

Flood Hazard Mapping Progress Report

South and southeast Asia Regional Seminar on
Flood Hazard Mapping
Feb.17, 2009

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Content:

- General introduction on flood related disasters in 2008
- Outline of current FHM situation in China
- Problems of FHM
- Work plan

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General introduction on flood related disaster in 2008

- Disasters occur frequently in 2008.
- In January, severe ice-snow and frost disaster occurred in south China. More than 20 provinces suffered this disaster. Large masses of power facilities, communication facilities, traffic infrastructures and forests were destroyed.
- Economic losses were hard to evaluate.



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General introduction on flood related disasters in 2008

- On May the 12th, a 8.0 magnitude earthquake hit Sichuan province in southwestern China. More than 88,000 people died or missing, 375,000 people injured. This is the biggest earthquake occurred in China since 1976.



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General introduction on flood related disasters in 2008

- From April to October, 10 tropical cyclones including typhoons hit China coastal areas. Altogether 127 people died, 52 people were missing and the economic losses were about 4.6 billion US dollars.
- Some rivers were blocked because the landslides and formed many "lakes" with unsteady dams. It took us many time and labor to release these dangers to downstream residents.



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General introduction on flood related disaster in 2008

- Table of tropical cyclone losses

Serial number	Name	Affected people (10 ⁴)	Dead (person)	Missing (person)	Collapse building (10 ⁴)	Economic Losses (billion CNY)
0801	Neoguri	202.3	3	18	0	0.789
0806	Fengshen	193.01	35	12	2.12	2.667
0807	Kalmaegi	87.75	7	0	0.52	0.799
0808	Fung-wong	968.88	15	4	3.61	7.795
0809	Kammuri	561.60	31	6	2.06	1.983
0812	Nuri	150.80	0	0	0.28	4.29
0813	Sinlaku	65.30	0	0	0	0.140
0814	Hagupit	1501.95	35	12	4.13	13.330
0815	Changmi	5.60	0	0	0	0.194
0817	Higos	54.37	1	0	0	0.088
合计		3791.56	127	52	12.72	320.75

General introduction on flood related disasters in 2008

- The frequently occurred flood related disasters in 2008 retained some of our basic research works including FHM.

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Outline of current FHM situation

- FHM responsible organization system.
 - At state level, the responsible organization is the office of state flood control and drought relief headquarters (OSFCH), which is a department of the Ministry of Water Resources (MWR).
 - At province and local government level, the office of flood control and drought relief headquarters at each level is the responsible organization.
 - IWHR (China Institution of Water resources and Hydropower Research), colleges and institution of water resources at province level form the technical supporting organization system.

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Outline of current FHM situation

- FHM is necessary for China to carry out flood risk management. In 2004, the OSFCH carried out FHM pilot works.
- General guideline of FHM in China is to carry out pilot works firstly before to carry out through whole country.
- Pilot works can be divided into two stages:
 - **First pilot stage is from 2004 to 2007.**
 - **Second pilot stage is from 2008 to 2010.**
 - **Now the first stage of pilot work has been finished and the second stage of pilot work is still going on.**

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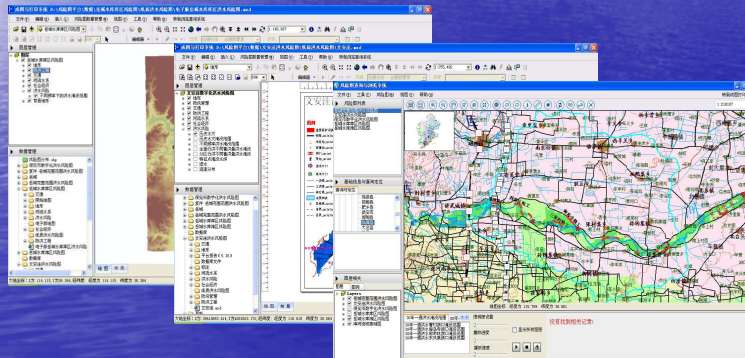
Outline of current FHM situation

- Outcomes of first stage:
 - Thirty-six pilot areas include 12 sections of important river dikes, 9 cities, 9 flood detention areas and 6 reservoirs. Those pilot areas are in seven major river basins.
 - More than 300 flood hazard maps were finished.
 - Most maps are of type E(past inundation area based on simulation) or type F(inundation area of the design flood).

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Outline of current FHM situation

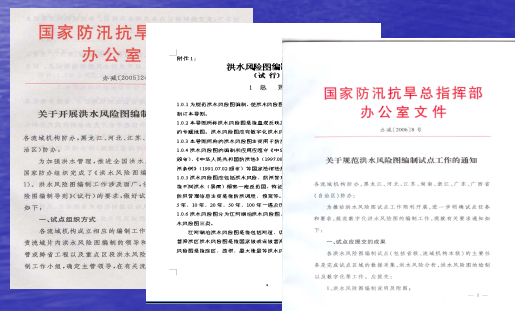
- Outcomes of first stage:
 - Seven flood hazard map management systems were set up.



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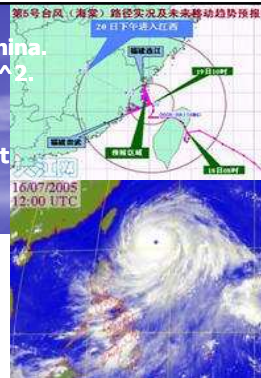
Outline of current FHM situation

- Outcomes of first stage:
 - Two technical files were issued to the pilot areas to guide and coach this work.
 - One is the file to carry out FHM pilot works in pilot areas and the other one is to standardize pilot works.

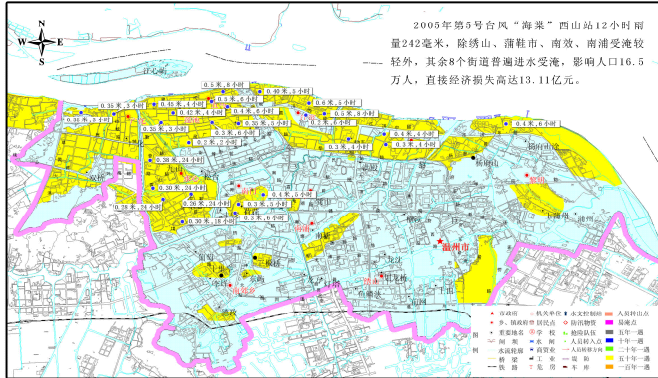


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- Wenzhou city is located in zhejiang province in southeast China. Rural area population is 0.8 million. Rural area is 1,082 km². It is the economic and cultural center for south ZheJiang province.
- TY Fera (0505) caused 11 people died or missing and about 1.05 billion US dollar economic losses. It is the strongest typhoon that affected Wenzhou since 9417 typhoon.



Flood inundation map based on simulation for past flood caused by 0505 typhoon Haitang (or Fera).



- Land FuJian province and Lianjiang city on July 17,2005.
- 10 grade wind last more than 40 hours.
- Average rainfall for Wenzhou city is over 300mm.
- Deepest water depth is over 2 meters in rural area.

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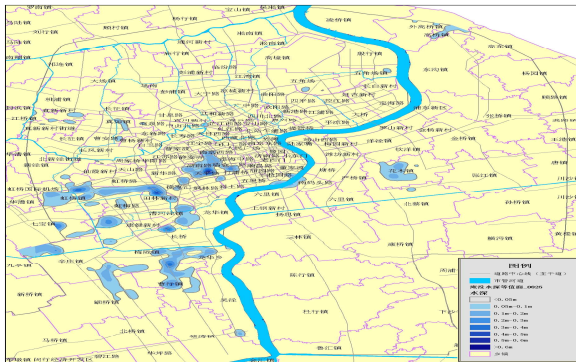
FHM practices

- FHM for Shanghai city:
 - On August 25, 2008, a heavy rain hit Shanghai city. In some observation sites maximum hourly rainfall are over 118 mm which is once in 100 years.
 - More than 100 main roads and streets were flooded with water depth over 30 cm in downtown area. More than 11,000 living houses were flooded.



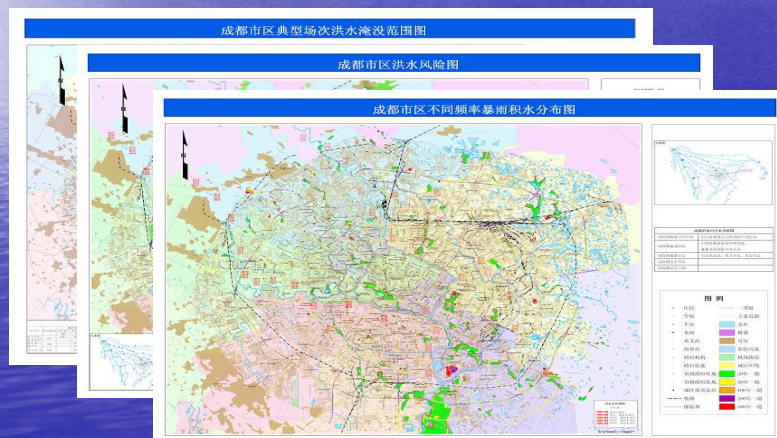
FHM practices

- FHM for Shanghai city
- Inundation map based on simulation on 8.25 heavy rainfall.



FHM practices

- FHM for ChengDu city.



FHM problems

- Problems on situation:
- Absence of FHM-related law result in many problems:
 - To local government, we can't clarify there obligation on making FHM.
 - To the related departments, we have no access to data and finance .
 - To the public, we have no measures to maintenance FHMs authority.
- Problems on making FHM:
 - FHM-related data was hard to acquire.
 - Focusing more attention on simulation and calculation. More type E or type F FHM than type D FHM which cost more time or labor than former.
 - Lack local communities' participance.

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Thank you !

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