

# Advancing Climate Resilience in Ghana:

## Integrating Nature-based Solutions, Climate Services, Gender, and Indigenous Knowledge.

# POLICY BRIEF

January 2026

*Figure 1. Flooding in Accra, Ghana*

## Executive Summary

Ghana's diverse climate, ranging from arid northern savannahs to humid southern coasts, renders the country highly vulnerable to climate change, with rising temperatures, erratic rainfall, prolonged droughts, and accelerating sea level rise posing serious risks to food security, livelihoods, and infrastructure.

This policy brief synthesizes findings from the ALBATROSS Horizon Europe project, which conducted a multi-level analysis of over 250 national and sub-national policy documents, as well as regional and transboundary frameworks, across five Sub-Saharan African countries. Focusing specifically on Ghana, a review of 51 national and subnational policy documents reveals that drought and flood hazards are addressed in 55% of Ghana's policies, 75% reference Nature-based Solutions (NbS), 45%

incorporate climate services, and gender-sensitive approaches appear in about 30%. Indigenous and Local Knowledge (IKLK) is acknowledged in community-based resource management and agroforestry practices in 55% of the reviewed documents.

These findings highlight the need for policymakers to mainstream NbS across development and infrastructure planning, strengthen climate services capacity, institutionalize gender inclusion, and formalize IKLK as a complement to scientific approaches. Equally important is the updating of outdated policies at both national and subnational levels, the exploration of innovative nature financing instruments for NbS, and the establishment of robust monitoring frameworks.

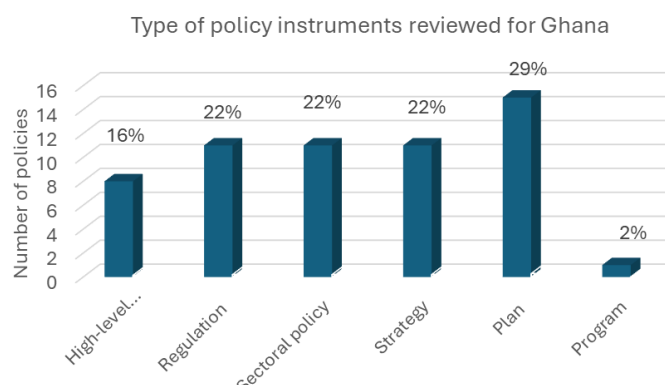
These are critical steps toward securing a climate-resilient, inclusive, and sustainable future for Ghana.



*Figure 2. Erosion along the Coastline of Ghana*

## Key Findings

### Policy SDG alignment



- Strong coverage of SDG 13 Climate Action (75%) and SDG 15 Life on Land (69%).
- Weaker integration of SDG 5 Gender Equality (29%) and SDG 4 Quality Education (16%).

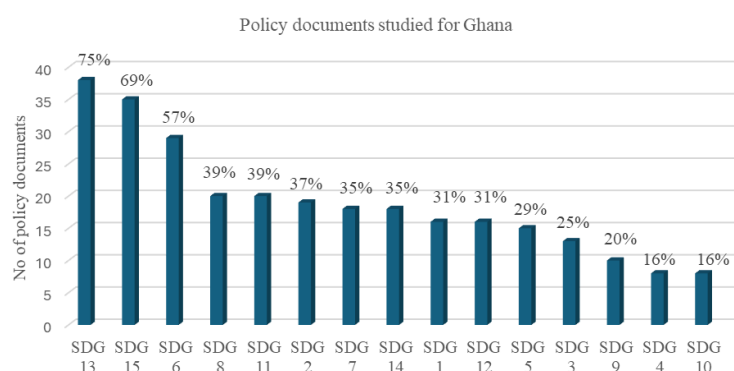


Figure 3. Policy alignment with the SDGs

### Climate Hazards and Risks

- Drought and flood hazards dominate climate-related policies, each featuring in 55% of Ghana's reviewed policy documents, followed by soil erosion (33%) and coastal erosion (31%); other hazards – such as heat waves, wildfires, and storm surges – appear less frequently.

### Nature-Based Solutions (NbS)

#### Integration trends

- While 75% of policies reference NbS, only 36% integrate them comprehensively.
- Strong examples: National Climate Change Policy (2013), Climate Master Plan (2015), REDD+ Strategy (2016), National Water Policy (2024), National Biodiversity Strategy (2016).
- Medium integration in infrastructure and spatial development frameworks which reference NbS but lack detailed implementation.
- Ecosystem focus: Freshwater (61%), forests (57%), coastal/marine (45%), agriculture (39%). Urban areas and grassland NbS remain underdeveloped.
- Key actions identified: Reforestation, wetland restoration, agroforestry, erosion control, coastal protection, and urban greening.

#### Policy recommendations

- Institutionalize NbS in all long-term and medium-term frameworks both at national and subnational levels.
- Update/revise outdated foundational documents (Land Policy 1999, Wetland Strategy 1999) to reflect contemporary NbS practices.
- Strengthen legal mandates: Update environmental laws to explicitly require NbS in land-use planning and disaster risk reduction.
- Integrate NbS into urban planning (green corridors, stormwater management, urban forestry).
- Establish innovative nature financial instruments and mechanism (green bonds, biodiversity credits, payment for ecosystem services etc.). Incentivize private sector investment.
- Create gender disaggregated NbS indicators and monitoring systems to track progress.
- Make NbS a central pillar of Ghana's forthcoming National Adaptation Plan.

## Climate Services

### Integration trends

- Only 45% of policies consider climate services.
- Focus areas: early warning systems, climate data access, and monitoring.
- Sectors addressed by climate services: Disaster risk reduction (24%), Water (18%), Agriculture and food security (12%).
- Strong examples: National Water policy (2024), Updated NDC (2021), National Climate Change Master Plan (2015) and Climate Change and Green Economy Strategy (2016).

### Policy recommendations

- Enhance the integration of climate services into national policy frameworks, e.g. National Spatial Development Framework (2015-2035) and National Environmental Policy (2012) do not explicitly incorporate climate services.
- Strengthen the provision of climate services and cross-sectoral coordination e.g. environment, agriculture, health, infrastructure and disaster risk reduction.
- Climate services expansion: Scale up multi hazard early warning systems and integrate climate data into national planning.
- Improve climate data availability and accessibility.
- Develop user-friendly platforms for local communities.
- Build capacity for evidence-based policymaking.



## Gender and Social Inclusion

### Integration trends

- Only 29% of policies integrate gender considerations.
- Additional 40% of the documents acknowledged the need to address gender inequality without listing specific actions to address these challenges.
- Gender and social inclusion mentioned often as add-ons rather than central strategies. e.g. Climate Change Gender Action Plan (2021) promotes climate-smart agriculture but lacks broader mainstreaming.
- Good examples: National Development Plan of Ghana (2018-2057), Medium-term National Development Policy Framework (2022-2025) and the Ghana Infrastructure Plan 2018-2047.

### Policy recommendations

- Ensure gender mainstreaming across all climate, environmental, and sectoral policies (e.g. through reviews of the Environmental Policy (2012), the Forest and Wildlife Policy (2012), the Environmental Sanitation Policy (2010), and the Biodiversity Strategy and Action Plan (2016)).
- Ensure inclusive participation of women in policy design and implementation.
- Link gender approaches to livelihood resilience (e.g., climate-smart agriculture, ecotourism); for example, the National Climate-Smart Agriculture and the Food Security Action Plan (2016-2020) could be updated to prioritize women's access to training, finance, and markets.
- Integrate gender considerations and IKLK into NbS strategies to ensure equitable and culturally relevant solutions.
- Review the Climate Change Gender Action Plan to support subnational policy integration.



## Indigenous Knowledge and Local Knowledge (IKLK)

### Integration trends

- Only 55% of policies reference IKLK.
- IKLK provides valuable insights for community-based adaptation, sustainable agriculture, and ecosystem management.

### Policy recommendations

- Strengthen and institutionalize IKLK:
  - Provide actionable implementation pathways and embed IKLK into national adaptation strategies.
  - Broaden its application beyond current domains and recognize it as a complementary pillar to modern climate services.
- Legal and regulatory integration: Update key laws and frameworks (Meteorological Act, NDMO Act, Water Resources Commission Act, Forest

Protection Decree) to formally integrate traditional forecasting, indigenous risk indicators, and local hazard response mechanisms.

- Community and knowledge co-production: Promote community-based natural resource management and support co-production of knowledge between scientists and local communities.

## Conclusion and Next Steps

Ghana has laid a strong foundation for NbS and climate services but must scale up integration, innovative financing, and monitoring while embedding gender and IKLK into all policy frameworks.

Policymakers have a unique opportunity to institutionalize these four pillars by seizing upcoming policy revisions – such as the National Adaptation Plan, Land Use and Spatial Planning Act – to embed them as central components of Ghana's climate resilience and sustainable development.

## Contact Information

- **Project Coordinator:** University of Bologna, Italy; Laura Sandra Leo: [laurasandra.leo@unibo.it](mailto:laurasandra.leo@unibo.it)
- **Authors:** Mary Nyasimi and Joseph Muhwanga, **UNESCO**, [m.nyasimi@unesco.org](mailto:m.nyasimi@unesco.org) and [j.muhwanga@unesco.org](mailto:j.muhwanga@unesco.org)

### Contributors:

#### Kwame Nkrumah University of Science and Technology Kumasi, Ghana:

- Michael Poku-Boansi, [mpoku-boansi.cap@knust.edu.gh](mailto:mpoku-boansi.cap@knust.edu.gh);
- Leonard K. Amekudzi, [leonard.amekudzi@gmail.com](mailto:leonard.amekudzi@gmail.com)
- Charity Owusua Danso Jnr., [charitydansoowusujnr@gmail.com](mailto:charitydansoowusujnr@gmail.com)

#### University of Ghana, Ghana:

- Christopher Gordon, [cgordon@ug.edu.gh](mailto:cgordon@ug.edu.gh)
- Doreen Larkailey Lartey, [dlartey222@gmail.com](mailto:dlartey222@gmail.com)
- Ebenezer Boahen, [ebenboahen1045@gmail.com](mailto:ebenboahen1045@gmail.com)



**Website:** [www.albatross-project.eu](http://www.albatross-project.eu)

**Source:** This brief is based on ALBATROSS Horizon Europe Deliverable D6.1: *Multi-level policy analysis* (Nyasimi, Almassy, Muhwanga, et al., 2025). For more detailed information and supporting evidence, readers are referred to the full report and country specific summaries.