



# Climate Change Risks - Learning From China Case

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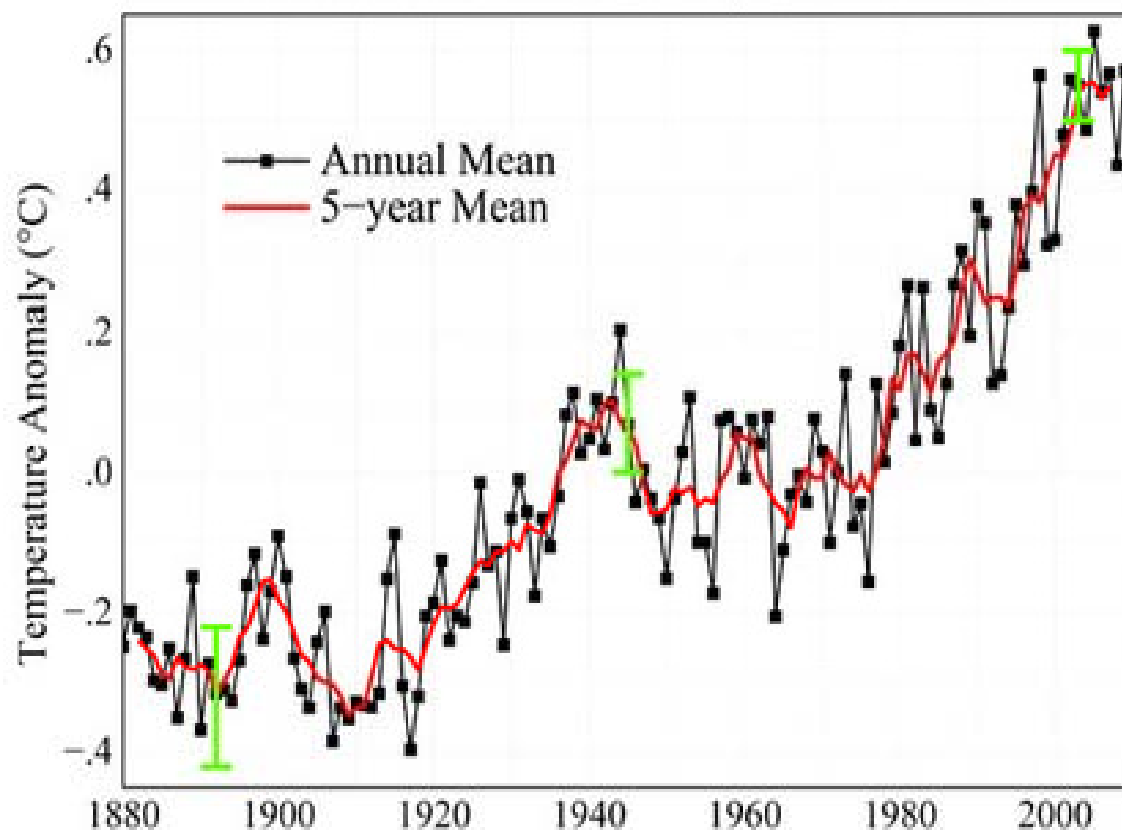
Durban, South Africa

December 1, 2011



# Climate is changing

Global Land–Ocean Temperature Index



Top 10 Warmest Years (1880-2010)

| Rank | Global |      |
|------|--------|------|
| Area | 100%   |      |
| 1    | 2010   | 0.58 |
| 2    | 2005   | 0.56 |
| 3    | 2007   | 0.51 |
| 4    | 2009   | 0.50 |
| 5    | 2002   | 0.49 |
| 6    | 1998   | 0.49 |
| 7    | 2006   | 0.48 |
| 8    | 2003   | 0.48 |
| 9    | 2004   | 0.41 |
| 10   | 2001   | 0.40 |

Temperature Anomalies Base Period = (1961-90)

(<http://data.giss.nasa.gov>, 2011)



# Climate is Changing and affecting everyone on the Earth

**People or Animals No Matter Rich**



2006 Pulitzer Prize; Smiley Poole  
Courtesy: The Dallas Morning News





# Society is also changing

## Shanghai Changes

1987



2004

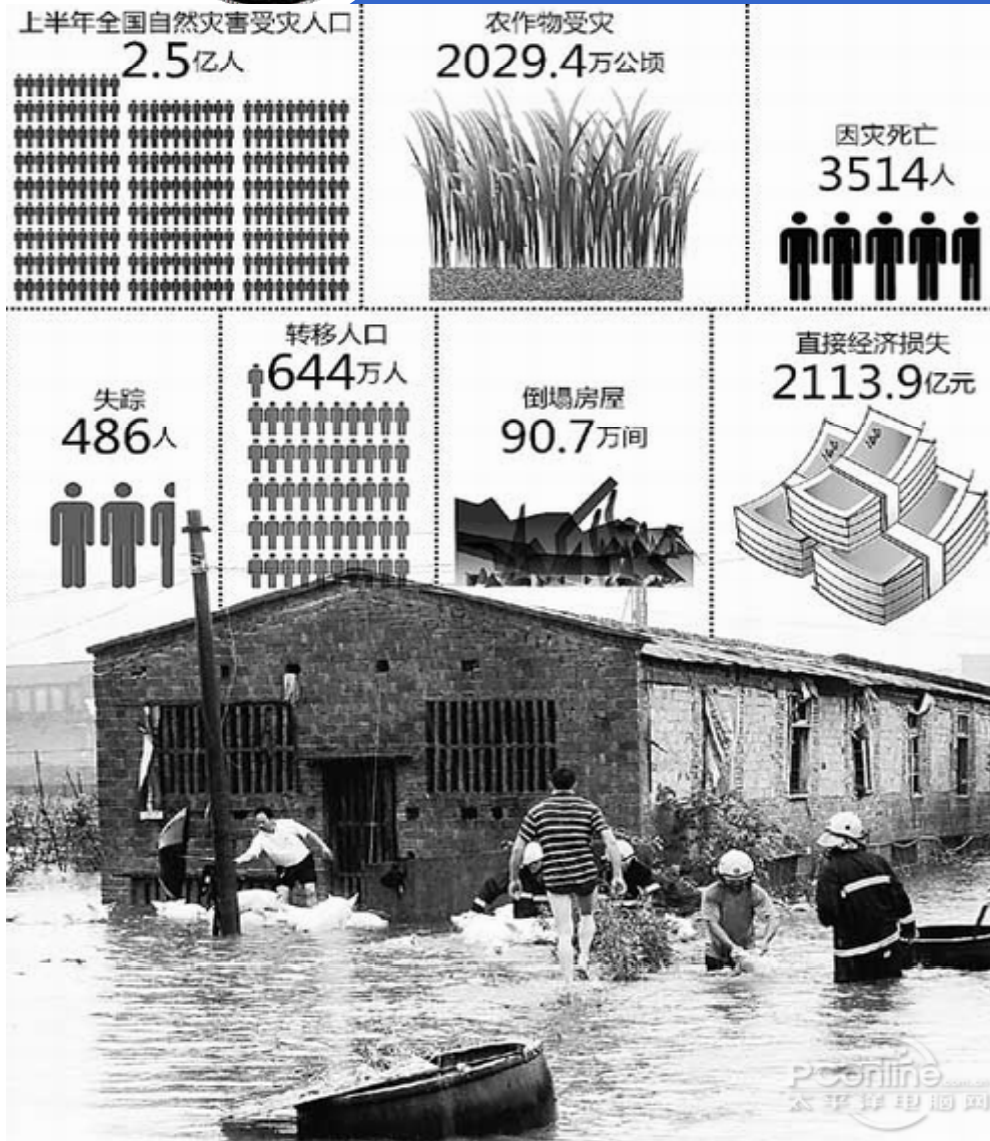


2011





# Disasters in China



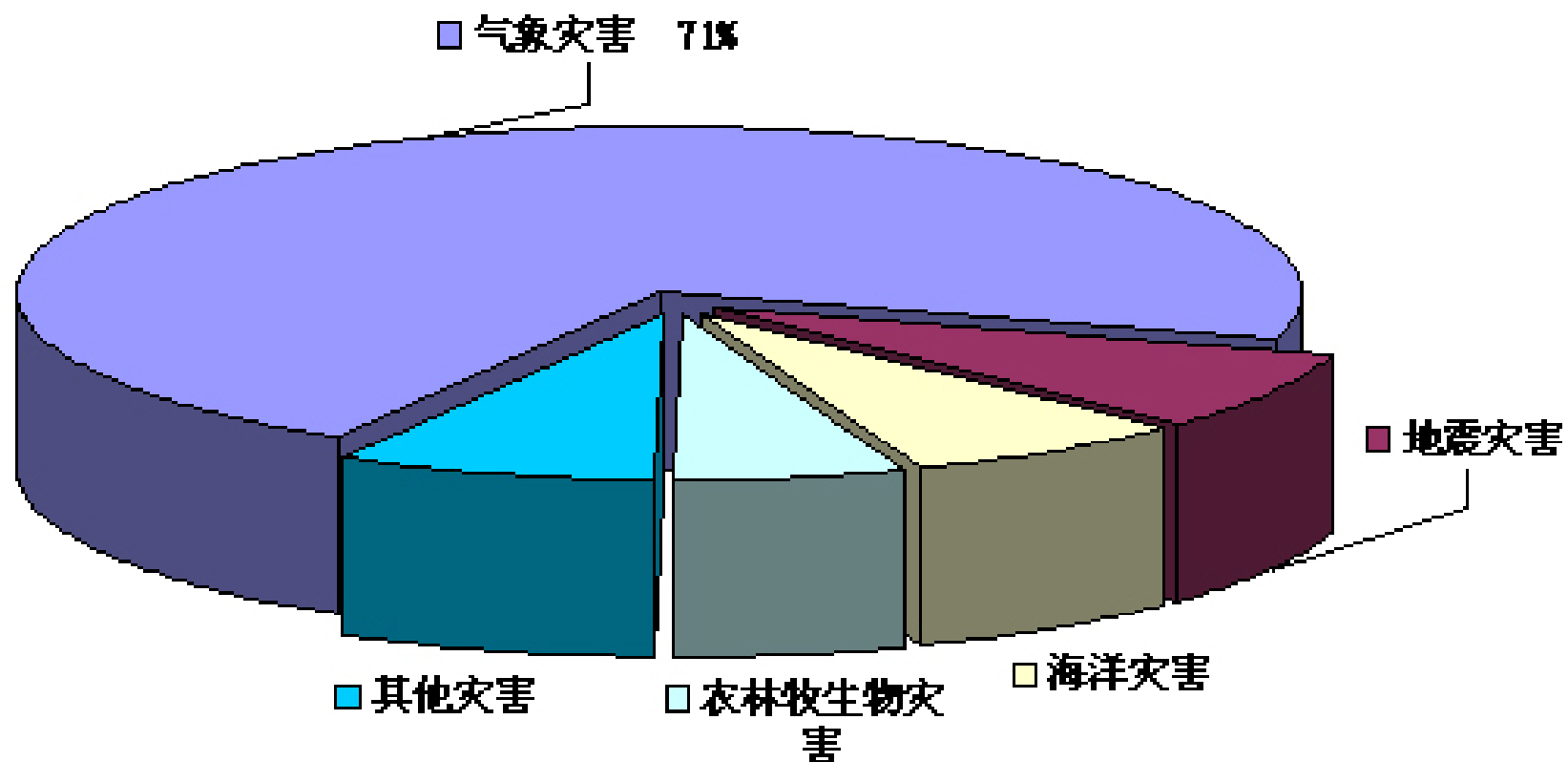
Big country: various natural hazards and/or man-made disasters somewhere all the time

Large population and fast economic development but still lacking of capacity in sciences, technology, engineering, management, insurance mechanism, etc.

**An example:**  
**Jan – June, 2010**  
**250MILLIONS People**  
**30BILLIONS USD Loss**

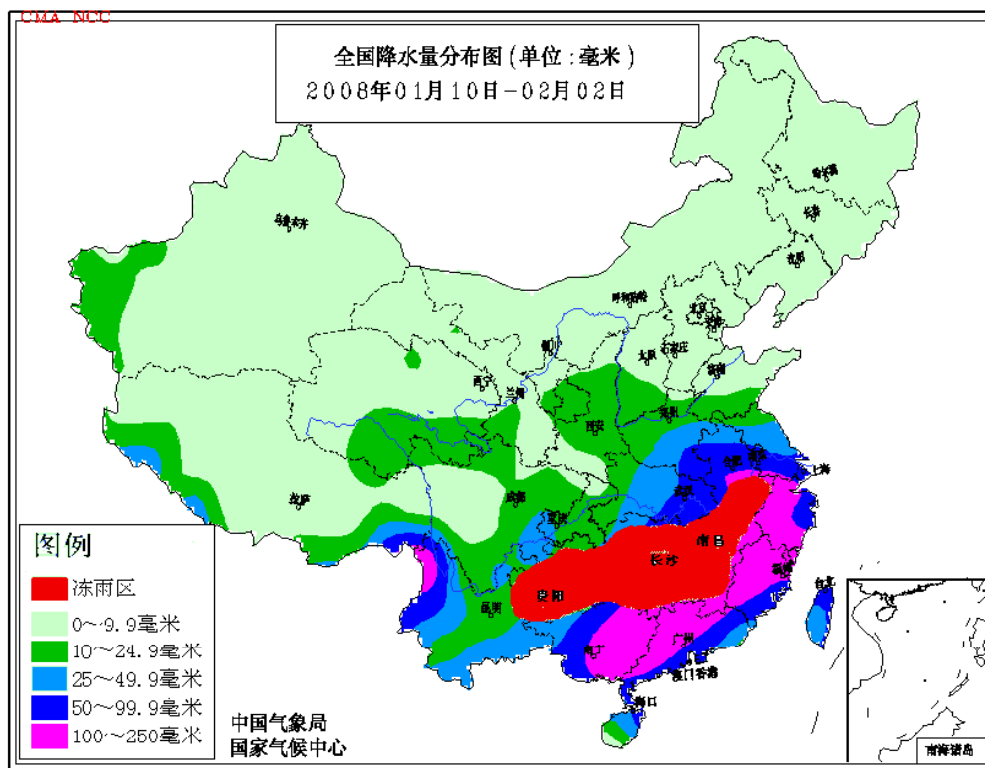


## Meteorological Hazards Dominant



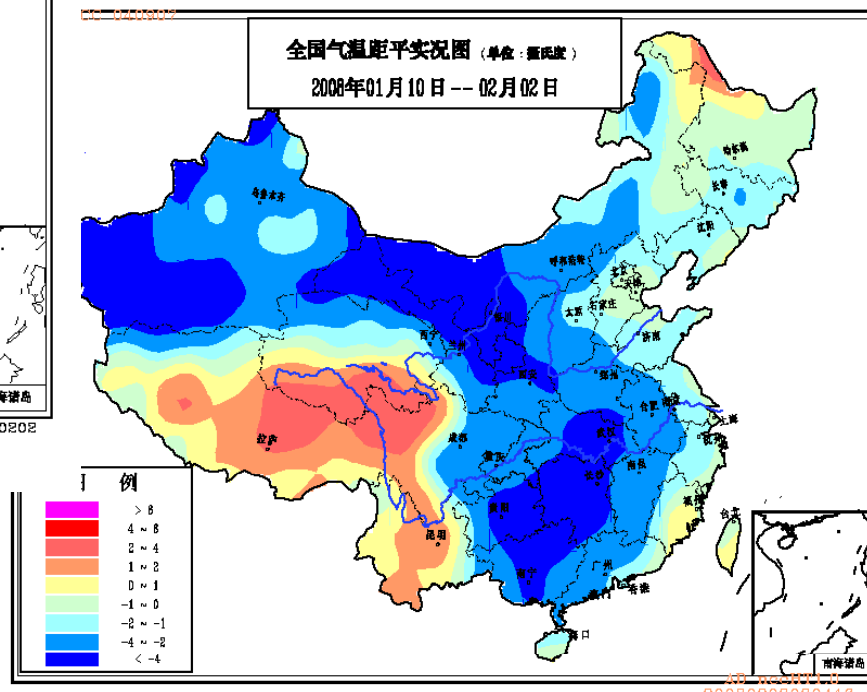


# 2008 Great Ice Storms in Southern China (2008/01/10-02/02)



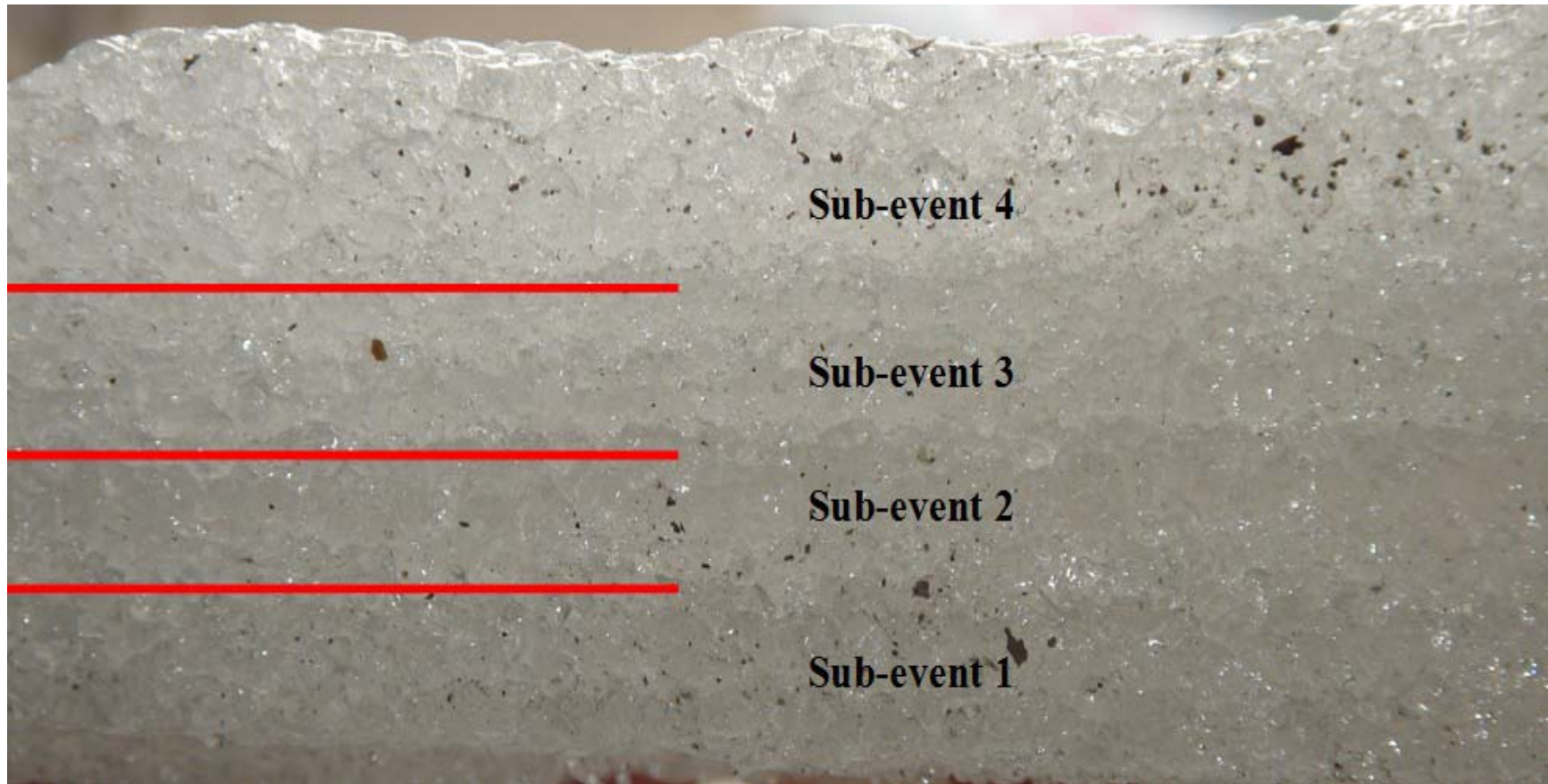
Precipitation

## Temperature Anomaly





## Extreme Event: 4 Continuous Ice Storms



**The four layers of ice accumulated during the four sub-events from  
January 10 to February 6, 2008 in Hunan Province**



**Powerline Facilities**



**Transformation-highway transportation**



**Transformation-air transportation**



## A Natural Extreme Event leads to a Social Extreme Event





## Lessons Learned

- **Disaster chains: from one natural hazard to another and to the social event**
- **Smaller scale, high intensity, sudden onset event (a trend? Urbanization and human activities intensified?)**
- **Definition of Extremes: Integrated, multidisciplinary research**



# Summary

1. Climate is always changing so climate risks are inevitable, especially when the “deep” climate change is occurring!
2. Climate risks are caused by many factors, the major, hard to control, most complicated factor is our human beings (our action, our behaviors, our capability of understanding Earth’s system, etc.)
3. Dealing with climate risks requires a multi-disciplinary, multi-dimensional and precautionary-based resilient adaptation approach