

The Twelfth Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon

**JMA, Tokyo, Japan
10-11 November 2011**

Summary

The Twelfth Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon took place in Tokyo from 10-11 November, 2011. More than 30 experts from 15 countries including China, Japan, Mongolia and Republic of Korea attended the meeting.

The meeting summarized outlooks for the coming winter 2011/2012 as follows:

- The La Niña event, which returned in this autumn, will continue during the coming winter. The strength of the La Niña event will be weak or moderate.
- The East Asian winter Monsoon will be near normal or weaker than normal in the northern part of East Asia and near normal or stronger than normal in its central and western parts during the coming winter reflecting the predicted La Niña conditions. However, it should be taken into account uncertainties of the prediction caused by the limited predictability of internal variability of the atmosphere such as the Arctic Oscillation (AO).
- The recent warming trend maybe decreases the interannual cold tendency.

The meeting agreed that exchanging the latest scientific knowledge and views relevant to the Asian monsoon system, such as those on long-term trend, decadal variability, ENSO and internal variability in the atmosphere, as well as predictabilities of these phenomena, would contribute to improving seasonal outlooks related to the Asian Monsoon. It noted that the Joint Meeting would be an ideal occasion for such purposes.

Considering that WMO's Regional Climate Outlook Forum (RCOF) process is similar to the organization of the Joint Meeting, the meeting noted that the Joint Meeting could be recognized as another RCOF in the future. China, Japan, Mongolia and Republic of Korea will make continuous efforts to turn the Joint Meeting into a sub-regional climate outlook forum.

The meeting was pleased to note that Republic of Korea will host the 13th Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon. The time and place will be decided later.

1. Introduction

The 12th Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon was held in Tokyo from 10-11 November, 2011. The Joint Meeting has been hosted by China, Korea, and Japan in turn since 1998. Mongolia joined the Joint Meeting in 2009. This year, invitations were also extended to Bangladesh, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam, which is expected to strengthen regional networking. The meeting was attended by more than 30 experts from the 15 countries.

In session 1, China, Japan and Korea presented their current status and future plans of seasonal forecasting. In session 2, the meeting reviewed recent researches related to the East Asian Monsoon. In session 3, presentations were made on overview of recent climate over East Asia, El Niño/La Niña outlooks, and seasonal outlooks using statistical and dynamical forecast models. In session 4, the meeting discussed the presented outlooks and agreed on its summaries.

In this report, monitoring results and outlook on ENSO is given in section 2, and outlooks for winter 2011/2012 is shown in section 3. In section 4, remarks on seasonal forecasts are summarized. Section 5 includes the agreed plan on the future meetings of the Joint Meeting.

2. Monitoring and Outlook on ENSO

Summary: The La Niña conditions, which returned in this autumn, will continue into the coming winter. The strength of the La Niña conditions will be weak or moderate.

CMA: La Niña conditions came back to the tropical Pacific again in early September 2011, and have gradually enhanced in strength thereafter. Jointly considering most results of ENSO model forecasts, La Niña is expected to strengthen and continue through the Northern Hemisphere winter 2011-12.

KMA: Current weak La Niña condition is continued until the end of 2011 and gradually recovers to neutral.

JMA: In October 2011, La Niña conditions are present in the equatorial Pacific. It is likely that La Niña conditions will decay between winter and spring.

Others:

Summary of ENSO Outlook

	La Niña	Neutral	El Niño
CMA	○		
KMA	○		
JMA	○		

3. Outlook of 2011/2012 Winter Monsoon

Circulation:

Summary: The East Asian winter Monsoon will be near normal or stronger than normal during the coming winter reflecting the predicted La Niña conditions. However, it should be taken into account uncertainties of the prediction caused by the limited predictability of internal variability of the atmosphere such as the AO.

CMA: The correlations between three indices of the East Asian winter monsoon (EAWM) and several related factors (such as SST, La Niña, the SCS summer monsoon, AO, and the Arctic sea Ice) were examined. It seemed that most of factors would support a strong EAWM in 2011/12 winter. BCC's CGCM predicts that the Siberian High and East Asian winter monsoon are stronger than normal.

KMA: The Eurasian snow cover is about to increase recently so that the Siberian High is weaker than normal. The AO is not strong compared to last year and is not significant. The anomalously strong MJO activity over Indian Ocean causes Middle Asia to be warm anomalously. Therefore, the 2011/12 winter monsoon is forecasted to be weaker than normal, and the Korean peninsula to be near/warmer and wetter than normal.

JMA: JMA's CGCM predicts that the Aleutian low is weaker than normal, and the subtropical jet stream shifts southward over Japan in the coming winter. Such predicted circulation features are considered to be forced by SST anomalies in the tropics including the La Niña event which are predictable. Although the CGCM predicted the neutral phase of the Arctic Oscillation (AO), which has severe impact on the EAWM, the spread among each ensemble member is large and the 30 years hindcast shows that the CGCM does not have enough skill to predict the AO. Considering all the above, the EAWM is predicted to be weaker than normal in the northern part of East Asia, and stronger than normal in the southern

part with huge uncertainties.

Others:

Decadal trends and others:

Summary: The recent warming trend maybe decreases the interannual cold tendency.

CMA: Temperatures have turned into the warm period over China in winter since the end of 1970s. The decadal trend tendency maybe decreases the interannual cold tendency.

KMA: Recent decadal trend of winter temperature is near of above normal.

JMA: The tropospheric thickness temperature averaged over the mid-latitudes of the NH, which is positively correlated with temperatures over Japan is predicted to be above normal.

Temperature and Precipitation:

Variables	Temperature	Precipitation
CMA	-: Most China except for Northeast and Southwest China The decadal warming tendency maybe decreases the interannual cold tendency	Less than normal on the whole. More rainfall regions only located over most Inner Mongolia, most Northeast China. Some parts of Southwest China and lower reaches of the Yangtze River.
KMA	0/+: All parts of Korea	+: All parts of Korea
JMA	0+: Northern Japan 0: Eastern and Western Japan 0-: Okinawa/Amami	0+: Pacific side in Northern Japan 0-: Okinawa/Amami 0: Other areas
Mongolia	0/-: Western part of Mongolia 0: Rest of part	0: Southeast and Southwest of Mongolia +: Rest of part

4. Remarks on seasonal forecasts

Cooperation among NMHSs and climate research communities should be maintained or even enhanced to improve accuracy and effective use of seasonal forecasts in East and Southeast Asia.

The interpretation of prognostic products should be based on common scientific understanding of important phenomena, such as the Asian Monsoon, ENSO, the Arctic Oscillation, the Circumglobal Teleconnection (CGT), and climate change including decadal variations, which are considered to have close relationship with climate variability in East Asia. The understanding of meteorological and climatological phenomena should be shared among forecasters, modelers, and scientists who are engaged in seasonal forecasts in the region. The participants appreciated that the joint meeting worked as a fruitful mechanism to foster the common understanding.

The limited predictability should always be taken into consideration when seasonal forecasts are prepared. In this sense, comprehensible verification of seasonal prediction products should be shared among NMHSs in the region.

5. Other issues

- **Host of Joint Meeting for the East Asian Winter Monsoon in 2012**

Republic of Korea will host the 13th Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon. The time and place will be decided later.