

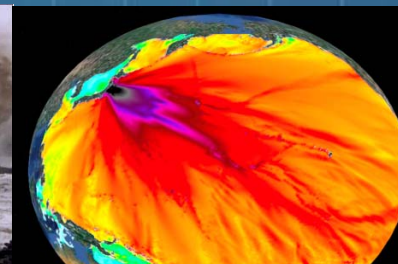
Cooperation with the ASEAN Countries in marine forecast and disaster relief

Dong jianxi

National Marine Environmental Forecasting Center(NMEFC),

SOA, China

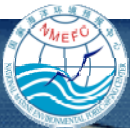
26, Feb, 2016





Outline

- ◆ An overview of NMEFC
- ◆ Cooperation with the ASEAN Countries
- ◆ Future cooperation on marine forecast and disaster relief





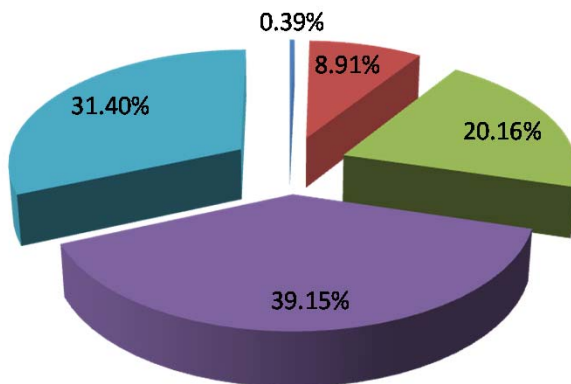
An overview of NMEFC





NMEFC general introduction

- National Marine Environmental Forecasting Center (NMEFC) :
the only national ocean forecasting agency in China.



❖ 358 staffs

- Academician of CAS 1
- Researcher 23
- Associate Researcher 52
- Engineer 101
- Research Assistant 81



Operational Oceanography History of NMEFC

- 1965: established as the Marine Hydro-meteorological Forecasting General Observatory
- 1974: storm surge forecast
- 1976: sea temperature forecast
- 1983: renamed as the National Marine Environmental Forecasting Center
- 1986: deliver forecasts by radio and TV
- 1996: El Niño forecast
- 2000: sea temperature-salinity-currents and ocean wave forecasting systems for the China Sea and Northwest Pacific Ocean
- 2001: red tides forecast
- 2006: tsunami forecast
- 2010: established Key Laboratory of Research on Marine Hazards Forecasting (SOA)
- 2013: Global Operational Oceanography Forecasting System



DIVISIONS



NMEFC

Marine disasters Pre-warning Division

Marine Environmental Forecasting Division

Numerical Forecasting Division

Marine Weather Forecasting Division

Climate Prediction Division

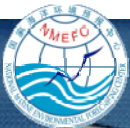
Polar Forecasting Division

Network and Computation Service Division

Marine Information Management Division

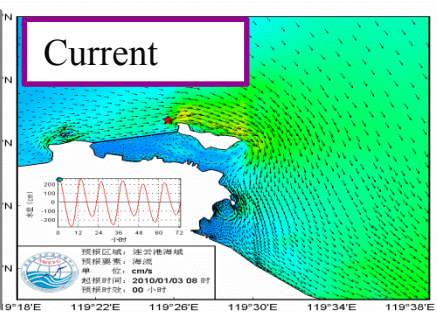
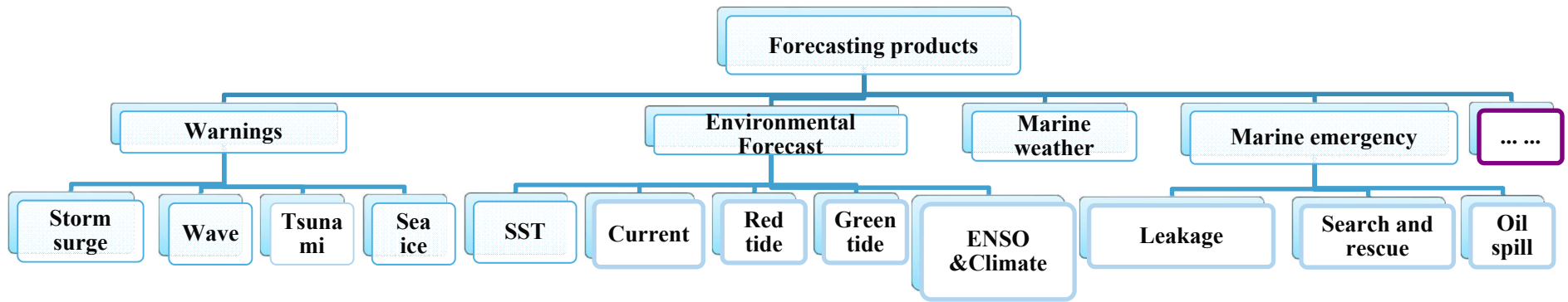
Public Production Services Division

Key Laboratory of Marine Disasters Forecasting





◆NMEFC issues dozens of marine disasters and environmental forecast products, including storm surge, huge wave, sea Ice, El-Nino, tsunami, sea temperature, current, salinity, Oil Spill, Green Tide, search and rescue...





Media for the release of marine forecasts and warnings

High-performance studios

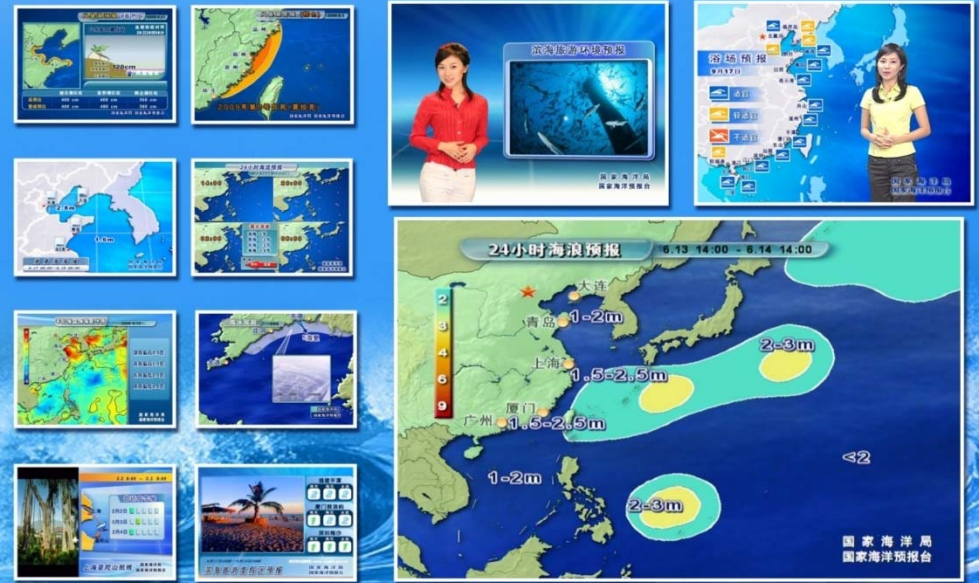


Forecasting products are produced and disseminated to the public by:

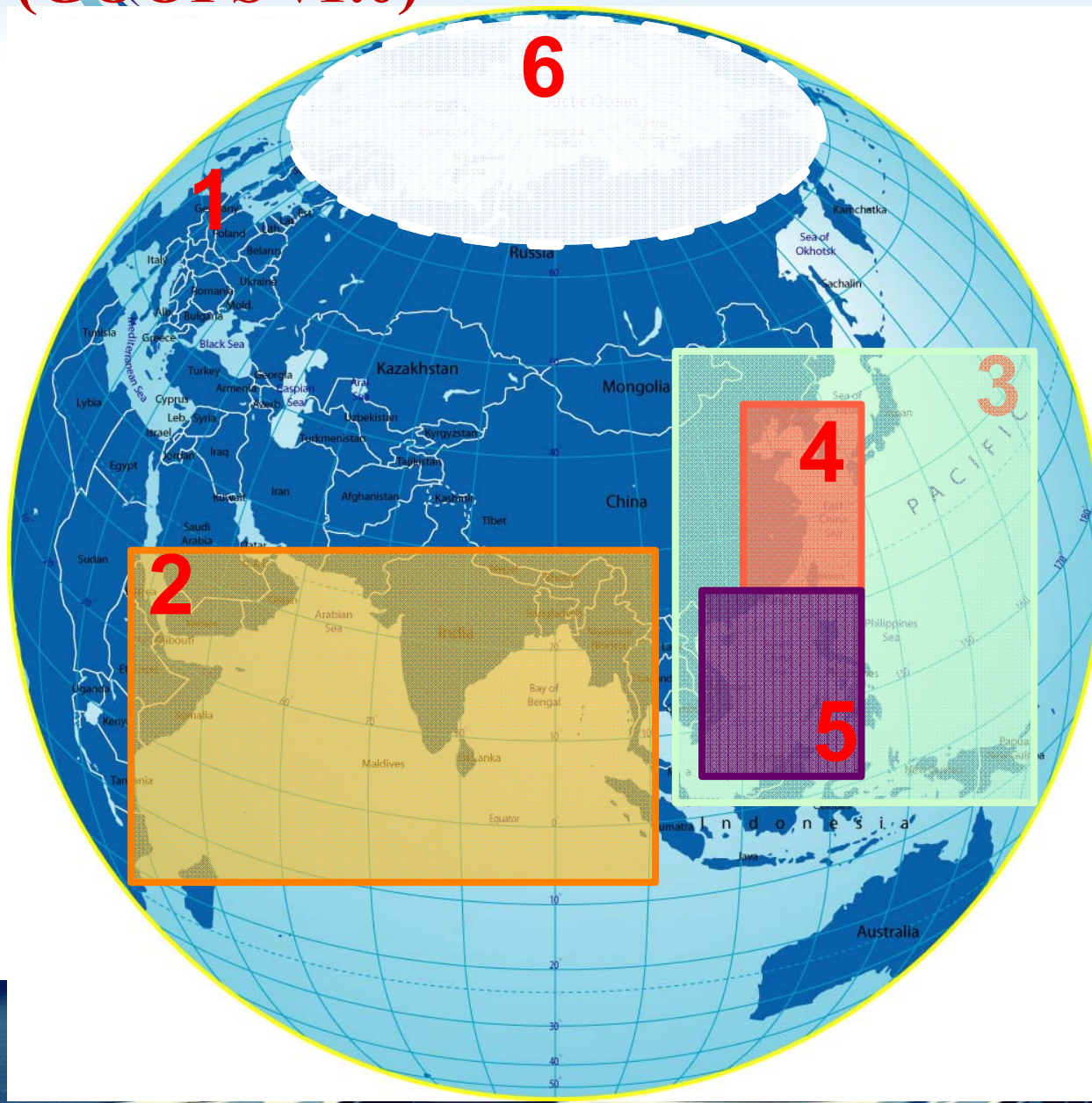
- TV programs covering the national and regional TV channels (CCTV, et al.)
- Broadcasting programs (CCBS)
- Website
- Microblog
- Newspaper
- LCD in the fishery ports or beach

Forecasts and Warnings are disseminated to the governments and concerned department by:

- Digital fax using parallel tech.
- Short messages
- Telephone



Global Operational Oceanography Forecasting System (GOOFS v1.0)



1. Global ocean
2. Indian Ocean
3. Northwest Pacific
4. Bo-Sea
5. East China Sea
6. Polar regions



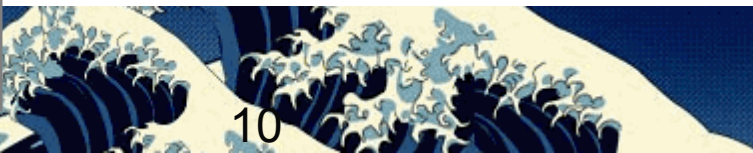
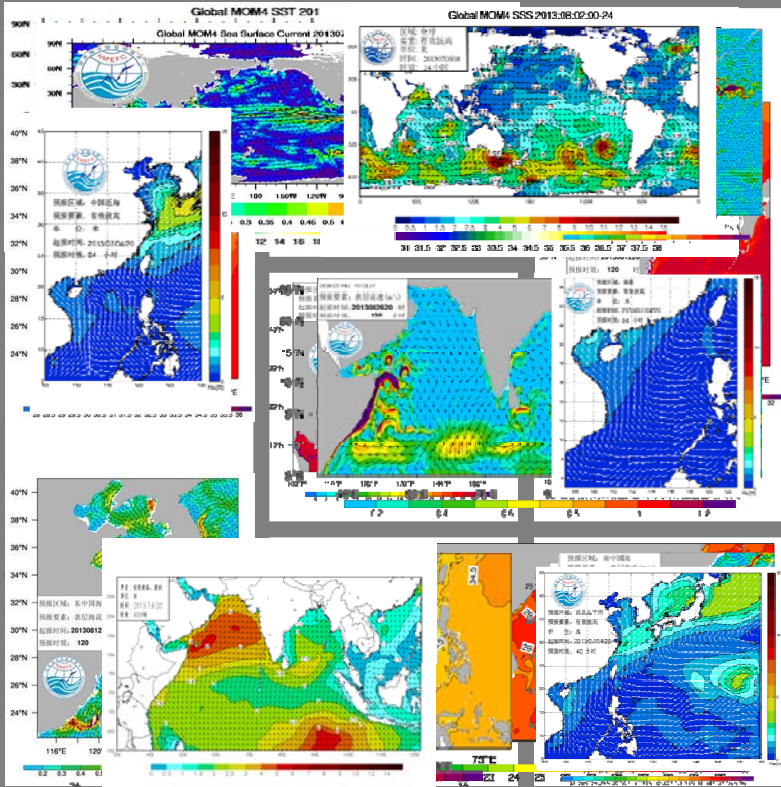


Sea Temperature

Salinity

Current

Ocean Wave





Global Coastal Tourist Destinations Forecasts

Forecasts for Travel Channel (20130521)

City	Wave	Temperature	City	Wave	Temperature
Da Lian	Slight	10.7	Maldives	Moderate	29.0
Vladivostok	Slight	5.9	Cape Town	Moderate	16.2
Jeju	Slight	17.7	Rio de Janeiro	Moderate	24.2
Tokyo	Slight	18.4	Lisbon	Moderate	17.9
Shanghai	Slight	19.1	Barcelona	Slight	16.6
Keelung	Slight	24.9	Bergen		
San Ya	Slight	28.8	Hamburge		
Hong Kong	Slight	25.8	San Franci		
Bangkok	Slight	31.0	New York		
Singapore	Slight	30.9	Sydney		
Dubai	Slight	27.7	Hawaii		

全球海洋预报
1.16 08:00-1.17 08:00

济州岛 16.9°C
东京 15.6°C

更多资讯请登陆 www.nmefo.gov.cn

国家海洋局
国家海洋预报台





Cooperation with the ASEAN Countries



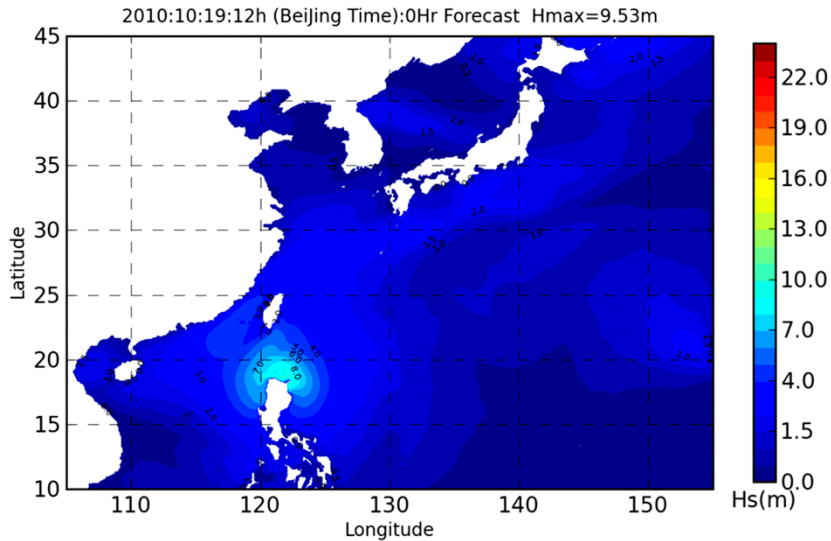


There are about 90 tropical cyclones occurred around the globe each year, storm surge caused by tropical cyclones produce an effect on china, philippines, Vietnam, Myanmar etc.

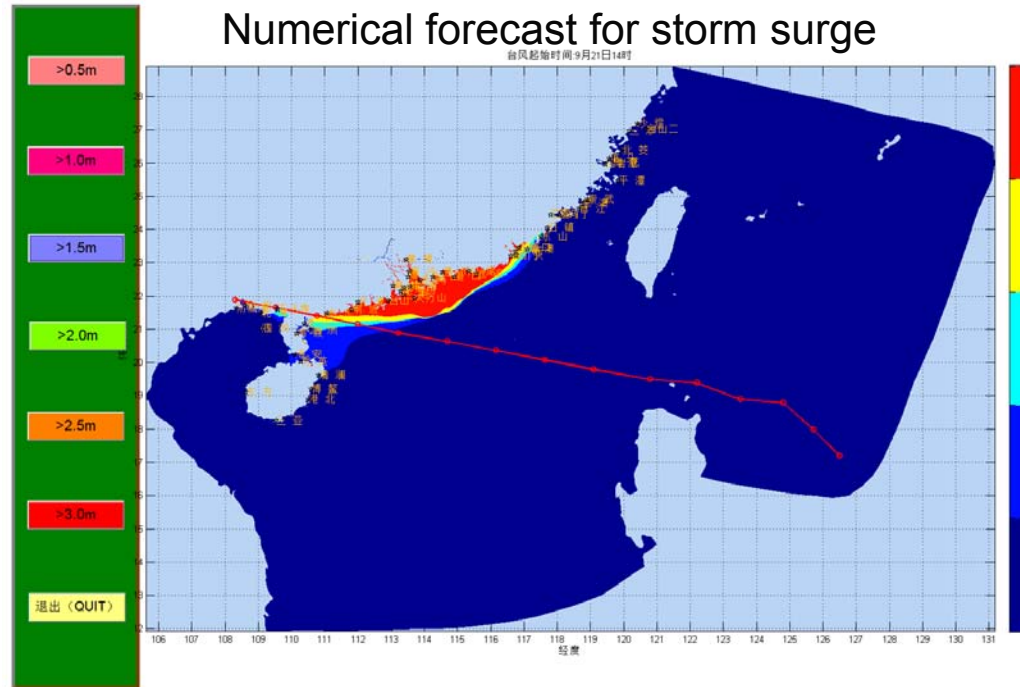




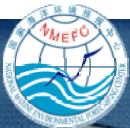
Numerical forecast for typhoon-induced wave



Numerical forecast for storm surge

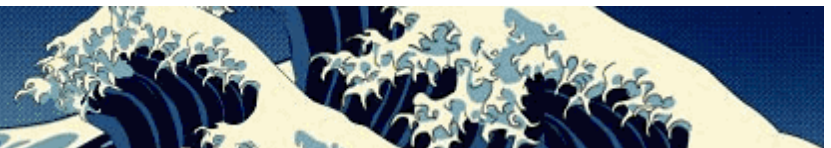
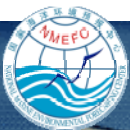


2003, according to the fifth meeting of the Sino-Vietnamese Committee on science and technology cooperation, forecast of wave and storm surge cooperation was a long-term scientific and technological cooperation projects between China and Vietnam.





- On June 14-17 2004, the Sino-Vietnamese forecast of wave and storm surge cooperation research seminar was held in Beijing, more than 20 scientific and technical personnel participate in the meeting. The two sides of the scientific research personnel exchanged their own research work and results.
- On October 23-30, Vietnam again sent a delegation to visit NMEFC. Researchers from NMEFC demonstrated the waves, storm surges numerical forecast model.





- On December 15-21, forecast of wave and storm surge cooperation research seminar was held in Hanoi, two sides further exchanged achievements. China delegation went to Hanoi to attend the meeting.

The results of the project included wave forecast model and storm surge forecast model, which played an important role in the forecast of wave and storm surge induced by XANGSANE and DURIAN ,attacked Vietnam in 2006.





Had a cooperation intention with Philippines.

➤ According to the thirteenth meeting of China-Philippine science and Technology Cooperation Joint Commission concluded in 2004, typhoon storm surge forecast technology and marine disaster mitigation were considered as cooperative projects.

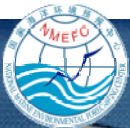
➤ In 2009, two sides talked about the cooperation, researchers from the Philippines hoped there were long-term cooperation in the field of marine disaster warning and disaster prevention and mitigation, such as storm surge.





Cooperation in recent years

- In 2015, during President Xi Jinping's visit to Pakistan, State Oceanic Administration(SOA) and Pakistan Ministry of science and technology signed a "memorandum of understanding on building a joint marine research center ", the two sides agreed to accelerate the construction and development of Marine Research Center.
- During Indian prime minister modi's China visit, SOA and the Indian Ministry of Earth Sciences signed a " memorandum of understanding on strengthening cooperation in marine science, marine technology, climate change, polar science and cryospheric sciences".
- SOA and Malaysia signed a" memorandum of understanding on the establishment of China-Malaysia joint marine research center ".





- SOA delegation visited to India, Bangladesh and Myanmar in 2015, and actively promoted the countries to establish a friendly and cooperative relations along the Maritime Silk Road. The first Sino Indian Ocean Science and Technology Seminar was held.
- On the basis of the Ministry of Fisheries and Aquatic Resources of Sri Lanka China visit, the two sides scientific research institutions signed a project “sea level monitoring and disaster reduction and forecast system” , becoming the flagship project of maritime cooperation between the two sides.
- During the Freshwater Crisis in Maldives, SOA provide actively technical support to the Maldives, including a seawater desalination equipment worth about RMB 1 million 900 thousand.





Future cooperation on marine forecast and disaster relief



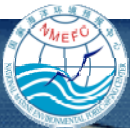
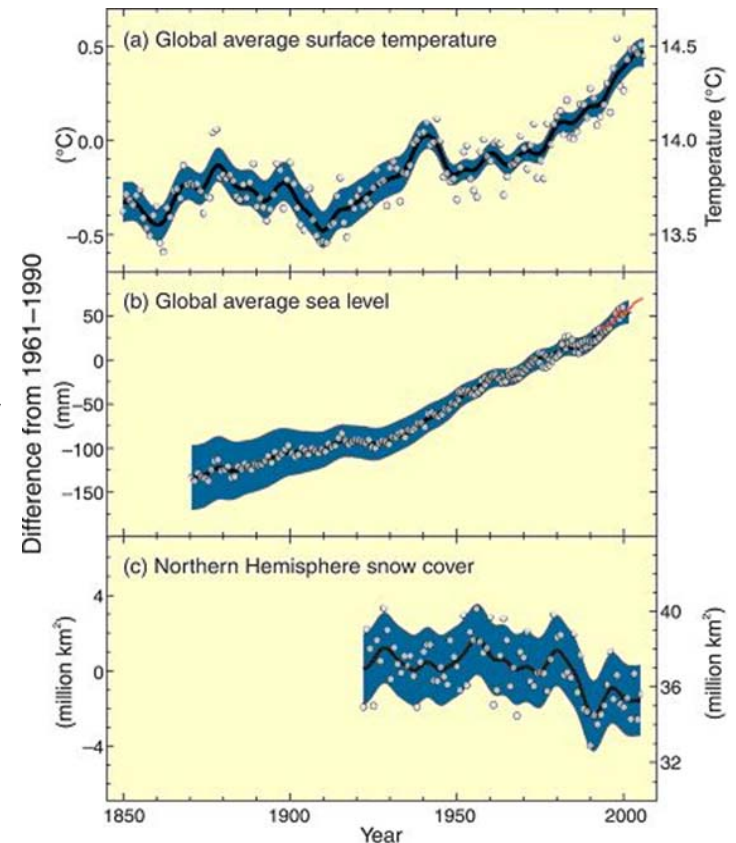


Global Warming



IPCC 4th Assessment Report :

- **“Rising sea level is consistent with warming**
Global average sea level has risen since 1961 at an average rate of 1.8 [1.3 to 2.3] mm/yr and since 1993 at 3.1 [2.4 to 3.8] mm/yr.”
- **“low-lying coastal systems, due to threat of sea level rise and increased risk from extreme weather events.**
- **“Increased damage from floods and storms, most global coastal wetlands lost , more people could experience coastal flooding each year ,with warming Global**

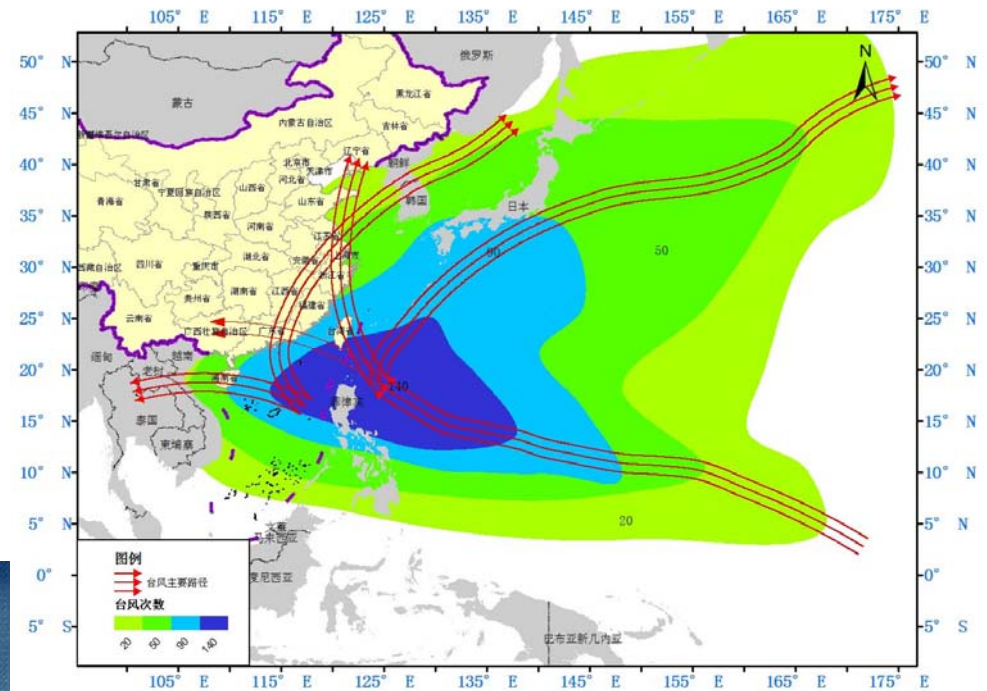
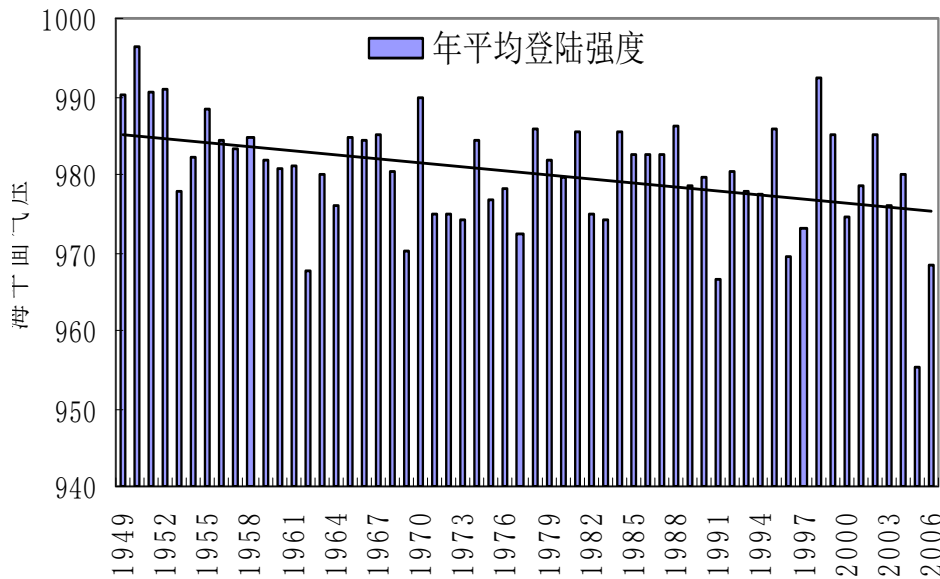
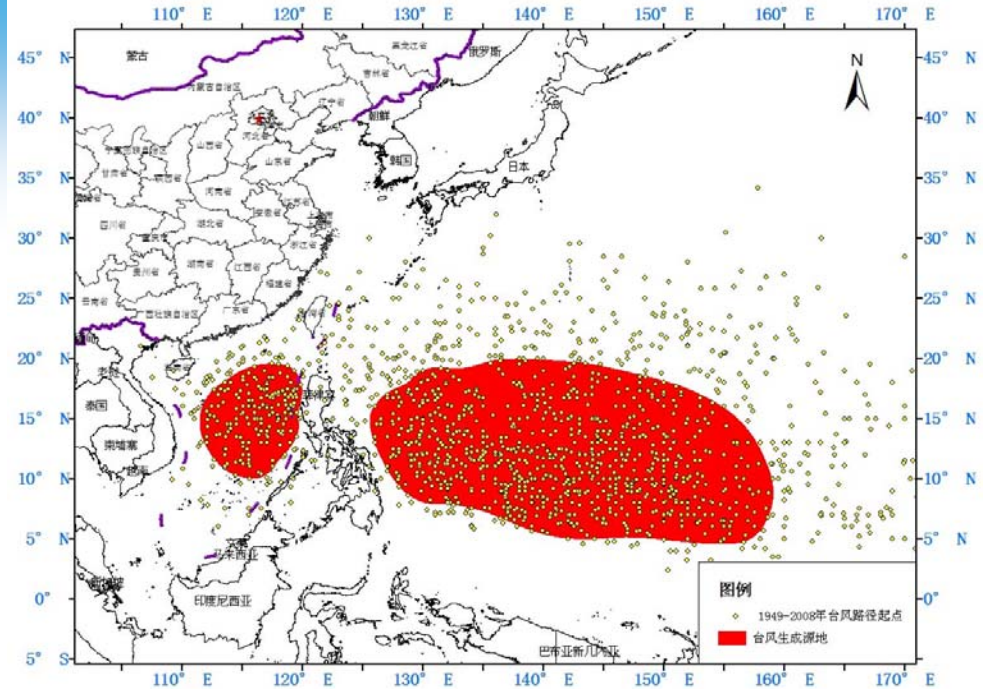




TYPHOON

The average strength of typhoon landing on China is increasing.

Rising sea level and increasing typhoon strength will exacerbate marine disasters, especially storm surge disaster.





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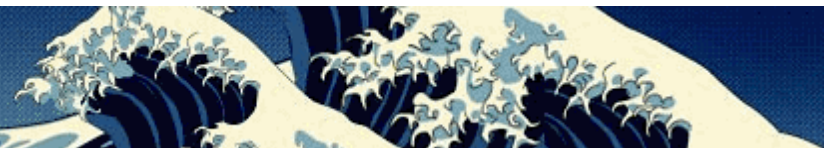
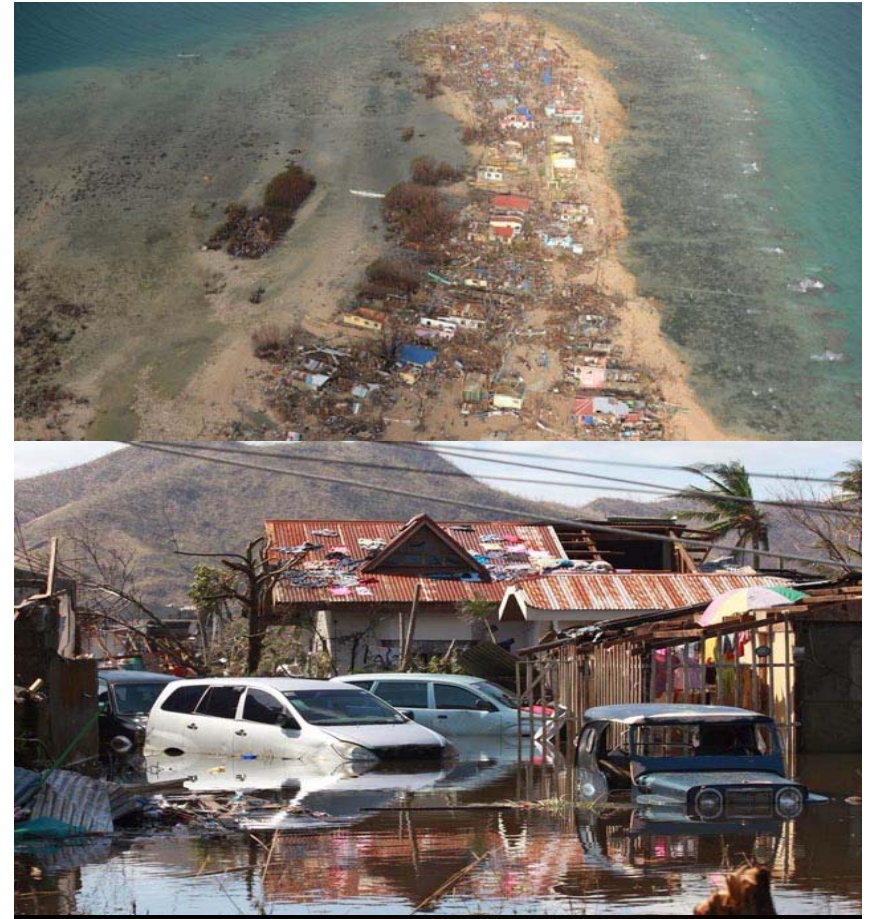
In 2004,Ivan storm surge hit Alabama American;

In 2005,Katrina storm surge caused heavy damage to New Orleans, the death toll was more than 1000 people;

On 2 May 2008,Nagis storm surge resulted in more than 130 thousand people dead or missing;

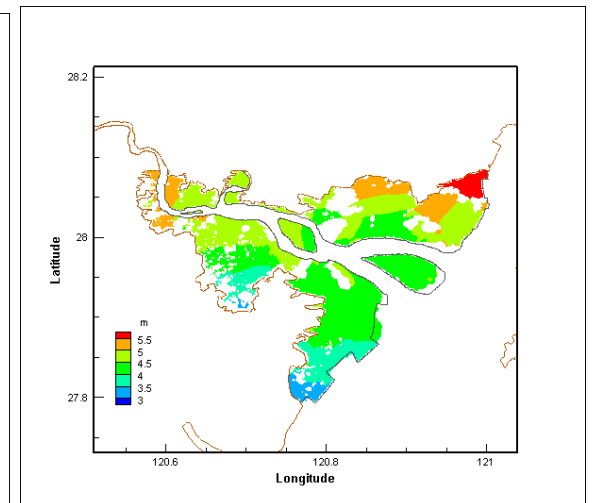
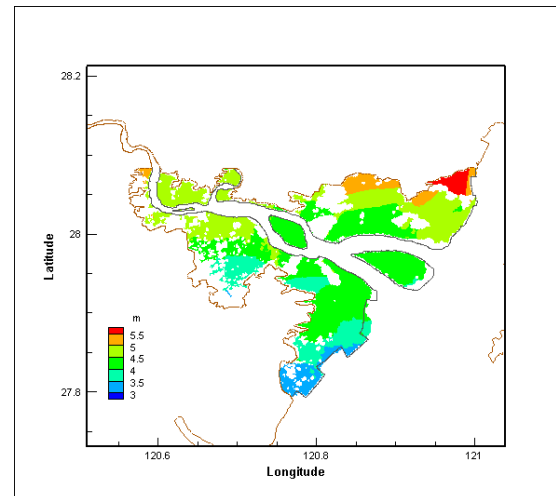
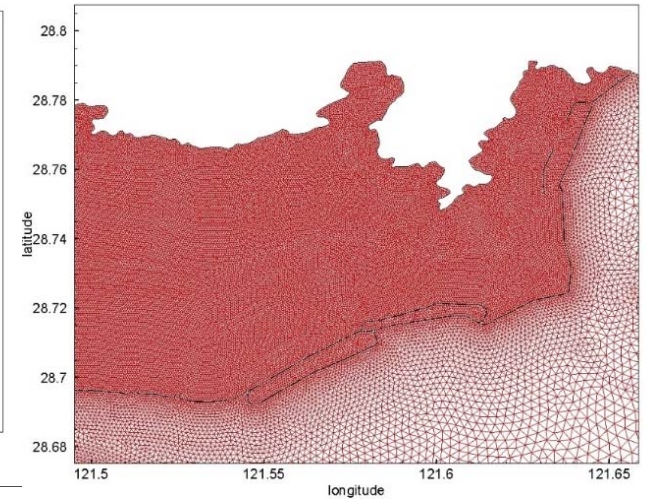
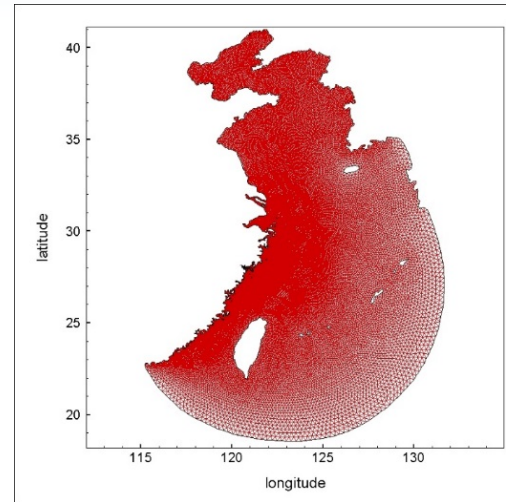
In 2012, Sandy storm surge again hit the U.S. east coast, causing huge losses;

In 2013,Haiyan storm caused more than 3000 people dead in Philippines.



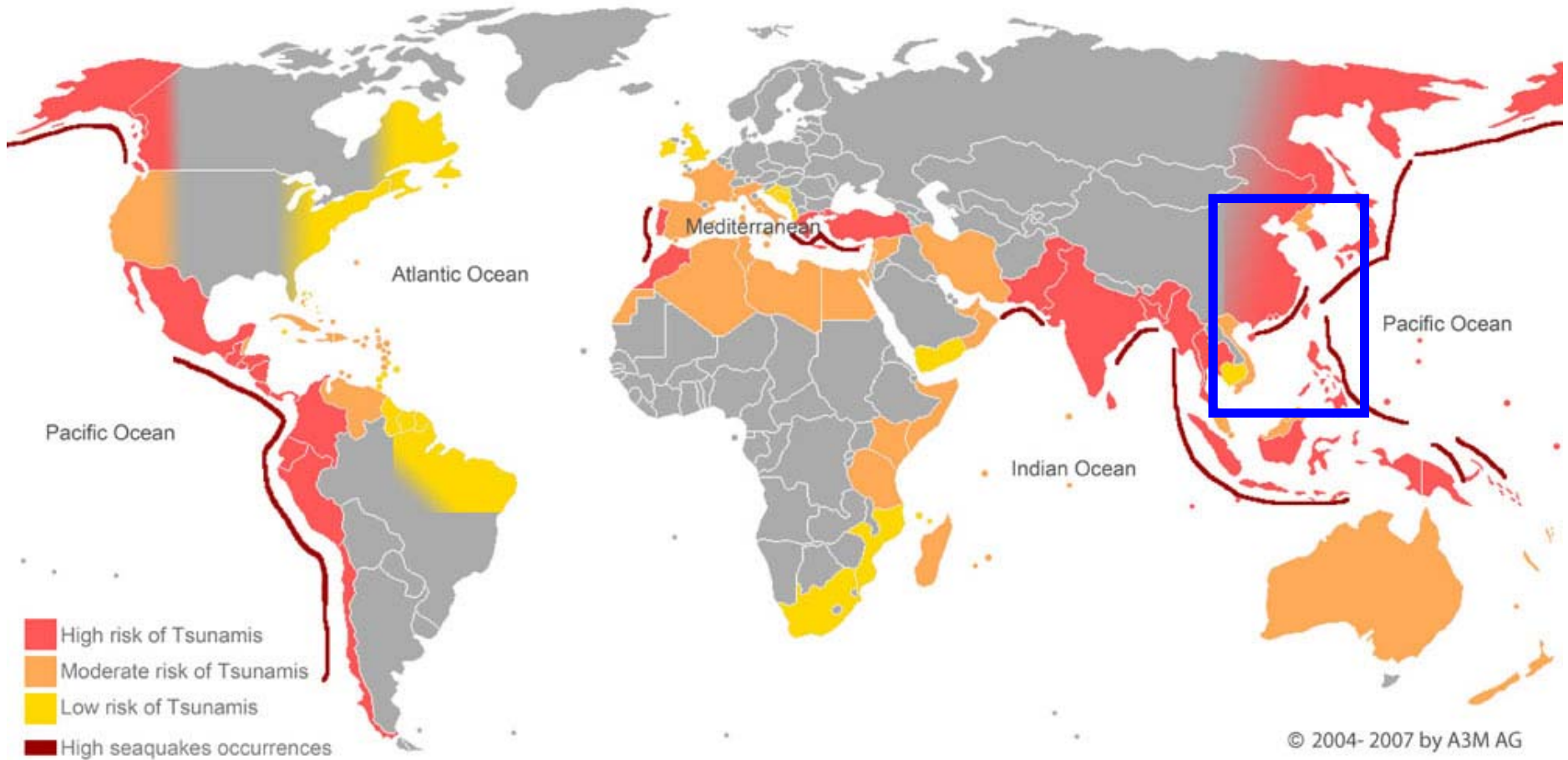


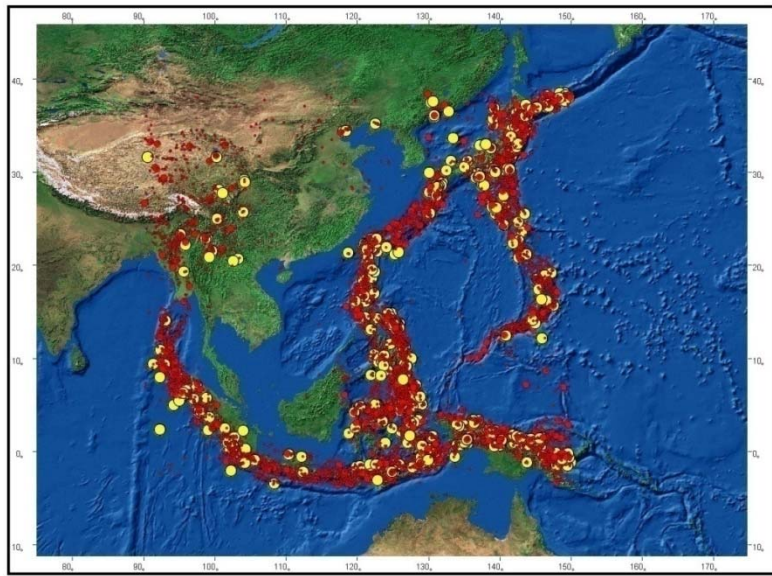
In order to cope with the storm surge disaster, the numerical forecast technology have been greatly developed in recent years. we have made remarkable progress in the research and application of spatial resolution, the coupling of storm surge and astronomical tide, storm surge and near shore wave, etc.



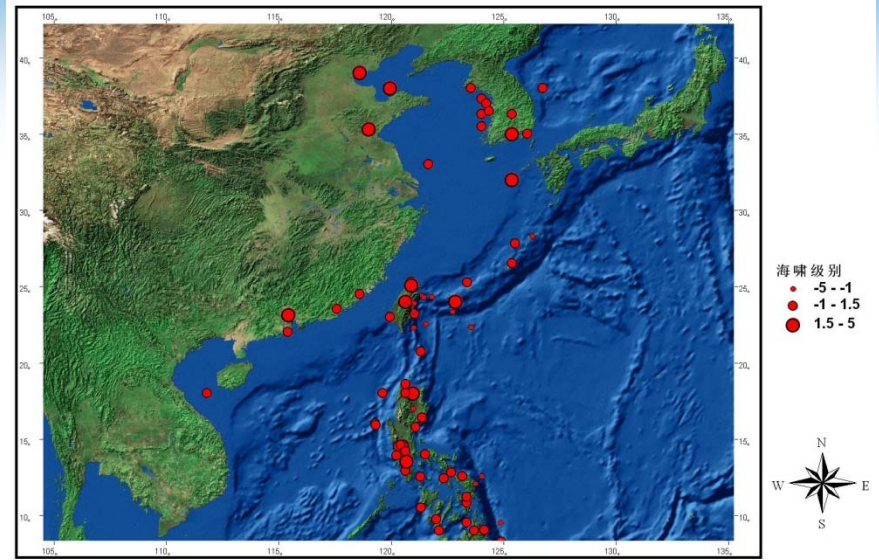


Risk of Tsunamis in the whole world





Sea floor earthquake from 1973 to 2005
90-150E, -10-45N



History tsunami hazards from -47 BC to 2004

We can also work together to focus on the early warning and prevention of tsunami disasters.



Friday, August 26, 2016





Therefore, the research and application of marine disasters forecasting technology can be carried out in the area which is concerned by both parties. Through regular academic exchanges of experience in the early warning and mitigation of marine disasters, we can improve the capacity of disaster prevention and mitigation.

SOA will host a ARF Workshop on Marine Disaster Management in the third quarter of 2016 in China, experts and officials from states and relevant international and regional organizations will be invited. China will send out concept paper in the near future. Countries which are interested in the workshop are welcomed to jointly host the symposium.





China's Cooperation with Regional countries

Ministry of Civil Affairs of PRC (MCA)





Necessity for regional cooperation



- ❖ Major natural disasters are threatening all human beings. With the aggravated global warming, we may face severer disasters with wider impact and stronger destructive power in the future. Further strengthening regional disaster relief cooperation mechanism is in line with the practical needs of all sides, which should continue to be the focus of deepening regional cooperation.



此处添加公司信息





Cooperation in 201



- ❖ In June, 2015, MCA had hosted the Workshop on “Application of Spatial Information Technology in Major Natural Disaster Monitoring and Assessment” under the EAS framework in Hangzhou.



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Cooperation in 201

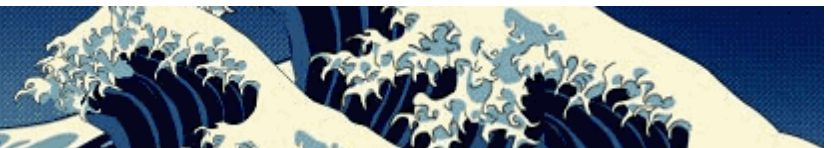


中华人民共和国民政部
Ministry of Civil Affairs of the People's Republic of China

- ❖ MCA also assists Ministry of Commerce in providing RMB 50 million to ASEAN for disaster relief, consults with ASEAN Secretariat on disaster mitigation and relief assistance cooperation, and establishes prioritized cooperation on disaster prevention and mitigation infrastructure construction; office supplies, equipment and information systems procurement; and human resources training.
- ❖ Last year, we had sent delegates in June and September respectively to Indonesia to conduct consultations with our counterparts.



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Cooperation in 2016

- In January, we sent delegates to attend the China-ASEAN Disaster Management and Emergency Response Workshop held in Cambodia. This workshop made a pretty good start for cooperation this year. And as follow-up, we'll have 3 upcoming activities organized by MCA in 2016:
 1. "Technical Training on Disaster Risk and Loss Assessment" .
 2. "China-ASEAN Workshop on Science and Technology Innovation and Typhoon Disaster Response" .
 3. "United Nations International Conference on Space-based Technologies for Disaster Management



此处添加公司信息



1. Technical training on disaster risk and loss assessment



- Hosted by Ministry of Civil Affairs of People' s Republic of China (MCA)
- Organized by National Disaster Reduction Center of China(NDRCC)
- Expected Participation: 20 disaster Management officials at director level and technology supporters from ASEAN member countries will be invited and sponsored. The participants should be with fluent English communication skills as well as basic understanding on disaster management and evaluation.
- Expected Time: June of 2016 (TBC)
- Planned place: Beijing, China
- Working Language : English



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Purpose:

“Technical training on disaster risk and loss assessment” will provide the platform to share the experience and technology for multi disaster monitoring, risk and loss assessment at the different phase of disaster risk management and to promote the technical guidelines development for regional disaster management.





2.China-ASEAN Workshop on Science and Technology Innovation and Typhoon Disaster Response



- Hosted by Ministry of Civil Affairs of People' s Republic of China(MCA)
- Organized by National Disaster Reduction Center of China(NDRCC)
- Expected Participation: Approximate 40 Disaster Management Department officers from China and ASEAN member countries and experts of disaster mitigation technology will be invited. 20 representatives at director-general level from ASEAN member countries and 2 representatives from ASEAN Secretariat and AHA center will be sponsored by the organizer.
- Planned Time: September of 2016
- Planned Place : Nanning City, Guangxi Zhuang Autonomous Region
- Working Language : Chinese and English



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Purpose:

“China-ASEAN Workshop on Science and Technology Innovation and Typhoon Disaster Response” aims to promote the practical cooperation and positive communication in the area of typhoon disaster response and science and technology innovation for disaster management department representatives from China and ASEAN member countries. And to share the experiences and information on technology study and research progress as well as the updated technology application situation in DRR. To discuss the roles and functions of government and social organizations in disaster response.



3. United Nations International Conference on Space-based Technologies for Disaster Management



- Theme: “Contribution in monitoring indicators of Sendai Framework for Disaster Risk Reduction”
- Hosted by Ministry of Civil Affairs of People’ s Republic of China and United Nations Office for Outer Space Affairs(UNOOSA)
- Expected Participation: Approximately one hundred (100) participants/experts, who hold positions at international, regional and national institutions, the United Nations system, governmental institutions, research and academic institutions, non-governmental organizations, and industries;
- Planned Time: September of 2016
- Planned Place : Beijing of China
- Working Language : English



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Purpose:

The purpose of the Conference will be to offer a forum for disaster management communities and experts to strengthen their capabilities in using space based information to assess, monitor and respond to disaster risks and integrate space technology into long-term disaster risk management efforts.

Thank You !

