



**Asia-Pacific  
Economic Cooperation**

---

**2016/SOM3/CSA/013**

Agenda Item: 2

## **Topic on Science Advice in and Around Emergencies - China's Practice**

Purpose: Information  
Submitted by: China



**Fourth APEC Chief Science Advisors and  
Equivalents Meeting  
Lima, Peru  
18-19 August 2016**



4<sup>th</sup> Meeting of APEC Chief Science Advisors and Equivalents (CSAE)  
Lima, Peru, August 18-19, 2016

- Topic on Science advice in and around emergencies

## China's Practice

Xian-En Zhang 张先恩  
Institute of Biophysics, Chinese Academy of Sciences  
Beijing, P R China

### Natural disasters

- **Emerging disasters** - earthquakes, volcanoes, landslides, tsunamis, typhoons, floods, infectious diseases ...
- **Gradual disasters** - land subsidence, land desertification, drought, coastline changes ...
- **Environmental disasters caused by human activities** - ozone layer change, water pollution, soil erosion, acid rain .....

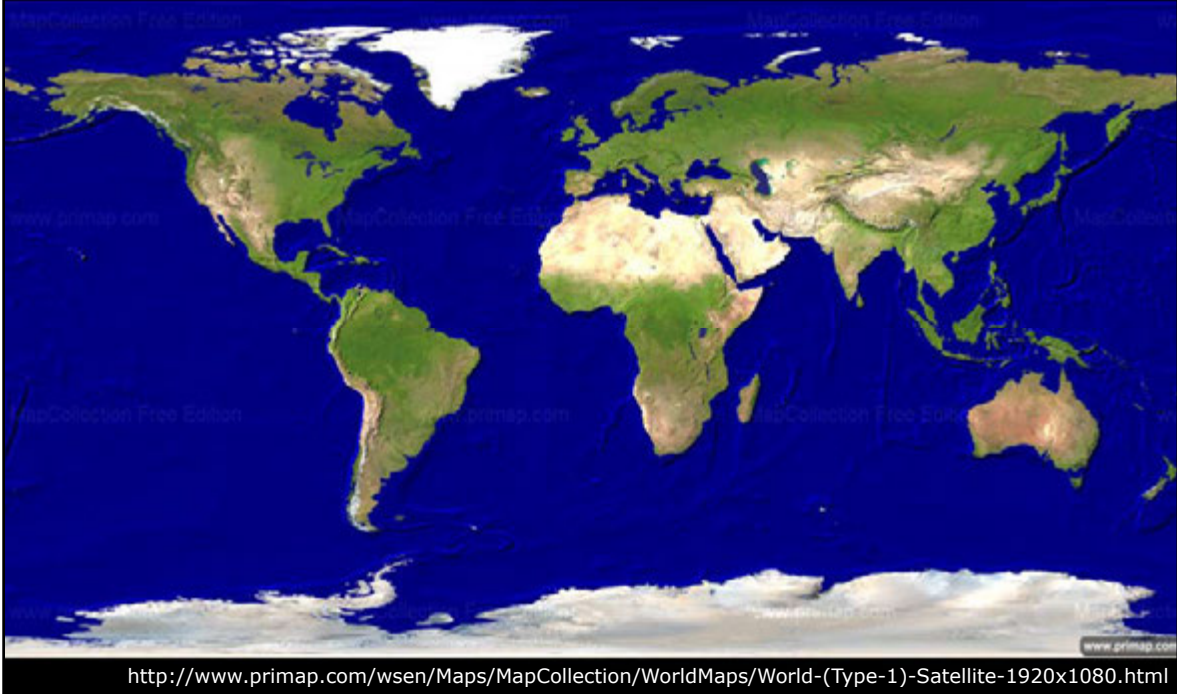
### Impact of the emerging disasters

- **The harm caused by natural disasters is often shocking.** In 2015, a total of 198 natural disasters, caused economic losses of about \$80 billion. For example, the Nepal led to nearly 9000 people killed. Including India, China and Bangladesh, the total loss reached \$6 billion.
- **The influence of natural disasters is very wide.** Major disasters can cause damage to resources and environment, increase fiscal spending, affect the normal social order, industrial and agricultural production and business order. Therefore, it is necessary to recognize the occurrence and development of these disasters, and to make it possible to reduce the harm.

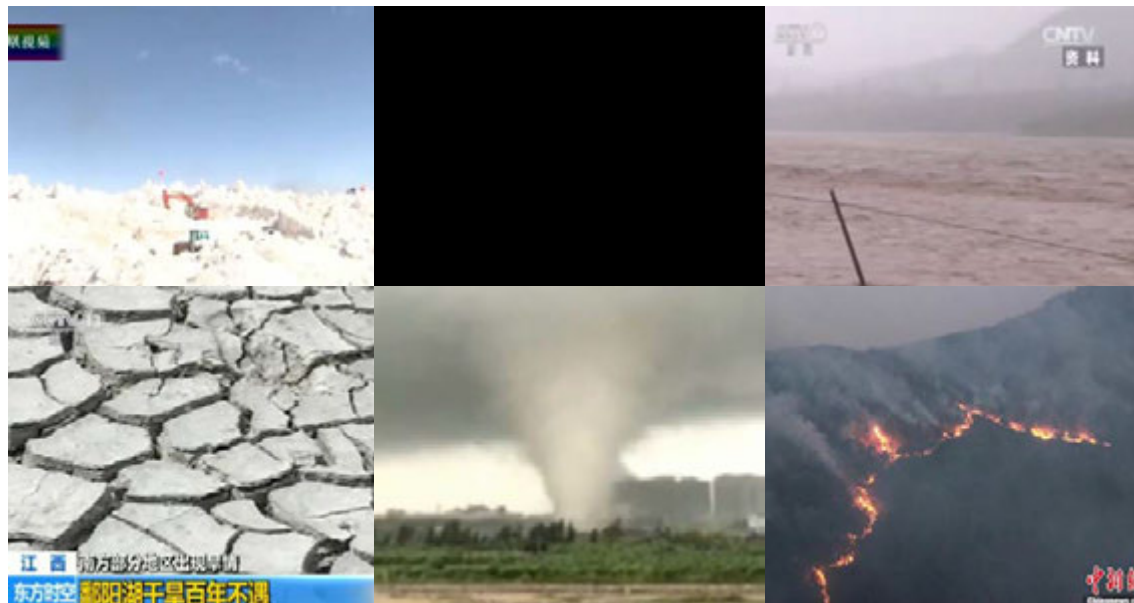
Ref:

<http://news.cctv.com/2016/08/06/APTTKeY7eDQadPbWq417wSKi16980>

### World map - Satellite



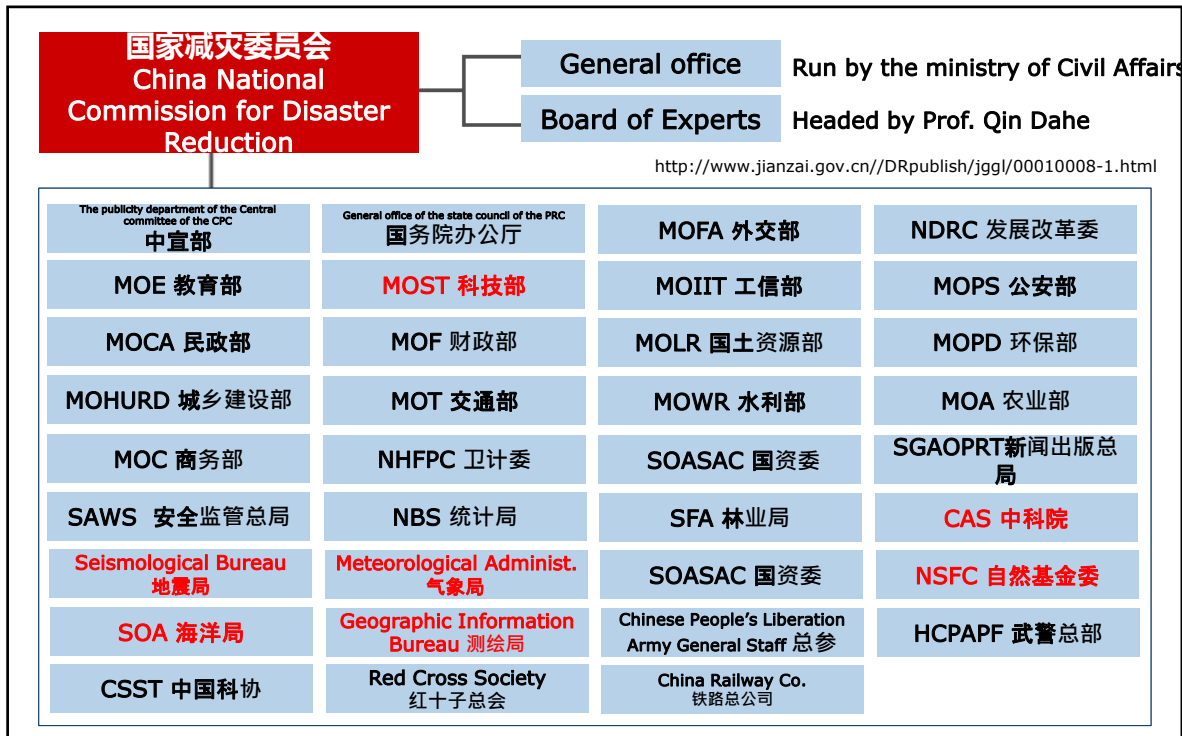
### China suffers many kind of natural disasters



Images from multi media








**8th Senior disaster management officials forum 2014 Beijing**

The forum was cosponsored by the Ministry of Civil Affairs (MCA) and APEC with the theme of "Science and technology strengthening disaster risk reduction".

The vice minister of MCA, Dou Yupei said, Chinese government has been actively echoing to the initiative of UN International Decade for Natural Disaster Reduction (IDNDR) and has established a disaster management mechanism featuring "united leadership by the government, division of responsibility among departments, tiered management of disasters and localities' management as the main role". Chinese government has paid great attention to give full play to the backbone role of S&T in disaster prevention and reduction by continuing to increase the investment in S&T, strengthening the fundamental research and applied research.

**MOST**

- Work plan of dealing with major natural disasters by sciences & technology. Four tasks are clear. First, to strengthen inter departmental coordination in strategic planning; second, initiate a major research project; third, to provide scientific basis for disaster prevention and mitigation.
- Establishment of a expert group to deal with natural disasters
- Special key projects for monitoring, warning and prevention of major natural disasters
- *The S&T solution for EI Nino event*, providing strong science bases for decision making.
- Science and technology to deal with natural disasters - key area of the BRIC-country cooperation framework.

**NSFC**

- Research project“prevention and monitoring of natural disasters”, calling proposals to implement the BRICS STI Framework Programme

**Remote sensing is a key technology in disaster reduction**

国家自然灾害救助应急预案 **National natural disaster relief emergency plan** (2016 Revision) - Set up space and ground integrated disaster monitoring and early warning, analysis and evaluation and decision support system, as well as Demonstration and training.

救助应急预案 **Emergency procedures for disaster relief work** (by the Ministry of Civil Affairs, 2015 Revision) - Use of satellite remote sensing disaster monitoring products at home and abroad, and combine the field information, basic geographic information, historical information and other sources of information, to carry out the comprehensive assessment of the disaster and its development trend.

灾害风险与损失评估工作规程 **Working procedures for disaster risk and loss assessment** (by the National Disaster Reduction Center of the Ministry of Civil Affairs, 2013 revision) - Remote sensing data production, disaster feature parameter extraction, major disaster emergency response and recovery and reconstruction inspection products; determination of the possible risk assessment scope

**UN-SPIDER KNOWLEDGE PORTAL**  
Space-based information for Disaster Management and Emergency Response

**Promoting the use of Earth observations and space-based applications in years to come**

UN-SPIDER and its partners aim to raise the profile of space-based information for global disaster risk reduction. (Image: NASA)

UNOOSA/UN-SPIDER and many partners from the Space, the Earth observations and the Civil Protection communities, and from the regional and international organizations have conducted a variety of efforts since June 2014 as a way to spearhead efforts regarding the incorporation of the use of Earth observations and space-based applications in the Sendai Framework for Disaster Risk Reduction, which was launched during the Third World Conference on Disaster Risk Reduction. The partners in this effort include:

- UN agencies: UNOOSA/UN-SPIDER, FAO, UNITAR/UNOBAT and ESCAP
- International Organisations: GEO, CEOS, GFDRR, **CAS-TWAS-SDIM**
- Regional Organisations: ADRC, ICMOD, European Commission (COPEPINCUS EMS)
- Space Agencies: ESA (Europe), DLR (Germany), JAXA (Japan)
- Ministries: MEXT (Japan) and MoDMR (Bangladesh)
- Civil Protection Agencies: NDRCC (China), NEC (Dominican Republic)
- Academia: Tohoku University/IRDiS (Japan)

**The CAS TWAS Centre of Excellence on Space Technology for Disaster Mitigation (SDIM) is hosted by the CAS Institute of Remote Sensing and Digital Earth (RADI), was established in 2013. It aims at demonstrating cooperative research, providing application training, and offering technology transfer, team development, strategic study, and advisory services to other**

**These efforts have been endorsed by government institutions of Germany, China, the Dominican Republic, Guatemala and Iran. In addition, UNOOSA/UN-SPIDER, GEO, JAXA and DLR worked with key government agencies in Asia, Africa, Europe, Latin America and the Caribbean to ensure that the proposed text on the use of Earth observations and space-based technologies was introduced in the Sendai Framework.**

**4th Meeting of the ICG/PTWS Reginal Working Group on Tsunami Warning and Mitigation System in the South China Sea Region** Quezon City Philippines, Mar. 2016



The meeting was participated by the representatives the South China Sea surrounding countries and Intergovernmental Oceanographic Commission (IOC), Japan's northwestern Pacific Tsunami Warning Center, and formally adopted China's working plan for construction of the South China Sea regional tsunami warning center. The second meeting will be held in China.

Hopefully the new system will take key role in tsunami warning and mitigation in the South China Sea region.



