

## Overview

El Niño is historically associated with lower rainfall amounts in the Asia-Pacific region; its impact is difficult to predict. Drought and floods are concurrently occurring in many countries in the region, however the effects of drought are expected to prevail and are likely to be heavier than expected.

## Country alerts

### India<sup>1</sup>

In early Aug, the India Meteorological Department reported a rainfall deficit as high as 57 percent in some areas. Monsoon rains affected the entire country ahead of schedule in 2015 and a strengthening El Niño pattern and prolonged dry spell in some regions has threatened to impact crop production. Reports are increasingly placing India at great risk as livelihoods, food production and food prices will likely experience significant impact.

### Philippines<sup>2</sup>

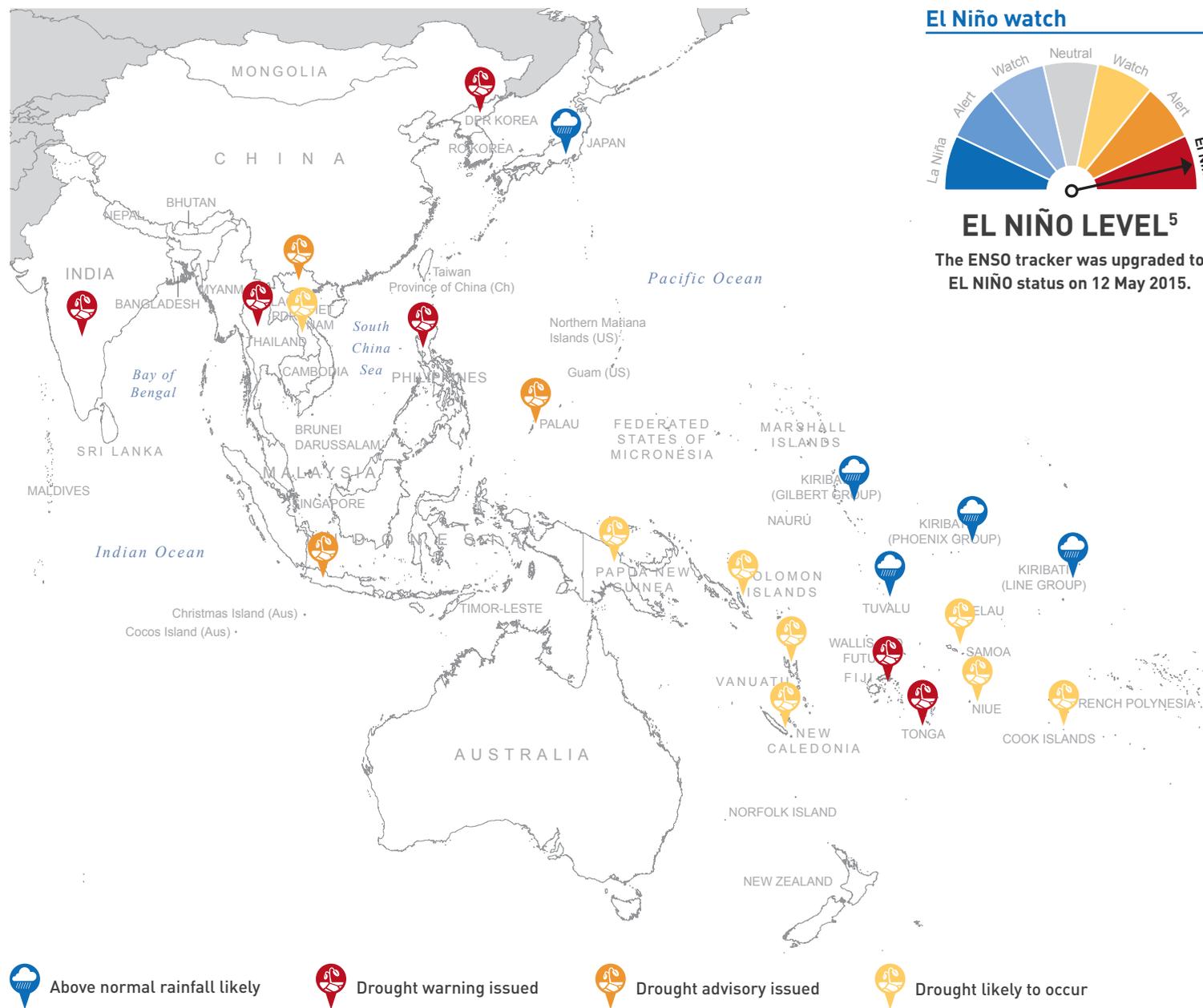
Drought warnings are in place for provinces in central and northern Philippines. In May, the Government placed eight provinces under a state of calamity due to worsening drought conditions. Meteorologists predict below normal rainfall conditions are likely to intensify in the coming months and into 2016. The El Niño could also trigger erratic behaviour of tropical storms, influencing their track and intensity.

### Fiji<sup>3</sup>

A drought warning is in place for Fiji where rainfall is well below average and sugar cane farmers are reporting crop reductions of around 25 per cent. Emergency water deliveries to villages and schools have already begun, especially on the outer islands and in some main island communities.

### Vanuatu & Solomon Islands<sup>4</sup>

Intensified drought conditions may adversely affect countries that are emerging from the devastation caused by Tropical Cyclones Pam and Raquel which included displacement, flooding and crop destruction. It is expected that the passage of possible tropical cyclone systems over or near island groups will be the primary source of significant rainfall over the year ahead.



Sources: 1. IMD, media 2. PAGASA, media, OCHA 3. Fiji Meteorological Service, Fiji Times, Nadraki, NOAA, OCHA ROP Expert Interviews 4. Nadraki, NOAA, OCHA ROP Expert Interviews 5. Source: Commonwealth of Australia 2014, Bureau of Meteorology

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

**What does this mean for Asia-Pacific?**

El Niño affects the weather in large parts of the world, depending strongly on location and season. The strongest effects on precipitation are in South-East Asia and the western Pacific Ocean, especially in the dry season (August-November).

**Disease:** Health risks include outbreaks of a number of diseases including diarrhoea, leptospirosis and typhoid, by exposure to contaminated water or decreased hygiene due to water shortages. There may also be an increase in vector-borne diseases including dengue, chikungunya and zika virus due to increase mosquito vectors and increased temperatures. Malnutrition is also a significant risk.

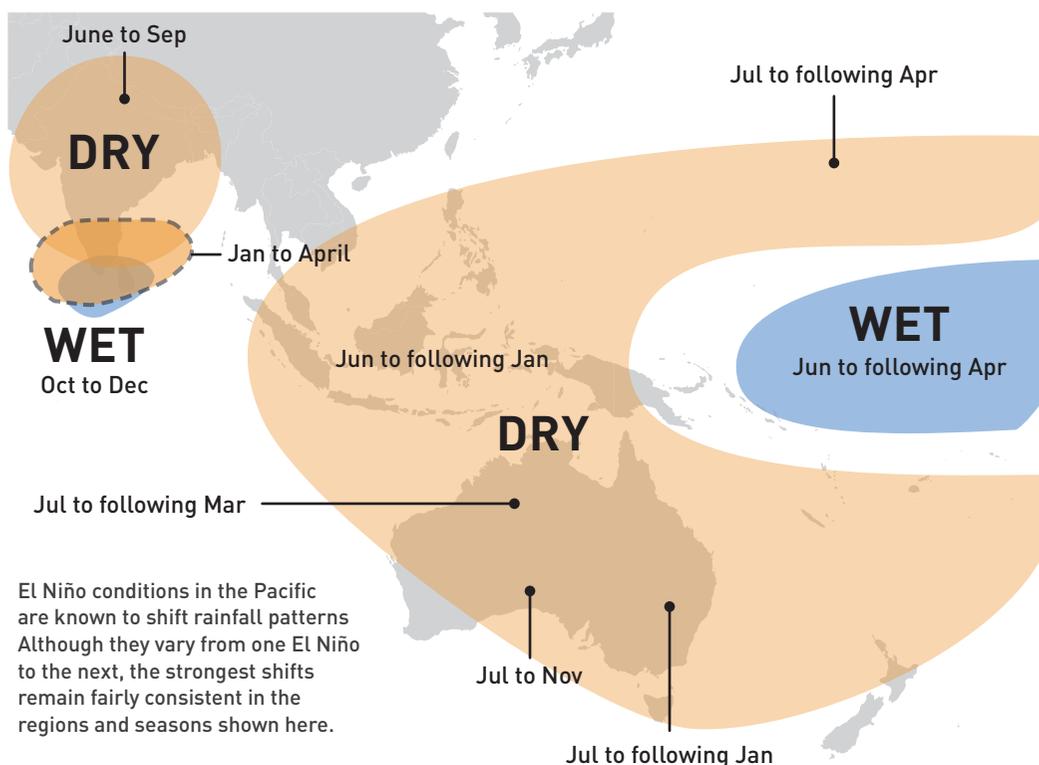
**Drought:** El Niño events usually, but not always, coincide with much drier than normal conditions across the western Pacific, including Indonesia and Papua New Guinea (PNG), eastern and northern Australia, South and South East Asia. Drier conditions can be expected particularly in the Philippines, PNG, India, Solomon Islands, Vanuatu, Fiji, Tonga, and Niue. Extended drought conditions could lead to food and water scarcity and impact job security and income, especially in at-risk sectors such as agriculture and tourism.

**Fires and haze:** Drier weather in many countries can cause increased occurrences of forest fires and haze. Many of these blazes are on deep peat lands, particularly in areas such as Sumatra and Borneo, producing huge plumes of smoke and large amounts of carbon dioxide, which can cause significant health concerns.

**Frost:** Previous El Niño events have resulted in severe frosts in the highland provinces of PNG, severely impacting domestic garden and crop yields.

**Heavy Rainfall:** In an El Niño year there is usually more heavy rain in Pacific equatorial countries putting these low-lying nations at risk of flood and erosion.

**El Niño and Rainfall**



El Niño conditions in the Pacific are known to shift rainfall patterns. Although they vary from one El Niño to the next, the strongest shifts remain fairly consistent in the regions and seasons shown here.

Source: International Research Institute for Climate and Society

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**Tropical cyclones:** In the Pacific, El Niño patterns usually see more frequent and intense cyclones developing over a wider area. An eastward shift in tropical cyclone activity in the South Pacific towards the Cook Islands and French Polynesia may result in more frequent landfalls in Japan and the Korean Peninsula. Cyclone related rains could be above average in southern China causing widespread flooding.

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**El Niño in 1997 and 1998<sup>6</sup>**

The 1997-98 El Niño was one of the strongest on record, with substantial effects such as major drought conditions across Micronesia, Fiji and Papua New Guinea. The scarcity of water, and associated impact on agriculture led to increased incidences of health problems, nutritional deficiencies and food shortages. Additionally, countries experienced a number of social problems, including increased school absenteeism and ethnic strife. More recently, El Niño conditions were observed in 2002, 2004, 2006, and 2009. Impacts from these latter El Niño events were less and of a shorter duration.

- Preparedness
- Recommendations

Humanitarian partners and government agencies should continue to closely monitor and record atmospheric conditions such as precipitation patterns, soil moisture etc. and consult with National Meteorological and Hydrological Services (NMHSs) and forecasters from World Meteorological Organization regional and global centres for updates. To this effect, OCHA will engage Resident and Humanitarian Coordinators to promote coordination of appropriate preparedness activities.

The humanitarian community should reflect on the lessons learned from previous El Niño conditions, including the severe 1997/98 effects on countries across Asia and the Pacific. It is important to ensure that governments and humanitarian responders have ready and available capacities to prepare for, and respond, to eventual El Niño conditions.

As predictions become more accurate and areas where events are anticipated, appropriate contingency processes and preparedness actions should be taken at the country level by the Resident Coordinator's Office (RCO), the Humanitarian Country Team (HCT), National Disaster Management Office (NDMO) in consultation with meteorological agencies. Preparedness actions should be taken at the country level by NDMO and Met services with support of RCO where necessary.

Partners and government technical agencies at the country level need to identify and implement risk mitigation measures in order for citizens and communities to be better equipped if and when El Niño does have an impact at the local level.

6. UNDAC Report 1997-98, OCHA ROP 2012