



## COMITÉ MULTISECTORIAL ENCARGADO DEL ESTUDIO NACIONAL DEL FENÓMENO EL NIÑO (ENFEN)

### ENFEN OFFICIAL STATEMENT N° 18-2015

*Peruvian Governmental Assessment on El Niño-Southern Oscillation*

#### Status warning system: **Coastal El Niño Alert**<sup>1</sup>

Note: This translation is provided for convenience, the official version is in Spanish

The Multisectoral Committee for the National Study of El Niño (ENFEN) maintains the state of alert, associated with a “strong” El Niño event evolving in the Peruvian coast, with above normal temperatures but, due to the seasonality, heavy rains are not expected in November, with exception of Tumbes in which heavy rains may occur sporadically, in the second fortnight of November.

The estimated probability that the Coastal El Niño event will be strong or extraordinary in austral summer 2015-2016 is 55%<sup>2</sup>.

The Multisectoral Committee for the National Study of El Niño (ENFEN) met to review and update the meteorological, oceanographic, biological-fishery and hydrological information of the first fortnight of October 2015.

The warm phase of El Niño-Southern Oscillation continues. In the first half of October, the sea surface temperature (SST) in the equatorial central Pacific (Niño 3.4 region<sup>3</sup>) continued to show a similar trend to 1997, although rainfall in the central-eastern region<sup>4</sup> -a key indicator of ocean-atmosphere coupling- showed values below those of that year. The westerly wind anomalies in the central equatorial Pacific, which generate warm equatorial Kelvin waves, have strengthened, associated to new westerly wind pulses, but remain below than those in 1997.

The observed depth of the thermocline and mean sea level (MSL) in the central equatorial Pacific region indicate a downwelling Kelvin wave, which was forced by westerly wind anomalies in the second half of September and strengthened by westerly wind anomalies in the first half of October.

In the coastal area of Peru, the average SST anomalies were +3°C in the north and central coast. In the same region, extreme air temperatures remained above normal, with average anomalies of +2° C for minimum air temperature and +2.2°C for maximum air temperature.

The MSL on the northern coast decreased to an average of +13 cm above normal, while in the central and southern coasts, the anomalies were, on average, +9 cm. Also in the fixed station Paita, located seven nautical miles off the coast, the anomalies decreased to +3°C in the upper 30 meters, associated with a shallower thermocline.

<sup>1</sup> Definition of Coastal El Niño Alert: According to recent conditions using expert judgment in a collegial manner, the ENFEN Committee considers that Coastal El Niño event has begun and/or ICENTmp value indicates warmer conditions, and is expected that Coastal El Niño consolidates (ENFEN Technical Note N°01-2015).

<sup>2</sup> ENFEN Official Statement N°17-2015.

<sup>3</sup> Niño 3.4 region: 5°S - 5°N, 170°W - 120°W.

<sup>4</sup> Central and Eastern region: 5°S - 5°N, 170°W - 100°W.



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The Coastal El Niño Index (ICEN) for August was +2.15, maintaining the category of strong “warm” as in June and July.

At the beginning of the hydrological year 2015-2016, rainfall and river flows in the coast were within normal for this period. The reservoirs in the northern and southern coasts have, on average, 60% and 50% of their maximum storage capacity, respectively. This decrease indicates the beginning of the crop seasons.

Anchovies were dispersed, between Punta La Negra (6 °S) and Pisco, slightly deepened. Biological indicators of the anchovies showed values within the normal range. On the other hand, off warm water oceanic species such as longnose and Pacific mackerel continued to be present off Chimbote.

### PERSPECTIVES

In the following months, along the Peruvian coast, the SST, MSL and thermocline depth anomalies are expected to continue as a result of El Niño event underway.

The duration of the downwelling Kelvin wave formed in the second half of September, is expected to be extended as a result of the westerly wind pulses observed in the first half of October in the central equatorial Pacific. This Kelvin wave would be arriving to the Peruvian coast from November, which would help to maintain the current warming and may even increase it, but not to the level recorded in November 1997.

As we enter the rainy season, the Coastal El Niño will intensify precipitations on the Pacific slope, according to its magnitude. While El Niño will have greater influence on the rains in the northern coast, there is strong heterogeneity of its impact in each region. However, heavy rains are not expected in November, except in Tumbes where they may occur sporadically in the second half of November.

For the central equatorial Pacific (Niño 3.4 region), global models continue to forecast an intensification of El Niño conditions by the end of the year, with SST anomalies that could exceed +2°C. The ENFEN Committee maintains a 75% chance that El Niño in the central Pacific reaches a strong or very strong magnitude in the summer (Table 2).

For rainfall in the Andes and the Amazonia, El Niño in the Central Pacific implies the possibility of reduced rainfall in summer, although this is not determinant, particularly in the southern zone.

According to Table 1 of ENFEN Official Statement N° 17-2015, there is a 95% probability that the Coastal El Niño will continue into summer and a 55% chance that the Coastal El Niño becomes strong or extraordinary in the same season. These probabilities will be updated in the next ENFEN Statement.

The ENFEN Multisectorial Committee will continue to report on the evolution of the observed conditions and will update monthly the probability estimations of the magnitude of El Niño in the Eastern Pacific (Coastal El Niño) and Central Pacific (El Niño) for austral summer.

ENFEN Multisectorial Committee

Callao-Perú, October 23<sup>rd</sup>, 2015



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**Table 1.** Probability of the magnitudes of Coastal El Niño in summer 2015-2016 (December 2015 - March 2016)

Magnitudes during December 2015 - March 2016	Probability of occurrence
Neutral or Coastal La Niña	5%
Weak Coastal El Niño	5%
Moderate Coastal El Niño	35%
Strong Coastal El Niño	40%
Extraordinary Coastal El Niño	15%

**Table 2.** Probability of the magnitudes of El Niño in the Central Pacific in summer 2015-2016 (December 2015 - March 2016)

Magnitudes during December 2015 - March 2016	Probability of occurrence
Neutral or Central Pacific La Niña	5%
Weak Central Pacific El Niño	5%
Moderate Central Pacific El Niño	10%
Strong Central Pacific El Niño	45%
Very Strong Central Pacific El Niño	35%