



The Climate Periscope
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SEA-LEVEL RISE IN THE COASTAL REGION OF NIGERIA AND THE GULF OF GUINEA: A CALL FOR ACTION¹

1.0 EXECUTIVE SUMMARY

The well documented rapid rise in sea levels in the Gulf of Guinea poses a great threat to the coastal region of Nigeria and the wider Gulf of Guinea. Driven primarily by climate change, its impacts have resulted in an increased rate of flooding, landslides, wetland degradation, coastal erosion and population displacement in Nigeria and other countries on the Gulf of Guinea. In Nigeria, certain coastal states like Lagos, Cross River, Ondo, Bayelsa and Rivers are already suffering the negative impacts of rising sea levels. This would further negatively affect economic development, coastal natural resources, agricultural production and food security in those states, and by extension the rest of Nigeria, if not the world. Thus, it is important to adopt as a matter of priority climate-resilient planning, green investments and practical solutions such as mangrove reforestation, wetland conservation, better drainage and stormwater management systems, offshore breakwaters, beach nourishment, revetments and groynes, etc to build long-term climate resilience in Nigeria and the Gulf of Guinea.

2.0 INTRODUCTION

The Gulf of Guinea has recently experienced an unprecedented sea level surge in its coastal regions. This has resulted in intense flood events, especially within the African coast and the downstream parts of Nigeria. These increasing flooding events are the direct result of climate change, which causes heavy seasonal rainfalls and rising sea levels. To mitigate (and where possible, adapt to) these effects of climate change, it is necessary to understand their underlying causes and the possible actions which may be taken to mitigate or adapt to the effects on the environment.

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3.0 SEA LEVEL RISE AND COASTAL VULNERABILITY IN NIGERIA AND THE GULF OF GUINEA

Sea level rise is the average increase in the height of the sea level, both locally and internationally.² The constant change in the sea level is primarily caused by global warming and climate change. Global warming causes the ocean to constantly rise in temperature, thereby causing the water to expand and sea ice and glaciers to melt. The expanding water and melting ice take up more space in the ocean, leading to higher sea levels, coastal flooding, erosion and even saltwater intrusion.³ Additionally, where humans engage in activities like agricultural irrigation and industrial extractions, water concentration tends to shift from the land to the ocean, thereby leading to further increase in sea levels and the attendant increase in the risk of flooding.⁴

In Lagos, Nigeria for instance, severe flash floods caused by the heavy rainfall in 2026 was attributed to a rise by about 1 metre in the levels of the Lagos Lagoon waters, which disrupted the discharge of stormwater from drainage channels.⁵ Similarly, Cross River, a coastal region in Nigeria, experienced destructive land slide, following weeks of continuous, unprecedented torrential rainfall across its capital city, Calabar during the 2026 rainy season.⁶ Similar occurrence has affected other parts of Nigeria and the Gulf of Guinea as intense rainfall increases the incidents of flood and erosion across the region.⁷ This has greatly affected businesses, electricity, transportation, access to essential services and overall economic development. While the incidents of flooding from torrential rainfall may have other immediate and remote causes, they have been exacerbated by rising sea levels because

² United Nations Office for Disaster Risk Reduction, 'Sea Level Rise' <https://www.undrr.org/understanding-disaster-risk/terminology/hips/en0402> accessed 18 August 2026.

³ Rebecca Lindsey, 'Climate Change: Global Sea Level' (Climate.gov, 26 January 2026) <https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level> accessed 19 August 2026.

⁴ Ibid.

⁵ Duro Oni, 'Rising Waters, Failing Systems: Inside Lagos' Recurring Flood Crisis (Business Day, 4 August 2026) <https://businessday.ng/pro/article/rising-waters-failing-systems-inside-lagos-recurring-flood-crisis/> accessed 19 August 2026 and WANEP Nigeria, 'Flooding in Lagos State' (June 2026) <https://wanepnigeria.org/the-june-2026-flooding-in-lagos-state-highlights-the-growing-intersection-of-climate-change-rapid-urbanisation-environmental-challenges-and-inadequate-urban-infrastructure/> accessed 17 August 2026.

⁶ Relief Web, 'NGA: Landslide - 08-2026 - Floods (2026-08-14)' (14 August 2026) <https://reliefweb.int/report/nigeria/nga-landslide-08-2026-floods-2026-08-14> accessed 17 August 2026.

⁷ ThisDay, 'FG Unveils 2026 Outlook: 14,000 Communities Across 266 LGAs in 33 States Face High Flood Risk' (17 August 2026) <https://www.thisdaylive.com/2026/04/16/fg-unveils-2026-outlook-14000-communities-across-266-lgas-in-33-states-face-high-flood-risk/> accessed 17 August 2026.

of climate change, which generally increases the effect of downpours in a territory because the hotter the atmosphere gets, the more evaporation and precipitation occurs.

Of particular concern is the effect of sea level rise on the coastal town of Ayetoro, Ilaje in Ondo State, which is on the brink of being wiped off the map by the surging waters of the Atlantic Ocean. A study has found that the community's coastline has receded by an average of 15 meters annually between 1987 and 2022. Today, over 80% of the houses in the community are said to have been lost to the intruding waters of the Atlantic Ocean, with only about 15% of the community still habitable, while the residents of the community who are mostly into fishing have either been rendered homeless or pushed deeper into the hinterland, far away from their means of livelihood.⁸ Same applies to other countries located on the Gulf of Guinea, including, Guinea, Togo and Ghana. In Ghana, torrential rain in June 2026 caused severe flooding that submerged most parts of the capital, Accra, causing at least 13 deaths.⁹

These effects of rapid sea level rises, if not mitigated, will adversely affect coastal economic development, coastal natural resources, coastal agricultural production and, globally, food security.¹⁰

4.0 MEASURES FOR ADDRESSING SEA LEVEL RISE IN NIGERIA AND THE GULF OF GUINEA

The following measures may be adopted by the government, international organisations and the citizens at large in addressing the constant sea level rise in the region.

- **Afforestation:** This generally decreases the rate of global warming and enhances rainfall over the afforested area,¹¹ by taking excess carbon from the atmosphere and allowing for natural rain cycle, thereby reducing the risk of melting ocean ice due to global warming and concentrated heavy downpours. Replanting coastal vegetation

⁸ Africa News, 'The Nigerian fishing community being eaten up by the Atlantic' (17 August 2026) <https://www.africanews.com/amp/2026/08/17/the-nigerian-fishing-community-being-eaten-up-by-the-atlantic/> accessed 19 August 2026 and BBC Africa, 'The community being washed away by rising sea' (27 May 2026) <https://www.youtube.com/shorts/hqBP6BOJIEI> accessed 19 August 2026.

⁹ BBC, 'Flooding hits Ghana's capital killing 13 people - with another storm forecast' (30 June 2026) <https://www.bbc.com/news/articles/cn4r8zlv8edo> accessed 19 August 2026.

¹⁰ United Nations Development Programme, 'Increased Resilience and Adaptation to Adverse Impacts of Climate Change in Guinea's Vulnerable Coastal Zones' <https://www.adaptation-undp.org/projects/increased-resilience-and-adaptation-adverse-impacts-climate-change-guineas-vulnerable> accessed 18 August 2026.

¹¹ R Kolade and Others, 'Afforestation: A Mitigation Strategy to Control Climate Change in Nigeria' (2021) 8(6) *International Journal of Research* 27-36.

and tidal forests can also stabilise the ocean's shifting shorelines which significantly reduces the risk of flooding.

- **Mangrove Reforestation:** Replanting native red and white mangroves. Their dense, submerged root networks trap sediment, stabilize loose shoreline soils, and act as natural shock absorbers against storm surges.
- **Green Industrialisation Investments:** Investing in infrastructures and amenities that shift away from the use of fossil fuel will significantly balance climate adaptation with industrial growth.
- **Wetland Conservation:** Healthy wetlands slow down incoming storm surges and reduce the physical impact of water on the shore lines. It does this by acting as a natural sponge and barrier which absorbs excess water wave before it reaches human communities.¹²
- **Provision of better drainage and stormwater management systems:** This can be achieved by building better pumps and pipes to drain rainwater and high-tide floods off city streets quickly.
- **Revetments and Groynes:** Installing heavy rock or concrete armoring along the shore to absorb wave energy. This is similar to the massive "Great Wall of Lagos" protecting the Eko Atlantic development.
- **Offshore Breakwaters:** Building underwater stone barriers parallel to the coast. These force high-energy Atlantic waves to break safely offshore before hitting the coast.
- **Beach Nourishment:** Pumping massive quantities of sand from the deep seabed back onto the eroded beaches. This temporarily extends the shoreline outward, though it requires continuous maintenance.
- **Stricter Regulation of Sand-filling and Reclamation of Wetlands:** Governments at all levels should implement stricter laws and regulations to stop the indiscriminate sand-filling and reclamation of wetlands for development without proper environmental impact assessment.
- **Managed Retreat:** Creating a structured, state-funded plan to relocate affected population to higher ground further inland, acknowledging that some coastal strips are already beyond saving.

¹² Australian Marine Conservation Society, 'The role of wetlands in coastal protection' (5 August 2025) <https://www.marineconservation.org.au/wetlands-coastal-protection/> accessed 18 August 2026.