

# La Niña and Precipitation



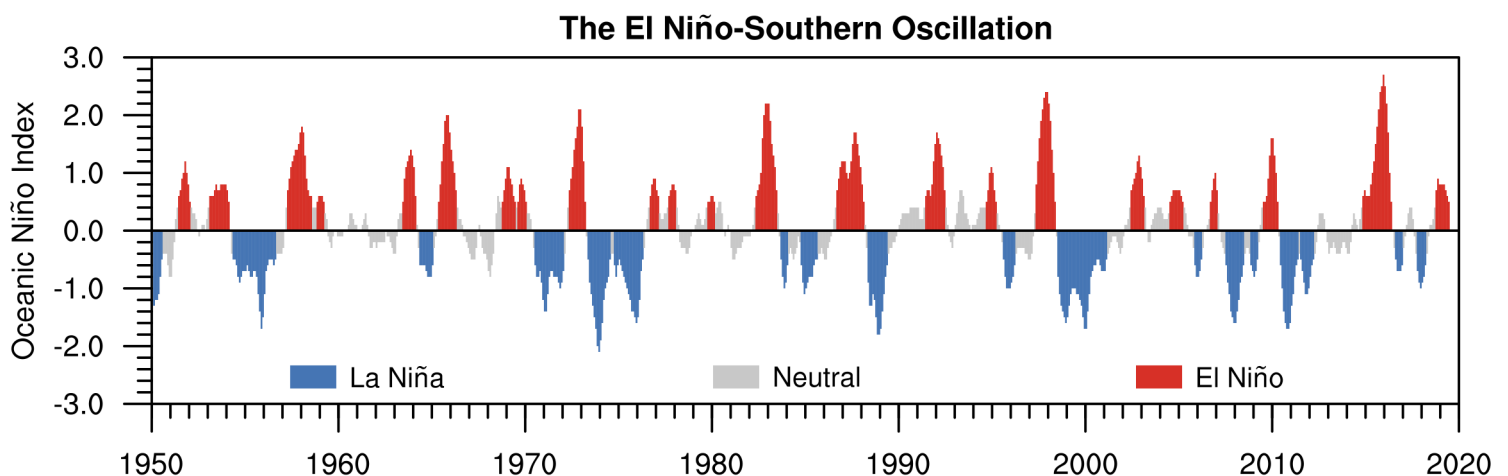
## What is La Niña?

La Niña is the cold phase of the El Niño-Southern Oscillation. Its opposite phase is El Niño. La Niña is defined by cooler than average sea surface temperatures in the central-eastern equatorial Pacific Ocean and related atmospheric changes. Key characteristics of La Niña, shown in Fig. 1, include:

- Events occur irregularly, but typically happen 2-4 times per decade.
- Events vary in strength and typically reach their peak intensity late in the calendar year.
- Many events last more than one year.

## Why is La Niña Important?

La Niña triggers changes in global atmospheric and oceanic circulation. These changes are responsible for anomalous precipitation patterns that can last from months to multiple seasons in FEWS NET regions (Fig. 2). While precipitation outcomes differ from one La Niña to the next, consistent patterns across past events provide a baseline for prediction. Agroclimatic assumptions used in FEWS NET scenario development are based on La Niña historical impacts, observed and predicted strength and duration, and other regional factors.



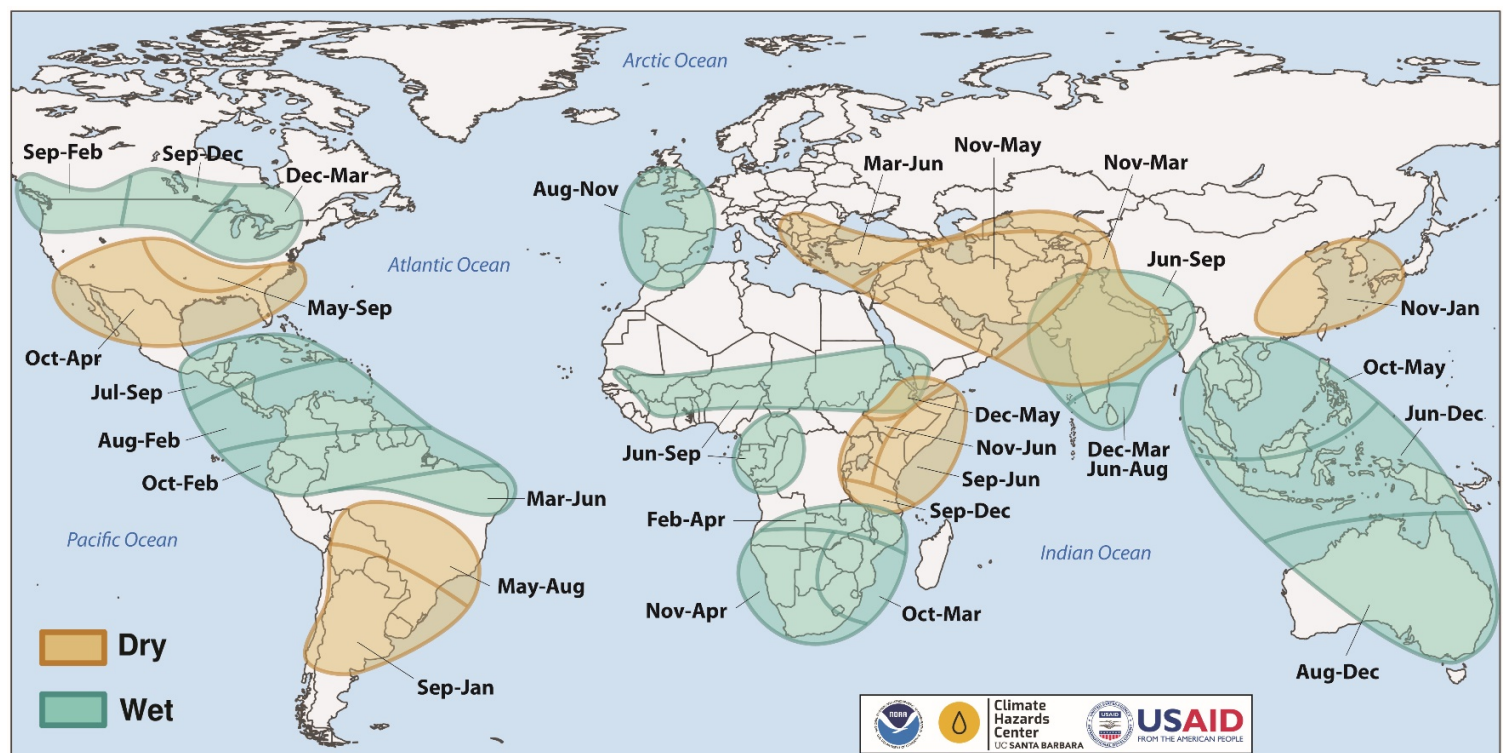
▲ **Fig. 1.** Time series of the El Niño-Southern Oscillation based on the Oceanic Niño Index.  
[https://origin.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ensostuff/ONI\\_v5.php](https://origin.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ONI_v5.php)

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## Regional Precipitation

La Niña is related to increases in the likelihood of above- and below-average precipitation over many regions of the globe (Fig. 2). These changes in precipitation likelihoods occur during certain times of the year. Over sub-Saharan Africa, primary rainfall seasons with wet conditions are in the central and eastern Sahel (June-September) and in Southern Africa

(October-May). Dry conditions are most likely over the Greater Horn of Africa during the September-December and March-May rainy seasons. Over Central Asia, dry conditions are most likely during the winter and spring precipitation seasons. In northern Central America and the Caribbean the likelihood of wet conditions increases during July-September.



▲ Fig. 2. Timing of wet and dry conditions related to La Niña.

### Methods

Wet and dry conditions are based on observed precipitation during 21 La Niña events since 1950. Consistent with seasonal forecasts, wet and dry correspond to a statistically significant increase in the frequency of precipitation in the upper and lower thirds of historical values, respectively. Statistical significance at the 95% level is based on the resampling of precipitation during neutral El Niño-Southern Oscillation conditions.

### Please Cite As

Famine Early Warning Systems Network, 2020: La Niña and Precipitation, Agroclimatology Fact Sheet Series, Vol. 2, pp. 1-2.

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