CVF V20 | SCIENCE BULLETIN

EL NIÑO IS STRENGTHENING FASTER THAN FORECAST

THE "VERY STRONG" OUTCOME IS NOW THE CENTRAL CASE FOR 2026 TO 2027

BULLETIN NO. 3
15 July 2026

Office of the Chief Scientist
CVF-V20 Secretariat

This is a technical update superseding Science Bulletin No. 2 published on 15 June 2026.
Photo Credit: February 2015, Local children collecting pumping water at a local village well at Kongo village, Ghana | Margus Vilbas | Shutterstock

BOTTOM LINE

El Niño is intensifying, and it is doing so faster than the June outlook implied. In its 9 July 2026 El Niño–Southern Oscillation (ENSO) Diagnostic Discussion, the National Oceanic and Atmospheric Administration (NOAA) maintained the **El Niño Advisory** and now assigns an **81 percent probability that this becomes a "very strong" El Niño**, with the Niño-3.4 sea surface temperature anomaly exceeding +2.0°C during an **October to December** peak, an event that would rank among the largest in the historical record going back to 1950.[1] The latest weekly Niño-3.4 index has climbed to **+1.2°C**, and NOAA puts a **97 percent chance that El Niño persists through early spring 2027**.[1] This is a further escalation from our Science Bulletin No. 2, which reported a 63 percent very-strong probability and a Niño-3.4 of +0.7°C. The very-strong ("super") outcome is no longer the alarming edge of the range; it is now the central planning case, and the peak has shifted a month earlier into the October to December window. For CVF-V20 governments, the operational implication is stark, in that the preparation window before peak conditions is now measured in weeks, not seasons. This Science Bulletin summarizes what has changed since June, what remains uncertain, and what member states should now be doing.

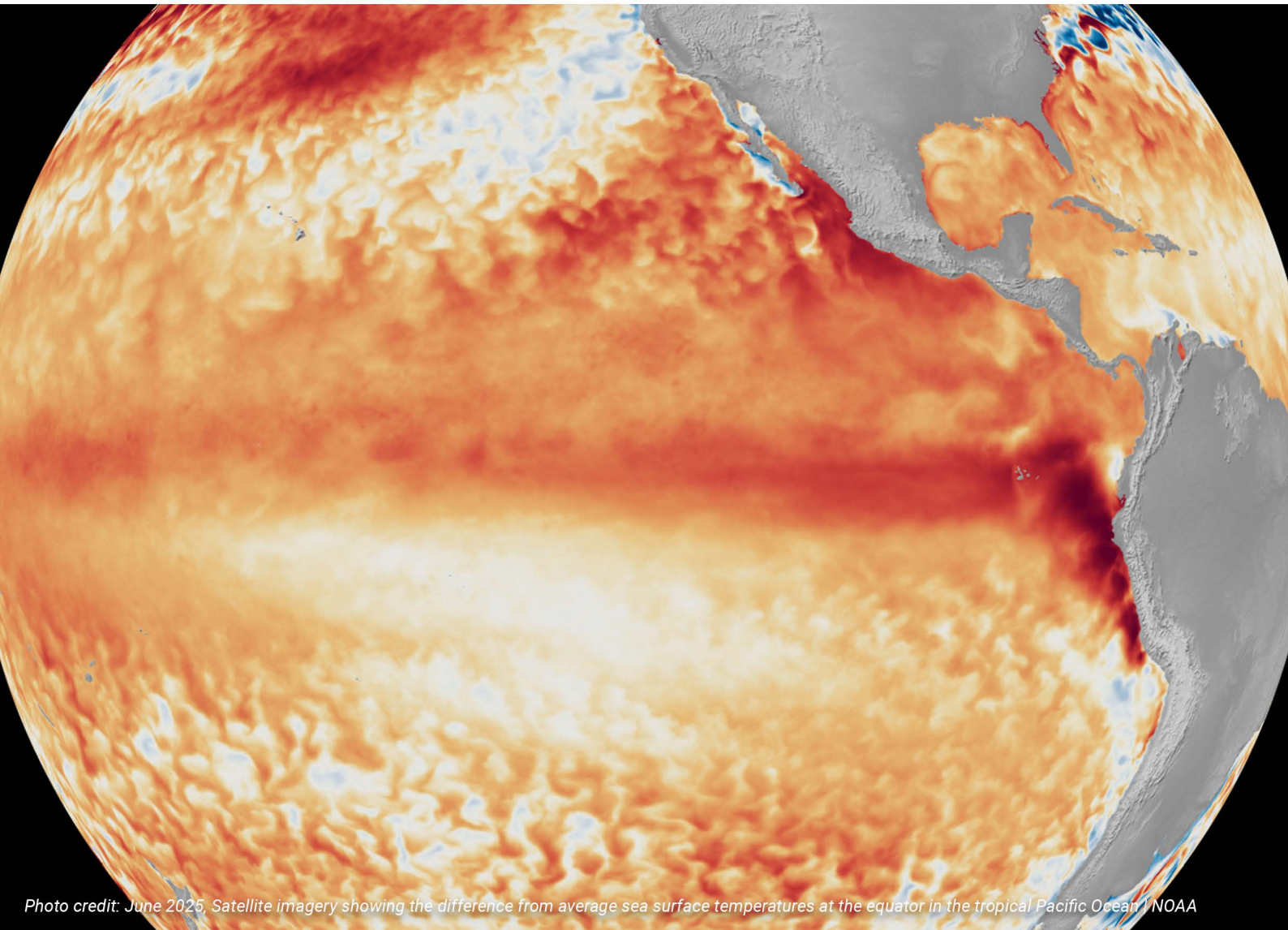


Photo credit: June 2025, Satellite imagery showing the difference from average sea surface temperatures at the equator in the tropical Pacific Ocean / NOAA

WHAT HAS CHANGED SINCE SCIENCE BULLETIN NO. 2

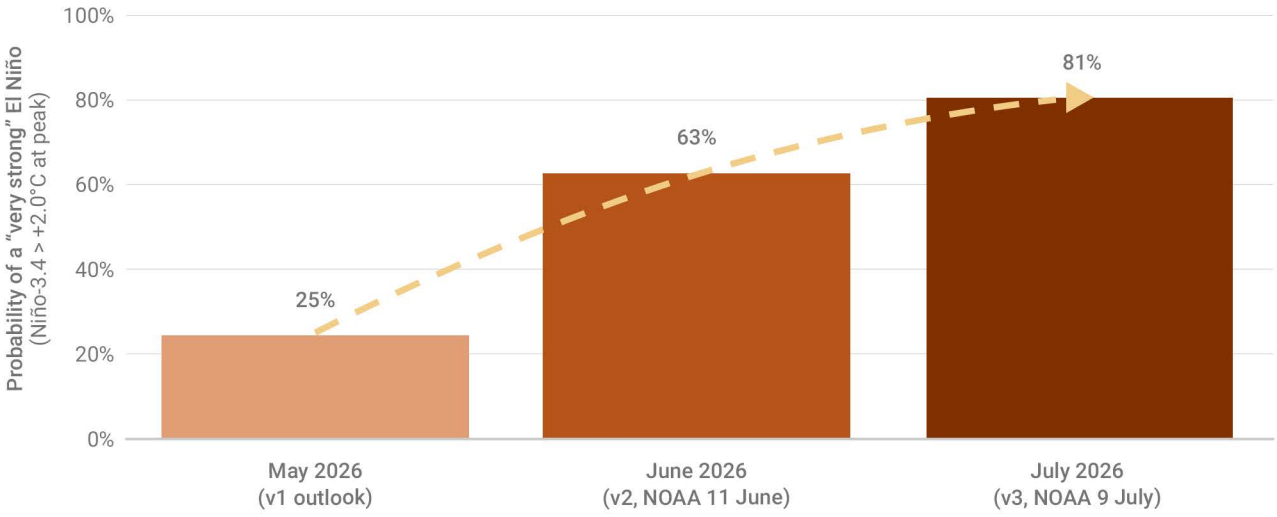
Three developments stand out.

First, the ocean signal has strengthened materially in a single month. NOAA's 9 July discussion reports a large area of sea surface temperature anomalies in excess of +1.0°C across the central and eastern equatorial Pacific, with the latest weekly Niño-3.4 index at **+1.2°C**, up from +0.7°C in June, and the far-eastern Niño-1+2 index at **+2.7°C**, up from +2.1°C.[1] A recent downwelling Kelvin wave has deepened the thermocline and warmed the eastern Pacific subsurface, the trade winds have weakened further, and the Southern Oscillation Index is significantly negative. The coupled ocean-atmosphere system now reflects a clearly strengthening El Niño rather than a young one.[1]

Second, the probability of a high-end event has risen again, and the peak has moved earlier. NOAA's **81 percent chance of a "very strong" El Niño**, now referenced to an **October to December** peak, replaces the 63 percent November to January figure we reported in June.[1] The persistence odds are correspondingly high, at a 97 percent chance the event lasts through early spring 2027.[1] The World Meteorological Organization has moved in the same direction: its early July assessment, drawing on the Global Seasonal Climate Update, now forecasts a **rapid development into a strong El Niño during July to September**, with seasonal-average sea surface temperature anomalies expected to exceed

FIGURE 1:
ESCALATING PROBABILITY OF A VERY STRONG EL NIÑO, 2026-2027.

The NOAA "very strong" (>+2.0 C at peak) probability rose from about 25 percent in May to 63 percent in June and to 81 percent in the 9 July outlook, while the projected peak advanced from November-January to October-December.



Sources: NOAA CPC ENSO Diagnostic Discussions (11 June and 9 July 2026); RONI-based strength probabilities.

Photo credit: March 2019, Women walking for water in Addis Ababa, Ethiopia | Andrzej Kubik | Shutterstock

+2.0°C in key monitoring regions, a firmer statement than the "at least moderate, possibly strong" language of its June bulletin.[2] NOAA and WMO are now closely aligned on both direction and intensity.

Third, the forecasts now carry high confidence. With the spring prediction barrier well behind us and model agreement described by both NOAA and WMO as strong, the residual uncertainty is no longer about *whether* a strong event arrives but about precisely how high the peak goes and exactly how the regional teleconnections express themselves. That is a different and more advanced planning problem than the one we faced in June.

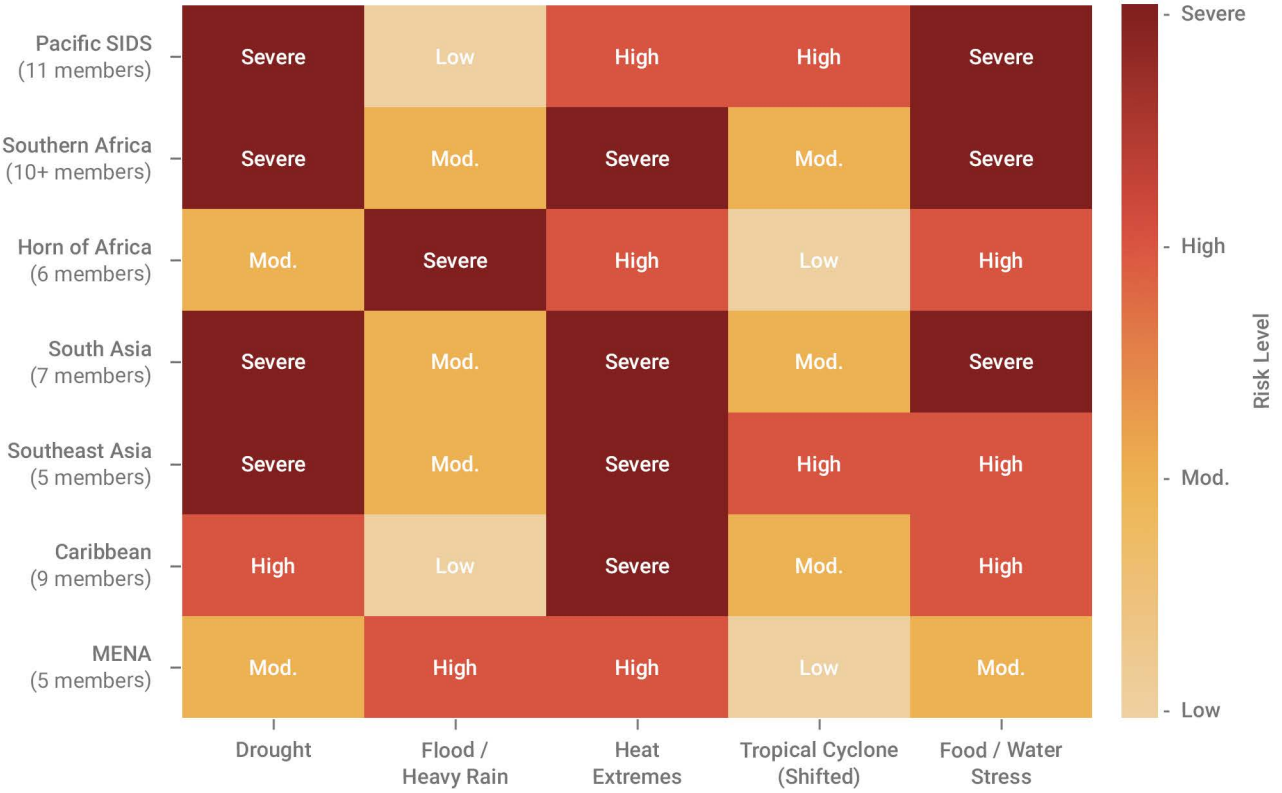
A note on terminology, unchanged from June and worth repeating for member-state communications. NOAA's strength categories reference the **Relative Oceanic Niño Index (RONI)**, adopted in February 2026, which removes the long-term background warming trend so that a true El Niño signal is not confused with general ocean warming.[1] "Super El Niño" remains informal media shorthand for events above +2.0°C; NOAA's formal term is "very strong," and the WMO notes that "super El Niño" is not part of its operational classification at all.[2] Our communications should lead with "very strong" and treat "super" as the public-facing synonym.

EXPECTED REGIONAL IMPACTS ON CVF-V20 MEMBERS

The following regional summary draws on historical patterns from the 1997 to 1998 and 2015 to 2016 events, both of which produced documented hardship across our membership, now read against an outlook in which the high-end scenario is the central case rather than a tail risk.

FIGURE 2:
INDICATIVE REGIONAL IMPACT PATTERN FOR A VERY STRONG EL NIÑO ACROSS CVF-V20 MEMBERSHIP.

Historical teleconnections from the 1997-1998 and 2015-2016 events; local outcomes remain variable.



Source: Synthesis by Office of the Chief Scientist, CVF-V20, drawing on NOAA, WMO, BoM, and peer-reviewed literature.

AFRICA

The Horn of Africa typically sees enhanced short rains, raising flood and landslide risk in Kenya, Somalia, and Ethiopia; the WMO's July outlook already points to below-normal rainfall for the Greater Horn during July to September, which would compound existing stress ahead of the short-rains season.[2] Southern Africa, including Madagascar, Malawi, Mozambique, and Tanzania, faces elevated drought risk during the December to March wet season. The 2015 to 2016 very strong El Niño produced southern Africa's most severe drought in nearly 120 years, leaving an estimated 40 million people acutely food insecure and reducing regional maize yields by approximately 15 percent against the five-year average.[3] With the high-end scenario now the central case, this is the reference case planners should use. West African Sahel countries should monitor for delayed or weaker monsoon onset.

ASIA

The India Meteorological Department's pre-season outlook indicated a 30 percent probability of drought and a 40 percent probability of below-normal rainfall for the 2026 southwest monsoon, with potentially adverse

consequences for the roughly 60 percent of Indian farmers dependent on monsoon rains.[4] A faster-strengthening El Niño tilts these odds further toward rainfall deficits as the season progresses, and the WMO's July outlook favors below-normal rainfall across South Asia.[2] South-east Asia, particularly the Philippines, Vietnam, and Cambodia, typically experiences below-normal rainfall, heightened wildfire risk in peat and forest areas, and reduced reservoir levels for hydropower. The 2015 to 2016 event caused crop damage in the Philippines alone of around US$217 million. Bangladesh and Nepal should plan for heat extremes, particularly in pre-monsoon and post-monsoon periods.

PACIFIC SMALL ISLAND DEVELOPING STATES

Atoll states face the most acute compounding risks, and the earlier peak brings the critical post-peak dry period forward. Historical El Niño events have driven severe drought in Kiribati, Marshall Islands, and Tuvalu in the year following peak conditions, with documented drinking water shortages and saltwater intrusion into shallow groundwater lenses. Sea level falls of several tens of centimeters in the western Pacific can expose and damage coral reefs and disrupt subsistence fisheries. Tropical cyclone tracks shift, raising risk for parts of Polynesia and reducing it for western Micronesia, but no Pacific member should treat the season as low-risk on this basis alone.

CARIBBEAN AND LATIN AMERICA

El Niño typically suppresses the Atlantic hurricane season through increased wind shear, and NOAA issued a below-normal 2026 Atlantic hurricane outlook.[5] A stronger El Niño reinforces that suppression, but this is only a partial reprieve: a single landfalling storm remains capable of devastating any small economy, and the suppression does not extend to the eastern and central Pacific basins. More material for Caribbean members is the tendency toward below-normal rainfall, water stress, and elevated heat; the WMO's July outlook favors below-normal rainfall across parts of Central America, the Caribbean, and northwestern South America.[2] Central and northern South America, including Guyana and Suriname, can experience pronounced drought in the upper Amazon and northeast.

MIDDLE EAST AND NORTH AFRICA

Members in this region should monitor for above-normal winter rainfall, with documented flood signals in past events for parts of the Levant and the Arabian Peninsula.

FISCAL AND LOSS-AND-DAMAGE IMPLICATIONS

A peer-reviewed study published in Nature Communications estimated that the 2015 to 2016 very strong El Niño produced cumulative global economic losses of approximately US$3.9 trillion

Photo credit: March 2016, Farmer walking on cracked soil during the drought in Sylhet, Bangladesh | HM Shahidul Islam | Shutterstock

over the event year and the three years that followed, equivalent to roughly 4 to 5 percent of global GDP at the time, with the burden disproportionately borne by developing economies.[6] With NOAA now assigning an 81 percent probability to a comparably intense event in 2026 to 2027, this loss profile is the central planning assumption, not a scenario. It would arrive at a time when many member countries are already operating with constrained fiscal space, elevated debt service costs, and limited access to concessional liquidity, and the earlier October to December peak compresses the runway for pre-arranging finance.

A note on attribution, directly relevant to the financing case. It would overstate the science to claim that global warming caused this El Niño or intensified the Pacific warming itself, and CVF-V20 communications should not assert otherwise: the IPCC's Sixth Assessment Report finds no model consensus that anthropogenic forcing has systematically changed the amplitude of El Niño sea surface temperature swings, and that specific claim is the most contestable part of the science. The defensible and better-supported claim is the one that matters for loss and damage. This event is unfolding on a baseline that warming has already made roughly 1.3 to 1.5°C hotter than pre-industrial. Thus, the absolute heat, marine heatwaves, and temperature records during the event are human-caused even where the El Niño cycle is itself a natural phenomenon. We also note that while the IPCC AR6 report finds no model consensus that anthropogenic forcing has systematically changed the amplitude of El Niño sea surface temperature swings, the report assesses it as very likely that the rainfall extremes that define strong El Niños, the floods and droughts that drive most of our members' losses, will intensify in a warming world regardless of whether the ocean signal changes.[7]

This has three implications for our collective advocacy.

First, it strengthens the case the CVF-V20 has been making in the run-up to COP31 for pre-arranged finance, including expanded use of climate-resilient debt clauses, contingency lines from multilateral development banks, and rapid disbursement windows under the Loss and Damage Fund. With the peak now advanced to the October to December window, the argument that this finance must be available before, not after, the peak is more urgent than it was in June.

Second, it underscores the urgency of operationalizing early warning systems under

the WMO Early Warnings for All initiative. The WMO reports that it has launched an unprecedented mobilization across the United Nations system and at the regional level to support governments, humanitarian organizations, and climate-sensitive sectors ahead of the event, but coverage across our most exposed members, particularly atoll states and the least-developed economies, remains incomplete.[2]

Third, the temperature trajectory sharpens the 1.5°C debate at COP31. Carbon Brief assesses that 2026 is on track to be the second-warmest year on record, with a best estimate of about 1.47°C above pre-industrial levels and a roughly 1-in-5 chance of surpassing 2024 as the warmest year. Critically, because the global temperature response lags the Pacific peak by about three months, the larger effect of a very strong El Niño would land in 2027, which would then be the strong favorite to set a new record.[8] A record-setting 2027 driven by a very strong El Niño would arrive directly into the COP31 negotiating cycle.

RECOMMENDED ACTIONS FOR MEMBER STATES OVER THE NEXT 90 DAYS

The recommendations from our Science Bulletin No. 2 stand, but the higher intensity odds and the earlier peak raise their priority and compress their timelines. CVF-V20 members are encouraged to:

1. Convene or reconvene a national inter-ministerial briefing involving finance, agriculture, health, water, energy, and disaster management, anchored on the 9 July NOAA Advisory, the July WMO assessment, and national meteorological service advisories.

2. Adopt the 2015 to 2016 event as the central budgetary planning scenario, not a stress-test tail, with particular attention to food import bills, fuel subsidies, and emergency response provisions, and plan against the earlier October to December peak rather than a November to January one.

3. Review and pre-position humanitarian and emergency supplies, including water storage, seed stocks, and essential medicines, in high-risk subnational zones now, with atoll states prioritizing drinking-water security ahead of a post-peak dry period that has moved forward by roughly a month.

4. Accelerate any pending applications to the Green Climate Fund, Adaptation Fund, and Fund for Responding to Loss and Damage that relate to drought, flood, and heat resilience, recognizing that the window before peak conditions has narrowed further.

5. Update public communications to reflect the new status: an El Niño Advisory remains in effect, a strong event is now expected rather than merely likely, and a very strong ("super") event is now the central case at 81 percent, while continuing to communicate that local impacts remain variable.

WHAT THE CVF-V20 SECRETARIAT WILL DO

The Office of the Chief Scientist will issue its next technical update following the NOAA ENSO Diagnostic Discussion scheduled for **13 August 2026**, and monthly thereafter for as long as the event remains active. We will continue to coordinate with the WMO Regional Climate Centres serving our membership to channel tailored seasonal forecasts to national focal points. Fiscal implications of the event will be circulated ahead of the IMF and World Bank Annual Meetings in October 2026 to reflect the higher-intensity outlook and the earlier peak.

Questions on this brief should be directed to the Office of the Chief Scientist and Science Advisor at kq@cvfv20.org and sgoffice_ml@cvfv20.org respectively copy to secretariat@cvfv20.org.

ENDNOTES

1 NOAA Climate Prediction Center, ENSO Diagnostic Discussion, 9 July 2026. El Niño Advisory; Niño-3.4 +1.2°C (Niño-4 +0.5°C, Niño-1+2 +2.7°C); 81 percent chance of a very strong El Niño during October to December; 97 percent chance of persistence through early spring 2027; next discussion 13 August 2026. NOAA, El Niño forms, expected to strengthen, say NOAA forecasters, news release, 11 June 2026. Most recent NOAA press release on the event; RONI adoption and below-normal 2026 Atlantic hurricane outlook. Current strength probabilities (RONI-based).

2 World Meteorological Organization, El Niño is forecast to intensify, increasing likelihood of extreme weather, press release, 3 July 2026, and the accompanying Global Seasonal Climate Update (July to September 2026). Rapid development into a strong event July to September; seasonal-average SST expected to exceed +2.0 C in key monitoring regions; peak November to February; super El Niño excluded from WMO operational classification.

3 AGRA, Drought Crisis in Southern Africa: The 2015 to 2016 El Niño-induced drought.

4 India Meteorological Department, 2026 southwest monsoon pre-season outlook.

5 NOAA, El Niño forms, expected to strengthen, say NOAA forecasters, news release, 11 June 2026. Most recent NOAA press release on the event; RONI adoption and below-normal 2026 Atlantic hurricane outlook. Current strength probabilities (RONI-based).

6 Nature Communications, Nonlinear El Niño impacts on the global economy under climate change (2023).

7 IPCC, Sixth Assessment Report, Working Group I, Chapter 4, (no model consensus on systematic change in ENSO SST amplitude; very likely increase in ENSO rainfall variability). See also NOAA Climate.gov, ENSO and Climate Change: What does the new IPCC report say?.

8 Carbon Brief, State of the climate: Strong El Niño puts 2026 on track for second-warmest year, Z. Hausfather, 21 April 2026.

Photo credit: October 2020, Datoga girls fetching water from the village well, Lake Eyasi, Arusha, Tanzania | SelimBT | Shutterstock

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