

Seasonal outlook of the East Asian Summer in 2014

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1. Oceanic conditions

Tropical oceanic conditions are the most important signal for the summer outlook in view of its predictability and have effects on variability of Asian summer monsoon which plays a key role in East Asian summer climate.

ENSO neutral conditions have continued during the boreal winter and the first half of spring. However, warm Kelvin waves which were excited by twice strong westerly bursts seen in January and February over the equatorial western Pacific migrated with large amplitude along the equatorial central Pacific in March, and will reach the western coast of South America in the end of April.

The JMA's CGCM predicts that the warm Kelvin waves will continue migrating along the equator and SSTs in the eastern Pacific will increase in the second half of April. It also predicts that the coupling of ocean and atmosphere will start in the first half of the boreal summer. The NINO.3 SST will be near normal during the boreal spring and will transition to above normal in summer. As a result, in summer, although the continuation of ENSO neutral conditions may be possible considering large uncertainties in the model prediction, it is more likely that El Niño conditions will develop.

The area-averaged SST in the tropical western Pacific (NINO.WEST) region was near normal in March. It is likely that the NINO.WEST SST will be near normal or below normal in summer.

2. Outlook for Asian summer monsoon

According to JMA's CGCM forecast, in association with the SST anomaly patterns, convective activity is predicted to be stronger than normal in the equatorial central and eastern Pacific while weaker than normal over the Indian Ocean, the Indian subcontinent and the Maritime continent. These anomaly patterns are consistent with those seen in El Niño conditions and imply that the Asian summer monsoon will be generally weaker than normal. In association with the weak Asian summer monsoon, the Tibetan anti-cyclone will be less developed than normal and the sub-tropical jet stream will shift southward compared to its normal position. These atmospheric conditions suggest cool summer climate in East Asia.

However, it is noteworthy in the result of forecast by JMA's CGCM that convection around the Philippines is predicted to be more enhanced than normal with good prediction skill. The north Pacific High will be dominant over the western Japan and Okinawa by the mechanism of P-J teleconnection pattern. This seems to be a point of discussion for summer climate in the southern part of East Asia.

3. Summary of the summer outlook for Japan

JMA issued the summer outlook on 25th February. It says that mean temperatures are expected to be near normal or below normal, both with a 40% probability, in northern Japan, and to be near normal or above normal, both with a 40% probability, in western Japan. Total precipitation amounts are expected to be near normal or above normal, both with a 40% probability, in northern Japan, and to be near normal and below normal, both with a 40% probability, in western Japan.