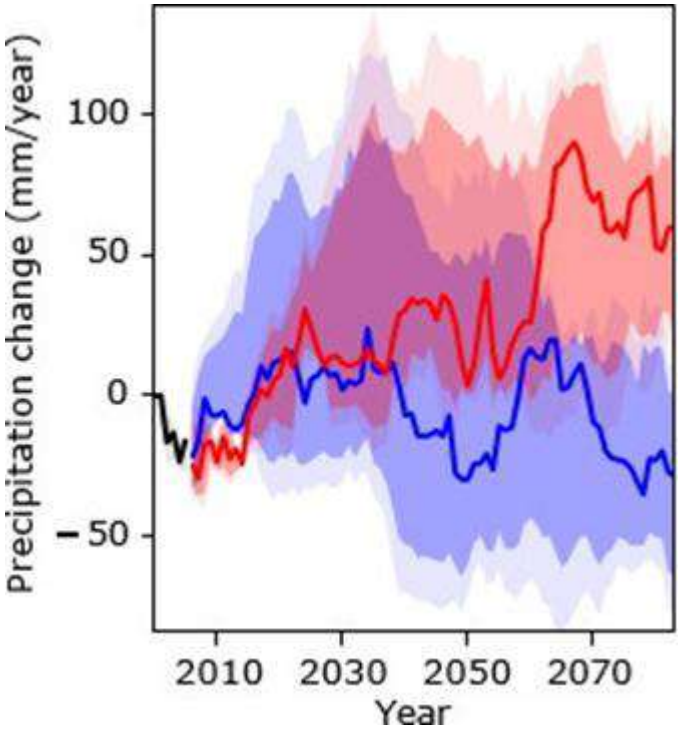


Figure 6: Annual mean precipitation projections for Kenya for different GHG emissions, relative to year 2000

3.1.1 Heavy precipitation events

In response to global warming, heavy precipitation events are expected to become more intense in many parts of the world due to the increased water vapor holding capacity of a warmer atmosphere. At the same time, the number of days with heavy precipitation events is expected to increase. This tendency is also found in climate projections for Kenya (Figure 9), with climate models projecting an increase in the number of days with heavy precipitation, from 7 days per year in 2000 to 9 days per year in 2080 under RCP6.0. Under RCP2.6, the number of days with heavy precipitation remains unchanged.

For Eldoret City, the hazard level related to heavy precipitation events is high, given the city's growing exposure to intense rainfall episodes. Historically, rainfall has been relatively well-distributed, but climate change projections indicate an increase in the frequency and intensity of heavy downpours, often concentrated in shorter periods. These events significantly raise the risk of urban flooding, especially in low-lying areas and informal settlements with inadequate drainage, while also contributing to soil erosion and damage to infrastructure.

Climate projections suggest that by mid-century, Eldoret could experience more frequent extreme rainfall days, with higher peak intensities compared to the past. This will challenge stormwater

management systems, overwhelm existing drainage, and increase contamination risks for water supplies. The impacts will be felt across sectors—transport disruptions, agricultural losses, and heightened public health risks from waterborne diseases. These trends highlight the urgent need for resilient drainage infrastructure, floodplain management, and community-based preparedness programs to reduce vulnerability and strengthen adaptive capacity

3.1.1 Potential evapotranspiration

Potential evapotranspiration is the amount of water that would be evaporated and transpired if sufficient water was available at and below the land surface. Since warmer air can hold more water vapor, it is expected that global warming will increase potential evapotranspiration in most regions of the world. In line with this expectation, hydrological projections for Kenya indicate a stronger and more continuous rise of potential evapotranspiration under RCP6.0 than under RCP2.6 (Figure 11). Under RCP6.0, potential evapotranspiration is projected to increase by 1.9 % in 2030, 3.0 % in 2050 and 4.5 % in 2080 compared to year 2000 levels.

For Eldoret City, the hazard level related to potential evapotranspiration (PET) is increasing, as rising temperatures and shifting rainfall patterns intensify atmospheric demand for water. Historically, PET has been moderated by the city's cooler highland climate, but climate projections indicate that higher average temperatures and longer dry spells will drive up evapotranspiration rates. This means soils, crops, and water bodies will lose moisture more rapidly, reducing water availability for agriculture, domestic use, and ecosystems.

By mid-century, under moderate emission scenarios, Eldoret is expected to experience significant increases in PET, particularly during the dry season. This will heighten drought risk, stress irrigation systems, and reduce crop yields—especially for water-sensitive crops like maize and dairy fodder. Elevated PET also compounds the impacts of reduced rainfall reliability, making water resource management more challenging. These trends underscore the need for climate-smart agriculture, efficient irrigation technologies, and integrated watershed management to sustain livelihoods and urban resilience in Eldoret

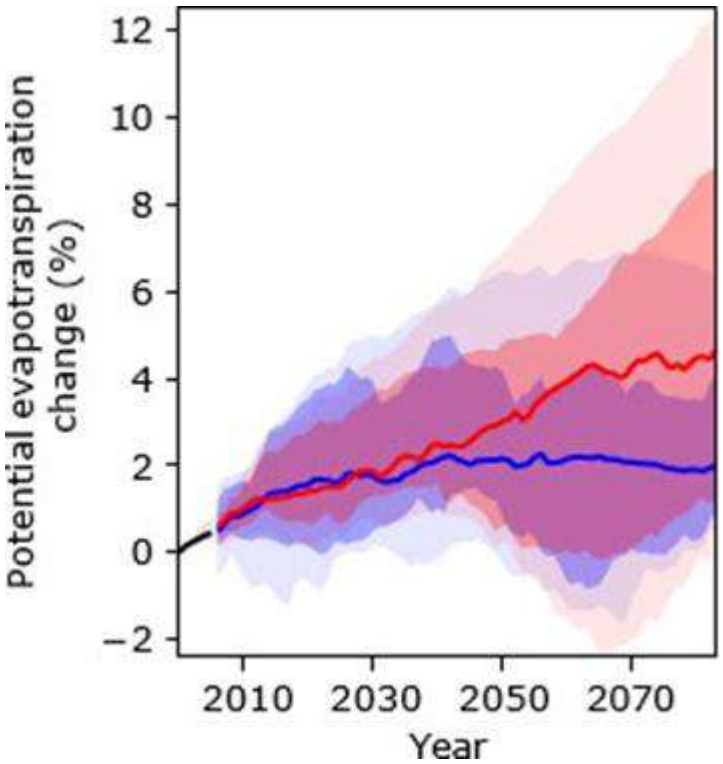


Figure 7: Potential evapotranspiration projections for Kenya for different GHG emissions scenarios, relative to the year 2000

Table 3.1. Current and future hazards levels for Eldoret City

			Hazard Level		
Hazard	**Current (Baseline)**	**2050 SSP2-4.5**	**2050 SSP5-8.5**	**2100 SSP2-4.5**	**2100 SSP5-8.5**
Urban Flooding (Pluvial & Riverine)	Medium-High	High	High	High	Very High
Extreme Rainfall Events	Medium	High	High	High	Very High
Heat Stress / Rising Temperatures	Low-Medium	Medium	Medium-High	High	Very High
Drought / Prolonged Dry Spells	Medium	Medium-High	High	High	Very High
Water Stress / Water Scarcity	Medium	High	High	High	Very High

For this Urban Climate Risk Profile, hazard levels should be interpreted in accordance with the table below.

Table 3.2. Interpretation of hazard levels

Level	Interpretation
High	Hazard events that are likely to occur with high frequency and/or intensity
Medium	Hazard events that are likely to occur with moderate frequency and/or intensity
Low	Hazard events that are likely to occur with low frequency and/or intensity

Interpretation

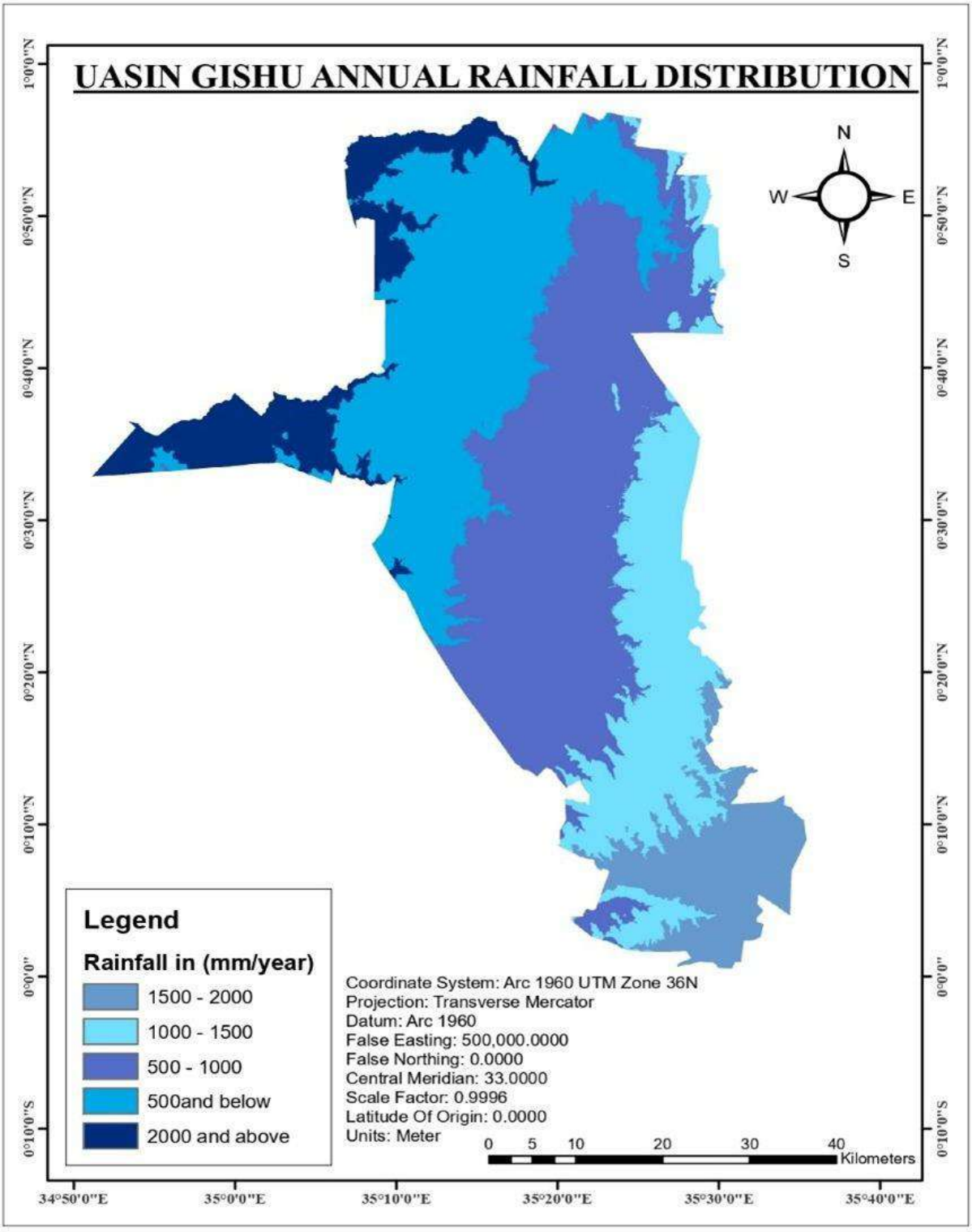
-Under **SSP2-4.5 (moderate emissions)**, Eldoret City is projected to experience **gradual but significant increases** in flood, heat, and water-related hazards by mid-century, stabilizing at high levels by 2100.

-Under **SSP5-8.5 (high emissions)**, hazards intensify more rapidly, with **very high flood, heat stress, drought, and water scarcity risks by 2100**, driven by stronger warming, more intense rainfall events, and longer dry spells.

-Flooding and water stress emerge as the **dominant long-term risks**, amplified by urban expansion, drainage limitations, and population growth.

Current and Future Hazard Impact Areas

This section spatially breaks down the climate risk projections into smaller geographical planning units, linking to the main livelihood and economic sectors


UASIN GISHU ANNUAL RAINFALL DISTRIBUTION
N
W
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Rainfall in (mm/year)
1500 - 2000
1000 - 1500
500 - 1000
500and below
2000 and above
Coordinate System: Arc 1960 UTM Zone 36N
Projection: Transverse Mercator
Datum: Arc 1960
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: 33.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter
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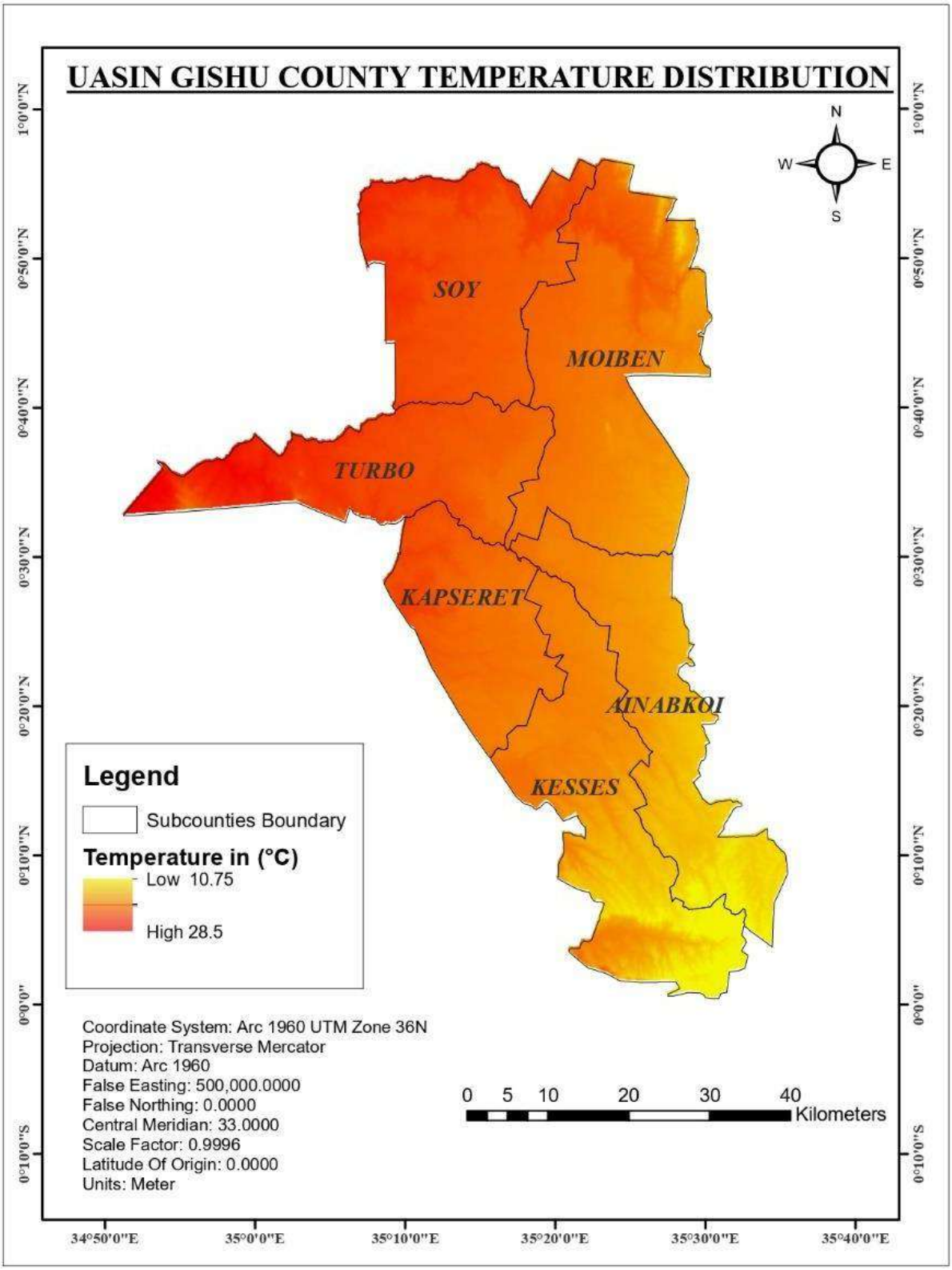

Figure 8: Uasin Gishu Temparature Distribution

3. Exposure & Vulnerability Assessment

This section presents the **Exposure and Vulnerability Assessment** for Eldoret City, focusing on how people, infrastructure, services, and ecosystems are affected by identified climate hazards. It examines the spatial distribution of exposed populations and assets, alongside social, economic, and environmental factors that influence their sensitivity and capacity to cope with climate impacts. By integrating hazard information with exposure and vulnerability characteristics, the assessment highlights priority areas, groups, and systems most at risk, providing a basis for targeted and inclusive climate resilience and adaptation planning in Eldoret City.

Urban Elements

1. Commercial Areas

Sub-category	Included	Description
Central Business District (CBD)	Yes	Eldoret CBD hosts banks, retail shops, offices, hotels, markets, and county administrative offices with high daytime population and traffic congestion.
Local markets	Yes	Major markets such as Eldoret Main Market and Langas Market, consisting of permanent and semi-permanent stalls for food and household goods.
Shopping malls	Yes	Modern malls including Rupa's Mall, Daima Towers, and Zion Mall, serving retail, entertainment, and service functions.

Table 3.3 : Exposure and vulnerability for commercial areas

2. Industrial Areas

Sub-category	Included	Description
Light industry	Yes	Light manufacturing, processing plants, warehouses, and depots located mainly in Eldoret Industrial Area and along Uganda Road.
Heavy industry	No	N/A

Table 3.4 : Exposure and vulnerability for Industrial areas

3. Transportation Infrastructure

Sub-category	Included	Description
Major roads and highways	Yes	Key corridors include Uganda Road (A104), Iten Road, Kapsabet Road, and Turbo Road, facilitating regional trade and urban mobility.
Public transport terminals	Yes	Bus parks and matatu stages within the CBD and at Langas, Annex, and Pioneer, with high daily passenger volumes.

Railway lines/stations	Yes	Meter-gauge railway line and Eldoret Railway Station, primarily used for freight with limited passenger services.
Airport	Yes	Eldoret International Airport, supporting passenger travel and cargo operations.

Table 3.4 : Exposure and vulnerability for transportation infrastructure

4. Utilities and Services

Sub-category	Included	Description
Water supply systems	Yes	Managed by Eldoret Water and Sanitation Company (ELDOWAS), including treatment works, storage tanks, and distribution pipelines.
Electricity infrastructure	Yes	Substations, transformers, and overhead distribution lines operated by Kenya Power.
Waste management facilities	Yes	Solid waste collection points and disposal at Kipkenyo dumpsite, with limited waste segregation.
Sewerage systems	Yes	Partial sewer coverage within the CBD and selected estates; many areas rely on septic tanks and pit latrines.

Table 3.4 : Exposure and vulnerability for Industrial areas

5. Social Infrastructure

Sub-category	Included	Description
Schools	Yes	Public and private primary and secondary schools, as well as tertiary institutions including Moi University and University of Eldoret.
Health facilities	Yes	Major facilities such as Moi Teaching and Referral Hospital (MTRH), county hospitals, private hospitals, and clinics.
Religious buildings	Yes	Churches, mosques, and other places of worship distributed across residential and commercial areas.

Table 3.5: Exposure and vulnerability for social infrastructure

6. Public and Green Spaces

Sub-category	Included	Description
Parks and recreational areas	Yes	Public recreational spaces such as Nandi Gardens and sports grounds used for leisure and community events.
Urban forests	No	N/A

Table 3.6 : Exposure and vulnerability for public and green spaces

7. Critical Facilities

Sub-category	Included	Description
Emergency services	Yes	Police stations, fire response units, ambulance services, and disaster response facilities.
Government buildings	Yes	Uasin Gishu County headquarters, sub-county offices, and other public administration buildings.

Table 3.7: Exposure and vulnerability for critical facilities

Table 3.8 Urban elements inventory

Category	Subcategory	Included in the RCRA (Y/N)	Available in GIS format (Y/N)	Description
Infrastructure & Services				

Stormwater Drainage	Stormwater drainage conveyance network	Y	Y	Formal drains and informal channels mapped where available
	Stormwater storage	Y	N	Public and informal retention, basins, ephemeral ponds and informal flood storage areas; limited formal mapping
Water & Wastewater Management	Pumping stations	Y	Y	Water and sewer pumping stations supporting pressure and wastewater conveyance
	Groundwater abstraction	Y	N	Boreholes and wells for domestic and institutional supply; data fragmented
	Water treatment facilities	Y	Y	Centralized water treatment plants serving urban population
	Water supply networks	Y	Y	Trunk mains and distribution pipelines supplying potable water
	Sewer networks	Y	Y	Gravity and pressure sewer networks in serviced areas
	Wastewater treatment facilities	Y	Y	Sewage treatment plants and stabilization ponds
Solid Waste Management	Transfer facilities	Y	Y	Waste transfer stations and aggregation points
	Landfills and dump sites	Y	Y	Official landfills and informal dumping areas vulnerable to flooding
	Recycling centers	N	N	Small-scale and informal recycling initiatives with limited spatial data
	Collection fleet	N	N	Waste collection vehicles; mobile assets not spatially fixed
Transport and Mobility	Road networks	Y	Y	Classified road network including highways, arterial, collector, and local roads

	Bridges	Y	Y	Road and pedestrian bridges crossing rivers and drainage channels
	Public transport networks (rail, bus, mini-bus, etc.)	Y	N	Bus and matatu routes; routes not consistently georeferenced
	Transportation terminals	Y	Y	Bus parks, termini, and major transport interchanges
	Vehicle depots	N	N	Public and private vehicle yards with limited relevance to climate risk
	Non-motorized transport networks	Y	Y	Footpaths, walkways, and cycling corridors
	Freight and logistics hubs			Warehouses, depots, and logistics centers supporting trade
Energy	Energy power plants	Y	Y	Grid-connected power generation facilities
	Poles and power lines	Y	Y	Electricity transmission and distribution network
	Transformers and substations	Y	Y	Power substations and distribution transformers
	Street lighting	Y	Y	Streetlight poles and circuits along major roads
Economic Infrastructure	Markets	Y	Y	Formal and informal markets supporting livelihoods

	Businesses and commercial hubs	Y	N	Central business districts and commercial clusters
	Industrial zones/parks and logistics parks	Y	Y	Designated industrial and logistics parks
Social Infrastructure	Government buildings and service centers	Y	Y	County and national government offices and service centers
	Education facilities	Y	Y	Early childhood, primary, secondary, and tertiary institutions
	Healthcare facilities	Y	Y	Hospitals, clinics, and dispensaries
	Public spaces	Y	Y	Parks, playgrounds, and recreational open spaces
	Faith-based buildings	N	Y	Churches, mosques, and temples
	Cultural and heritage assets	N	N	Sites of historical and cultural value
Emergency Services	Fire stations	Y	Y	Fire and rescue stations
	Police stations	Y	Y	Police posts and stations
	Telecommunications networks	Y	N	Mobile and fiber networks; sensitive and limited spatial data
	Early warning systems	Y	N	Flood gauges, weather stations, and alert systems
	Disaster management centers and shelters	Y	Y	Emergency coordination centers and designated shelters
	Evacuation routes	Y	Y	Primary evacuation corridors during floods and other hazards
Populations				
Urban Residents	Population	Y	Y	Total population distribution by wards and sub-locations
	Households	Y	Y	Household counts and density

Informal Settlement Residents	Population living in informal settlements	Y	Y	Residents in informal and unplanned settlements
	Households lacking land tenure	Y	N	Households without formal tenure arrangements
	Households / residents lacking access to basic services	Y	N	Limited access to water, sanitation, drainage, and electricity
Vulnerable and Marginalized Groups	Low-income households	Y	N	Economically vulnerable households
	Women-headed households	Y	N	Households led by women
	Children and youth	Y	Y	Population under 18 and youth cohorts
	Elderly persons	Y	Y	Population aged 60 years and above
	People with disabilities (PWD)	Y	N	Persons with physical, sensory, or cognitive disabilities
	Homeless populations	N	N	Transient and undocumented populations
	Unemployed or precariously employed workers	Y	N	Informal and casual labor force
	Seasonal workers / migrant laborers	N	N	Temporary and seasonal urban residents
	Nomadic groups in peri-urban areas			Pastoral communities near urban fringe
	Urban refugees and migrants	Y	N	Refugees and migrants in urban areas
	Minority ethnic groups in urban areas	Y	N	Ethnic minorities residing in the city
Natural Assets				
Urban Green Infrastructure	Urban parks and gardens	Y	Y	Public green spaces contributing to cooling and recreation
	Green corridors	Y	N	Linear green spaces along rivers and roads
	Street landscaping	N	N	Roadside trees and vegetation
	Urban forests and forest reserves	Y	Y	Forested areas within or adjacent to the city
Urban Blue Infrastructure	Natural wetlands	Y	Y	Wetlands providing flood regulation
	Rivers	Y	Y	Permanent and seasonal rivers
	Riparian zones	Y	Y	Buffer zones along watercourses

	Lakes, ponds and reservoirs	Y	Y	Natural and artificial water bodies
	Coastal ecosystems	N	N	Not applicable for inland cities
	Urban agriculture	Y	N	Small-scale farming within urban areas
Peri-urban and Agricultural Systems	Peri-urban agriculture	Y	Y	Farming systems at the urban fringe
	Agroforestry systems	Y	N	Integrated tree–crop systems
	Forests and forest reserves	Y		Gazetted and community forests
	Protected areas and national parks	N	Y	Protected ecosystems near the city
	Savannahs and rangelands	Y	Y	Grazing and open natural landscapes

Exposure, Vulnerability, and Impacts of Climate Hazards on Urban Elements – Eldoret

Interpretation of Exposure and Vulnerability Levels

Exposure and vulnerability levels are interpreted according to the reference table provided in this assessment, where:

- **Low** = Limited exposure or high adaptive capacity
- **Medium** = Moderate exposure and/or partial adaptive capacity
- **High** = Frequent/intense exposure and low adaptive capacity

Key Climate Hazards Considered

- Flooding (riverine and urban/pluvial)
- Extreme rainfall
- Heat stress / rising temperatures
- Drought and water scarcity
- Strong winds and storms

Climate Risk Assessment by Urban Element

1. Residential Areas

Urban Element	Main Climate Hazards	Exposure	Vulnerability	Likely Impacts
Informal settlements (Langas, Munyaka, Huruma)	Flooding, extreme rainfall	High	High	Damage to housing, displacement, water contamination, increased disease outbreaks
Formal housing estates	Flooding, heat stress	Medium	Medium	Localized flooding, heat discomfort, increased cooling demand
High-rise apartments	Heat stress, strong winds	Medium	Low–Medium	Increased indoor heat, structural stress during storms

2. Commercial Areas

Urban Element	**Main Climate Hazards**	**Exposure**	**Vulnerability**	**Likely Impacts**
CBD	Flooding, extreme rainfall	Medium–High	Medium	Business disruption, traffic congestion, property damage
Markets	Flooding, heat stress	High	High	Loss of goods, health risks to traders, income disruption

Shopping malls	Heat stress	Medium	Low	Increased energy demand for cooling

3. Industrial Areas

Urban Element	Main Climate Hazards	Exposure	Vulnerability	Likely Impacts
Light industrial zones	Flooding, water scarcity	Medium	Medium	Production delays, equipment damage, reduced water availability

4. Transportation Infrastructure

Urban Element	Main Climate Hazards	Exposure	Vulnerability	Likely Impacts
Major roads & highways	Flooding, extreme rainfall	High	Medium	Road damage, traffic disruption, increased accident risk
Public transport terminals	Flooding, heat stress	High	Medium–High	Service interruptions, passenger discomfort
Railway infrastructure	Flooding	Medium	Medium	Track damage, service delays
Eldoret International Airport	Heavy rainfall, storms	Medium	Low–Medium	Flight delays, operational disruptions

5. Utilities and Services

Urban Element	Main Climate Hazards	Exposure	Vulnerability	Likely Impacts
Water supply systems	Drought, flooding	High	High	Water shortages, contamination, service interruptions
Electricity infrastructure	Storms, strong winds	Medium	Medium	Power outages, damage to overhead lines

Sewerage systems	Flooding	High	High	Overflow, environmental contamination, health risks
Solid waste facilities	Flooding	High	Medium	Waste dispersal, blocked drainage

6. Social Infrastructure

Urban Element	Main Climate Hazards	Exposure	Vulnerability	Likely Impacts
Health facilities	Flooding, heat stress	Medium	Medium	Reduced service capacity, increased patient load
Schools	Flooding, heat stress	Medium	Medium	Learning disruptions, heat-related discomfort
Religious facilities	Flooding, storms	Low–Medium	Low	Temporary access disruption

7. Public and Green Spaces

Urban Element	Main Climate Hazards	Exposure	Vulnerability	Likely Impacts
Parks and open spaces	Drought, extreme rainfall	Medium	Low	Vegetation loss, soil erosion, reduced usability

8. Critical Facilities

Urban Element	Main Climate Hazards	Exposure	Vulnerability	Likely Impacts
Emergency services	Flooding, storms	Medium	Medium	Delayed response times
Government buildings	Flooding	Medium	Low–Medium	Temporary service disruptions

Summary

- Highest risk is observed in informal settlements, markets, water and sewerage systems, due to high exposure and vulnerability.
- Flooding and extreme rainfall are the most significant climate hazards affecting Eldoret.
- Heat stress is an emerging risk, especially in dense residential and commercial areas.
- Strengthening drainage, early warning systems, land-use planning, and climate-resilient infrastructure will significantly reduce impacts.

Exposure, Vulnerability, and Impacts of Climate Hazards on Urban Elements – Eldoret

Interpretation of Exposure and Vulnerability Levels

Exposure and vulnerability levels are interpreted according to the **reference table provided in this assessment**, where:

- **Low** = Limited exposure or high adaptive capacity
- **Medium** = Moderate exposure and/or partial adaptive capacity
- **High** = Frequent/intense exposure and low adaptive capacity

Key Climate Hazards Considered

- Flooding (riverine and urban/pluvial)
- Extreme rainfall
- Heat stress / rising temperatures
- Drought and water scarcity
- Strong winds and storms

Table 3.4. Interpretation of exposure and vulnerability levels

Level	Exposure Level Interpretation	Vulnerability Level Interpretation
High	Few or no critical urban elements lie within the hazard footprint or area of impact.	The urban element is vulnerable to the climate hazard due to high natural sensitivity – considering physical and non-physical characteristics – and limited adaptive capacity.
Medium	A moderate number or a mix of low- and medium-value urban elements are located within the hazard footprint.	The urban element is somewhat vulnerable to the climate hazard due to moderate sensitivity and adaptive capacity.
Low	A large number and high-value urban elements (e.g., critical infrastructure, dense neighborhoods, major economic assets) are located within the hazard footprint.	The urban element is minimally vulnerable to the climate hazard due to limited sensitivity and/or a high degree of adaptive capacity.

For this Urban Climate Risk Profile, the following matrix summarizes likely impacts on each urban element by combining the assigned exposure and vulnerability levels.

Table 3.9. Impact Matrix

		Vulnerability Level		
		Low	**Medium**	**High**
Exposure Level	**High**	Moderate	Major	Catastrophic
	Medium	Minor	Moderate	Major
	Low	Insignificant	Minor	Moderate

Table 3.10 Exposure, Vulnerability, and Impacts of Urban Flooding (Pluvial and Riverine) on Urban Elements

Hazard: ***Urban Flooding (Pluvial and Riverine)***

Category	Exposure (Description)	Exposure Level	Vulnerability (Description)	Vulnerability Level	Impact Level
Infrastructure & Services	• Frequent clogging of drains, flash floods in CBD and residential estates	High	• Sensitivity: Poorly maintained drainage, rapid urbanization without adequate planning. Adaptive Capacity: Expansion of drainage networks, routine desilting, community clean-up programs	High	Catastrophic
Infrastructure & Services	Flooding of treatment plants, contamination of River Sosiani water sources	High	• Sensitivity: Aging sewer lines, limited treatment capacity. Adaptive Capacity: Upgrading treatment facilities, emergency water trucking, resilient designs	High	Catastrophic
Infrastructure & Services	• Waste blocking drains, spread of debris during floods	Medium	• Sensitivity: Inadequate collection systems, illegal dumping in river valleys. Adaptive Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws	Medium	Moderate
Infrastructure & Services	Flooded roads, disruption of matatu and boda boda transport	High	• Sensitivity: Poor road drainage, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, improved drainage, flood-resilient transport planning	High	Catastrophic

Infrastructure & Services	• Damage to power lines, substations near flood-prone areas	Medium	• Sensitivity: Above-ground distribution lines, limited redundancy. Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources	Medium	Moderate
Infrastructure & Services	Flooding of markets (e.g., Eldoret Main Market), industries along Sosiani River	High	• Sensitivity: Poor location planning, lack of insurance coverage. Adaptive Capacity: Relocation of businesses, insurance uptake, resilient construction	High	Catastrophic
Infrastructure & Services	• Schools, hospitals (e.g., Moi Teaching & Referral Hospital) affected by flooding	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Flood-proofing, emergency response plans, disaster drills	High	Catastrophic
Infrastructure & Services	Disruption of police, fire, and ambulance services during floods	Medium	• Sensitivity: Limited resources, poor coordination. Adaptive Capacity: Training, equipment upgrades, contingency planning	Medium	Moderate
Infrastructure & Services	• Frequent clogging of drains, flash floods in CBD and residential estates	High	• Sensitivity: Poorly maintained drainage, rapid urbanization without adequate planning. Adaptive Capacity: Expansion of drainage networks, routine desilting, community clean-up programs	High	Catastrophic
Infrastructure & Services	Flooding of treatment plants, contamination of River Sosiani water sources	High	• Sensitivity: Aging sewer lines, limited treatment capacity. Adaptive Capacity: Upgrading treatment facilities, emergency water trucking, resilient designs	High	Catastrophic

Infrastructure & Services	• Waste blocking drains, spread of debris during floods	Medium	• Sensitivity: Inadequate collection systems, illegal dumping in river valleys. Adaptive Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws	Medium	Moderate
Infrastructure & Services	Flooded roads, disruption of matatu and boda boda transport	High	• Sensitivity: Poor road drainage, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, improved drainage, flood-resilient transport planning	High	Catastrophic
Infrastructure & Services	• Damage to power lines, substations near flood-prone areas	Medium	• Sensitivity: Above-ground distribution lines, limited redundancy. Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources	Medium	Moderate
Infrastructure & Services	Flooding of markets (e.g., Eldoret Main Market), industries along Sosiani River	High	• Sensitivity: Poor location planning, lack of insurance coverage. Adaptive Capacity: Relocation of businesses, insurance uptake, resilient construction	High	Catastrophic
Infrastructure & Services	• Schools, hospitals (e.g., Moi Teaching & Referral Hospital) affected by flooding	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Flood-proofing, emergency response plans, disaster drills	High	Catastrophic
Populations					
Urban Residents	• Severe flooding, displacement in areas like Langas and Munyaka	Very High	• Sensitivity: Poor housing, lack of basic services. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic

	Higher risk of injury, disease, loss of livelihoods	High	• Sensitivity: Poverty, limited mobility, lack of social safety nets. Adaptive Capacity: Targeted support, social protection programs, inclusive disaster planning	High	Catastrophic
Informal Settlement Residents	• Severe flooding, displacement in areas like Langas and Munyaka	Very High	• Sensitivity: Poor housing, lack of basic services. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic
	Higher risk of injury, disease, loss of livelihoods	High	• Sensitivity: Poverty, limited mobility, lack of social safety nets. Adaptive Capacity: Targeted support, social protection programs, inclusive disaster planning	High	Catastrophic
Vulnerable and Marginalized Groups	• Severe flooding, displacement in areas like Langas and Munyaka	Very High	• Sensitivity: Poor housing, lack of basic services. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic
Natural					
Urban Green Infrastructure	• Damage to parks, vegetation, soil erosion	Medium	• Sensitivity: Poor maintenance, encroachment on green spaces. Adaptive Capacity: Reforestation, green design, conservation initiatives	Medium	Moderate
	River Sosiani and tributaries overflowing, flash floods	High	• Sensitivity: Encroachment on riparian land, pollution. Adaptive Capacity: River restoration, enforcement of buffer zones, floodplain management	High	Catastrophic

Urban Blue Infrastructure	• Crop loss, soil erosion in surrounding farmlands	High	• Sensitivity: Poor drainage, monoculture practices. Adaptive Capacity: Diversified farming, improved irrigation, soil conservation measures	High	Catastrophic
	Damage to parks, vegetation, soil erosion	Medium	• Sensitivity: Poor maintenance, encroachment on green spaces. Adaptive Capacity: Reforestation, green design, conservation initiatives	Medium	Moderate
Peri-urban and Agricultural Systems	• River Sosiani and tributaries overflowing, flash floods	High	• Sensitivity: Encroachment on riparian land, pollution. Adaptive Capacity: River restoration, enforcement of buffer zones, floodplain management	High	Catastrophic

Hazard: Extreme Rainfall

Category	Exposure (Description)	Exposure Level	Vulnerability (Description)	Vulnerability Level	Category
Stormwater Drainage **Water & Wastewater Management**	• Frequent clogging of drains, flash floods in CBD and residential estates	High High	• **Sensitivity:** Poorly maintained drainage, rapid urbanization without adequate planning	High	Catastrophic

	• Flooding of treatment plants, contamination of River Sosiani water sources		Adaptive Capacity: Expansion of drainage networks, routine desilting, community clean-up programs • · **Sensitivity:** Aging sewer lines, limited treatment capacity **Adaptive Capacity:** Upgrading treatment facilities, emergency water trucking, resilient designs	High	
Solid Waste Management **Transport and Mobility**	• Waste blocking drains, spread of debris during floods • Flooded roads, disruption of matatu and boda boda transport	Medium High	• **Sensitivity:** Inadequate collection systems, illegal dumping in river valleys **Adaptive** Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws • · **Sensitivity:** Poor Road drainage, unpaved roads in informal settlements **Adaptive Capacity:** Elevated roads, improved drainage, flood-resilient transport planning	Medium High	Moderate

Energy **Economic Infrastructure**	• Damage to power lines, substations near flood-prone areas • Flooding of markets (e.g., Eldoret Main Market), industries along Sosiani River	Medium High	• **Sensitivity:** Above-ground distribution lines, limited redundancy Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources • · **Sensitivity:** Poor location planning, lack of insurance coverage **Adaptive Capacity:** Relocation of businesses, insurance uptake, resilient construction	Medium High	Moderate Catastrophic
Social Infrastructure **Emergency Services**	• Schools, hospitals (e.g., Moi Teaching & Referral Hospital) affected by flooding • Disruption of police, fire, and ambulance services during floods	High Medium	• **Sensitivity:** Limited emergency preparedness, poor building design Adaptive Capacity: Flood-proofing, emergency response plans, disaster drills • · **Sensitivity:** Limited resources, poor coordination **Adaptive Capacity:** Training, equipment	High Medium	Catastrophic Moderate

			upgrades, contingency planning		
Stormwater Drainage **Water & Wastewater Management**	• Frequent clogging of drains, flash floods in CBD and residential estates • Flooding of treatment plants, contamination of River Sosiani water sources	High High	• **Sensitivity:** Poorly maintained drainage, rapid urbanization without adequate planning Adaptive Capacity: Expansion of drainage networks, routine desilting, community clean-up programs • · **Sensitivity:** Aging sewer lines, limited treatment capacity **Adaptive Capacity:** Upgrading treatment facilities, emergency water trucking, resilient designs	High High	Catastrophic
Solid Waste Management **Transport and Mobility**	• Waste blocking drains, spread of debris during floods • Flooded roads, disruption of matatu and boda boda transport	Medium High	• **Sensitivity:** Inadequate collection systems, illegal dumping in river valleys **Adaptive** Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws	Medium High	Moderate Catastrophic

			• · **Sensitivity:** Poor road drainage, unpaved roads in informal settlements **Adaptive Capacity:** Elevated roads, improved drainage, flood-resilient transport planning		
Energy **Economic Infrastructure**	• Damage to power lines, substations near flood-prone areas • Flooding of markets (e.g., Eldoret Main Market), industries along Sosiani River	Medium High	• **Sensitivity:** Above-ground distribution lines, limited redundancy Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources • · **Sensitivity:** Poor location planning, lack of insurance coverage **Adaptive Capacity:** Relocation of businesses, insurance uptake, resilient construction	Medium High	Moderate Catastrophic

Social Infrastructure	• Schools, hospitals (e.g., Moi Teaching & Referral Hospital) affected by flooding	High	• **Sensitivity:** Limited emergency preparedness, poor building design **Adaptive Capacity:** Flood-proofing, emergency response plans, disaster drills	High	Catastrophic
Populations					**Populations**
Urban Residents **Informal Settlement Residents**	• Property damage, health risks (cholera, malaria outbreaks) • Severe flooding, displacement in areas like Langas and Munyaka	High Very High	• **Sensitivity:** High population density, poor housing in flood-prone areas Adaptive Capacity: Insurance, awareness campaigns, community preparedness • · **Sensitivity:** Poor housing, lack of basic services **Adaptive Capacity:** Community-based adaptation, relocation programs, upgrading informal settlements	High Very High	Catastrophic Catastrophic

Vulnerable & Marginalized Groups **Urban Residents**	• Higher risk of injury, disease, loss of livelihoods • Property damage, health risks (cholera, malaria outbreaks)	High	• **Sensitivity:** Poverty, limited mobility, lack of social safety nets **Adaptive Capacity:** Targeted support, social protection programs, inclusive disaster planning • · **Sensitivity:** High population density, poor housing in flood-prone areas **Adaptive Capacity:** Insurance, awareness campaigns, community preparedness	High High	Catastrophic
Informal Settlement Residents	• Severe flooding, displacement in areas like Langas and Munyaka	Very High	• **Sensitivity:** Poor housing, lack of basic services **Adaptive Capacity:** Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic
Natural Assets			•		**Natural Assets**
		Medium	**Sensitivity:** Poor maintenance, encroachment	Medium	Moderate

Urban Green Infrastructure **Urban Blue Infrastructure**	Damage to parks, vegetation, soil erosion River Sosiani and tributaries overflowing, flash floods	High	on green spaces Adaptive Capacity: Reforestation, green design, conservation initiatives • · **Sensitivity:** Encroachment on riparian land, pollution **Adaptive Capacity:** River restoration, enforcement of buffer zones, floodplain management	High	Catastrophic
Peri-urban & Agricultural Systems **Urban Green Infrastructure**	Crop loss, soil erosion in surrounding farmlands Damage to parks, vegetation, soil erosion	High Medium	• **Sensitivity:** Poor drainage, monoculture practices **Adaptive Capacity:** Diversified farming, improved irrigation, soil conservation measures • · **Sensitivity:** Poor maintenance, encroachment on green spaces **Adaptive Capacity:** Reforestation, green design, conservation initiatives	High Medium	Catastrophic Moderate

Urban Blue Infrastructure	River Sosiani and tributaries overflowing, flash floods	High	• **Sensitivity:** Encroachment on riparian land, pollution **Adaptive Capacity:** River restoration, enforcement of buffer zones, floodplain management	High	Catastrophic

Hazard: ***Heat stress/Rising Temperature***

Category	Exposure (Description)	Exposure Level	Vulnerability (Description)	Vulnerability Level	Impact Level
Stormwater Drainage	• Reduced efficiency of stormwater drainage due to heat damage and evaporation	High	• Sensitivity: Poorly maintained drainage, materials vulnerable to heat stress. Adaptive Capacity: Expansion of heat-resilient drainage networks, use of durable materials, routine maintenance	High	Catastrophic
	Rising demand for water, treatment challenges, contamination risks under high temperatures	High	• Sensitivity: Aging sewer lines, limited treatment capacity, increased evaporation. Adaptive Capacity: Upgrading treatment facilities,	High	Catastrophic

			emergency water trucking, resilient cooling and treatment designs		
Water & Wastewater Management	• Accelerated decomposition of waste, odor problems, blocked drains	Medium	• Sensitivity: Inadequate collection systems, heat-induced faster decomposition. Adaptive Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws, heat-resistant storage	Medium	Moderate
	Road surface damage, asphalt softening, transport disruption	High	• Sensitivity: Poor road materials, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, heat-resilient surfacing, improved maintenance planning	High	Catastrophic
Solid Waste Management	• Damage to power lines, substations stressed by cooling demand	Medium	• Sensitivity: Above-ground distribution lines, limited redundancy. Adaptive Capacity: Underground cabling, backup	Medium	Moderate

			generators, diversification of energy sources		
	Economic hubs (markets, industries) disrupted by heat stress and productivity loss	High	• Sensitivity: Poor location planning, lack of insurance coverage, heat-sensitive industries. Adaptive Capacity: Relocation of businesses, insurance uptake, resilient construction	High	Catastrophic
Transport and Mobility	• Schools, hospitals affected by rising admissions and cooling demand	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Heat-proofing, emergency response plans, disaster drills, cooling infrastructure	High	Catastrophic
	Emergency services strained by rising heat-related emergencies	Medium	• Sensitivity: Limited resources, poor coordination. Adaptive Capacity: Training, equipment upgrades, contingency planning	Medium	Moderate

Energy	• Reduced efficiency of stormwater drainage due to heat damage and evaporation	High	• Sensitivity: Poorly maintained drainage, materials vulnerable to heat stress. Adaptive Capacity: Expansion of heat-resilient drainage networks, use of durable materials, routine maintenance	High	Catastrophic
	Rising demand for water, treatment challenges, contamination risks under high temperatures	High	• Sensitivity: Aging sewer lines, limited treatment capacity, increased evaporation. Adaptive Capacity: Upgrading treatment facilities, emergency water trucking, resilient cooling and treatment designs	High	Catastrophic
Economic Infrastructure	• Accelerated decomposition of waste, odor problems, blocked drains	Medium	• Sensitivity: Inadequate collection systems, heat-induced faster decomposition. Adaptive Capacity: Improved waste collection, awareness campaigns, enforcement	Medium	Moderate

			of bylaws, heat-resistant storage		
	Road surface damage, asphalt softening, transport disruption	High	• Sensitivity: Poor road materials, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, heat-resilient surfacing, improved maintenance planning	High	Catastrophic
Social Infrastructure	• Damage to power lines, substations stressed by cooling demand	Medium	• Sensitivity: Above-ground distribution lines, limited redundancy. Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources	Medium	Moderate
	Economic hubs (markets, industries) disrupted by heat stress and productivity loss	High	• Sensitivity: Poor location planning, lack of insurance coverage, heat-sensitive industries. Adaptive Capacity: Relocation of businesses, insurance uptake, resilient construction	High	Catastrophic

Emergency Services	• Schools, hospitals affected by rising admissions and cooling demand	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Heat-proofing, emergency response plans, disaster drills, cooling infrastructure	High	Catastrophic
Populations					
Urban Residents	• Urban residents exposed to heat waves, dehydration, health risks	High	• Sensitivity: High population density, poor housing without cooling. Adaptive Capacity: Insurance, awareness campaigns, community preparedness, cooling centers	High	Catastrophic
	Informal settlement residents highly exposed due to poor housing	Very High	• Sensitivity: Poor housing, lack of basic services, limited ventilation. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic

Informal Settlement Residents	• Vulnerable groups face higher risk of injury, disease, exclusion	High	• Sensitivity: Poverty, limited mobility, lack of social safety nets. Adaptive Capacity: Targeted support, social protection programs, inclusive disaster planning	High	Catastrophic
	Urban residents exposed to heat waves, dehydration, health risks	High	• Sensitivity: High population density, poor housing without cooling. Adaptive Capacity: Insurance, awareness campaigns, community preparedness, cooling centers	High	Catastrophic
Vulnerable and Marginalized Groups	• Informal settlement residents highly exposed due to poor housing	Very High	• Sensitivity: Poor housing, lack of basic services, limited ventilation. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic
Natural Assets					

Urban Green Infrastructure	• Urban parks and vegetation stressed, soil degradation	Medium	• Sensitivity: Poor maintenance, encroachment on green spaces, heat stress on vegetation. Adaptive Capacity: Reforestation, green design, conservation initiatives	Medium	Moderate
	Urban water bodies reduced due to evaporation, aquatic stress	High	• Sensitivity: Encroachment on riparian land, pollution, declining water levels. Adaptive Capacity: River restoration, enforcement of buffer zones, sustainable water management	High	Catastrophic
Urban Blue Infrastructure	• Crop loss, soil degradation, reduced yields in peri-urban farms	High	• Sensitivity: Poor drainage, monoculture practices, heat-sensitive crops. Adaptive Capacity: Diversified farming, improved irrigation, soil conservation measures	High	Catastrophic
	Urban parks and vegetation stressed, soil degradation	Medium	• Sensitivity: Poor maintenance,	Medium	Moderate

			encroachment on green spaces, heat stress on vegetation. Adaptive Capacity: Reforestation, green design, conservation initiatives		
Peri-urban and Agricultural Systems	• Urban water bodies reduced due to evaporation, aquatic stress	High	• Sensitivity: Encroachment on riparian land, pollution, declining water levels. Adaptive Capacity: River restoration, enforcement of buffer zones, sustainable water management	High	Catastrophic

Hazard: ***Drought/prolonged dry spells***

Category	Exposure (Description)	Exposure Level	Vulnerability (Description)	Vulnerability Level	Impact Level
Stormwater Drainage	• Reduced efficiency of stormwater drainage due to heat damage and evaporation	High	• Sensitivity: Poorly maintained drainage, materials vulnerable to heat stress. Adaptive Capacity: Expansion of heat-resilient drainage networks, use of durable materials, routine maintenance	High	Catastrophic

	Rising demand for water, treatment challenges, contamination risks under high temperatures	High	• Sensitivity: Aging sewer lines, limited treatment capacity, increased evaporation. Adaptive Capacity: Upgrading treatment facilities, emergency water trucking, resilient cooling and treatment designs	High	Catastrophic
Water & Wastewater Management	• Accelerated decomposition of waste, odor problems, blocked drains	Medium	• Sensitivity: Inadequate collection systems, heat-induced faster decomposition. Adaptive Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws, heat-resistant storage	Medium	Moderate
	Road surface damage, asphalt softening, transport disruption	High	• Sensitivity: Poor road materials, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, heat-resilient surfacing, improved maintenance planning	High	Catastrophic

Solid Waste Management	• Damage to power lines, substations stressed by cooling demand	Medium	• Sensitivity: Above-ground distribution lines, limited redundancy. Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources	Medium	Moderate
	Economic hubs (markets, industries) disrupted by heat stress and productivity loss	High	• Sensitivity: Poor location planning, lack of insurance coverage, heat-sensitive industries. Adaptive Capacity: Relocation of businesses, insurance uptake, resilient construction	High	Catastrophic
Transport and Mobility	• Schools, hospitals affected by rising admissions and cooling demand	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Heat-proofing, emergency response plans, disaster drills, cooling infrastructure	High	Catastrophic
	Emergency services strained by rising heat-related	Medium	• Sensitivity: Limited resources, poor	Medium	Moderate

	emergencies		coordination. Adaptive Capacity: Training, equipment upgrades, contingency planning		
Energy	• Reduced efficiency of stormwater drainage due to heat damage and evaporation	High	• Sensitivity: Poorly maintained drainage, materials vulnerable to heat stress. Adaptive Capacity: Expansion of heat-resilient drainage networks, use of durable materials, routine maintenance	High	Catastrophic
	Rising demand for water, treatment challenges, contamination risks under high temperatures	High	• Sensitivity: Aging sewer lines, limited treatment capacity, increased evaporation. Adaptive Capacity: Upgrading treatment facilities, emergency water trucking, resilient cooling and treatment designs	High	Catastrophic
Economic Infrastructure	• Accelerated decomposition of waste, odor problems, blocked drains	Medium	• Sensitivity: Inadequate collection systems, heat-induced faster decomposition. Adaptive	Medium	Moderate

			Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws, heat-resistant storage		
	Road surface damage, asphalt softening, transport disruption	High	• Sensitivity: Poor road materials, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, heat-resilient surfacing, improved maintenance planning	High	Catastrophic
Social Infrastructure	• Damage to power lines, substations stressed by cooling demand	Medium	• Sensitivity: Above-ground distribution lines, limited redundancy. Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources	Medium	Moderate
	Economic hubs (markets, industries) disrupted by heat stress and productivity loss	High	• Sensitivity: Poor location planning, lack of insurance coverage, heat-sensitive industries. Adaptive Capacity: Relocation of businesses, insurance	High	Catastrophic

			uptake, resilient construction		
Emergency Services	• Schools, hospitals affected by rising admissions and cooling demand	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Heat-proofing, emergency response plans, disaster drills, cooling infrastructure	High	Catastrophic
Populations					
Urban Residents	• Urban residents exposed to heat waves, dehydration, health risks	High	• Sensitivity: High population density, poor housing without cooling. Adaptive Capacity: Insurance, awareness campaigns, community preparedness, cooling centers	High	Catastrophic
	Informal settlement residents highly exposed due to poor housing	Very High	• Sensitivity: Poor housing, lack of basic services, limited ventilation. Adaptive Capacity: Community-based adaptation, relocation	Very High	Catastrophic

			programs, upgrading informal settlements		
Informal Settlement Residents	• Vulnerable groups face higher risk of injury, disease, exclusion	High	• Sensitivity: Poverty, limited mobility, lack of social safety nets. Adaptive Capacity: Targeted support, social protection programs, inclusive disaster planning	High	Catastrophic
	Urban residents exposed to heat waves, dehydration, health risks	High	• Sensitivity: High population density, poor housing without cooling. Adaptive Capacity: Insurance, awareness campaigns, community preparedness, cooling centers	High	Catastrophic
Vulnerable and Marginalized Groups	• Informal settlement residents highly exposed due to poor housing	Very High	• Sensitivity: Poor housing, lack of basic services, limited ventilation. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic
Natural Assets					

Urban Green Infrastructure	• Urban parks and vegetation stressed, soil degradation	Medium	• Sensitivity: Poor maintenance, encroachment on green spaces, heat stress on vegetation. Adaptive Capacity: Reforestation, green design, conservation initiatives	Medium	Moderate
	Urban water bodies reduced due to evaporation, aquatic stress	High	• Sensitivity: Encroachment on riparian land, pollution, declining water levels. Adaptive Capacity: River restoration, enforcement of buffer zones, sustainable water management	High	Catastrophic
Urban Blue Infrastructure	• Crop loss, soil degradation, reduced yields in peri-urban farms	High	• Sensitivity: Poor drainage, monoculture practices, heat-sensitive crops. Adaptive Capacity: Diversified farming, improved irrigation, soil conservation measures	High	Catastrophic
	Urban parks and vegetation stressed, soil degradation	Medium	• Sensitivity: Poor maintenance,	Medium	Moderate

			encroachment on green spaces, heat stress on vegetation. Adaptive Capacity: Reforestation, green design, conservation initiatives		
Peri-urban and Agricultural Systems	• Urban water bodies reduced due to evaporation, aquatic stress	High	• Sensitivity: Encroachment on riparian land, pollution, declining water levels. Adaptive Capacity: River restoration, enforcement of buffer zones, sustainable water management	High	Catastrophic

Hazard: Water stress/water scarcity

Category	Exposure (Description)	Exposure Level	Vulnerability (Description)	Vulnerability Level	Impact Level
Stormwater Drainage	• Reduced efficiency of stormater drainage due to limited recharge and drying channels	High	• Sensitivity: Poorly maintained drainage, rapid urbanization without adequate planning. Adaptive Capacity: Expansion of drainage networks, routine	High	Catastrophic

			desilting, community clean-up programs		
	Rising demand for water, treatment challenges, contamination risks under scarcity	High	• Sensitivity: Aging sewer lines, limited treatment capacity, reduced supply. Adaptive Capacity: Upgrading treatment facilities, emergency water trucking, resilient designs	High	Catastrophic
Water & Wastewater Management	• Sanitation challenges due to reduced water availability for waste management	Medium	• Sensitivity: Inadequate collection systems, reliance on water for cleaning. Adaptive Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws, dry sanitation technologies	Medium	Moderate
	Transport disruption from dust, erosion, and reduced resilience of road networks	High	• Sensitivity: Poor road drainage, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, improved	High	Catastrophic

			surfacing, dust suppression measures		
Solid Waste Management	• Energy systems stressed by increased pumping demand and reduced hydropower	Medium	• Sensitivity: Above-ground distribution lines, reliance on hydropower. Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources	Medium	Moderate
	Economic hubs (markets, industries) disrupted by water shortages	High	• Sensitivity: Poor location planning, water-dependent industries, lack of insurance. Adaptive Capacity: Relocation of businesses, insurance uptake, resilient construction	High	Catastrophic
Transport and Mobility	• Schools, hospitals affected by water rationing and sanitation challenges	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Water storage, emergency response plans, resilient infrastructure	High	Catastrophic

	Emergency services strained by drought-related emergencies	Medium	• Sensitivity: Limited resources, poor coordination. Adaptive Capacity: Training, equipment upgrades, contingency planning	Medium	Moderate
Energy	• Reduced efficiency of stormwater drainage due to limited recharge and drying channels	High	• Sensitivity: Poorly maintained drainage, rapid urbanization without adequate planning. Adaptive Capacity: Expansion of drainage networks, routine desilting, community clean-up programs	High	Catastrophic
	Rising demand for water, treatment challenges, contamination risks under scarcity	High	• Sensitivity: Aging sewer lines, limited treatment capacity, reduced supply. Adaptive Capacity: Upgrading treatment facilities, emergency water trucking, resilient designs	High	Catastrophic

Economic Infrastructure	• Sanitation challenges due to reduced water availability for waste management	Medium	• Sensitivity: Inadequate collection systems, reliance on water for cleaning. Adaptive Capacity: Improved waste collection, awareness campaigns, enforcement of bylaws, dry sanitation technologies	Medium	Moderate
	Transport disruption from dust, erosion, and reduced resilience of road networks	High	• Sensitivity: Poor road drainage, unpaved roads in informal settlements. Adaptive Capacity: Elevated roads, improved surfacing, dust suppression measures	High	Catastrophic
Social Infrastructure	• Energy systems stressed by increased pumping demand and reduced hydropower	Medium	• Sensitivity: Above-ground distribution lines, reliance on hydropower. Adaptive Capacity: Underground cabling, backup generators, diversification of energy sources	Medium	Modern

	Economic hubs (markets, industries) disrupted by water shortages	High	• Sensitivity: Poor location planning, water-dependent industries, lack of insurance. Adaptive Capacity: Relocation of businesses, insurance uptake, resilient construction	High	Catastrophic
Emergency Services	• Schools, hospitals affected by water rationing and sanitation challenges	High	• Sensitivity: Limited emergency preparedness, poor building design. Adaptive Capacity: Water storage, emergency response plans, resilient infrastructure	High	Catastrophic
Populations					
Urban Residents	• Urban residents exposed to shortages, rationing, and rising health risks	High	• Sensitivity: High population density, poor housing without reliable water access. Adaptive Capacity: Insurance, awareness campaigns, community preparedness, water conservation programs	High	Catastrophic

	Informal settlement residents highly exposed due to poor access to safe water	Very High	• Sensitivity: Poor housing, lack of basic services, limited water infrastructure. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic
Informal Settlement Residents	• Vulnerable groups face higher risk of dehydration, disease, and exclusion	High	• Sensitivity: Poverty, limited mobility, lack of social safety nets. Adaptive Capacity: Targeted support, social protection programs, inclusive disaster planning	High	Catastrophic
	Urban residents exposed to shortages, rationing, and rising health risks	High	• Sensitivity: High population density, poor housing without reliable water access. Adaptive Capacity: Insurance, awareness campaigns, community preparedness, water conservation programs	High	Catastrophic

Vulnerable and Marginalized Groups	• Informal settlement residents highly exposed due to poor access to safe water	Very High	• Sensitivity: Poor housing, lack of basic services, limited water infrastructure. Adaptive Capacity: Community-based adaptation, relocation programs, upgrading informal settlements	Very High	Catastrophic
Natural Assets					
Urban Green Infrastructure	• Urban parks and vegetation stressed, soil degradation from lack of water	Medium	• Sensitivity: Poor maintenance, encroachment on green spaces, drought stress on vegetation. Adaptive Capacity: Reforestation, drought-tolerant species, conservation initiatives	Urban parks and vegetation stressed, soil degradation from lack of water	Medium
	Urban water bodies reduced due to scarcity and over-extraction	High	• Sensitivity: Encroachment on riparian land, pollution, declining water levels. Adaptive Capacity: River restoration, enforcement of buffer zones,	Urban water bodies reduced due to scarcity and over-extraction	High

			sustainable water management		
Urban Blue Infrastructure	• Crop loss, soil degradation, reduced yields in peri-urban farms	High	• Sensitivity: Poor drainage, monoculture practices, water-sensitive crops. Adaptive Capacity: Diversified farming, improved irrigation, soil conservation measures	Crop loss, soil degradation, reduced yields in peri-urban farms	High
	Urban parks and vegetation stressed, soil degradation from lack of water	Medium	• Sensitivity: Poor maintenance, encroachment on green spaces, drought stress on vegetation. Adaptive Capacity: Reforestation, drought-tolerant species, conservation initiatives	Urban parks and vegetation stressed, soil degradation from lack of water	Medium
Peri-urban and Agricultural Systems	• Urban water bodies reduced due to scarcity and over-extraction	High	• Sensitivity: Encroachment on riparian land, pollution, declining water levels. Adaptive Capacity: River restoration, enforcement of buffer zones, sustainable water management	Urban water bodies reduced due to scarcity and over-extraction	High

4. Climate Risk Assessment

Climate Risk Assessment will involve evaluating exposure to risks such as flooding, droughts, heatwaves, and shifting rainfall patterns, while considering the sensitivity of critical sectors like health, water, agriculture, and infrastructure. By combining historical data with future climate projections, the assessment shall provide evidence-based insights into potential impacts and guides the development of adaptation strategies. Ultimately, climate risk assessment will serve as the foundation for building resilience, informing policy, and ensuring that Eldoret's urban growth and development pathways remain sustainable in the face of climate change.

For this Urban Climate Risk Profile, the following matrix summarizes overall risk for each urban element by combining the assessed hazard level and the estimated impact level.

Table 4.1. Risk matrix

		Hazard Level		
		Low	**Medium**	**High**
Impact Level	**Catastrophic**	High	Very High	Very High
	Major	Medium	High	Very High
	Moderate	Low	Medium	High
	Minow	Low	Low	Medium
	Insignificant	Very Low	Low	Low

For this Urban Climate Risk Profile, risk levels should be interpreted based on the table below.

Table 4.2. Interpretation of risk levels

Level	**Interpretation**
Very High	Very high risks are unacceptable. Risk should be avoided, reduced or transferred. Immediate planning and implementation of risk reduction measures is required. Allocate resources and coordinate interventions to prevent or minimize impact.
High	High risks should be actively addressed. Develop and implement mitigation actions promptly. Monitor environmental indicators and ensure readiness of emergency or adaptation measures.
Medium	Medium risks should be managed. Plan and implement mitigation activities to reduce them to acceptable levels. Regularly review climate data and risk levels.
Low	Low risks are acceptable under current conditions. Minimal control or monitoring is needed, provided they remain stable and do not escalate.
Very Low	Very low risks are negligible in terms of likelihood and consequences. No immediate action is required beyond routine monitoring and periodic review.

Table 4.3 Current and Future Climate Risks on Urban Element

Summary of Hazard-1 Urban flooding (Pluvial and Riverine)risks for Eldoret City

	Time Horizon & Climate Scenario	Current	2050 SSP2-4.5	2050 SSP5-8.5	2100 SSP2-4.5	2100 SSP5-8.5
	Hazard Level					
				Risk Levels		
Categories	**Impact**	**Current**	**2050 SSP2-4.5**	**2050 SSP5-8.5**	**2100 SSP2-4.5**	**2100 SSP5-8.5**
Infrastructure & Services						
Stormwater Drainage	Overloaded drainage systems, backflow, and blockages	Low	Moderate	High	Moderate	High
Water & Wastewater Management	Contamination of water supply, sewer overflow	High	Very High	Extreme	Very High	Extreme
Solid Waste Management	Floodwaters spreading waste, blocked drains	Low	Moderate	High	Moderate	High
Transport and Mobility	Road flooding, traffic disruption, infrastructure damage	Low	Moderate	High	Moderate	High
Energy	Power outages due to submerged substations and damaged lines	Moderate	High	Very High	High	Extreme
Economic Infrastructure	Business interruptions, property damage, economic losses	Moderate	High	Very High	High	Extreme
Social Infrastructure	Hospitals, schools, and public facilities disrupted	Moderate	High	Very High	High	Extreme
Emergency Services	Increased demand for rescue and relief operations	Moderate	High	Very High	High	Extreme

Urban Residents	Exposure to floodwaters, property loss, health risks	Moderate	High	Very High	High	Extreme
Informal Settlement Residents	High vulnerability due to poor housing in flood-prone areas	High	Very High	Extreme	Very High	Extreme
Vulnerable & Marginalized Groups	Limited capacity to recover, higher exposure	High	Very High	Extreme	Very High	Extreme
Urban Green Infrastructure	Damage to parks, vegetation loss, soil erosion	Moderate	High	Very High	High	Extreme
Urban Blue Infrastructure	Overflowing rivers, lakes, and wetlands degradation	Moderate	High	Very High	High	Extreme
Peri-urban & Agricultural Systems	Crop destruction, soil erosion, reduced yields	High	Very High	Extreme	Very High	Extreme

Summary of Hazard-2 - Extreme rainfall events risks for Eldoret City

	Time Horizon & Climate Scenario	Current	2050 SSP2-4.5	2050 SSP5-8.5	2100 SSP2-4.5	2100 SSP5-8.5
	Hazard Level					
Categories	**Impact**	**Risk Levels**				
		Current	**2050 SSP2-4.5**	**2050 SSP5-8.5**	**2100 SSP2-4.5**	**2100 SSP5-8.5**
Infrastructure & Services						
Stormwater Drainage	Overloaded drainage systems, flash flooding, backflow	Low	Moderate	High	Moderate	High
Water & Wastewater Management	Sewer overflow, contamination of water supply	High	Very High	Extreme	Very High	Extreme

Solid Waste Management	Floodwaters spreading waste, blocked drains	Low	Moderate	High	Moderate	High
Transport and Mobility	Road flooding, traffic disruption, infrastructure damage	Low	Moderate	High	Moderate	High
Energy	Power outages due to damaged substations and transmission lines	Moderate	High	Very High	High	Extreme
Economic Infrastructure	Business interruptions, property damage, economic losses	Moderate	High	Very High	High	Extreme
Social Infrastructure	Hospitals, schools, and public facilities disrupted	Moderate	High	Very High	High	Extreme
Emergency Services	Increased demand for rescue and relief operations	Moderate	High	Very High	High	Extreme
Populations						
Urban Residents	Exposure to floodwaters, property loss, health risks	Moderate	High	Very High	High	Extreme
Informal Settlement Residents	High vulnerability due to poor housing in flood-prone areas	High	Very High	Extreme	Very High	Extreme
Vulnerable & Marginalized Groups	Limited capacity to recover, higher exposure	High	Very High	Extreme	Very High	Extreme
Natural Assets						
Vulnerable & Marginalized Groups	Limited capacity to recover, higher exposure	High	Very High	Extreme	Very High	Extreme
Urban Green Infrastructure	Damage to parks, vegetation loss, soil erosion	Moderate	High	Very High	High	Extreme
Urban Blue Infrastructure	Overflowing rivers, lakes, and wetlands degradation	Moderate	High	Very High	High	Extreme

Summary of Hazard-3 Heat stress/rising stress risks for Eldoret City

	Time Horizon & Climate Scenario	Current	2050 SSP2-4.5	2050 SSP5-8.5	2100 SSP2-4.5	2100 SSP5-8.5
	Hazard Level					
				Risk Levels		
Categories	**Impact**	**Current**	**2050 SSP2-4.5**	**2050 SSP5-8.5**	**2100 SSP2-4.5**	**2100 SSP5-8.5**
Infrastructure & Services						
Stormwater Drainage	Reduced efficiency due to heat damage and evaporation	Low	Moderate	High	Moderate	High
Water & Wastewater Management	Higher demand for water, rising treatment needs	High	Very High	Extreme	Very High	Extreme
Solid Waste Management	Increased odor and decomposition rates	Low	Moderate	High	Moderate	High
Transport and Mobility	Road surface damage from heat, rising maintenance needs	Low	Moderate	High	Moderate	High
Energy	Increased cooling demand, rising grid stress	Moderate	High	Very High	High	Extreme
Economic Infrastructure	Reduced productivity, rising economic losses	Moderate	High	Very High	High	Extreme
Social Infrastructure	Rising health service demand, increased hospital admissions	Moderate	High	Very High	High	Extreme
Emergency Services	Limited response capacity, rising emergencies	Moderate	High	Very High	High	Extreme
Populations						
Urban Residents	Exposure to heat waves, rising health risks	Moderate	High	Very High	High	Extreme

Informal Settlement Residents	High exposure due to poor housing	High	Very High	Extreme	Very High	Extreme
Vulnerable & Marginalized Groups	Limited access to cooling, rising inequality	High	Very High	Extreme	Very High	Extreme
Natural Assets						
Urban Green Infrastructure	Heat stress on vegetation, declining biodiversity	Moderate	High	Very High	High	Extreme
Urban Blue Infrastructure	Reduced water levels, rising evaporation	Moderate	High	Very High	High	Extreme
Peri-urban & Agricultural Systems	Reduced crop yields, rising irrigation demand	High	Very High	Extreme	Very High	Extreme

Summary of Hazard-4 Drought / prolonged dry spells in Eldoret City

	Time Horizon & Climate Scenario	Current	2050 SSP2-4.5	2050 SSP5-8.5	2100 SSP2-4.5	2100 SSP5-8.5
	Hazard Level					
Categories	**Impact**	**Risk Levels**				
		Current	**2050 SSP2-4.5**	**2050 SSP5-8.5**	**2100 SSP2-4.5**	**2100 SSP5-8.5**
Infrastructure & Services						
Stormwater Drainage	Dry sediment accumulation, reduced flow	Low	Moderate	High	Moderate	High
Water & Wastewater Management	Water scarcity, reduced supply and pressure	High	Very High	Extreme	Very High	Extreme
Solid Waste Management	Odor and decomposition issues	Low	Moderate	High	Moderate	High
Transport and Mobility	Dust storms, road surface cracking	Low	Moderate	High	Moderate	High

Energy	Hydropower reduction, increased cooling demand	Moderate	High	Very High	High	Extreme
Economic Infrastructure	Reduced productivity, water-dependent industry losses	Moderate	High	Very High	High	Extreme
Social Infrastructure	Water rationing in schools, hospitals	Moderate	High	Very High	High	Extreme
Emergency Services	Increased fire risk, resource strain	Moderate	High	Very High	High	Extreme
Populations						
Urban Residents	Water shortages, health risks	Moderate	High	Very High	High	Extreme
Informal Settlement Residents	High vulnerability to water scarcity	High	Very High	Extreme	Very High	Extreme
Vulnerable & Marginalized Groups	Limited access to water, higher exposure	High	Very High	Extreme	Very High	Extreme
Natural Assets						
Urban Green Infrastructure	Vegetation loss, soil degradation	Moderate	High	Very High	High	Extreme
Urban Blue Infrastructure	Drying wetlands, reduced water bodies	Moderate	High	Very High	High	Extreme
Peri-urban & Agricultural Systems	Crop failure, livestock loss, food insecurity	High	Very High	Extreme	Very High	Extreme

Summary of Hazard-5 Water stress/ water scarcity risks for Eldoret City

	Time Horizon & Climate Scenario	Current	2050 SSP2-4.5	2050 SSP5-8.5	2100 SSP2-4.5	2100 SSP5-8.5
	Hazard Level					
				Risk Levels		
Categories	**Impact**	**Current**	**2050 SSP2-4.5**	**2050 SSP5-8.5**	**2100 SSP2-4.5**	**2100 SSP5-8.5**
Infrastructure & Services						
Stormwater Drainage	Low	Moderate	High	Moderate	High	Stormwater Drainage
Water & Wastewater Management	High	Very High	Extreme	Very High	Extreme	Water & Wastewater Management
Solid Waste Management	Low	Moderate	High	Moderate	High	Solid Waste Management
Transport and Mobility	Low	Moderate	High	Moderate	High	Transport and Mobility
Energy	Moderate	High	Very High	High	Extreme	Energy
Economic Infrastructure	Moderate	High	Very High	High	Extreme	Economic Infrastructure
Social Infrastructure	Moderate	High	Very High	High	Extreme	Social Infrastructure
Emergency Services	Moderate	High	Very High	High	Extreme	Emergency Services
Populations						
Urban Residents	Moderate	High	Very High	High	Extreme	Urban Residents
Informal Settlement Residents	High	Very High	Extreme	Very High	Extreme	Informal Settlement Residents

Vulnerable and Marginalized Groups	High	Very High	Extreme	Very High	Extreme	Vulnerable and Marginalized Groups
Natural Assets						
Urban Green Infrastructure	Moderate	High	Very High	High	Extreme	Urban Green Infrastructure
Urban Blue Infrastructure	Moderate	High	Very High	High	Extreme	Urban Blue Infrastructure
Peri-urban and Agricultural Systems	High	Very High	Extreme	Very High	Extreme	Peri-urban and Agricultural Systems

Climate Risk Hotspots

Climate risks in Eldoret are not evenly distributed across the urban area. Variations in topography, land use, drainage infrastructure, population density, and proximity to natural systems influence how different wards experience climate hazards. The following is a distribution of specific climate risks

Flooding

Flood risk is highest in low-lying wards and areas near rivers and drainage channels, particularly where rapid urbanization has reduced natural infiltration. Informal settlements and densely built neighborhoods experience frequent surface flooding during intense rainfall due to inadequate stormwater drainage. Central business areas are also exposed to pluvial flooding, which disrupts transport, trade, and public services.

Heat Stress

Heat-related risks are more pronounced in high-density residential and commercial wards with limited green spaces. Built-up areas with extensive concrete and asphalt surfaces experience higher temperatures, especially during dry seasons. Peripheral wards with more vegetation tend to experience lower heat stress.

Drought and Water Scarcity

Wards located at the urban periphery are more vulnerable to drought impacts, particularly those relying on shallow wells, boreholes, or rain-fed water sources. During prolonged dry periods, these areas face water shortages, affecting households, schools, and health facilities.

Impacts on Critical Infrastructure

Climate risks also vary based on the location of infrastructure. Flood-prone wards host roads, drainage systems, and sanitation facilities that are vulnerable to damage, while heat stress affects electricity demand and water supply systems across the city. Health facilities in high-risk wards face increased pressure during extreme weather events.

Future Climate Risks

Under future climate projections, the frequency and intensity of heavy rainfall events and heat waves are expected to increase. This will likely exacerbate flooding in already high-risk wards and expand heat stress into areas previously considered moderate risk, particularly as urban development continues.

Climate Risk Maps of the Urban Area

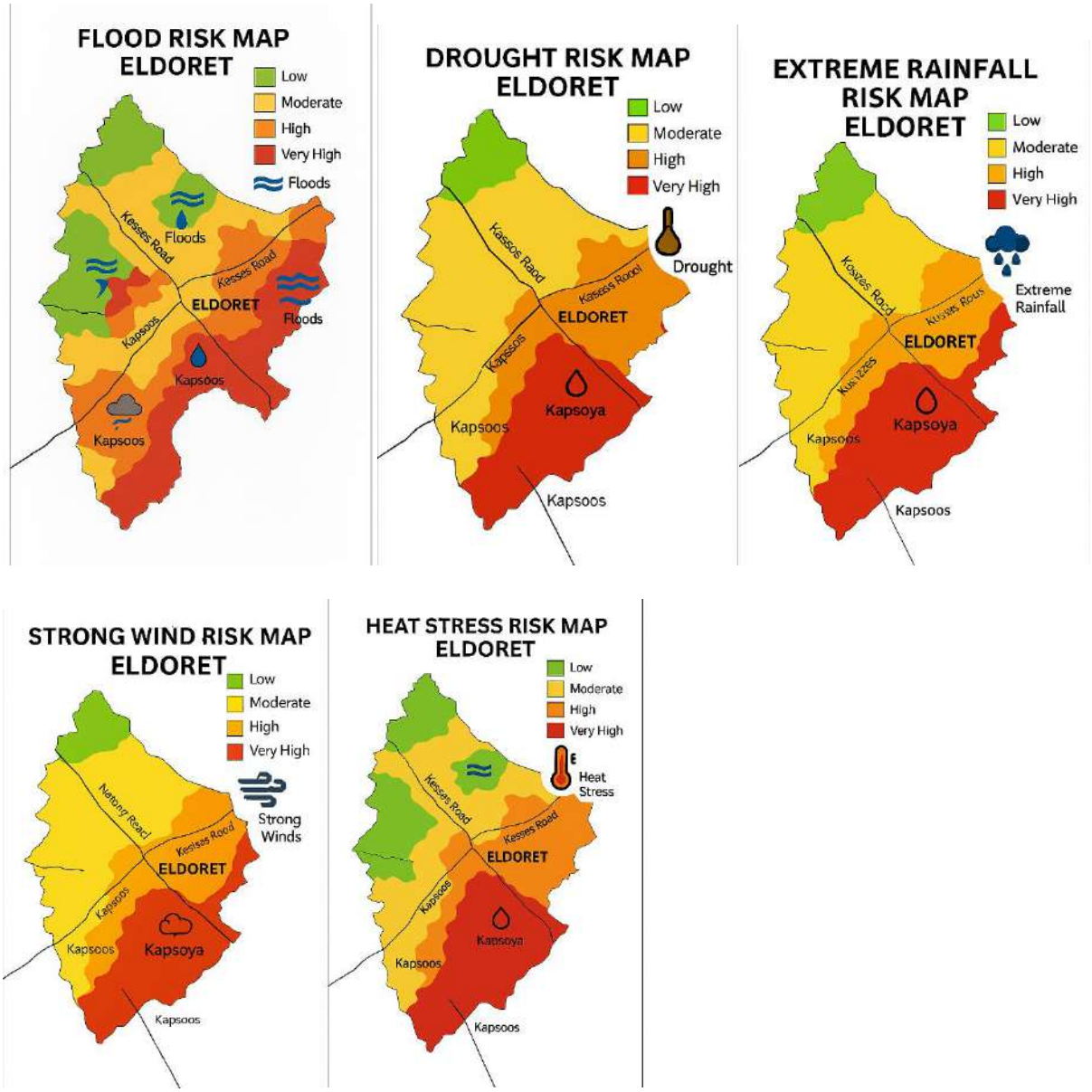

Figure 8 : Climate Risk Maps of the Urban Area

5. What's Next?

Key Findings ***Table 5.1. Summary of climate risks affecting urban elements for Eldoret City***

		List of Key Hazards	
Category	**Current**	**Mid-term (2050)**	**Long-term (2100)**
Infrastructure & Services			
Stormwater Drainage	Flooding	More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains	Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common
Water & Wastewater Management	Flooding Extreme rainfall Drought and water scarcity	More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains	Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Longer dry spells between extremes Intense thunderstorms and squall lines Short duration-high wind gusts events	
Solid Waste Management	Flooding Extreme rainfall Strong winds and storms	More tense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains Intense thunderstorms and squall lines	Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Short duration-high wind gusts events	
Transport and Mobility	Flooding Heat stress/rising temperatures Strong winds and storms	+1.7 °C rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains Intense thunderstorms and squall lines	~3.5 °C rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Short duration-high wind gusts events	
Energy	Flooding Strong winds and storms	Intense thunderstorms and squal lines Short duration-high wind gusts events	Maximum wind speeds during severe storms Damaging winds gusts and microbusts
Economic Infrastructure	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity Strong winds and storms	+1.7 °C rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains	~3.5 °C rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Longer dry spells between extremes Intense thunderstorms and squall lines Short duration-high wind gusts events	
Social Infrastructure	Flooding Extreme rainfall Strong winds and storms	More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains Intense thunderstorms and squall lines	Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Short duration-high wind gusts events	
Emergency Services	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity Strong winds and storms	+1.7 ℃ rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains Longer dry spells between extremes Intense thunderstorms and squall lines Short duration-high	~3.5 ℃ rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		wind gusts events	
Populations			
Urban Residents	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity Strong and storms	+1.7 °C rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains Longer dry spells between extremes	~3.5 °C rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Intense thunderstorms and squall lines Short duration-high wind gusts events	
Informal Settlement Residents	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity	+1.7 °C rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but	~3.5 °C rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		sporadic rains Longer dry spells between extremes	
Vulnerable and Marginalized Groups	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity Strong winds and storms	+1.7 °C rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains Longer dry spells between extremes	~3.5 °C rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Intense thunderstorms and squall lines Short duration-high wind gusts events	
Natural Assets			
Urban Green Infrastructure	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity Strong winds and storms	+1.7 ℃ rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains	~3.5 ℃ rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Longer dry spells between extremes Intense thunderstorms and squall lines Short duration-high wind gusts events	
Urban Blue Infrastructure	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity	+1.7 ℃ rise; more heat extremes More intense heavy rainfall events; increased flash flood risk	~3.5 ℃ rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts

		Greater variability; intense but sporadic rains Longer dry spells between extremes	
Peri-urban and Agricultural Systems	Flooding Extreme rainfall Heat stress/rising temperatures Drought and water scarcity Strong winds and storms	+1.7 ℃ rise; more heat extremes More intense heavy rainfall events; increased flash flood risk Greater variability; intense but sporadic rains	~3.5 ℃ rise under high emissions Even greater rainfall extremes and flood severity Continued variability with potential season shifts; extreme events more common Continued dry extremes coupled with rainfall bursts Maximum wind speeds during severe storms Damaging wind gusts and microbusts

		Longer dry spells between extremes Intense thunderstorms and squall lines Short duration-high wind gusts events	

Climate Adaptation and Resilience Solutions

		Recommended Solutions	
Category	**Immediate**	**Mid-term**	**Long-term**
Infrastructure & Services			
Stormwater Drainage	• Clear blocked drains; install temporary culverts; community awareness on waste disposal	• Construct lined drainage channels; introduce permeable pavements; integrate rainwater harvesting	• Develop smart stormwater systems; large-scale floodplain restoration; climate-resilient drainage masterplans
Water & Wastewater Management	• Emergency water trucking; repair leaks; chlorination of supplies	• Expand piped networks; build decentralized wastewater treatment plants; promote greywater reuse	• Integrated water resource management; advanced treatment plants; circular water economy
Solid Waste Management	• Increase collection frequency; deploy skips; community clean-up drives	• Establish transfer stations; introduce segregation at source; composting facilities	• Waste-to-energy plants; circular economy hubs; zero-waste city strategies
Transport and Mobility	• Repair potholes; improve traffic control; prioritize pedestrian safety	• Expand public transport routes; introduce cycling lanes; regulate informal transport	• Smart mobility systems; mass rapid transit (light rail/BRT); electric vehicle infrastructure
Energy	• Provide backup generators; promote solar lanterns; repair faulty grid lines	• Expand mini-grids; incentivize solar rooftops; improve transmission efficiency	• Transition to renewable-dominated grid; smart grids; regional energy interconnections

Economic Infrastructure	• Support local markets; microfinance for small businesses	• Develop industrial parks; logistics hubs; ICT infrastructure	• Regional trade corridors; innovation ecosystems; global investment hubs
Social Infrastructure	• Temporary shelters; mobile clinics; emergency schooling	• Expand health centers; build affordable housing; strengthen education facilities	• Smart hospitals; resilient housing programs; world-class universities
Emergency Services	• Stockpile relief supplies; train volunteers; improve communication systems	• Build fire stations; expand ambulance services; integrate disaster response centers	• Advanced disaster management systems; predictive analytics for emergencies; resilient city networks
Stormwater Drainage	**Clear blocked drains; install temporary culverts; community awareness on waste disposal**	**Construct lined drainage channels; introduce permeable pavements; integrate rainwater harvesting**	**Develop smart stormwater systems; large-scale floodplain restoration; climate-resilient drainage masterplans**
Water & Wastewater Management	• Emergency water trucking; repair leaks; chlorination of supplies	• Expand piped networks; build decentralized wastewater treatment plants; promote greywater reuse	• Integrated water resource management; advanced treatment plants; circular water economy
Solid Waste Management	• Increase collection frequency; deploy skips; community clean-up drives	• Establish transfer stations; introduce segregation at source; composting facilities	• Waste-to-energy plants; circular economy hubs; zero-waste city strategies
Transport and Mobility	• Repair potholes; improve traffic control; prioritize pedestrian safety	• Expand public transport routes; introduce cycling lanes; regulate informal transport	• Smart mobility systems; mass rapid transit (light rail/BRT); electric vehicle infrastructure

Energy	**Provide backup generators; promote solar lanterns; repair faulty grid lines**	**Expand mini-grids; incentivize solar rooftops; improve transmission efficiency**	**Transition to renewable-dominated grid; smart grids; regional energy interconnections**
Economic Infrastructure	• Support local markets; microfinance for small businesses	• Develop industrial parks; logistics hubs; ICT infrastructure	• Regional trade corridors; innovation ecosystems; global investment hubs
Social Infrastructure	• Temporary shelters; mobile clinics; emergency schooling	• Expand health centers; build affordable housing; strengthen education facilities	• Smart hospitals; resilient housing programs; world-class universities
Emergency Services	• Stockpile relief supplies; train volunteers; improve communication systems	• Build fire stations; expand ambulance services; integrate disaster response centers	• Advanced disaster management systems; predictive analytics for emergencies; resilient city networks
Populations			
Urban Residents	• Improve water access; enhance waste collection; ensure reliable electricity	• Affordable housing schemes; expanded public transport; community health programs	• Smart city services; resilient housing; inclusive urban planning
Informal Settlement Residents	• Provide clean water points; mobile toilets; emergency health outreach	• Upgrade settlements; introduce tenure security; community-led infrastructure	• Full integration into formal city fabric; equitable service delivery; inclusive governance
Vulnerable and Marginalized Groups	• Emergency food aid; targeted health services; social protection	• Skills training; inclusive education; accessible infrastructure	• Long-term equity policies; universal healthcare; inclusive economic participation

Natural Assets			
Urban Green Infrastructure	• Protect existing trees; initiate community greening	• Develop urban parks; green corridors; rooftop gardens	• Large-scale reforestation; biodiversity networks; climate-adaptive green belts
Urban Blue Infrastructure	• Clean rivers/lakes; prevent dumping	• Restore wetlands; build retention ponds; improve waterfront access	• Integrated blue-green networks; ecological restoration; sustainable aquaculture
Peri-urban and Agricultural Systems	• Support farmers with inputs; protect farmland from encroachment	• Promote agroforestry; improve irrigation; strengthen cooperatives	• Climate-smart agriculture; regional food hubs; sustainable land-use planning

Table 5.2. Climate adaptation and resilience solutions recommended for Eldoret City

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Annex 1. Historical Hazard Events

Hazard Event/Type	Date or Period	Location	Intensity	Social Impacts	Physical Impacts	Economic Impacts	Ecological Impacts
Urban Flooding (Flash Floods)	April 2018, April 2020, May 2023	Eldoret CBD, Huruma, Langas, Maili Nne	Floodwaters up to 1.5m in low-lying estates; lasted 2–3 days; drainage overwhelmed	3 fatalities (2018), dozens injured, ~5,000 households displaced; informal settlements most affected	Roads submerged, bridges damaged, sewer lines blocked; schools and health facilities temporarily closed	Repair costs estimated at KES 300M; disruption of trade in CBD; informal traders lost stock	River Sosiani riparian zones eroded; wetland vegetation degraded
Drought (Prolonged Dry Spells)	2016 – 2017, 2022	Entire county, peri-urban Eldoret	Rainfall deficit >40%; water rationing in Eldoret town; rivers dried	~200,000 people affected by water shortages; women and children bore burden of water collection	Water supply systems strained; boreholes overused; urban agriculture collapsed	Dairy sector losses ~KES 1.2B; food prices spiked; informal jobs disrupted	Loss of vegetation cover; reduced river flow; biodiversity stress
Strong winds and storms	August 2015, July 2022	Eldoret outskirts (Chepkoilel, Kapsaret)	Winds >80 km/h; hail damaged roofs and crops	~500 households affected; injuries from flying debris	Roofs blown off schools/houses; power lines downed	Repair costs ~KES 50M; crop losses in peri-urban farms	Tree covers damaged; soil erosion increased
Heat Stress (Urban Heatwaves)	Jan–Mar 2019, Feb 2024	Eldoret CBD, peri-urban estates	Temperatures exceeded 32–34°C for several consecutive days;	Elderly, children, and outdoor workers suffered heat	Power demand surged; water supply stressed; informal	Productivity losses in construction and outdoor labor;	Heat island effect intensified; vegetation wilted; reduced

			limited shade and ventilation in dense settlements	exhaustion; hospital admissions rose by 20%	housing overheated	increased cooling costs	soil moisture
Extreme Rainfall (Prolonged Heavy Rains)	Oct–Dec 2019, April 2023	Sosiani River catchment, Langas, Huruma	Continuous rainfall >200mm in 2 weeks; rivers overflowed	~10,000 people displaced; schools closed; vulnerable groups in informal settlements most affected	Flooded roads, collapsed drainage, damaged bridges; electricity outages	Agricultural losses in peri-urban farms; transport disruption; repair costs >KES 500M	Riverbank erosion; wetland flooding; contamination of water sources

Annex 2. Data Sources

Page	Data	Data Source
Section 2 – Hazard Assessment	Historical hazard events (floods, droughts, heatwaves, etc.)	Kenya Meteorological Department (KMD), NDMA reports, County Disaster Management Office
Section 2 – Hazard Assessment	Climate projections (SSP1–SSP5 scenarios)	CORDEX-Africa datasets, IPCC AR6 regional data
Section 2 – Hazard Assessment	Urban flood zones and drainage maps	Eldoret Municipality GIS Unit, County Physical Planning Office
Section 3 – Exposure Analysis	Population distribution and vulnerable groups	Kenya National Bureau of Statistics (KNBS), 2019 Census, County Social Services
Section 3 – Exposure Analysis	Informal settlement mapping	UN-Habitat, Eldoret Municipality planning records
Section 4 – Sensitivity Analysis	Infrastructure vulnerability (roads, schools, hospitals)	County Infrastructure Department, Ministry of Transport & Public Works
Section 4 – Sensitivity Analysis	Livelihood dependence on climate-sensitive sectors	County Agriculture Office, Uasin Gishu Dairy Masterplan, stakeholder interviews
Section 5 – Adaptive Capacity	Access to early warning systems	NDMA, KMD, County ICT Department
Section 5 – Adaptive Capacity	Community coping strategies and social networks	Public participation forums, ward-level stakeholder consultations
Section 5 – Adaptive Capacity	Budget allocations for climate resilience	County Integrated Development Plan (CIDP 2023–2027), Annual Development Plans

ANNEX 3: NOTICE FOR PUBLIC PARTICIPATION

REPUBLIC OF KENYA

COUNTY GOVERNMENT OF UASIN GISHU

DEPARTMENT OF LANDS, HOUSING PHYSICAL PLANNING AND URBAN DEVELOPMENT

PUBLIC NOTICE

PUBLIC PARTICIPATION FORUM

The County Government of Uasin Gishu wishes to notify the General Public that it will be holding a Public Participation forum on **Friday, 6th February 2026**, at **West Social Hall (City Headquarters)**, starting from **9:30 a.m.**

The forum will deliberate on the following matters:

1. **Model Financing of Urban Areas Bill**
2. **Climate Risk Profile**
3. **Private Sector Engagement Framework**

Members of the public, stakeholders, and interested parties are invited to attend and submit their views.

Written submissions may be emailed to; **eldoretcity@uasingishu.go.ke** or hand delivered to the Department of Lands, Housing Physical Planning and Urban Development (Ardhi House).

Mr. Edward Sawe
County Executive Committee Member
Department of Lands, Housing Physical Planning and Urban Development
COUNTY GOVERNMENT OF UASIN GISHU

The Champions

ANNEX 4: PUBLIC PARTICIPATION QUESTIONNAIRE

REPUBLIC OF KENYA
COUNTY GOVERNMENT OF UASIN GISHU

Public Participation Questionnaire

Preparation of Eldoret City Urban Climate Risk Profile

Section A: General Information
Name : _____
Ward/Neighborhood: _____
Age Group:
☐ Youth (18–35)
☐ Adult (36–59)
☐ Senior (60+)
☐ I am a Person with Disability (PWD)
Occupation/Organization: _____

Section B: Past Hazard Experiences
1. Have you experienced any of the following hazards in Eldoret City in the past 10 years?
☐ Floods
☐ Drought
☐ Heat stress/heatwaves
☐ Extreme rainfall
☐ Disease outbreaks
☐ Fire outbreaks
☐ Windstorms/hailstorms
2. Please describe the most severe hazard you experienced:
- Type: _____
- Year: _____
- Location: _____

Section C: Impacts of Hazards
3. What impacts did the hazard have on your household/community?
☐ Loss of life/injury
☐ Damage to houses/infrastructure
☐ Loss of income/livelihoods
☐ Disruption of services (water, electricity, transport)
☐ Environmental damage (soil erosion, river pollution, deforestation)
4. Which groups were most affected?
☐ Children
☐ Elderly
☐ Women
☐ Persons with disabilities
☐ Informal settlement residents

Section D: Preparedness & Response

5. How prepared do you feel Eldoret City is to deal with climate hazards?

☐ Very prepared
☐ Moderately prepared
☐ Not prepared

6. What coping strategies have you or your community used?

☐ Relocation
☐ Water storage
☐ Early warning systems
☐ Community support groups
☐ Other: _____

Section E: Future Priorities

7. What measures should be prioritized to reduce climate risks in Eldoret City?

☐ Improved drainage and flood control
☐ Water supply and drought management
☐ Green spaces and tree planting
☐ Health services strengthening
☐ Awareness and education campaigns
☐ Support for vulnerable groups

8. Any additional comments or suggestions:

_____
_____

CITY OF ELDORET

URBAN CLIMATE RISK PROFILE 2026

The City of Eldoret
P. O. Box 64 – 30100 Eldoret, KENYA
eldoretcity.go.ke