

KENYA: Disaster displacement risk profile

Key findings

- Kenya has recorded over 2.7 million disaster displacements between 2008 and 2024.
- Droughts and riverine floods drive the highest displacement levels, with 38,000 – 81,000 people at risk each year under current climate conditions.
- Climate change is expected to intensify these risks under optimistic and pessimistic climate scenarios.
- High-intensity, extreme events are likely to result in large-scale displacements.
- Bungoma, Kilifi, Kwale, Lamu, Mandera, Mombasa, Nakuru, Tana River, and Turkana are most at risk of displacement due to disasters.
- Under current climate conditions, severe rare droughts could displace 247,000 people in total across Mandera, Bungoma, and Nakuru.
- Severe rare floods could displace up to 108,000 people in Mandera, under pessimistic climate conditions.
- In the pessimistic climate scenario, displacement levels of Baringo, Nakuru, and Uasin Gishu rise exponentially across riverine floods and droughts.

Implications for government action

1. Integrate displacement risk into national plans
Focus on National Adaptation Plan (NAP) and disaster risk reduction (DRR) strategies.
2. Prioritise high-risk, densely populated districts
Target Mombasa and other exposed areas for resilient infrastructure and safer housing.
3. Strengthen preparedness and early warning systems
Improve shelter capacity and local response mechanisms.
4. Scale up nature-based solutions
Reduce flood and drought risks through ecosystem protection.
5. Improve urban planning and enforcement
Prevent unsafe expansion in hazard-prone areas and ensure compliance with land-use rules.
6. Plan for high-impact, extreme events
Use displacement estimates to guide shelter needs, logistics and infrastructure planning.

About this profile

This profile applies IDMC's Global Displacement Risk Model 2.0 to estimate how many people may be displaced by disasters under three climate scenarios:

- Current: observed climate conditions from 1979 to 2016,
- Optimistic: about 1°C temperature rise by 2100, and
- Pessimistic: about 5°C temperature rise by 2100.

The model assesses the likelihood of displacement linked to severe housing damage and loss of livelihoods. It focuses on the risk of medium- to long-term displacement and does not include pre-emptive evacuations.

Outputs are generated at administrative level 1 for each hazard using two metrics:

- Average Annual Displacement (AAD): expected average number of people displaced in any given year.
- Probable Maximum Displacement (PMD): estimated displacement from rare, high-intensity events based on return periods (expected average time between two events of a given intensity).

Scan here to learn more



Displacement drivers and trends

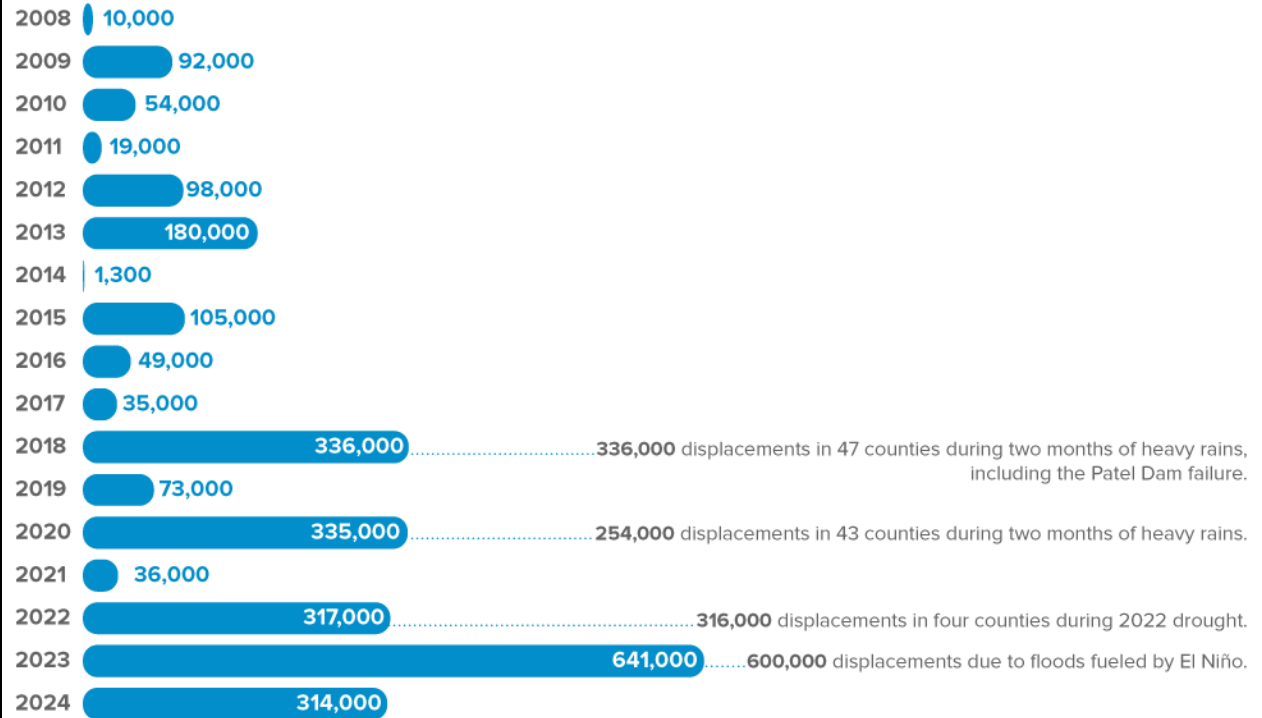
Kenya's disaster displacement risk is shaped by:

- **Diverse topography and climate zones**
Kenya ranges from humid coasts to arid northern regions and cool highlands, with rainfall driven by the Intertropical Convergence Zone.
- **Dual exposure to droughts and floods**
Successive La Niña-driven droughts are followed by El Niño-fuelled floods.
- **High vulnerability of rural and pastoralist livelihoods**
Heavy reliance on livestock grazing and rainfed agriculture heightens vulnerability to climate shocks.
- **Recurrent flooding in coastal and northern regions**
Counties in these regions face repeated, intense flooding linked to shifting rainfall patterns.
- **Compounded risks in refugee-hosting areas**
Counties hosting large refugee populations are repeatedly affected by floods and drought, stretching limited infrastructure.

Recent trends

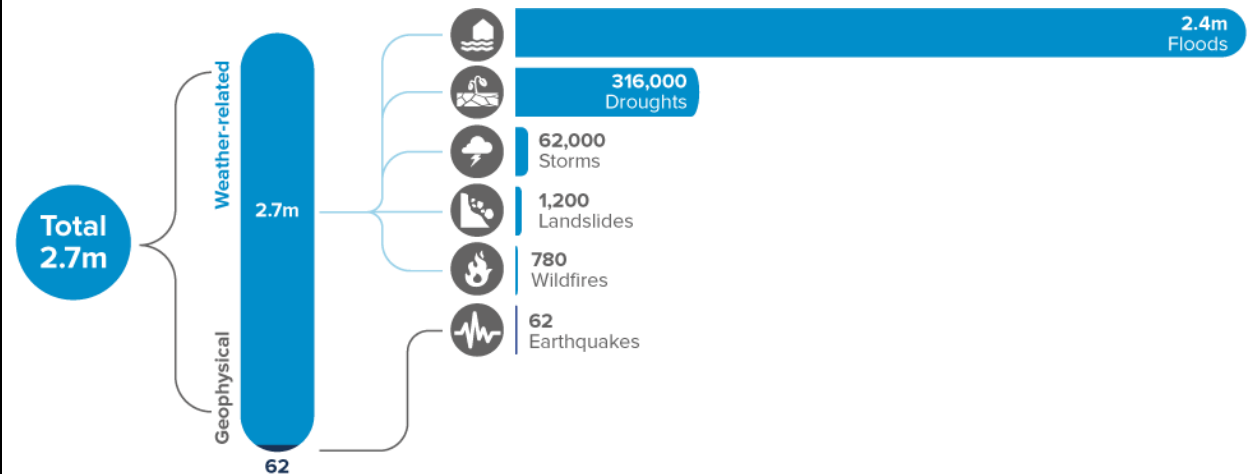
- In 2023, disaster displacements rose sharply to 641,000 movements, the highest figure since 2008.
- Large-scale displacements were also recorded in 2018 and 2020, when major floods each triggered more than 330,000 displacements.
- The prolonged 2020-2022 La Niña drought was the worst drought in 70 years.
- Between 2008 and 2024, 90 disaster displacement events, mainly droughts and floods, have affected the country, driving recurrent displacement.
- Both droughts and floods are increasingly leading to protracted displacement, linked to the loss of livestock, destruction of homes and infrastructure, and erosion of livelihoods.

Internal displacements by disasters in Kenya, 2008-2024



Source: IDMC, 2025.

Internal displacements by disasters in Kenya, 2008-2024



Source: IDMC, 2025.

Displacement risks by hazard type



Droughts

Displacement risk at a glance

Displacements in any given year in the future by climate scenarios:

- Current: 81,130.
- Optimistic: 385,574.
- Pessimistic: 605,986.

Rare 100-year droughts (PMD100)

There is a 39% probability that, in the next 50 years, a severe drought (100-year return period) will displace:

- Current: 2 million.
- Optimistic: 4 million.
- Pessimistic: 5.7 million.

Most at-risk districts

Displacements in the current scenario:

- Mandera: 6,300.
- Bungoma: 4,600.
- Nakuru: 3,500.

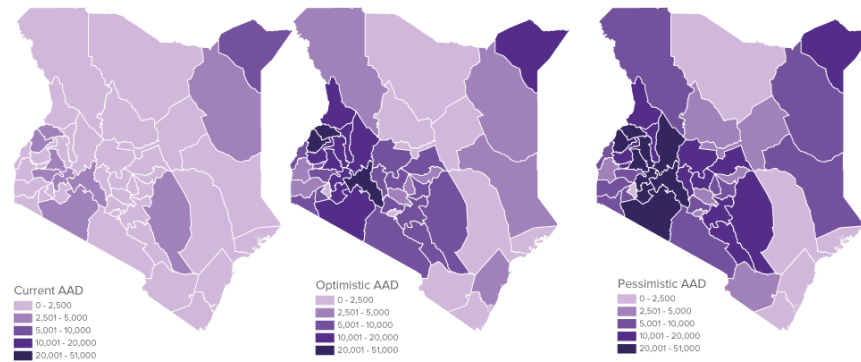
Displacements in the pessimistic scenario:

- Nakuru: 51,000 (+1357%).
- Bungoma: 42,000 (+813%).
- Nandi: 36,000 (+1285%).
- Uasin Gishu: 29,000 (+1712%).
- Baringo: 28,000 (+1456%).

Under pessimistic climate scenario, severe rare droughts could displace:

- 363,000 in Nakuru.
- 320,000 in Bungoma.
- 281,000 in Trans Nzoia.
- 276,000 in Kericho.

Average Annual Displacement risk by droughts under different climate scenarios



Source: IDMC, 2025.



Riverine floods

Displacement risk at a glance

Displacements in any given year in the future by climate scenarios:

- Current: 38,183.
- Optimistic: 103,457.
- Pessimistic: 118,129.

Rare 50-year riverine floods (PMD50)

There is a 64% probability that, in the next 50 years, a severe rare riverine flood (50-year return period) will displace:

- Current: 148,761.
- Optimistic: 373,834.
- Pessimistic: 470,510.

Most at-risk districts

Displacements in the current scenario:

- Turkana: 15,000.
- Mandera: 10,000.
- Tana River: 4,300.

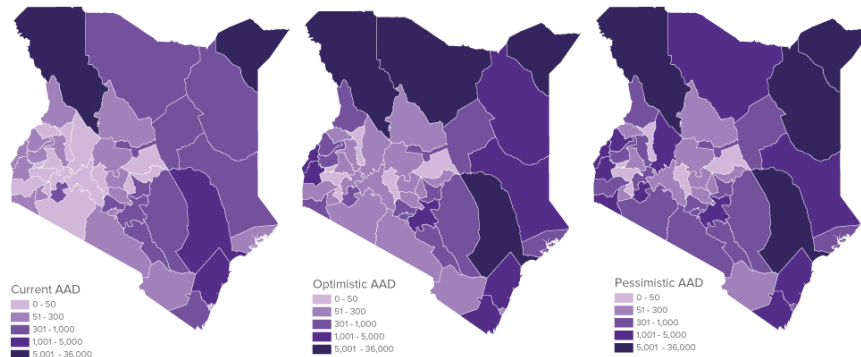
Displacements in the pessimistic scenario:

- Mandera: 32,000 (+220%).
- Turkana: 27,000 (+80%).
- Tana River: 16,000 (+272%).

Under pessimistic climate scenario, severe rare floods could displace:

- 108,000 in Mandera.
- 87,000 in Tana River.
- 79,000 in Turkana.

Average Annual Displacement risk by riverine floods under different climate scenarios



Source: IDMC, 2025.

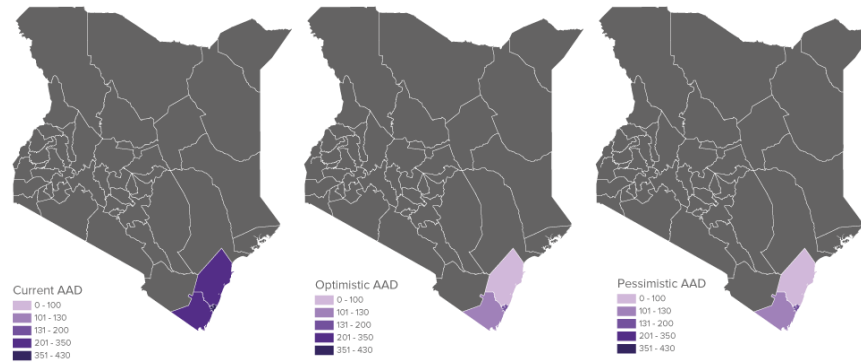
Cyclonic winds

Displacement risk at a glance

Displacements in any given year in the future by climate scenarios:

- Current: 990.
- Optimistic: 342.
- Pessimistic: 343.

Average Annual Displacement risk by cyclonic winds under different climate scenarios



Source: IDMC, 2025.

Most at-risk districts

Displacements in current scenario:

- Mombasa: 430.
- Kwale: 310.
- Kilifi: 250.

Displacements in the pessimistic scenario:

- Mombasa: 140 (-67%).
- Kwale: 120 (-61%).
- Kilifi: 83 (-67%).



Storm surges

Displacement risk at a glance

Displacements in any given year in the future by climate scenarios:

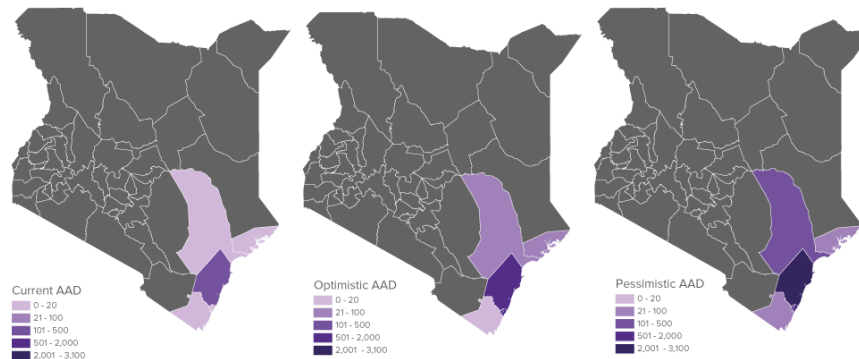
- Current: 197.
- Optimistic: 2,554.
- Pessimistic: 4,552.

Rare 50-year storm surges (PMD50)

There is a 64% probability that, in the next 50 years, a severe rare storm surge (50-year return period) will displace:

- Current: 280.
- Optimistic: 2,741.
- Pessimistic: 4,353.

Average Annual Displacement risk by storm surges under different climate scenarios



Source: IDMC, 2025.

Most at-risk districts

Displacements under the current scenario:

- Kilifi: 190.

Displacements in the pessimistic scenario:

- Kilifi: 3,100 (+1532%).
- Mombasa: 1,100 (+15614%).
- Tana River: 180.

Severe storm surges displacements in the pessimistic scenario:

- 2,800 in Kilifi.
- 970 in Mombasa.
- 380 in Tana River.

Acknowledgements

Read the [detailed profile](#). This profile was made possible thanks to the generous contribution of the European Union and the Federal Republic of Germany Foreign Office.



Co-funded by
the European Union



Federal Republic of Germany
Foreign Office