Strengthening Climate-Resilient Development in South Africa:

Integrating Nature-Based Solutions, Climate Services, Gender & Social Inclusion, and Indigenous Knowledge

POLICY BRIEF

January 2026

Purpose

This policy brief presents a consolidated synthesis of the major insights and strategic recommendations emerging from the Multi-Level Policy Analysis conducted as part of the ALBATROSS Horizon Europe project across five Sub-Saharan African countries: Ghana, Kenya, Madagascar, South Africa, and Tanzania**.** In total, 252 documents were analyzed, including 53 from South Africa. This policy brief highlights South Africa's progress, gaps, and opportunities in integrating Nature-based Solutions (NbS), climate services, gender-responsive approaches, and Indigenous and Local Knowledge into environmental and climate frameworks. It is intended to inform and guide national and sub-national level policymakers, development planners, and practitioners in the design of evidenced-based frameworks to address environmental and climate challenges.

Executive Summary

South Africa faces intensifying climate risks, including prolonged droughts in the arid western provinces, floods and soil erosion in the Eastern Cape, sea-level rise along coastal areas, and increasing urban heatwaves. A review of 53 national and sub-national policy documents shows that while climate hazards are widely acknowledged, integration of nature-based solutions (NbS), climate services, gender-sensitive approaches, and Indigenous and local knowledge (IKLK) remains uneven and fragmented.

Nature-based solutions are referenced in 75 percent of policies, but only a quarter integrate them comprehensively. Innovative financing and monitoring frameworks for NbS are largely absent, limiting large-scale implementation.

Climate services are integrated in 40 percent of policies, however, mainstreaming climate services into broader development frameworks and sectoral strategies remains limited, reducing their potential to support evidence-based decision-making across agriculture, water, health, and disaster risk management.

To strengthen resilience, South Africa should mainstream Nature-based Solutions (NbS) and ecosystem-based adaptation into high-level

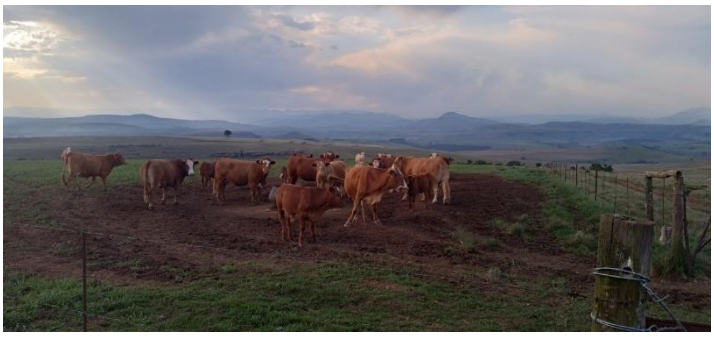

Figure 1:Maclear, Eastern Cape: Well-managed rangelands in action: A clear nature-based solution delivering resilience for people, landscapes, and climate (Photo: Glynis Humphrey)

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frameworks, expand sectoral guidelines across forestry, agriculture, and water, and legislate explicit NbS requirements within environmental laws and impact assessments.

Establishing urban NbS standards, developing financing mechanisms such as green bonds, and introducing NbS-specific monitoring indicators are critical next steps. Equally important is the pursuit of sustainable, innovative, and equitable approaches to carbon, water, and biodiversity funds, including blended finance models.

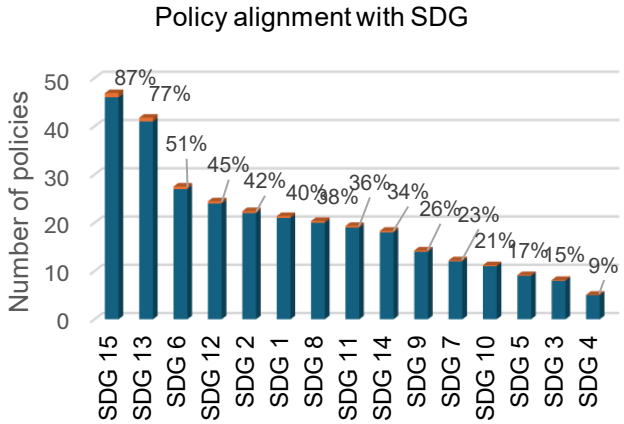
Addressing gaps in gender equity and the integration of Indigenous and Local Knowledge (IKLK) will ensure that climate adaptation strategies remain inclusive, participatory, and aligned with the Sustainable Development Goals.

Figure 2:Healthy rangelands close to the town of Matatiele, Eastern Cape, South Africa: Resilient grasses, managed grazing, and intact soils supporting livestock, biodiversity, and water regulation. (Photo: Glynis Humphrey)

Key Findings

Policy alignment with SDG

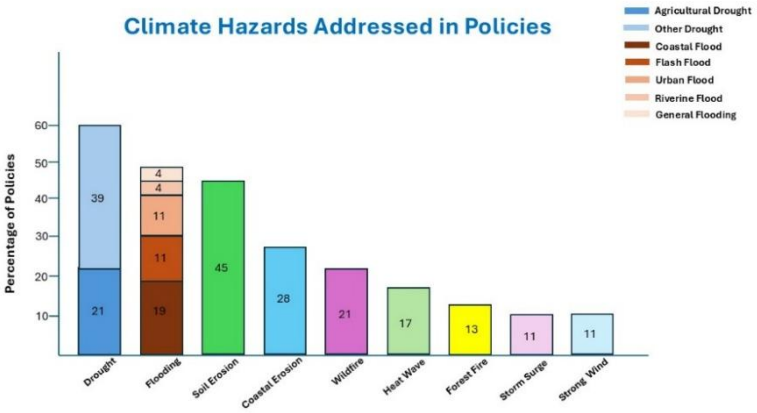
- South Africa's policy frameworks demonstrate strong alignment with SDGs, that address ecosystems and climate action -SDGs (13, 14, 15).



- However, integration across socio-economic and equity-related goals remains uneven (SDGs 5, 4, 7, 11), highlighting opportunities for more holistic mainstreaming.

Climate hazards addressed

- South African policy documents identify a wide range of climate hazards, with drought featured in 60% of policies, including agricultural drought in 21%.
- Flooding is addressed in 49% of policies, including coastal flooding (19%), flash floods (11%), urban (pluvial) floods (4%) and riverine floods (4%).
- Soil erosion/land degradation appear in 45% of policies, while coastal erosion features in 28%.
- Other notable hazards include wildfires (21%), forest fires (13%), heatwaves (17%), strong winds (11%).



Nature-Based Solutions (NbS)

Current Integration

- 75% of reviewed policies include NbS measures, with high level of integration at 25%, and another 50% at medium level.
- Stronger references were located in the following key policies: water, biodiversity, and forestry policies such as *National Water Resource Strategy Third Edition (2023), White Paper on the Conservation and Sustainable Use of South Africa's Biodiversity (2023),* and *South African Land Degradation Neutrality Target Setting Programme (2017)*.

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- Medium integration in high-level frameworks, e.g., *National Development Plan 2015-2030, updated first NDC (2021),* and *Strategic Plan for South African Agriculture (2020-2025).*
- Ecosystems covered included: Freshwater 40%, Agriculture 32%, Coastal/Marine ecosystems 30%, Forests 25%, Savanah and grasslands 11%.

Policy Recommendations

To accelerate Nature-based Solutions (NbS) adoption, the following policy recommendations are proposed:

- Mainstream NbS into national and sub-national development and climate strategies. For example, the *National Development Plan 2030,* the *Climate Change Adaptation Strategy for the Eastern Cape,* and the *Eastern Cape Biodiversity Conservation Plan* show high potential for integration.
- Strengthen NbS and EbA integration in key environmental sectors – e.g., *Strategic Plan for the Environmental Sector (2019-2024), Strategic Plan for South African Agriculture (2020-2025).*
- Introduce innovative nature financing mechanisms and instruments and incentivize private sector (e.g green bonds, blended finance, payment for ecosystem services, and carbon tax offset etc.).
- Integrate NbS into urban planning through national guidelines on hybrid green-blue-grey infrastructure – for example, urban tree planting, green roof, storm water management.
- Develop monitoring frameworks with NbS-specific indicators to track co-benefits.

Climate Services

Current Integration

- 40% of policies reference climate services, with 17% showing high level of integration.
- Strong integration in *National Climate Change Response* Policy *(2011), National Climate Change Adaptation Strategy (2019),* and *Climate Change Act (2024).*
- Sectoral examples are *National Water Resource Strategy (2023)* and *National Disaster Management Framework (2023)* which embed early warning systems and climate data.
- Types of climate services integrated are climate research and modelling (32%), climate observations and monitoring (28%) and climate services information systems (32%).

Policy Recommendations

- Strengthen climate services in key environmental sectors by integrating available climate projections - for example, in policies such as the National Water Resource Strategy (2023), the Marine Spatial Planning Framework (2017) and the Strategic Plan for South African Agriculture (2020-2025).
- Expand people-centered, multi-hazard early warning system ensuring community-level distribution and access within each province.
- Expand climate data collection, accessibility, and downscaled modeling to deliver localized projections and risk maps, while strengthening provincial and municipal climate service capacity to support evidence-based, equitable adaptation planning.
- Operationalize the National Climate Change Information System with clear mandates and funding.
- Strengthen institutional capacity for climate services at provincial and municipal levels.

Gender and Social Inclusion

Current Integration

- Around 30% of the reviewed frameworks include specific gender-responsive measures.
- Additional 25% of the documents acknowledged the need to address gender inequality without listing specific actions.
- Remaining 40% of the reviewed policy documents include limited or no consideration of gender inclusion.
- Strong examples are *2nd NAP to Combat Desertification, Land Degradation, and Drought (2018–2030), Strategy toward Gender*

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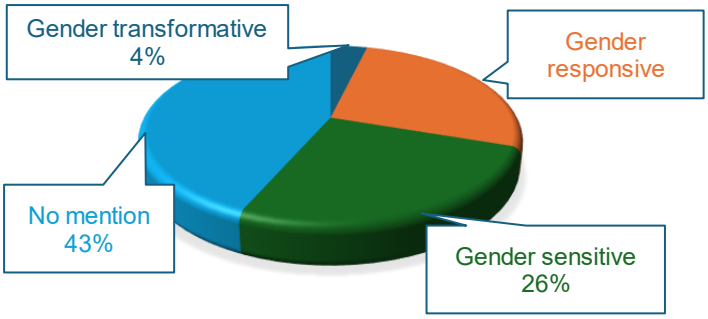
Mainstreaming in the Environment Sector (2016–2025).

- There is evidence of good progress in agriculture and rural development strategies, but mainstreaming is recommended to be strengthened.
- Limited recognition of intersectional vulnerabilities (women, youth, and marginalized communities, e.g., elderly generation).

LEVEL OF SOCIAL AND GENDER INCLUSION IN STUDIED SA FRAMEWORKS



Policy Recommendations

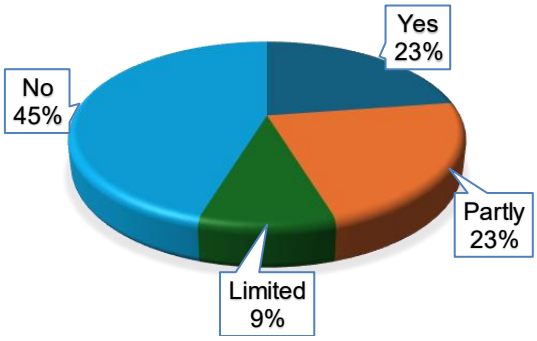
- Mandate gender mainstreaming in climate and environmental policies.
- Develop gender-responsive /disaggregated indicators for adaptation and NbS outcomes. For example, the *Disaster Management Framework (2023)* calls for gender integration in DRR/DRM activities but lacks detailed implementation mechanisms.
- Support women-led NbS initiatives in agriculture, forestry, and water management.
- Ensure equitable access to climate services, especially for rural women and vulnerable groups.
- Integrate social inclusion into innovative nature financing mechanisms and instruments, that could also catalyze private sector investments.

Indigenous & Local Knowledge (IKLK)

Current Integration

- 45% of the reviewed policy frameworks contain concrete provisions for integrating indigenous knowledge and local knowledge (IKLK), either comprehensively or partially.

LEVEL OF INTEGRATION OF IKLK



- The remaining half of the studied documents include limited considerations or do not mention IKLK systems.
- IKLK was referenced in policies such as the National *Climate Change Response Policy (2011)* and the *Adaptation Strategy (2019)*.
- Partial integration in community-based programs like *LandCare*, *Working for Water*, Working *for Wetlands*.

Policy Recommendations

- Mainstream IKLK integration in national and sub-national environmental governance.
- Integrate IKLK into regulatory frameworks, e.g. *National Environmental Management Act (1998, amended in 2022*) recognizes IKLK but lacks specific enforceable mechanisms.
- Support the co-production of knowledge by linking IKLK with scientific climate data.
- Broaden the application of IKLK beyond current domains, e.g., *The National Water Resource* Strategy *(2023)* mentions IKLK but does not integrate it into water governance practices. Forestry 2030 Roadmap could be updated to consider sustainable forest management rooted in traditional knowledge systems.
- Create participatory platforms for Indigenous communities specifically for policy engagement.
- Document and scale successful IKLK practices across ecosystems (forests, rangelands, wetlands, coastal zones etc.).

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Conclusion

South Africa has made significant strides in embedding Nature-based Solutions (NbS) and climate services into sectoral policies. However, systematic integration, innovative nature financing mechanism and instruments, and cross-sectoral coordination remain weak. By mainstreaming NbS, strengthening climate services, embedding gender equity, and elevating IKLK, policymakers can unlock transformative pathways for climate-resilient development.

Figure 3:Small-livestock farming embedded within healthy grassland systems across communities in the Tsitsa Catchment, Eastern Cape, South Africa. (Photo: Glynis Humphrey).

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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.

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