INFORMATION AND COMMUNICATION TECHNOLOGIES IN DISASTER MANAGEMENT

Workshop on Disaster Relief Systems, Network Resiliency and Recovery

June 25 2012

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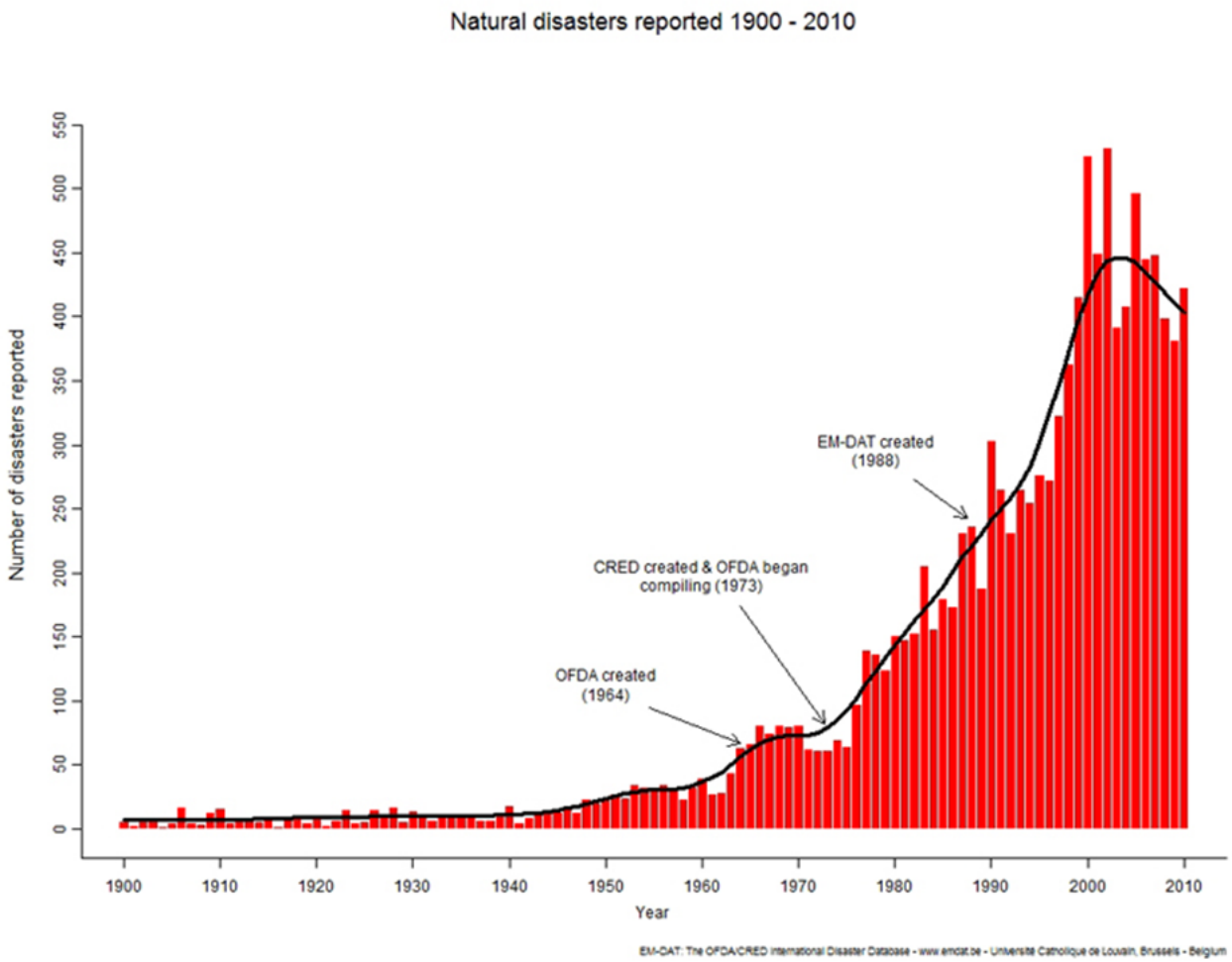
Increment of Disasters world wide



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Recent catastrophic disasters

- Japan earthquake 9.0 and tsunami - March 2011
- Uganda floods – August 2011
- Pakistan floods - July 2010
- Chile earthquake and tsunami – February - 2010
- Haiti earthquake – January 2010
- China floods - May 2010
- China earthquake – May 2008
- Myanmar Cyclone – May 2008

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Overview of Emergency Telecommunications

- Emergency telecommunications is an integral part of Telecommunications Development Bureau (BDT). Emergency telecommunications unit implements **activities** related to telecommunications/ICTs in disaster management.
- Our work can be summed up in four principles:
  - Multi-hazard
  - Multi-technology
  - Multi-phased
  - Multi-stakeholder

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Areas of Action of ITU

1. *Disaster Risk reduction*: focuses on the mitigation and preparedness aspects of the emergency cycle

2. *Disaster Management*: a systematic process that aims to reduce the negative impacts or consequences of adverse events.

3. *Climate change mitigation and adaptation*: a response that seeks to reduce the vulnerability of natural and human systems to climate change effects.

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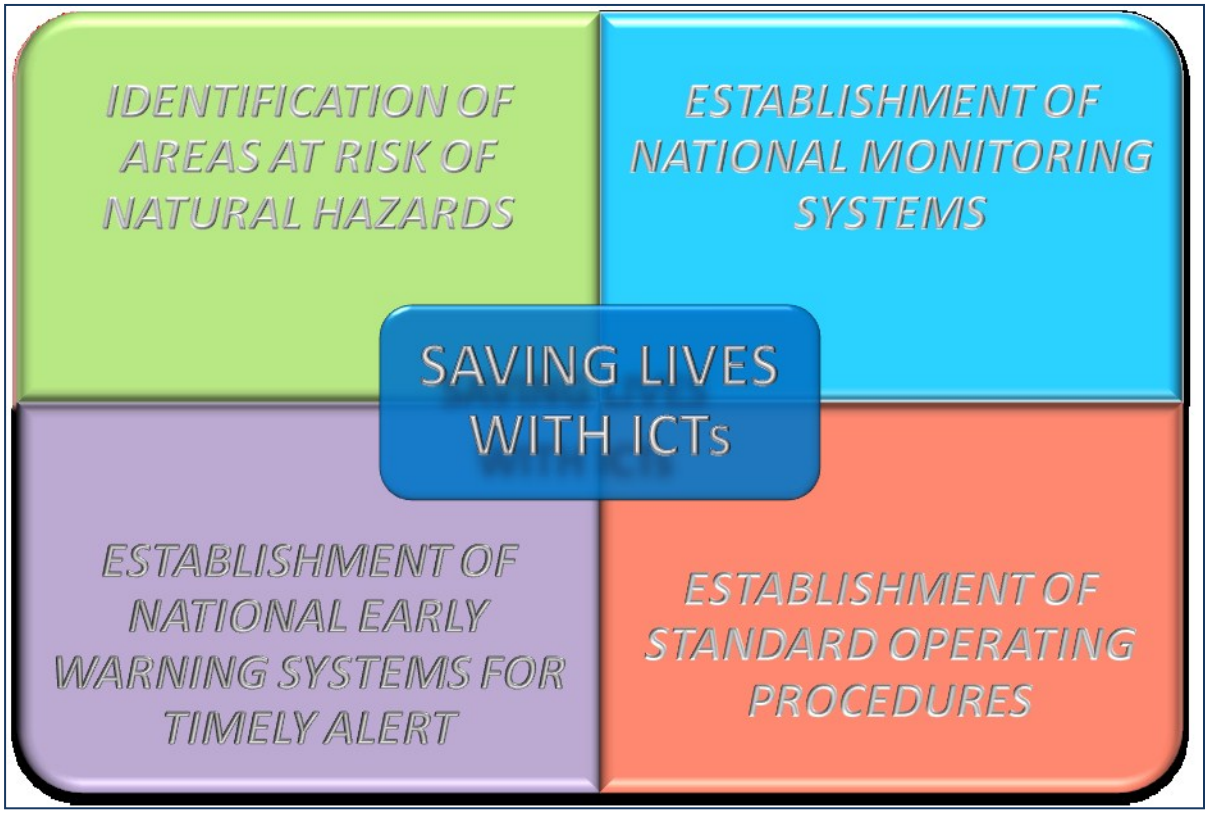
Telecommunications/ICTs - 4-Disaster Risk Reduction



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Telecommunications/ICTs for Disaster Management

Emergency Telecommunication Plans

1. ***PREPAREDNESS***: actions, arrangements and procedures taken in anticipation of an emergency to ensure a rapid, effective and appropriate response that may save lives and livelihoods.

2. ***RESPONSE***: is a phase of the disaster management cycle. Its preceding cycles aim to reduce the need for a disaster response, or to avoid it altogether.

3. ***REHABILITATION AND RECOVERY*****:** Following a disaster and when the initial crisis is over, people affected and the communities that support them are still in a state of heightened vulnerability. Most of the telecommunications networks may have been affected. Post-emergency rehabilitation programmes are frequently needed.

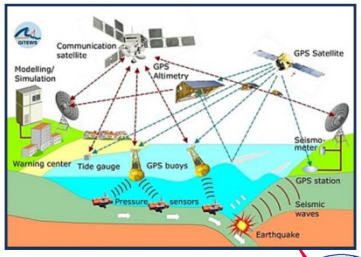
Preparedness Phase

The use of monitoring systems and satellite earth observation to:

- Assess country needs
- Identify vulnerable areas to different hazards




- Establish Early Warning Systems
- Establishment of Standard Operating Procedures (SOP)



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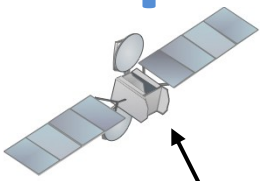
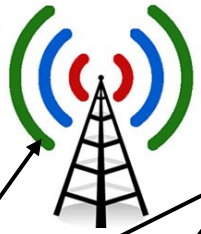
Response Phase

Hospitals



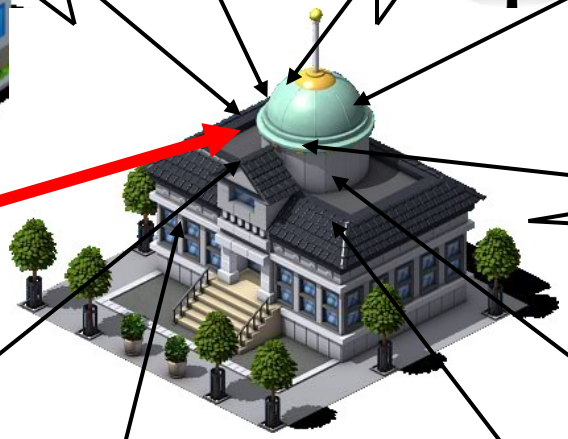
Satellite



Broadcasting

Beach public address system

Early Warning Centre



Disaster Management Headquarters

Public Announcing System

Government authority

Fire Division Headquarters

Indoor receiv Citizens

Public-Service Vehicles (Fire engines)

Public-Relations Vehicle (Official Vehicles)

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Rehabilitation and Recovery Phase

- Assess countries on the reconstruction of resilient Telecommunication Networks

- Assistance on the development of improved emergency telecommunication Systems

- Review of SOP

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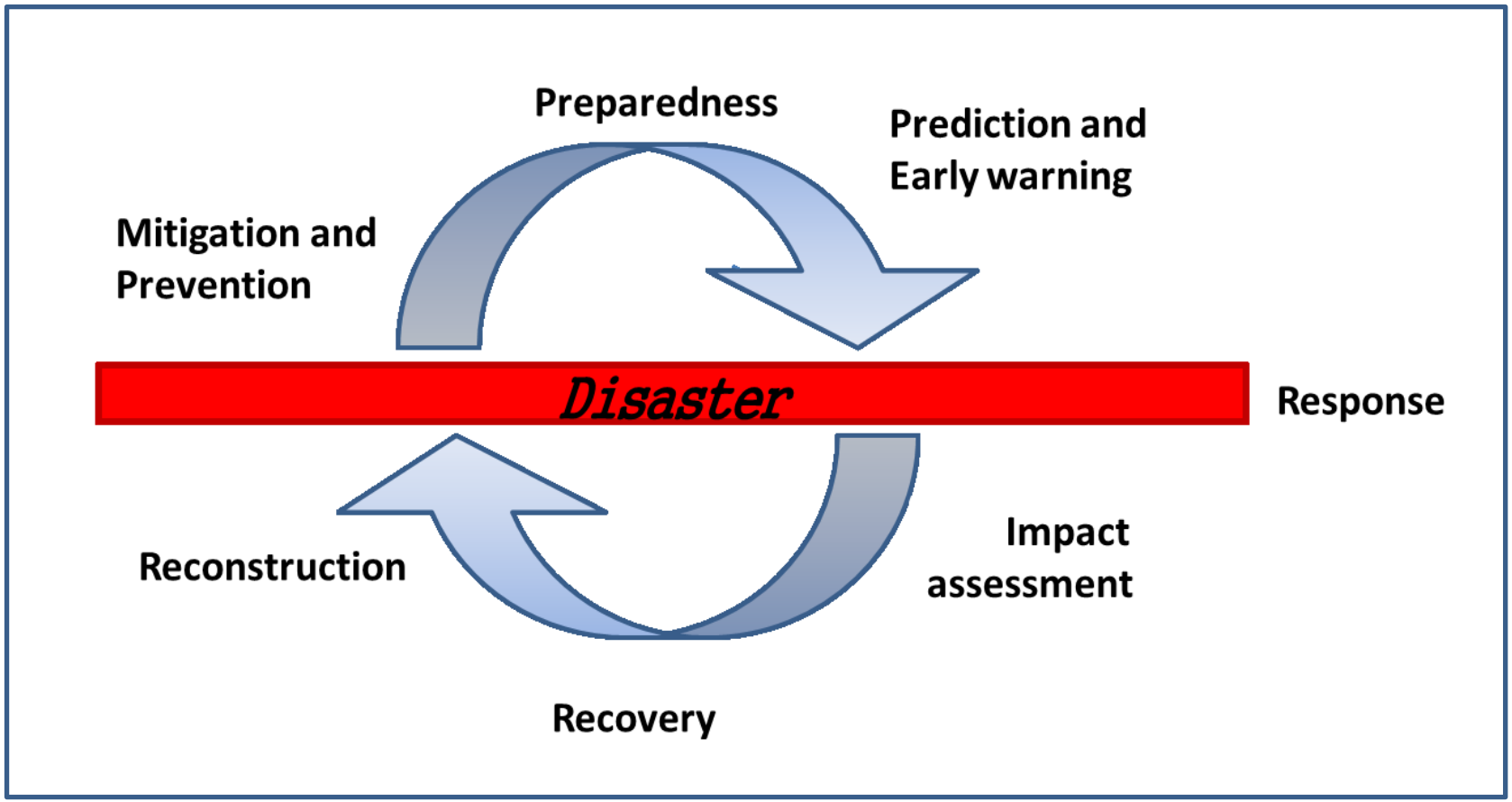
Disaster Management Cycle



Role of Information Systems

Earth Observation Satellites & Geographic Information Systems (GIS)	Allow to establish extensive and accurate knowledge of Country Situation and areas at risks
Global Navigation satellite systems (GNSS/ GPS)	Allow to complement the Earth observation data with geographical ground truth Information in real time
Earth Observation Satellites and Meteorological Satellites	Allow to predict, monitor in real time, raise timely awareness and alert on disasters occurrence for rapid decision making and life saving
Satellite Communications	Essential for communicating during emergencies
Land Observations Systems	Allow to monitor different types of natural hazards and to reduce the vulnerability of the communities

Geographical Information Systems

Japan Earthquake 2011

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ITU's satellite telecommunication systems

ITU and it's partners deploy satellite terminals and other emergency telecommunication equipment to affected countries within the first 24 to 48 hours aftermath a disaster to help restore vital communication links.

The equipment is critical in:

- Coordinating rescue and relief operations;
- Setting up telemedicine links between hospitals and medics in the field;
- Providing call centres where disaster victims can contact their loved ones

ITU pays for the delivery of equipment and for its use. The calls are free. ITU also offers training through workshops.

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ITU Framework for Cooperation in Emergencies (IFCE)

Eminent Industry Champion

Technology Cluster

- Satellite operators and Land Earth station operators
- Telecom Operators
- GIS/Remote sensing service providers
- Radiocommunications Equipment Providers

Eminent Corporate Champion

Finance Cluster

- Governments
- Private Sector
- Development Banks
- Regional Economic Groups

Eminent Corporate Champion

Logistics Cluster

- Air Transport operators
- International Couriers

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The Tampere Convention

What is the Tampere Convention?

"Tampere Convention is a treaty that provides a legal framework for the deployment and the use of telecommunications in international humanitarian assistance."

Simplifies :

- The trans-border importation and use of telecommunications equipment
- Use of allocated frequencies
- Customs duties, fees and procedures
- Restrictions on movement of personnel


The "Tampere Hall" in Tampere, Finland, where the treaty on Telecommunication for Disaster Mitigation and Relief was signed on 18 June 1998.

So far, 46 countries have ratify this treaty, being Luxemburg the last country that have finalized the process.

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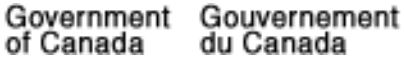
Partnering for Humanitarian Work



Concluding Remarks

- Establish multi-disciplinary partnerships
- Develop and use ICTs for disaster prediction, detection monitoring, and response
- Develop Standard Operating Procedures
- Integrate National Emergency Telecommunication Plans into Disaster Management Plans
- Design and Develop Early Warning Systems
- Share information for better preparedness and response
- Strengthen Institutional Capacities through training
- Link the Development and Disaster Management Agendas to optimize the use of resources.

Thank you

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