Current status of operations of [RCC/RCC-Network]

SUN Yuan
Beijing Climate Center, CMA

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

WMO OMM
World Meteorological Organization
Organisation météorologique mondiale

WMO International Workshop on Global Review of RCC Operations, Pune, India, 12 – 14 November 2018

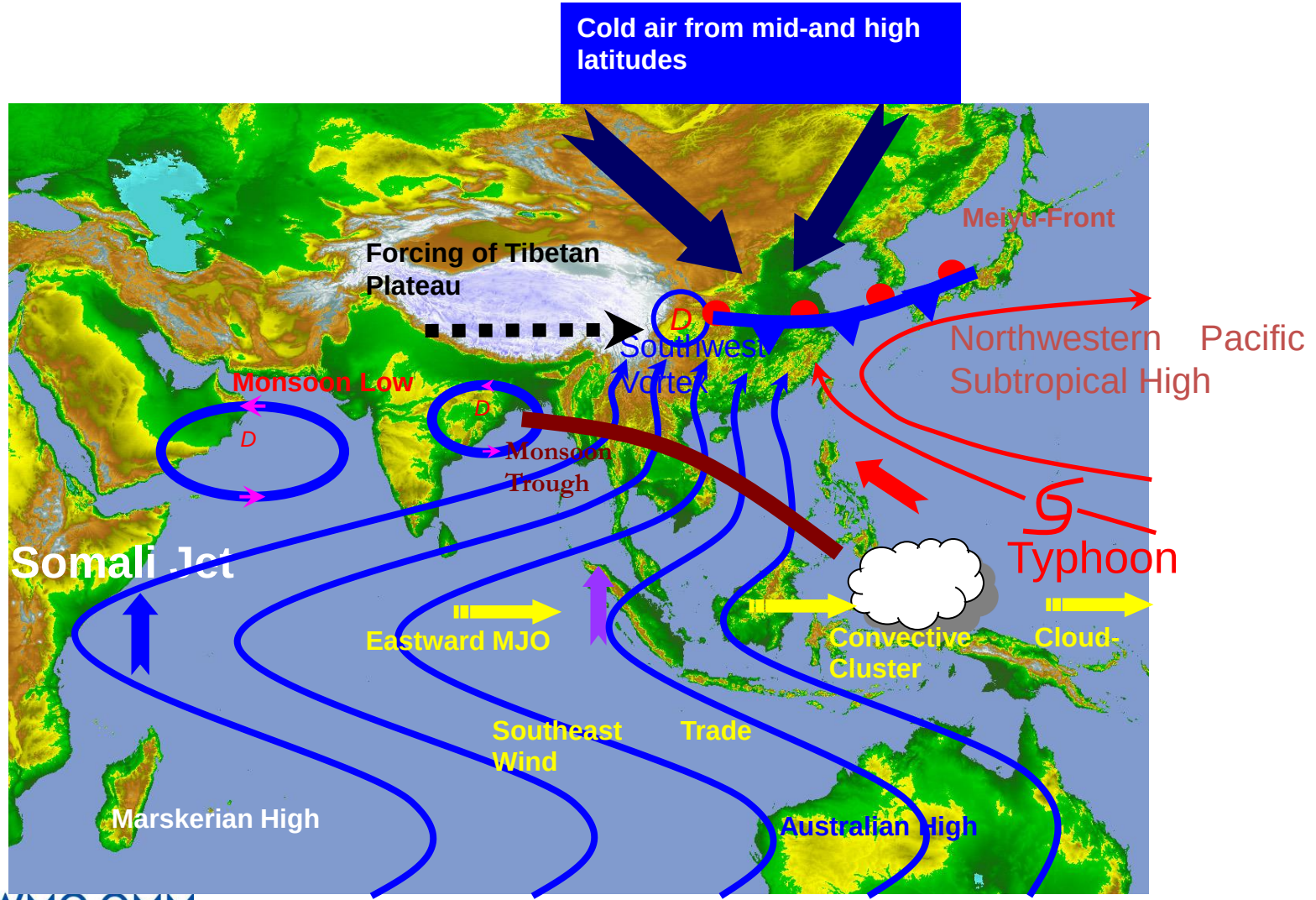
Background

Beijing Climate Center (BCC) was established in 2003, based on the National Climate Center of China Meteorological Administration, to better perform its functions as a WMO Regional Climate Centre (RCC).

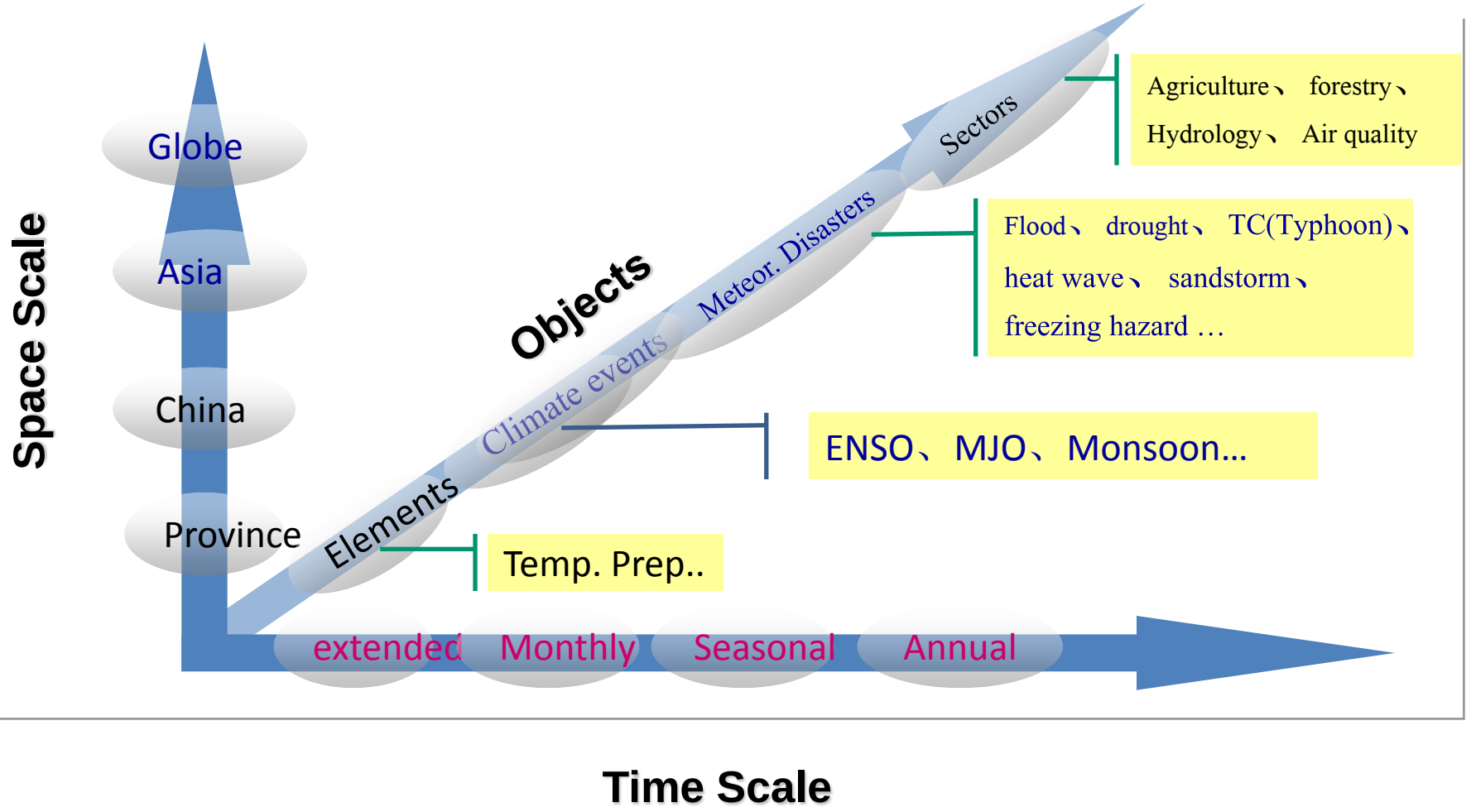
BCC was designated as a WMO RCC in RA II (Asia) at EC-LXI in June 2009. BCC has the obligations to deliver climate service for neighboring and surrounding countries in Asia and international climate community.

Based on its Climate System Model, BCC provides climate prediction products at monthly, seasonal and inter-annual time scales, particularly over East Asia, well fulfills its function as a WMO RCC and a WMO GPC.

East Asian Summer Monsoon Systems



Climate Prediction



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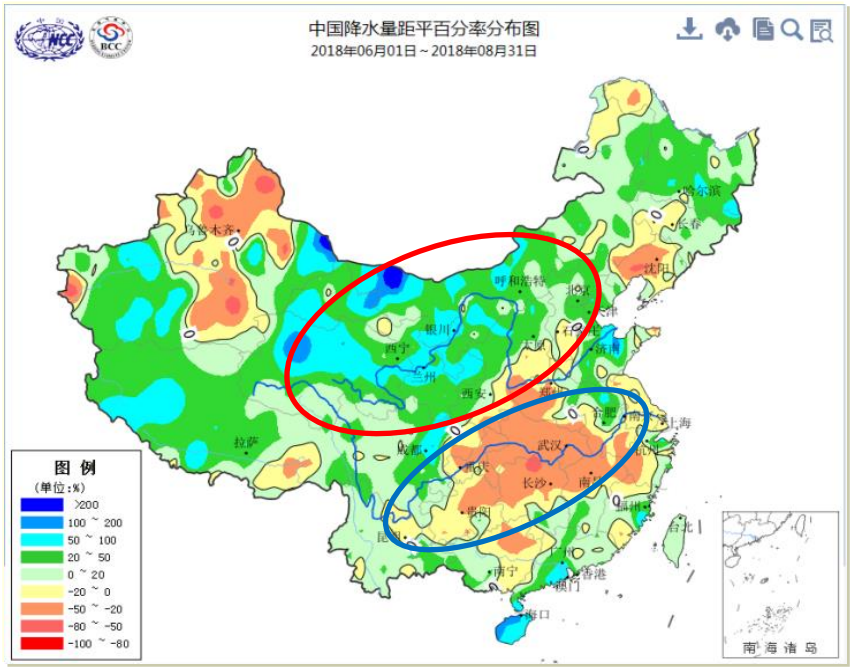
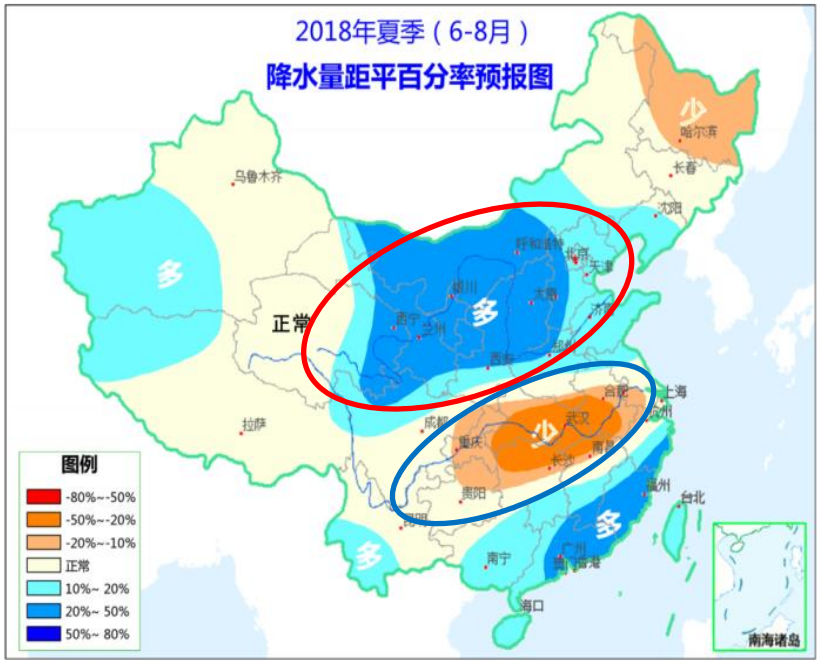
Climate Prediction

Real time seasonal prediction. Start Predicting time: Mar. 2018

Observation (JJA 2018)



Prediction (JJA 2018)



Total prediction results: PS:77， ACC:0.25

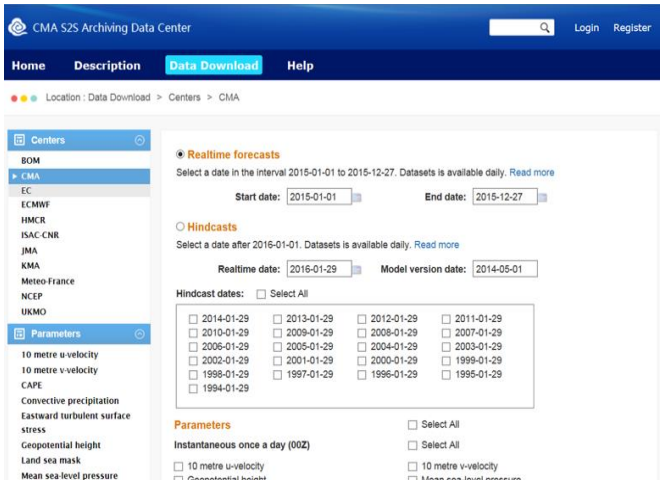
Successful prediction：the overall precipitation pattern, less precipitation in the Yangtze River and much precipitation in North China.

RCC Operations: Mandatory Functions

1. Operational Data Services

According to mandatory functions, BCC delivers data and products of climate monitoring and monthly to seasonal forecasts to NMHSs through its website.

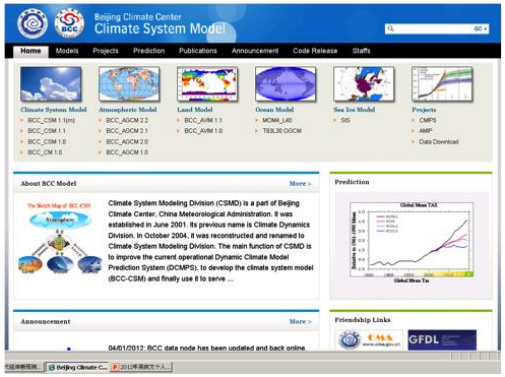
http://bcc.ncc-cma.net



- Products Dissemination
  - Graphical products disseminated freely at BCC website:
    - http://cmdp.ncc-cma.net/pred/en_md.php for ERF
    - http://cmdp.ncc-cma.net/pred/en_cs.php for LRF
  - Digital data (seasonal forecast and hindcast) download on request at:
    - http://cmdp.ncc-cma.net/nccdownload/en_cgcm.php for registered user
  - Digital forecast and hindcast outputs also sent to WMOLC-LRFMME routinely

- There are a large amount of S2S data to provide users to do research on MJO, extreme events, and etc. Using the released CMA S2S re-forecast data, the present version of BCC S2S model has low MJO forecast skill (~16 days).

http://bcc.ncc-cma.net/bcccsm/htm/



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- the Second Annual Meeting of the Atmospheric Circulation Reconstructions over the Earth (ACRE) Initiative – China, a co-sponsored project by Chinese and UK experts, was held in Hong Kong, China, 2 March 2017

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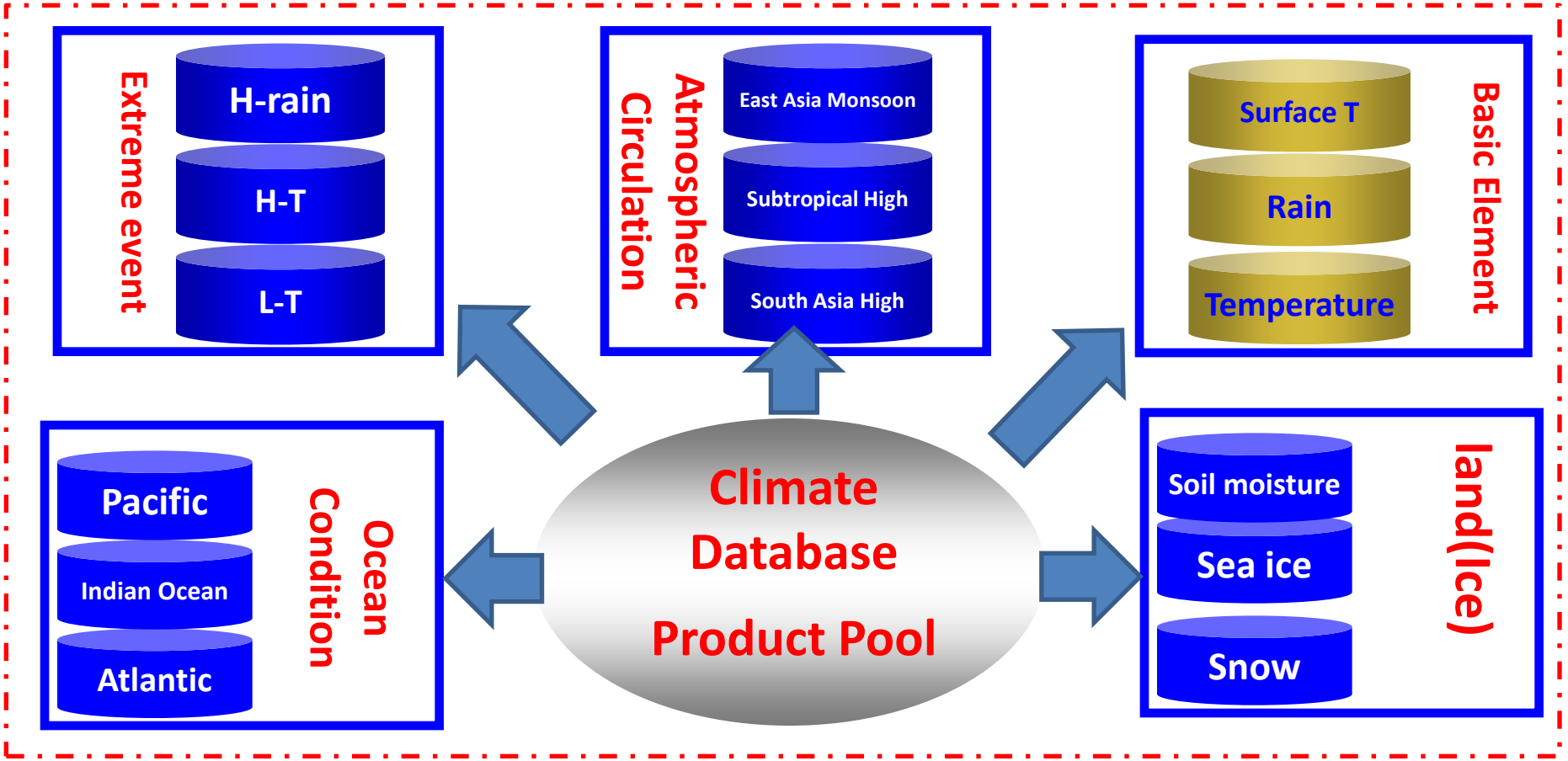
RCC Operations: Mandatory Functions
2. Climate Monitoring

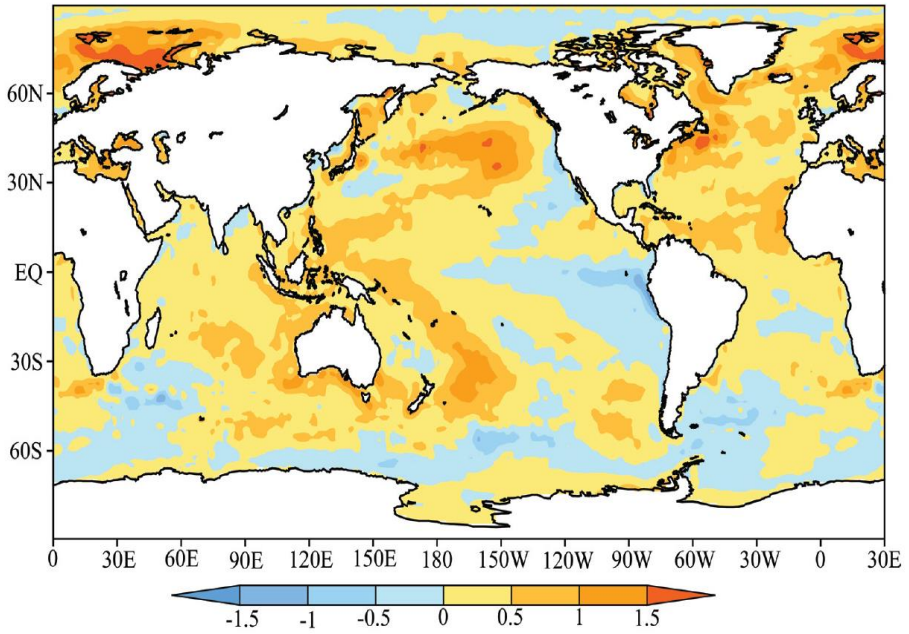


Monitoring of current conditions in the outlook;
Climate data is available for the sub-region of interest at extend-range, monthly and seasonal scales.

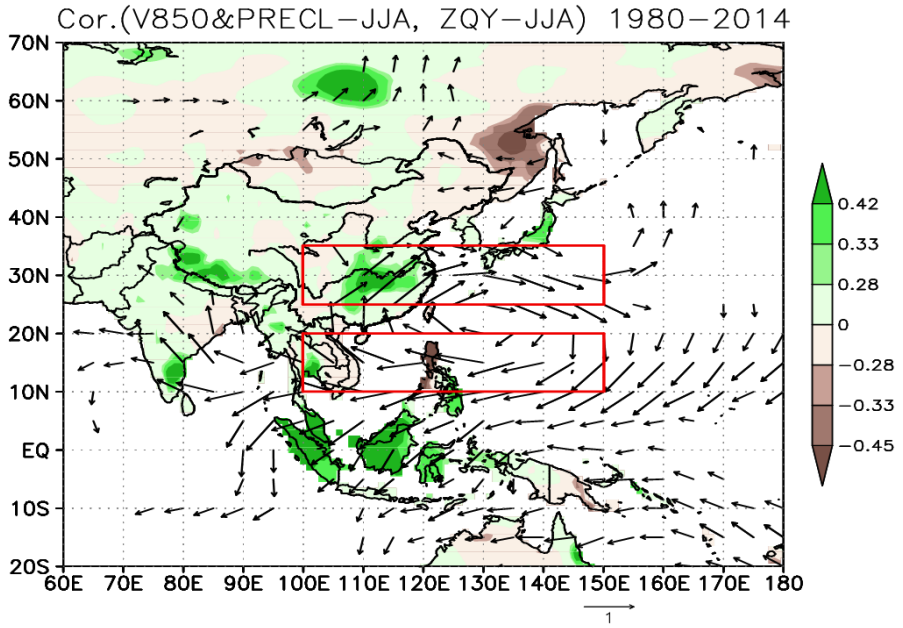
RCC Operations: Mandatory Functions
3. Long Range Forecasting

1) ENSO Outlook
2) Indian Ocean SST Outlook
3) EASM Outlook
4) Precipitation and Temperature Outlook
5) Tropical Cyclones Outlook

SST Anomalies

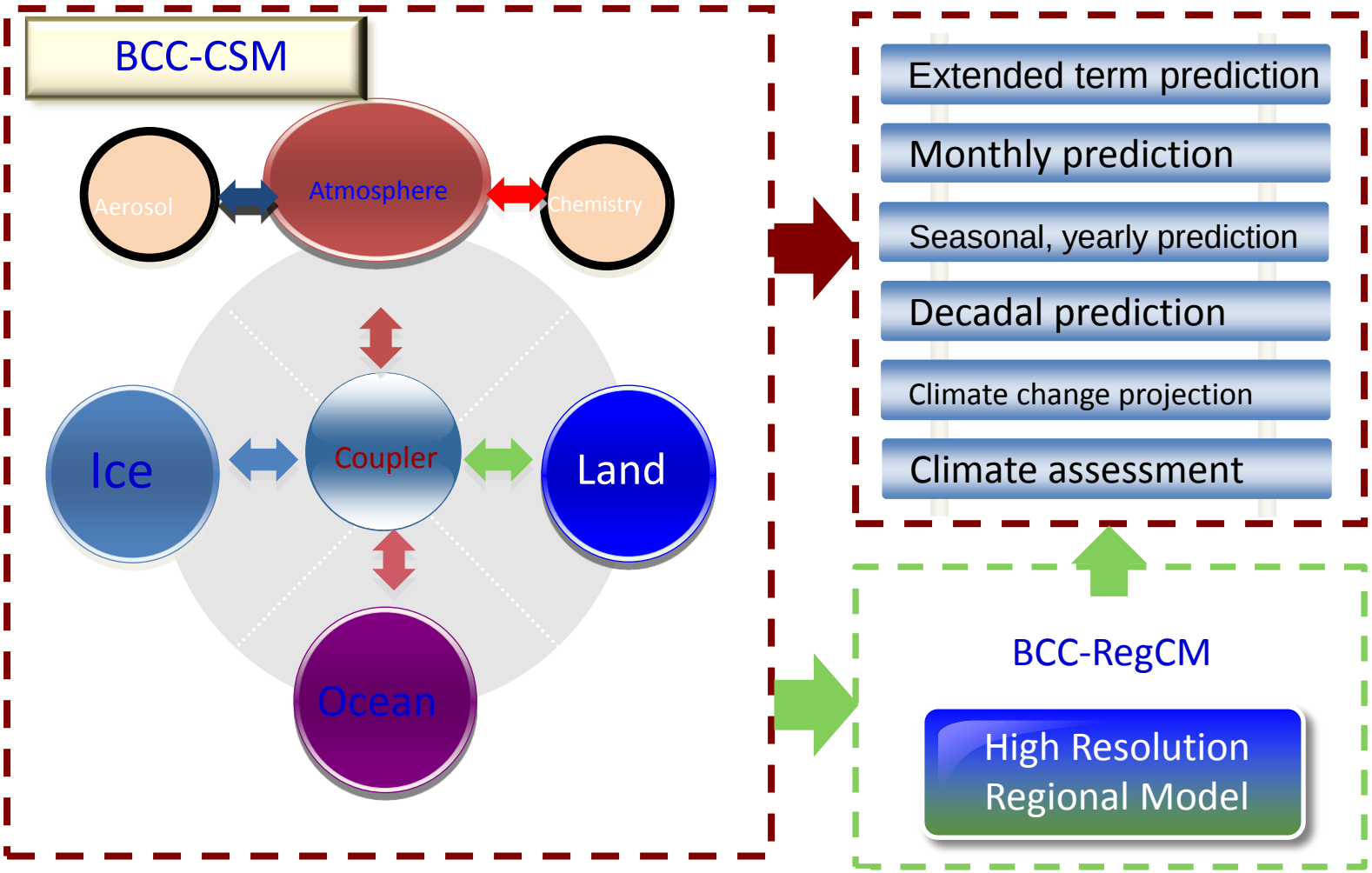


EASM System Anomalies



BCC EASMI=U850(10-20N, 100-150E)-U850(25-35N,100-150E)

Climate Prediction Model System



Improve physical process and model resolution

RCC Operations: Mandatory Functions

4. Training/Guidance in the use of RCC products

- To enhance existing capabilities to provide climate services more effectively by establishing the mechanism and workflow in the areas such as improving the data sharing and collaborative products releasing, deepening the cooperation and exchange between different sectors, strengthening cooperative R&D activities and joint training, and optimizing the operational service system and distribution.

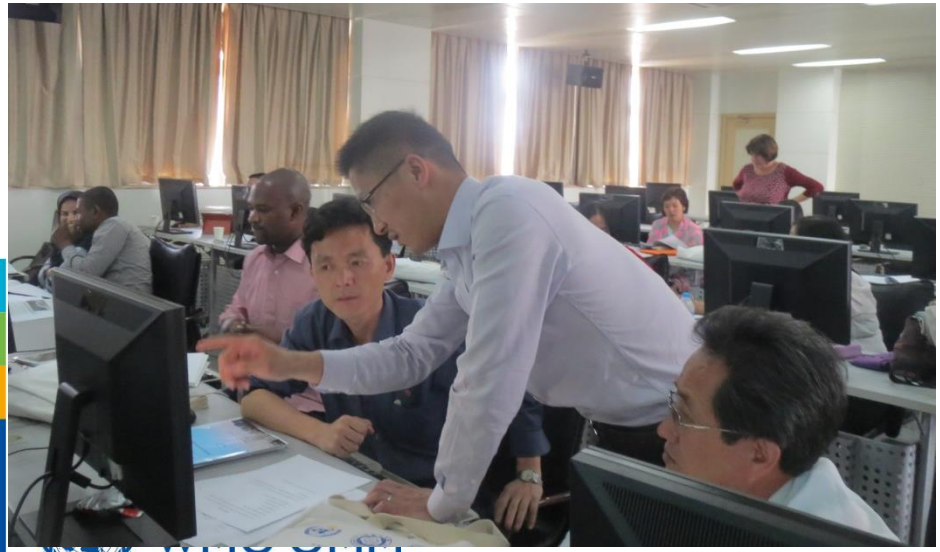
- International Seminar on Climate System and Climate Change (ISCS)
- International Training Seminar on Methods for Short-term Climate Prediction
- International training workshop for climate service
- Training and International Visiting Scholar Program

Climate Prediction Tool Training

International Training Course on Global Framework for Climate Services 2015 - 2018

Since 2015 The FODAS has been introduced to the international students participating the GFCS training course from more 30 countries, i.e., Thailand, Bhutan, Mongolia, North Korea, Africa etc.

More than 10 countries are studying the use of this tool for their operational work.



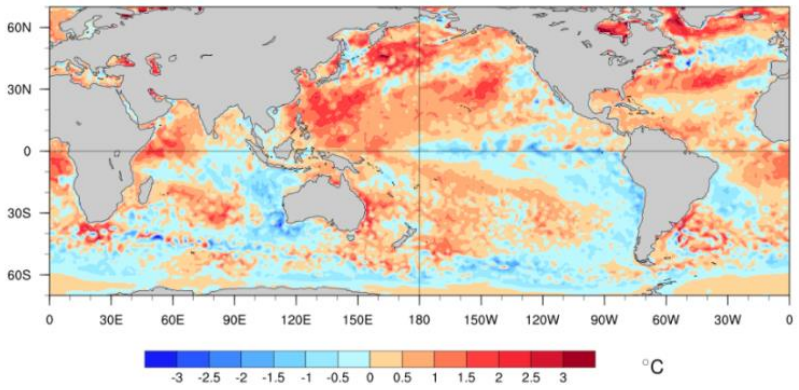
RCC Operations: Highly Recommended Functions

[Briefly describe performance of highly recommended functions, if any:

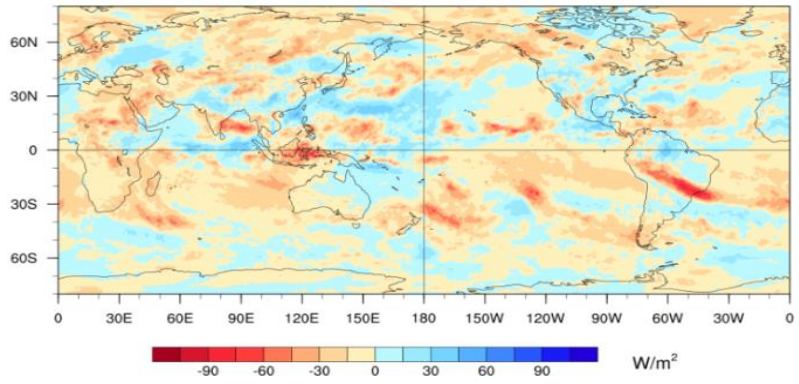
- *Non-operational data services (including WIS compliance);*
- *Additional climate variables;*
- *Climate prediction (other than LRF);*
- *Climate change projection;*
- *Regional coordination/collaboration (including project implementation);*
- *Training/capacity development;*
- *Research and Development;*
- *Use of Climate Services Toolkit;*
- *Major constraints, if any]*

ENSO Monitoring and Forecast System

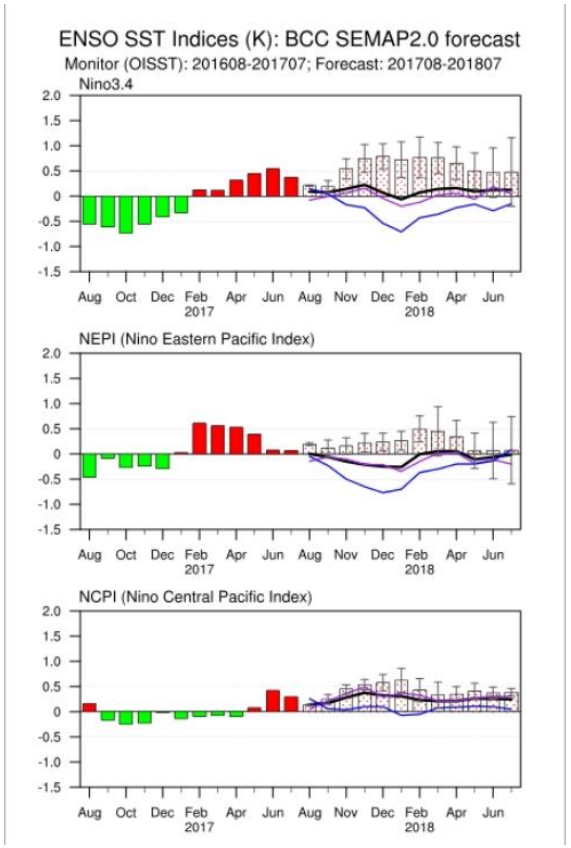
Global SST Monitoring



Satellite based SST Mentoring



BCC_CSM based ENSO Forecast System



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Role in RCOF Activities

The Forum on Regional Climate Monitoring-Assessment-Prediction for Regional Association II (RAII)

2005

2018

Since 2005, 14 times of Forum on Regional Climate Monitoring-Assessment-Prediction for Asia have been hosted by BBC, which makes it a very important and effective platform for products distribution and communication of climate prediction.

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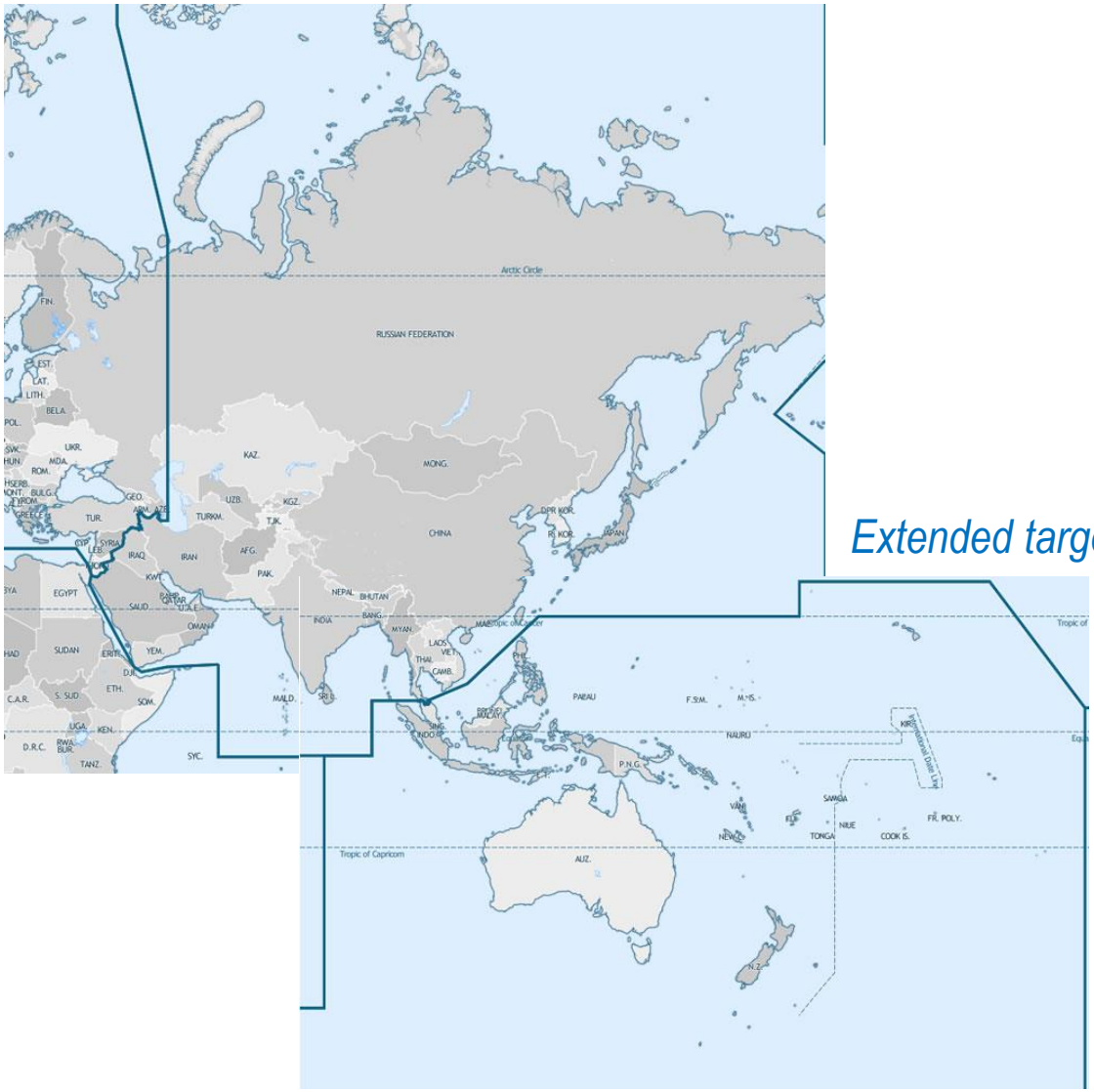
Original target region:

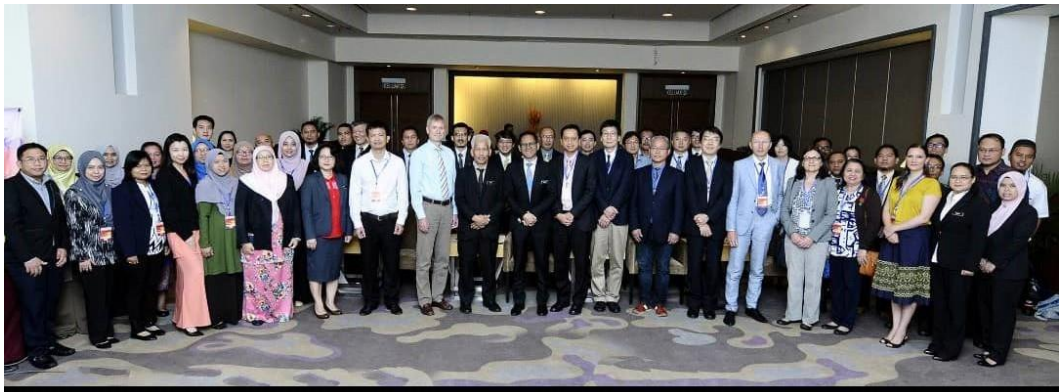


Extended target region:

FOCAII frequency, Once a year

Sources of funding, Regular International Cooperation Fund of CMA

ASEANCOF, EASCOF, SASCOF, NEACOF



Eleventh ASEAN Climate Outlook Forum and WMO SEMDP
Workshop & Steering Group Meeting
29 October - 2 November 2018
Kuala Lumpur, Malaysia

Major constraints: Visa problems

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User Engagement

Potential applications of seasonal outlooks

Agriculture and food security

In an era of rapid population growth, food security remains a major concern. Agriculture is vulnerable not only to market fluctuations but also to climate variability and climate change and

Disaster risk reduction

Most natural hazards are caused by weather and climate. This exemplar illustrates how user-friendly climate services can help countries and communities build greater resilience

Energy

Energy systems are the engine of economic and social development. Energy generation and planning of operations are markedly affected by meteorological events and energy systems

Health

Climate variability and climate change have important repercussions on public health. Temperature and rainfall conditions influence the spread of communicable diseases

Water

Water is vital for life, but an over or under supply can threaten life, societies and economies. The amount and availability of water is strongly influenced by climate variability and

National Climatic Indication for Ecological Economy

Assessment Process of National Climatic Indication

National Climatic Indication refers to the general term of high-quality climate condition, aiming to promote the development of ecological economy by exploiting climate resources based on the local climate characteristics. So far 16 counties or cities have been awarded the " National Climatic Indication ", witnessing an enhancement in local popularity and an increase in the number of tourists and vacationers, and contributing to green economy.


A'er Mountain (Inner Mongolia)


Jiande (Zhejiang))

RCC Web Portal

ICANN

顶级国际域名证书

Certification of Global Top Level Domain Name

域名 rccra2.org 已由 ncc 注册，并已在国际顶级域名数据库中记录。

This is to certify that the domain name rccra2.org has been registered by ncc .And the registration has been put on records in the database of gTLD(Generic Top Level Domain) and ccTLD(Country Code Top Level Domain).

域名：rccra2.org
域名所有者：ncc
Registrant：ncc
域名所属注册机构：HICHINA ZHICHENG TECHNOLOGY LTD.
域名注册日期：2005-12-28
域名到期日期：2015-12-28

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Regional Climate Centers in WMO RA II

Top | RCC Beijing | RCC Moscow | RCC Tokyo

About RCC RAII

WMO Regional Climate Centers (RCCs) are centres of excellence that create regional products including long-range forecasts that support regional and national climate activities, and thereby strengthen the capacity of WMO Members in a given region to deliver better climate services to national users.

In RA II, the Beijing Climate Center (BCC), China, and the Tokyo Climate Center (TCC), Japan were designated as RCC Beijing and RCC Tokyo, respectively, in 2009. The North Eurasian Climate Center (NEACC), Russian Federation, was designated as a new RCC (RCC Moscow) in 2013. India began a demonstration phase in May 2013. Iran and Saudi Arabia have intention to become RCC.

Links to NMHSs in RA II

Afghanistan Bahrain Bangladesh Bhutan China Democratic People's Republic of Korea Hong Kong, China India Iran, Islamic Republic of Iraq Japan Kazakhstan Kuwait Kyrgyzstan Lao People's Democratic Republic Macao, China Maldives Mongolia Myanmar Nepal Oman Pakistan Qatar Republic of Korea Republic of Yemen Russian Federation Saudi Arabia Sri Lanka Thailand United Arab Emirates Uzbekistan Viet Nam

Information on relevant meetings, workshops and training seminars/courses

15-17 November 2017
Ninth Session Of The ASEAN Climate Outlook Forum (ASEANCOF-9)

14-16 November 2017
The thirteenth session of North Eurasia Climate Outlook Forum (NEACOF-13)

8-10 November 2017
The Fifth Session of the East Asia winter Climate Outlook Forum (EASCOF-5)

25-27 September 2017
11th Session of the South Asian Climate Outlook Forum (SASCOF-11)

SWOT analysis

Strength:

The platform has been established and operated as a routin work;

Continue support and instruction from WMO Secertariat

Weakness:

Lacks of cooperations among RCCs;

Lacks of a common platform to collect feedback from countries in the region;

Lacks of practice to transform climate outlook to climate services.

Way Forward

More Cooperations with other RCCs.

More interactions with RAII countries.

Make engagement with users to transform prediction to services.

Meeting of the Working Group on Climate Services of WMO RA II to be held from 10-12 December 2018 in Beijing, China

Implementation Planning Meeting of the Third Pole RCC-Networking to be held from 13-14 December 2018 in Beijing, China

The 15th FOCRAII will be held in early May 2019 in Beijing, China

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TEMPS CLIMAT EAU

Thank you
Merci

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http://bcc.ncc-cma.net/

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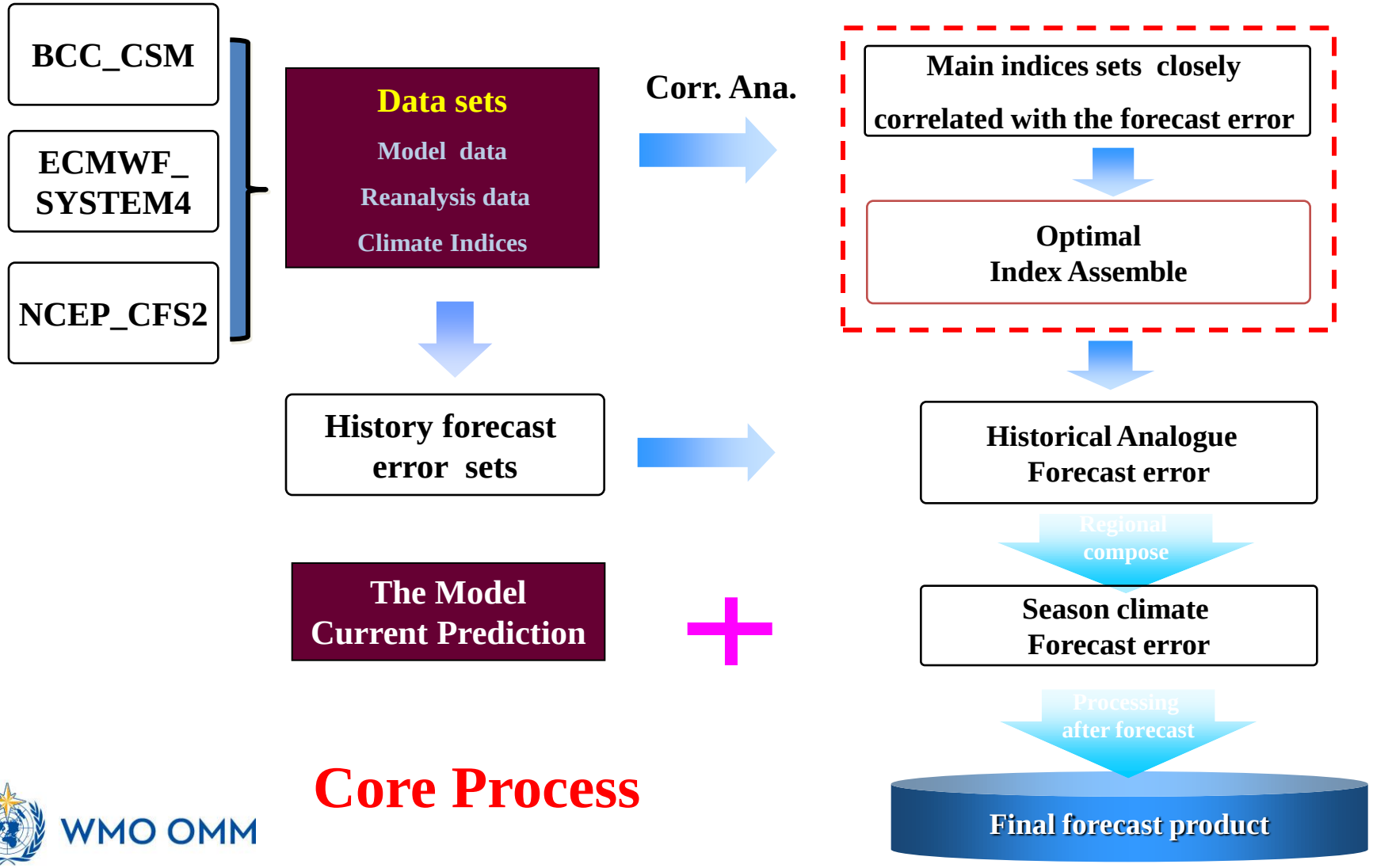
CSSP-China Progresses

Since 2014, CMA and UKMO have established and strengthened the strategic partnership between the scientists from the two countries. Focusing on research and innovation, based on a solid scientific basis, the project supports the climate service development to meet the needs of economic development.

The Forecast System on Dynamic Analogue Skills (FODAS)

Concept note, Using the historical prediction Error to Correct the Current Output, transforming the direct model prediction to the model error estimation.



Core Process

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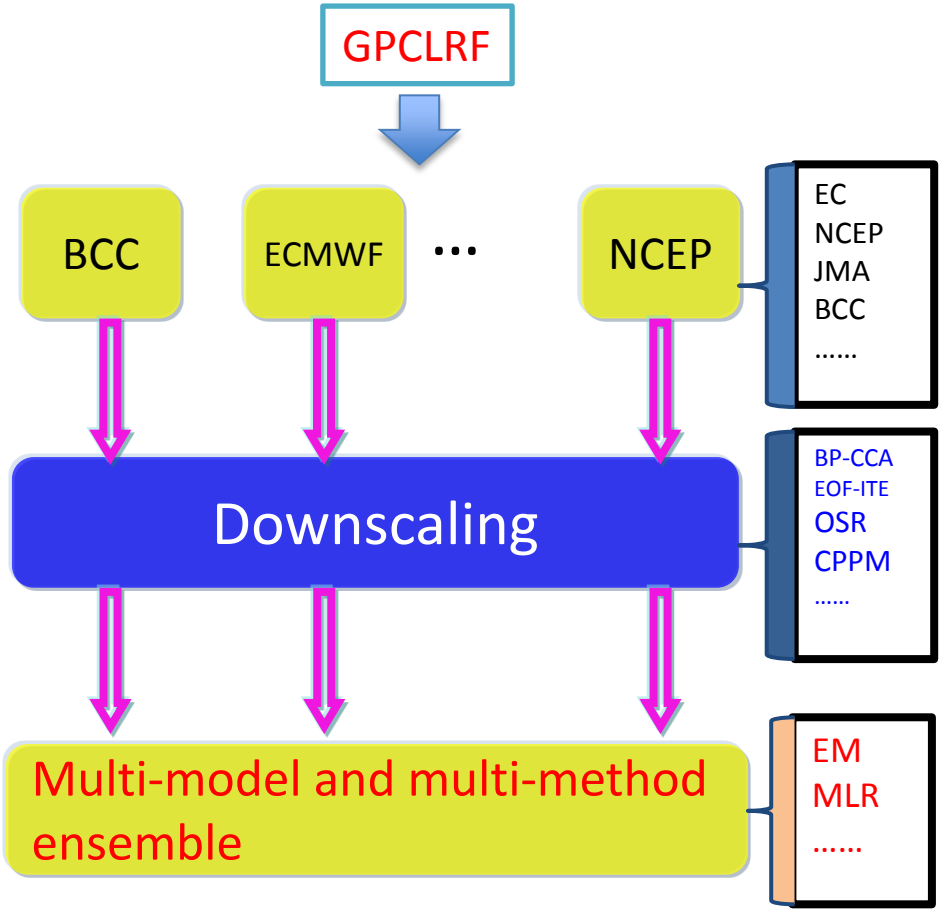
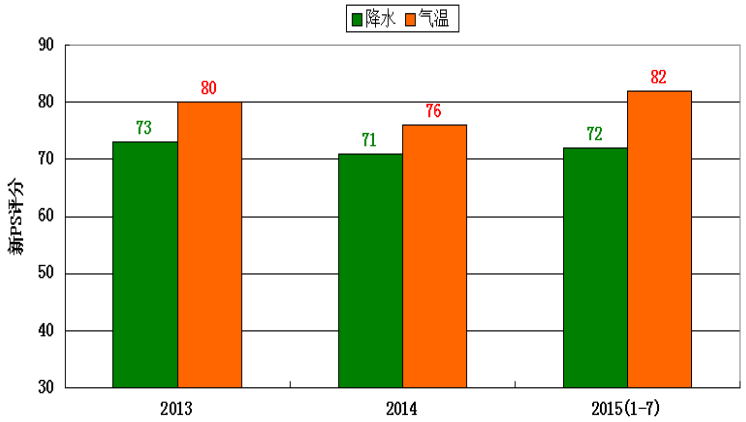
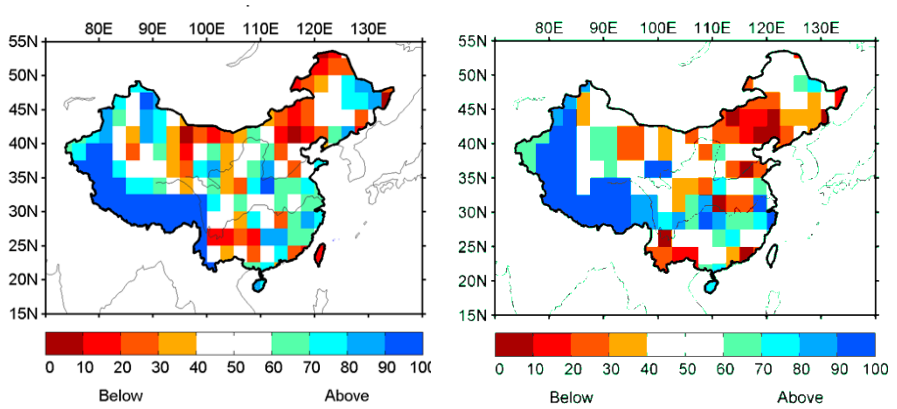
Multi-Model Downscaling Ensemble System (MODES)



Monthly Prediction



2014-2015 Summer prediction



2014 2015

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