US-Taiwan Workshop on the Advancement of Societal Responses to Mega-Disasters afflicting Mega-Cities

Technologies Required for the Mitigation and Management of Mega-Disasters



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May 6-8, 2010 National Taiwan University, Taipei, Taiwan

Hazard Management Framework



Aim: provide community resilience to natural physical hazards

(Reduction Readiness Response Recovery)



Operation of the CEOC Assessment Group (Earthquake)





Operation of Emergency Management on Natural Hazard





Collapse of a hotel near riverbank (Typhoon Morakot)





Damage of bridges due to flood and scouring in Typhoon seasons











The continuous heavy rainfall and the strong wind induced by typhoon often led to serious damage to Taiwan.









Significant Landslide on April 26, 2010 occurred in Taiwan North-South Freeway No.3 (+3.0 km)





The natural hazard we are facing is not a single hazard (e.g. only earthquake hazard or only typhoon hazard. It is a multiple hazards.

Why multiple hazard mitigation?

Key Factors for Change

- Infrastructure changes during the past decade
- Problems with integration & coordination
- Recognition of vulnerability to hazards
- Lack of strategic direction
- Present emphasis on response activity



Missions of Emergency Management (EM) in National Level (1)

- Promote sustainable management of hazards.
- Enable communities to achieve acceptable levels of risk.
- Require local authorities to coordinate EM planning and activities through regional Groups.
- Provide for integration of national and local emergency management planning.
- Encourage coordination across agencies.



Missions of Emergency Management (EM) in National Level (2)

- Builds on local EM Group response and recovery planning
- Identifies hazards and risks requiring management at a national level
- Defines roles and responsibilities of national agencies and international assistance
- Establishes arrangements for inter-regional coordination of local resources during a national emergency



Problem of Integration







Provide commitment to work together.Develop and coordinate planning and activity.Do the work on readiness, response & recovery.

Plan and exercise jointly with emergency management Group members.

Carry out emergency management Group Plan functions. Be individually capable – continuity of operation.



Ensure service meets emergency management priorities.

Plan and exercise jointly. Service meets emergency management priorities.



Emergency

services



Develop Knowledge-based Emergency & Risk Management Support System





Elements in relating to Hazard Mitigation



Conclusions

• To develop MC/MD hazard mitigation the following future works need to be strengthened:

Enhance database and decision-support system,
Application of remote sensing & monitoring technology,
Establish Sustainable land use management,

- Methodology and system development for mega-city and mega-disaster hazard mitigation need an integration of a lot of assessment tools and policies
- The joint efforts of the meteorological group, the flooding group and the debris flow group need work together and make quick action possible if the condition changes abruptly.
- Better typhoon track and rainfall forecast schemes are highly needed for hazard mitigation in Taiwan.





