



我国农业自然灾害发生趋势分析

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北京



数字农情

Digital
Agriculture



提纲



一、建国以来灾害发生概况

1. 我国主要农业气象灾害及其时空发布
2. 灾害对粮食生产的影响

二、今年可能发生的主要农业气象灾害

1. 主要灾害
2. 可能影响
3. 主要依据

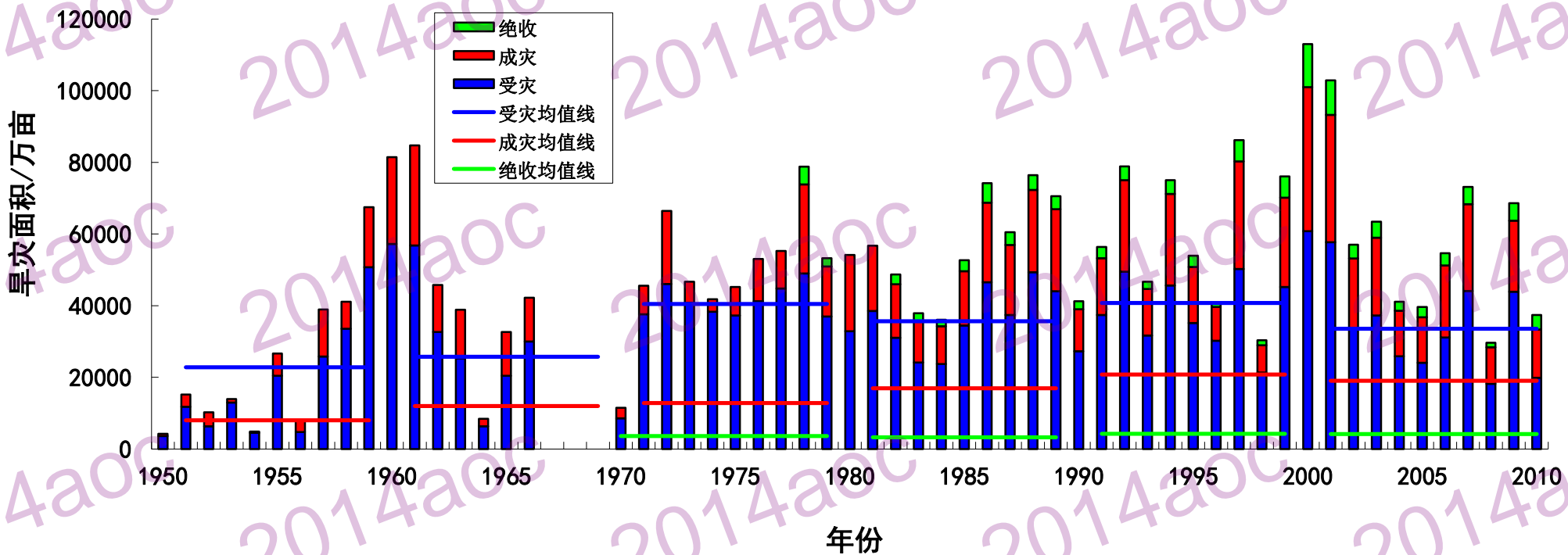
三、未来农业气象灾害发生趋势

四、农业防灾减灾战略对策



一、建国以来灾害发生概况

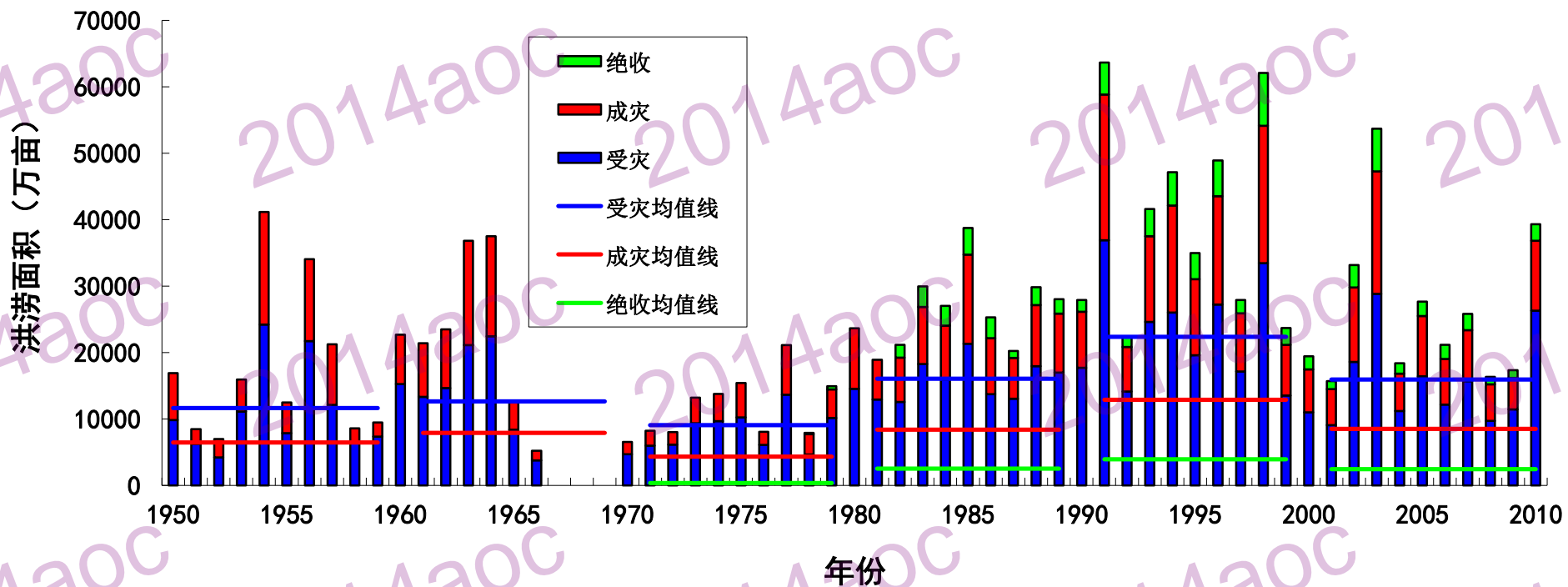
1、我国主要农业气象灾害及其时空分布



1950-2010年全国旱灾灾害面积变化



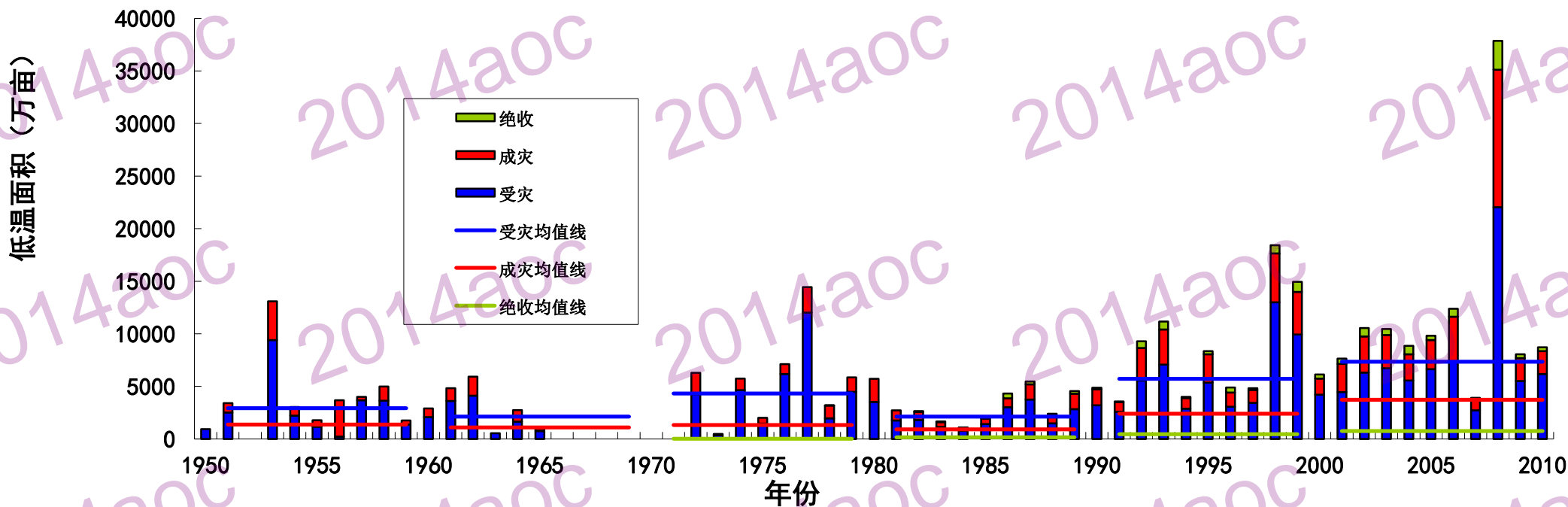
一、建国以来灾害发生概况



1950-2010全国洪涝灾害面积变化



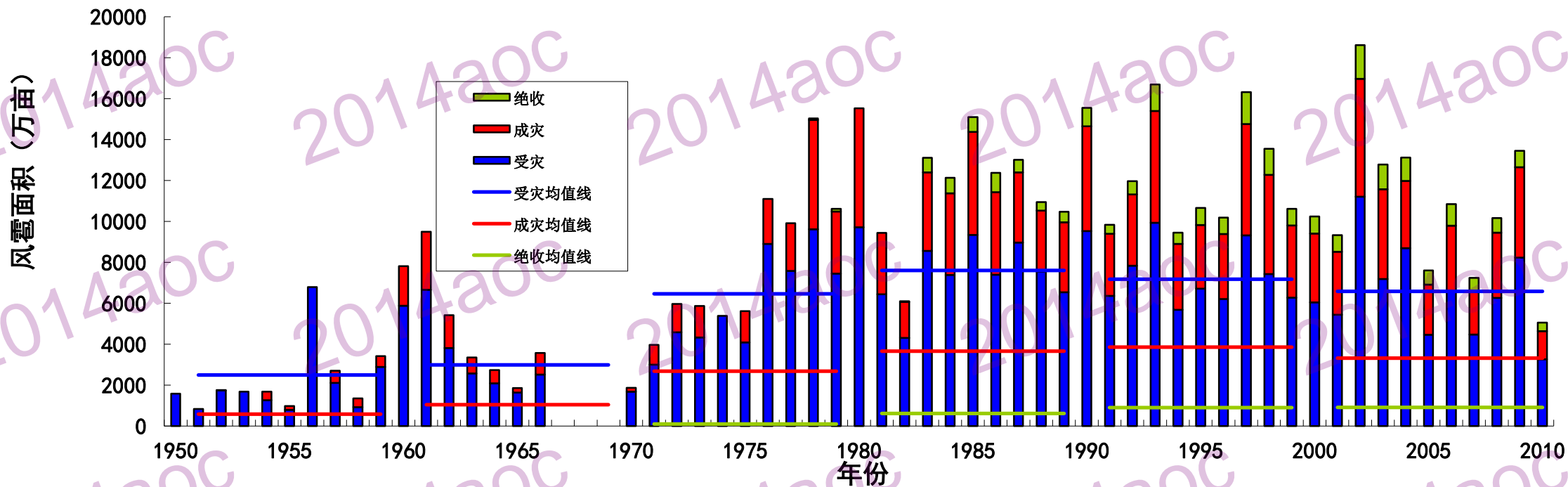
一、建国以来灾害发生概况



1950-2010年全国低温灾害面积变化



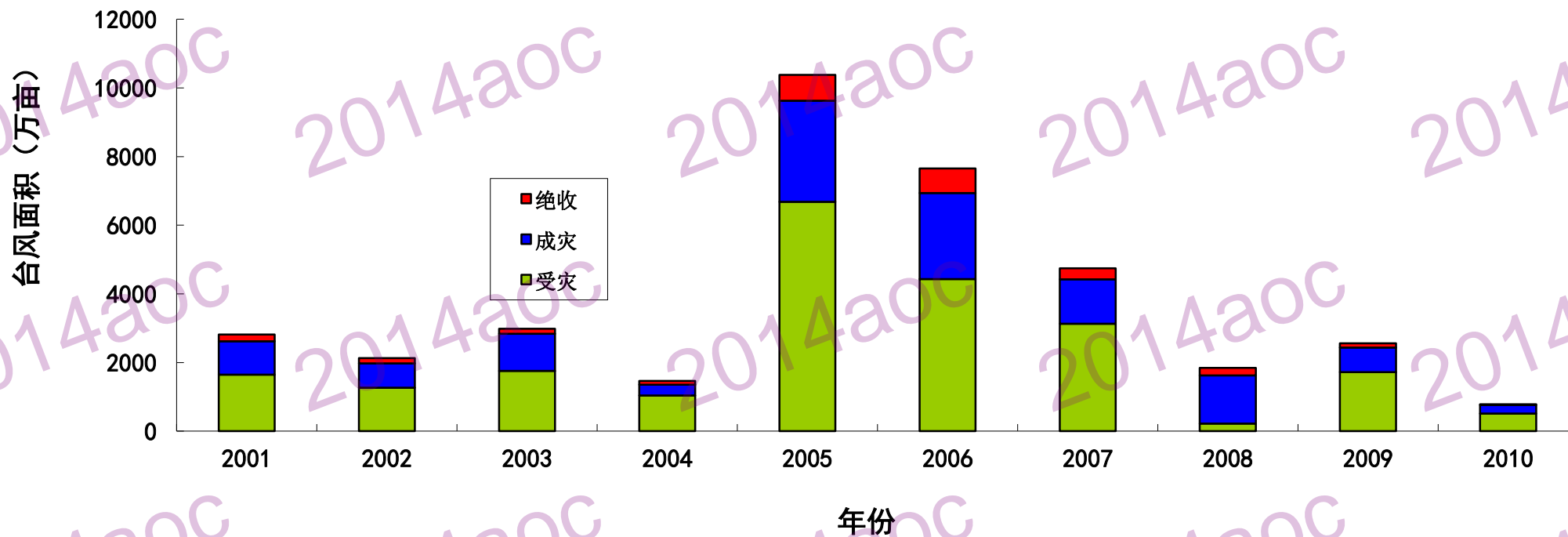
一、建国以来灾害发生概况



1950-2010年全国风雹灾害面积变化



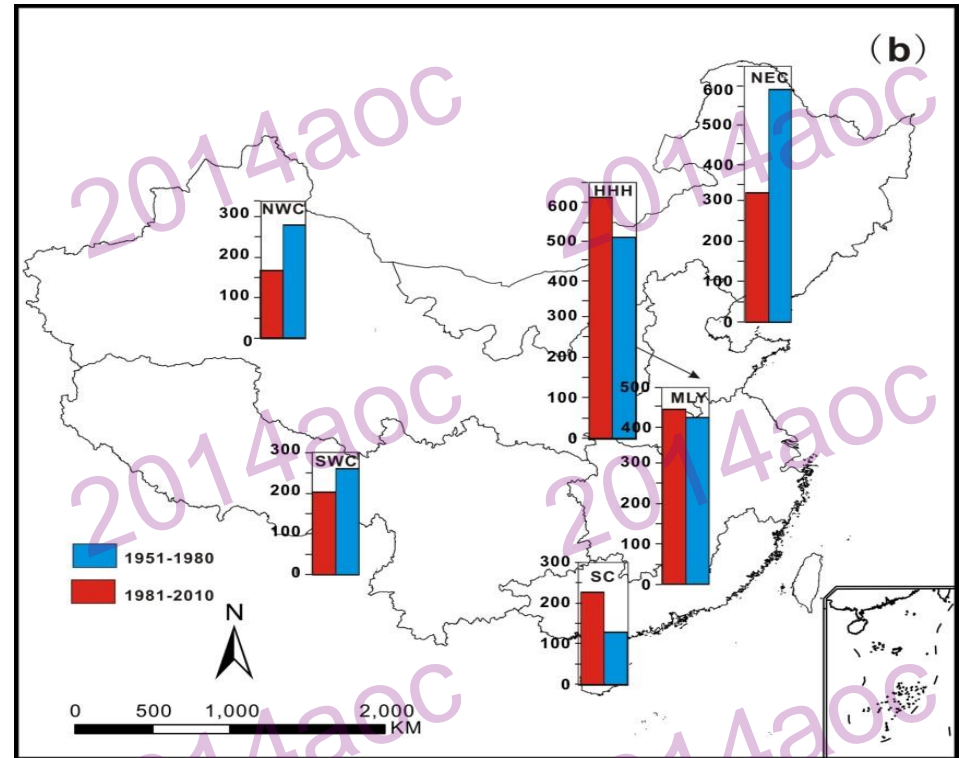
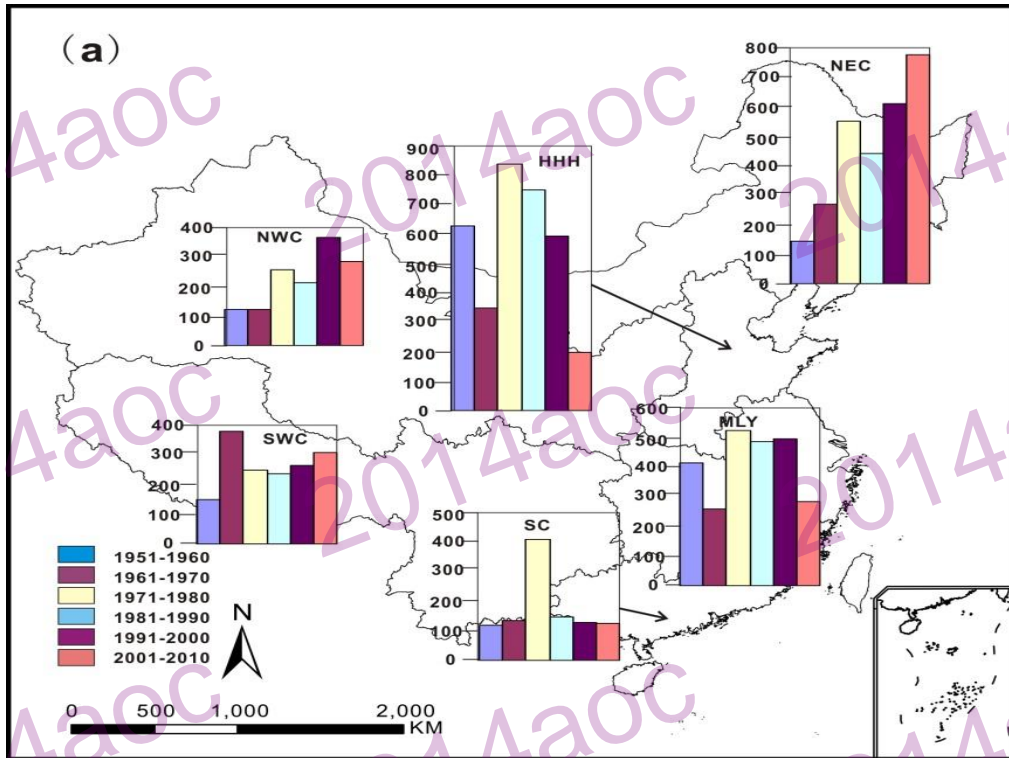
一、建国以来灾害发生概况



2001-2010年全国台风灾害面积变化



一、建国以来灾害发生概况

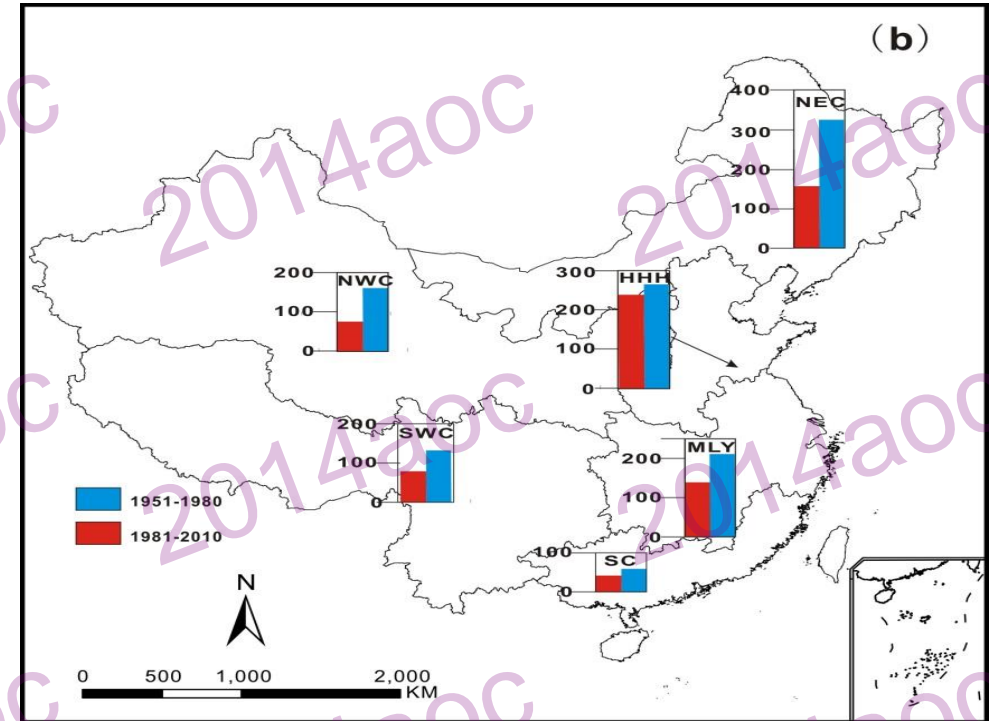
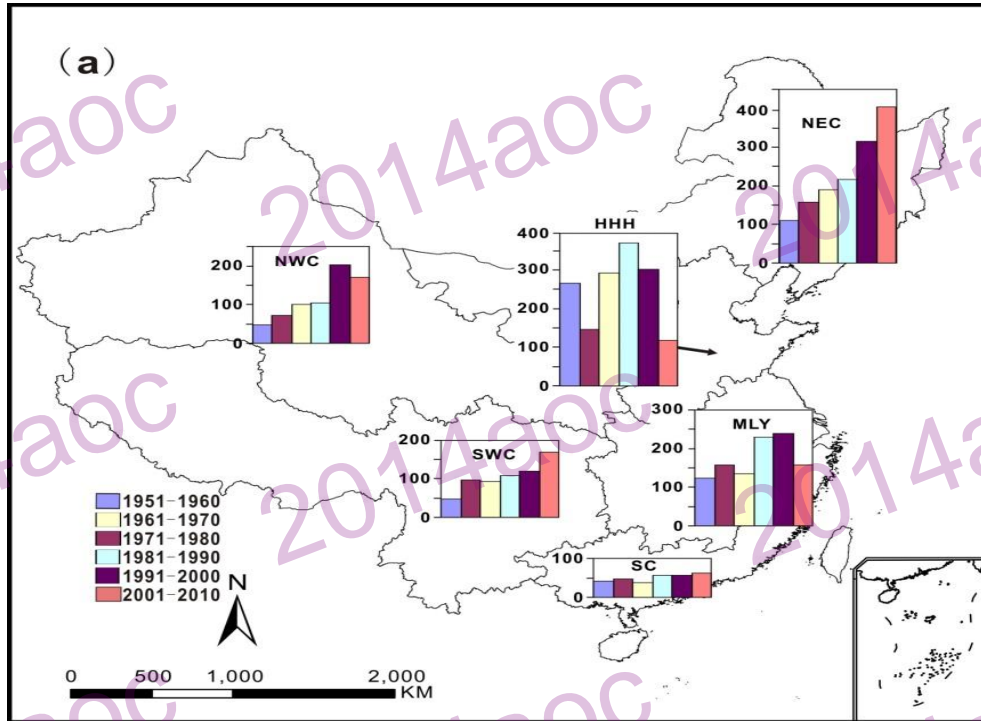


The variability of drought-influenced areas in each region from 1951 to 2010(a); the changes of the average 30 years of the crop drought-influenced areas in each region (b).

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一、建国以来灾害发生概况

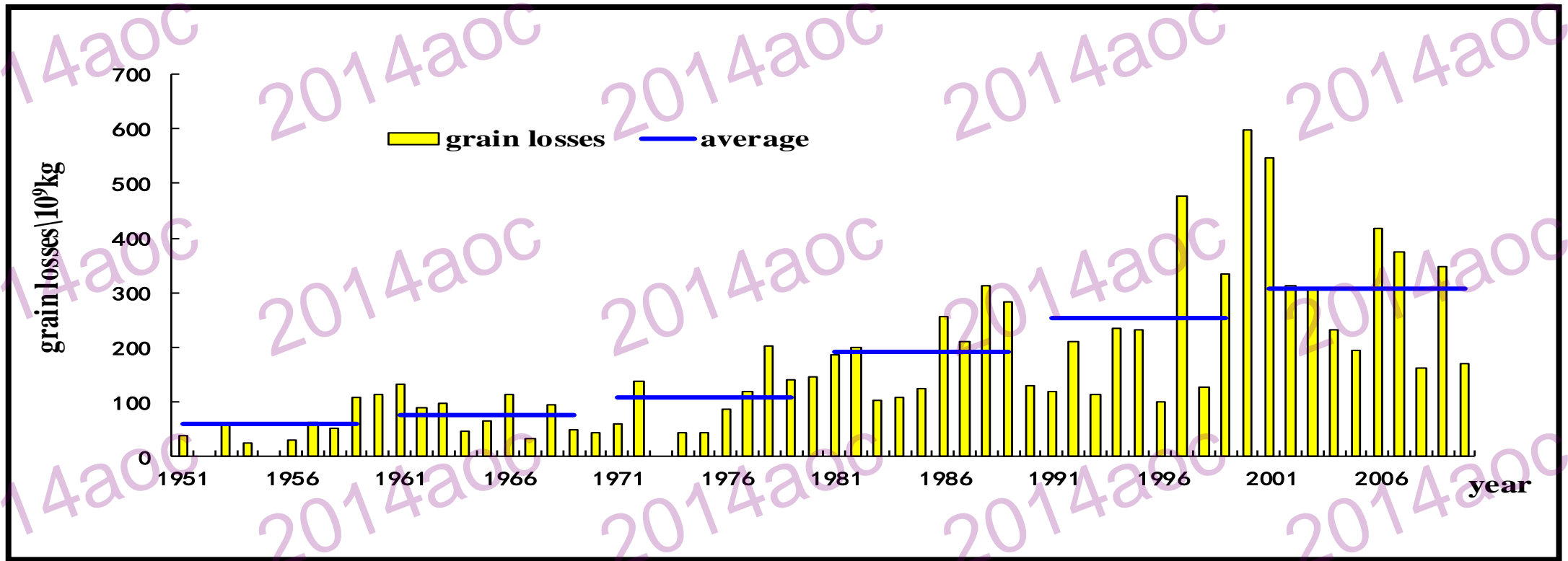


The interdecadal changes of the drought-affected areas in each region from 1951 to 2010(a); the changes of the average 30-year drought-affected areas in each region from 1951 to 2010(b).



一、建国以来灾害发生概况

2、灾害对粮食生产的影响



The changes of the drought induced grain yield loss in China from 1951 to 2012

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一、建国以来灾害发生概况



Decade	1980	1990	2000							
Frequency	1	3	6							
Year	1988	1997	1999	2000	2001	2002	2003	2006	2007	2009
Grain losses /10 ⁹ kg	311.69	476	333	599.6	548	313	308	416.5	373.6	348.49

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二、今年可能发生的主要农业气象灾害

1、主要灾害



- (1) 全国性倒春寒
- (2) 东北低温、内涝、干旱
- (3) 流域性洪涝和区域性干旱。



二、今年可能发生的主要农业气象灾害

2、可能影响

- 1、早稻育秧和适时栽插
- 2、冬小麦后期籽粒形成和千粒重
- 3、油菜千粒重
- 4、东北适时春播
- 5、粮食生产保持持续增产难度极大

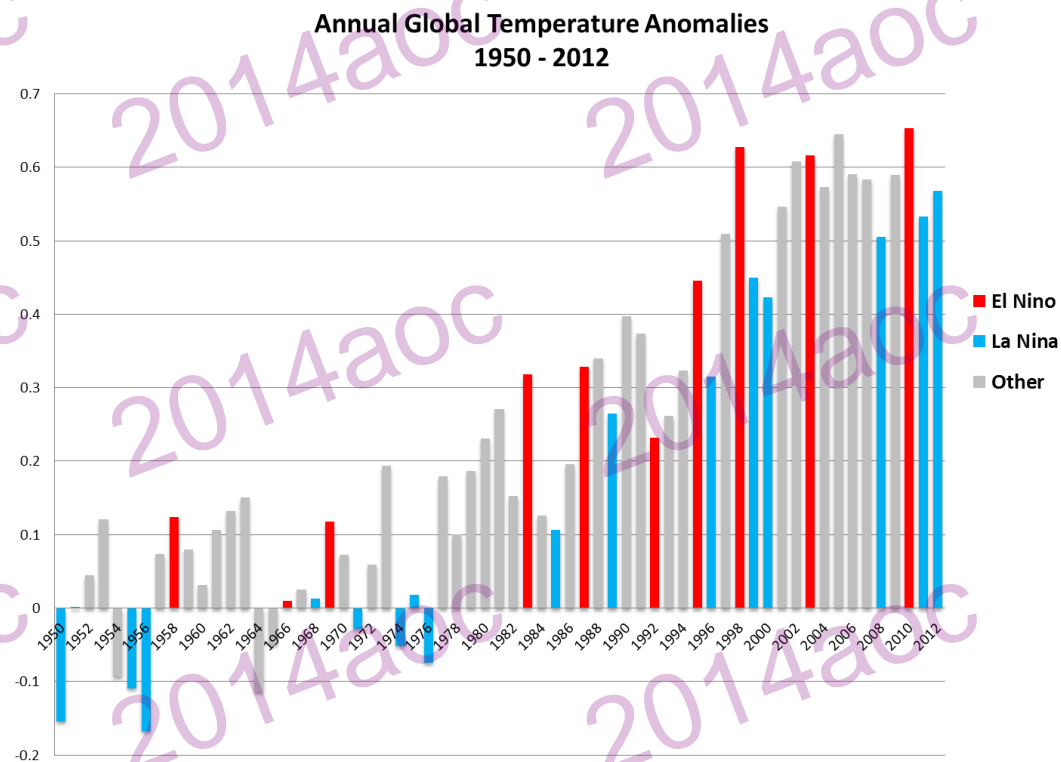
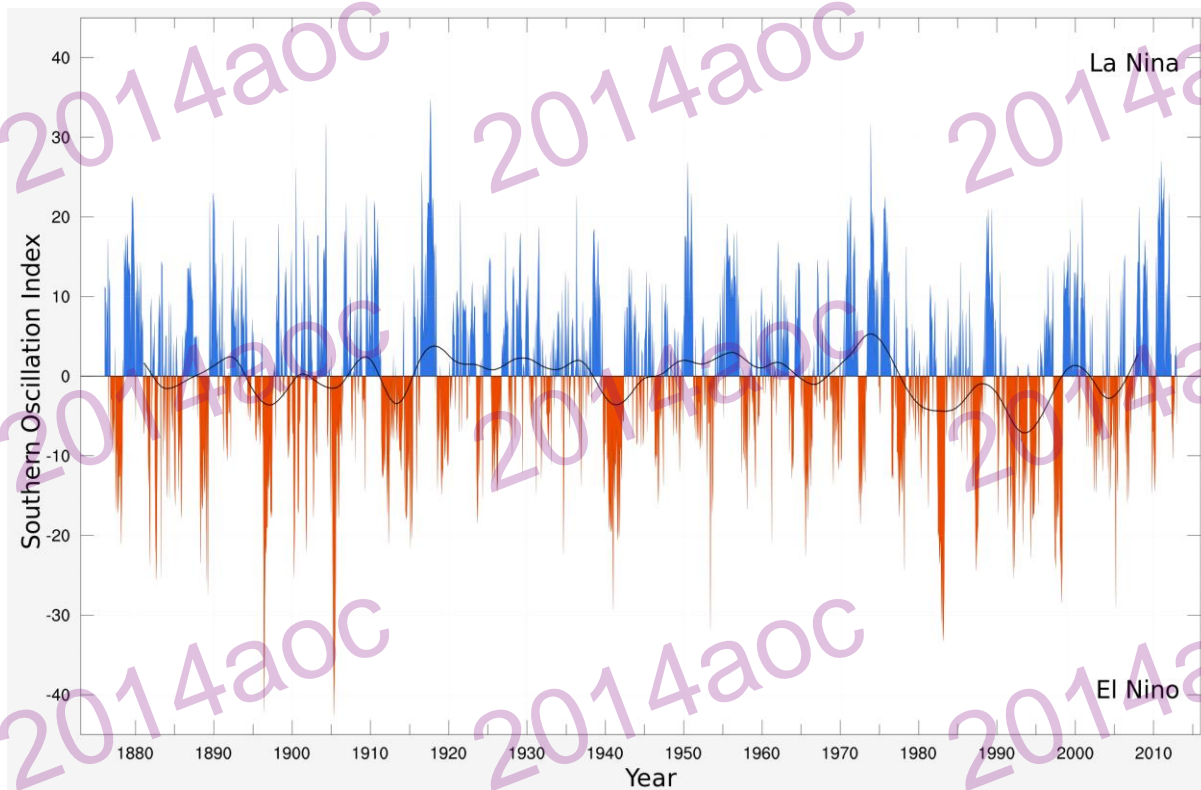




二、今年可能发生的主要农业气象灾害



3、主要依据



今年是厄尔尼若年。

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Digital agriculture



World Meteorological Organization

EL NIÑO/LA NIÑA

UPDATE



Current Situation and Outlook

The tropical Pacific continues to be ENSO-neutral (neither El Niño nor La Niña). Model forecasts and expert opinion suggest that neutral conditions are likely to continue into the earlier part of the second quarter of 2014. However, temperatures below the surface of the tropical Pacific have warmed to levels that can occur prior to the onset of an El Niño event, while climate models surveyed by WMO experts show a steady warming of the tropical Pacific during the months ahead. A majority of models reach El Niño thresholds around the middle of the year. If an El Niño event does occur, it remains too early to determine its strength. National Meteorological and Hydrological Services and other agencies will continue to monitor Pacific Ocean conditions for further El Niño developments, and will assess the most likely local impacts.

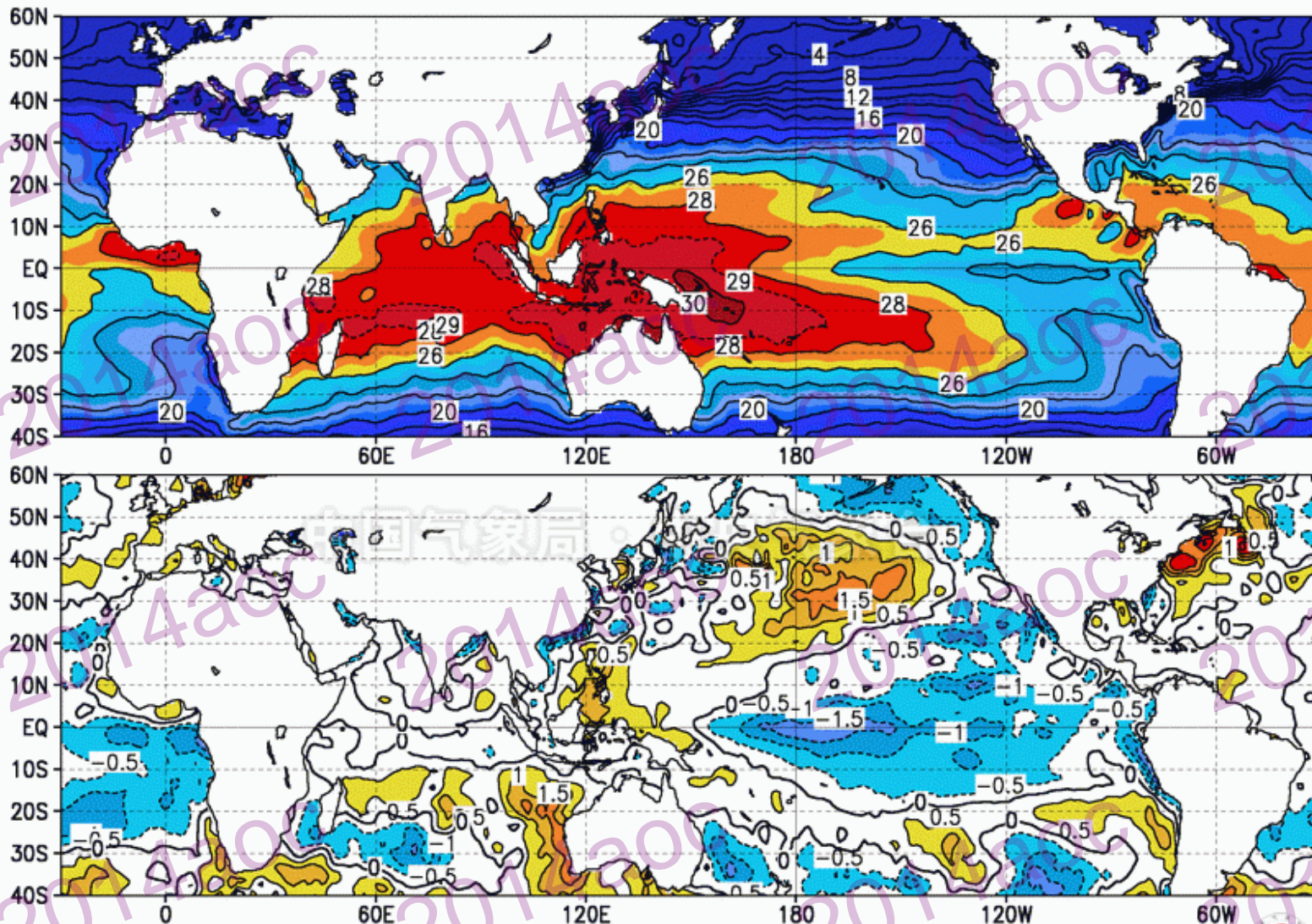


图 4.1 月平均海表温度(上)及距平(下) (°C) 2012.01
Monthly Mean Sea Surface Temperatures (top) and Anomalies (bottom)

Climate Diagnostics and Prediction Division /NCC/CMA



青



三、未来农业气象灾害发生趋势



The IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation

ipcc

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



A changing climate leads to changes in extreme weather and climate events



2

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

2014aoc

ipcc



事件和灾害风险 推进气候变化适应特别报告》

北京区域宣讲会

IPCC SREX Regional Outreach Meeting

Beijing, 26 and 27 April 2012

政府间气候变化专门委员会
中国气象局
英国海外发展研究所
气候和发展知识网

Sponsor: Intergovernmental Panel on Climate Change (IPCC)
Organizer: China Meteorological Administration (CMA)
Co-sponsor: Overseas Development Institute, UK
Climate and Development Knowledge Network



沈晓农



闪淳昌



郑国光



秦大河



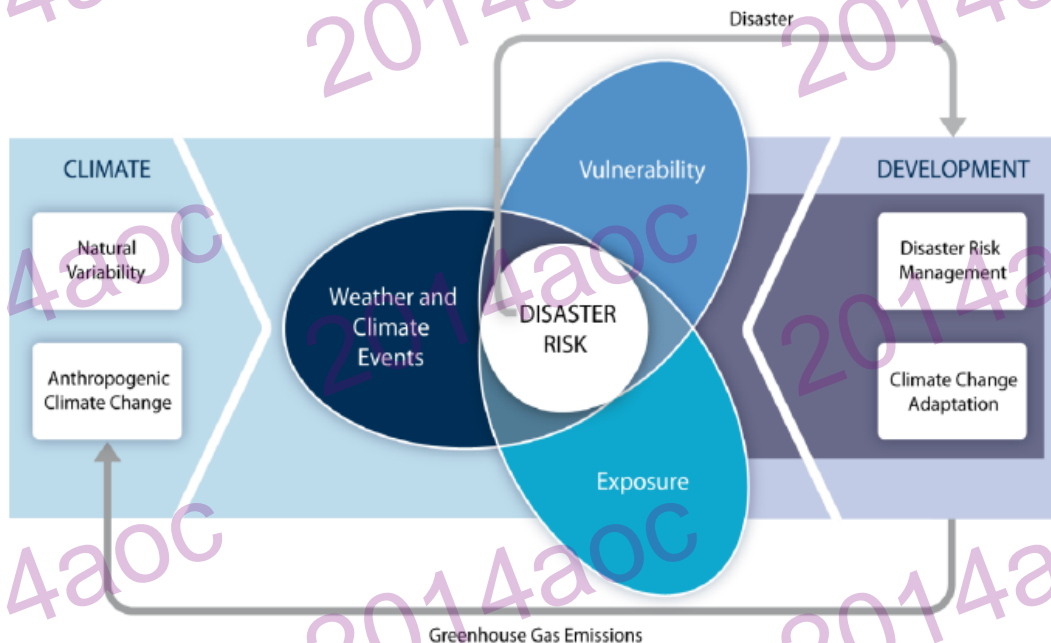
Kristie Ebi



三、未来农业气象灾害发生趋势

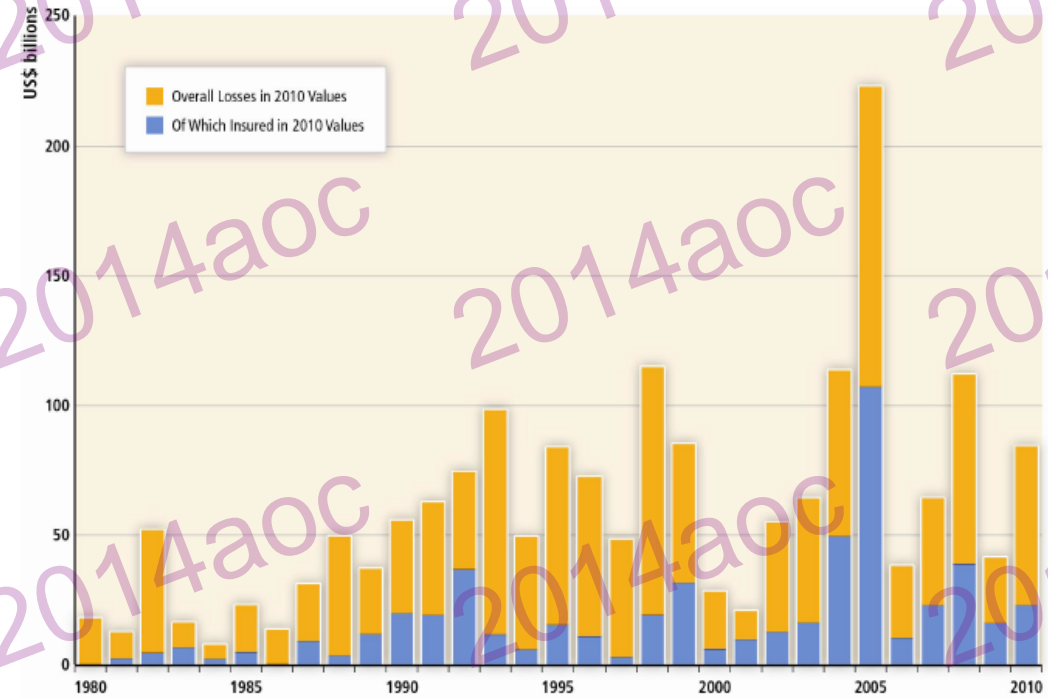


Increasing vulnerability, exposure, or severity and frequency of climate events increases **disaster risk**



Disaster risk management and climate change adaptation can influence the degree to which **extreme events translate into impacts and disasters**

Economic losses from climate-related disasters have increased, with large spatial and interannual variation



Data from Munich Re, 2011

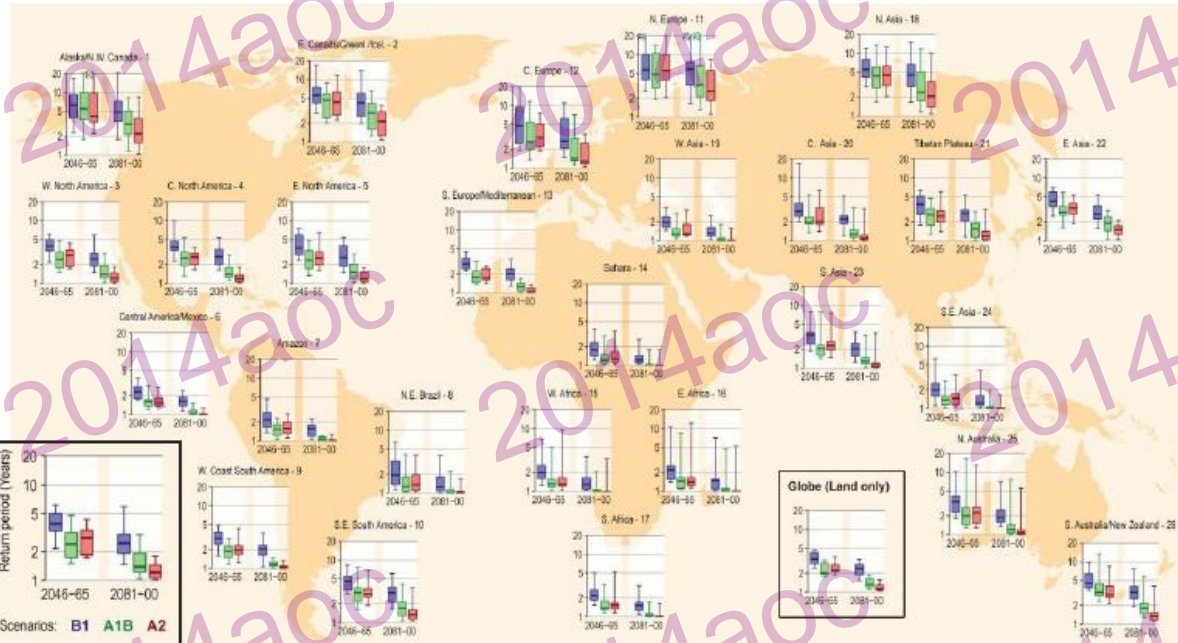


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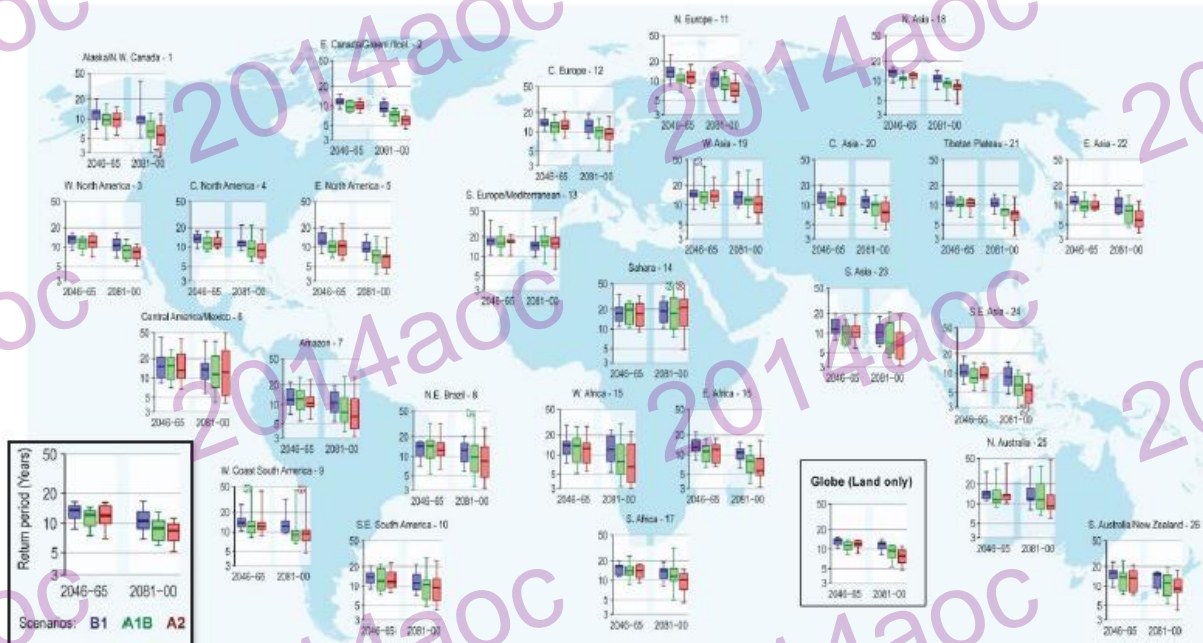


Climate models project more frequent hot days throughout the 21st century

Climate models project there will be more heavy rain events throughout the 21st century



In many regions, the time between "20-year" (unusually) warm days will decrease



In many regions, the time between "20-year" (unusually) intense rainstorms will decrease

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INTERGOVERNMENTAL PANEL ON climate change

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INTERGOVERNMENTAL PANEL ON climate change



四、农业防灾减灾战略对策

十大能力建设



- 1、加强自然灾害监测预警能力建设
- 2、加强农业农村防灾减灾信息管理与服务能力建设
- 3、加强农业自然灾害风险管理能力建设
- 4、加强农业自然灾害工程防御能力建设
- 5、加强区域和农村基层防灾减灾能力建设
- 6、加强农业自然灾害应急处置与恢复重建能力建设
- 7、加强农业防灾减灾科技支撑能力建设
- 8、加强农业防灾减灾社会动员能力建设
- 9、加强农业防灾减灾人才和专业队伍建设
- 10、加强农业防灾减灾文化建设



四、农业防灾减灾战略对策



八大工程

- 1、全国农业自然灾害综合风险调查工程
- 2、国家农业综合减灾与风险管理信息化建设工程
- 3、国家农业自然灾害应急救助指挥系统建设工程
- 4、国家农业救灾物资储备工程
- 5、农业灾情监测预警系统工程
- 6、国家重农业自然灾害科技创新平台建设工程
- 7、农业综合减灾示范社区和避难场所建设工程
- 8、农业防灾减灾宣传教育和科普工程



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敬请批评指正
谢谢!