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World Meteorological Organization

EL NIÑO/LA NIÑA UPDATE

Current Situation and Outlook

The El Niño event of the latter half of 2006 has now ended. Pacific basin-wide conditions are now neutral. Despite being at the time of year when it is most difficult to predict future developments, there are sufficient indications to suggest that a transition to La Niña has recently become a substantial possibility. This transition is generally considered by experts to have some, though weak, chance of developing in the next 2-3 months. At this time, re-development of El Niño is considered an unlikely outcome over the next few months.

Rapid dissipation of El Niño conditions occurred during January and February of 2007. Sea-surface temperatures in December were up to 2 degrees Celsius warmer than normal in the central and eastern Equatorial Pacific, and were still generally around 1 degree Celsius warmer than normal in early January. By the end of February, sea surface temperatures in the region were colder than normal and surface winds were near normal. Sub-surface equatorial Pacific Ocean was cooler-than-normal in the east and warmer-than-normal in the west. These conditions are typical of the end of an El Niño event.

Prior to the dissipation of El Niño, climate patterns over several months displayed many characteristics usually associated with El Niño events, including drier than normal conditions across many parts of Australia, Indonesia and Fiji and unusually heavy rains and flooding across parts of eastern Africa and extended dry spells across many southwestern parts of southern Africa.

This is now the time of year when predictions of developments across the basin-wide tropical Pacific are least accurate. Dynamical and statistical forecast models show a range of possible outcomes over the next 3-6 months. Most models have been indicating cooling after the November-December peak of El Niño conditions to near-average before or by mid-2007. However, the observed rate of cooling has been more rapid than most models predicted. Currently, several, but not all, models indicate the likelihood of an emerging La Niña over the next several months. Furthermore, experts have noted the presence of a substantial pool of cooler than normal water just beneath the surface of the central and eastern Equatorial Pacific. This water is expected to reinforce, over the next few weeks, the already cooler than normal waters at the surface. The system at this time of the year is finely balanced

and can be quite easily deflected from an apparent track, but the pre-requisite conditions appear to be in place for the development of a La Niña event. The next 2-3 months will be crucial for determining whether neutral conditions continue, or a La Niña event does indeed transpire.

It is important to consider that El Niño and La Niña are among a number of factors that lead to information about the regional climate patterns to be expected over the next several months. More complete information can be found in detailed seasonal climate outlooks, as produced by National Meteorological and Hydrological Services.

In summary:

- An El Niño event prevailed during the second half of 2006, exerting substantial influence on climate patterns during that period.

- A rapid dissipation of the El Niño event occurred in the early part of this year, especially during February 2007, and leading to neutral conditions in the Equatorial Pacific. Indeed, sea-surface temperatures had already become cooler than normal in the central and eastern Equatorial Pacific by the end of February.

- Forecasts made at this time of year notoriously lack skill, and the period March-May is often referred to as the “spring barrier” in the predictability of El Niño and La Niña. Nonetheless, there are indications that cooler than normal waters may prevail over the next several weeks in the central and eastern Equatorial Pacific such that a La Niña event becomes established. If such an event does become established, then given the timing in the year, it would be likely that the event would persist for much of the remainder of the year.

- A further update of the situation will be made in the next 2-3 months, given the uncertainty that currently exists on the expected conditions in the tropical Pacific.

The situation in the tropical Pacific will therefore continue to be carefully monitored. More detailed interpretations of regional climate fluctuations will be generated routinely by the climate forecasting community over the coming months and will be made available through National Meteorological and Hydrological Services.

El Niño/La Niña Background

Climate Patterns in the Pacific

Research conducted over recent decades has shed considerable light on the important role played by interactions between the atmosphere and ocean in the tropical belt of the Pacific Ocean in altering global weather and climate patterns. During El Niño events, for example, sea temperatures at the surface in the central and eastern tropical Pacific Ocean become substantially higher than normal. In contrast, during La Niña events, the sea surface temperatures in these regions become lower than normal. These temperature changes are strongly linked to major climate fluctuations around the globe and, once initiated, such events can last for 12 months or more. The strong El Niño event of 1997-1998 was followed by a prolonged La Niña phase that extended from mid-1998 to early 2001. El Niño events change the likelihood of particular climate patterns around the globe, but the outcomes of each event are never exactly the same. Furthermore, while there is generally a relationship between the global impacts of an El Niño event and its intensity, there is always potential for an event to generate serious impacts in some regions irrespective of its intensity.

Forecasting and Monitoring the El Niño/La Niña Phenomenon

The forecasting of Pacific Ocean developments is undertaken in a number of ways. Complex dynamical models project the evolution of the tropical Pacific Ocean from its currently observed state. Statistical forecast models can also capture some of the precursors of such developments. Expert analysis of the current situation adds further value, especially in interpreting the implications of the evolving situation below the ocean surface. All forecast methods try to incorporate the effects of ocean-atmosphere interactions within the climate system.

The meteorological and oceanographic data that allow El Niño and La Niña episodes to be monitored and forecast are drawn from national and international observing systems. The exchange and processing of the data are carried out under programmes coordinated by the World Meteorological Organization.

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