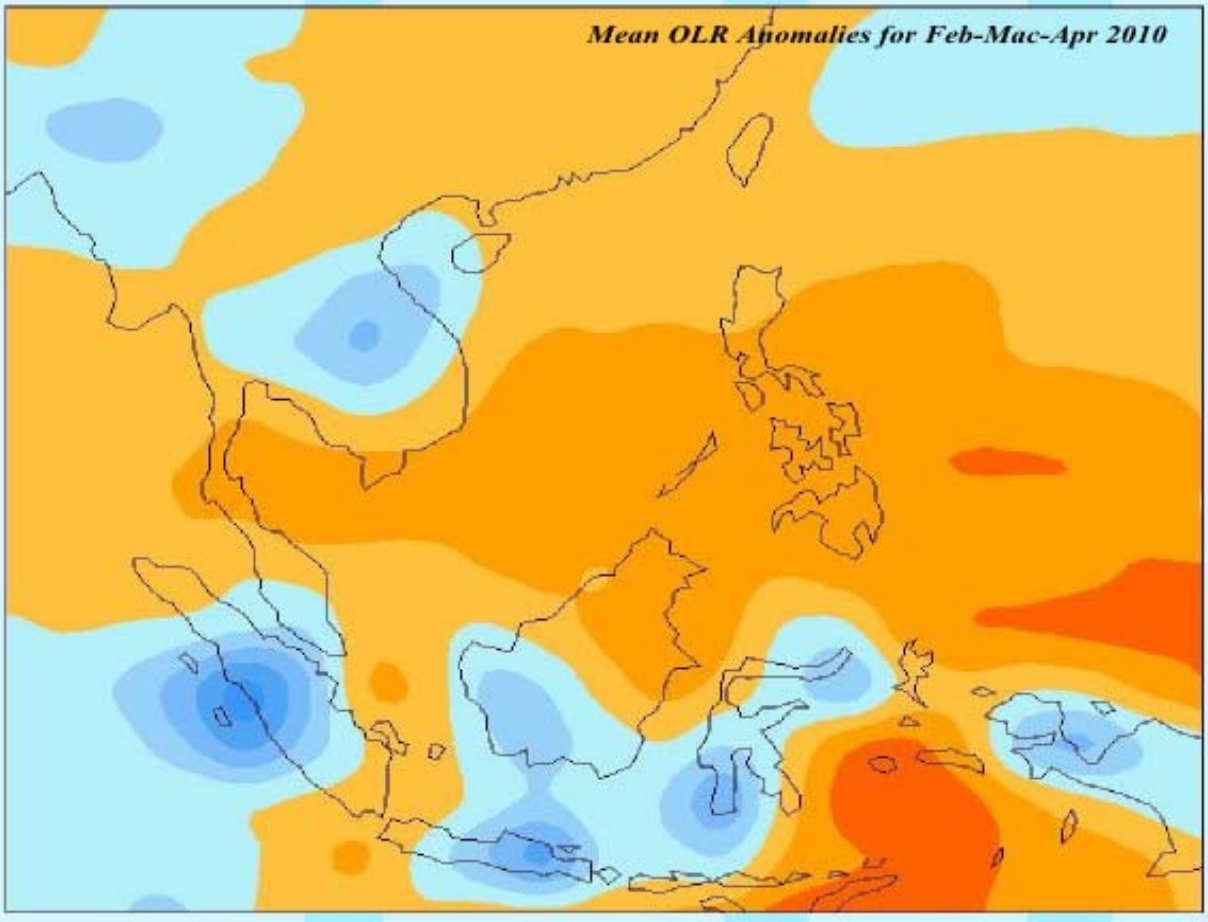
SOUTHWEST MONSOON REPORT

Kuala Lumpur Monsoon Activity Centre

MAY 2010



MALAYSIAN METEOROLOGICAL DEPARTMENT
http://www.met.gov.my

MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

Introduction

The ongoing El Niño event continues to have significant and widespread impacts in many climate patterns around the world. During the month of February and March 2010, conditions in the tropical Pacific continued to clearly reflect the presence of the El Niño event. Although near-neutral conditions are expected towards mid-year, however the persistence of El Niño or the possibility of early stages of La Niña by mid-year cannot be ruled out. The impact of El Niño event are expected to continue to be felt on many climate patterns both close to and remote from the Pacific through at least the second quarter of 2010 since its adverse impacts could also occur during the decay phase of an El Niño event. As for the formation of tropical storms along the North Western Pacific, until April 2010 there were only two significant events recorded. First is Tropical Storm Omais, which was reported on March 18, 2010, 325km to the southwest of Chuuk Island in southern Micronesia. Tropical Storm Omais did not make landfall and dissipated as an extra tropical storm. The second is the tropical depression (TD) which initially formed as an area of low pressure 140km to the west of Palau Island on April 24, 2010. By April 27, the TD had made landfall on Davao City and crossed central Mindanao. The near equatorial trough line in the Inter-tropical Convergence Zone (ITCZ) being close to the equator and emergence of low level southwesterly winds over the Indian Ocean and, continue of weakening of the easterlies over the Southeast Asian region is indicative that the transition period to the Southwest Monsoon season has begun.

1. Weather Conditions During April 2010

Across the central equatorial Pacific, the sea-surface temperature remained above 1.0˚C warmer than normal. This resulted in increased cloudiness and convection in the central equatorial Pacific while suppressed convection were observed in the western equatorial Pacific during the first quarter of 2010. Overall, this event is considered to have close to or slightly above the typical strength seen in the historical record of El Niño events.

The 925-hPa mean wind analysis (Figure 1) for April 2010 shows that light northeasterly winds of less than 10ms^{-1} are dominant over the Southeast Asian region. Whereas strong easterly winds prevailed over Western Pacific Ocean and strong southwesterly wind in the Northern Bay of Bengal. This exhibits the typical climatological pattern for the month of April.

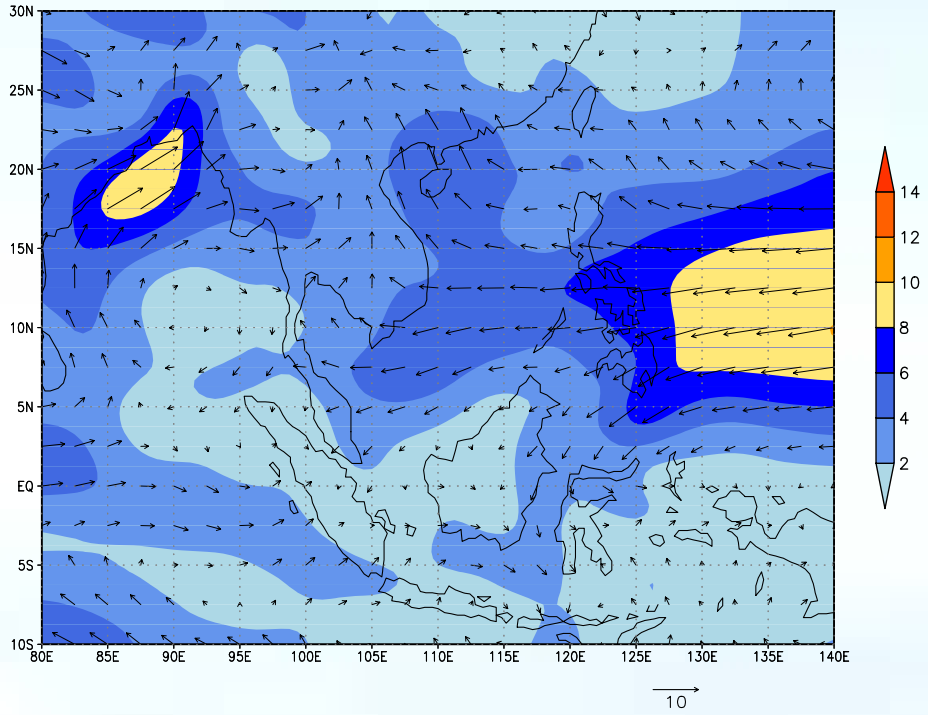


Figure 1 : 925-hPa Mean Wind Analysis (ms^{-1}) for April 2010

The 850-hPa mean zonal winds for April 2010 (**Figure 2**) shows a significant difference in the wind pattern throughout the region. Strong westerly wind from the Indian Ocean exhibits a maximum in strength every 8 to 11 days. During the fourth pentad, the westerly winds were seen propagating eastward all the way into the Western Pacific Ocean causing dry weather conditions in our region. However, during the sixth pentad weakening of the westerly winds had improved the weather conditions over Malaysia.

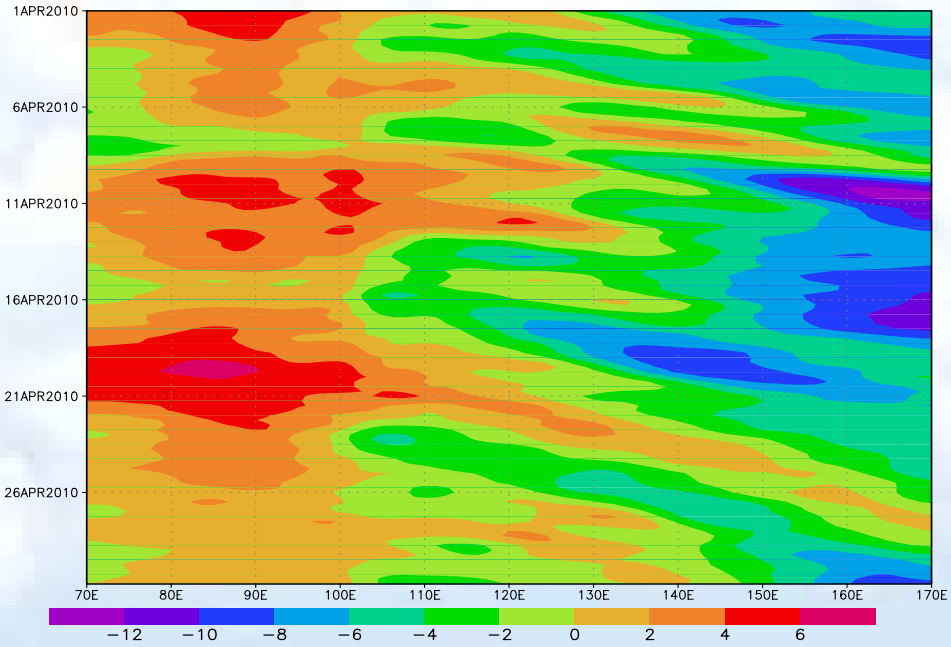


Figure 2 : Time Series of Mean Zonal Wind Averaged between 10˚N - 30˚N at 850-hPa for April 2010 (Wind Speed in ms^{-1})

2. Outgoing Long Wave Radiation (OLR)

From February to mid March 2010, the positive anomaly of OLR were dominant over the entire region indicating a very strong suppressed convection over the Western Pacific Ocean and Southeast Asia (**Figure 3**). Beginning mid March 2010, the OLR exhibits an oscillation between the positive and negative signals throughout the region as shown in **Figure 3**. It is noticeable that, the convective systems which developed in the Western Pacific Ocean around the dateline, propagated westward and ended the dry spell in the Western Pacific Ocean and maritime continent of Southeast Asia. The convective disturbances generally propagated at a rate of about 5˚ longitude per day and has an approximately 15 days cycle.

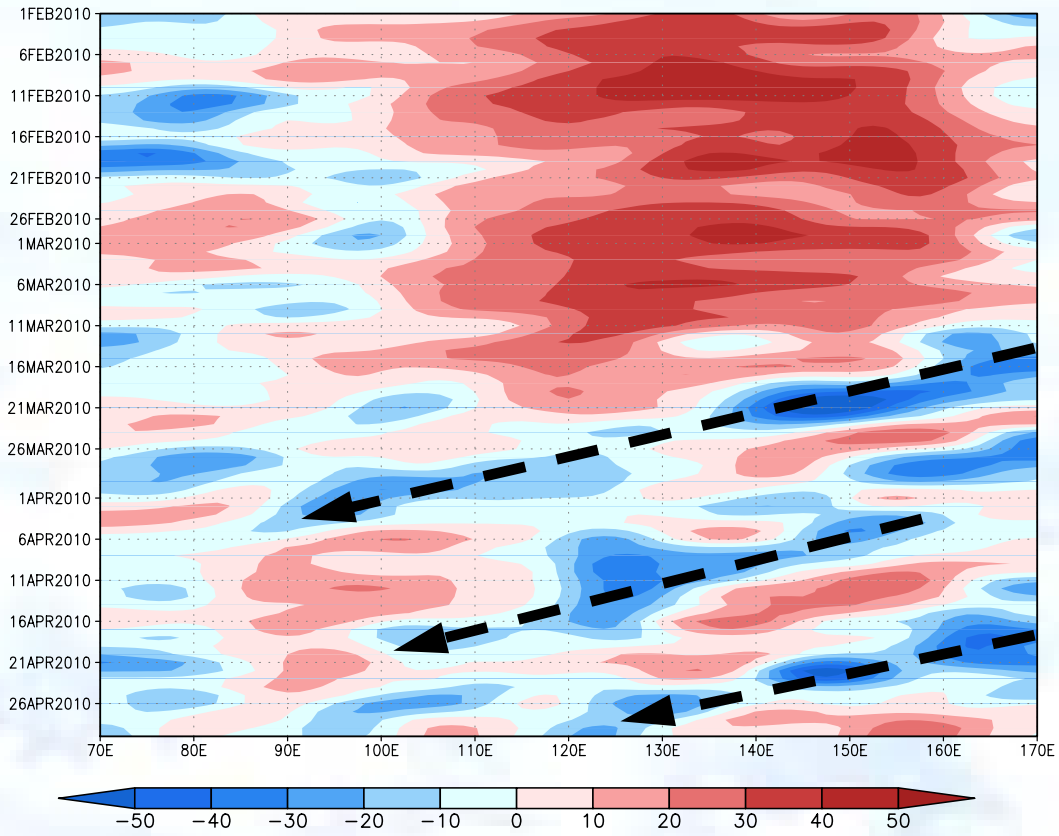


Figure 3 : Time Series of OLR Anomalies (Wm^{-2}) Averaged Between 0˚ - 10˚N from February to April 2010. Arrows show westward propagating convective systems.

The monthly distribution of OLR anomaly shown in **Figure 4**, clearly indicates that February 2010 was the driest month for the Southeast Asian region. Except for Myanmar, central Thailand and Cambodia, western Sumatra, Jawa as well as part of Sulawesi and Borneo Island, the rest of the region was relatively dry. In March 2010, the dominant positive OLR anomaly around the Philippines and Western Pacific Ocean had subsided and negative anomalies were recorded in the Indonesian and the Indochina region.

Further negative anomalies were seen between 5˚S and 5˚N in April 2010 indicating the strengthening of convective activity and thus ending the dry spell in the region. The distribution of mean monthly OLR anomaly for February-March-April 2010 shows that generally most of the region was relatively dry, except for central Sumatra, western Kalimantan, Java and Sulawesi Islands in Indonesia and northern Indochina.

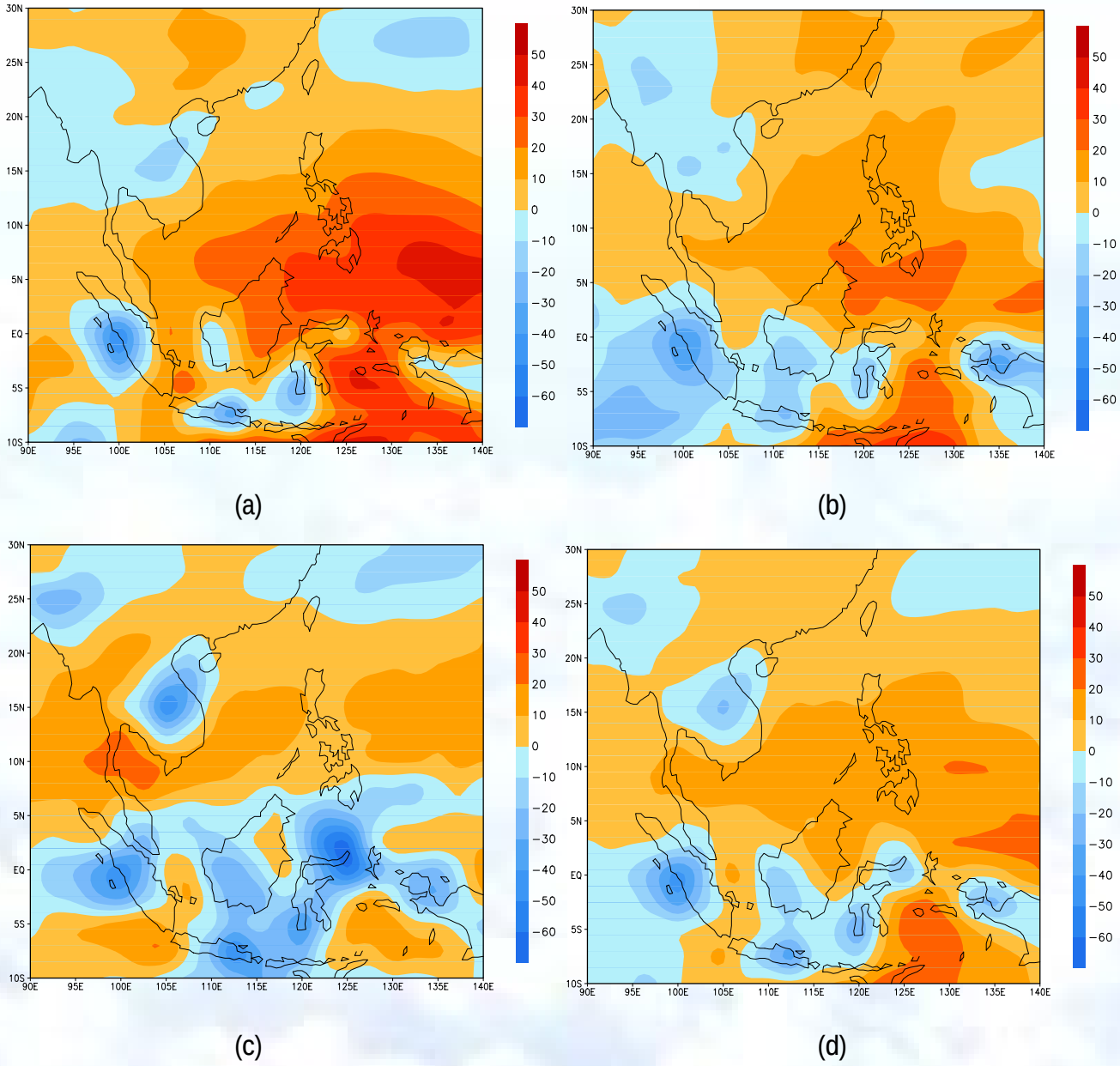


Figure 4 : Distribution of OLR Anomalies (Wm^{-2}) for (a) February 2010, (b) March 2010, (c) April 2010 and, (d) Mean OLR Anomaly for February-March-April 2010

3. Weather Outlook for May-June-July 2010

Based on the rainfall anomaly forecast (Figure 5) for the period May to July 2010 generated by data from ECMWF and CFS seasonal forecast products, central Thailand, southern Laos, northeastern Cambodia and the island of Luzon in the Philippines are expected to experience dry weather conditions. In Myanmar, the central and southern part are expected to be drier while the northern part is forecast for above normal amount of rainfall. As for the Philippines, Luzon is expected to receive below normal amount of rainfall while Mindanao with above normal amount of rainfall during the forecast period. Elsewhere is the Philippines and Indochina it is expected to receive normal amount of rainfall.

As for Malaysia, the southern tip of Peninsular Malaysia, Sabah and Sarawak is expected to receive above normal amount of rainfall and the rest of the areas with normal amount of rainfall. In Indonesia, northwestern Sumatra, more than half of Kalimantan and Sulawesi, Maluku Islands as well as parts of Irian Jaya are expected to receive above normal amount of rainfall whereas the rest of the areas are expected to experience normal weather conditions.

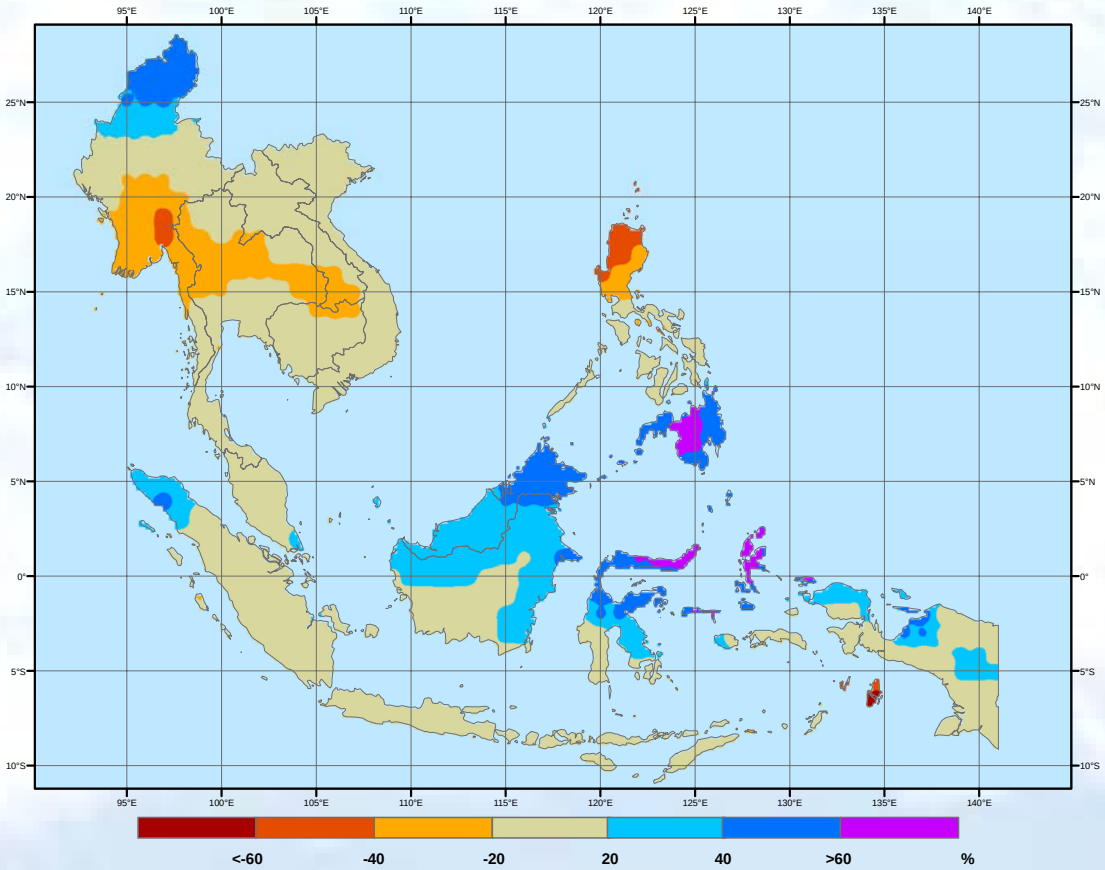


Figure 5 : May-June-July Rainfall Anomaly (%) Forecast