Transfrontier Conservation Areas

SOUTHERN AFRICAN DEVELOPMENT COMMUNITY

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WEBINAR SERIES 2026

Drought, Wildlife and Livelihoods

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OBJECTIVE

Southern Africa is expected to face severe drought conditions linked to a possible Super El Niño. This presents major risks for wildlife, tourism, rural livelihoods, and conservation efforts. This webinar will explore how drought affects the wildlife economy and identify practical actions to build resilience across TFCAs and surrounding communities.

Global Gateway

Co-funded by the European Union

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Implemented by: giz

Strengthening the Wildlife Based Economy in face of an El Nino induced drought in Southern Africa

Moderated by Steve Collins
SADC TFCA Network Coordinator
NaturAfrika/C-NRM Program

Webinar Program

- **El Nino and drought–** Steve Collins TFCA Network Coordinator
- **Communities on the frontline** – Petros Muyunda from ***The Zambian CBNRM Forum*** - zcbnrm.com
- **Preparing Rural farmers for expected drought – *COMACO*–** Community Markets for Conservation - itswild.org
- **Building a Climate-Resilient Wildlife Economy** - Dr Wiseman Ndlovu from The African Wildlife Economy Institute wildlifeeconomy.info
- Panel discussion and questions

EL NIÑO

What it is — and why Southern Africa should pay attention

Pacific Ocean warming

El Niño begins when unusually warm water builds up in the central and eastern tropical Pacific, roughly every 2–7 years.

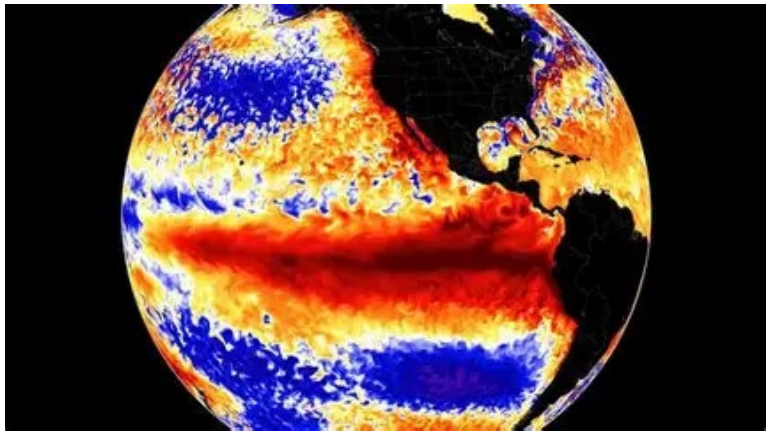
Global rainfall scramble

This warmth shifts wind and rainfall patterns worldwide. For Southern Africa it almost always means below-normal rainfall and above-normal heat.

La Niña is the opposite

La Niña — the cool phase — often brings above-normal rains. The two phases are part of the same climate oscillation: ENSO.

HOW IT WORKS



NORMAL YEAR

Warm water pools in the west (near Australia/Indonesia). Trade winds blow west. Rain falls there.

EL NIÑO YEAR

Warm water shifts east. Trade winds weaken or reverse. Southern Africa, India and parts of Australia see drought conditions.

CLIMATE CHANGE & EL NIÑO

Not the cause — but it turns up the heat on everything

What climate change does NOT do

✕ Cause El Niño events

✕ Increase their frequency (evidence is mixed)

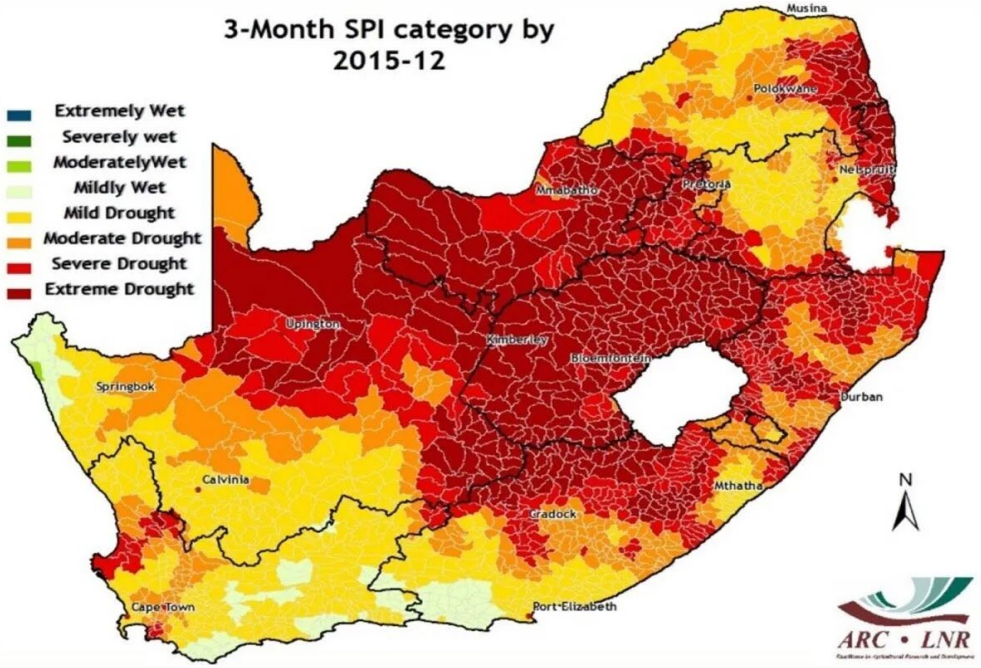
✕ Control when the next one begins

Climate change DOES

✓ Raise the baseline temperature of ocean & atmosphere

✓ Increase moisture in the air = more intense rainfall and more intense droughts

✓ Each El Niño drought now plays out in a hotter system

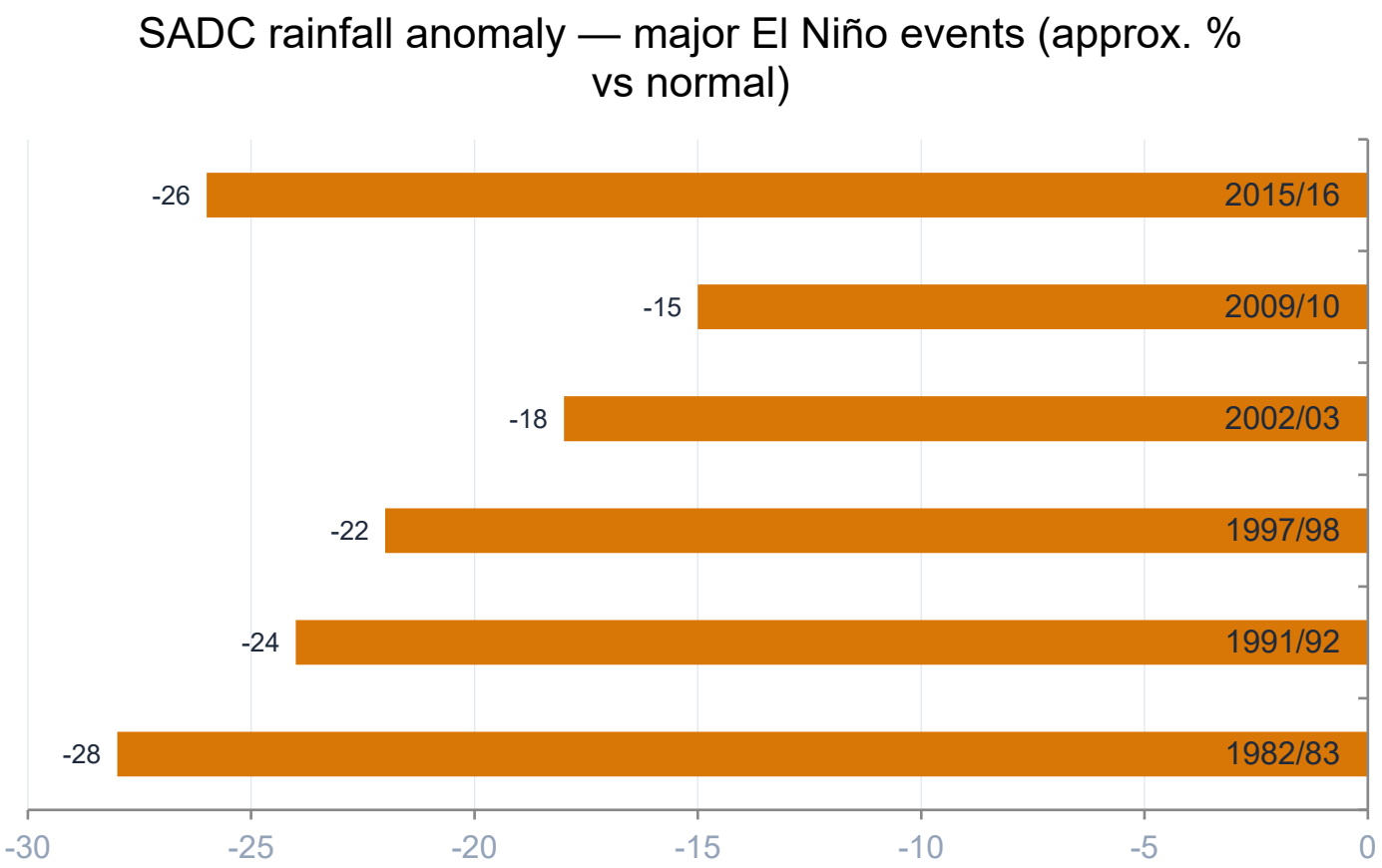


3-year global average (2023–25) exceeded 1.5°C above pre-industrial for the first time in recorded history — meaning every El Niño now plays out in a warmer world than any previous one.

Sources: WMO State of Global Climate (2025); IPCC AR6; Cai et al. (2021) Nature Climate Change

EL NIÑO & SOUTHERN AFRICA

A long and well-documented relationship – El Nino means Drought



Records since ~1600

Coral skeletons and ice cores show El Niño–drought correlations in Southern Africa going back over 400 years.

7 of the 8 driest seasons

In the 20th century, 7 of SADC's 8 driest summer seasons coincided with an El Niño event.

Maize is the key crop

Maize — the regional staple — is planted Oct–Dec and harvested Feb–May. El Niño rains fail exactly at planting time.

2015/16 EL NIÑO DROUGHT

Impacts on rural communities across Southern Africa

40M

people were at risk of food insecurity across the SADC region

9.3M

tonnes of cereal crops lost across Southern Africa

The information gap

Commercial farms get weather forecasts within hours. Subsistence farmers in remote communities may find out months later — via input price rises or a radio broadcast. This gap turns a climate shock into a famine.

–45%

maize harvest reduction in Zimbabwe in 2015/16 season

$1.5B

estimated agricultural losses in South Africa alone

Not just drought — intense rain events are also part of the picture

Why El Nino also brings floods

El Nino suppresses overall seasonal rainfall across Southern Africa — but it does not produce evenly dry conditions. It creates a volatile, unpredictable pattern: long dry spells punctuated by sudden, intense downpours.

The same season can bring both drought stress on crops and flash flooding in low-lying areas. In a warmer atmosphere, higher moisture content means when rain does fall, it can fall very hard, very fast.

Both extremes can occur in the same season — even the same month.

Flash flooding and infrastructure damage

Sudden intense rainfall overwhelms drainage, damages roads and bridges, and destroys crops that survived the dry spell. Low-lying communities and informal settlements are most exposed.

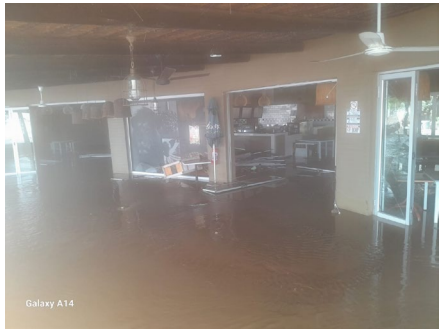
Riverine flooding and cyclone risk

Late-season rainfall events can cause major river floods downstream. Cyclone activity off the Mozambique Channel also intensifies during El Nino transition periods — a further flooding risk for Mozambique and Zimbabwe.

Disease spikes after flooding

Standing water after floods drives cholera, malaria and diarrhoeal disease outbreaks — compounding food insecurity with health emergencies. Malaria cases bordering KNP rose sharply after the 2015/16 season.

Floods in Kruger Park February 2026



(Photos suppled: SANParks

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MR. PETROS MUYUNDA

ZAMBIA CBNRM FORUM

Drought Effects on Communities living in Game Management Areas

Overview

- Drought in Game Management Areas affects both communities and wildlife by reducing access to water and food.
- Households face hunger, water shortages and pressure on their livelihoods.
- Wildlife also suffer from lack of forage and drinking water, forcing animals to move closer to human settlements which has increased human wildlife conflict, including crop damage, livestock loss, injuries, and deaths.
- Drought conditions can also contribute to higher poaching levels as people seek alternative sources of food and income.
- Overall, drought has continued to weaken community resilience and leads to a decline in wildlife populations.

Human wildlife conflicts

Increased deaths and injuries occur when people enter the bush to poach wildlife in search of food and money for survival.

These activities expose community members to serious dangers, including attacks by animals, accidents, and physical harm in remote areas.

Wildlife habitants disturbed

Cutting trees for charcoal destroys wildlife habitat and reduces shelter, breeding, and feeding areas.

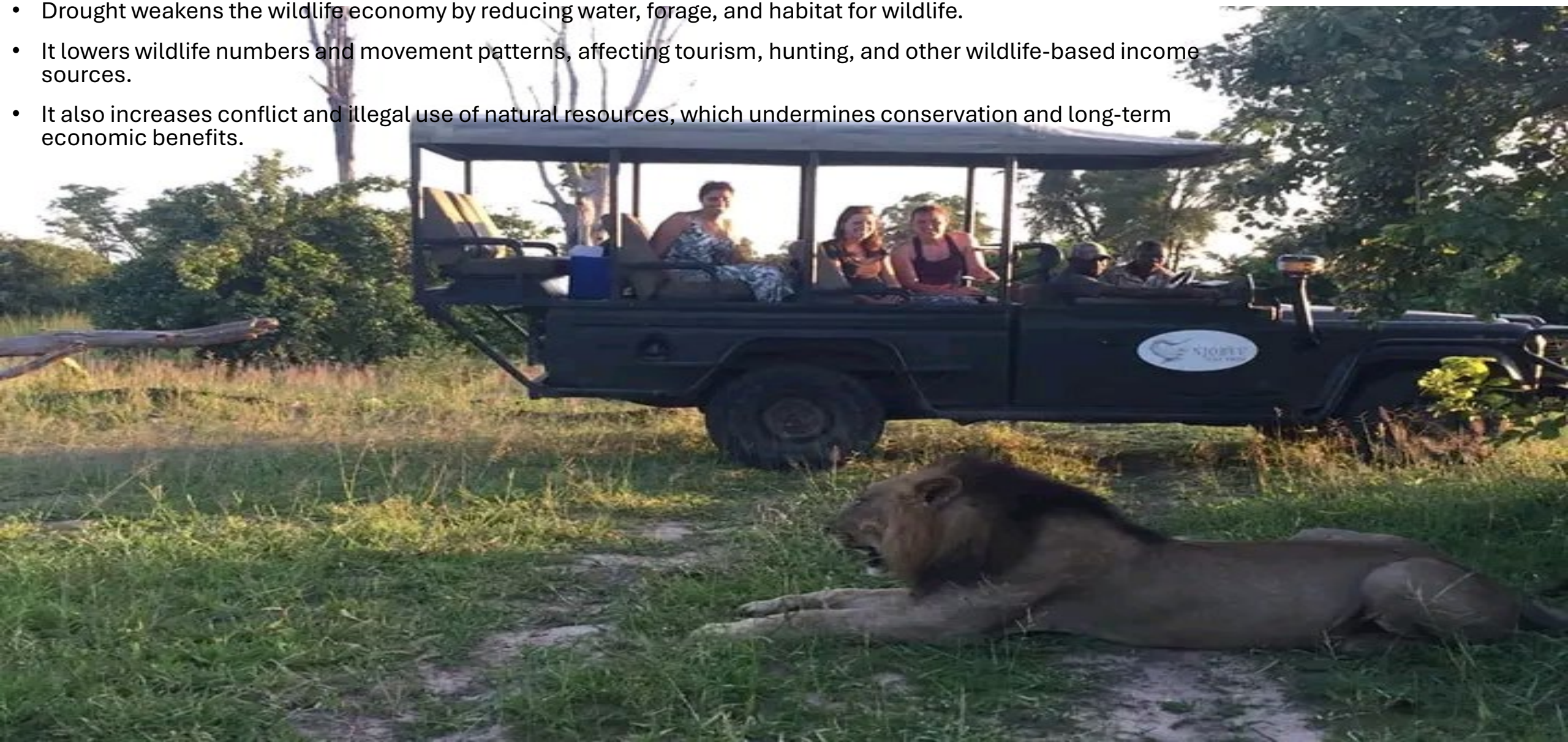
Deforestation constantly forces animals to move elsewhere and increases stress on wildlife.

It also causes land degradation, soil erosion, and loss of biodiversity.

Communities should be supported with alternative livelihoods, tree planting, habitat restoration, and sustainable energy options.

Wildlife Economy

- Community rely on trophy hunting and photographing safari and once drought occurs it also affect the wildlife economy
- Drought weakens the wildlife economy by reducing water, forage, and habitat for wildlife.
- It lowers wildlife numbers and movement patterns, affecting tourism, hunting, and other wildlife-based income sources.
- It also increases conflict and illegal use of natural resources, which undermines conservation and long-term economic benefits.



Water Challenges

Drought has reduced water levels in shallow wells, making access to safe water harder for households.

This has increased collection time and distance, while also affecting water for livestock and small-scale farming.

It also worsens water quality and reliability, creating health and livelihood risks.

POACHING

Effects of Poaching

- Poaching has dramatically increased and wildlife resources always come at high risk and some species risk being completely wiped-out eg buffalos always become very weak due to lack of water and they are easy to be hunted and some time die on there own as well as hippo
- Poaching is often driven by hardship, especially when families lack adequate food, income, and livelihood options.
- The exchange of game meat for cash or food has negatively rendered short-term relief, but it puts lives at risk and continues to worsen long-term insecurity.
- This practice also undermines wildlife conservation and increases pressure on already vulnerable animal populations.

ANUTRITION

- Malnutrition has mostly affected children leading to untimely deaths are very common
- Drought in communities around GMAs continues to be the leading cause food and water shortages, leading to hunger, malnutrition, and weak livelihoods.
- It pushes wildlife closer to settlements, increasing human–wildlife conflict (Crop Damage).
- Overall, drought reduces community resilience and worsens poverty and health outcomes.

Call for Action

- Encourage communities to grow drought-resistant crops.
- Provide local communities with certified drought-resistant seeds.
- Raise community awareness of the impending drought.
- Drill boreholes and promote dry-season irrigation for household food production.
- Promote climate-smart agriculture among farmers.
- Recruit more community village scouts.
- Construct water dams to harvest and store rainwater.
- Drill boreholes in wildlife conservation areas to support water availability.

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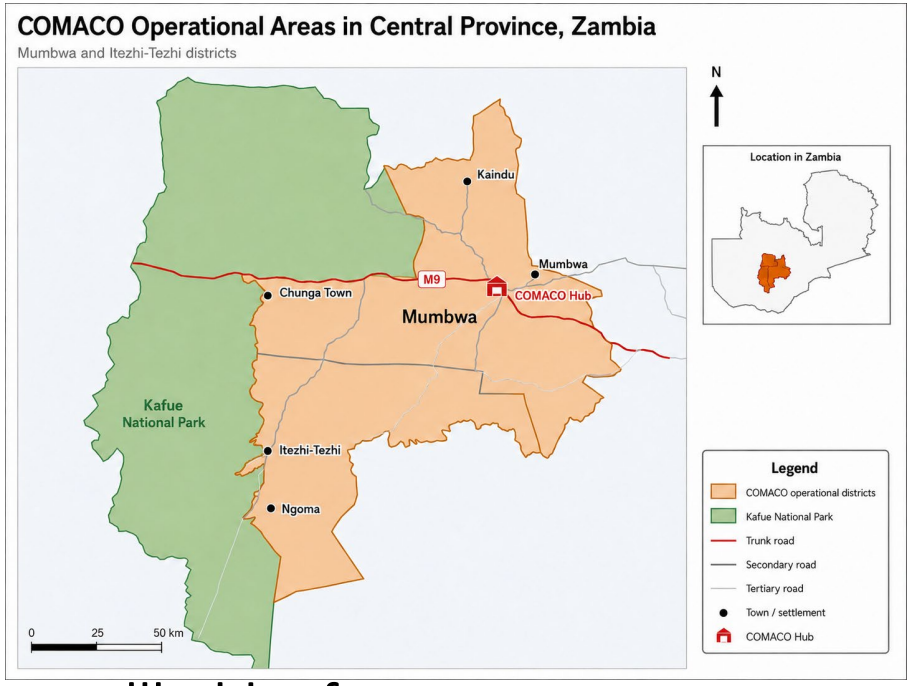
MR. RICHARD MUMBA

COMACO

Anticipated El Nino conditions expected to increase the risk of:

- Reduced and erratic rainfall.
- Crop failure
- Household food insecurity
- Loss of livestock productivity
- Reduced household incomes



- Increased vulnerability among smallholder farmers

COMACO will apply

- Integrated climate-smart preparedness strategy.

Early Warning Communication Campaign to strengthen drought resilience

- Convene 30 cooperative leaders & Community elders under classroom learning approach to;

  -Share indigenous knowledge and traditional drought coping strategies
- Use Farm talk radio to raise awareness and share preparedness actions.

  (No legumes production, no Agroforestry but Concentrate on cereal crops)
- Drought adaptation leadership – Use active leaders to influence on the strategy of food storage.
- Building up poultry livestock to fall back , farmers to be prepared to sell cattle, work with COMACO to find these markets and irrigation solutions to promote horticulture production

Intervention #1: Organic matter application for soil Moisture Retention & Yield Stability

Approach

- Scale up the use of Gliricidia tree leaves and composite manure.
- Promote firebreak to preserve crop residues
- Enforce 100% soil cover (mulching) of existing materials
- Introduce cover crops for blanketing the ground with leafy cover to retain soil moisture and reduce soil temperature.

Intervention #2: Transition to Drought-Tolerant & Early Maturing Crops

- Replace part of maize production with drought tolerant crops
  (Sorghum, fortified orange sweet potatoes, early maturing cassava)
- Intercrop with legume cover crops (early maturing and disease tolerant)
  (Cowpeas, pigeon peas, velvet beans)
- Promote early maturing local maize varieties and intercrop with velvet beans

Intervention# 3 Water Harvesting for Small-Scale Irrigation Backup

Approach.

-Conduct rapid assessment of watering points, water-table mapping.

-To determine water wells and boreholes available for small-scale irrigation.

-Grouping farmers depending on water sources assessment.

Solar pumps for boreholes- 25 farmers

Water table within 8 meters deep-low-cost treadle pumps-5 farmers.

Farmers will have access to water for winter crop production (food income security)

Conclusion

- Integrated climate-smart interventions will strengthen household resilience to anticipated El Niño conditions.

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DR. WISEMAN NDLOVU

AFRICAN WILDLIFE ECONOMY INSTITUTE

Building a Climate-Resilient Wildlife Economy

Drought preparedness, diversified livelihoods and regional cooperation for sustainable wildlife-based economies in Southern Africa

KEY MESSAGE

The future wildlife economy must be climate-smart, water-wise, and resilient.

Date: 30 June 2026

Presented by

Dr. Wiseman Ndlovu

Deputy Director | Lecturer Extraordinary

African Wildlife Economy Institute (AWEI) | SADC WBE TIG | NWPTT

SADC TFCA

THE CLIMATE IMPERATIVE

Why Wildlife Economies Must Build Climate Resilience Now

Drought & Water Stress

Recurrent droughts in SADC are reducing wildlife populations, degrading habitats, and threatening community livelihoods dependent on wildlife tourism, hunting and non-timber forest products.

Livelihood Vulnerability

Millions in rural Southern Africa rely on wildlife-based income. Climate shocks erode assets, increase human-wildlife conflict, and push households into poverty traps.

Value Chain Disruption

Game meat, edible insects, leather and tourism enterprises face supply, market and logistics disruptions from extreme weather, disease outbreaks and shifting species distributions.

Policy & Institutional Gaps

Many wildlife economy policies and TFCA management plans were designed for stable climates. They lack integrated climate risk management and cross-border adaptation coordination.

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OUR NORTH STAR

The Future Wildlife Economy Must Be

CLIMATE SMART

Anticipate, absorb and adapt to climate shocks through diversified enterprises, climate-informed planning and nature-based solutions.

WATER WISE

Prioritise water security for wildlife, communities and enterprises. Integrate catchment management, restoration and efficient value chains.

RESILIENT INNOVATIONS

Build redundancy, flexibility and learning into wildlife economies so they can withstand and recover from droughts, floods and market shifts.

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STRATEGIC FRAMEWORK

Three Interconnected Pillars for Climate-Resilient Wildlife Economies

Pillar 01

Financing Drought Preparedness & Climate Adaptation

Pillar 02

Diversifying Income through Sustainable Wild Foods, Tourism & Ecosystem Services

Pillar 03

Climate Information, Policy & Cross-Border TFCA Cooperation

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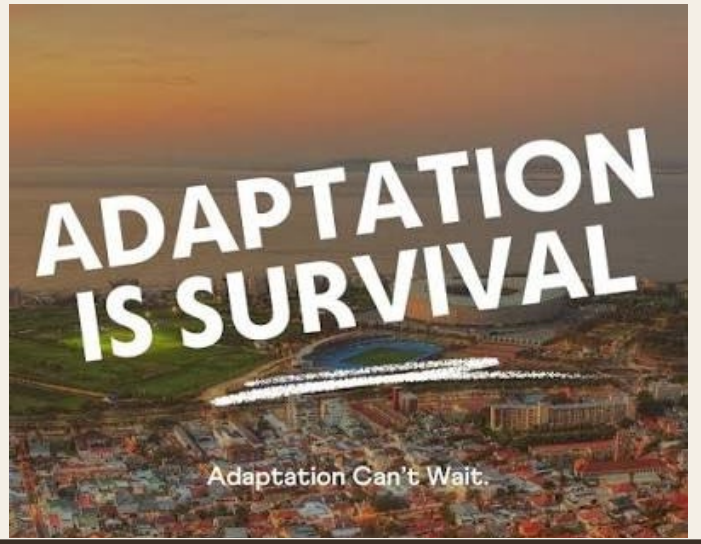
Financing Drought Preparedness and Climate Adaptation

Priority Financing Mechanisms

- Blended finance vehicles combining public climate funds, development finance and private capital for wildlife enterprise adaptation
- Climate risk insurance products and contingency funds tailored for community conservancies and wildlife SMEs
- Payment for Ecosystem Services (PES) and biodiversity credit markets linked to restoration and sustainable management
- Green bonds and sustainability-linked loans for large-scale habitat restoration and water infrastructure in TFCAs
- Dedicated national and regional climate adaptation windows within wildlife economy strategies and SADC frameworks



Why This Matters for Livelihoods

Without dedicated climate finance, wildlife enterprises in drought-prone areas will continue to suffer asset losses, reduced revenues and increased vulnerability. Proactive financing builds the adaptive capacity of communities, reduces humanitarian costs, and protects the natural capital base that underpins the entire wildlife economy.

Key Opportunity

Link wildlife economy investments to Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs) and SADC Climate Strategies to unlock larger flows of adaptation finance.

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Diversifying Income through Sustainable Wild Foods, Tourism & Ecosystem Markets

Wild Foods & Value Chains

- Scale climate-resilient edible insects (mopane worms, termites) — high protein, low water footprint
- Develop value chains for indigenous fruits, oils (marula, baobab) and botanicals
- Sustainable game meat production and processing for food security and income

WildFood
Eating the wild: Improving the value-chain

Tourism & Experience Economy

- Community-based and regenerative tourism models that build local ownership
- Drought-resilient tourism products (cultural, wellness, wildlife viewing in buffer zones)
- Digital platforms and storytelling to reach new markets less sensitive to climate shocks

Restoration & Ecosystem Services

- Carbon markets, biodiversity credits and water funds linked to habitat restoration
- Employment in restoration economy (invasive clearing, reforestation, soil rehabilitation)
- Co-management models that deliver both conservation and diversified household income

Climate Information, Policy & Cross-Border TFCA Cooperation

Climate Information Services

Integrate downscaled climate forecasts, drought early warning, and wildlife health surveillance into enterprise and conservancy decision-making. Co-produce actionable advisories with communities and wildlife authorities.

Enabling Policy Environment

Update wildlife economy policies, CITES implementation and land-use planning to explicitly address climate risk. Mainstream adaptation into SADC WBE Strategy, national wildlife policies and TFCA management plans.

Transfrontier Conservation Areas (TFCAs)

Leverage TFCAs (GLTFCA, KAZA, etc.) as platforms for joint climate adaptation planning, shared water governance, wildlife corridor protection and coordinated response to transboundary climate shocks and disease.

INTEGRATED APPROACH

Building Systemic Resilience through Synergies

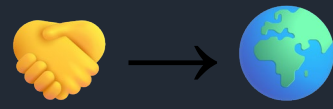
The three pillars are mutually reinforcing. Finance enables diversification. Diversified incomes reduce pressure on single resources and increase capacity to invest in adaptation. Better climate information and coordinated policy across TFCAs improve the effectiveness of both finance and enterprise strategies.

Finance for Diversification

Climate finance supports insect farming enterprises, restoration jobs and community tourism infrastructure that are inherently more drought-resilient.

Information for Finance

Reliable climate data and early warning systems de-risk investments and enable better-designed insurance and contingency mechanisms.



TFCA Cooperation for Scale

Cross-border collaboration unlocks larger landscape-level projects, shared markets and coordinated policy advocacy that no single country can achieve alone.

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RECOMMENDATIONS

Priority Actions for Stakeholders

Governments & SADC

Embed climate resilience explicitly into WBE strategies, TFCA treaties and national wildlife policies. Establish dedicated climate finance windows for wildlife enterprises.

Development Partners & Finance

Design blended finance instruments and insurance products specifically for wildlife SMEs and conservancies. Support capacity for accessing GCF, Adaptation Fund and bilateral climate finance.

Private Sector & Investors

Invest in climate-resilient value chains (insects, restoration, regenerative tourism). Adopt science-based targets and nature-positive business models.

Communities & Conservancies

Diversify beyond single-species tourism. Build local enterprises in wild foods, restoration and ecosystem services. Participate in co-design of climate information services.

Research & Academia

Generate evidence on climate impacts and adaptation options for wildlife economies. Support curriculum development and capacity building for climate-smart WBE.

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CONCLUSION

The Path Forward

A climate-resilient wildlife economy is not only possible — it is essential for the future of conservation, rural livelihoods and sustainable development in Southern Africa.

KEY MESSAGE

The future wildlife economy must be climate-smart, water-wise, and resilient.

This requires bold collaboration across finance, enterprise, policy and communities — with TFCAs as the living laboratories of integrated, landscape-scale resilience.

Let us work together to ensure that wildlife continues to sustain people and nature — even in a changing climate.

Thank you | Questions & Discussion Welcome

Dr. Wiseman Ndlovu · wiseman.ndlovu@sun.ac.za · AWEI, Stellenbosch University

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