



RISK FINANCING & INVESTMENT



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Implemented with the European Union, the World Bank and the Global Fund for Disaster Risk Reduction (GFDRR)



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GFDRR  
Global Facility for Disaster Reduction and Recovery



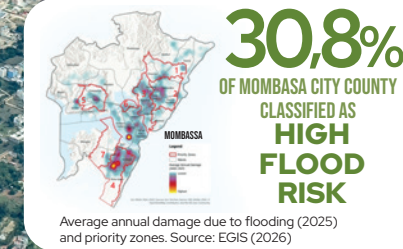
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## CASE STUDY

### RISK REDUCTION INVESTMENT

# Mombasa Strengthens Risk-Informed Urban Resilience

Mombasa County, a strategic anchor of Kenya's Northern Trade Corridor and home to East Africa's busiest port, is facing rising flood and coastal risks driven by rapid urbanisation and climate change. Through EU-funded support and World Bank/GFDRR technical assistance, the county is strengthening risk analysis and developing investment-ready solutions to guide resilient infrastructure and urban planning.



## EXECUTIVE SUMMARY

**01 COUNTRY/REGION/LOCATION**  
Kenya, Mombasa County, Mombasa City.

**02 RISK ADDRESSED**  
Urban flooding, coastal erosion.

**03 IMPLEMENTATION PERIOD/TIMEFRAME**  
April 2024 to February 2026  
(extended activities to December 2026).

**04 ACTORS/IMPLEMENTING AND LOCAL PARTNERS**  
GFDRR with national and Mombasa City County authorities.

**05 KEY BENEFICIARIES**  
Residents, businesses, local communities, infrastructure systems and public services in high-risk zones.

## CONTEXT AND CHALLENGE

Mombasa is a key economic hub for Kenya and East Africa, but faces growing risks from extreme weather, sea-level rise and rapid urbanisation. Flooding is exacerbated by outdated drainage systems, encroachment into flood-prone areas and environmental degradation, compounded by weak land-use control and unplanned urban expansion.

These factors increase exposure of infrastructure, services and communities to climate hazards. Recent events, including the April 2026 floods, illustrate the scale of vulnerability, with heavy rainfall overwhelming drainage systems, disrupting transport corridors, affecting livelihoods, and increasing risks to public health and critical infrastructure, particularly in low-lying and informal settlements.

## WHY THIS ACTION MATTERS?

Flooding and coastal risks threaten economic activity, infrastructure and livelihoods in Mombasa, a strategic hub for trade, tourism and transport. **More than 30 percent of the city lies in high-risk flood zones, with approximately 80,000 people exposed to annual flooding.**

**Direct impacts on communities**, particularly in vulnerable and informal settlements, are compounded by disruptions to port operations, mobility and essential services, generating wider economic losses and affecting regional supply chains. **By linking risk information to investment planning, the intervention strengthens risk-informed development**, enhances institutional capacity, supports better land-use decisions, and ensures infrastructure investments integrate resilience and sustainability from the outset.

See the intervention and results on page 2 →



## INTERVENTION AND APPROACH

The intervention delivers an ex-ante probabilistic analysis of flood risk in Mombasa port. The approach combining probabilistic assessment modelling, spatial analysis and economic appraisal tools. Hydrological and hydraulic models simulate current and future climate scenarios to produce detailed flood hazard and risk maps, quantifying impacts on people, infrastructure and assets. A comprehensive GIS database, terrain models and remote sensing data support hotspot identification and exposure analysis.

The detailed risk assessment has identified priority hotspots and quantified exposure at asset level, including infrastructure, buildings and services. Initial capacity-building

activities, including technical workshops and stakeholder engagements in 2024–2025, have strengthened local understanding and ownership. These analytical outputs are already informing a parallel nature-based solutions study and guiding stakeholder discussions on risk reduction priorities.

Building on this, the study is developing a costed, phased investment plan integrating grey, nature-based and hybrid solutions, supported by cost-benefit and multi-criteria analysis. It also includes policy and institutional reviews to align planning instruments, zoning and development control with risk information, ensuring that results inform resilient infrastructure design and urban planning.

## PROGRAMME OUTPUT ALIGNMENT



### RISK FINANCING & INVESTMENT

This action contributes to Investing in Resilience by translating risk assessment into investment-ready strategies, supporting risk-informed planning, infrastructure resilience and alignment with possible partners financing DRR interventions and risk-informed development programmes.



*Over the past year, the Mombasa City Lab has shown that by bringing together government, communities, and technical experts, we can tackle one of our city's greatest challenges: urban flooding."*



**H.E. FRANCIS THOYA**  
Deputy Governor of Mombasa County Government of Mombasa

## RESULTS AND CHANGE

**1** The intervention has improved understanding of infrastructure exposure to floods and coastal erosion, enabling identification and prioritization of vulnerable areas and targeted risk reduction measures. Investment planning will increasingly be guided by risk analysis, with the potential to inform infrastructure design and disaster risk reduction investments.

**2** The strategic flood risk assessments, policy recommendations, and capacity-building initiatives are not only enhancing the resilience of urban infrastructure but also empowering local communities to better manage flood risks. Further, it will also inform the development of a future investment pipeline and supports preparation of a broader multi-phase engagement along Kenya's Northern Economic Corridor, promoting resilient economic growth, jobs, and sustainable urban development.

### EARLY CONCRETE UPTAKE IN ONGOING INVESTMENTS:

#### EU-FUNDED MOMBASA-KILIFI HIGHWAY



EU-funded Mombasa-Kilifi highway integrates flood risk analysis into design decisions.



#### LINKING WASTE MANAGEMENT AND URBAN FLOOD RESILIENCE



Solid waste management initiatives align with flood risk findings to reduce drainage blockages.

#### ENHANCING FLOOD RISK GOVERNANCE IN MOMBASA COUNTY

The Strategic Flood Risk Assessment findings have informed priorities of government agencies, regulators, and CBOs through three structured multi-stakeholder workshops (40+ participants), building documented institutional awareness among key flood risk decision-makers in Mombasa County.



### KEY ENABLERS OF SUCCESS



**STRONG EU-WORLD BANK-GFDRR PARTNERSHIP**



**MULTI-STAKEHOLDER ENGAGEMENT AND COORDINATION**

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Building Resilience in Mombasa: A Key to Sustainable Growth web story, Available at: <https://www.gfdr.org/en/feature-story/building-resilience-mombasa-key-sustainable-growth>

Project Fiche – Kenya: Enhancing Infrastructure Resilience Update on the status of GFDRR-supported activities in Mombasa Information shared by email

