AUSTRALIAN SECURITY LEADERS CLIMATE GROUP

RECIPE FOR FOOD INSECURITY:

WAR, FERTILISER AND THE EL NIÑO

JULY 2026

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OVERVIEW

The Indo-Pacific is in a period of escalating climate and security risk. The convergence of extreme heat, food system pressures and geopolitical instability could trigger cascading impacts with significant implications for regional stability and national resilience.

- 2026 is likely to be the hottest year in the modern record, and 2027 even hotter, as a result of a strong El Niño adding a layer of warming to a world that has already heated by 1.5°C due to the burning of oil, coal and gas.
- This will result in a hotter, drier summer in Australia in 2026–27 and increased fire and drought risks, with the likelihood of lethal heat, record-breaking heatwaves, severe bushfires and adverse impacts on food production.
- Across much of Asia, the El Niño conditions are likely produce hotter, drier conditions, unliveable heat and potentially weaker or delayed monsoons, as well as the bleaching of coral systems that are a primary protein source for more than 75 million people.
- The war on Iran increased fertiliser prices and reduced supply, and the consequences include less planting of grain staples this year, and lower yields over the next year.
- The deadly combination of a strong El Niño and the fertiliser crisis could have a significant impact on food production, and lead to shortages, higher prices, panic buying and perhaps social unrest and conflict.
- These events could occur in countries neighbouring Australia with which Australia has security arrangements, and Australia itself will not be immune. Defence and emergency services may be spread too thinly across competing response demands.
- There is an urgent need to enhance the capacity of neighbouring countries to withstand climate change-driven food shocks.
- Australia's system for assessing and preparing for such climate risks is inadequate. Now is the time to establish an Abrupt Climate Change Early Warning System and to fund and integrate climate research in Australia in a manner that provides a sound platform for realistic risk assessment, government planning and policy-making.
- A climate-first foreign and security policy would include diplomatic leadership in high-ambition climate alliances, such as agreements to phase out fossil fuel subsidies and international financing for coal, oil and gas projects, and ultimately to phase out the fossil fuel economy.

INTRODUCTION

We are heading towards a perfect storm.

Over 2026-27, intersecting events — driven by climate warming and fossil-fuel energy disruption — of extreme heat, intense bushfires, widespread drought, reduced crop yields, and food inflation will have complex, adverse impacts on Australia and the Asian region.

There will be particularly devastating consequences for people in developing economies who lack the economic capacity to prepare and adapt, compared to the developed world. Neither the Australian Parliament nor the population have been well-informed about what is coming.

The proximate causes of this crisis are reduced supply and higher prices for fertiliser, driven by the war on Iran and the closure of the Strait of Hormuz, and a potentially record-breaking El Niño over 2026-27 that will produce unprecedented global temperatures well above 1.5°C, and reduce crop yields in Australia and elsewhere.

As in military conflict, foresight and clear-minded analysis are key in preparing for this perfect storm. More than ever, we must nourish climate foresight.

Thus, this report explores the key drivers of this coming storm and how they could manifest in Australia and the near region over the next year. This data is then synthesised into a plausible scenario of what may occur, in order to draw out the implications for human and regional security, and to identify key actions.

This report presents a plausible scenario rather than a prediction. While uncertainty remains around precise timing, scale and location, the analysis explores how converging climate and security risks could generate cascading impacts.

WHY THIS MATTERS FOR AUSTRALIA

Climate-driven food shocks in the Indo-Pacific have the potential to become a security issue for Australia. Severe disruptions to regional food systems could trigger cascading humanitarian, economic and geopolitical crises that will directly affect Australia.

Potential consequences include:

- Food shortages, price shocks and supply chain disruption affecting Australian households and businesses.
- Concurrent humanitarian crises requiring large-scale and prolonged Australian assistance.
- State fragility, social unrest and conflict in vulnerable neighbouring countries.
- Defence and emergency services being spread across multiple competing domestic and international missions.
- Increased population displacement and regional migration pressures.
- Greater strategic competition as powers seek to expand influence through their crisis response.

A "SUPER" EL NIÑO IN 2026-27

An El Niño was formally declared by US climate agencies on 11 June 2026.

The El Niño-Southern Oscillation (ENSO) is an irregular pattern of change in sea-surface temperatures (SSTs) and winds over the tropical Pacific Ocean. In its warm, El Niño phase, increased westerly winds (weaker easterly trade winds) drive warmer tropical water east towards the Americas and reduce ocean upwelling of cooler deep water, and a positive feedback reinforces this weakening of the trade winds and surface warming. The central and eastern tropical Pacific experiences a marine heatwave.

An indicator of the state of the ENSO is the variation in short-term SSTs along the central-eastern Pacific equator in a zone known as Niño3.4. Negative (cooler) SST readings indicate a La Niña; positive (warmer) readings indicate a developing El Niño. The strongest recent El Niños were in 1997-8 and 2015-16, when SST Niño3.4 warming was about 2.5°C.

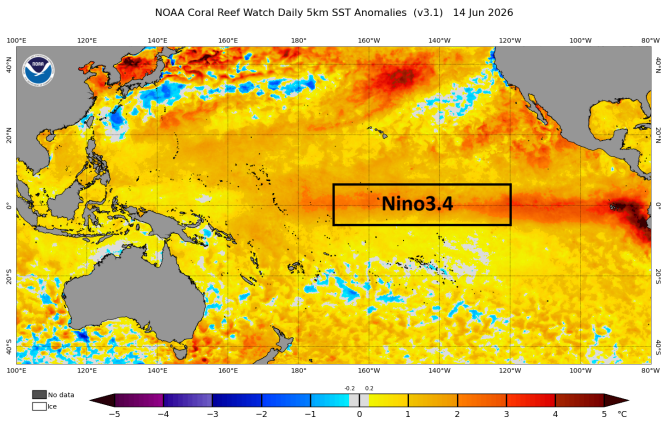

Figure 1: Location of Niño3.4 and warming of eastern equatorial Pacific (NOAA)

Currently, Niño3.4 projections for late 2026 are 3-4°C. This would constitute a "super" El Niño with exceptionally intense warming in the eastern Pacific, defined as temperatures rising more than 2°C above neutral conditions. An El Niño shifts jet streams, alters rainfall and raises global temperatures, and a "super" event would sharply disrupt global weather, increasing the risk of extreme heat, droughts and flooding.[1] The greatest impacts of this El Niño would be felt in 2027, with former NASA climate chief James Hansen estimating global average warming for 2026-27 could reach 1.7°C.[2]

The 2026-27 "super" El Niño may be more intense than an epochal El Niño in 1877, whose devastating consequences were called a "Late Victorian Holocaust" by the historian Mike Davis.[3]

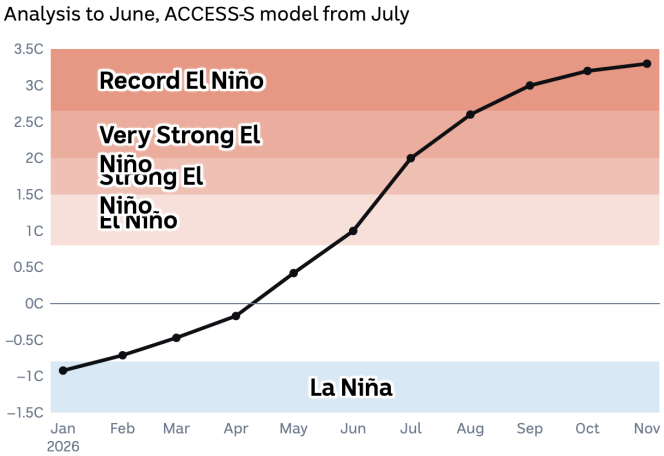

Figure 2: Niño3.4 forecast at mid-June 2026, mean of 99 model runs (NOAA)

1 theconversation.com/how-a-super-el-nino-could-trigger-global-famine-281486
2 safeclimate.org.au/resources/another-el-nino-already-what-can-we-learn-from-it/
3 archive.org/details/latevictorianhol00dav_wbr

Climate change has already made extreme heatwaves more intense and persistent, and they are likely to worsen during an El Niño, which adds a layer of heat on top of the trend in global warming of 1.5°C. An El Niño brings persistent high-pressure weather systems and hotter and drier conditions to eastern Australia and South-east Asia, particularly Indonesia, and southern Africa. But it also increases rain and flooding in East Africa, parts of South America, and East China. El Niños generally develop between March and June and peak between November and February.

An El Niño with an eastern Pacific SST reading close to +2°C contributed to 2023 being a record-breaking year for global heat. Global average warming for September 2023 was above 1.8°C, and a whopping 0.5°C above the previous September record, and the second half of 2023 was a global average of 1.67°C. In 2024, Earth experienced the hottest year recorded in human history, aided by the El Niño boost.[4] There are only three super El Niños in the modern instrumental record: in 1982-83, 1997-98 and 2015-16.

If the 2026-27 El Niño is as intense as some projections, with an Niño3.4 above 3°C, the world could experience a global average temperature close to 2°C for a single month or two.

The rate of warming may also be boosted by a decline in the ocean carbon sink under record-high sea surface temperatures.[5] And during the mid-Pliocene, when carbon dioxide levels were similar to today, there are also strong indications that permanent El Niño conditions prevailed.[6]

A recent study described how super El Niño events drive climate regime shifts, characterized by abrupt and persistent transitions to a new, stable state with enhanced risks under global warming.[7] The study concluded that "super El Niños" are not just passing weather events, but more like climate shocks that can push parts of the Earth system into new states, said co-author Jong-Seong Kug. They can lead to unprecedented marine heat waves that "destroyed or damaged coral reefs and caused mass die-offs and starvation among many marine organisms, from starfish to seabirds and marine mammals. Those impacts, as well as changes in drought and extreme heat over land areas, persisted for years and could shift some regional patterns for decades, according to the study."[8]

El Niño impacts on most of Australia generally include marine heatwaves, less rainfall and less cooling cloud cover, higher temperatures over land, and more extreme heatwaves, all of which lead to higher evaporation rates and more intense bushfires. If this super El Niño eventuates, it will likely destroy swathes of the Great Barrier Reef and produce record-breaking heat waves and severe fire risk, drought and lower crop yields, heat stress for people, domestic livestock and nature, and damage to infrastructure. A terrifying "hyperthreat" may be coming for Australia as El Niño chances rise.[9]

The Indian Ocean Dipole is currently in a neutral phase. If it turns positive, that would further reduce rainfall in Australia by creating lower moisture availability, but it would likely boost the Indian monsoon.

4 insideclimatenews.org/news/25042026/el-nino-earth-warming/
5 .nature.com/articles/s41558-025-02380-4
6 science.org/doi/10.1126/science.1112596
7 nature.com/articles/s41467-025-66143-7
8 insideclimatenews.org/news/25042026/el-nino-earth-warming/
9 news.com.au/technology/environment/climate-change/terrifying-hyperthreat-coming-for-australia-as-el-nino-chance-rises/news-story/aeca98abd0aa28f2aec16c4fa36cf991

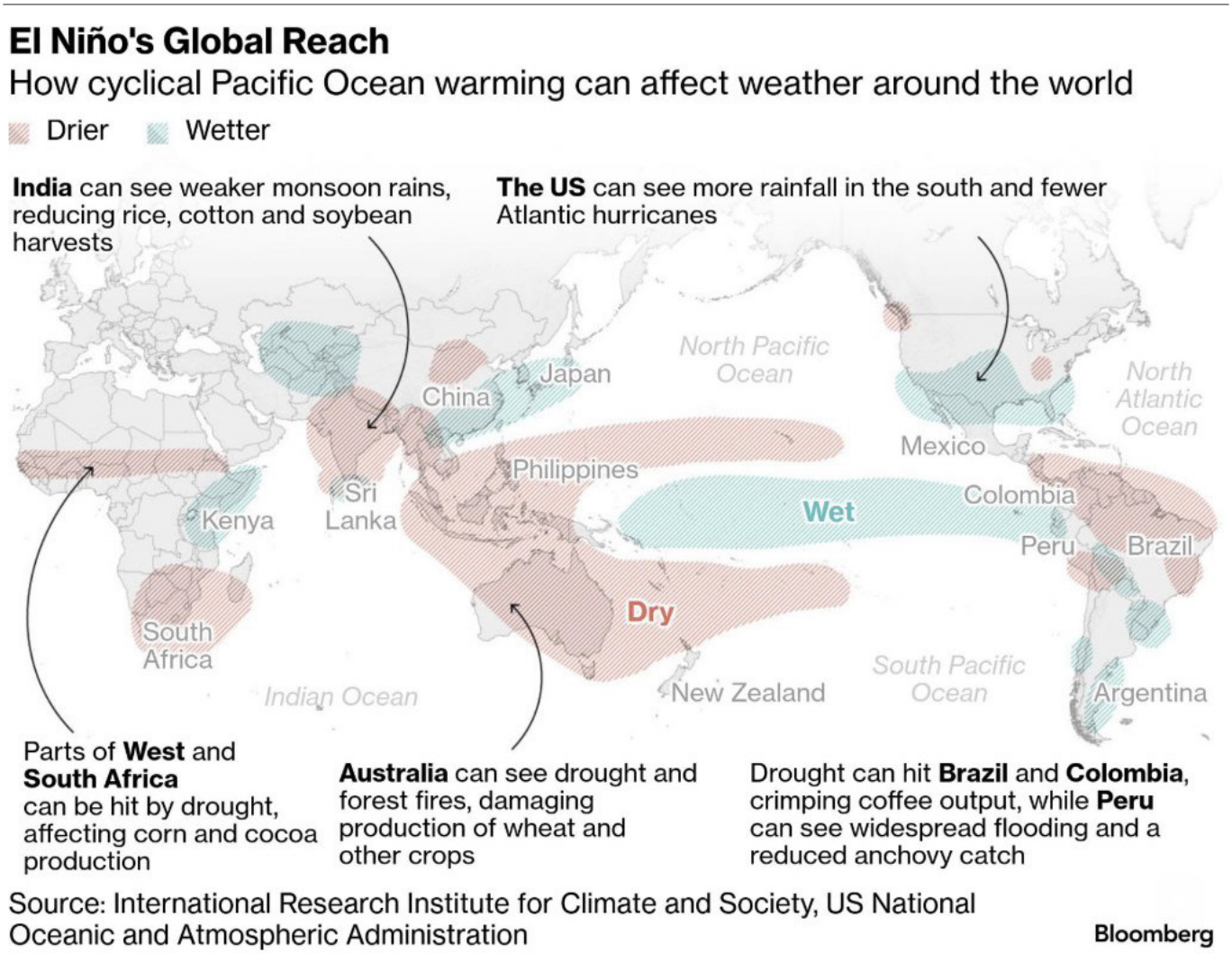

Figure 3: El Niño's global impacts (Bloomberg)[10]

In South-east and South Asia, the El Niño will intensify heat conditions and may weaken or delay the monsoon from June onwards. A weakened monsoon would "strip countries like Malaysia, Singapore, Indonesia, Thailand and the Philippines of crucial atmospheric moisture," said climate professor Justin Sentian of Universiti Malaysia Sabah, adding that it could affect staples such as rice and palm oil, pushing up food prices and threatening food security for lower-income households.[11] China, on the other hand, may experience above-average rainfall and unpredictable, extreme flooding.

Rice is the main source of calories for half the global population and supplies 20% of the global dietary energy. In India, for example, 70% of the caloric intake comes from rice. Summer monsoon rainfall provides up to 80% of the annual precipitation in India.

10 claimsjournal.com/news/national/2026/06/08/338042.htm
11 theguardian.com/environment/2026/jun/05/el-nino-asia-unpredictable-extreme-weather-climate-change-crisis

THE FERTILISER CRISIS

Four crops – wheat, rice, maize and soybeans – provide more than 60% of the world's calorie intake.[12] Wheat and maize are highly dependent on nitrogen fertiliser for protein content and yield; and high-yield rice is also significantly nitrogen fertiliser dependent. The threat to food security from the war on Iran is significant and ongoing.

The Strait of Hormuz was closed by Iran on 2 March 2026 in response to US and Israeli airstrikes on Iran. The impact on global oil, gas and fertiliser prices was immediate. The Strait was partially reopened on 18 June, but may continue in a pattern of partial closures for some time due to breakdowns in political negotiations.

The bombing and missile and drone strikes on the oil industry around the Gulf will have lasting impacts. Some key infrastructure associated with the gas and fertiliser industries will take three to five years to repair. Once the Gulf is fully open, resuming oil and gas to full pre-war production levels will take months even for some infrastructure untouched by the war.

About half of global food production depends on nitrogen fertiliser. Reduced fertiliser application can cut crop yields by as much as 50% in the first season.[13] And one-third of global fertiliser trade passes through the Gulf of Hormuz, which has ceased. In addition, the war blocked the liquefied natural gas exports needed as a feedstock for fertiliser plants in other regions, such as South Asia, where some plants shut down.[14] In total, it was estimated that close to 45% of globally traded nitrogen was cut off, disrupted or at risk.[15]

12 reuters.com/sustainability/land-use-biodiversity/super-el-nino-could-trigger-global-food-price-shock-heres-how-companies-can--ecmii-2026-06-03/
13 agnavigator.com/Article/2026/05/01/yara-chief-warns-iran-conflict-could-put-10bn-meals-a-week-at-risk-as-food-price-impact-looms/
14 weforum.org/stories/2026/05/iran-war-fertiliser-biochar/
15 theage.com.au/business/the-economy/trump-is-steering-the-world-into-a-food-crisis-20260330-p5zjq8.html

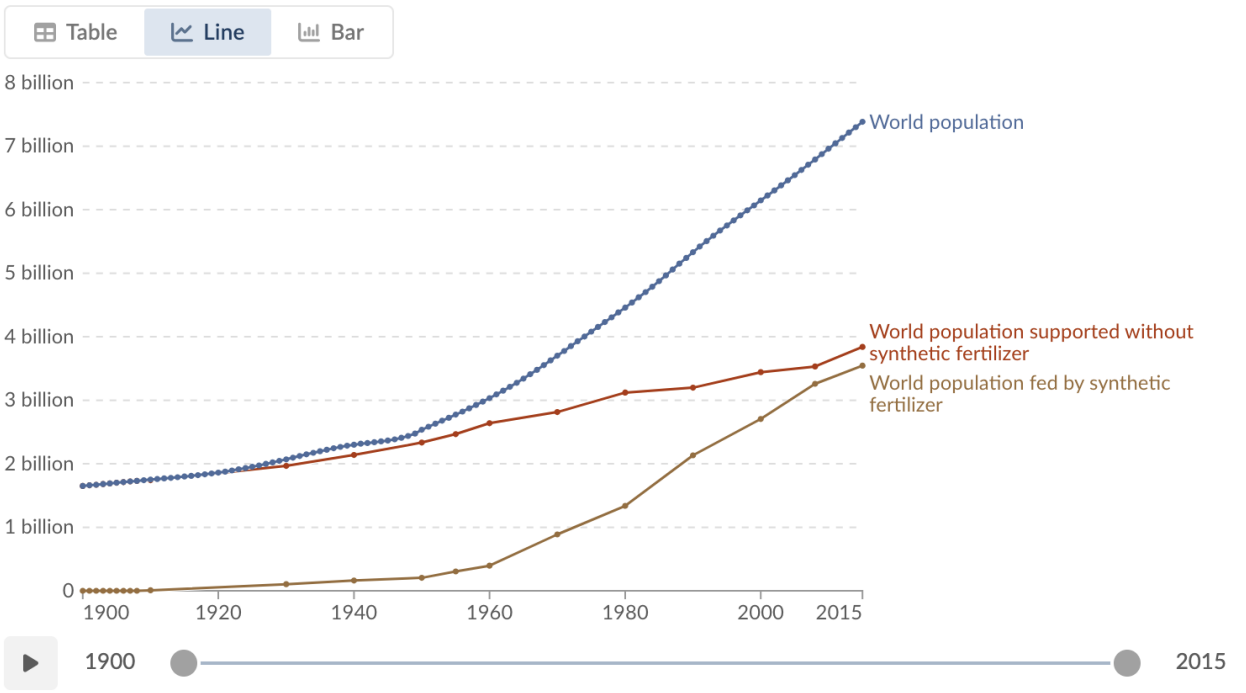

Figure 4: World population with and without synthetic nitrogen fertilisers[16]
Estimates of the global population reliant on synthetic nitrogenous fertilizers, produced via the Haber-Bosch process for food production. Best estimates project that just over half of the global population could be sustained without reactive nitrogen fertilizer derived from the Haber-Bosch process.

In addition, the processing of phosphate rocks to make fertiliser requires sulphuric acid, much of which is produced in the Gulf.

For the 2026 Northern Hemisphere spring, the crisis of high prices and reduced affordability, rather than physical shortage of fertiliser, was the main driver of reduced plantings and fertiliser use. In addition, the price of diesel increased by around a third, adding to costs of mechanized agriculture and food transport.

A simple, illustrative calculation suggests these factors could reduce crop yields around the world by five-to-ten per cent, perhaps more. The lack of fertiliser could remove up to 10 billion meals a week from global food production.[17]

It is costly to store fertilisers and most states work on a just-in-time basis. Global stocks are low, and half the total inventory was in China, the one country prepared for famines.[18] China, Russia and Turkey compounded the shortage by imposing export curbs. Poorer countries in Asia whose fertiliser imports come mainly from the Gulf have been hit hard.[19] Lower fertiliser use also has an impact beyond the current harvest by reducing soil fertility and future crop yields.

The supply shock caused fertiliser prices to skyrocket, nearly doubling in some cases. Through April, for example, world urea prices approximately doubled and diammonium phosphate prices rose about 35%.[20]

About two-thirds of the urea Australia uses for fertiliser production comes from the Persian Gulf, and energy experts at Argus report that Australian farmers have been paying as much as double the price at the beginning of the year.

16 ourworldindata.org/grapher/world-population-with-and-without-fertiliser
17 agnavigator.com/Article/2026/05/01/yara-chief-warns-iran-conflict-could-put-10bn-meals-a-week-at-risk-as-food-price-impact-looms/
18 theage.com.au/business/the-economy/trump-is-steering-the-world-into-a-food-crisis-20260330-p5zjq8.html
19 theage.com.au/business/the-economy/trump-is-steering-the-world-into-a-food-crisis-20260330-p5zjq8.html
20 ifpri.org/blog/how-fertiliser-policies-could-exacerbate-hormuz-price-shocks/

LETHAL HEAT

Conditions above 35°C create discomfort and a range of health impacts, from mild to severe, and can ultimately be fatal without intervention.[21] Many regulators and researchers use 35°C as an important threshold for safety, work and climatic conditions.

The International Labour Organisation reports that: "At 33–34°C, a worker operating at moderate work intensity loses 50% of their or her work capacity."[22] Heat affects our ability to think and reason,[23] and can have significant effects on mental health and behaviour, including increased levels of violence and suicide.[24]

Wet bulb temperature (WBT) is a measure of heat stress conditions including both temperature and humidity, because the body finds it more difficult to cool down with higher levels of humidity. Beyond certain levels of heat and humidity, the human body can no longer cool itself and its internal temperature rises uncontrollably. A 2023 study found that threshold to be a WBT of 31°C for a sample of young and healthy research subjects who were not accustomed to such humid conditions.[25]

AUSTRALIA

In Darwin, the WBT already exceeds the 31°C benchmark on a summer afternoon in mid-afternoon when wind speeds are low.[26]

The January 2009 heatwave in Victoria was of unprecedented intensity and duration with maximum temperatures 12–15°C above normal for much of Victoria, whilst Melbourne endured three consecutive days above 43°C. An analysis of medical, ambulance, hospital and death data for the week of the heatwave, 26 January to 1 February 2009, found that there were 374 excess deaths over what would be expected.[27] During the August 2003 extreme heat wave in France, almost 15,000 excess deaths were recorded, most in Paris.[28]

At 40–50°C, sustained exposure without air conditioning becomes life-threatening, particularly for vulnerable populations and those working outdoors. Australia is already experiencing such conditions regularly. The record maximum temperature in western Sydney is 48.9°C, at Penrith on 4 January 2020 (not an El Niño period). Victoria's highest recorded temperature is 48.9°C, measured at Walpeup and Hopetoun on 27 January 2026.

And parts of inland Australia are experiencing heat extremes several decades ahead of expectations. 18 December 2019 was Australia's hottest day on record with a maximum of 41.9°C averaged across the nation. The heat in some areas aligned with worst-case 2040–2060 projections.

21 academic.oup.com/heapro/article/30/2/239/56186
22 ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_711919.pdf
23 psychologytoday.com/au/blog/evidence-based-living/202308/how-heat-waves-affect-your-ability-to-think-and-reason
24 psychiatrictimes.com/view/impacts-extreme-heat-mental-health
25 journals.physiology.org/doi/full/10.1152/japplphysiol.00738.2021
26 pnas.org/post/update/climate-change-interactive-maps-offer-telltale-glimpse
27 content.health.vic.gov.au/sites/default/files/migrated/files/collections/research-and-reports/h/heat_health_impact_rpt_vic2009---pdf.pdf
28 sciencedirect.com/science/article/pii/S0398762006767062

At 2°C of global average warming, locations in northern Australia such as Katherine and Derby could expect more than 200 days a year above 35°C and more than 150 nights above 25°C. If a strong El Niño develops, such circumstances could be experienced this year. Extreme heat also affects materials, buildings and equipment, electronics and communications, tropical disease vectors, and civil infrastructure such as roads and railways.

Increasing heat and other climate extremes will have profound effects on the Indigenous population in the north, straining conventional civil services such as health and emergency response capability, and housing, as well as disrupting traditional connections to land and sea. This comes on top of already inadequate infrastructure and poor social conditions.

ASIA

If the 2026-27 El Niño is as intense as some projections — with an Niño3.4 SST above 3°C — the world could experience a month with a global average temperature close to 2°C. Certainly, the coming year may provide a preview of life in a 2°C-hotter world, and that picture may be most stark in Asia.

Last year, researchers estimated that almost half of the global population (3.79 billion) will be experiencing extreme heat conditions if the world reaches 2°C of global warming above pre-industrial levels, with the largest projected populations affected in India, Nigeria, Indonesia, Bangladesh, Pakistan and the Philippines.[29]

And in a clear warning, scientists in 2025 said that half-a-degree-further rise in global warming — from 1.5°C to 2°C — will triple to six percent of the total land mass the area of Earth that would be too hot for even healthy young humans (18-to-60-year-olds) to keep a safe core-body temperature. The area of land where the over-60s will be at risk will increase to about 35%.[30]

In 2018, *The New York Times* headlined that "In India, Summer Heat May Soon Be Literally Unbearable", reporting that "In cities that are already scorching hot, temperatures and humidity levels are rising to levels that the human body simply can't tolerate, researchers warn." [31] And a monster heatwave in India and Pakistan this year, with temperatures above 46°C and high humidity, has claimed many lives.

Unbearable heat will make much of Asia barely liveable. At 2.7°C, more than 2 billion people in Asia will be in "near-unliveable conditions", currently found on only 0.8% of the planet's surface, mostly in the Sahara.[32] But long before then, masses of people will be on the move. It is already a major cause of death.

In a report released in May 2026, *Lethal humidity and the systemic risks of climate change*, Dr Robert Glasser warned that Indonesia is the country in our region at most risk from lethal humidity.[33] caused by the twin rise of heat and humidity. He notes: "It's really remarkable what an overlapping centre of climate hazards Indonesia is. It also has the fastest sea level rise in the world, it has the largest exposure to a range of natural hazards, many of which climate is amplifying. Indonesia, on our doorstep, is at huge risk from these issues."[34]

29 nature.com/articles/s41893-025-01754-y
30 sciencedaily.com/releases/2025/02/250204132128.htm
31 nytimes.com/2018/07/17/climate/india-heat-wave-summer.html
32 pnas.org/content/early/2020/04/28/1910114117
33 aspi.org.au/report/lethal-humidity-and-the-systemic-risks-of-climate-change/
34 theage.com.au/environment/climate-change/how-lethal-humidity-threatens-to-displace-millions-in-our-region-20260525-p600j0.html

The report emphasises that extreme heat is both a stand-alone climate hazard and part of a complex pattern of interconnected hazards intensified by climate change, and how extreme humid-heat occurrences will both amplify and be amplified by other climate-related events.

CROP YIELDS

Crop yields decrease with global warming. For staple crops such as maize and wheat, yields have declined by 7.5% and 6.0% per 1°C of warming and are projected to decline by up to an additional 10% for every 1°C of warming in the future.[35]

In *Extreme heat and agriculture*, the UN's Food and Agriculture Organization (FAO) and the World Meteorological Organization reported this year that most major crop yields drop sharply above 30°C, heat stress reduces livestock productivity, and rising heat may make farm work unsafe for much of the year across South Asia, sub-Saharan Africa and parts of the Americas.[36]

An upper optimum during reproduction and yield formation of around 30°C is common for many important agricultural crops (e.g. maize, soy, cotton). Other major crops show damaging sensitivities at lower temperatures during their reproductive period (e.g. barley, beans, wheat and potatoes). In addition, higher concentrations of carbon dioxide in the atmosphere are already having a serious effect on the nutritional quality of most of the world's major crops – grains, soya, corn and rice.[37]

The FOA report says that extreme heat magnifies existing weaknesses across agricultural systems:

> "Higher temperatures parch soils, reduce harvests, strain livestock, disrupt fisheries and increase wildfire risk. When combined with water scarcity, the consequences intensify, cutting production, lowering incomes, and tightening food supplies. These impacts extend far beyond the farm gate. They represent a systemic risk to global food security and to the livelihoods of more than 1.23 billion people who rely on agriculture."

> "Rising temperatures, prolonged heatwaves, and shifting climate patterns are already disrupting crop yields, livestock health, water availability, and rural livelihoods – with impacts falling disproportionately on the most vulnerable. Because extreme heat is predictable, strengthening climate services and early warning systems linked to anticipatory actions is a key opportunity. It is also clear that there are profound limits to what adaptation can achieve."[38]

35 openknowledge.fao.org/items/f635e477-b37a-46f8-bc10-34d56cec6332
36 openknowledge.fao.org/items/f635e477-b37a-46f8-bc10-34d56cec6332
37 simonandschuster.com.au/books/Hope-in-Hell/Jonathon-Porritt/9781471193309
38 openknowledge.fao.org/items/f635e477-b37a-46f8-bc10-34d56cec6332

FOOD IN/SECURITY

Compounding and cascading impacts of climate change will undermine food security on an increasing scale. These include the loss of coral, coastal and delta inundation of rich farmlands, more extreme floods, changed precipitation patterns, droughts and aridification, and more frequent and more intense wildfires.

Even without accounting for all these simultaneous hazards, scientists say that a global average of 2°C of warming around 2040 will reduce per capita crop production by one-third in Southeast Asia.

In addition, climate impacts occurring outside of the region will:

> "further diminish the options available to countries to offset the domestic effects, such as by importing additional food, as Indonesia did on an unprecedented scale during its severe drought in 1998. Amplifying the food insecurity risks is the region's reliance on fisheries. Indonesia obtains more than half of its animal-source protein from fish, while in the Philippines the figure is about 40%. Fish species are already moving out of the region to escape warming waters, and the region's coral reefs, the 'nursery' for roughly 10% of the world's fish supply, are degrading rapidly; globally, over 90% of reefs will have collapsed at 1.5°C of warming."[39]

As well as declining yields with heat, another major risk is simultaneous crop failure across major producing countries, which would have devastating impacts on both supply and price, triggering social consequences reminiscent of the events of the Arab Spring.

By the 2040s, the probability of a 10% or greater yield loss in any one year within the top four maize-producing countries — the US, China, Brazil and Argentina today account for 87% of the world's maize exports — rises to 40–70%. The probability of a synchronous, greater-than-10% crop failure across all four countries during the 2040s is just less than 50%, or almost one year in every two.[40]

New analysis by the World Resources Institute shows that one-quarter of the world's crops are grown in areas where the water supply is highly stressed, highly unreliable or both.[41]

A 2025 report, *Indonesia in 2035: Climate risks to security in the Indo-Pacific*, says that in little more than a decade, Indonesia is likely to experience major climate disruptions that amplify climate security risks in the region, resulting in a range of additional risks for Australia.[42] The report's 2035 scenario highlights:

- "Significant food insecurity from losses to domestic production due to shifting precipitation timing and extremes across the wet and dry seasons, heightened sensitivity to shocks in global food prices, and reduced government ability to absorb economic shocks, such as food-price hikes.
- "Large-scale coastal population displacement driven by Indonesia's high coastal population density and the significant exposure of that population to sea-level rise and climate-induced coastal flooding.
- "Slowed economic growth from lost agricultural output, declining revenues from stranded fossil-fuel assets, rising disaster costs at home and abroad affecting economic infrastructure and supply chains, and rising challenges in responding to domestic crises driven by food insecurity and population displacements."

These are precisely the outcomes that may be previewed if a strong El Niño, extreme heat, changed precipitation and crop failures, combined with a global food crunch, manifest in Indonesia.

39 aspi.org.au/report/rapidly-emerging-crisis-our-doorstep
40 chathamhouse.org/2021/09/climate-change-risk-assessment-2021
41 wri.org/insights/growing-water-risks-food-crops
42 aspi.org.au/report/indonesia-in-2035-climate-risks-to-security-in-the-indo-pacific/

A 2026-27 SCENARIO: FOOD, FERTILISER AND THE EL NIÑO

What is a Super El Niño and why should we be worried?

A "super" El Nino emerges in mid-2026, with weather bureau forecasts for a hotter and drier spring and summer for eastern Australia. At the same time, there are continuing shortages and elevated prices for nitrogen fertiliser. So how will these intersecting crises — an energy price shock, a shortage of fertiliser and a strong or "super" El Niño affect Australian and regional security?

In June 2026, a study by the European Commission's Joint Research Centre warned that El Niño-related shocks may be "increasing the likelihood of compound and non-linear systemic impacts", with agriculture representing "one of the main transmission channels of socio-economic impacts".

The study noted that: "A plausible transmission pathway would run from droughts, floods and heat stress affecting agricultural production, labour productivity, water availability, hydropower generation and transport systems, to higher food and energy prices, inflationary pressure, fiscal stress and weaker borrower repayment capacity."[43]

The following is offered as a plausible scenario, in order to explore the security implications. As a scenario, this is **not** a prediction of what will happen, but a sketch of what may reasonably occur, given the evidence presented.

— The fertiliser and fuel crisis continues past the end of 2026. As noted above, it will take many months to a year or more for volumes and prices to return to pre-conflict levels. The fertiliser crisis may become more acute as stocks and critical reserves are exhausted.

— As a consequence, major grain plantings are reduced. In Australia, the area sown for wheat in 2026 is expected to fall by 12% compared to the previous season, and the total wheat harvest for 2026-27 is forecast to be 23% below the five-year average. Agricultural agencies forecast rice plantings in Asia for 2026-2027 to be below average, and reduced fertiliser use will reduce rice yields.

— A "super" El Niño occurs with a peak Niño3.4 of 3.5°C. It is of longer-than-average duration and the most intense warming is felt in early to mid-2027. This drives global average temperatures to new record highs, including months where warming approaches 2°C, with global average warming being around 1.7°C for 2027. Extreme heat, weaker monsoons and drought reduce hydro-electric power capacity and damage infrastructure including power systems and railways. At the same time, extreme heat drives up energy demand and energy prices in some countries.

— Australia experiences a drier-than-normal spring and a hot, dry summer with record-breaking heatwaves, low rainfall and rapidly-reducing soil moisture, creating extreme bushfire risk. The conditions reduce yields for broad-acre crops, and the searing heat also significantly affects fruit and vegetable production. In western Sydney and across inland south-eastern Australia, temperatures break the 50°C barrier.

— In Asia, the monsoons weaken and fail in some cases. Water shortages result and crop plantings are curtailed. Some cities run out of water. Severe heatwaves affect rice crops across South and South-east Asia, reducing yields. Unbearable heat across South Asia results in a death toll of many thousands, though governments work to keep the real toll secret.

— Across the Great Barrier Reef and reef systems in the Coral Triangle, record-breaking marine heatwaves in early 2027 produce severe and widespread bleaching, and adversely affect fish stocks. In the Coral Triangle, fish is the primary protein source for more than 75 million people.

43 publications.jrc.ec.europa.eu/repository/handle/JRC147365

SCENARIO CONSEQUENCES: RECIPE FOR INSECURITY

A war-gaming scenario of a strong El Niño and an extreme heatwave over much of Asia was put to a group of South-east Asian and Australian defence officials at the ANU is 2023. Participants were divided into two teams, one of which sought to preserve law and order and pursue pragmatic responses, and one that sought to exploit the situation for their own benefit. It is reported that: "After four hours of high-intensity action and reaction, things didn't turn out so well."[44]

On 4 June 2026, Dr Andrew Coburn, one of the founding members of the Cambridge Centre for Risk Studies, wrote that:

> "Because demand for basic staples is inelastic – consumers must eat regardless of cost – even small supply deficits cause disproportionate price surges. Scenarios for this El Niño indicate price shocks of 10% to 50% across core commodities, with highly-exposed crops, including rice, palm oil, sugarcane and coffee, potentially experiencing surges of 50% to 100%, or more.
>
> "In the past, price shocks struck one commodity at a time. A simultaneous, cross-category surge means consumers will be hit harder and broader than ever before.
>
> "Worryingly, price rises can be heavily amplified by market panic, speculative trading and government interventions. If El Niño triggers major shortfalls in rice production, the governments of India, Vietnam and Thailand could enact export bans to feed their own populations, removing millions of tonnes from the global market and causing prices to escalate. A significant failure of Australia's wheat crop could similarly trigger inflationary panic buying in international markets."[45]

It is plausible that the confluence of the super El Niño and the fertiliser crisis will trigger a food crisis in Asia in particular, but also around the world. The energy crisis has increased fuel costs for farmers. Reduced yields lead to higher prices. There will be food shortages, panic buying, price shocks. Many vulnerable countries are poorly prepared for disruptions to food supplies, which can hit hardest in regional and remote areas.

The combined effect of many months of unaffordably high fuel prices and a food crisis across Asia, together with almost unliveable heat waves, leads to social unrest and conflict in vulnerable countries, much as the global wheat crisis became a trigger of the Arab Spring. Rationing of food essentials is introduced in some countries, but poor administration and corruption lead to riots. Insurgency movements and malicious non-state actors including criminal syndicates take advantage of the opportunity.

44 news.com.au/technology/environment/climate-change/terrifying-hyperthreat-coming-for-australia-as-el-nino-chance-rises/news-story/aeca98abd0aa28f2aec16c4fa36cf991

45 reuters.com/sustainability/land-use-biodiversity/super-el-nino-could-trigger-global-food-price-shock-heres-how-companies-can--ecmii-2026-06-03/

The capacity of UN organisations including FAO and OCHA to offer provide and distribute large-scale assistance has been degraded by the Trump Administration, as well as its own programmes cuts. China's capacity to fill the gap is limited, and it prioritises the release of grain reserves for its own population. These two events exacerbate the food crisis and social instability. China, as the best resources regional power with the capacity and expertise in policing and restoring civil order, says it has a moral obligation to do so as a good neighbour. Australia looks impotent in comparison, with AUKUS providing no real capacity to address the immediate security challenges.

Water shortages and disputes trigger conflict between India and Pakistan. A mass of people are on the move, seeking refuge.

Australia will not be immune from this perfect storm. These events occur in countries neighbouring Australia with whom Australia has security arrangements, and Australia may intervene at the request of the national governments, or insist that it do so.

Defence and emergency services may be spread too thin over sets of competing response demands, both internal and external. A hot, dry summer, reduced fertiliser use and rising grain prices set by global markets will drive food inflation. That will add to the social focus on "cost of living pressures" and may provide further fuel for populist politics within Australia.

HOW LIKELY IS A GLOBAL FOOD SHOCK FROM EXTREME WEATHER?

Source: Yale Climate Connections[46]

Envision, for a moment, a multiyear period of extreme weather, including heat waves, freezes, droughts, floods, and windstorms, topped off by extreme weather during an El Niño event, leading to major crop failures in the US. A disruption of the global agricultural and food supply chain results, leading to panic buying and price shocks. Water shortages cause significant social disruption as populations vie for limited vital resources. The number of countries able to maintain a sustainable level of output shrinks dramatically, the global economy contracts at an accelerating pace, and political tensions rise as countries look to maintain food security. Trade disputes, increased competition and inequality, social unrest, and crime increase, causing widespread business interruption, falling profits, and layoffs, primarily in the agricultural and agriculture-dependent industries.

A 2023 report by insurance giant Lloyd's explores the odds of such a scenario, using weather data from the past 40 years and a crop model combined with a water-stress model to measure the economic impact of a sustained period of extreme weather.

The report looked at "major," "severe," and "extreme" scenarios. The authors found that the "major" case would cost the world $3 trillion over a five-year period, which they estimated has a 2.3% chance of happening per year. Over a 30-year period, those odds equate to about a 50% probability of occurrence — assuming the risks are not increasing each year, which they are.

The costs get even more eye-watering for Lloyd's "severe" case: $5.7 trillion over a five-year period. This case was estimated to have a 1.1% chance probability of occurrence per year, or a 28% chance over 30 years.

The "extreme" case, which would cause global havoc, was estimated to cause $17.6 trillion in damage over a five-year period, with a 0.3% probability of occurrence per year — a 9% chance over 30 years. This extreme case would meet the United Nations definition of a global catastrophic risk event: a catastrophe global in impact that kills over 10 million people or causes over $10 trillion (2022 USD) in damage.

46 yaleclimateconnections.org/2024/01/what-are-the-odds-that-extreme-weather-will-lead-to-a-global-food-shock/

KEY ACTIONS

Global average warming has already reached 1.5°C, far earlier than IPCC and most governments expected; and the rate of warming has accelerated. Two years ago, the Australian Government's climate department was saying warming would be 1.5-2°C in 2050. Next year it may be 1.7°C. There is little indication that the Australian Government has recognised this timing in disaster management planning and resilience strategies.

In a 2023 report, the ASLCG wrote that:

> "A cascading climate-security crisis initiated by chronic water shortages, crop failures and diminishing yields is likely to emerge globally, including across vulnerable nations and regions in the Asia-Pacific.
>
> "There will be big consequences for Australia's economic and human security, both because Australia's own food growing systems will be disrupted, and because food insecurity in the region will drive political instability, conflict, and people displacement in ways that will significantly impact on Australia and the security of its people.
>
> "Yet Australia is ill-prepared for these events: in assessing their likelihood, understanding the consequences, acting now to reduce the risks, both by strong emission reduction and other actions, along with adaptation and development plans to assist its neighbours."[47]

Unfortunately, our prognosis remains current. The government has classified the Office of National Intelligence (ONI) assessment of climate-security risks in our region, preventing its public release, whereas the National Climate Risk Assessment downplays the domestic risks.[48] So the parliament and the people remain ignorant of the threat, suggesting that the government does not want a public policy conversation about the security implications of future climate impacts and risks.

Australia is ill-prepared to handle these threats domestically, let alone when they combine with enhanced global food crises and the systemic, cascading risks to human, regional and global security. The government should:

- Enhance the capacity of neighbours to withstand climate-change-driven food shocks and their security consequences by encouraging development of a monitoring system to identify potential food insecurity hotspots, with a related programme to enhance food production capacity, emergency reserves and resilience in the region and domestically.
- Review disaster management plans taking into account the levels of disruption likely in the next year, which may be greater than current near-term scenarios utilised by the government.
- Establish a Climate Threat Intelligence branch within the Office of National Intelligence with a focus on Australia and the Asia region, with outputs including an annual, de-classified briefing to Parliament, and regular National Food Security Impact Assessment.[49]
- Establish an Abrupt Climate Change Early Warning System, and publish a declassified version of the 2022 ONI assessment of climate and security risks.

47 aslcg.org/wp-content/uploads/2022/06/ASLCG-Food-Fight-Report-June-2022-1.pdf
48 aslcg.org/wp-content/uploads/2024/05/ASLCG_TooHotTooHandle_2024R.pdf
49 aspistrategist.org.au/australia-needs-a-food-security-impact-assessment/

- Plan, fund and integrate climate research and modelling in Australia in a manner that will deliver a sound independent platform for realistic risk assessment and government policy-making.
- Rebuild the climate policy-making capacity of the Australian Public Service and overcome the bureaucratic silos that are making systemic analysis of climate risks difficult to achieve.
- Take global and diplomatic leadership in high-ambition climate alliances, such as agreements and cooperation to phase out fossil fuel subsidies and international financing for coal, oil and gas projects, and to phase out the fossil fuel economy.
- Prepare for this enhanced climate threat scenario by taking precautionary adaptation measures, but equally important, aligning policy with accelerated mitigation goals to assist in preventing that threat escalating further, in the first instance by halting fossil fuel expansion.

ABOUT ASLCG

The Australian Security Leaders Climate Group is a non-partisan network of Australian security and policy professionals that is working to reframe the climate debate and make climate an immediate security priority in Australia, through assessing the full level of risk posed by climate change and building resilience for local and global protection.

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