Resilient Adaptation

- Lessons learned from dealing with great disasters

Qian Ye

Consortium for Capacity Building
University of Colorado, Boulder, CO 80309 USA

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Climate Change

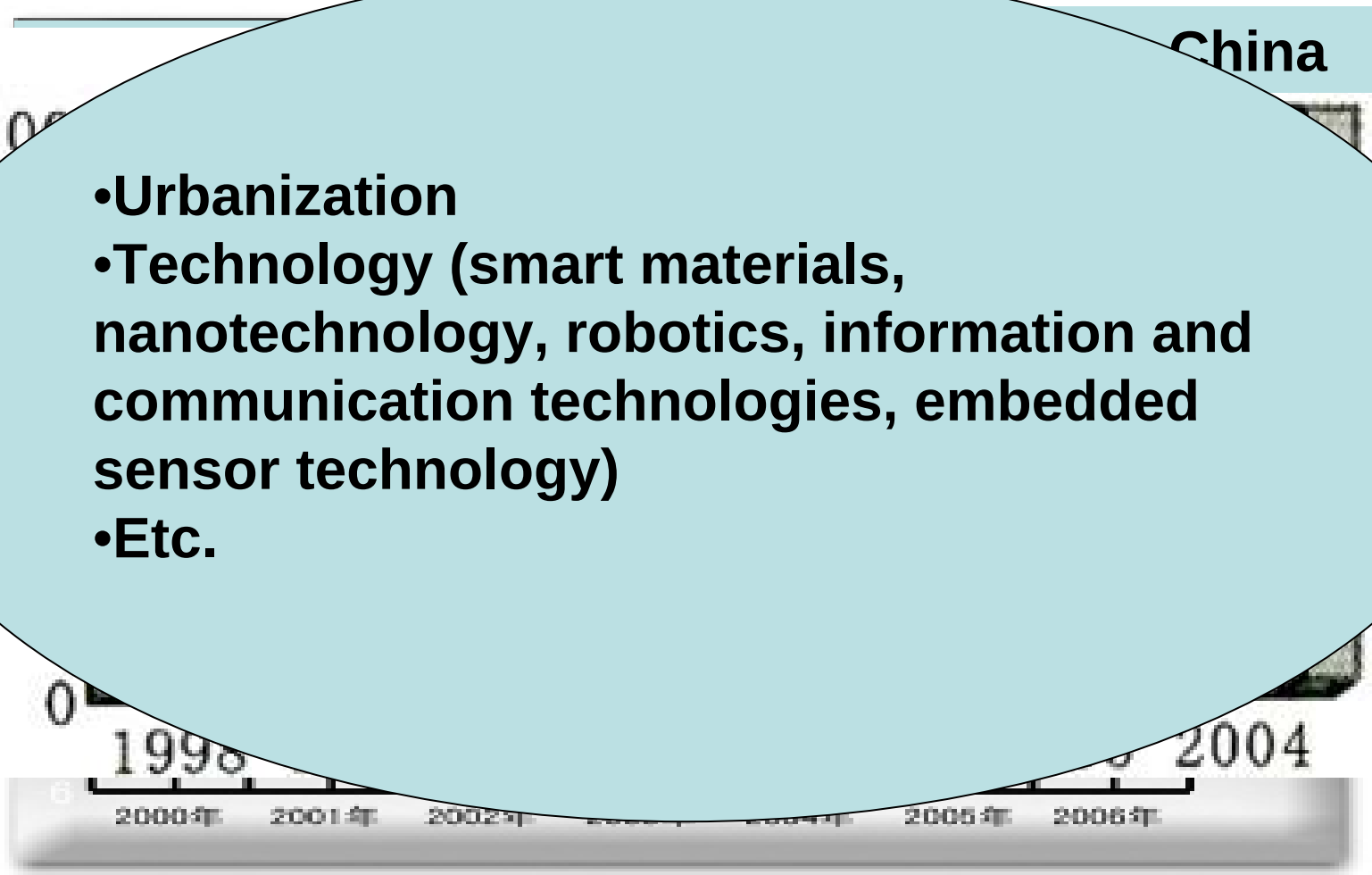
From IPCC (2007)

1) Climate is changing

2) Human activities are playing a major role

3) Adaptive actions are needed

Changing Society



- **Urbanization**
- **Technology (smart materials, nanotechnology, robotics, information and communication technologies, embedded sensor technology)**
- **Etc.**

Questions

1) climate is always changing (seasonality, variations in different spatial-temporal scales, rate of change, extremes, etc.), what kind of changes is we talking about?

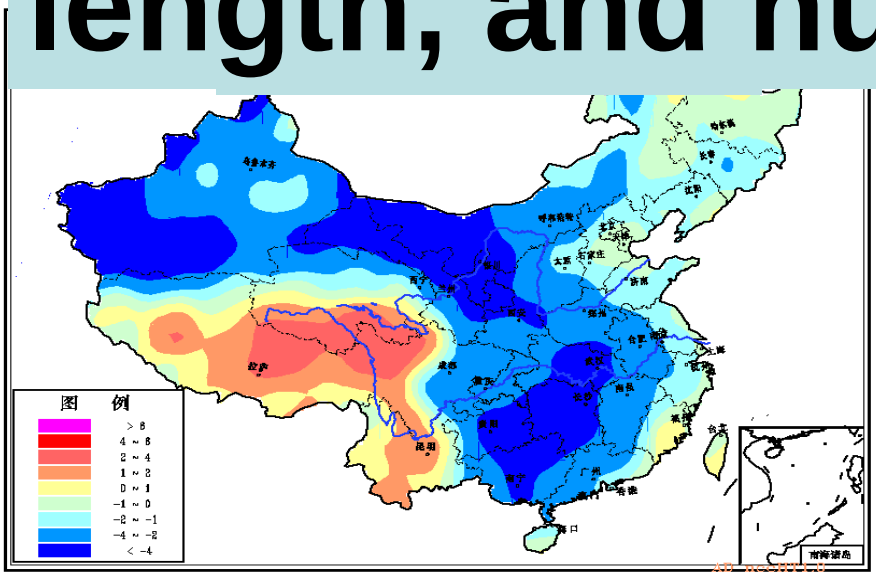
2) the role of human being is on which change and

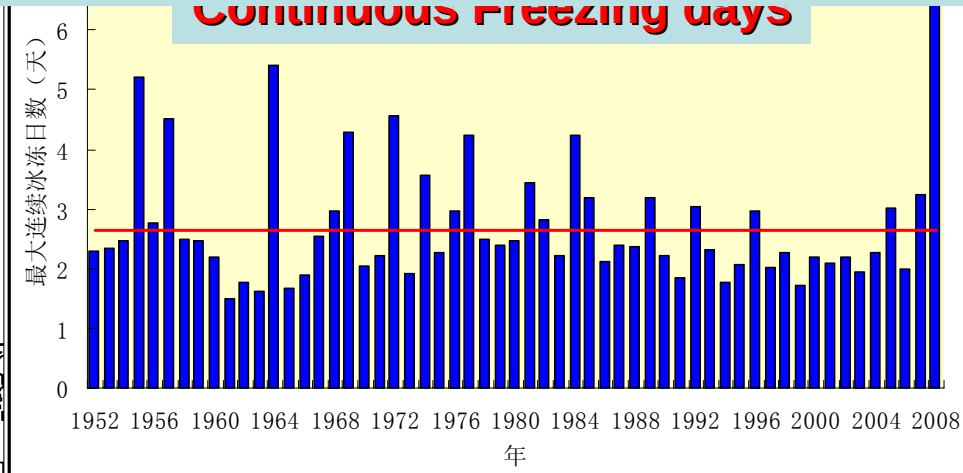
3) what should we adapt and how?

Learn from a Disaster

-the Great Ice Storm in Southern China, Jan 10 –Feb. 2, 2008

- **Large uncertainty in forecasts**
- **Unexpected in strength, length, and number of events**





Transportation—Highway & Road

Transporation—Flight

Electricity—Power line

Communication—Wireless base station

Travel in holiday

Resilient Adaptation (RA) Strategy vs. (Traditional) Adaptation Measures

Resilient Adaptation	Adaptation
Preparing for uncertainties and unexpected	Past experience counted
Measures and actions must be flexible in both temporal and spatial scales	Events driven
Multi-disciplines	Disciplinary driven
Multiple level players	Single level player
Multiple sectors	One or a few agencies, departments or sectors

Some Thoughts on New Approaches

	RA	A
Man	**•Capacity Building** **•Multi-disciplinary Training**	**Behavior change**
States	**•Early Warning System** **•Multiple layers of players** **•Multi-sectors**	**Climate proofing**
International community	**•Cooperation** **•Communication to improve understandings of differences in cultures, religions, social and economic stages** **•Early Warning System**	**Bio-fuel**
Technology	**. Assessments in different levels, different sectors as well as different temporal and spatial scales**	**Geo-engineering (e.g., Intelligent building, Green technology)**