

Environmental Drivers of Migration

Climate Change and the Gambia

Laura Youel Page, Kyle Santiago, Efrata Eshetu, and Mia Feldman

November 2, 2026

Background

On the coasts of The Gambia, local fishermen are being outcompeted by industrial trawlers leading young people to risk their lives on dangerous voyages to Europe. Inland, farmers are watching their land turn to salt. Climate change is no longer a distant threat in this West African nation—it is a daily reality, driving desperation and forcing many, to risk perilous journeys to Europe in search of survival.

- The Gambia is ranked 144 out of 180 countries in the Notre Dame Global Index which considers a nation's susceptibility to climate change and other global issues, along with its preparedness to enhance resilience.

- The major climate hazards experienced by the coastal nation are storms, droughts, floods and epidemics, which account for over 95% of the average annual hazard occurrence for 1980-2020.
- Significantly low GDP per capita of 840 USD– 53.4% of the population resides below the national poverty line, with poverty rates in rural areas being as high as 70%.

Their Voices Must Be Heard

“Their Voices Must Be Heard,” a nonprofit organization founded by Mustapha Manneh, is dedicated to addressing the realities of migration in the Gambia from the root cause and journey standpoints. By giving Gambian migrants a platform to share their experiences, the organization works to promote rights and advocate for migrant social justice.

Virtual Tour of the Gambia

Coastal Regions *(Fishing):* Tanji, Sanyang, Gunjur, Kartong
Inland Regions *(Farming):* North Bank, Kerewan, Mansa Konko
Urban Centers *(Internal Migration):* Brikama, Kanifing

Powered by Esri

1 Tanji

Coastal

Located along The Gambia's Atlantic coast, Tanji is highly vulnerable to coastal erosion and rising sea levels. The fishing industry, a primary livelihood for residents, faces disruption due to changing fish patterns influenced by warming ocean temperatures. These factors drive local migration inland in search of stable income and housing.

2 Sanyang

Coastal

A coastal village exposed to beach erosion and saltwater intrusion, Sanyang's agricultural lands are at risk, impacting food security. The tourism sector also faces challenges due to coastal degradation, which can lead to a decline in employment and prompt migration.

3 Gunjur

Coastal

Gunjur’s coastal ecosystem is threatened by erosion, overfishing, and habitat loss. Local residents dependent on fishing and eco-tourism may migrate due to reduced income opportunities. Environmental degradation also impacts agriculture, further driving migration.

4 Kartong

Coastal

Kartong is affected by coastal erosion and saltwater intrusion, threatening agriculture and fishing. Community members increasingly move inland as traditional livelihoods become unsustainable.

5 Kerewan

Rural

Located in the North Bank Region, Kerewan faces threats from erratic rainfall patterns and soil degradation, impacting crop yields. Rural out-migration is common as residents seek stable agricultural opportunities or urban employment.

6 Mansa Konko

Rural

In the Lower River Region, Mansa Konko is exposed to unpredictable rainfall and occasional flooding. As agriculture becomes less reliable, residents are compelled to migrate to urban areas for alternative livelihoods.

7 Brikama

Urban

As a growing urban center, Brikama experiences in-migration from rural and coastal regions due to climate impacts. Overpopulation and strain on urban infrastructure present significant challenges.

8 Kanifing

Urban

Part of the Greater Banjul Area, Kanifing is a major urban district that attracts migrants escaping coastal and rural climate impacts. Urbanization and limited housing intensify the social and economic pressures on the region.

Climate Change and Environmental Degradation

> *"I have dedicated my entire life to farming, yet each day brings new challenges, and things seem to worsen. We face pest infestations and unpredictable weather conditions that undermine our efforts."*
>
> ***Ebrima, 51-Year-Old Farmer***

The agricultural sector is one of the most vulnerable industries to climate change. With limited government investments, local farmers like Ebrima are not receiving the support they need in order to combat the changing environment and decreasing crop yields.

Intensified climate variability has put the Gambia's agricultural sector at risk:

- Rainy seasons' durations have decreased
- Precipitation decreased
- Temperature increased
- Severe weather events (droughts and floods)

Over the past thirty years, The Gambia has experienced at least one major disaster roughly every two years, with floods accounting for over half of these events. While droughts occur less frequently than floods or storms, they tend to affect a significantly larger portion of the population due to their wider-reaching impact.

Agriculture is the most vulnerable sector to the climate

change while it is The Gambia's main source of income and food for 75% of households.

The Gambia is especially vulnerable to declining cereal yields. Over the past two decades, unlike the steady or slightly rising cereal yields observed in Western and Central African countries, The Gambia has experienced a consistent decline.

The Gambia's agriculture sector employs 49% of the working population and contributes about 22.6% of the country's GDP.

Economic Loss in The Gambia
After Natural Disasters, 1990–2023.

A decrease in crop productivity would result in the Gambia's GDP decreasing **4.2%** in medium term and falling **6.9%** in the long term. These declines could lead to economic recession, high unemployment, low disposable income, and a decline in consumer spending which are all contributing factors to the migration decision.

Natural disasters impose heavy social costs, including loss of life, increased food insecurity, and a decline in human capital, all of which have lasting negative effects on economic growth and poverty, particularly in low-income countries.

Ebrima shares how the poor environmental conditions impact his life, as his hard work has limited returns in the current circumstances.

> *"After investing my time and energy, it's disheartening to see such poor results. I'm considering giving up farming altogether, as it feels*

> *like a futile endeavor now."*
>
> *Ebrima, 51-Year-Old Farmer*

The Challenging Reality Exacerbated by a Lack of Government Support

Challenging environmental factors paired with a lack of support from government policy and external organizations have made local farmers' work in the agricultural industry unproductive and draining.

Sarjo Darboe, a young farmer who is continuing his family's business, shares how he feels a lack of support and security in his work and in life. When asked if he was receiving any empowerment from the government, he said that he received a one-time installment from New Empowerment Projects to advance his farm and some money from people visiting, yet has no overarching sustained structure of support. The lack of policy safety-nets for climate disasters leaves Sarjo feeling alone and afraid for his future.

> *"I really feel like I have a fear in life. I'm really afraid. Not because I'm afraid of flying but because I'm afraid of falling down. I work so hard I never have a normal life on my own… Everything is about returning back to people. That is everything that I want to do in life…Doing it alone is something that really makes me afraid."*
>
> *Sarjo Darboe, Farmer*

Climate change and the missing support in the face of

worsening agricultural conditions impact local farmers and The Gambia's economy and growth at large. When farmers like Ebrima and Sarjo feel helpless about the future of their careers, migration arises as an adaptation and survival measure.

Saltwater intrusion occurs when seawater moves upstream into the River Gambia and seeps into surrounding groundwater due to rising sea levels and reduced freshwater flow. This intrusion is exacerbated by climate change and deforestation, which further reduce the river's flow and natural barriers. As a result, farmland near the river becomes increasingly saline, making the soil less fertile and unsuitable for growing traditional crops like rice, groundnuts, and vegetables. This poses a major challenge for local farmers and threatens food security in low-lying coastal and riverine areas.

Saltwater intrusion and unpredictable rainfall have significant impacts on rice fields, as they rely heavily on consistent water supply. The contamination of fresh groundwater via saltwater intrusion also decreases rice yields.

Rice field not far from Mansa Konko (left and middle photos)
A prepared groundnut farm close to Mansa Konko (right photo)

Photos courtesy of Mustapha Manneh, personal communication, [April, 2025]

The rice fields and farming lands pictured have been degraded by desertification and saltwater intrusion, both of which have made the grounds unsuitable for growth.

Sand Mining's Effects on Coastal Ecosystems, Agriculture, and Economic Stability

Tracking Coastal Change: Erosion and Accretion Rates Along The Gambia's Coastline (1987–2019)

The Gambia ranks among the top ten countries most affected by sea-level rise, driven by its low-lying coastal areas and vulnerable coastal morphology, which accelerate erosion.

Projections indicate that a 1-meter rise in sea level could submerge approximately 92 km² of coastal land. The country's coastline, particularly around Banjul, faces heightened erosion risks due to low elevation, rising sea levels from global warming, and increased water volumes.

Reduced sediment supply from the River Gambia and its tributaries, caused by lower rainfall, further exacerbates coastal erosion. Flooding threatens settlements, with Banjul's entire population of ~30,000 at risk of displacement.

Critical infrastructure, including 19.5 km of paved roads, 5.1 km of secondary roads, 31 km of other roads, hotels, government buildings, a vegetable oil mill, and Albert Market in Banjul, is also endangered. Other areas, such as Bakau, Senegambia, Saniang, and Gunjur, have seen flooding damage to rice and vegetable farms.

Drone footage captures the destruction of women’s gardens and rice fields in Kartong Village, where sand mining has severely disrupted local ecosystems and agricultural livelihoods.

Photos courtesy of Mustapha Manneh, personal communication, [April, 2025]

The above photos depicting a sand mining operation are exacerbated by urbanisation, industrialization, tourism, port activities, unauthorized and authorized sand mining by locals.

According to the Director of Geological Department of Gambia, Alieu Jawo, sand shortage in Gambia is causing:

1. **Increased levels of illegal mining**
2. **Damage to various environments**
3. **Delay to building and infrastructure construction**

With sand being the second largest flow of material moved by humans, it is a large commodity in Gambia, as the urban population increases resulting in demand for new roads and buildings.

Hotel industries and fisheries contribute 36% of the GDP in The Gambia, but erosion threatens land used for hotels, industrial projects, fisheries, real estate, and farming, negatively impacting the economy. Accretion causes sediment buildup, leading to silting and potential closure of Banjul's port. Effective coastal protection and risk management require understanding coastline dynamics, factoring in global warming and accelerated sea-level rise.

Rosewood Trading's Impact on Environment

The Gambia became the epicenter of rosewood trading after 2010, when Southeast Asia was depleted of its rosewood supply. China had a significant demand for rosewood for furniture design, which resulted in West African nations supplying them with $2 billion worth of rosewood material. Over time, Gambian forests have been depleted by nearly 20%, raising concerns about environmental sustainability.

- By 2011, rosewoods were considered extinct in the Gambia; however, between 2012 and 2020, they shipped 1.6 million rosewoods to China.
- In 2022, the Gambian government banned all timber exports to mitigate the impacts of deforestation in the nation.
    - However, smugglers would maneuver around this ban,

cutting wood in Senegal and sneaking it through the ports of the Gambia.

Overfishing and Industrial Exploitation

- Fish resources contribute **12%** to the Gambia's economy, and **over 300,000 Gambians** rely on them for their livelihood.
  - A 2022 report by the Financial Transparency Coalition says West African nations lose an estimated **$9.4 billion per year** due to illegal, unreported, unregulated (IUU) fishing.
- With that, **50%** of Gambia's fish stocks are overfished

Environmental damage from overfishing results in key species including grouper, deepwater rose shrimp, cuttlefish, sardinella, and bonga fish being overexploited and harvests being depleted.

The existing damage of marine life from coastal erosion and rising sea temperatures is exacerbated by the unsustainable exploitation of resources through unfair agreements, neo-colonial practices, and IUU fishing.

> *"I started fishing professionally in 1994. […] Things have changed drastically since […] 2017 and I heard that the government signed a contract with all those big ship companies."*
>
> *Morro Camara, Fisherman from Sanyang*

Illegal, Unreported, Unregulated fishing practices

from foreign industrial trawlers have invaded local artisanal fishermen in the Gambia

IUU fishing is a complex issue pushed by foreign industrial trawlers, inadequate regulatory management, and historical and political factors prioritizing foreign investment over local communities' well-being and environmental health.

Illegal- *Fishing that violates national laws or international agreements, including unauthorized fishing in a state's waters or against regional management rules.*

Unreported- *Fishing that is not reported or misreported to relevant authorities violates national or regional reporting requirements.*

Unregulated- *Fishing by vessels not bound by regional rules, or in areas lacking regulation, is conducted in ways that conflict with international conservation responsibilities.*

- The 2019 Sustainable Fisheries Partnership Agreement (SFPA) between The Gambia and the European Union allows EU vessels to fish up to 3,300 tonnes per year in Gambian waters in exchange for an annual payment of EUR550,000, split equally between access fees and sectoral support. The agreement includes strict conditions to protect local fisheries, bans fishing within 12 nautical miles of the coast, and requires daily electronic catch reporting, while also committing the EU to support sustainable fisheries management and combat IUU fishing.
- The Gambia also has fishing agreements with countries like China and Senegal, but these are not publicly available, highlighting a lack of transparency. The 2017 Senegal-Gambia agreement allows reciprocal fishing access, but enforcement is weak—Senegalese canoes often exceed agreed limits and land catches in Senegal, creating

loopholes that enable abuse by other foreign vessels through flags of convenience.

  - Flags of convenience: “the flag of a country a ship is registered under to avoid regulation and scrutiny [which] creates more confusion, lack of transparency, surveillance and accountability, making it easier for bad practices such as IUU fishing.” -- Amnesty International Report

- Despite the 2017 protocol capping the number of authorized Senegalese canoes in Gambian waters at 250 per year, enforcement is weak, and the actual number of Senegalese-owned boats often exceeds this limit by up to three times.

> *"Looking at our fishing sector, it is dominated by Senegalese because they are the ones who go to sea. You only find, out of a 100, only 5% are Gambians. So they dominate it."*
>
> Rohey M. Bah, Fisherwoman

A combination of conditional approval of foreign actors and regulatory failure on the part of the Gambian government allows for these damaging fishing practices.

As a post-colonial state, the Gambia has weak governance structures and a limited capacity for maritime monitoring, enforcement, and legal oversight. Fragmented legal systems and overlapping maritime jurisdictions with Senegal also stem from colonial-era borders and continue to complicate the governance of fisheries.

The Gambia’s reliance on foreign aid from the EU, China, and multilateral donors often shifts national priorities toward donor agendas rather than long-term resource management.

This can result in fisheries agreements that prioritize foreign access over local sustainability. Aid-dependent governments may also hesitate to enforce regulations against powerful foreign actors, fearing diplomatic or financial repercussions.

The intruding foreign fishing industry extends into *fishmeal factories*, which stand on the coast and violate legal procedures that ultimately impacts the environmental, economic, and social health of the region.

> *ROHEY: "I own one boat and I have investment of five boats that the return was very promising but at the end of the day it did not work out because I did not secure a contract with the fish meal factories."*

> *RESEARCHER: "So, you didn't have buyer for the fish?"*

> *ROHEY:* ***"They were buying from non-Gambians instead."***
>
> Rohey M. Bah, Fisherwoman

Rohey discusses how beyond the industry's impact on the catch yields, their reach extends into fishermen's ability to sell their fish in the local market and to fish meal factories. She discusses how there is potential for economic success if a contract with a factory is earned, yet she was taken advantage of and ended up with no returns. At the factory's request, she invested in five boats that were Two Hundred & Fifty Thousand (D250,000.00) each, yet was still not given priority in the market.

> *"I brought the boats in the country and he ended up failing me woefully without taking my fish instead he was paying me a lower price compared to the other people."*
>
> Rohey M. Bah, Fisherwoman

Aliou Ba, the interim senior oceans campaign manager for Greenpeace Africa, shares how "These patterns of exploitation exacerbate socio-economic inequalities, driving many people to despair and emigration." Rohey discusses how support from the government or being given business by the fish meal factories would give local fisheries more of a chance in the increasingly industrial trawler-dominated space.

> *"If we are encouraged and given the chance, most Gambians leaving would stay in this country."*
>
> Rohey M. Bah, Fisherwoman

Fish Landing Site in the Gambia

Fisheries usually provide hope for youth to work, but the fishing agreements that regional governments sign with industrial fishing operators take away that opportunity. Fishermen now face a daily struggle and risk to venture farther out into the ocean in order to catch what is still a suboptimal yield.

> *“Having been born in Gambia, I now face the harsh reality of fishing that no longer resembles what it used to be. Each day is a struggle; we must go*

> *much farther out to sea to find fish. Our nights are disrupted by the presence of industrial trawlers, making it nearly impossible for us to catch anything substantial. This constant struggle leaves us unable to afford necessities, like fuel for our fishing boats."*
>
> ***Alagie Sarr,*** *Migrant Fisherman from Senegal*

Fish Landing Site in The Gambia (April 2025)

Photos courtesy of Mustapha Manneh, personal communication, [April, 2025]

> *“Before it was not difficult to get fish, now it is difficult to get fish and there is a huge difference in prices. From 2014 to 2016, three catfish would be 25 dalasi now four is 100 dalasi, the bigger one is 100 dalasi for just one.”*
>
> *Adama Jatta, Fish Smoker*

A 2022 report by the Financial Transparency Coalition says

West African nations lose an estimated **$9.4 billion per year** due to IUU fishing. Without government support in regulating these illegal practices, most local Gambian fishermen are faced with difficult decisions about how to carry on with their carriers and make a living.

Section 4: Human Response

As climate change continues to skyrocket globally, it will lead to three outcomes of extreme events: **migration (voluntary and forced)**, **displacement**, and **immobility**.

Gambian Government's Response to Climate Change

To adapt to these growing hazards, governments must enforce adaptation strategies and ensure that their economies are not negatively impacted, resulting in unemployment and low labor market participation.

The Gambian government's neglect of agricultural sector investments has made this field most prone to climate change (Belford et al., 2022).

- Research has shown that **75%** of Gambian households rely heavily on agriculture to sustain their financial livelihood and food security.

Without proper climate change intervention, the growing food insecurity and crop devastation will force Gambians to migrate regionally or internationally, hoping for sustainable living.

As a result, it is evident that climate-induced migration of Gambians results from their government's failure to

adapt, rather than a successful coping mechanism.

International Community's Response to Climate Change

Despite the Global North's responsibility for emitting the most greenhouse gases, the Global South bears the burden of these consequences through severe natural hazards.

- The Global South has a lower adaptive capacity compared to the Global North.
  - It is essential for the Global North and international organizations cooperate to provide financial assistance
  - However, this does not acknowledge or tackle the drivers of migration

As the Global North continues to contribute disproportionately to climate change, they are also enforcing stricter migration policies that make it harder for people, especially from climate-vulnerable regions, to seek refuge or better opportunities. This creates a cycle of injustice as the communities least responsible for the climate crisis are often the most affected, facing droughts, flooding, and crop failures that lead them to migrate.

This highlights a deep imbalance in global responsibility and moral accountability.

Migration as a Response

As the Global South is regarded as the most vulnerable to climate change, countries in West Africa have turned to migration as a response, making the ECOWAS's free movement protocol vital as climate change amplifies migration

The Economic Community of West African States

Established on May 28, 1975, the Economic Community of West African States (ECOWAS) comprises twelve countries: **Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal Sierra Leone, and Togo**.

Established to promote economic cooperation and unity among West African nations, it has aided the migration of its member citizens. The **Free Movement of Persons, Residence and Establishment** protocol was adopted on May 29, 1979. Its key elements are:



- free movement of people and their animals
- Abolishment of visas for citizens among member nations
- States provide citizens with proper travel documents
- Ensures illegal immigrants are protected from abuse
- allow citizens to find employment in member countries
- establish businesses and practices
- Allows for citizen expulsion from the host nation on the conditions of national security, public health, and breach of residential laws

Through this initiative, Gambians and other West African citizens can freely move to member states to find employment and sanctuary from the growing climate change concerns. However, current developments within the ECOWAS members have altered their migration ideologies.

Current Developments in the ECOWAS

Various elements according to the Quarterly Mixed Migration

Update: West Africa, demonstrate that ***member nations are contradicting the free people movement protocol*** of the ECOWAS:

July 6, 2024

Niger, Mali, and Burkina Faso created the Confederation of Sahel States, severing ties with ECOWAS. They left due to international interference, believing that Paris was influencing the region's terrorist movement policies.

July 22, 2024

The European Union funded $15 million to the Mauritanian Armed Forces to strengthen border surveillance and deterrence capabilities, resulting in the increased militarization of immigration.

August 14, 2024

Côte d'Ivoire reinforces visas for citizens traveling to Morocco due to irregular migration to Europe and counterfeit passports, contradicting the ECOWAS free people movement protocol.

As a result of recent political trends in West Africa, it would make migration as an adaptation tool difficult to employ for Gambians and other ECOWAS citizens.

Section 5: Policy Landscape & Gaps

Internationally, funding and support from organizations like