Uses of ICT for Disaster Risk Reduction

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Contents

1. Japan’s Implementation of flow of Disaster information ……… Page 3
2. Overview of Disaster Management Systems …………………… Page 4
3. Lessons Learned from East Japan Great Earthquake ……… Page 5
4. Integrated Early Warning System ……………………………… Page 6
5. Disaster Information Sharing System …………………………… Page 7
6. SNS Disaster Data Analysis System ……………………………… Page 9
1. Japan’s Implementation of the Flow of Disaster Information

**Information Provider**
- Central government
  - Cabinet Secretariat
    - Missile launch information, etc.
  - FDMA (Fire Defense Management Agency)
    - Civil Protection Law defines
  - JMA (Japan Meteorological Agency)
    - Emergency Warning, etc.
    - Meteorological Service Act defines
- Local government
  - Prefectures
    - Evacuation order, etc.
    - Disaster Countermeasures Basic Act defines
  - Telecommunication/power/gas/water supply

**Information Communicator**
- Local governments
- Mobile service providers
- TV station

**Local Residents**
- Urgent alert systems for emergency situation ONLY
- J-Alert
- Mobile alert
- Automatic switch on
- Mobile broadcast
- TV, Radio

- Disaster information sharing platform
- L-Alert
- Mixed messages
- N x N

**Disaster information sharing platform**
- TV, Radio
- Mobile internet
- Mobile service providers
- Local governments
- Mobile broadcast
- Automatic switch on
- J-Alert
- Mixed messages
- N x N
2. Overview of Disaster Management System

- Monitoring/Measurement of Climate and Collection of Disaster Data
  - Flood Information Management System

- Collection of Damage Data
  - Monitoring Camera System

- Information Sharing, Analysis, and Decision Making
  - Integrated Disaster Management System

- Information/Alert Dissemination to Residents
  - Emergency Warning System
  - Tsunami Information Display System
  - Flood Warning System
Due to a fact that residents are sometimes hard to hear the disaster-information speakers and the wireless disaster information in disaster situation, we believe that people need a variety of information dissemination means including TVs, radios, cell phones, and internet.

Ref: Study group on the common basis of information communication such as disasters
4. Integrated Early Warning System (L-Alert)

The L-Alert system collects, analyzes, and disseminates a variety of disaster information including evacuation advisory automatically, promptly, and precisely. We believe that Japan’s experiences and technologies will help reduce damages in disaster-prone states.

**Disaster Occurrence**
- Tsunami data
- Earthquake data
- Heavy rain and flood
- Volcano eruption

**Collecting Information**

**Analysis & Decision-making**

**Distributing Information**
- Cell broadcast
- Sirens
- TV and radio
- Smart phones

Evacuate!
5. Disaster Information Sharing System (ASEAN Member States)

ASEAN wide-range cooperation:
10 ASEAN Member States are connected in terms of disaster information and responses.

Disaster Information Sharing System (ASEAN Member States)

AHA CENTRE
ASEAN Coordinating Centre
for Humanitarian Assistance on Disaster Management

Central gov. State gov. Platform
Local gov.

Disaster
Earthquake Tsunami Flood

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5. Disaster Information Sharing System (AHA Centre)

ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre) is a hub to share disaster information among 10 ASEAN Member States.

This system supports real-time sharing of disaster information by collecting, analyzing, and distributing disaster information throughout the region on the web.
6. SNS Disaster Data Analysis System (1)

An image of the SNS disaster data analysis system in the case of flood:

The system sends alert mail to the staff of disaster management organization in disaster-stricken country.

*Example of alert email
【SNS disaster data analysis system】
Alert notification (immediate)
[2017/6/23 12: 00 (=report date and time)]
The number of tweet messages containing the word, "flood," exceeded 100 (threshold) at 12:00 on 23 June.
There is a possibility of flood in the city XYZ (=place of tweet messages sent).

The staff confirm the alert mail by accessing the system through smart phones/PCs.

Send alert mail

Flood occurrence in City XYZ

Detected when the number of tweet messages including the pre-set keyword exceeds the threshold number.
6. SNS Disaster Data Analysis System (2)

Images of the “Dashboard” menu.

Change of Tweet

Ranking
Banjir (Indonesia)

Alert

Tweets about “flood in Indonesia” had increased
6. SNS Disaster Data Analysis System (3)

Enlarged map.
6. SNS Disaster Data Analysis System (4)

Actual tweet data.