



Tanggapan ng Kalihim

Office of the Secretary

DEC 28 2004

DepED MEMORANDUM

No. 477, s. 2004

INFORMATION CAMPAIGN FOR EL NIÑO PHENOMENON

To: Bureau Directors
Regional Directors
Schools Division/City Superintendents
Heads, Public and Private Elementary and Secondary Schools

1. The latest update from PAG-ASA states that a weak El Niño is currently taking place as indicated in the latest observation of an increased sea surface temperature over the equatorial Pacific. It is expected that this will continue to prevail through the next five to six months as suggested by latest information from global climate prediction centers.
2. Based on the latest global information and the current trends in rainfall and weather patterns in the country, there is a potential for continued rainfall deficit over areas in Regions I, II, III and CAR in the coming months. Available forecasting tools also indicate that below normal rainfall conditions will likely to occur in western and central Visayas, and western and northern Mindanao in the first quarter of 2005. The expected deficit in rainfall will have adverse impacts on agriculture, water resources, hydropower generation, health and sanitation and other sectors. Enclosed is a Primer on El Niño/Southern Oscillation (ENSO), for further information on these climatic conditions.
3. All field officials are therefore advised to continue school-based activities that can mitigate the possible effects of El Niño, particularly on schoolchildren through the following:
 - a. Enhance the level of awareness of teachers and schoolchildren through the incorporation of the El Niño phenomenon into classroom discussions and conduct dialogues with various sectors of the government such as the agricultural sector and other concerned agencies such as DENR, DA, DILG, DOH, PIA and other concerned groups to increase awareness on the adverse impact of the phenomenon to the schools;
 - b. Awaken the response level of schools and communities on how to mitigate the effects of the phenomenon through proper health and nutrition practices and improved environmental sanitation to prevent and control possible drought-related diseases; and
 - c. Mobilize all school health personnel to conduct health and environmental surveillance activities and to put in place a preventive alert network in the schools.
4. Wide and immediate dissemination of this Memorandum is desired.


FLORENCIO B. ABAD
Secretary

Encl.: As stated

Reference: DepEd Memorandum: No. 23, s. 2003

Allotment: 1—(D.O. 50-97)

To be indicated in the Perpetual Index
under the following subjects:

CAMPAIGN HEALTH EDUCATION

Sheila, MPPD, DM Campaign El Niño Phenomenon, Nov. 22, 2004

Primer on El Niño/Southern Oscillation (ENSO)

What is El Niño?

El Niño is a large-scale oceanographic/meteorological phenomenon that develops in the Pacific Ocean and is associated with extreme climatic variability like devastating rains and strong winds in some areas and drought in others. It is the migration from time to time of warm surface waters from the western equatorial Pacific Basin to the eastern equatorial Pacific region, along the coast of Peru and Ecuador. This condition can prevail for more than a year thus affecting the economy in both local and global scale.

El Niño translates from Spanish as the "Boy Child" or the "Little One". It used to be considered a local event along the coast of Peru and Ecuador. The term was traditionally used by the Peruvian anchovy fishermen to describe the appearance of warm ocean current flowing the south American coast around Christmas time.

In normal condition, the prevailing southeasterly trade winds produce a surface current flowing toward the equator along the western South American coast. The waters leaving the coast are replaced by colder waters from below (upwelling) which is rich in phytoplankton, the food source of anchovy.

The warm current (El Niño) temporarily displaces nutrient-rich upwelling cold water resulting to heavy harvest of anchovies. The abundant catch, however, lasted for only a short period of time. What followed later was a sharp decline in the fish population resulting in lesser catch. At times, warming is exceptionally strong and ruins the anchovy harvest.

El Niño Condition

An annual warm current that churns southward until it reaches the coast of Ecuador thrusts farther south to the waters of Peru. It mixes with the upwelling cold water, warming it slightly and depressing the thermocline. The warmer water no longer cools the air above it so effectively, and without the cross-ocean temperature differential, the wind stops or even reverse, bringing rain and more warm water eastward. The water strikes the coast and splits into two currents that move toward the poles and empty the basin of warm water. Finally, there is no longer enough warm water to sustain the El Niño cycle, so it decays, and things return to normal

Characteristics of ENSO

- It occurs in the Pacific basin every 2 to 8 years;
- It usually starts during the Northern winter (December to February);
- Once established, it lasts until the first half of the following year, although at times, it stays longer (ex: 1939-1941 and 1989-1992 episodes);
- It exhibits phase-locking to annual cycles (El Niño and rainfall fluctuations associated with it tend to recur at the same time of the year); and
- It usually has a biennial cycle (El Niño events will often be preceded and or followed by La Niña). La Niña is a term applied to the cold phase during which the equatorial central eastern Pacific sea surface temperatures are generally below normal

General conditions that precede an El Niño by a few months

- a. The weakening of the Pacific trade-wind system with westerlies or westerly anomalies appearing in the western Pacific and increasing in magnitude and area extent;
- b. Rising surface pressure in Darwin and falling surface pressure in Tahiti, hence Southern Oscillation Index decreases;
- c. The appearance of above normal (warmer) sea surface temperatures (SSTs) in the eastern Pacific that persists beyond the normal wintertime annual warming at Peru; and
- d. Surface ocean warming in the central equatorial Pacific usually accompanied by a movement of the zone of warmest waters from the western Pacific to the date line.

What are the climatic indicators of ENSO phenomenon in the Philippines?

Abnormalities such as:

- delayed onset of the rainy season
- early termination of the rainy season
- weak monsoon activity
- isolated heavy downpour with short duration
- weak tropical cyclone activity
- far tropical cyclone track
- less number of tropical cyclones entering the PAR
- less intense tropical cyclone

How does the ENSO affect climate?

The episodes of these merging of air and ocean water patterns evolve with a remarkable degree of consistency. However, their effects vary from episode to episode, and because ENSO is global in nature, it leads to the nearly simultaneous appearance of pronounced climate anomalies around the world.

There are three types of anomalies that can be associated with ENSO episodes; rainfall, wind and temperature fluctuations

a. Rainfall fluctuations

One very distinct effect of ENSO is the tendency for rainfall anomalies (drought in some places, heavy rainfall in others) to appear in many areas around the globe at the same time and its large-scale nature means that large areas suffer from the same rainfall anomaly at the same time. There is also a large interannual variability in areas affected by it. The drought and wet periods tend to last about 12 months or so, and are phased locked to the annual cycle. If an extensive drought is established by the middle of the year, it is unlikely to break until at least the following year.

b. Wind and temperature fluctuations

Rainfall is not the only aspect of the climate affected by ENSO. Some researchers have reported increased temperatures throughout Southeast Asia during El Niño events relative to the La Niña episodes with phase locking to the annual cycle being also evident in these temperature anomalies.

There are also clear variations in wind between El Niño and non-El Niño events, especially close to the equator. Northeast monsoon over the Philippines tends to be weaker during an El Niño, whereas the southwest monsoon over Indonesia and Malaysia tends to be stronger during an ENSO episode.

What are the effects of ENSO in the Philippines?

In the Philippines, drought events are associated with the occurrence of ENSO episodes.

What are the expected second and third order impacts of ENSO related drought events in the Philippines?

These include a number of environmental (degradation of soil which could lead to desert-like conditions if persistent, effect on water quality like salt-water intrusion, high forest/grass/bush fire risk, domestic water supply shortage, etc.), social (disruption of normal human activities, migration to urban communities, human and health problems, etc.) and economical (unemployment, food shortages, significant reduction in the productivity and subsequent revenue of various industries, hydro-electric power generation, etc.) impacts.