ICT for DRR

The Korean Case

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Natural Disasters in Korea

Average Death Toll by Natural Disasters in the Last 10 years: 117 Deaths/year

Average Property Damage by Natural Disasters in the Last 10 years: US$ 2 billion/year

- Typhoons (57)
- Torrential Rain (55)
- Storms (1)
- Heavy Snow & Snowstorms (3)
- Other Damages (0.1)
- Snowstorms (0.1)
- Typhoons (1.2)
- Torrential Rain (0.6)

Average: 117 Deaths/year
Average: US$ 2 billion/year
Why ICT for DRR

- Various systematic ICT systems have been established and operating for DRR in Korea
- Construction of SAFE KOREA, that protects the people by fast and correct disaster information dissemination through the variety of ICTs
- Contribution to the construction of ICT systems in Asia-Pacific area for disaster management skills
1. National Disaster Management System

**NDMS**

Comprehensive disaster information system for disaster prevention, preparedness, response, and recovery
2. Cell Broadcasting Service

[ CBS Message Transmission flow ]

NEMA → Request to CBS message Transmission at disaster area → CBS System of Mobile Telecom Company Base Station → CBS message on mobile phone which is located at broadcasted area → NEMA

End user (Mobile phone with CBS service function)
3. Automatic Verbal Notification System

① Collection and analysis of disaster information
   ◆ Rain, river level or any emergency situation

② Choose person to inform and start au
   ◆ Call related officers using emergency communication network.
   ◆ Notification to disaster related institutes.
   ◆ Notification to residents located at disaster area.

③ Tool for notification
   ◆ village broadcast amplifier
   ◆ automatic answer telephone
   ◆ wire phone, mobile phone, etc

④ Activities for disaster prevention such as resident evacuation.
4. Disaster Notification Board System
5. TV Disaster Warning Broadcasting System
6. Radio Disaster Warning Broadcasting System

① Out breaking of emergent disaster situation and its foreseeing
   ◆ warns when out breaking of local downpour, typhoon attack, flooding warns at the vulnerable time

② Requesting of alarming the disaster warning at specific area

③ Reviewing of disaster warning alarming and operation
   ◆ Finalizing the area and selecting correct sentence
   ◆ Starting operation of disaster warning alarming system

④ Acting of disaster warn alarming system for and at specific area

⑤ Starting of disaster warn broadcasting
   ◆ Auto radio turning on and maximizing of its volume at specific area

⑥ Proactive disaster prevention activities such as relevant residents sheltering
7. Automatic Rainfall Warning System

**System Overview**

- **Automatic rainfall (water level) observing station at the upper and middle area of mountain valley**
- **Automatic warning system at the lower area**
- **Automatic remote control/monitoring station at control center**
Capacity Building

- Regular Training and Education (NDMI)
  - Telecommunications Disaster Response
  - NDMS Operations and Applications
  - Government Disaster Management Network System
  - Disaster Forecast and Early Warning System

- Advocacy in Policy
  - Disaster and Safety Management Basic Act
    (Article 38, 66: Disaster Information, Early Warning)
  - Natural Disaster Countermeasures Act
    (Article 3: DRR information Compilation etc)
International Cooperation

- Cooperation with **Tsunami-hit** Five Countries: Oct. ~ Nov., 2005
- Cooperation with **Mongolian** Disaster Managers: Aug. ~ Sept., 2007
- System Support for **Indonesian** Early Warning System (CBS): 2008 ~ 2009
Future Directions

Towards Comprehensive DRR Systems using ICT

- To construct a “working” ICT System, international cooperation, as well as system refinement, is important to minimize loss of lives in the regional level.

- Need to expand and integrate currently-available local ICT systems into a regional level covering multi-hazards including Tsunami, Typhoon, Landslide, Tidal wave, etc.
  - Start new initiatives such as “Network for Networks” or “System of Systems” using ICT on knowledge sharing and DRR data analysis

- Effective Systems using ICT need to be actively considered in emergency action plan, disaster response activities including emergency aid and training.
Thank You

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