Adaptation to Climate change in China

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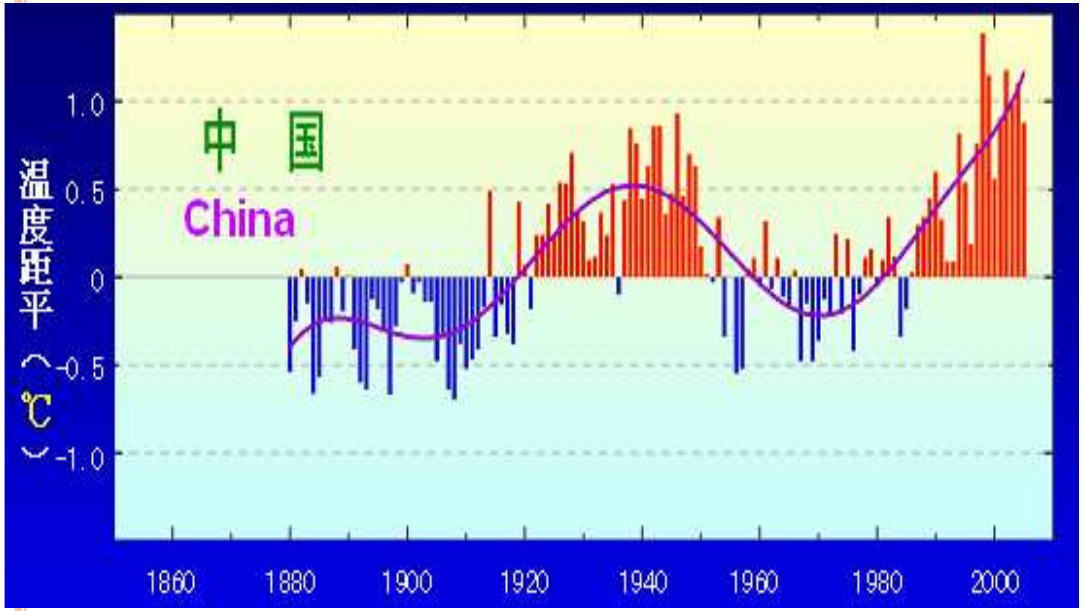
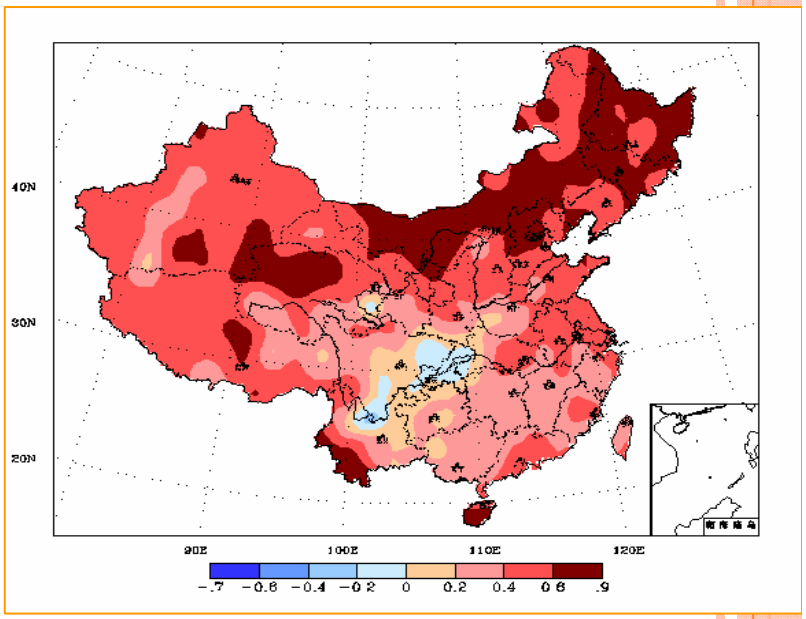
OUTLINE

- **Current climate change in China**
- **Climate hazards and its impacts**
- **Adaptation in China**

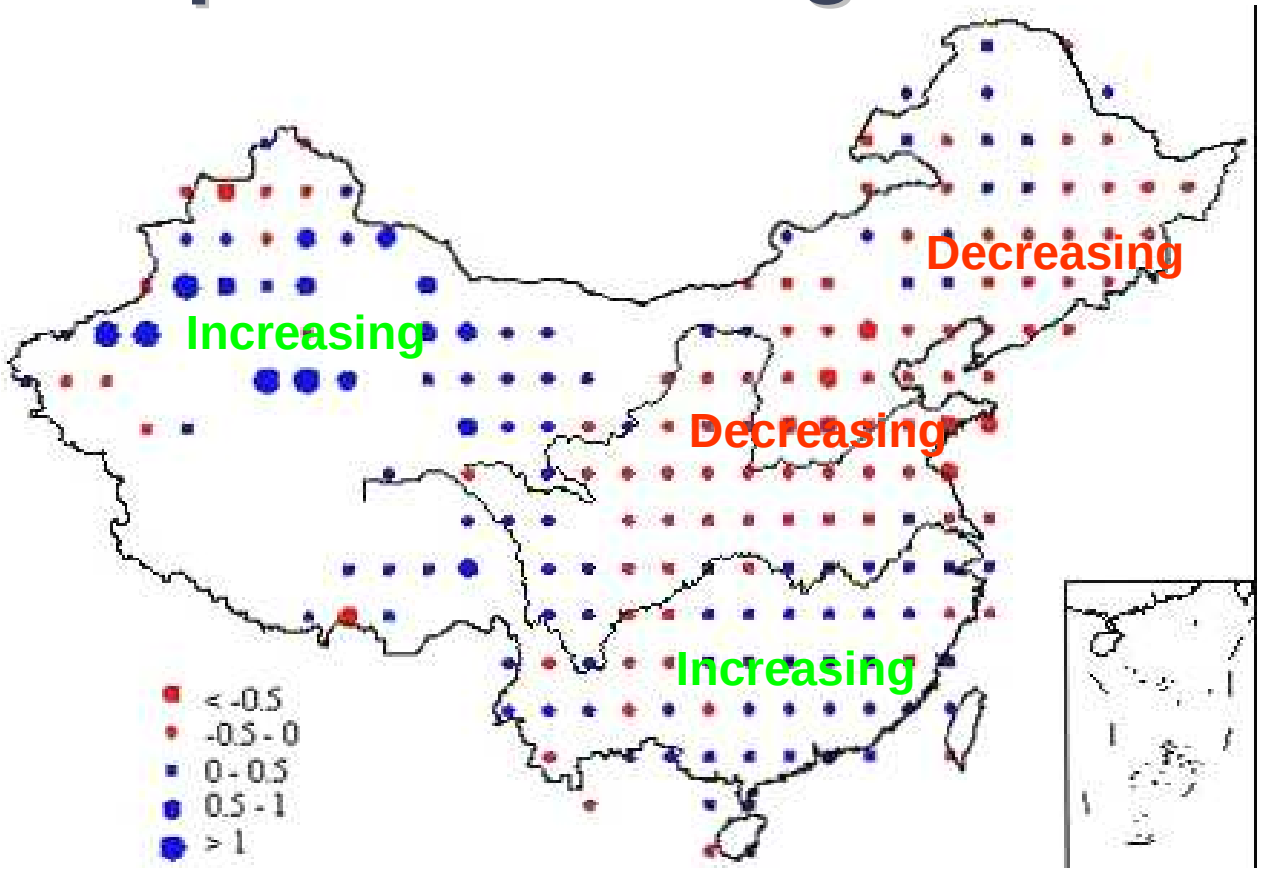
Current climate change in China





- Similar rising trend to global temperature
- Temperature rise during the last 100yrs: 1.1℃
- Rising rate during the last 50yrs: 0.22℃/10a

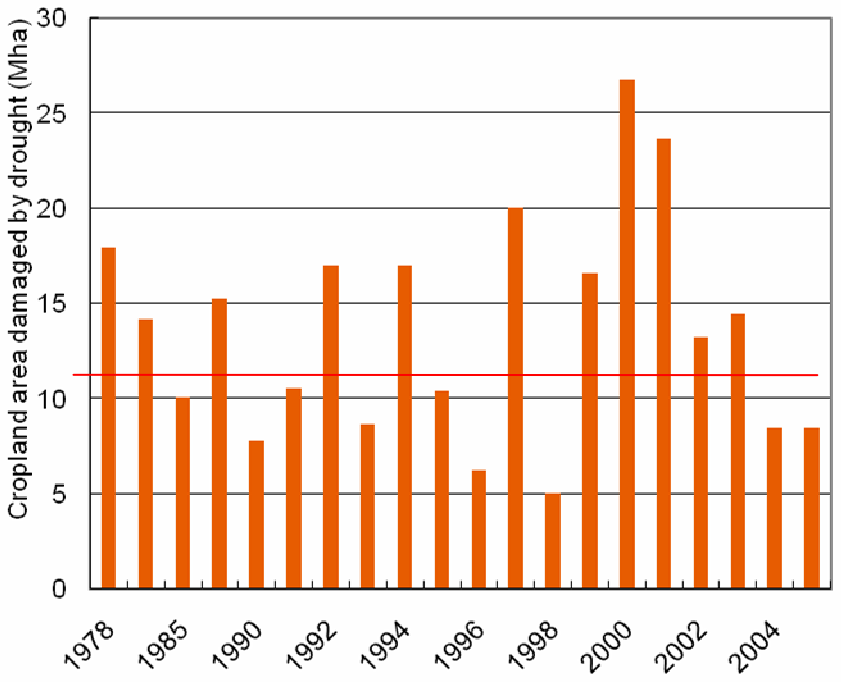
Precipitation during 1951-2002

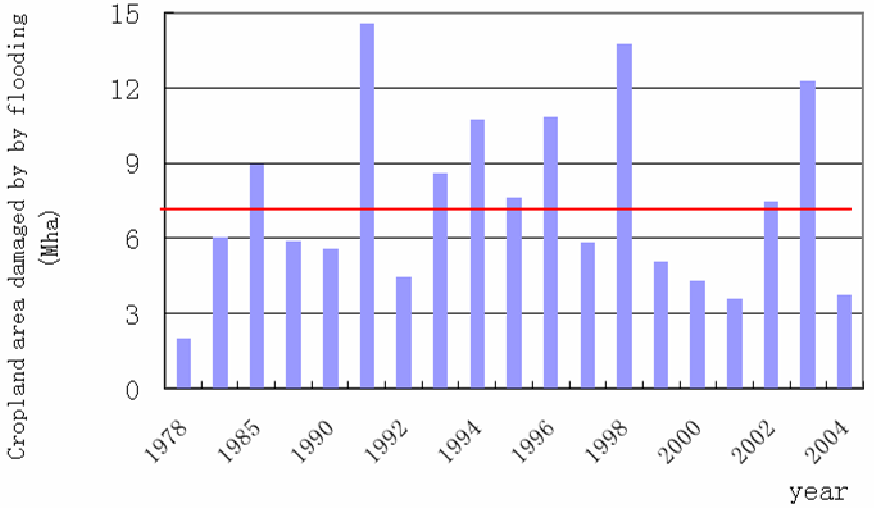


- West and south: Increase
- North and Northeast: Decrease

Climate hazards and its impacts

China experiences most of the major climatic hazards
Millions of livelihoods are highly exposed to climate related risks
China's exposure and sensitivity to climatic hazards are high





Vulnerability and low adaptation capacity in China's case (2008)

- **14 provincial grids and the electricity supply for users in about 570 counties was damaged.**
- **12 and 17 million ha of cropland and forest land damaged**
- **129 deaths, 485,000 houses collapsed;**
- **Direct economic loss reached 150billion Yuan RMB**

Vulnerability and low adaptation capacity in China's case (2010)

- The most serious drought in five provinces of southwest China has lasted for six months from the end of 2009 to April 2010
- 7.7 million ha of farmland had been affected by the drought and roughly 24.25 million people and 15.84 million livestock had difficulty in accessing drinking water
- Direct economic losses due to drought in the five provinces exceeded 23.66 billion Yuan RMB.

Adaptation in China

- Extreme climate events may act as triggers in policy processes and may provide an opportunity for new policies
- The case in 2008 highlighted important weaknesses in the response to extreme climate events and led policy makers to speed up the process of formulating contingency response measures for severe meteorological disasters.
  - Regulations on Meteorological Disasters Prevention
  - National Planning on Meteorological Disasters Prevention

Adaptation in China

- The case in 2010 resulted in Decision on Accelerating the Water Conservancy Reform and Development
  - aims to build effective flood control and drought relief systems by the end of 2020
  - complete the harnessing of its major medium- and small-sized rivers within the next five years
  - maintain annual water consumption at below 670 billion cubic meters.
  - double average annual spending on water conservancy over the next ten years compared with that of 2010
  - By 2020, the total investment is 4000 billion yuan

ADAPTATION IN CHINA-NATIONAL LEVEL

- National Climate Change Programme was published in 2007
  - The Programme recognizes mitigation and adaptation as integral components of the strategy to cope with climate change;
  - 'China will take practical measures to enhance its capacity to adapt to climate change via key projects for ecosystem protection, disaster prevention and reduction and other key infrastructure construction'
- Published White paper: China's policies and actions on climate change since 2007

ADAPTATION IN CHINA-NATIONAL LEVEL

- Chapter 21 of China's 12th Five-Year Plan (2011-2015): Addressing climate change:
  - Formulate adaptation strategy
  - enhance research, observation and impact assessment
  - take climate change into consideration when project design and infrastructure construction
  - build the capacity for adapting climate change and extreme events
  - accelerate the expansion of adaptation technologies,
  - promote the adaptation capacity in agricultural, forestry, water resources, coastal zones, and vulnerable ecosystems.

ADAPTATION IN CHINA

- Research on climate change impacts has a long history in China
  - Impacts of climate change on China's agriculture, forestry, water resources, and sea level rising, and associated response strategies (1991-2010)
  - Research and demonstration of adaptation technologies and measures (2006-2010)
- Major reviews have been conducted
  - National Climate Change Assessment Report (2007)
  - Second National Climate Change Assessment Report (2011)

ADAPTATION IN CHINA-INSTITUTIONAL

- Department of Climate Change, the National Development Reform Commission (NDRC) established in 2008
  - Responsibility: comprehensively analyzing the impact of climate change on social-economic development; organizing and coordinating the formulation of key strategies, plans and policies dealing with climate change
- The National Leading Group Dealing with Climate Change, established in 2007, is China's national consultation and coordination mechanism to address climate change, including mitigation and adaptation.

ADAPTATION IN CHINA-PROVINCIAL LEVEL

- Provincial Climate Change Programmes were published after 2007
- Climate change impacts and adaptation are important content in all these provincial programmes
- Many provincial development and reform committee have established climate change office

SECTORAL ADAPTATION-AGRICULTURE

- Improve agricultural infrastructures
  - construction of infrastructure of large-scale, water-saving irrigation areas; improve irrigation and drainage systems; develop dryland water-saving farming; construct rain water collection in hill mountain areas and other arid areas.
- Promote adjustment of agricultural structure and cropping systems.
  - Adjust cropping systems according to the warming, develop multiple cropping and raise multiple cropping indexes.
- Breed stress-resistant varieties.
  - Select and cultivate stress-resistant varieties with specific abilities of resistance to drought, high temperature, diseases and pests.
- Prevent grassland from desertification.
  - Controlling grazing intensity ； Strengthen the development of animal husbandry in the farm belt

SECTORAL ADAPTATION-WATER RESOURCE

- Strengthen infrastructure planning and construction
  - Speed up building of the Project of South-to-North Water Diversion
  - Construct regional water storage and water diversion projects
- Promote the development and extension of technologies for water allocation, water-saving, and sea water utilization
- Enhance water resources management.
  - Adopting the principle of harmony between human and nature in water resource management.
  - Pay more attention to saving, protection, and optimizing the allocation of water resources.
  - Develop investment, financing and management system for key water conservancy projects

SECTORAL ADAPTATION-COASTAL ZONE

- Establish and improve relevant laws and regulations.
- Establish integrated coastal zone management system, the comprehensive decision-making mechanism and effective coordination mechanism.
- Promote technology development and extension.
- Strengthen research and development of technologies for protection and restoration of the marine ecosystems
- Strength adaptation strategies to address sea level rise.
  - Raise design standards of sea dike height, heighten and consolidate existing sea dike engineering
  - Raise protection standard for coastal cities and major projects, raise standard for designed height of port docks, and adjust outlet depth

SECTORAL ADAPTATION-FOREST

- Formulate laws and regulations relevant to climate change adaptation.
- Strengthen the effective protection of existing forest resources and other natural ecosystems.
- Strengthen technology development and extension
  - Research and develop technologies for forest, insect and disease control
  - Select and breed tree species with drought, pest and disease-resistance
  - Develop technologies for biodiversity conservation and restoration.
  - Improve monitoring network and management system to enhance forecasting, early-warning, and emergency responding capacities.


谢谢！
Thank you!