

# EL NIÑO AND PUBLIC HEALTH SECURITY IN AFRICA

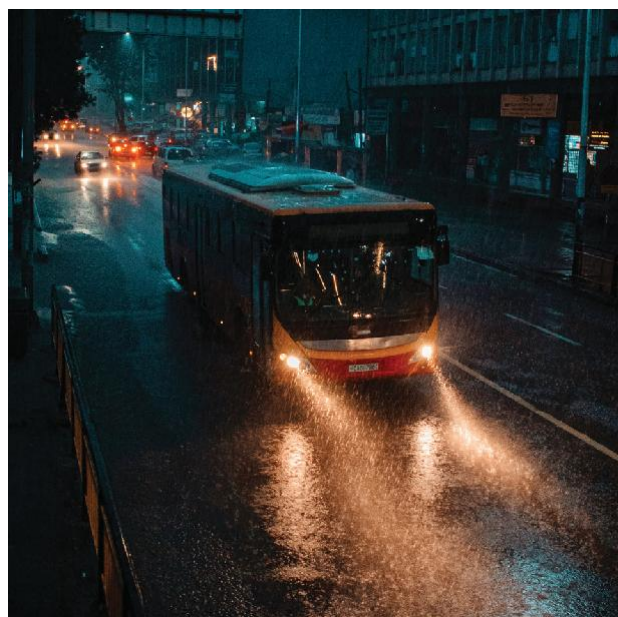
## Strategic Policy Brief: Evidence, Lessons, and Priority Actions for the 2026 El Niño Event

### EXECUTIVE SUMMARY

El Niño is no longer a purely meteorological phenomenon for Africa - it is a recurring, predictable driver of public health emergencies. Historical events have repeatedly shown the same chain reaction: drought or flooding, followed by food insecurity, disease outbreaks, and lasting harm to lives and livelihoods, particularly for children's health and development. Forecasts now put the probability of a strong-to-major El Niño forming by late 2026 above 90%, with Southern and Eastern Africa again flagged as high-risk regions.

The evidence is unambiguous on two points: (1) early warning systems have become increasingly reliable; and (2) anticipatory funding and action have consistently failed to keep pace with those warnings, with documented response gaps exceeding 90% even after high-confidence forecasts. Closing this "warning-to-action" gap is the central public health security challenge of the coming El Niño cycle.

This brief summarizes the evidence base, draws cross-cutting lessons from the 1997–98, 2015–16, 2018/19, and 2023–25 events, outlines the 2026 outlook, and sets out five priority public health policy actions for Africa CDC and Member States.



# 1. UNDERSTANDING EL NIÑO AS A HEALTH SECURITY THREAT

El Niño is the warm phase of the El Niño–Southern Oscillation (ENSO), caused by above-average sea surface temperatures in the central and eastern tropical Pacific. It reliably shifts regional rainfall patterns; which may lead to either occurrence of drought or flooding. Seven such events have occurred over the past 20 years, recurring roughly every 2–7 years, though intensity and precise regional effects vary and interact with other climate drivers such as the Indian Ocean Dipole and Atlantic Dipole.

El Niño threatens public health security through multiple, compounding pathways: undermining food security, increasing disease transmission, overwhelming health services, disrupting medical and food supply chains, damaging infrastructure, and deepening humanitarian crises. This makes it a genuinely cross-sectoral threat, not a single-sector environmental event.

# 2. EVIDENCE OF IMPACT HEALTH

El Niño elevates health risk through drought, flooding, and extreme heat:

| Pathway                   | Key Health Risks                                                                                                                                |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Drought / water scarcity  | Water shortage; malnutrition and wasting; water-borne disease (cholera, typhoid); water-washed disease (trachoma, scabies, ringworm)            |
| Flooding / heavy rainfall | Vector-borne outbreaks (malaria, dengue, Rift Valley Fever); damaged health infrastructure; service interruption; displacement and overcrowding |
| Extreme heat              | Heat-related illness, dehydration, cardiovascular strain, occupational health risk, and elevated psychosocial stress                            |



Historical health severity of the previous El Niño events is well documented for the African Regions.

## East Africa / Greater Horn



- El Niño-driven rainfall has triggered every major Rift Valley Fever outbreak in the Horn since 1950; the 1997–98 event alone caused ~90,000 infections and 500 deaths.
- Non-immune populations face recurrent malaria surges during El Niño rains, most recently flagged by WHO/UN/KEMRI in 2023–24.
- Cholera incidence roughly triples in East Africa during El Niño years, with the 2023–24 outbreak among the region’s longest on record.
- Displacement and disrupted immunization access elevate measles and meningitis outbreak risk.
- Flooding repeatedly overwhelms health infrastructure, causing mass casualties, displacement, and facility closures.

Southern Africa



Weak WASH infrastructure converts El Niño drought into major cholera outbreaks (Zambia, Zimbabwe). Drought-driven wasting threatens up to 4 million children per event. Concurrent mpox outbreaks compound already-strained drought-response health systems.

Drought disrupts chronic disease management, including HIV treatment adherence in rural populations. Extreme heat and water scarcity drive parallel heat-illness and diarrhoeal disease burdens.

West Africa



Sahel–Gulf of Guinea rainfall divergence produces a dual burden of drought-driven malnutrition and flood-driven disease. 2024 flooding alone affected 7.5 million people and damaged health infrastructure across 18 countries.

Extreme heat events (48°C+) carry direct mortality risk, compounded by El Niño alongside broader climate change. Flood-linked stagnant water elevates malaria and waterborne disease transmission.

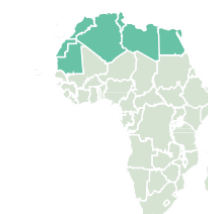
Central Africa



Congo Basin hydrology links El Niño to major river flooding and associated cholera outbreaks. The region faces a distinct dual-hazard profile: drought in northern states (Chad, Cameroon, CAR) concurrent with river flooding further south. Ecological disruption raises zoonotic

spillover risk, evidenced by recurring mpox emergencies in DRC and CAR. Flooding and displacement compound baseline malaria and measles risk by disrupting vector control and immunization.

North Africa



Baseline water stress (already high-to-extreme across Morocco, Algeria, Tunisia) magnifies any El Niño-linked rainfall deficit into a public health risk. The region recorded the continent’s strongest warming during the 2023–24 event, raising heat-related cardiovascular and respiratory risk.

Rare heavy-rainfall events have damaged humanitarian infrastructure (e.g., Tindouf refugee camps). Direct El Niño attribution remains weak and contested; risk is better addressed through general water-stress and heat resilience than El Niño-specific early warning.



## FOOD AND NUTRITION SECURITY

- Reduced agricultural output, higher food prices, lost agricultural labour, and disrupted regional supply chains consistently follow El Niño onset — typically with a three-to-six-month lag before the lean season hits hardest.
- 2015–16 (severe): Southern Africa’s harshest drought in 35 years; maize production fell by up to 66%; food insecurity across 8 countries rose from 6.4 million to 16.6 million people; 5 countries declared national emergencies; a 13-country, USD 2.7 billion appeal was launched.
- 2018/19 (moderate): food insecurity in the same monitored countries rose 265%, from 5.3 million to 14 million people - without any regional coordination mechanism in place.
- 2023–25: 13.6 million people were already food insecure across seven at-risk countries before the lean season even peaked, and a 91% funding shortfall left an estimated 4.5 million people unassisted.

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### **UNICEF’s qualitative research across drought-affected Ethiopian regions (Afar, Amhara, Oromia, SNNPR, Tigray) following the 2015 El Niño found both immediate and long-term harm:**

- Immediate: chronic hunger, reduced meal frequency and diversity, worsened school attendance and performance, thirst, and water-scarcity-related skin conditions.
- Longer-term: asset depletion and indebtedness, increased child labour and economic migration (particularly older boys), a resumption of early marriage for girls after temporary drought-driven pauses, and erosion of social capital and support networks.
- Coping mechanisms carried their own harms: prolonged migration exposed children to mistreatment, and longer water-collection journeys increased women’s and girls’ exposure to abuse.

### 3. CROSS-CUTTING LESSONS LEARNED

Early warning alone is not enough. In 2015, readiness gains were evident well before year-end for the African Region, but coordinated response only gained real traction roughly six months later.

- ▶ Government leadership is essential to coordinate multi-partner response and integrate humanitarian action with national social protection systems.
- ▶ Emergency response must be paired with recovery and resilience-building — short-term relief alone does not address the underlying vulnerability. Funding is chronically skewed away from the needs. In 2015–16, Food Security and Agriculture received 76% of required funding, while WASH received only 32% and Nutrition/Health only 52%.
- ▶ Anticipatory action pays for itself. Pre-emptive support has repeatedly been shown to return several times its cost in benefits and losses averted for the households it reaches for example; in East Africa, keeping livestock healthy prevented the disease from jumping to human populations and also preserved milk production - a critical source of protein and micro-nutrients that kept children from slipping into acute malnutrition.

### 4. OUTLOOK: THE 2026 EL NIÑO

As of August 2026, African Continental Climate Outlook Forum (ACCOF) places the likelihood of a strong event by late 2026 at 80%, while broader forecasts put the odds of formation above 90%. ACMAD cautions that outcomes will still depend on interaction with the Atlantic and Indian Ocean dipoles.

#### Eastern Africa

below-average rainfall risk in September 2026 for Ethiopia, South Sudan, and Uganda; possible flooding October–December if a positive Indian Ocean Dipole develops alongside El Niño.

#### Western Africa

more variable impacts, with the Sahel near normal but localized flood and drought risk in Gulf of Guinea coastal areas and major river basins.

#### Central Africa

ACMAD's Central Africa Regional Climate Centre continues to issue Congo Basin discharge outlooks and heavy-precipitation vigilance maps, meaning localized flood risk persists in specific river-basin areas even under an overall drier seasonal signal.

#### Southern Africa

below-average rainfall risk in September 2026 for Ethiopia, South Sudan, and Uganda; possible flooding October–December if a positive Indian Ocean Dipole develops alongside El Niño.

#### North Africa

rainfall remains primarily governed by the North Atlantic Oscillation and Mediterranean pressure systems rather than ENSO; the 2026 signal should be treated as a secondary, compounding risk on top of the region's existing water-stress baseline, not a primary driver.

## 5 CALL TO ACTION

Climate variability is now a strategic public health security challenge for Africa, not solely an environmental one. El Niño events are expected to grow more disruptive as climate change progresses, demanding stronger, coordinated preparedness across sectors and borders.

Africa CDC — working with African Union Member States, Regional Economic Communities, Regional Climate Centres, national meteorological agencies, development partners, and communities — should lead the integration of climate intelligence into public health surveillance, preparedness, and response, advancing the Africa CDC Strategic Plan, Africa CDC Health Security and Sovereignty (AHSS) Agenda, the International Health Regulations (2005), and the Africa CDC Climate Change and Health Strategic Framework (2025–2029).

### Therefore;

**East Africa** should prioritize flood- and vector-borne disease preparedness (malaria, RVF, cholera); **Southern Africa** should prioritize drought-driven wasting, cholera, mpox, and continuity of chronic disease care; **West and Central Africa** require dual drought-and-flood contingency planning with zoonotic spillover surveillance; and **North Africa's** response should center on underlying water-stress and heat resilience rather than El Niño-specific early warning.

### 5.1 Priority Policy Actions for Public Health

#### a. Climate-Informed Disease Surveillance and Early Warning

- » Integrate meteorological and environmental data into Integrated Disease Surveillance and Response (IDSR) systems.
- » Develop predictive risk mapping for climate-sensitive diseases.
- » Expand event-based surveillance and digital early warning systems.
- » Establish regional climate-health early warning mechanisms.
- » Develop standard operating procedures for El Niño and other climate hazard preparedness and response.



#### b. Climate-Resilient Health Systems

- » Climate-proof health facilities against floods and extreme heat.
- » Strengthen resilient supply chains for medicines, vaccines, diagnostics, nutrition and WASH supplies.
- » Ensure continuity of essential health services during climate emergencies.



## c. Multi-Hazard Preparedness and Response using the One Health Approach

- » Preposition emergency health and nutrition supplies in high-risk areas.
- » Strengthen multidisciplinary rapid response teams.
- » Expand emergency operations centre capacity for climate-related health emergencies.
- » Enhance collaboration through a One Health Approach between health, meteorological, agriculture, and disaster management sectors.



## d. Protection of Vulnerable and High-Risk Populations

- » Prioritise nutrition interventions for children and pregnant women
- » Ensure safe water and sanitation services.
- » Expand community-based surveillance.
- » Provide mental health and psychosocial support.
- » Strengthen risk communication and community engagement.



## e. Regional Collaboration and Coordination

- » Facilitate cross-border disease surveillance.
- » Promote regional data sharing and joint risk assessments.
- » Coordinate continental preparedness exercises.
- » Utilise the One Health approach to climate-sensitive threats in collaboration with WHO AFRO and other partners.
- » Align national plans with regional bodies (e.g., SADC, IGAD) through Africa CDC's Regional Coordinating Centres.



## 6. CONCLUSION

The pattern across four decades of El Niño events is consistent and well understood: predictable climate shocks, compounding health and nutrition impacts, and response funding that arrives too late and too short with a strong El Niño now likely by late 2026.

**Sources:** WFP/FAO (2024); WHO (2016); UNICEF Ethiopia/OPM/HESPI (2018); Welthungerhilfe WAHAFA Briefing Note (April 2026); Africa CDC Strategic Framework and Plans (2023–2025); ACCOF (2026); WHO AFRO (2026); WMO State of the Climate in Africa (2026); IPCC AR6 (2021); FAO (2018); ACMAD El-Niño Bulletin (2026).