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EDITORIAL ANALYSIS

Africa as Climate Teacher: What India Can Learn from Smallholder Climate-Volatility Strategies

 **DOWN TO EARTH**27 May 2026 · **ENVIRONMENT** · **IR** · **GS2** · **GS3**

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 Down to Earth

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INTERVIEW ANGLE

"If African smallholder strategies — crop diversification, indigenous knowledge, decentralised water systems — have managed climate volatility for decades, why is the Global South still framed as climate victim rather than climate teacher?"

DOWN TO EARTH

| Opinion by **Tafadzwanashe Mabhaudhi** | May 27, 2026

Africa's smallholder adaptation strategies —

CROP DIVERSIFICATION, INDIGENOUS KNOWLEDGE, DECENTRALISED WATER SYSTEMS

— offer the Global South a usable template for climate resilience. The editorial reframes Africa from “**climate victim**” to “**climate teacher**” for countries like India facing similar volatility. Mabhaudhi (a Zimbabwean-South African climate scientist) argues that the global climate-finance and adaptation narrative undervalues bottom-up knowledge systems and over-funds top-down techno-fix solutions.

THE ARGUMENT IN ONE LINE

Africa is not a climate-vulnerability case study to be funded; it is a knowledge source whose smallholder strategies — refined over generations of climate stress — are directly transferable to India's drought-flood-heat triple shock, if Indian policy stops imagining adaptation as a one-way export of technology.

WHAT “CLIMATE VOLATILITY” LOOKS LIKE IN AFRICA

PATTERN	MANIFESTATION
Drought-flood cycle	Sub-Saharan Africa has experienced 3 major droughts and 2 mega-floods in the past 5 years
Temperature anomaly	Sahel warming 1.5× global average; East African Long Rains compressed
Pest invasions	Desert locust outbreaks (2019-21); fall armyworm (since 2016)
Soil degradation	~65% of African arable land affected by degradation (UNCCD 2024)
Pastoralist crisis	Sahel pastoral collapse; Horn of Africa migrations

Africa’s smallholders have been adapting to this volatility **without** the safety nets that Indian farmers (PM-KISAN, PMFBY, MGNREGS, MSP) have — making the adaptation lessons starker.

THE AFRICAN STRATEGIES — FIVE PILLARS

1. Crop Diversification

- **Intercropping** (maize + cowpea, maize + pigeonpea, sorghum + groundnut).
- **Underutilised crops** — Bambara groundnut, finger millet, fonio, teff — heat- and drought-resilient African grains.
- **Agroforestry** — *Faidherbia albida* (“fertilizer tree”) in Niger and Malawi; doubles maize yields without external N.
- **Crop rotation** with legumes for biological N fixation.

2. Indigenous Knowledge

- **Phenological indicators** — flowering of indicator plants signals planting time.
- **Animal behaviour cues** — migration patterns predict rainfall.
- **Soil-feel and -smell techniques** — moisture assessment without instruments.
- **Variety selection by community elders** — preserving climate-resilient landraces.

3. Decentralised Water Systems

- **Zai pits** (Burkina Faso, Mali) — small basins filled with manure that capture rain.
- **Half-moon (demi-lune) catchments** — Sahelian water-harvesting on degraded land.

- **Sand dams** (Kenya, Ethiopia) — capture seasonal river-bed flow.
- **Roof rainwater harvesting** at household level.

4. Pastoralist Mobility

- **Transhumance** — calibrated cross-border migration; preserves rangeland; recognised in the **ECOWAS Transhumance Protocol (1998)**.
- **Bunding and rotational grazing**.
- **Drought-time fodder reserves** at community level.

5. Decentralised Governance

- **Village-level adaptation committees** in Niger, Kenya, Ethiopia.
- **Community-based natural resource management (CBNRM)** — Botswana, Namibia.
- **Customary land rights recognition** — legitimises long-term investment in soil and water.

WHAT INDIA CAN BORROW

AFRICAN STRATEGY	INDIAN APPLICATION	WHERE IT EXISTS ALREADY
Intercropping with legumes	All semi-arid India	Tamil Nadu, Karnataka rainfed belts
Underutilised crops (millets)	Pan-India	International Year of Millets 2023; Shree Anna Mission
Agroforestry	Punjab-Haryana wheat-paddy belt + degraded land	NAP-led; ICAR-CAFRI; needs scaling
Zai-style water harvesting	Bundelkhand, Marathwada, Rayalaseema	Watershed Development Programme; needs intensification
Indigenous knowledge documentation	Tribal belts (Jharkhand, Odisha, MP, NE)	Honey Bee Network; needs scaling
Community-based water governance	All India	Atal Bhujal Yojana (2020) at gram panchayat level
Pastoralist mobility recognition	Rabari (Gujarat), Dhangar (Maharashtra), Van Gujjar (UP/Uttarakhand)	Partial; needs legal recognition
Customary land rights	Forest dwellers under FRA 2006	Implemented but contested

THE KNOWLEDGE-FLOW PROBLEM

The editorial's core grievance: the global climate-adaptation discourse is structured as **North-to-South knowledge transfer** (climate-smart agriculture, CSA, exported from CGIAR centres). The **South-to-South** flow — African knowledge to India and Latin America — is **under-funded, under-published, under-mainstreamed**.

FLOW DIRECTION	FUNDING	PUBLICATIONS	POLICY ATTENTION
Global North → Global South	High	High	High
South → North	Low	Low	Low
South ↔ South	Very low	Very low	Episodic (CoP-cycle)

THE CLIMATE-FINANCE ARCHITECTURE — WHERE INDIA STANDS

MECHANISM	INDIA'S POSITION
Green Climate Fund (GCF)	Recipient + governance role
Adaptation Fund	Active recipient
Loss and Damage Fund (CoP27, 2022)	India supports; modest implementation
New Collective Quantified Goal (NCQG)	USD 300 billion/year by 2035 agreed at CoP29 (Baku, Nov 2024)
India's adaptation finance need	~USD 2.5 trillion by 2030 (Indian government estimates)
International Solar Alliance + CDRI	India-led initiatives benefiting Global South
India-Africa Forum Summit (IAFS)	Held 2008, 2011, 2015; IAFS-IV pending

WHY INDIA NEEDS THIS NOW

REASON	DETAIL
Climate vulnerability	India ranks 9th in long-term Climate Risk Index 1995–2024 (Germanwatch 2025); ~12% of GDP at climate risk
Smallholder dominance	86% of Indian farmers are small/marginal ; closest demographic match to Africa
Heatwave intensification	2024 had unprecedented heatwaves; 2025-26 similar
Monsoon variability	Erratic; 2026 South-West monsoon onset advanced; intra-seasonal variability high
Pastoralism stress	India has 35 million pastoralists; under-recognised in climate policy

THE INDIAN SCHEMES THAT COULD TAKE IN AFRICAN LESSONS

SCHEME	CURRENT FOCUS	WHERE AFRICAN LESSONS CAN DEEPEN
Shree Anna Mission	Millets	Add African millets (teff, fonio) — research collaboration with CGIAR-Africa
Atal Bhujal Yojana	Groundwater	Add Zaï-style pit + half-moon catchments in degraded watersheds
PM Krishi Sinchayee Yojana (PMKSY)	Watershed	Same
Mission for Integrated Development of Horticulture (MIDH)	Horticulture	Underutilised crops
National Mission for Sustainable Agriculture (NMSA)	Adaptation	South-South knowledge exchange
NAP/SAPCC State Action Plans on Climate Change	State-level	Pastoralist mobility recognition
PMFBY (crop insurance)	Risk transfer	Index-based insurance design from African experience

WIDER SIGNIFICANCE

- **Climate equity** — Africa-India South-South cooperation reframes the global climate conversation.

- **G20 + BRICS leadership** – India’s 2023 G20 presidency added AU as permanent member; the architecture is now in place.
- **Africa-Asia Growth Corridor (AAGC)** – India-Japan initiative; climate-resilient agriculture is a natural addition.
- **Vaccine-Maitri / Health-Maitri to Climate-Maitri** – a coherent Global South soft-power story.

WAY FORWARD

- **Establish South-South Climate Knowledge Hub** at NITI Aayog with AU + Brazil partnership.
- **CGIAR-Africa + ICAR joint research stations** for underutilised crops, indigenous knowledge, water-harvesting.
- **Bilateral fellowships** – Indian agronomists at African universities; vice versa.
- **State-level pilots** – Bundelkhand (zaï pits), Rayalaseema (intercropping), NE India (transhumance).
- **DPI for adaptation** – open-source climate-information stack for smallholders.

UPSC RELEVANCE

GS Paper 2 – International Relations:

- India’s bilateral, regional and global relations.
- Effect of policies and politics of developed and developing countries on India.

GS Paper 3 – Environment & Ecology / Agriculture:

- Conservation, environmental pollution and degradation.
- Major crops, e-technology in the aid of farmers.
- Disaster management – drought, flood, climate vulnerability.

Analytical hooks for Mains:

- Climate adaptation – top-down vs bottom-up.
- South-South cooperation in climate knowledge.
- Indigenous knowledge in policy mainstreaming.

FACTS CORNER

Author: Tafadzwanashe Mabhaudhi — Zimbabwean-South African climate scientist.

Faidherbia albida (“fertilizer tree”) — agroforestry species, doubles maize yields in Sahel.

Zai pits: Origin Burkina Faso/Mali; small basins filled with manure for rainwater capture.

Demi-lune (half-moon) catchments: Sahelian water-harvesting.

ECOWAS Transhumance Protocol: 1998 — recognises pastoralist cross-border movement.

India ranks 9th in the long-term Global Climate Risk Index 1995–2024 (Germanwatch 2025, released at CoP30 Belem).

86% of Indian farmers are small or marginal.

India has ~35 million pastoralists (estimate).

NCQG (climate finance): USD 300 billion/year by 2035 (CoP29 Baku, November 2024).

India’s adaptation finance need: ~USD 2.5 trillion by 2030 (GoI estimate).

Loss and Damage Fund: Established at CoP27 (Sharm el-Sheikh, 2022).

Africa Union joined G20: September 2023 at New Delhi Summit.

Editorial source: Down to Earth, May 27, 2026 | Cross-link: Daily India-Ebola DRC supplies, May 28, 2026

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