The Second Session of the East Asia winter Climate Outlook Forum (EASCOF)
Tokyo, Japan
29 – 31 October 2014

Contents:

Executive summary

The Second Session of the East Asia winter Climate Outlook Forum (EASCOF-2) took place in Tokyo, Japan for the period from 29 to 31 October 2014. Experts from China, Japan, Mongolia and Republic of Korea participating in the Forum discussed outlook for winter 2014/2015 and summarized that the coming East Asian winter monsoon is likely to be weaker than normal.

1. Introduction

According to the agreement at the Thirteenth Session of the Joint Meeting for Seasonal Prediction of the East Asian Winter Monsoon, the East Asia winter Climate Outlook Forum (EASCOF) was established as a WMO sub-regional COF. The first session of EASCOF was held in Mongolia last year (2013) as the successor to the Joint Meeting for Seasonal Prediction of the East Asian Winter Monsoon.

The Second Session of EASCOF (EASCOF-2) was held at the headquarters of the Japan Meteorological Agency in Tokyo, Japan for the period from 29 to 31 October 2014. More than 30 experts from China, Japan, Mongolia and Republic of Korea attended EASCOF-2, sharing recent understanding of phenomena related to seasonal prediction on the East Asian winter monsoon as well as discussing seasonal outlook of the coming winter.

In session1, experts from National Meteorological and Hydrological Services (NMHSs) of the four countries presented current status and future plan of seasonal forecasting service. In session 2, researchers gave lectures about state-of-the-art findings for climate forecasting experts to understand phenomena related to seasonal prediction of the East Asian winter monsoon and their predictability. In session 3, experts from NMHSs and research institutes presented climate variations associated with the East Asian monsoon. Following the review of recent climatic features in East Asia in session 4, including those for summer 2014, seasonal outlooks for winter 2014/2015 were discussed in session 5 and summarized in session 6. In session 7, finally, the management of EASCOF was discussed and future plans were agreed.

2. Review of recent climatic features in East Asia and related climate variations

2.1 Surface climate conditions during summer 2014

General characteristics in East Asia:

In summer (June – August) 2014, three-month mean temperatures were above normal in South China and northeastern China, northern Japan, and were below normal in parts of the eastern China and western Japan. Three-month precipitation amounts were above normal in southern China, northern and western Japan, and were below normal in northern China. Mongolia and Republic of Korea experienced in general near-normal temperature and near-normal precipitation.

During the East Asian rainy season that approximately persists from June to July (called Meiyu in China, Changma in Republic of Korea, and Baiu in Japan), southern China experienced above-normal rainfall, and Republic of Korea and many parts of the main island in Japan experienced below-normal rainfall.

In August 2014, many parts of East Asia experienced unseasonable weather conditions (e.g., cool conditions in Yangtze River valley, cold and wet conditions in Republic of Korea and Japan, dry conditions in northern China and Mongolia) partly due to weaker-than-normal East Asian summer monsoon, which is associated with the southward shift of the subtropical jet stream from its normal position over East Asia and weaker-than-normal northward extension of the Northwest Pacific High.

China:

During summer 2014, mean temperature over China was slightly higher than normal, but lower in Jianghuai region. Extreme events of high temperature were observed in China with higher frequency than normal, while both frequency and intensity were relatively weaker than the summer of 2013. The averaged precipitation over China was a bit less than normal, severe events of drought occurred in parts of northern China.

Japan:

From late July towards late August, Japan experienced above-normal rainfall and below-normal sunshine duration nearly nationwide. Most notably the monthly precipitation for August averaged over the Pacific side of western Japan was the highest since 1946 and exceeded three times as much as its normal.

Mongolia:

During the summer 2014, Mongolia has experienced, in general, near normal summer. However, month to month variation was different, June temperature was 16.1˚C, -0.4˚C below normal almost all over the country, and precipitation was 51.3mm, mainly 155% above normal. July and August temperature were 17.1-19.2˚C, 0.4-0.5˚C above normal and precipitation were 30-33mm, 61-62% below normal except eastern area.

In terms of general circulation, in sea level pressure field, positive anomaly dominates almost all over the country during the summer.

The beginning of last decade of July was comparatively hot as climatology, during that time the soil was relatively humid. It makes the condition favorable to generate convective related extreme events. As a result, on 26th July, during the passage of cold front system over central area of the country, strong multi-cell squall line with Tornado observed over the area. The Tornado was F3 category according to Fujita scale and first ever recorded by camera. However, scale of the area affected by Tornado is small; the economic loss reached 1 trillion tug and it caused 2 fatalities.

Republic of Korea:

Korea experienced near normal temperature (23.6˚C) and near-normal precipitation (599.8mm) during 2014 summer. Notable events over Korea are much less rainfall than normal during Changma period and above normal precipitation in August. The Changma front started late over the central and southern parts of Korea and ended late than normal. The total Changma rainfall was less than half of normal precipitation. In August, temperature was 1.3˚C lower than normal because North Pacific High was less extended toward the Korean Peninsula. The precipitation ratio was 138%, which is above normal. The enhanced precipitation over Korea was caused by frequently meeting with warm and moist southwesterly winds along the flank of the anomalous anticyclone over the western North Pacific and cold air from the north of the Korean Peninsula, and two typhoons.

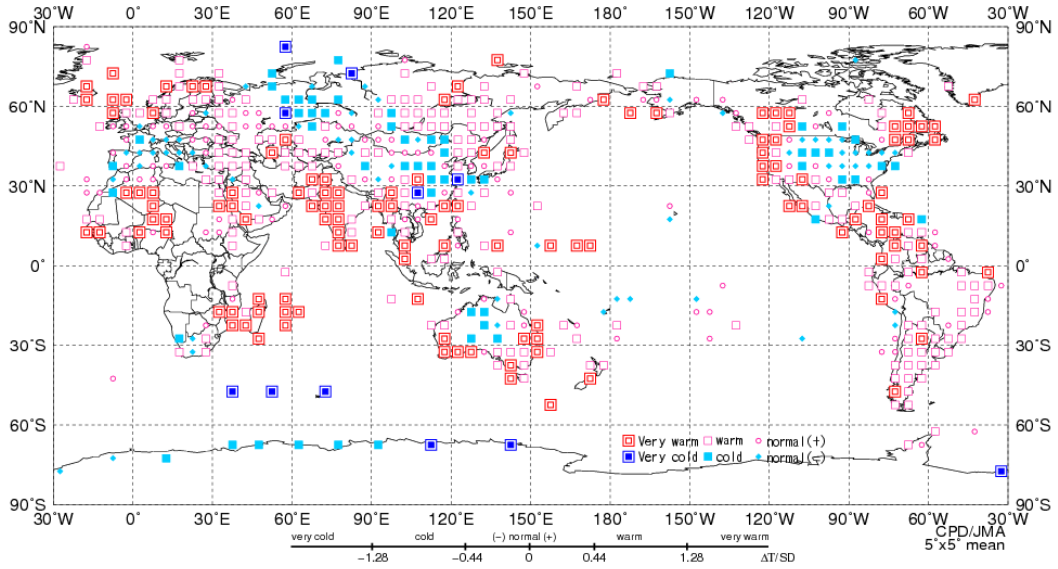

Figure 2.1 Three-month mean temperature anomalies for June – August 2014
Categories are defined by the three-month mean temperature anomaly against the normal divided by its standard deviation and averaged in 5° × 5° grid boxes. The thresholds of each category are -1.28, -0.44, 0, +0.44 and +1.28. The normal values and standard deviations were calculated from 1981 – 2010 statistics. Areas over land without graphical marks are those where observation data are insufficient or where normal data are unavailable.

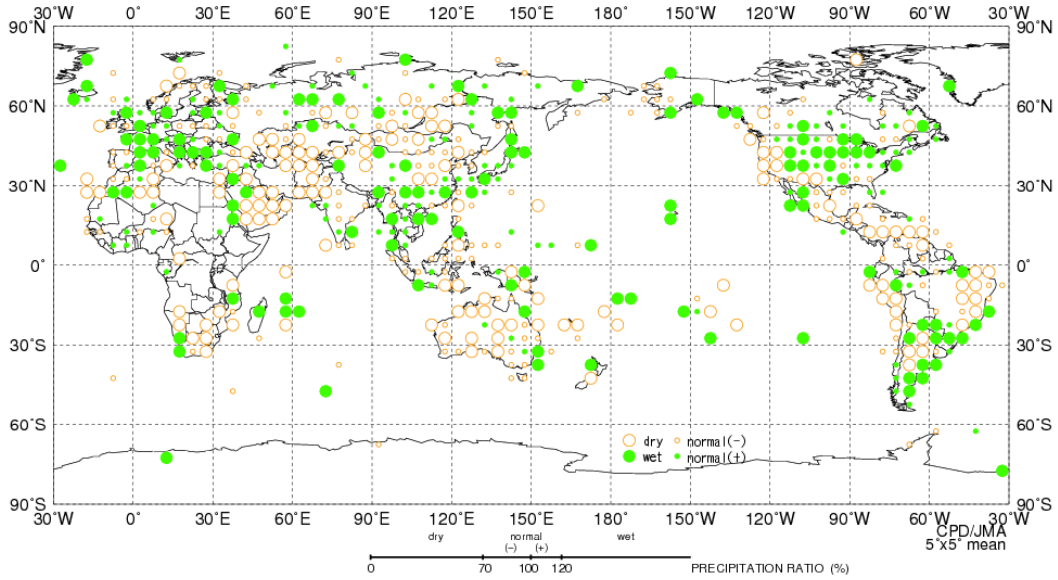

Figure 2.2 Three-month total precipitation amount ratios for June – August 2014
Categories are defined by the three-month precipitation ratio to the normal averaged in 5° × 5° grid boxes. The thresholds of each category are 70%, 100% and 120%. Areas over land without graphical marks are those where observation data are insufficient or where normal data are unavailable.

2.2 Sea surface temperature and atmospheric circulation during summer 2014

Three-month mean sea surface temperatures (SSTs) for summer (June – August) 2014 were above normal in the tropical Pacific except in its southeastern part (Figure 2.3). SSTs were above normal in most of the tropical Indian Ocean.

In the three-month mean 200-hPa velocity potential field, negative (large-scale divergence) anomalies were seen over the Pacific especially its eastern part, and positive (large-scale convergence) anomalies were seen over the area from Africa to the western Indian Ocean (Figure 2.4). Convective activity over the area from India to the Philippines was enhanced in July and suppressed in August, which is partly associated with tropical intraseasonal oscillations.

In association with the weaker-than-normal Tibetan High, the subtropical jet stream flowed southward of its normal position over East Asia. The northward extension of the Pacific High toward East Asia was weaker than normal.

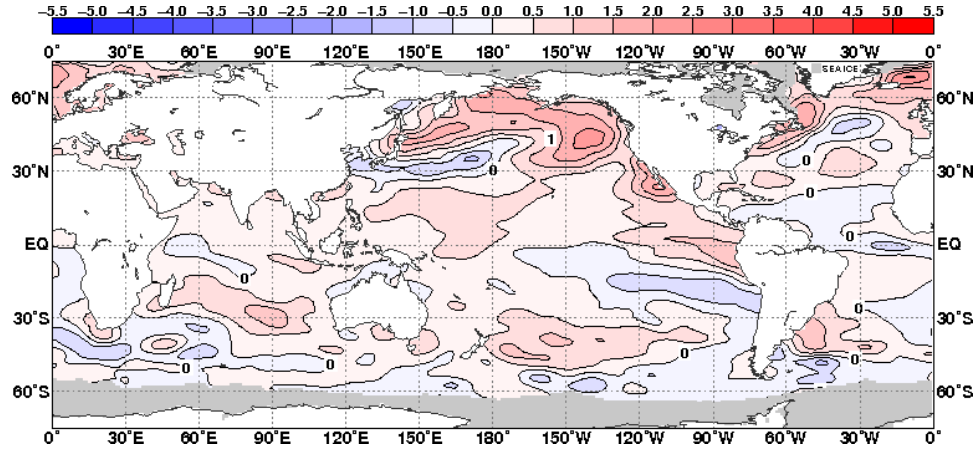

Figure 2.3 Three-month mean sea surface temperature anomalies for June – August 2014
The contour interval is 0.5 degree C. The base period for the normal is 1981 – 2010.

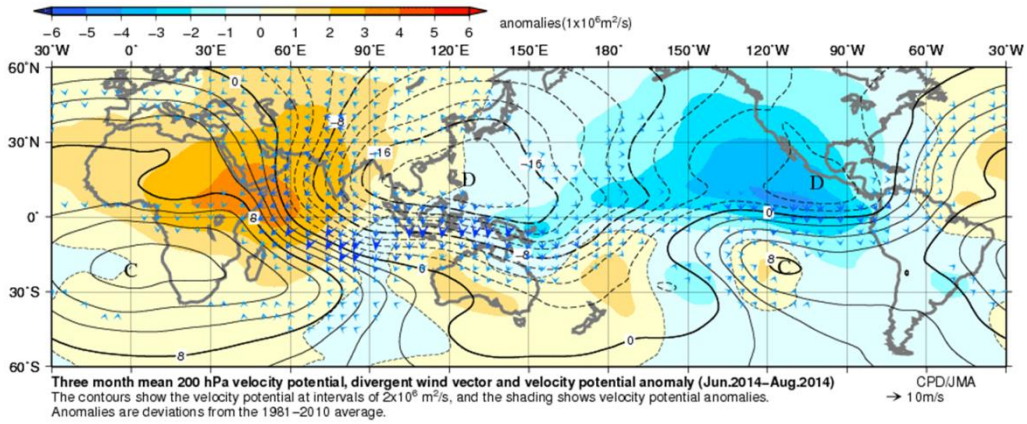

Figure 2.4 Three-month mean 200-hPa velocity potential and anomalies for June – August 2014
The contours show the velocity potential at intervals of 2×10^6 m^2/s, and the shading shows velocity potential anomalies. The base period for the normal is 1981 – 2010.

2.3 Long-term climate variations

Oceanographic and atmospheric conditions

La Niña-like conditions were frequently observed in the last decade.

The sea ice extent in the Arctic Ocean has recently shown a decreasing tendency, of which impact on East Asian winter monsoon through the enhancement of the Siberian High attracted attention of participants in the Forum.

The negative Arctic Oscillation (AO) frequently appeared for the period from late 1950s to late 1980s and after late 1990s. Extreme negative AO was observed in 2009/10 winter. The positive AO frequently appeared during the 1990s.

Surface climate

China:

The annual averaged surface air temperature over China showed a significant upward trend, with distinct decadal fluctuation since the early period of 20th century. With even apparent temperature rising rate for the past half century, the annual averaged temperature over China was consecutively higher than normal after 1997.

Japan:

Since the late 1990s, surface temperature has been higher than normal (near or lower than normal) for summer/autumn (winter/spring) over Japan, indicating enhanced seasonality of temperature in the country.

Mongolia:

In general, annual mean temperature has 0.37^{o}C increasing trend in decade. However, after 2007, slight decreasing trend is observed in summer and winter temperature.

Republic of Korea:

The summer mean temperature in Korea shows an Increasing tendency and autumn mean temperature shows a slightly decreasing tendency over the past 10 years. However, no trend in both summer and autumn precipitation were observed.

3. Current status of and Outlook for ENSO

Summary: Weak El Niño/El Niño-like conditions are predicted during the coming winter 2014/15.

CMA: According to the ENSO monitoring standard (Niño Z index) of BCC, an El Niño event has been developed and will reach its peak in the coming winter.

KMA: The KMA ENSO prediction model predicts that oceanic conditions across the equatorial Pacific Ocean are tending towards weak El Niño conditions (Figure 3.1).

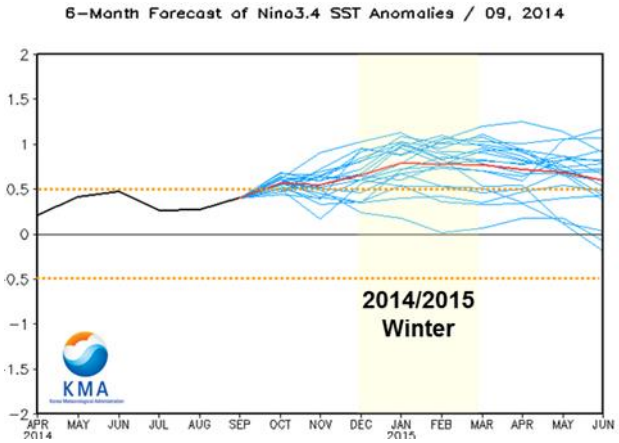

Figure 3.1 SST anomalies in NINO3.4 predicted by the KMA's El Niño prediction model.

JMA: ENSO neutral conditions continued in the equatorial Pacific based on NINO.3 index. The possibility of development of El Niño conditions during the coming winter 2014/15 is comparable to that of continuation of ENSO neutral conditions (Figure 3.2).

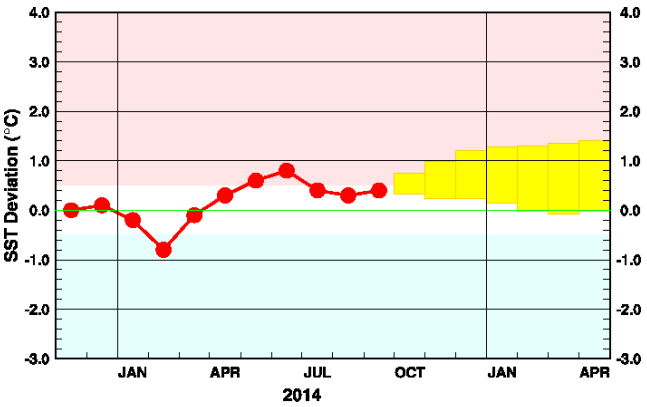

Figure 3.2 Outlook of the SST deviation for NINO.3 by the JMA' El Niño prediction model.

4. Outlook for 2014/2015 winter

Summary: The East Asian winter monsoon is likely to be weaker than normal.

4.1 Atmospheric circulation

CMA:

Based on dynamical models including BCC_CGCM1.0 and BCC_CSM and statistical analyses of possible impacts of the external forcing including the anomalies of global SST, Arctic sea ice area and Eurasia snow cover, it is predicted that the Ural Mountain high and Siberian high will be weaker than normal, and East Asian trough will be shallower, which denote a weaker EAWM in the coming winter. The averaged Arctic Oscillation (AO) index will be slightly negative. The northwestern Pacific subtropical high is likely to be stronger and extend farther westward than normal, and the Indian-Burma trough is likely to be shallower than normal in DJF 2014/2015.

JMA:

Based on a JMA's Seasonal Ensemble Prediction System (EPS), which is based on the coupled atmosphere-ocean general circulation model (CGCM), convective activity is expected to be enhanced around the Pacific dateline region and be suppressed over the area from the Indian Ocean to the Maritime Continent. In association with the suppressed convective activity, the subtropical jet stream is expected to shift southward of its normal position over Eurasia. The Aleutian low is expected to be enhanced in its southeastern part. A positive AO pattern and a weaker-than-normal Siberian High are predicted with low predictability. North-westerly monsoon is expected to be near normal in northern and eastern Japan and to be weaker than normal in western Japan and Okinawa/Amami.

KMA:

ENSO and Arctic sea ice are important external forcings affecting the pressure pattern over the East Asia. The winter climate over Korea is expected to be warmer than normal since KMA ENSO prediction model and others predicts that ENSO could develop during this winter. The Arctic sea ice does not show any distinct signal which might be difficult to lead a strong-negative AO during this winter. In addition, sea ice area over Barents/Kara Sea is in normal condition.

Based on predicted fields from the KMA's Global Seasonal Forecasting System (GloSea5) and the WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME), the Siberian High is expected to be weaker than normal and positive AO pattern is predicted. Therefore, the 2014/15 East Asia winter monsoon is expected to be weaker than normal.

4.2 Temperature and precipitation

Summarized prediction

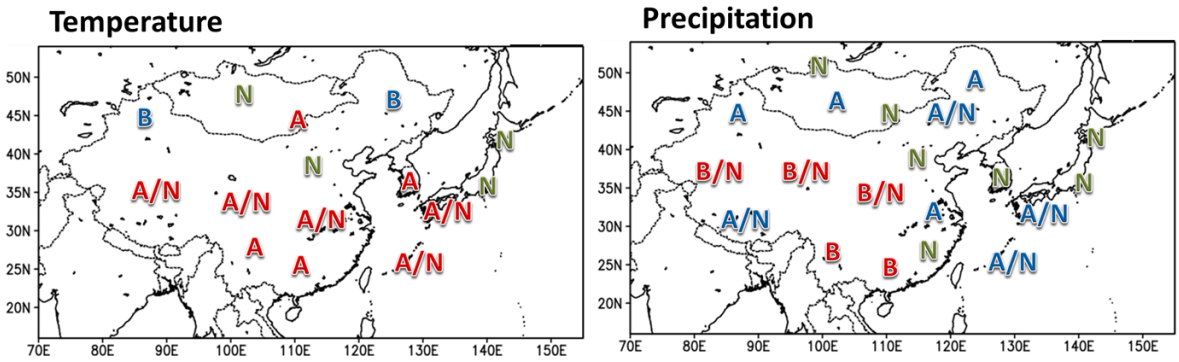

Figure 4.1 Outlooks of temperature (left) and precipitation (right) for winter (December 2014 – February 2015)

A: probability of above-normal category is 50% or more (e.g., above-normal: 50%; normal: 30%; below-normal: 20%), or most likely category is above normal (deterministic forecast).

A/N: probabilities of above-normal and normal categories are both 40% (i.e., above-normal: 40%; normal: 40%; below-normal: 20%), or most likely category is above-normal or normal (deterministic forecast).

N: probability of normal category is 40% or more and above those of the other categories (e.g., above-normal: 30%; normal: 40%; below-normal: 30%), or most likely category is normal (deterministic forecast).

B/N: probabilities of below-normal and normal categories are both 40% (i.e., above-normal: 20%; normal: 40%; below-normal: 40%), or most likely category is below-normal or normal (deterministic forecast).

B: probability of below-normal category is 50% or below (e.g., above-normal: 20%; normal: 30%; below-normal: 50%), or most likely category is below normal (deterministic forecast).

Detailed prediction for respective countries

CMA:

It is predicted that the temperature anomalies over most areas in China will be near or above normal, especially in South China and Southwest China the air temperature departures will be more than 1˚C. But in northeastern China and parts of Northwest China the temperatures will be below normal in DJF 2014/2015.

It is predicted that the precipitation will be near or below normal over most areas in China especially in most Southwest China and western South China, while above normal precipitation is expected in eastern China, northeastern China, northern Xinjiang Province and parts of southern Tibetan Plateau in the coming winter.

JMA:

As a signal from the displacement of tropical convective activity in association with El Niño-like conditions, north-westerly monsoon is expected to be near-normal around northeast Japan and to be weaker than normal around southwestern Japan.

Mean temperatures for cold season (December 2014 – February 2015) are expected to be near- or above-normal, both with 40% probability, in western Japan and Okinawa/Amami and to be near normal in eastern and northern Japan (Figure 4.2).

Precipitation amounts for cold season are expected to be near- or above-normal, both with 40% probability, on the Pacific side of western Japan and Okinawa/Amami and to be near normal over the remaining region (Figure 4.3).

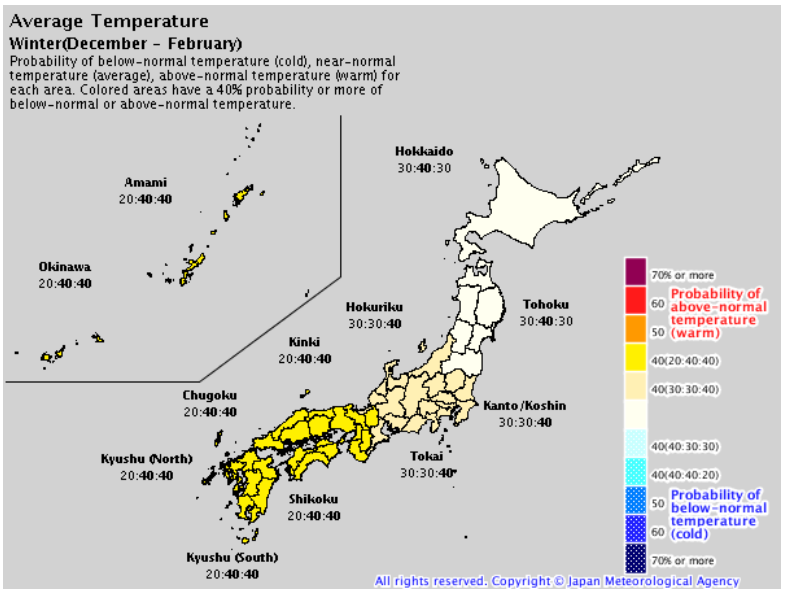

Figure 4.2 Cold season outlook of temperature for December 2014 – February 2015 in Japan

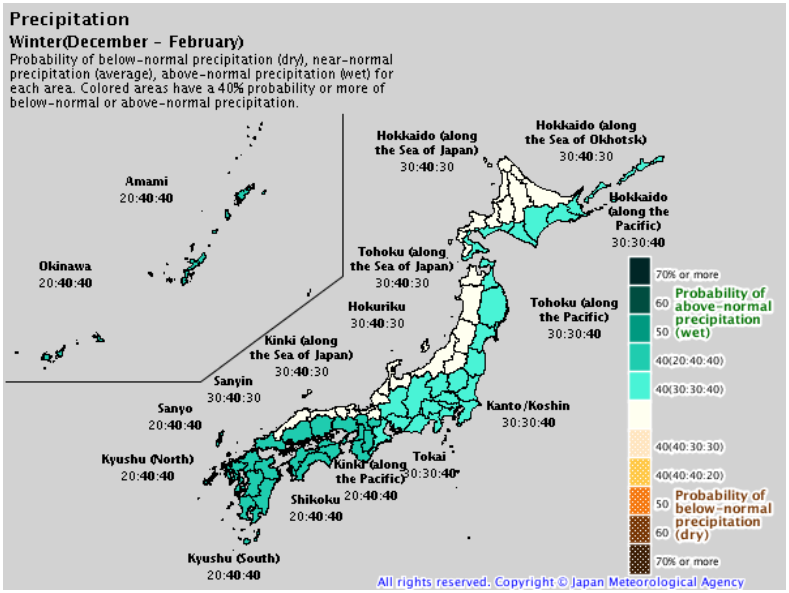

Figure 4.3 Cold season outlook of precipitation for December 2014 – February 2015 in Japan

KMA:

It is expected that temperature is above normal and precipitation is near normal over Korea in the coming winter.

- Probabilities prediction for temperature

Below normal: 20% Near normal: 30% Above normal: 50%

- Probabilities prediction for precipitation

Below normal: 10% Near normal: 60% Above normal: 30%

NAMEM:

Winter temperature is expected to be mostly near normal and precipitation will be above normal almost all over the country.

5. Remarks on seasonal forecasting

Cooperation among NMHSs and climate research communities should be maintained or even enhanced to improve accuracy and effective use of seasonal forecasting in East 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, Arctic sea ice condition, 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 forecasting 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.

6. Other issues

6.1 Proposal for making EASCOF materials available on the internet.

JMA proposed making EASCOF materials available on the internet. Participants from other NMHSs pointed out several issues to be solved, and agreed that this matter would continue to be considered.

6.2 Date and place of the next session

The session was pleased to note that the Republic of Korea would host the Third Session of EASCOF (EASCOF-3) in autumn 2015. The time and place will be decided later.

Annex I

List of Participants

China

Mr Qiang Zhang
Deputy Director-General,
National Climate Center,
China Meteorological Administration
46 Zhongguancun Nandajie, Beijing, 100081
Tel: +86 10 6840 7354
Fax: +86 10 6217 9859
E-mail: zhq62@cma.gov.cn

Mr Cunjie Zhang
Director, Climate Impact Assessment Division,
National Climate Center,
China Meteorological Administration
46 Zhongguancun Nandajie, Beijing, 100081
Tel: +86 10 5899 3328
Fax: +86 10 5899 6975
E-mail: zhangcj@cma.gov.cn

Mr Zongjian Ke
Deputy Director, Climate Prediction Division,
National Climate Center,
China Meteorological Administration
46 Zhongguancun Nandajie, Beijing, 100081
Tel: +86 10 6840 9712
Fax: +86 10 5899 3705
E-mail: kezj@cma.gov.cn

Ms Mingzhu Yang
Senior Forecaster, Climate Prediction Division,
National Climate Center,
China Meteorological Administration
46 Zhongguancun Nandajie, Beijing, 100081
Tel: +86 10 6840 0404
Fax: +86 10 5899 3705
E-mail: yangmz@cma.gov.cn

Mr Pengling Wang
Senior Engineer, Division of Climate System Monitoring, National Climate Center,
China Meteorological Administration
46 Zhongguancun Nandajie, Beijing, 100081
Tel: +86 10 6840 8141
Fax: +86 10 6217 6804
E-mail: wangpl@cma.gov.cn

Republic of Korea

Ms Jeongsun Kim
Chief, LRF team, Climate Prediction Division,
Korea Meteorological Administration
61 16-gil Yeouidaebang-ro Dongjak-gu
Seoul, 156-720
Tel: +82 2 2181 0407
Fax: +82 2 2181 0489
E-mail: jskim@kma.go.kr

Ms So-Young Yim
Chief, Climate monitoring team, Climate Prediction Division,
Korea Meteorological Administration
61 16-gil Yeouidaebang-ro Dongjak-gu
Seoul, 156-720
Tel: +82 2 2181 0474
Fax: +82 2 2181 0489
E-mail: syyim@korea.kr

Ms Eun Mi Kim
Long-range forecaster
Climate Prediction Division,
Korea Meteorological Administration
61 16-gil Yeouidaebang-ro Dongjak-gu
Seoul, 156-720
Tel: +82 2 2181 0480
Fax: +82 2 2181 0489
E-mail: kimem@kma.go.kr

Ms Seong-eun Lee
Long-range forecaster
Climate Prediction Division,
Korea Meteorological Administration
61 16-gil Yeouidaebang-ro Dongjak-gu
Seoul, 156-720
Tel: +82 2 2181 0482
Fax: +82 2 2181 0489
E-mail: 2seun@korea.kr

Mr Hyung Jin Kim
Team Leader, Research Fellow,
Climate Prediction Team
APEC Climate Center
12 Centum 7-ro, Haeundae-gu,
Busan, 612-020
Tel: +82 51 745 3954
Fax: +82 51 745 3999
E-mail: hyungjin@apcc21.org

Ms Yoojin Kim
Research Fellow, Climate Prediction Team,
APEC Climate Center
12 Centum 7-ro, Haeundae-gu,
Busan, 612-020
Tel: +82 51 745 3938
Fax: +82 51 745 3999
E-mail: yoojin.kim@apcc21.org

Mr Baek-Min Kim
Senior Researcher
Climate Change Research Division
Korea Polar Research Institute
28 Songdomirae-ro, Yeonsu-gu,
Incheon, 406-840
Tel: +82 32 760 5308
E-mail: bmkim@kopri.re.kr

Mr Yoo-Geun Ham
Professor,
Chonnam National University
Basic Science Bldg B311, Yongbong-dong,
Buk-gu, Gwangju
Tel: +82 62 530 3461
Fax: +82 62 530 3469
E-mail: ygham@jnu.ac.kr

Mongolia
Ms Oyunjargal Lamjav
Head of Numerical weather prediction section, Institute of Meteorology, Hydrology and Environment (IMHE)
Juulchiny Gudamj -5, Ulaanbaatar-210646,
Tel: +976 99904540
Fax: +976 11 326611
E-mail: o_jargal@hotmail.com

Japan
Dr Masahiro Watanabe
Associate Professor
Atmosphere and Ocean Research Institute (AORI)
University of Tokyo
5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8568
Tel: +81-4-7136-4387
Fax: +81-4-7136-4375
e-mail: hiro@aori.u-tokyo.ac.jp

Dr Tomoaki Ose
Climate Research Department
Meteorological Research Institute/JMA
1-1 Nagamine, Tsukuba-city, Ibaraki 305-0052
Tel: +81-29-853-8600
Fax: +81-29-855-2552
E-mail: tomoaose@mri-jma.go.jp

Dr Hitoshi Mukougawa
Professor
Climate Environment Laboratory,
Disaster Prevention Research Institute,
Kyoto University
Gokasho, Uji, Kyoto 611-0011
Tel: +81-774-38-4155
Fax: +81-774-38-4153
E-mail: mukou@dpac.dpri.kyoto-u.ac.jp

Dr Meiji Honda
Associate Professor
Department of Environmental Science, Faculty of Science,
Niigata University
8050 Ikarashi 2-no-cho, Nishi-Ku, Niigata 950-2181
Tel: +81-25-262-6145
Fax: +81-25-262-6145
E-mail: meiji@env.sc.niigata-u.ac.jp

Japan Meteorological Agency (JMA)
1-3-4 Otemachi, Chiyoda-ku
Tokyo 100-8122
Tel: +81 3 3211 8406
Fax: +81 3 3211 2032
E-mail: tcc@met.kishou.go.jp

Mr Toru Sasaki
Ms Teruko Manabe
Dr Kazutoshi Onogi
Mr Shuhei Maeda
Mr Shotaro Tanaka
Mr Takashi Yamada
Mr Norihisa Fujikawa
Mr Hiroshi Takahashi
Mr Atsushi Minami
Mr Chihiro Matsukawa
Mr Ichiro Ishikawa
Mr Masayuki Hirai
Mr Kengo Miyaoka
Mr Motoaki Takekawa
Mr Shoichiro Miyawaki
Mr Yusuke Urabe
Mr Yoshinori Oikawa
Mr Yutaro Kubo
Mr Atsushi Goto
Mr Yasushi Mochizuki

Annex II

Agenda

Wednesday, 29 October

Opening session:
09:45 – 10:05

- Welcome Address (Dr. Tatsuo YOKOYAMA, Director-General of Global Environment and Marine Department, JMA)
- Self-Introduction
- Group Photo

10:05 – 10:15 Coffee Break

Session 1: Current Status and Future Plan of Seasonal Forecasting Service *(Chair: Dr. Kazutoshi ONOGI, JMA)*
10:15 – 12:20

- Seasonal Climate Prediction Operation in Beijing Climate Center (Dr. Zongjian KE, BCC/CMA) 25min
- Case in JMA (Mr. Shuhei MAEDA, JMA) 25min
- LRF Services in KMA (Ms. Jeongsun KIM, KMA) 25min
- Development of Seasonal forecasting service in Mongolia (Ms. Oyunjargal LAMJAV, NAMEM) 25min
- JMA's New Seasonal Prediction System: JMA/MRI-CGCM2 (Mr. Chihiro MATSUKAWA, JMA) 25min

12:20 – 13:40 Lunch

Session 1 (cont.): *(Chair: Mr. Takashi YAMADA, JMA)*
13:40 – 15:25

- Seasonal predictability of tropical cyclone formation by the JMA/MRI-CGCM (Mr. Yutaro KUBO, JMA) 25min
- Subseasonal predictability in negative phases of the Arctic Oscillation (Mr. Atsushi MINAMI, JMA) 30min
- The JRA-55 Reanalysis: General specifications and basic characteristics (Dr. Kazutoshi ONOGI, JMA) 25min
- JMA's contribution to improving Climate Risk Management (Mr. Shoichiro MIYAWAKI, JMA) 25min

Session 2: Understanding of phenomena related to seasonal prediction of the East Asian Winter Monsoon and their predictability *(Chair: Mr. Shuhei MAEDA, JMA)*

15:25 – 16:00

- Global warming hiatus: its mechanisms and role of internal decadal variability (Dr. Masahiro WATANABE, University of Tokyo) 35min

16:00 – 16:20 Coffee break

Session 2 (cont.): *(Chair: Mr. Shuhei MAEDA, JMA)*

16:20 – 18:05

- Roles of the Planetary Wave Reflection in the Stratosphere-Troposphere Dynamical Coupling (Dr. Hitoshi MUKOUGAWA, Kyoto University) 35min
- Various ENSOs and East Asian winter monsoon (Dr. Tomoaki OSE, MRI/JMA) 35min
- Arctic Sea Ice and East Asian winter monsoon (Dr. Meiji HONDA, Niigata University) 35min

18:30 – 20:00 Reception at the KKR Hotel Tokyo

Thursday, 30 October

Session 3: Climate variations associated with the East Asian monsoon: *(Chair: Ms. Jeongsun KIM, KMA)*

09:15 – 10:30

- The relationship between Japan's recent temperature and decadal variability (Mr. Yusuke URABE, JMA) 25min
- Statistical relationship between ENSO and East Asian climate (Mr. Motoaki TAKEKAWA, JMA) 25min
- The Characteristics of North China drought in the summer 2014 and its relationship with the East Asian monsoon (Mr. Cunjie ZHANG, BCC/ CMA) 25min

10:30 – 10:50 Coffee break

Session 3 (cont.): *(Chair: Ms. So-Young YIM, KMA)*

10:50 – 12:30

- A review on the dynamic factors controlling east Asia winter monsoon (Dr. Baek-Min KIM, KOPRI) 25min
- Climate variation of AO and its impact on East Asia (Mr. Kengo MIYAOKA, JMA) 25min
- Relationship between AO, NAO and EAWM index and climate of Mongolia (Ms. Oyunjargal LAMJAV , NAMEM) 25min
- Improvement in simulation of Eurasian winter climate variability with a realistic Arctic sea ice condition in an atmospheric GCM (Prof. Yoo-Geun HAM, Chonnam National University)

12:30 – 13:50 Lunch

Session 4: Review of recent climatic features in East Asia: *(Chair: Mr. Cunjie ZHANG, CMA)*

13:50 – 15:05

- Characteristics of 2014 Summer over Korea (Ms. So-Young YIM, KMA) 25min
- Characteristics of East Asian summer monsoon 2014 (Mr. Yoshinori OIKAWA, JMA) 25min
- An Overview of Climate Characteristics of 2014 Summer over China (Mr. Pengling WANG, BCC/CMA) 25min

15:05 – 15:25 Coffee break

Session 5: Seasonal outlook for winter 2014/15 *(Chair: Mr. Norihisa FUJIKAWA, JMA)*

15:25 – 17:30

- ENSO outlook (Mr. Ichiro Ishikawa, JMA) 20min
- Seasonal Outlook of the Climate in 2014/2015 Winter over China (Ms. Mingzhu YANG, BCC/CMA) 20min
- Cold Season Outlook for Winter 2014/2015 over Japan (Mr. Masayuki HIRAI, JMA) 20min
- Climate Outlook for 2014/15 Winter over Korea (Ms. Seongeun LEE, KMA) 20min
- Recent climate feature and seasonal outlook for winter 2014/15 in Mongolia (Ms. Oyunjargal LAMJAV, NAMEM) 25min
- APCC Climate Prediction for Winter 2014/2015 (Ms. Yoojin KIM, APCC) 20min

<u>Friday, 31 October</u>

Session 6: Discussion and summary of the winter outlook *(Chair: Mr. Shotaro TANAKA, JMA)*

09:30 – 10:30 Discussion and summary

Session 7: Discussion on the management of EASCOF *(Chair: Ms. Teruko MANABE, JMA)*

10:30 – 11:00 Discussion

Closing session

11:00 – 11:15