CVF V20 | SCIENCE BULLETIN

NOAA NOW GIVES AN 83 PERCENT CHANCE THAT THIS EL NIÑO BECOMES THE STRONGEST ON RECORD

VERY STRONG CONDITIONS NEAR-CERTAIN THROUGH DECEMBER AND IMPACTS RUNNING INTO 2028



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This is a technical update superseding Science Bulletin No. 6 published on 17 September 2026
Photo Credit: February 2015, woman fetching water from a borehole in Northern Kenya | David duChemin | Shutterstock

BOTTOM LINE

The peak quarter of what is now likely to be the strongest El Niño on record has begun, with evidence from the past month pointing to impacts that will outlast the ocean peak by more than a year. The top lines for members are these.

- The National Oceanic and Atmospheric Administration (NOAA) raises to 83 percent, from 75 percent in September and 69 percent in August, the chance of a historic event exceeding every El Niño since 1950, defined as a three-month Relative Oceanic Niño Index (RONI) at or above +2.5°C during October to December, while its strength table now puts a very strong event at 100 percent for both September to November and October to December.[1,2]

- The World Meteorological Organization (WMO) consensus of 13 centers expects the event to peak around December and to persist through February 2027 with near-100 percent likelihood, while NOAA expects strong to very strong conditions through January to March 2027 and neutral conditions to become most likely by April to June.[3,2]

- September 2026 was 1.63°C above pre-industrial, the second-warmest September on record, on the highest September sea surface temperature ever measured, with Copernicus expecting the run of months above 1.5°C that began in August to continue into 2027.[4]

- The failed June to September season in Sudan, South Sudan, northern Ethiopia and Eritrea now runs into the same months as flood risk in the southern Greater Horn, while the Famine Early Warning Systems Network (FEWS NET) places the peak of southern African food needs in the November 2027 to March 2028 lean season, a full year after the ocean peak.[5,6]

- Seven weeks after the Rasuwa disaster in Nepal, the Fund for responding to Loss and Damage has still not decided on Nepal's emergency request and has yet to approve any project, which is the clearest evidence members can bring to Bangkok and Antalya that current windows cannot meet hazards that peak in weeks. Climate Home News reports that the Board's first-ever extraordinary meeting, on 22 October, will consider a motion to provisionally set aside US$20 million for Nepal, with final approval of Nepal's proposal for using the money left to one of the Board's regular meetings.[7,8,52]

For CVF-V20 members, the planning question is no longer whether this event will be exceptional but how to carry impacts that run from the current flood and drought season through the 2027 harvests and into 2028 and how to turn the Annual Meetings in Bangkok (12 to 18 October) and COP31 in Antalya (9 to 20 November) into finance that arrives before those impacts do.



Photo credit: January 2025, drought-stricken landscape in Vietnam. | Quang Nguyen Vinh | Pexels

WHAT HAS CHANGED SINCE THE SEPTEMBER UPDATE

The single most important shift is that a record-breaking event has moved from a real possibility to the likely outcome, since NOAA's historic-event probability for October to December has risen from 69 percent in August to 75 percent in September and 83 percent in October, with 54 percent for September to November and 70 percent for November to January, placing the most likely peak of the three-month index in the October to December season.[1,9] Members should not read NOAA's new headline wording as a downgrade. The September discussion gave a greater than 90 percent chance of a very strong event through the Northern Hemisphere fall and winter, whereas the October discussion gives a greater than 83 percent chance that strong to very strong conditions last through January to March 2027, which is a statement about a longer window reaching into the decay phase, while NOAA's own strength table resolves the question by putting a very strong event at 100 percent for September to November and October to December, 96 percent for November to January, 81 percent for December to February and 46 percent for January to March.[1,2]

The ocean has continued to warm toward the historic threshold, with September indices of +2.1°C in Niño-3.4, +3.0°C in Niño-3 and +3.9°C in Niño-1+2, up from +1.8°C, +2.5°C and +3.4°C in August, surface anomalies above +4.0°C in parts of the eastern equatorial Pacific and subsurface anomalies above +10°C at depth, while the atmosphere remains fully coupled, with westerly wind anomalies, enhanced rainfall over the central and eastern Pacific, suppressed rainfall over Indonesia and strongly negative Southern Oscillation indices.[1,9] The latest weekly values in NOAA's status update stand at +2.4°C for Niño-3.4, +3.4°C for Niño-3 and +4.4°C for Niño-1+2, with Niño-4 at +0.2°C, which keeps this an eastern Pacific event of the kind that has historically produced the strongest teleconnections.[10]

The historic threshold has not yet been crossed on the index that defines it, since the three-month RONI stood at +1.7°C for July to September, up from +1.4°C for June to August, against historical peaks of +2.4°C in 1982 to 1983 and +2.3°C in both 1997 to 1998 and 2015 to 2016.[10,11] Reaching +2.5°C for October to December therefore requires the coming three months to run well above the September level, which the weekly values and the model consensus both support but which only the data can confirm.

The WMO now forecasts an October to December Niño-3.4 anomaly near +3.7°C in its own dataset, with a peak around December and tight agreement across forecast systems, and has lowered its Indian Ocean Dipole expectation from a September to November mean of 0.9°C in its September update to an October peak followed by decline and an October to December mean of about +0.5°C.[3,12,13] The India Meteorological Department now describes the dipole as neutral, so members should treat its support for East African short rains as weaker than the strongly positive dipole that accompanied 1997 to 1998.[14]

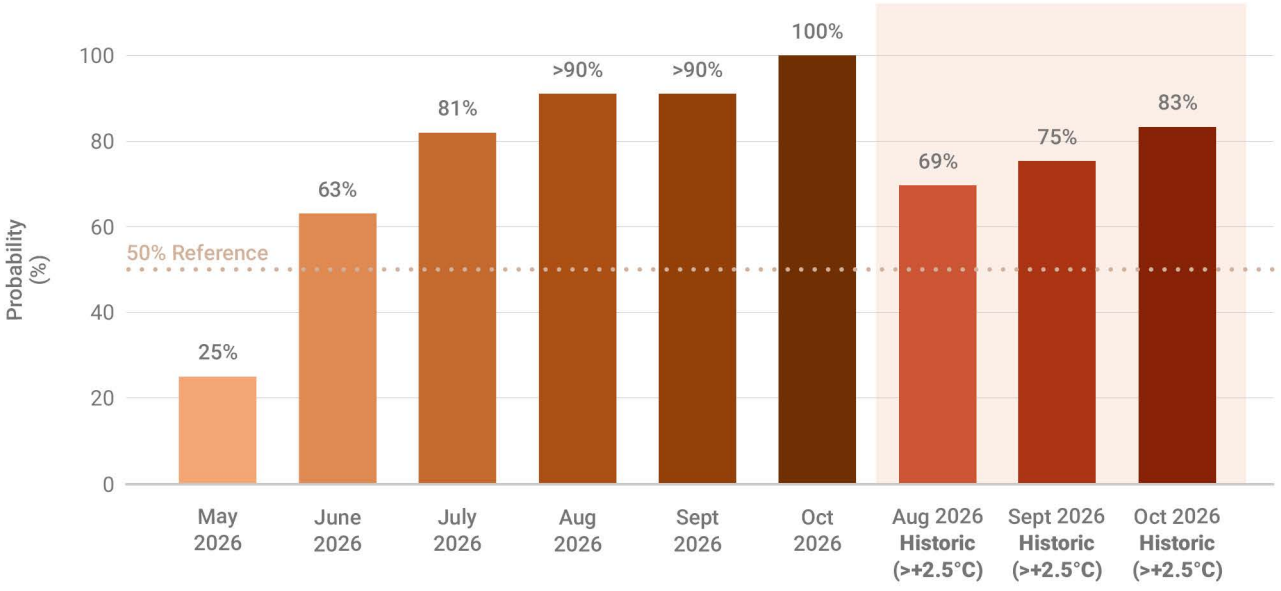
A NOTE ON PRECISION

Members will see three different records reported this month and should know which one counts, since none of them is yet the official record. Carbon Brief reports that the daily Niño-3.4 anomaly on the traditional convention reached 3.11°C on 21 September, above the 3.08°C daily record of November 2015, while Copernicus reports that the monthly Niño-3.4 sea surface temperature reached 29.7°C in September, an all-time high above the 1982 to 1983, 1997 to 1998 and 2015 to 2016 peaks.[15,4] Both measures include the background warming of the whole tropical ocean, which is why NOAA ranks events on the RONI, which removes that warming and on which the event has not yet passed the 1982 to 1983 peak.[15,11] The October to December RONI value can only be computed once December closes, so official confirmation will come in early 2027 at the earliest. Until then, the defensible wording is "on track to become the strongest El Niño since at least 1950," and the WMO's +3.7°C forecast should not be set against the +2.3°C to +2.4°C RONI peaks of past events, because the two numbers sit on different scales.

As before, "very strong" is NOAA's formal category for a three-month RONI at or above +2.0°C, while "super El Niño" is the informal public synonym that our official statements should avoid.[2] The next NOAA discussion is scheduled for 12 November 2026, during the 31st Conference of the Parties (COP31).[1]

FIGURE 1:
NOAA "VERY STRONG" EL NIÑO PROBABILITY ACROSS THE MAY TO OCTOBER 2026 OUTLOOKS, WITH THE HISTORIC-EVENT ODDS (THREE-MONTH RONI AT OR ABOVE +2.5°C) OF 69 PERCENT ON 13 AUGUST, 75 PERCENT ON 10 SEPTEMBER AND 83 PERCENT ON 8 OCTOBER.

The October very-strong value is the October to December entry in the Climate Prediction Center's (CPC) October strength table. Bars 1 to 6: probability of a very strong El Niño (RONI at or above +2°C) in successive NOAA monthly outlooks; the October bar is the October-December value in CPC's October strength table. Final 3 bars: the 13 August, 10 September, and the 8 October outlooks' chances of a historic event (three-month RONI at or above +2.5°C) exceeding any El Niño since 1950.



Sources: NOAA CPC.



Photo credit: November 2015, children carrying water jugs in Lusaka, Zambia | Vidit Luthra | Shutterstock

EXPECTED REGIONAL IMPACTS ON CVF-V20 MEMBERS

Members should read this brief alongside the CVF-V20 Regional Climate Outlook Digest. This section corrects three figures carried in Science Bulletin No. 6 and adds a Northern Horn and Sudan row to Figure 2, because the Greater Horn now faces opposite hazards in its north and south during the same months.

Southern Africa enters its rainy season under the SARCOF-33 outlook, which favors below-normal rainfall for October to December across much of Angola, southern Zambia, Zimbabwe, Mozambique, Namibia, Botswana, most of South Africa, Eswatini and Lesotho, with the dry signal persisting into January to March 2027 over Angola, Namibia, Botswana, Zimbabwe, Zambia and parts of South Africa and above-normal temperatures across most of the region.[16] FEWS NET expects a late onset and widespread crisis-level food insecurity, noting that South African maize production has come in 14 to 64 percent below normal in every strong El Niño since 1980 except one and was 40 percent below normal in 2015 to 2016.[6] Two factors shift the timing of the risk rather than its size, since the 2026 regional cereal harvest was about 10 percent above the five-year average, which cushions supply into early 2027, while Lake Kariba holds 38 percent usable storage against 14 percent a year ago, so the hydropower risk sits in the 2027 to 2028 storage year rather than in current generation.[6,17] The consequence is that needs will peak in the November 2027 to March 2028 lean season, after the ocean has returned to neutral and after international attention is likely to have moved on.[6] The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) counts 13.3 million people already in crisis or worse, about 90 percent of them in Malawi, Mozambique, Madagascar and Zambia, against an anticipatory plan for 11.9 million people costed at US$111.3 million that is

about 80 percent unfunded.[18]

Members should note a correction to Science Bulletin No. 6, which cited a United Nations Children's Fund (UNICEF) estimate of more than 162 million children at risk across 13 Eastern and Southern African countries. UNICEF updated that release on 7 October to clarify that the figure measured exposure to drought or flooding from all weather patterns, whereas its El Niño-specific estimate is more than 40 million children in eight countries facing unusually wet or dry conditions in October to December, with the US$173 million requirement across 13 priority countries unchanged.[19] Our communications should use the revised figure.

In the southern Greater Horn, the 74th Greater Horn of Africa Climate Outlook Forum (GHACOF74) outlook for October to December remains the issued consensus, with a 90 percent chance of enhanced rainfall over southern Ethiopia, central to southern Somalia and northeastern Kenya.[20] The short rains have begun, the Shabelle at Jowhar stood about 30 cm below its moderate flood threshold on 8 October, and FEWS NET warns of a credible risk of Famine in southern Somalia between October and January if Deyr flooding is extreme, while the Somali river network remains close to flood thresholds as the heaviest rains approach.[21] Member states of the Intergovernmental Authority on Development (IGAD) adopted a High-Level Call to Action on 17 September that commits them to activate contingency plans, pre-position supplies, protect roads, bridges and health facilities and strengthen cholera and malaria surveillance before the peak.[22] The IGAD Climate Prediction and Applications Centre (ICPAC) assesses desert locust risk as elevated preparedness risk along the Red Sea and Gulf of Aden coasts rather than evidence of an ongoing upsurge.[23]

The northern Greater Horn faces the opposite problem, since ICPAC reports persistent May to August deficits across Djibouti, Eritrea, Ethiopia, Somalia, South Sudan and Sudan with the highest risk in Sudan, northern Ethiopia and Eritrea, while FEWS NET puts June to September rainfall in northern Sudan at or below 45 percent of normal and the season in parts of South Sudan and Karamoja as the driest on record.[5,6] Harvest losses in the north will therefore coincide with flood losses in the south, which is why this edition gives the Northern Horn and Sudan its own row in Figure 2.

In West Africa and the Sahel the main season has ended with a mixed result that the aggregate numbers hide, since the assessment PREGEC (Dispositif régional de Prévention et de Gestion des Crises Alimentaires/ Food Crisis Prevention and Management Mechanism) assessment forecasts regional cereal production 11 to 31 percent above the five-year average, but with declines in Chad and Cabo Verde, forage below 100 kg of dry matter per hectare across more than 60 percent of the Sahel and about 80 percent of water points declining, while FEWS NET identifies Chad as the country most affected by El Niño, with deficits above 40 percent in parts of Chad, Niger and Mali.[24,6] The pastoral stress lands on a region where the Cadre Harmonisé already projected more than 54.8 million people in crisis or worse during the June to August lean season, with the November analysis cycle due to give the first post-harvest numbers.[25] This edition raises the drought and water stress scores for the Sahel to medium and lowers its flood score to low.

South Asia's monsoon has closed as forecast, with all-India rainfall 13 percent below the long-period average, the South Peninsula 24 percent below and East and Northeast India 26 percent below, which corrects the 14 percent mid-season figure cited in Science Bulletin No. 6.[26] The India Meteorological Department forecasts a normal northeast monsoon over the

South Peninsula, at 88 to 112 percent of the long-period average, but below-normal all-India rainfall in October and above-normal October temperatures, while the WMO multi-model outlook leans drier for the Indian subcontinent through December, so members should follow their national services where the two differ.[14,12] Pakistan's meteorological department expects normal to above-normal rainfall in the north and near to slightly below normal in the south through December, with above-normal temperatures and a risk of delayed snow accumulation.[27]

For the Himalaya and Hindu Kush Himalaya, the Science Bulletin No. 6 assessment holds, with the addition that World Weather Attribution concluded on 17 September that the Rasuwa rock-ice collapse could not be quantitatively attributed and described warming as a destabilizing factor acting on a pre-existing geological predisposition, while assessing the disaster as beyond adaptation limits, without identifying any El Niño mechanism.[28] The flood score in Figure 2 therefore remains a cryosphere score, not an El Niño teleconnection, while the drought score stays at medium because the winter sign in the literature is uncertain.[29] By late September the toll stood at about 1,450 dead and more than 5,000 missing, with recovery and reconstruction needs estimated by the government at US$4.8 billion, well above the US$2.5 billion loss figure cited in Science Bulletin No. 6.[7]

In the Maritime Continent, the Association of Southeast Asian Nations (ASEAN) Specialised Meteorological Centre forecasts a high probability of below-normal rainfall over the southern and most of the eastern Maritime Continent through December, with Alert Level 3 for transboundary haze in force across the southern ASEAN region since 26 August.[30] Indonesia Meteorological, Climatological and Geophysical Agency (BMKG) expects the rainy season to start late across most of Indonesia, with most seasonal zones beginning in November or December, while the Philippine science department now forecasts drought conditions in every province by the end of March 2027.[31,32] Indonesian fire emissions had reached 76 million tons of carbon by 7 September, on the 2015 trajectory, which remains the latest figure available.[33] This edition raises the water stress score for the region to high.

In the Pacific, the October Island Climate Update gives a 100 percent chance that El Niño persists through December and forecasts below-normal rainfall, often below the 25th percentile, for most of Micronesia and an arc from Papua New Guinea to Pitcairn, while Nauru, Kiribati, Tuvalu, Tokelau, the northern Cook Islands and the Marquesas sit on the wetter side.[34] Tonga has



Photo credit: August 2026, aftermath of massive flooding along the Bhotekoshi River in Nuwakot, Nepal | AP Tolang | Shutterstock



Photo credit: September 2019, people queueing for water during a water shortage in Punjab, Pakistan | Syed Usman Photography | Shutterstock

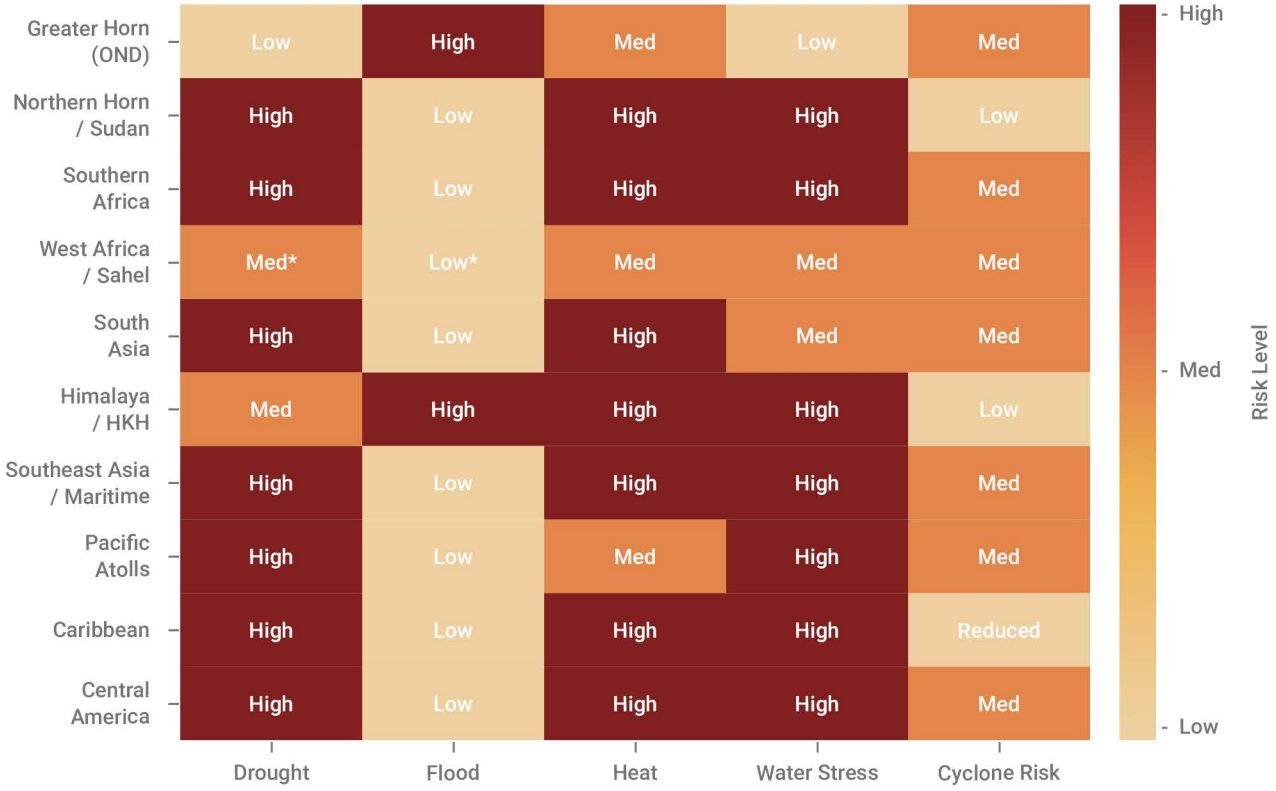
moved from alert to declared drought for Tongatapu, Ha'apai, 'Eua and Niuatoputapu, Palau recorded its driest June to August on record, and NOAA Coral Reef Watch gives a 90 percent probability of bleaching-level heat stress across much of the tropical Pacific through December.[35,36] The outlook from the nineteenth Pacific Islands Climate Outlook Forum, due later this month, will be reflected in the Regional Climate Outlook Digest.

In the Caribbean, the Caribbean Regional Climate Outlook Forum (CariCOF) outlook of early October assesses short-term drought as imminent by the end of December in Dominica and evolving in the ABC Islands, Antigua, the northern and northwest Bahamas, northwest Belize, the easternmost Dominican Republic, interior French Guiana, Grenada, Martinique, St Barts, Saint Lucia, St Martin, Tobago and the US Virgin Islands, as well as long-term drought as imminent by the end of November in the northern and northwest Bahamas and Saint Lucia.[37] It expects recurrent excessive humid heat through October in Belize and the Antilles and through November in the Guianas, coral bleaching potential around the Bahamas and the Greater Antilles, and a dry season from January to March in which drought may worsen, with cascading impacts by May 2027 and an earlier start to the 2027 heat season.[37] The Atlantic season has followed NOAA's below-normal outlook, since its first hurricane, Isaias, formed on 7 October, later than in any season on record, though Isaias reached Category 3 within two days, which is a reminder that a quiet season is not a safe one.[38,39]

Central America remains in emergency, with Honduras keeping 103 municipalities on red alert and reporting 5.6 million people affected, while Guatemala maintains a national orange alert and a red alert in the Trifinio with about 210 municipalities reporting crop losses.[40] Members should note a correction to Science Bulletin No. 6 on Panama, since the Canal Authority has raised the Neopanamax draft to 49.0 feet and daily slots to 33 from 15 October on near-average September rainfall, with September transits averaging 32.6 a day, though it states that the water deficit continues and the dry-season risk from January remains.[41] Colombia's Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) declared El Niño conditions on 8 October and expects deficits to deepen into December, while the government has secured fuel for thermal plants to avoid the rationing risk the country faced in 2015 to 2016.[42] The World Food Programme (WFP) estimates that 16 million people are at risk across Latin America and the Caribbean and that up to 49 million people worldwide could be pushed into acute hunger by this event.[43]

FIGURE 2:
EXPECTED HAZARD PROFILE ACROSS CVF-V20 REGIONS IN A VERY STRONG EL NIÑO, OCTOBER 2026 TO MARCH 2027.

Qualitative scale (Low, Med, High) based on the issued regional outlooks and the 1997-98 and 2015-16 events. The Northern Horn and Sudan row is new in this edition, while cells marked with an asterisk (*) changed since Science Bulletin No. 6. The Himalaya / HKH flood score reflects cryosphere hazard, not an El Niño teleconnection.



Source: Synthesis by Office of the Chief Scientist, CVF-V20.

FISCAL AND LOSS-AND-DAMAGE IMPLICATIONS

The fiscal case now rests on odds of roughly five to one that this event exceeds 2015 to 2016 on the index that defines it and on a peer-reviewed estimate that the 2015 to 2016 event cost the world economy about US$3.9 trillion over the event year and the following three years, equivalent to roughly 4 to 5 percent of global Gross Domestic Product (GDP) at the time, with the burden falling disproportionately on developing economies.[1,44] Estimates differ by method, with Callahan and Mankin putting five-year global income losses at US$4.1 trillion for 1982 to 1983 and US$5.7 trillion for 1997 to 1998.[45] Applying their method to the current event, the Peterson Institute for International Economics puts year-one losses at about US$986 billion in 2027, or 0.8 percent of world GDP, of which US$353 billion, equal to 3.6 percent of GDP, falls on the 51 most strongly exposed economies.[46] Members should cite the year-one

figure and the share borne by exposed economies rather than the institute's six-year central estimate of US$17.6 trillion, since that figure extrapolates a long-run multiplier, comes from a policy analysis rather than peer-reviewed work, and carries a range of US$7.2 trillion to US$28.5 trillion. The institute itself describes its estimates as conservative, since it assumed an event roughly comparable to 1997 to 1998, and the forecast has strengthened since it was published.[46]

The Loss and Damage case has gained a second month of evidence, since six weeks after Nepal petitioned the Fund for responding to Loss and Damage on 31 August, the Board has not convened a meeting able to decide the request; the US$20 million confirmed under the Barbados Implementation Modalities from earlier proposals has not yet been released; and Nepal has raised about US$90 million domestically through the Prime Minister's Disaster Relief Fund against recovery needs the government puts at US$4.8 billion.[47,7] At its July meeting the Board approved no projects, with about 180 proposals requesting about US$2.8 billion against US$250 million available and deferred its first approvals to December.[8] Climate Home News reports that a motion, drafted by Board members from both developed and developing countries, will ask the Board's first-ever extraordinary meeting on 22 October to provisionally set aside US$20 million for Nepal and invite the government to submit a proposal for using the money, which the Board would then approve or reject at one of its regular meetings, so Nepal's request remains undecided for now.[52] For the CVF-V20, the lesson is the one we have made before, now with a second number attached, that a fund which has yet to approve a project cannot respond to hazards that peak in weeks, while an El Niño whose southern African needs peak in 2028 will test the same architecture on a far larger scale.

The finance calendar over the next six weeks is unusually aligned with the event, beginning with the International Monetary Fund (IMF) and World Bank Annual Meetings in Bangkok, from 12 to 18 October, where the CVF-V20 fiscal statement carries our asks in full and continuing with COP31 in Antalya from 9 to 20 November, which opens three days before NOAA's next discussion and will coincide with the peak of the short rains and the onset of the southern African season.48,49

A note on attribution, directly relevant to the financing case. It would overstate the science to claim that warming caused this El Niño or intensified the Pacific warming itself, so our communications should not assert either, just as they should not attribute the Rasuwa disaster to El Niño. The Intergovernmental Panel on Climate Change (IPCC) finds no model consensus that anthropogenic forcing has changed the amplitude of El Niño sea surface temperature swings.50 The defensible and stronger claim is that the event is unfolding on a baseline that warming has already made roughly 1.3 to 1.5°C hotter than pre-industrial, so the absolute heat, marine heatwaves and temperature records during the event are human-caused even where the El Niño rhythm itself is natural, while the IPCC assesses it as very likely that the rainfall extremes that define strong El Niños will intensify in a warming world.50 Because the global temperature response lags the Pacific peak by about three months, the larger effect of this event will land in 2027, for which Carbon Brief's July assessment gives a best estimate of 1.71°C above pre-industrial and a 92 percent chance of a new global record.51 This shifts the event from a purely natural act of God toward a natural cycle whose harms are foreseeably amplified by emissions for which our members bear little responsibility, which is the stronger foundation for concessional finance, debt relief and Loss and Damage claims.

RECOMMENDED ACTIONS FOR MEMBER STATES OVER THE NEXT 60 DAYS

The peak quarter is underway, so the recommendations shift from execution to sustaining response through a season that will outlast the ocean peak. CVF-V20 members are encouraged to:

1. Adopt an event that exceeds the 2015 to 2016 magnitude as the central planning scenario, recognizing that NOAA now assigns an 83 percent chance to a historic event and a 100 percent chance to a very strong event for October to December and extend planning horizons to the 2027 harvests and the 2027 to 2028 lean season.[1,2,6]

2. In Southern Africa, complete drought measures before planting closes, prioritizing drought-tolerant seed, water and livestock measures in the SARCOF-33 dry zone, closing the funding gap on the OCHA anticipatory plan and agreeing 2027 to 2028 water allocations for the Kariba and Cahora Bassa systems now rather than after the rains fail.[16,18]

3. In the Greater Horn, keep flood, flash-flood and landslide response, cholera and malaria surveillance and Rift Valley fever livestock vaccination in place through December in the south, as committed in the IGAD Call to Action, while scaling food assistance in Sudan, South Sudan, northern Ethiopia and Eritrea, where the June to September season failed.[22,5]

4. For Himalayan members, extend cryosphere hazard monitoring and downstream early warning on transboundary rivers, secure winter water supply on the assumption of a deficient monsoon and delayed snow accumulation, and carry the mountain hazard case to COP31 on the loss and damage evidence from Rasuwa rather than on an El Niño attribution the science does not support.[28,27]

5. Pre-position water storage, seed stocks and essential medicines in high-risk subnational zones, with Pacific members in the drier arc from Papua New Guinea to Pitcairn, Caribbean members named in the CariCOF drought outlook and Central American members in the Dry Corridor prioritizing drinking-water security ahead of the January to March dry season, while Maritime Continent members keep haze health protocols active.[34,37,30]



Photo credit: January 2008, woman collecting water in Koupela, Burkina Faso | Gilles Paire | Shutterstock



Photo credit: Stock image | K | Pexels

6. Activate heat-health action plans for outdoor workers, hospitals and schools and coordinate with fisheries and marine agencies on coral bleaching monitoring across the Caribbean and the tropical Pacific.[37,36]

7. Use the Bangkok Annual Meetings to request El Niño-adjusted debt sustainability assessments, activation of climate-resilient debt clauses where they exist and readiness of contingent financing, confirm that parametric insurance policies are in force with triggers that match the hazards now forecast and accelerate pending applications to the Green Climate Fund, Adaptation Fund and Fund for responding to Loss and Damage, citing the Nepal timeline as evidence of what the current windows can and cannot deliver.[48,7]

8. Begin systematic recording of economic and non-economic losses now, so that COP31 interventions and future Loss and Damage requests rest on documented figures rather than estimates reconstructed after the season.[49]

9. Communicate clearly that an El Niño Advisory is in effect, that a very strong event is near-certain through December and that a record-breaking event carries an 83 percent probability, describe the event as "on track to become the strongest since at least 1950" until NOAA confirms the October to December RONI and use the revised UNICEF figure of more than 40 million children, while continuing to note that local impacts remain variable.[1,19]

WHAT THE CVF-V20 SECRETARIAT WILL DO

The Office of the Chief Scientist will issue its next technical update following the NOAA El Niño–Southern Oscillation (ENSO) Diagnostic Discussion scheduled for 12 November 2026, timed to support member delegations during COP31 and will circulate an updated Regional Climate Outlook Digest carrying the PICOF-19 outlook, the November Cadre Harmonisé analysis and any SARCOF or GHACOF updates. The Secretariat will carry the fiscal asks into the Annual Meetings in Bangkok (12 to 18 October), support Nepal and other mountain members in carrying the mountain hazard case into COP31, and track the Fund for responding to Loss and Damage from its extraordinary Board meeting of 22 October, which is expected to consider setting aside US$20 million for Nepal, to its December Board meeting, at which the first project approvals are expected to be considered.[7]

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, with a copy to secretariat@cvfv20.org.

ENDNOTES

[1] NOAA Climate Prediction Center, ENSO Diagnostic Discussion, 8 October 2026. El Niño Advisory; strong to very strong El Niño likely through January to March 2027 (greater than 83 percent chance); probability of a historic event (three-month RONI at or above +2.5°C) of 54 percent for September to November, 83 percent for October to December and 70 percent for November to January; September Niño-3.4 +2.1°C, Niño-3 +3.0°C, Niño-1+2 +3.9°C; surface anomalies above +4.0°C in parts of the eastern equatorial Pacific and subsurface anomalies above +10.0°C at depth; westerly low-level wind anomalies, enhanced convection over the central and eastern Pacific, suppressed convection over Indonesia and significantly negative Southern Oscillation indices; next discussion 12 November 2026.

[2] NOAA Climate Prediction Center, official ENSO strength probabilities on the Relative Oceanic Niño Index, October 2026 issue. Very strong (RONI at or above +2.0°C) at 100 percent for September to November and October to December, 96 percent for November to January, 81 percent for December to February, 46 percent for January to March, 6 percent for February to April and 0 percent from March to May 2027, when ENSO-neutral becomes the most likely outcome by April to June.

[3] World Meteorological Organization, "Sea-surface temperatures reflect strengthening El Niño," press release, October 2026 (page dated 6 October, release dated 8 October). Niño-3.4 anomaly (WMO dataset) rose from about +1.6°C in June to +2.5°C in August; October to December forecast near +3.7°C, the highest since observations began; peak around December 2026; near-100 percent likelihood of persistence through February 2027; consensus of 13 centers; record global sea surface temperature in August 2026; regional rainfall signals are probabilistic and do not replace national forecasts.

[4] Copernicus Climate Change Service, September 2026 climate bulletin, 9 October 2026. September 2026 at 16.27°C, 1.63°C above the 1850 to 1900 average and 0.82°C above 1991 to 2020, the second-warmest September after 2023; extra-polar (60°S to 60°N) sea surface temperature of 21.05°C, the highest September value on record; monthly Niño-3.4 sea surface temperature of 29.70°C, an all-time high above the 1982 to 1983, 1997 to 1998 and 2015 to 2016 peaks; the run of months above 1.5°C that began in August expected to continue into 2027. The August bulletin (10 September 2026) reported 1.65°C.

[5] ICPAC, Climate Watch Advisory, 17 September 2026. Persistent May to August rainfall deficits across Djibouti, Eritrea, Ethiopia, Somalia, South Sudan and Sudan, with the highest risk in Sudan, northern Ethiopia and Eritrea and dryness extending into Uganda and western Kenya.

[6] FEWS NET, Global Special Report, "2026-2027 El Niño food security impacts," 6 October 2026. Late onset expected for the October 2026 to March 2027 southern African season; widespread IPC Phase 3 likely, with needs peaking in the November 2027 to March 2028 lean season; South African maize production 14 to 64 percent below normal in every strong El Niño since 1980 except 2009 to 2010 and 40 percent below in 2015 to 2016; 2026 regional cereal harvest about 10 percent above the five-year average; northern Sudan June to September rainfall at or below 45 percent of normal and the driest season on record in parts of South Sudan and Karamoja; Sahel deficits above 40 percent in parts of Chad, Niger and Mali, with Chad the most affected country.

[7] Climate Home News, 22 September 2026, "As loss and damage fund stalls, Nepal crowdfunds flood relief" (about 1,450 dead and more than 5,000 missing; government recovery and reconstruction estimate of US$4.8 billion; about US$90 million raised through the Prime Minister's Disaster Relief Fund; no Fund decision on Nepal's emergency request and no project yet approved by the Fund; next Board meeting from 15 December).

[8] Climate Home News, 10 July 2026, on the ninth Board meeting of the Fund for responding to Loss and Damage (Manila, 8 to 10 July 2026). No projects approved; about 180 proposals requesting about US$2.8 billion against US$250 million available; first

approval package deferred to the next meeting in December 2026.

[9] NOAA Climate Prediction Center, ENSO Diagnostic Discussion, 10 September 2026 (archived). Greater than 90 percent chance of a very strong event during Northern Hemisphere fall and winter 2026 to 2027; 75 percent chance of a historic event in October to December; August Niño-3.4 +1.8°C, Niño-3 +2.5°C, Niño-1+2 +3.4°C.

[10] NOAA Climate Prediction Center, ENSO evolution, status and forecast presentation, 13 October 2026. Latest weekly sea surface temperature departures (OISST v2.1) of +0.2°C for Niño-4, +2.4°C for Niño-3.4, +3.4°C for Niño-3 and +4.4°C for Niño-1+2; three-month RONI of +1.0°C (May to July), +1.4°C (June to August) and +1.7°C (July to September 2026).

[11] NOAA Climate Prediction Center, historical Relative Oceanic Niño Index table (ERSSTv6). Three-month RONI peaks of +2.4°C in 1982 to 1983 and +2.3°C in both 1997 to 1998 and 2015 to 2016, so a value at or above +2.5°C would be unprecedented in the record.

[12] World Meteorological Organization, Global Seasonal Climate Update for October-November-December 2026 (last updated 7 October 2026). Niño-3.4 forecast of about +3.7°C with close model agreement; positive Indian Ocean Dipole peaking in October then declining, October to December mean about +0.5°C; wetter than normal Greater Horn of Africa; drier than normal South Asia, western Pacific, southern Central America, parts of the Caribbean and northwestern South America.

[13] World Meteorological Organization, El Niño/La Niña Update and press release "El Niño set to become very strong, raising risks of extreme weather into 2027," 3 September 2026. Nearly 100 percent likelihood of persistence through February 2027; very strong intensity peaking toward the end of 2026 with impacts well into 2027; Niño-3.4 (WMO dataset) +2.0°C in July and weekly +2.2 to +2.6°C late July to mid August; positive Indian Ocean Dipole with a September to November mean of 0.9°C.

[14] India Meteorological Department, press release on the October to December 2026 outlook, 30 September 2026. Northeast monsoon rainfall over the South Peninsula normal (88 to 112 percent of the long-period average); all-India October rainfall below normal (under 85 percent); above-normal October temperatures over most of the country; strong El Niño expected to strengthen to year end; Indian Ocean Dipole neutral.

[15] Carbon Brief, "Analysis: Super El Niño reaches remarkable all-time record," Z. Hausfather, 21 September 2026 (updated 23 September). Daily Niño-3.4 anomaly of 3.11°C on 21 September on the traditional (ONI) convention, above the previous daily record of 3.08°C on 18 November 2015; daily RONI about +2.5°C in mid-September, below the late-December 1982 daily record; 14 seasonal models (674 runs) project a monthly peak near +4.1°C between November and January; no forecast system has been verified against an event of this size and models ran about 0.3°C warm in August.

[16] SADC Climate Services Centre, SARCOF-33 consensus statement and press release, Swakopmund, Namibia, 25 to 28 August 2026. Below-normal rainfall favored for October to December 2026 across much of Angola, southern Zambia, Zimbabwe, Mozambique, Namibia, Botswana, most of South Africa, Eswatini and Lesotho, persisting into January to March 2027 for Angola, Namibia, Botswana, Zimbabwe, Zambia and parts of South Africa; normal to above-normal over eastern DRC, most of Tanzania, northern Malawi and Zambia, Comoros and Seychelles; above-normal temperatures October 2026 to January 2027.

[17] Zambezi River Authority, weekly lake levels. Lake Kariba at 480.83 m and 38.04 percent usable storage on 5 October 2026, against 477.56 m and 14.30 percent on the same date in 2025; 2026 water allocation of 36 billion cubic meters (ZRA hydrological outlook, 21 July 2026).

[18] UN OCHA Regional Office for Southern and Eastern Africa, Southern Africa El Niño Preparedness Alert, 15 August 2026. 13.3 million people in IPC Phase 3 or worse, about 90 percent of them in Malawi, Mozambique, Madagascar and Zambia; 84

anticipatory actions in 13 countries to reach about 11.9 million people for US$111.3 million, about 80 percent unfunded.

[19] UNICEF, "More than 40 million children in Eastern and Southern Africa face unusually wet or dry conditions," press release of 1 September 2026, updated 7 October 2026. More than 40 million children in eight countries exposed to El Niño-driven wet or dry conditions in October to December 2026 at a 70 percent probability threshold; the earlier figure of 162 million measured exposure to drought or flooding from all weather patterns, not El Niño specifically; US$173 million requirement across 13 priority countries unchanged.

[20] ICPAC, GHACOF74 outlook for October to December 2026 (Kigali, 17 to 18 August 2026) and Summary for Decision Makers (10 September 2026). Wetter than normal, with a 90 percent chance of enhanced rainfall over southern Ethiopia, central to southern Somalia and northeastern Kenya and seasonal totals above 400 mm likely in parts of Somalia, central Kenya, the Lake Victoria Basin, Burundi, western Rwanda and western Tanzania.

[21] FAO SWALIM river data as reported by Dawan Africa, 8 October 2026. The Shabelle at Jowhar rose 2.22 m to 4.70 m, about 30 cm below the moderate flood threshold, with early-October rainfall above the monthly average at Bardheere and Galkayo; FEWS NET flags a credible risk of Famine in southern Somalia between October 2026 and January 2027 if Deyr flooding is extreme.

[22] IGAD and ICPAC, High-Level Call to Action on El Niño Preparedness, Anticipatory Action and Resilience, Addis Ababa, 17 September 2026. Member states commit to activate contingency plans, pre-position food, health, WASH and agricultural supplies, protect roads, bridges and health facilities, strengthen cholera and malaria surveillance and share forecast, river and disease data across borders, and call for predictable, flexible financing before the October to December peak.

[23] ICPAC, Desert Locust risk report under a strengthening El Niño, 30 September 2026. Elevated preparedness risk rather than evidence of an ongoing regional upsurge, concentrated on the Red Sea and Gulf of Aden coasts, northern Somalia, Djibouti, eastern Ethiopia, Eritrea and adjacent Sudan.

[24] CILSS and AGRHYMET, PREGEC notice on the 2026 to 2027 agropastoral season, 22 September 2026. Cereal production forecast at 62.8 to 71.1 million tons, 11 to 31 percent above the five-year average (Burkina Faso, Guinea, Niger and Liberia excluded), with declines in Cabo Verde and Chad; forage below 100 kg of dry matter per hectare over more than 60 percent of the Sahel and about 80 percent of water points declining.

[25] Cadre Harmonisé, regional analysis of June 2026 (communication of 2 July 2026). More than 54.8 million people projected in Phase 3 to 5 in June to August 2026 across the Sahel and West Africa, including 3.02 million in Phase 4 and 10,277 in Phase 5.

[26] India Meteorological Department, salient features of the 2026 southwest monsoon (data to 30 September 2026). All-India June to September rainfall of 759.4 mm, 87 percent of the long-period average (13 percent deficient); South Peninsula 24 percent and East and Northeast India 26 percent below normal; 17 of 36 subdivisions deficient.

[27] Pakistan Meteorological Department, seasonal outlook for October to December 2026, 1 October 2026. Normal to above-normal rainfall in the north (Gilgit-Baltistan, Kashmir and northern Khyber Pakhtunkhwa) and near to slightly below normal in the south; above-normal temperatures; smog and fog risk over the plains; snow accumulation may be delayed.

[28] World Weather Attribution, "Rapid warming in the Himalaya exacerbates geohazard cascades beyond adaptation limits," 17 September 2026. The Langtang-Lirung collapse was not quantitatively attributed; warming is described as a destabilizing factor acting on a pre-existing geological predisposition; human-caused warming of about 1.5°C for July to August at the nearest grid cell; glacier recession accelerated from 0.5 percent a year

to 1 to 2.3 percent a year since 2010; the event is assessed as beyond adaptation limits.

[29] Shrestha, A. B. et al., International Journal of Climatology (2000), on the strong correlation between all-Nepal monsoon precipitation and the Southern Oscillation Index; Nepal Department of Hydrology and Meteorology as reported by Nepalnews, 3 June 2026 (monsoon rainfall about 9 percent below average in El Niño years, 17.59 percent below in 2015, but above average in 1987 and 1998); Cannon, F. et al., Climate Dynamics 48 (2017) and Dimri, A. P., Climate Dynamics (2014), on the tendency for El Niño winters to bring enhanced western disturbance precipitation to the western Himalaya and Karakoram, with the snowless 2023 to 2024 El Niño winter as a documented exception.

[30] ASEAN Specialised Meteorological Centre, seasonal outlook of 5 October 2026 and regional haze alert log. High probability of below-normal rainfall over the southern and most of the eastern Maritime Continent in October to December, with above-normal temperatures across most of the region; Alert Level 3 for the southern ASEAN region in force since 26 August 2026.

[31] BMKG rainy-season outlook as reported by Bisnis, 25 September 2026, and RCTI, 8 October 2026. Rainy-season onset delayed in most of Indonesia's seasonal zones (reported as 529 zones, about 61 percent of land area), with most zones starting in November or December; drought into October in Java, Bali and Nusa Tenggara. Press reports of an official product.

[32] DOST and PAGASA briefing as reported by PhilSTAR Life, 5 October 2026. All Philippine provinces forecast to be under drought conditions by the end of March 2027, citing a PAGASA advisory of 23 September 2026. Press report of an official product.

[33] Carbon Brief, "El Niño: Indonesia fire emissions in 2026 on track to match record for this century," 11 September 2026, using Global Fire Emissions Database data (76 million tons of carbon to 7 September 2026, against 333 MtC for the whole of 2015); Scientific American, 10 September 2026 (113,336 people treated for fire-related respiratory conditions by 9 September, more than 12.5 million exposed to haze).

[34] Earth Sciences New Zealand (NIWA), Island Climate Update 312, October 2026. El Niño may become the strongest on record (30-day Niño-3.4 +2.74°C, RONI +1.95°C) with a 100 percent chance of persisting through October to December; below-normal rainfall, often below the 25th percentile, for most of Micronesia and an arc from Papua New Guinea to Pitcairn; above-normal rainfall for Nauru, Kiribati, Tuvalu, Tokelau, the northern Cook Islands and the Marquesas.

[35] Tonga Meteorological Service as reported by PINA, 12 October 2026. Drought declared for Tongatapu, Ha'apai, 'Eua and Niuatoputapu, a drought warning for Niuafo'ou and a drought alert for Vava'u.

[36] NOAA and partners, Pacific ENSO quarterly drought outlook for the US-affiliated Pacific islands, September 2026. Palau (Airai) recorded 74 percent of normal rainfall, its driest June to August on record; below-normal September to November rainfall favored for the Marianas, Palau, much of the Federated States of Micronesia and the central Marshall Islands; NOAA Coral Reef Watch gives a 90 percent probability of Alert Level 1 to 2 heat stress from September to December across the west-central, central and eastern tropical Pacific.

[37] Caribbean Institute for Meteorology and Hydrology, CariCOF Caribbean Climate Outlook newsletter for October to December 2026 and January to March 2027, and drought outlook to end December 2026 (posted 6 October 2026; newsletter footer dated September 2026). Short-term drought observed by 1 September in Antigua, the northern and northwest Bahamas, central Cuba, Grand Cayman, Grenada, northeast Puerto Rico, St Barts, St Kitts, St Vincent and Tobago; short-term drought imminent by end December in Dominica and evolving in the ABC Islands, Antigua, the northern and northwest Bahamas, northwest Belize, the easternmost Dominican Republic, interior French Guiana, Grenada, Martinique, St Barts, Saint Lucia, St Martin, Tobago and the US Virgin Islands; long-term drought

imminent by end November in the northern and northwest Bahamas and Saint Lucia; recurrent excessive humid heat through October in Belize and the Antilles and through November in the Guianas; coral bleaching potential around the Bahamas and Greater Antilles; drought may worsen through the January to March dry season with cascading impacts by May 2027 and an earlier start to the 2027 heat season.

[38] NOAA, August 2026 Atlantic hurricane season update, 6 August 2026, as summarized by Moody's, 21 August 2026. Seven to 13 named storms, two to six hurricanes and zero to two major hurricanes, with a 75 percent probability of a below-normal season; every strong El Niño season since 1950 has produced below-normal Atlantic activity.

[39] WBTV and CBS News, 7 to 9 October 2026. Isaias, the ninth named storm of the 2026 Atlantic season, became the season's first hurricane late on 7 October, the latest first hurricane on record (previous record Gustav, 11 September 2002), and reached Category 3 on 9 October. Press reports.

[40] COPECO as reported by La Tribuna, 6 October 2026, and Agencia Guatemalteca de Noticias, 1 October 2026. Honduras keeps 103 municipalities on red alert and 233 under some drought alert, with 5.6 million people affected; Guatemala maintains a national orange alert and a red alert in the Trifinio, with about 210 municipalities reporting crop losses and a Q500 million drought plan. Press reports of official statements.

[41] Panama Canal Authority, advisories A-33-2026 (4 September), A-36-2026 (late September) and A-38-2026 (9 October 2026). Planned draft reduction postponed; Neopanamax draft raised to 49.0 feet and daily slots to 33 from 15 October on near-average precipitation, while the Authority notes that the water deficit continues; September transits averaged 32.63 a day.

[42] IDEAM declaration as reported by Primicias, 8 October 2026. Colombia officially declared El Niño conditions on 8 October, expecting a strong to very strong event with an 83 percent chance of lasting to March 2027 and rainfall deficits deepening into December; Decree 1491 of 6 October secures thermal plant fuel supply and rewards consumption cuts above 10 percent; no rationing announced. Press report of an official declaration.

[43] World Food Programme, "How a record-breaking El Niño could deepen global hunger," 7 October 2026 (up to 49 million people could be pushed into acute hunger worldwide), and WFP regional director for Latin America and the Caribbean as reported by AFP, 16 September 2026 (16 million people at risk in the region).

[44] Liu, Y., Cai, W., Lin, X., Li, Z. and Zhang, Y., "Nonlinear El Niño impacts on the global economy under climate change," Nature Communications 14, 5887 (2023). Cumulative global losses of about US$3.9 trillion from the 2015 to 2016 event over the event year and the following three years (about 4 to 5 percent of global GDP at the time), of which US$739 billion in the event year; US$2.1 trillion for 1997 to 1998.

[45] Callahan, C. W. and Mankin, J. S., "Persistent effect of El Niño on global economic growth," Science 380, 1064 to 1069 (2023). Global income losses of US$4.1 trillion for 1982 to 1983 and US$5.7 trillion for 1997 to 1998 in the five years after each event.

[46] Hendrix, C. S., Peterson Institute for International Economics, RealTime Economics, 20 July 2026 (corrected 18 August 2026). Applying Callahan and Mankin's elasticities to about 88 teleconnected economies, a year-one loss of about US$986 billion in 2027 (about 0.8 percent of world GDP), of which US$353 billion (3.6 percent of GDP) falls on 51 strongly exposed economies; six-year central estimate of about US$17.6 trillion (range US$7.2 trillion to US$28.5 trillion); assumes an event roughly comparable to 1997 to 1998 (E-index 3.5 against 3.84) and describes the estimates as conservative.

[47] The Kathmandu Post, 9 September 2026. Nepal secured confirmation of US$20 million from the Fund for responding to Loss and Damage under the Barbados Implementation Modalities from proposals submitted earlier in 2026, with release conditional on addressing reviewer comments, while its urgent

request of 31 August following the Rasuwa disaster remains pending.

[48] International Monetary Fund, 2026 Annual Meetings of the IMF and World Bank Group, Bangkok, Thailand, 12 to 18 October 2026.

[49] UNFCCC, COP31, Antalya, Türkiye, 9 to 20 November 2026.

[50] 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).

[51] Carbon Brief, "State of the climate: Rapidly developing El Niño raises chance of record-warm 2026," Z. Hausfather, 24 July 2026. Best estimate for 2027 of 1.71°C above pre-industrial (90 percent range 1.49 to 1.93°C), a 92 percent chance that 2027 sets a new global record and a 94 percent chance that it exceeds 1.5°C; 2026 best estimate 1.51°C.

[52] Climate Home News, 16 October 2026, "UN's loss and damage fund set to give Nepal $20m for flood recovery," J. Lo. Motion, seen by Climate Home News and drafted by Board members from developed and developing countries, for the Board's first-ever extraordinary meeting on 22 October to provisionally set aside US$20 million for Nepal and invite a proposal for its use, with approval of that proposal at a regular Board meeting; Nepali officials describe the sum as symbolic against US$4.8 billion in recovery needs.



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