



ICCS 2



Climate Services at National, Provincial and Local Levels in China

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Outline



- ***What's the foundation of the CS?***
- ***What are we doing in the CS?***
- ***What's the implementation plan in the years to be?***





Foundation



Organization structure

Missions

- There are **8** operational divisions and 3 administrative offices, and about **160** staffs, responsible for the climate monitoring, prediction, and assessments.
- More than half (**80**) of staffs are directly included in climate services.

(DPA)

4 FTE

(LCS) 10 FTE

Operational System Management Division

(OSMD) 13 FTE

To do **research** on climate and climate change issues



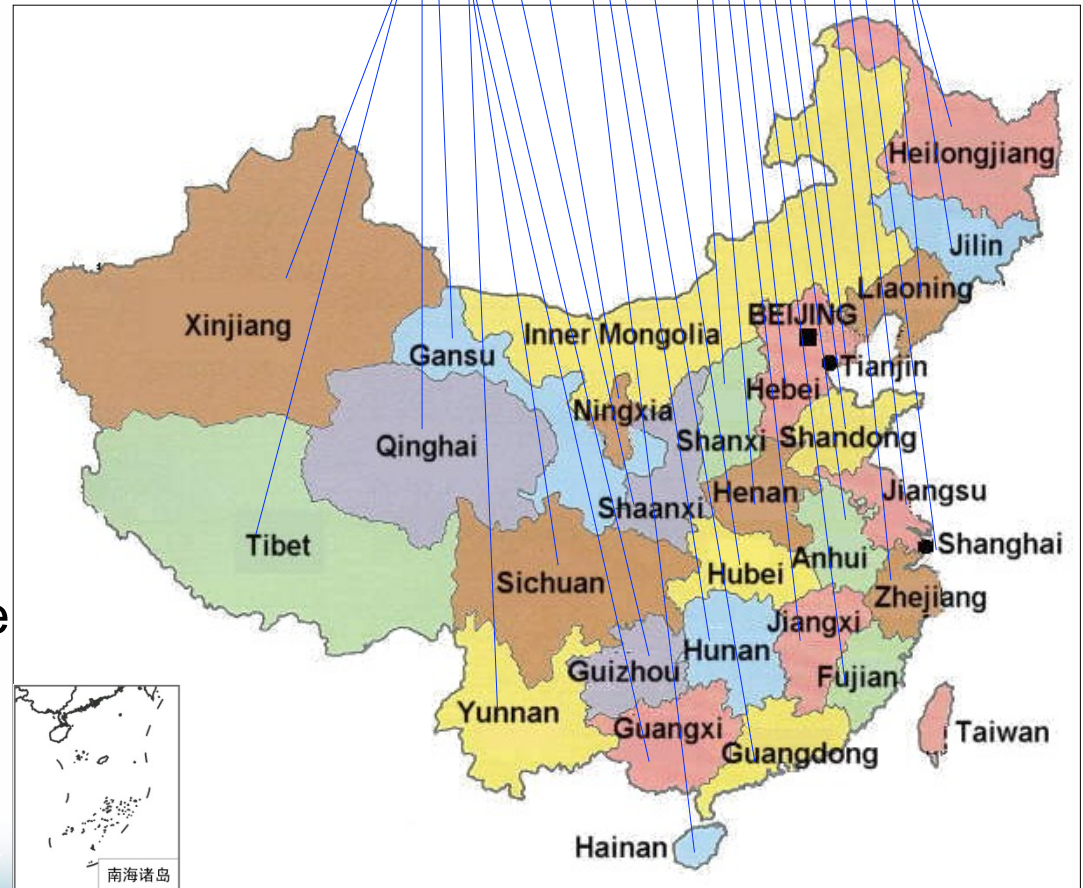


Foundation



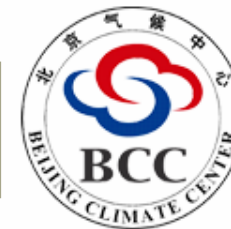
31 Provincial Climate Centres with almost the same organization struc. and mission

- National and 31 provincial **Climate Centres** are engaged in climate operations, research and services, in China.
- The two level **official organization** are the foundation in the operations tier.
- All of the centers established the CS operational system, according to **the missions**.





The Climate Service We Done



- The difference in 3 levels
- How to connect with each others
- Status of climate services





The brief difference

	NCC	Provincial Centers	Local Admin.
Users	<ul style="list-style-type: none"> • decision-makers (government) • major projects • researchers • the public 	<ul style="list-style-type: none"> • sectors(industry) • local government • the public 	<ul style="list-style-type: none"> • enterprise • local government
Products	<ul style="list-style-type: none"> - climate prediction - climate monitoring - climate bulletin - impact assessment - disaster risk - consolidated report - ... 	<ul style="list-style-type: none"> - local prediction - special report - consultation report - climate condition assessment for projects - strategic advice - ... 	<ul style="list-style-type: none"> - climate normal - early warning - consultation report - climate condition assessment for local projects
Focus	<ul style="list-style-type: none"> - climate predict - climate change adapt... 	<ul style="list-style-type: none"> - the need of industry - agriculture, water source - insurance - wind energy - impact assessment 	warning and response for adaptation





Connect with:

- The monthly, seasonal **consultation meeting system** to enable peoples in different location to exchange and discuss the result of climate issues.
- The climate centers **share products, tools** and works at **uniform operational platform.**
- Following the **same indicators and methods.**

• ...





The Status of Climate Services in China

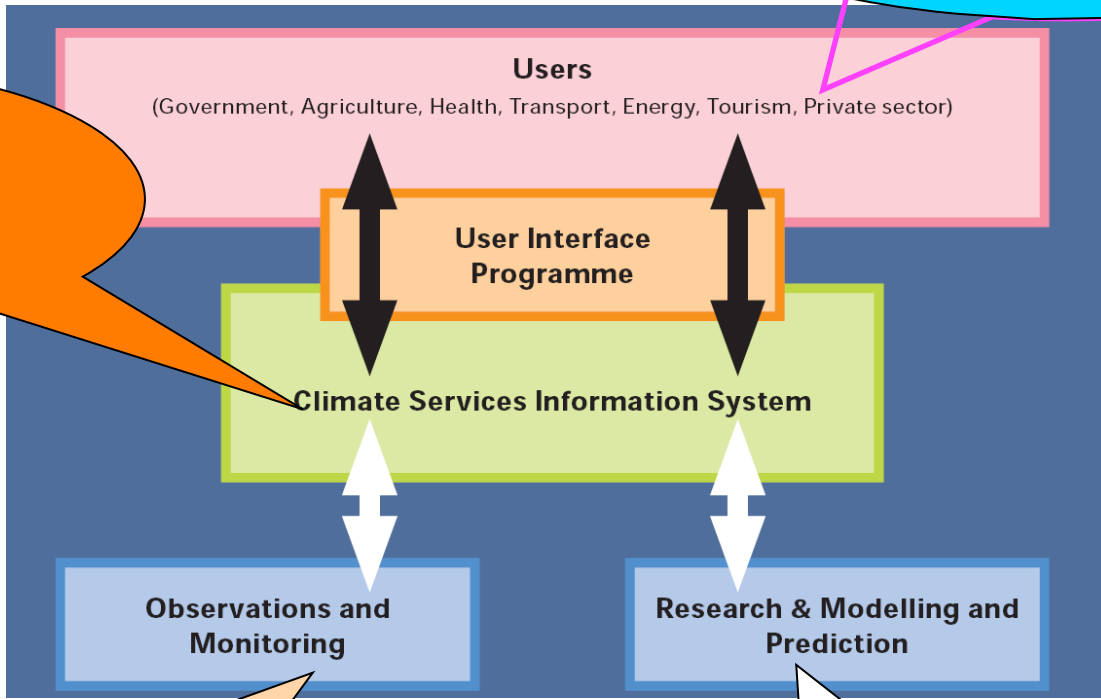




In the past 1.5 years...

Encourage users to participate to develop **the system** of climate service

Enhance the capacity building of **centers**



Accelerate improvement of China Climate Observing System (CCOS), specialized meteorological observation networks and data processing system

Speed-up the development of BCC's Climate System Model





Climate Monitoring



气候业务内网

用户名: 密码:

- [首页](#) [监测诊断](#) [气候预测](#) [影响评估](#) [气候变化](#) [气候模式](#) [气候服务](#) [业务会商](#) [业务应急](#) [业务流程监控](#) [业务服务](#)

当前位置: 首页-监测诊断

产品关键字:

监测诊断

气候系统

地面要素

气温

降水

大气环流

海洋海冰

陆地

气候事件

当前业务: 监测诊断 >> 气候系统 >> 地面要素 >> 气温 >> 全国日最高气温分布图

业务类型: 缺省 [分布图](#)

要素: 缺省 [最高气温](#) [最高气温距平](#) [最低气温](#) [最低气温距平](#) [平均气温](#) [平均气温及距平](#) [平均气温距平](#)

时间尺度: 缺省 [逐日](#) [近10天](#) [近20天](#) [近30天](#) [近90天](#)

区域: 缺省 [中国](#) [全球](#) [美洲](#) [欧洲](#) [亚洲](#)

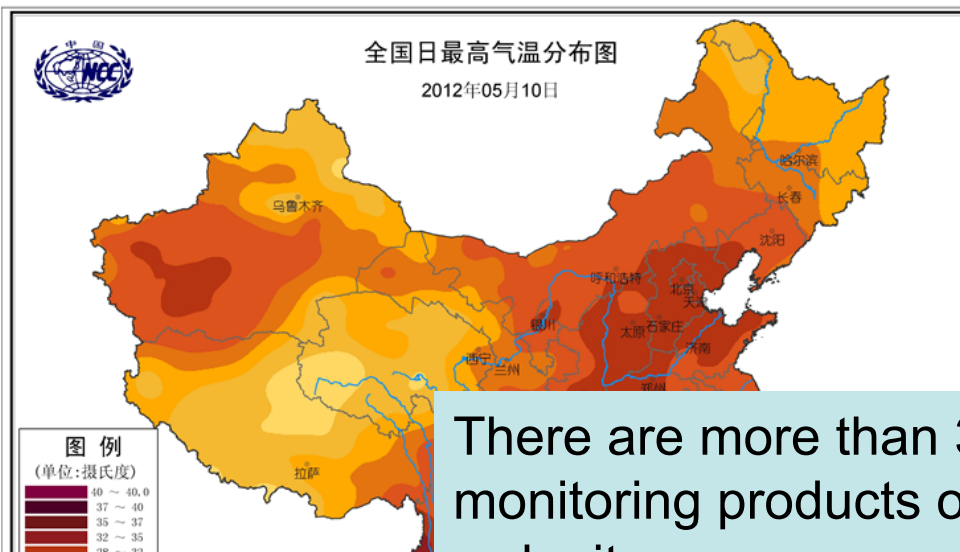
层次: 缺省 [地面或水面特性](#)

方法: 缺省

时间范围: 2012-04-25 至 2012-05-28 查询总条数为28条,显示第8条至第14条

2012-05-02 2012-05-03 2012-05-05 2012-05-07 2012-05-08 2012-05-09 2012-05-10

播放速度



There are more than 350 climate monitoring products on the inner web site.





Climate Prediction

Ensemble Monthly Prediction

Variable: surface temperature, precipitation, sea level pressure, 200hPa, 500hPa, 700hPa geopotential height, 200hPa, 700hPa wind field

Prediction region: Asia (15°S-65°N, 40°E-175°E), the Northeast Hemisphere, the Northern Hemisphere and global

Period of prediction: 30 days, 3rd ten days, 30 days.

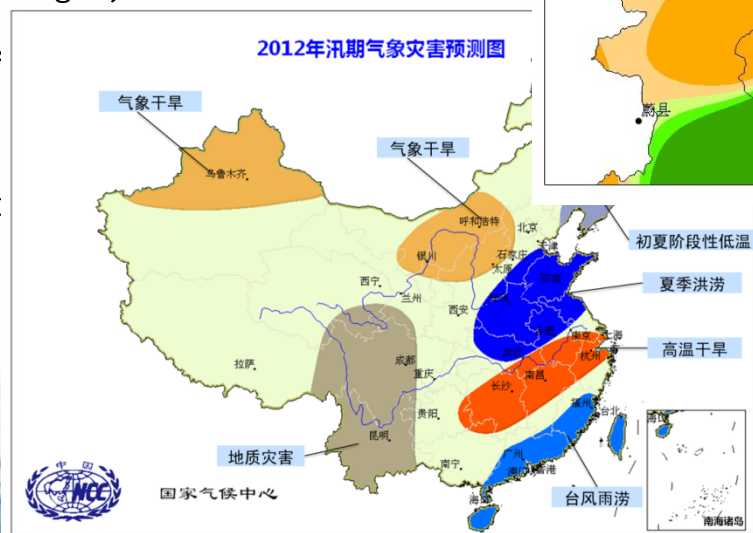
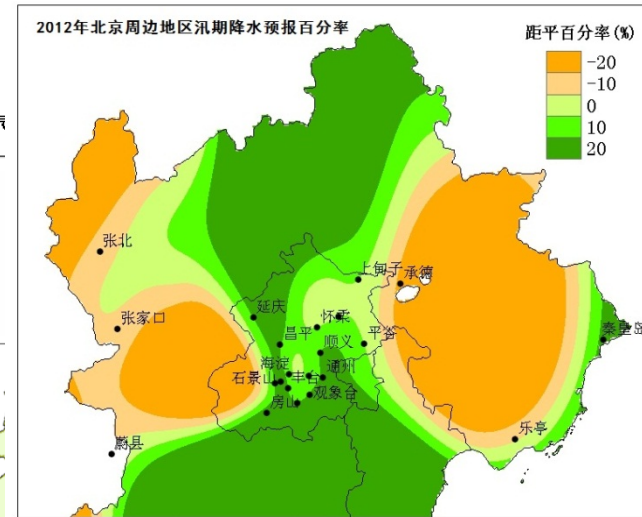
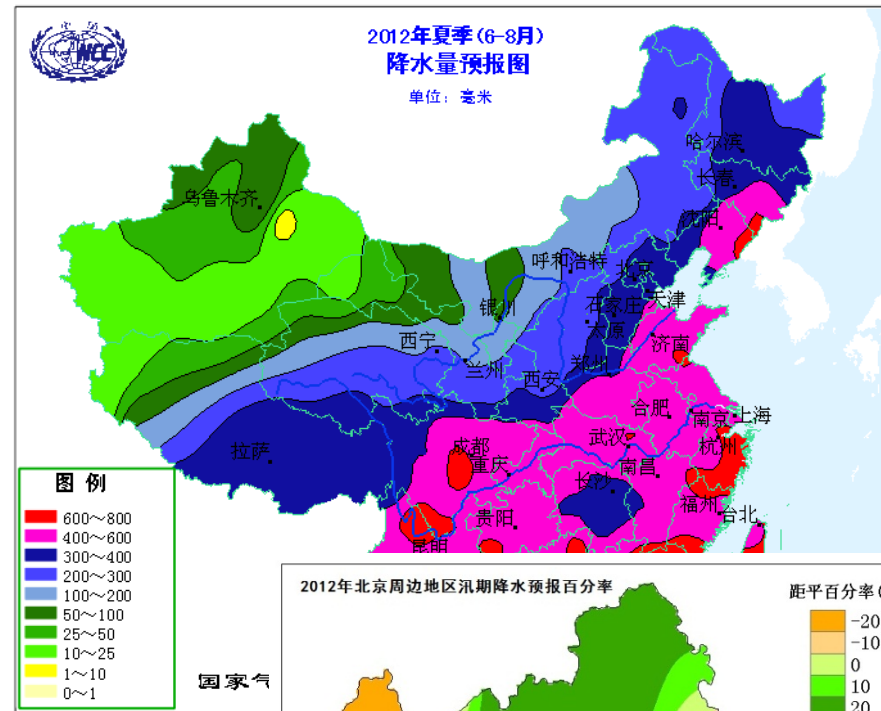
These are from new system!

Seasonal Prediction by CGCM

Variables: SSTa, 500hPa geopotential height, 850hPa temperature, 200hPa and 850hPa wind, precipitation, 2m temperature.

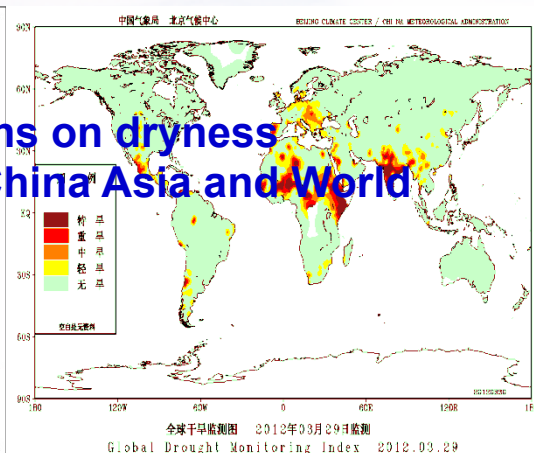
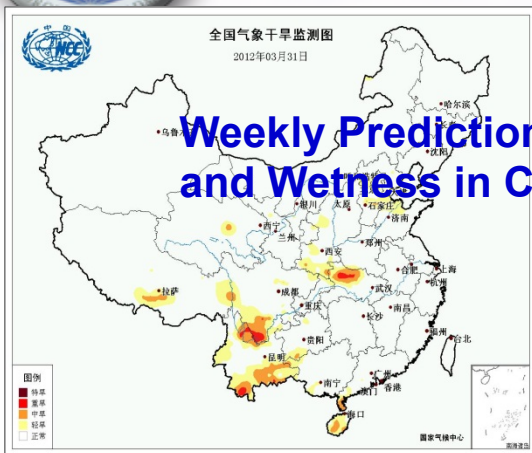
prediction region: Asia, Northeastern northern hemisphere, global, the Pacific Indian Ocean

Prediction period: coming 11 months





Climate Impact Assessment



Annual Assessment on Water Resources

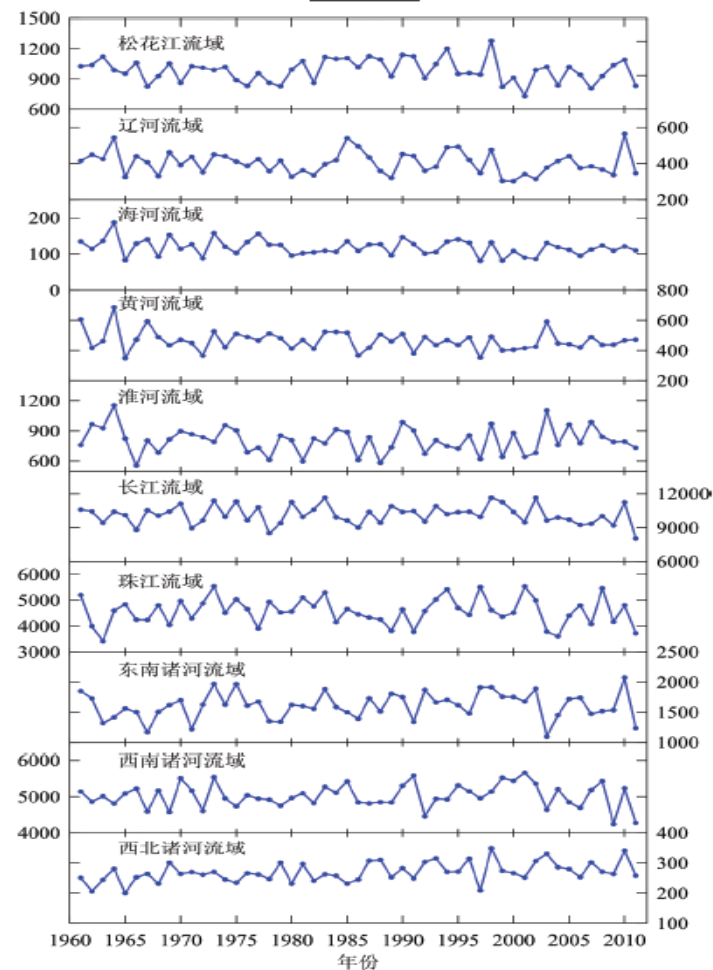
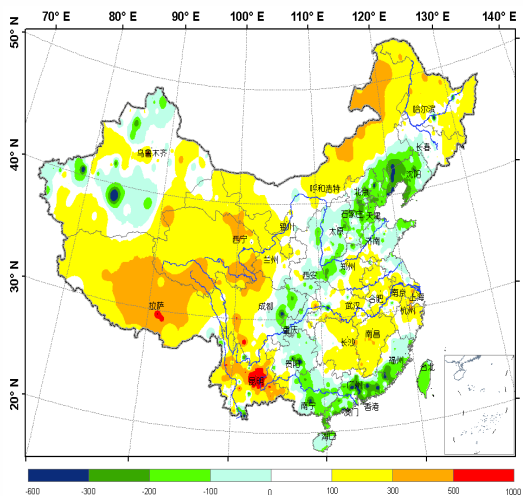


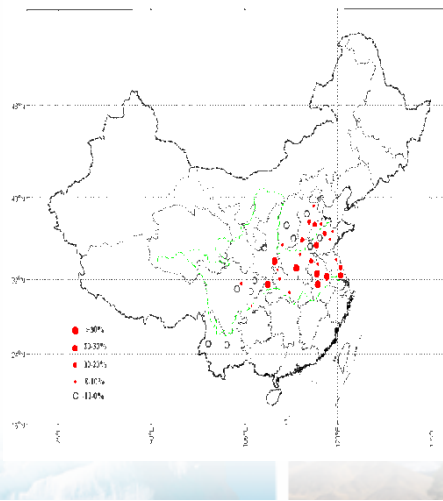
图 43 1961—2011年中国各流域地表水资源(亿立方米)变化
Fig.43 Variations of annual surface water resources (unit: 10⁸m³) in China from 1961 to 2011

Climate impact on agriculture



12

2011年中国≥10°C积温距平分布(度·日)

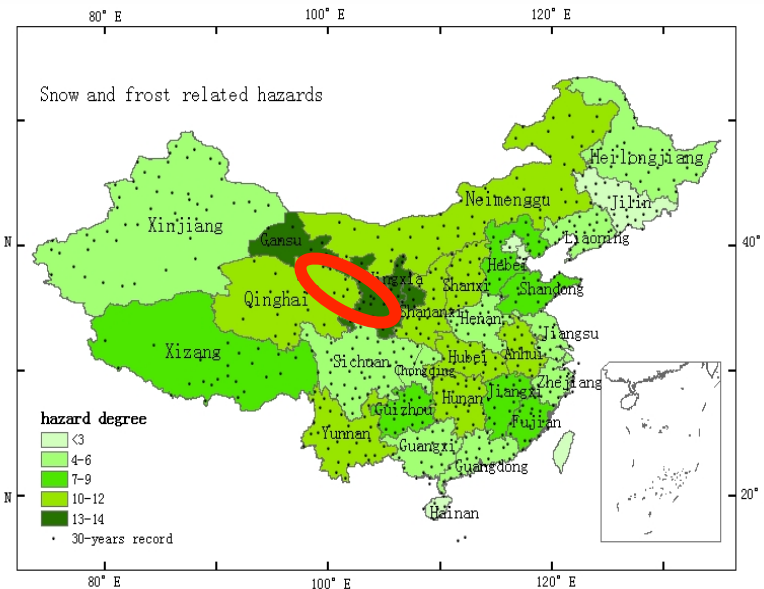
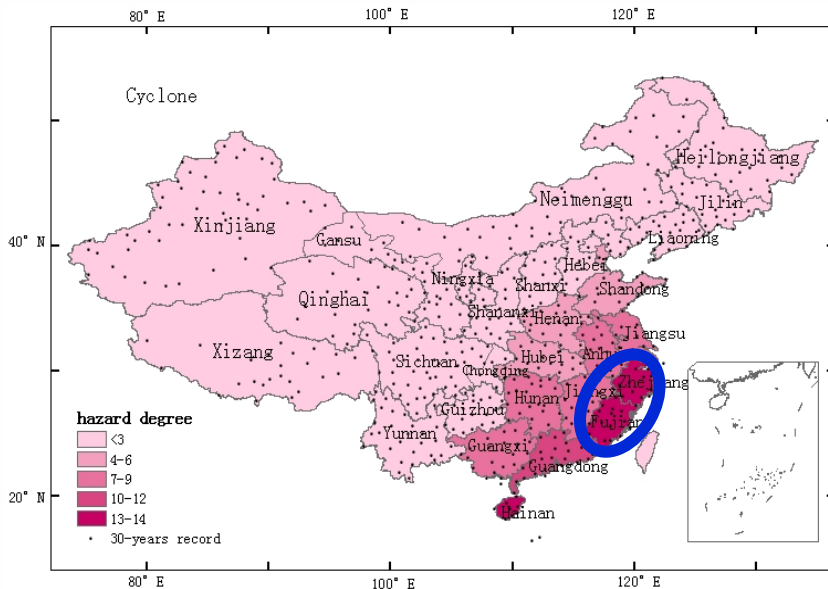
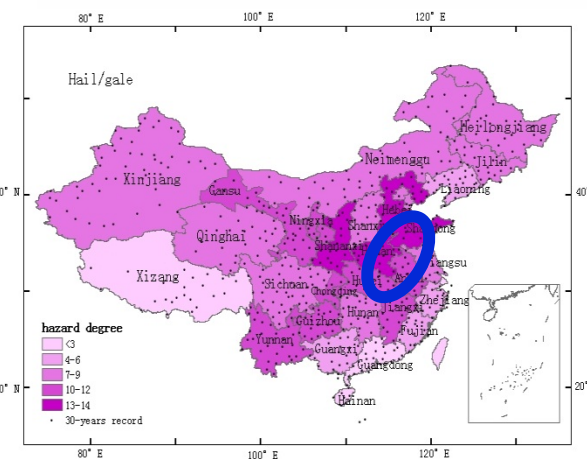
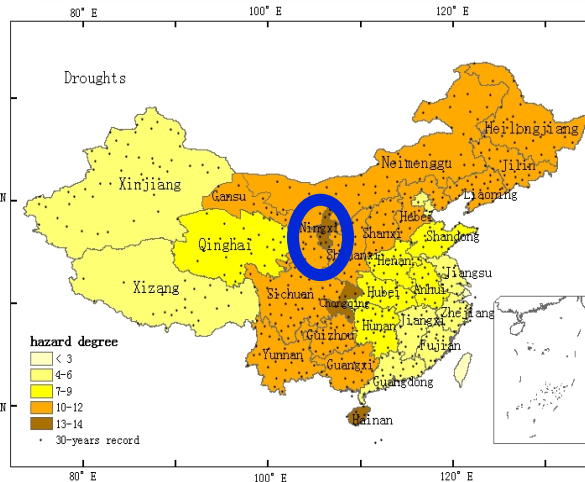
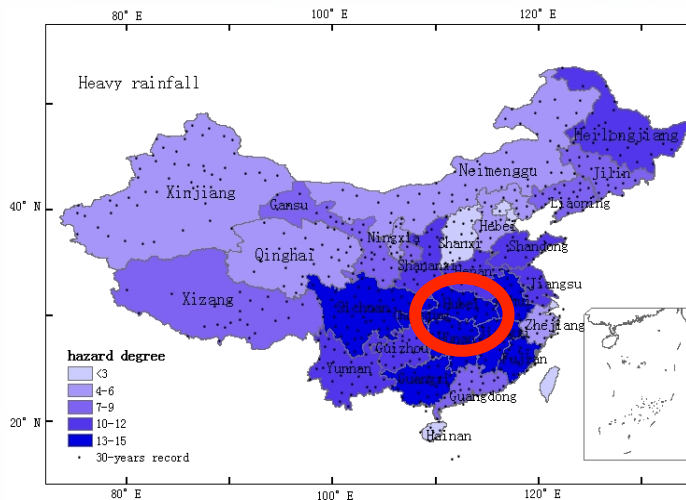
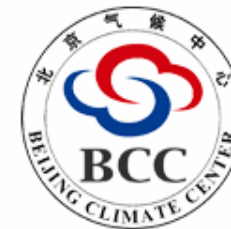


作物模型模拟的2011年冬小麦产量距平百分率(%)





Risk Mapping for Heavy Rainfall, Drought, Hail/gale, Cyclone and Snow/frost

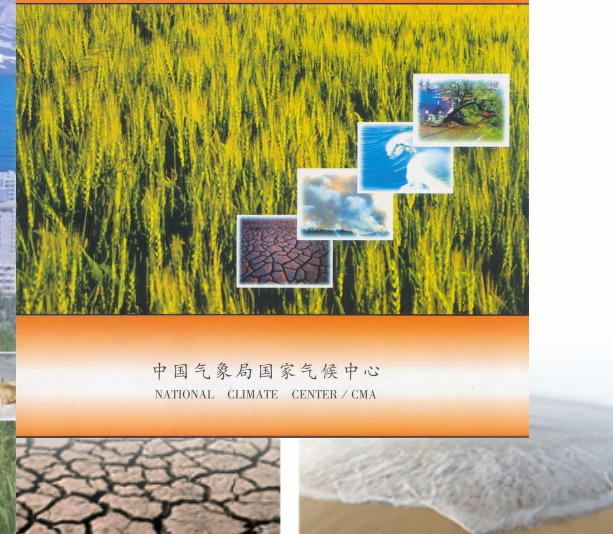
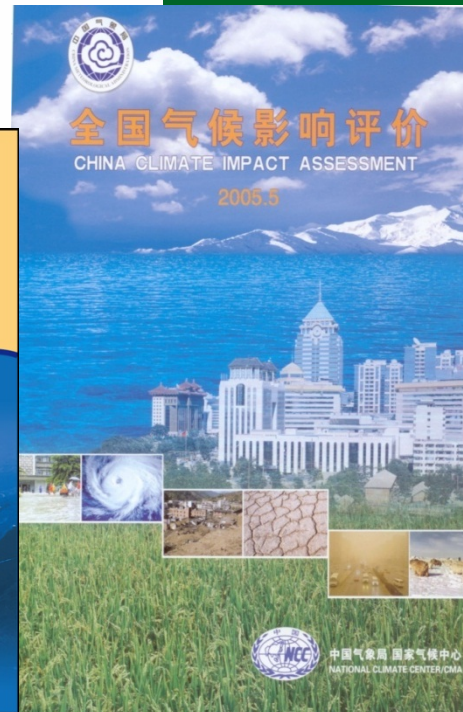
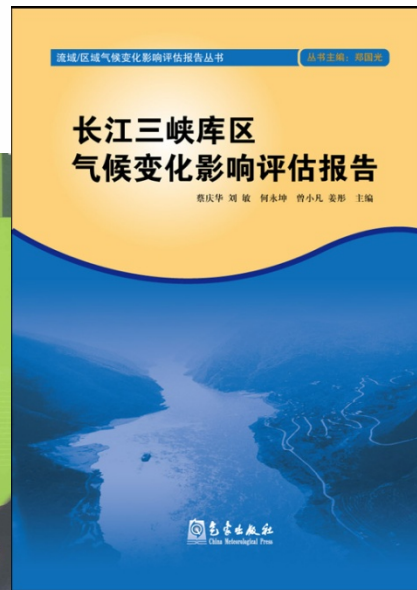
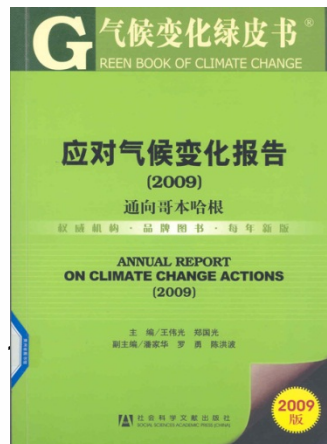




Reports for China Climate and Climate Impacts



- **China Climate Bulletin**
- **Climate Impact Assess**
 - **Climate and agriculture**
 - **Climate and water**
 - **Climate and energy**
 - **Climate and transportation**
 - **Climate and human health**
 - **Climate and air quality**

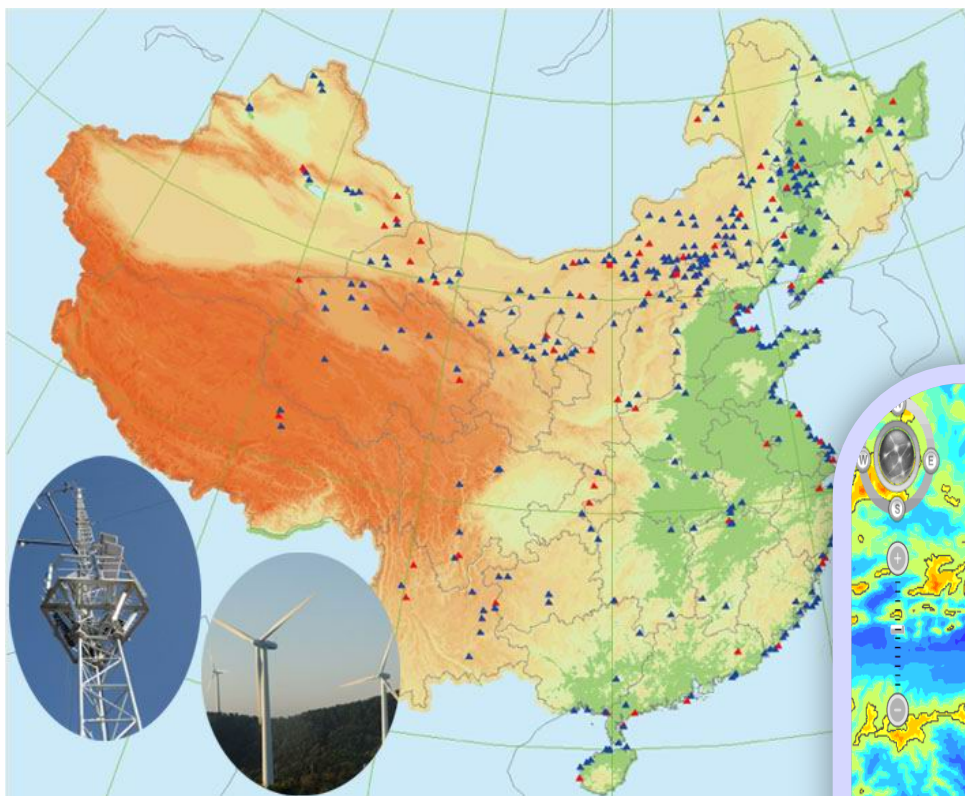




Climate service for renewable energy



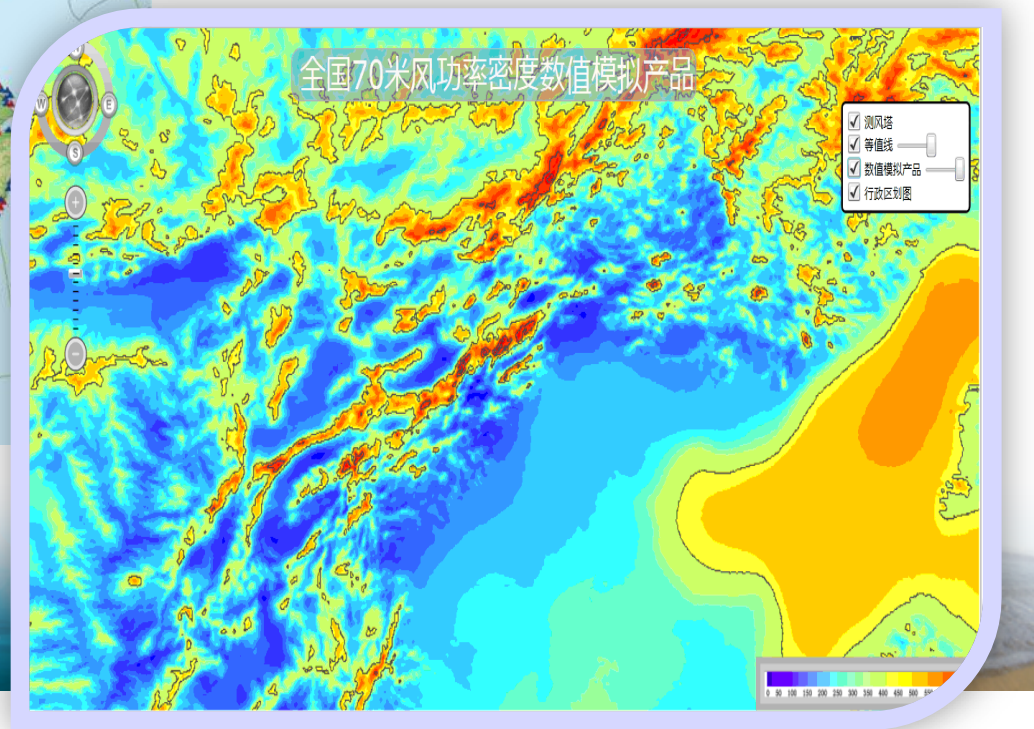
400 wind-measurement towers



70-meter **329**

100-meter **68**

120-meter **3**





Cooperation with Users



- CMA and **Ministry of Water Resources**: climate prediction consulting meeting for summer season;
- CMA and **Ministry of Agriculture**: early frost prediction for autumn season and its impacting assessment ;
- CMA and **National Forestry Bureau**: dust storm climate prediction, seasonal climate rank of forest fire risk prediction ;
- CMA and **Ministry of Land and Resources**: geological disasters outlook

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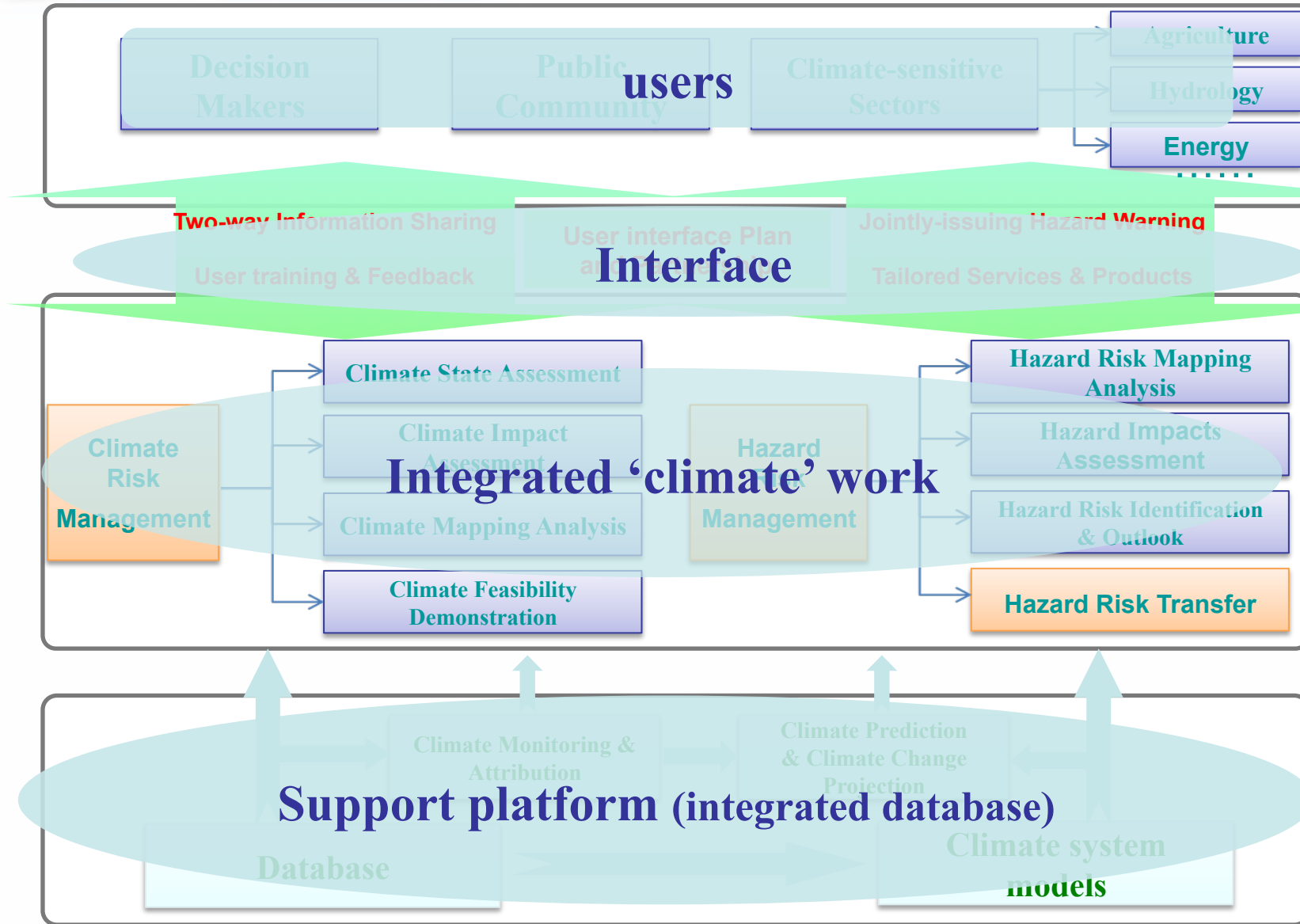
The *climate services* on going in **NCC**

Economic sectors are getting specialized climate services to acquire benefits and reduce economic losses. Centers become much more involved with economic activities in China.





(1) Established the climate services operational flow





(2) Broadening the areas of the climate services

Large Engineer

Water Conservancy Project

Railway Road Project

Wind Farm Project

Ecological Protection Project

Nuclear Power Project

Major Developing Region Project

Energy Saving and Emission Reduction Project

Department

Agriculture

Water source

Energy

Sanitation

Planning

Ocean

Building

Insurance

Region

Civilization Region, Production Area, Key Ecological Function Area

Seven Major River Valleys, Mountain Torrent and Geological Disaster Easy-happening Area

Climate Monitoring

Climate Impact

Climate Prediction

Climate Effect

Climate Change

Climate Risk

Climate Adaptation





(3) Provide the tailored services



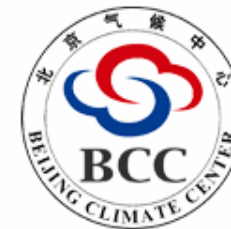
Provide the **end to end** climate information, help users to effectively make use of and manage the climate risk:

- **Climate Disaster Warning**
- **Climate Yearly Outlook**
- **Climatic Condition Assessment for Major Projects**
- **Climate Disaster Risk Management**
- ...

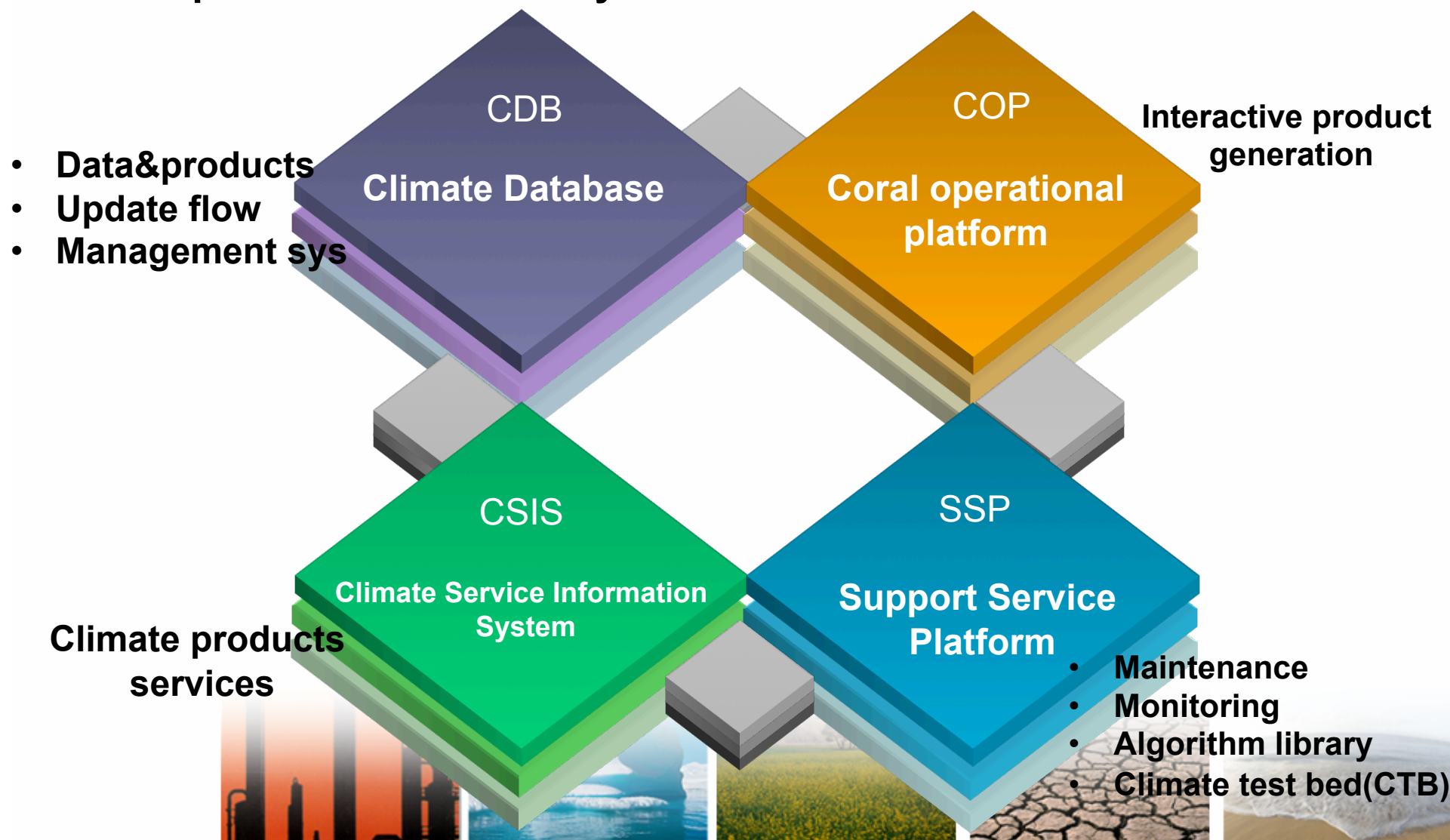




(4) Design and develop the CFCS



Component of technical system:





Challenge



- Requires climate service providers and users to work together. Matching capability to user needs requires **dialogue**.
- Some services cannot be provided with current level of modelling capability - needs a stepwise approach. Especially further **improve prediction** skill and accuracy.
- Involves multiple advice on multiple scales, from broad strategic advice to **detailed local climate information**.





Thanks for your attentions!
Comments & questions, please.

Contact: wanggf@cma.cma.gov.cn

