Emergency Communications: Challenges and Regulation

The Critical Role of Emergency Telecommunications

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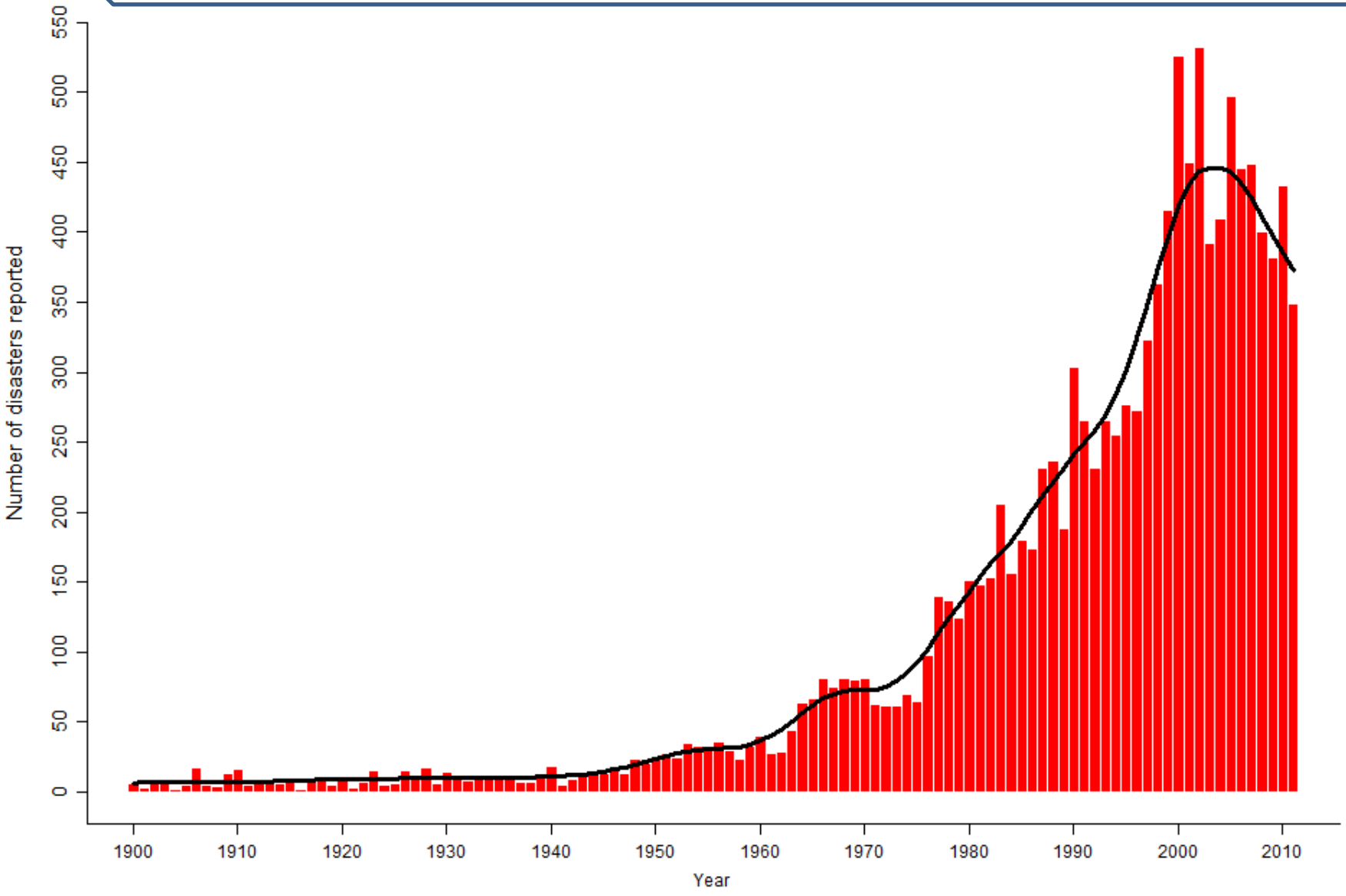
Disasters on the rise

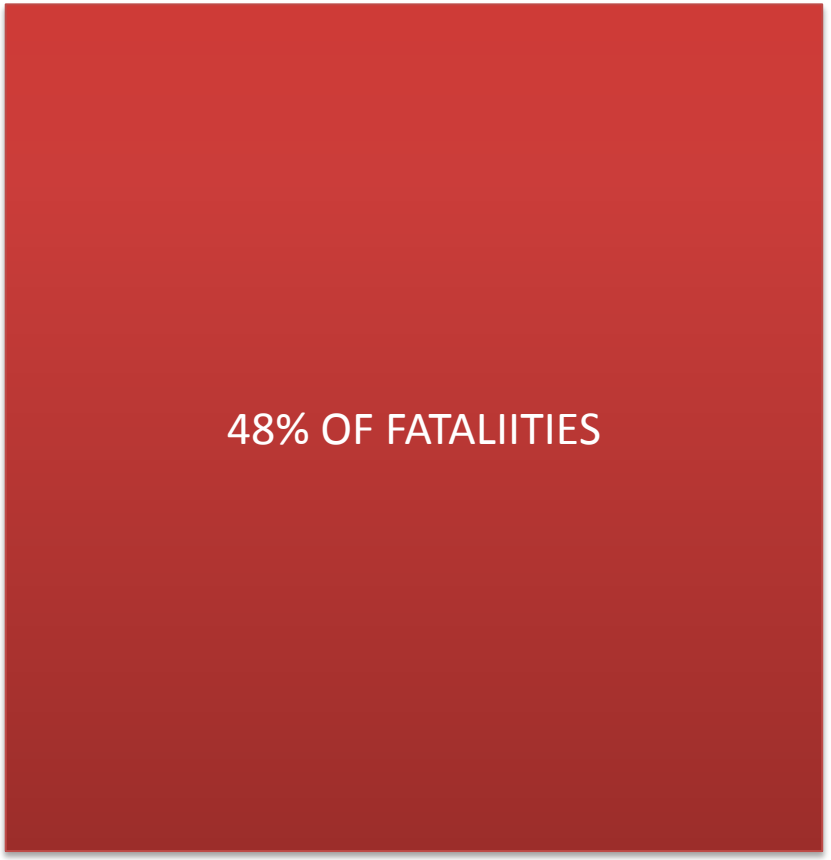


EM-DAT: The OFDA/CRED International Disaster Database - www.emdat.be - Université Catholique de Louvain, Brussels - Belgium

Disasters Affect Everyone

but they impact poor and vulnerable the most

LOW INCOME COUNTRIES ACCOUNT ONLY FOR 9% OF THE WORLDS DISASTERS, BUT ……



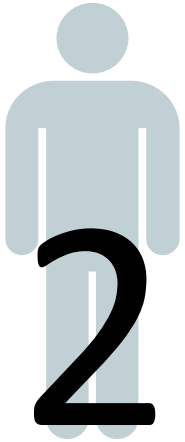
Source: http://www.emdat.be
Also used b y UNISDR and GFDR

DISASTER IMPACTS (2010-2012)

1.7

TRILLION

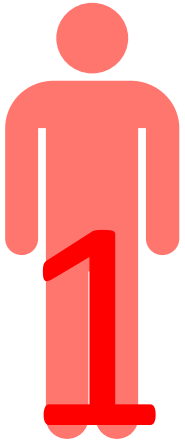
DAMAGES (USD)



2.9

BILLION

AFFECTED



1.2

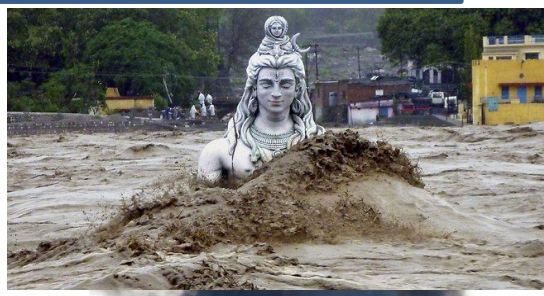
MILLION

KILLED

Source: http://www.emdat.be
Also used b y UNISDR and GFDR

Recent Disasters

- Europe Floods – Germany, France, Switzerland - 2013
- India 2009 & 2013 - Floods
- Calgary, Canada 2013 - Floods
- Oklahoma, US 2013 - Storm
- Super storm Sandy October 2012
- Japan earthquake 9.0 and tsunami - March 2011
- Pakistan floods - 2010 and 2011
- Chile in February - 2010
- Haiti earthquake – 2010
- China floods - 2010 & 2013
- And more ….






About ITU

Founded in 1865 (148 years old)

Committed to connecting the World

ITU-HQ is in Geneva, Switzerland

193 Member States and 700 + Sector Members and Associates and 40+ Academia.

Over 750 employees, from more than 80 nationalities.

Organized in three Sectors:

- Radiocommunication (ITU-R)
- Standardization (ITU-T)
- Development (ITU-D)

ITU ACTIVITIES

ITU-D

Vital role in policy, regulation, and legal frameworks development. Implementation of ICT projects and capacity building activities.

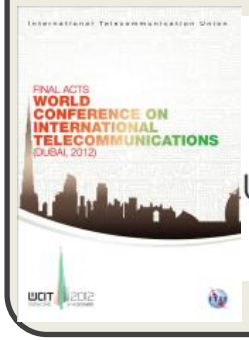
ITU-R

Vital role in global management of the radio-frequency spectrum and satellite orbits

Radio Regulations

ITU-T

Vital role in developing international standards defining elements in the interoperability of ICT global infrastructure.

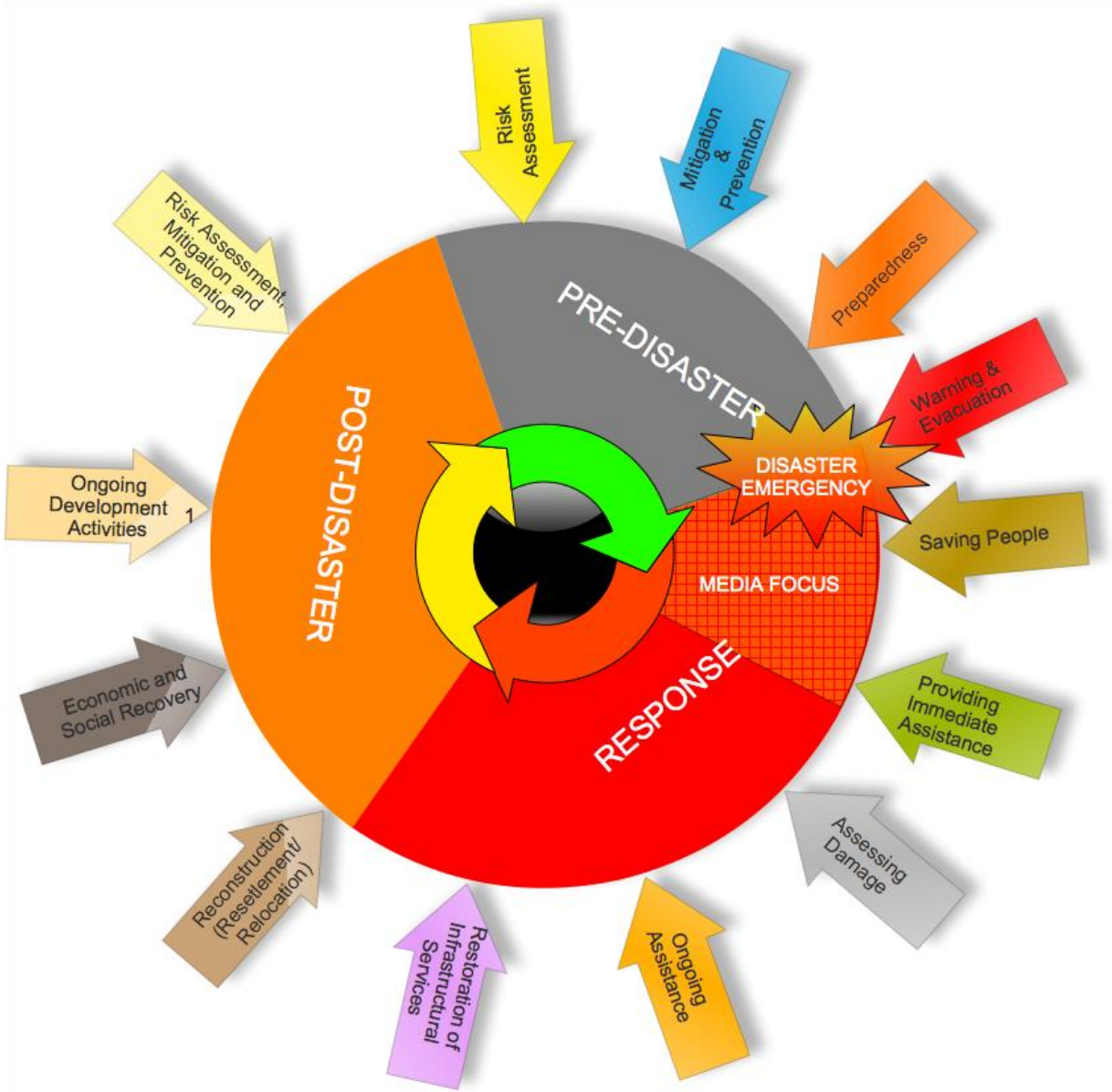


Why emergency telecommunications?

- Alert the population before, during and after the disaster
- Convey information necessary for important decision-making during all the phases
- The coordination during the interventions between the different actors

Saving Lives

Disaster Lifecycle Phases



ITU & 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 and disaster risk reduction.
- Our work can be summed up in four principles:
  - Multi-hazard
  - Multi-technology
  - Multi-phased and
  - Multi-stakeholder

ITU & Emergency telecommunications

- International Conference on Disaster Communications (Geneva, 1990).
- Based on 50 international regulatory instruments including the Constitution of the ITU, calling for absolute priority to **emergency life-saving communications**.
- **Tampere Declaration on Disaster Communications (Tampere, 1991).**
- United Nations General Assembly adopted Resolution 46/182, for strengthening international coordination of humanitarian emergency assistance.
- ARTICLE 1 of ITU Constitution - Purposes of the Union:

To this end, the Union shall in particular:

g) **: "promote the adoption of measures for ensuring the safety of life through the cooperation of telecommunication services".**

Areas of action

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.

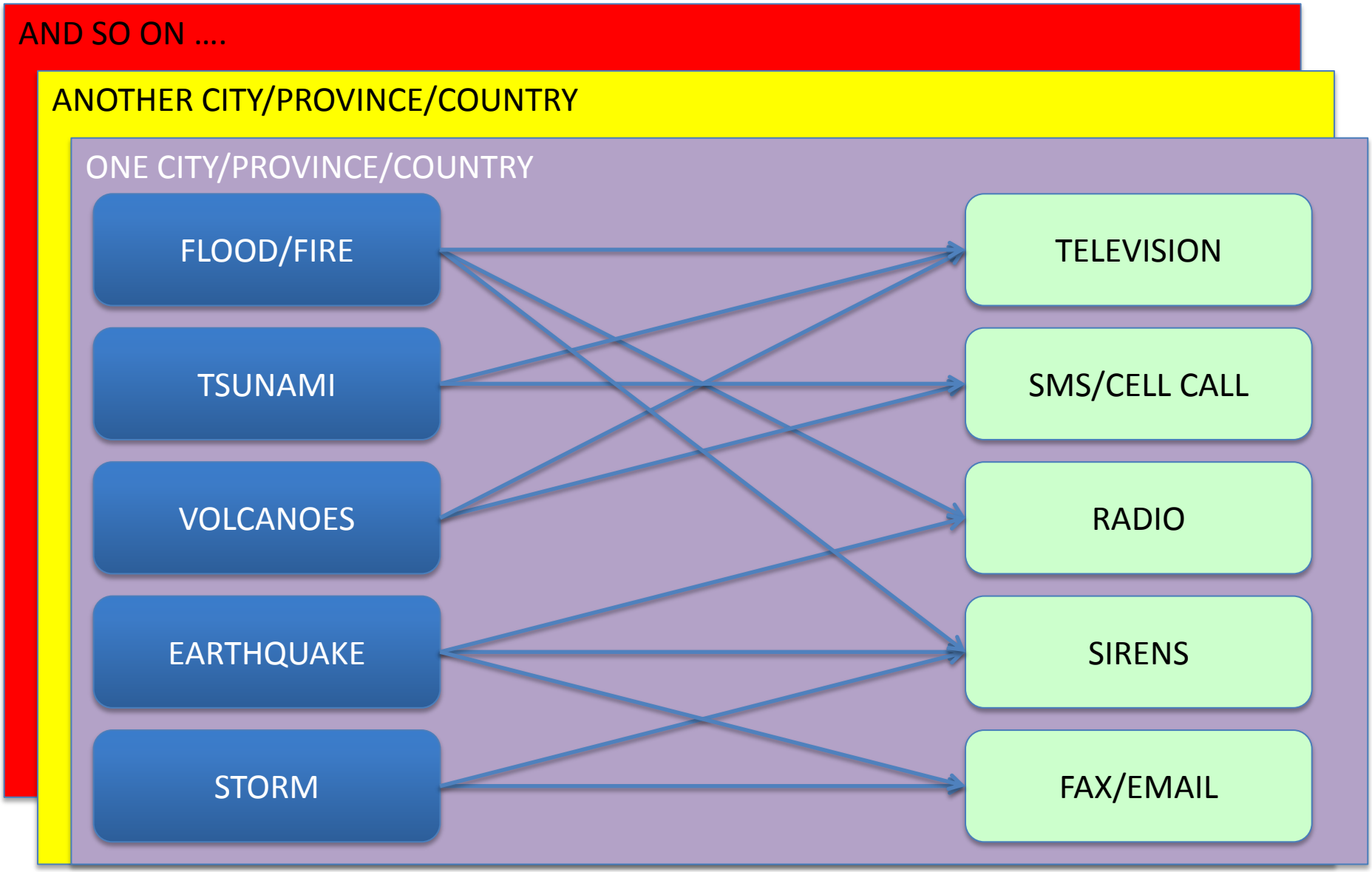
Key Activities of ITU

- Designing National Emergency Telecommunications Plans and formulating Standard Operating Procedures
- Deploying telecommunication resources during emergency situations such as satellite telecommunications equipment for voice and data services to support communication needs in the field.
- Human and Institutional Capacity Building
- Assisting countries to formulate policies and draft appropriate regulations for emergency telecommunications
- Forging stakeholder partnerships as a form of resource mobilization, etc.

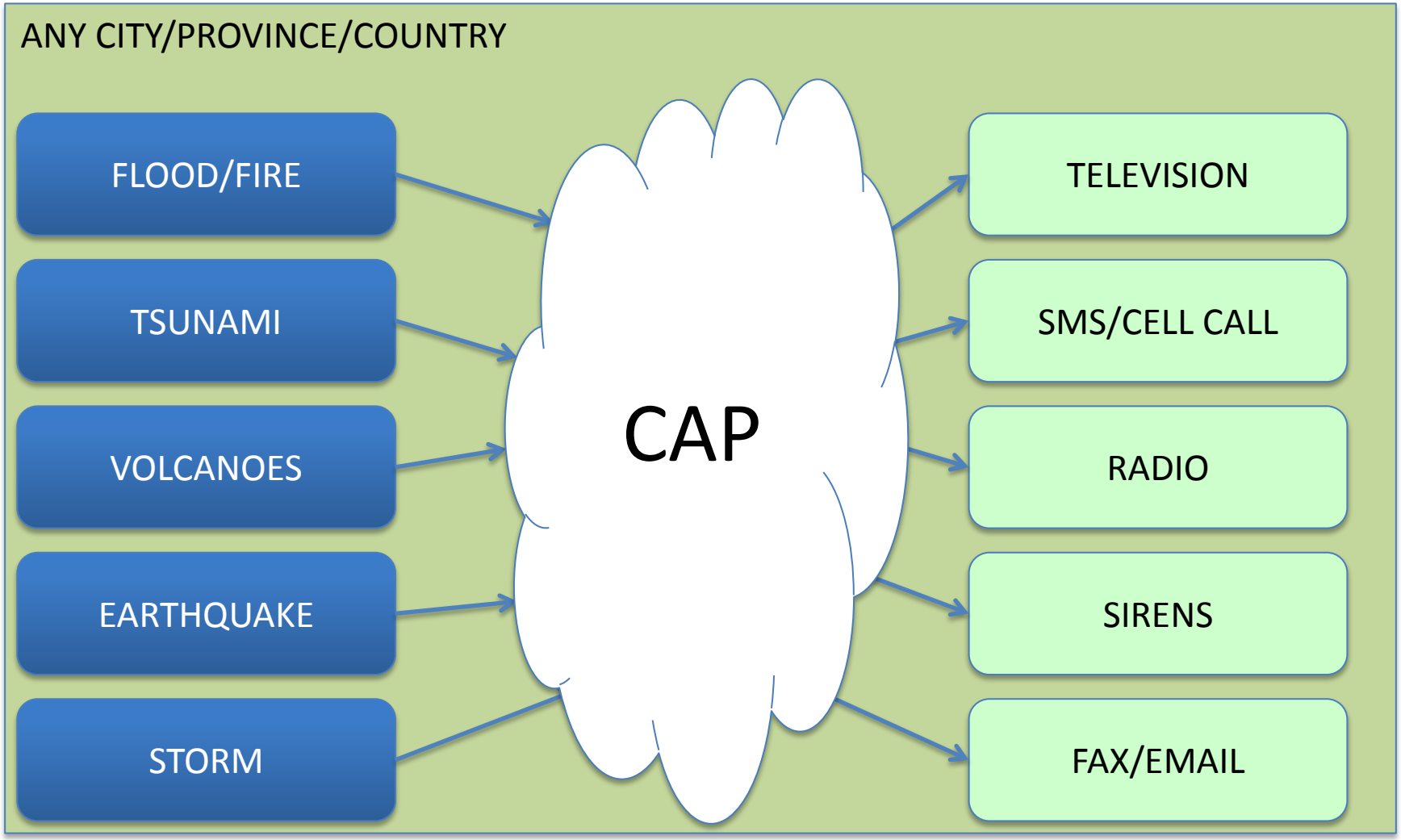
Key Activities of ITU

- Project Development and Implementations (Early Warning Systems, Remote Sensing, etc.)
- Development of manuals, handbooks, etc.
  - E.g. implementation of X.1303 (CAP1.1)
- Assistance in Telecommunications Infrastructure Reconstruction
- Meeting ICTs and emergency telecommunication needs of Member countries in particular LDCs, LLDCs and SIDS
- Plan workshops, forums, conferences on emergency telecommunication and climate change adaptation

DIFFERENT ALERTING SYSTEMS



X.1103 – Common Alerting Protocol



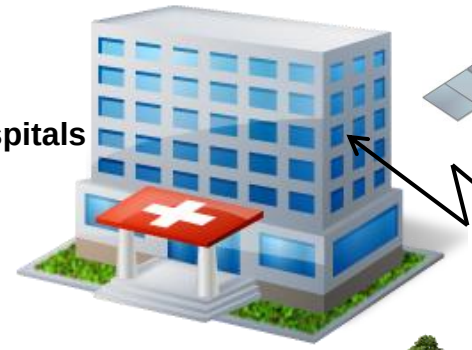
Role of Telecommunications/ICTs

Services	Tasks
• Meteorological services (including satellite) • Earth exploration-satellite service	• Weather and climate prediction. Detection and tracking of earthquakes, tsunamis hurricanes, etc. • Providing crucial information
• Amateur services • Broadcasting services terrestrial and satellite (radio, television, etc.) • Fixed services terrestrial and satellite • Mobile services (land, satellite, maritime services, etc.)	• Receiving and distributing alert messages assist in organizng relief operations • Disseminating alert messages and advice to large sections of the public • Delivering alert messages and instructions to telecommunication centers for further dissemination to public • Distributing alert messages and advice to individuals.

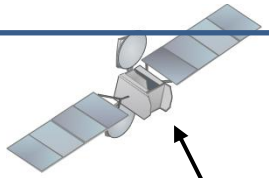
Role of Telecommunications/ICTs

Services	Tasks
Earth Observation Satellites & (GIS)	extensive and accurate knowledge of Country Situation and areas at risks
Global Navigation satellite systems (GNSS/ GPS)	complements the Earth observation data with geographical ground Information in real time
Earth Observation Satellites and Meteorological Satellites	predict, monitor in real time, raise timely awareness and alert on disasters occurrence for rapid decision making and life saving
Satellite Communications	Can be the only service available
Land Observations Systems	monitor different types of hazards and to reduce the vulnerability of the communities

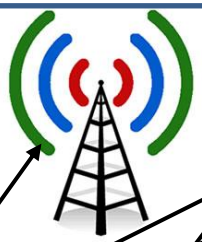
Role Telecommunications/ICTs in Disaster Management



Hospitals



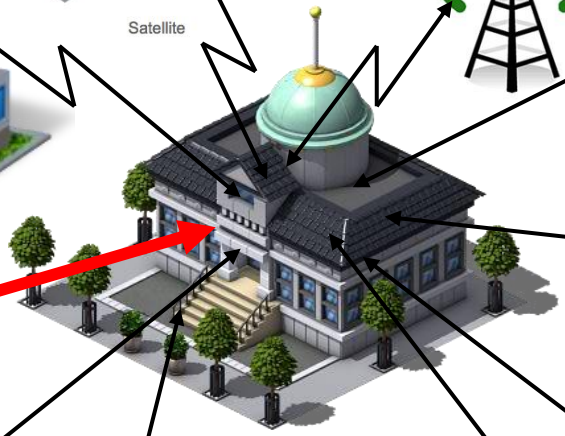
Satellite



Broadcasting

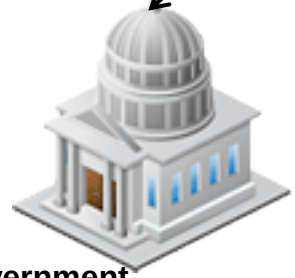
Beach public address system

Early Warning Centre



Disaster Management Headquarters

Public Announcing System



Government authority

Fire Division Headquarters

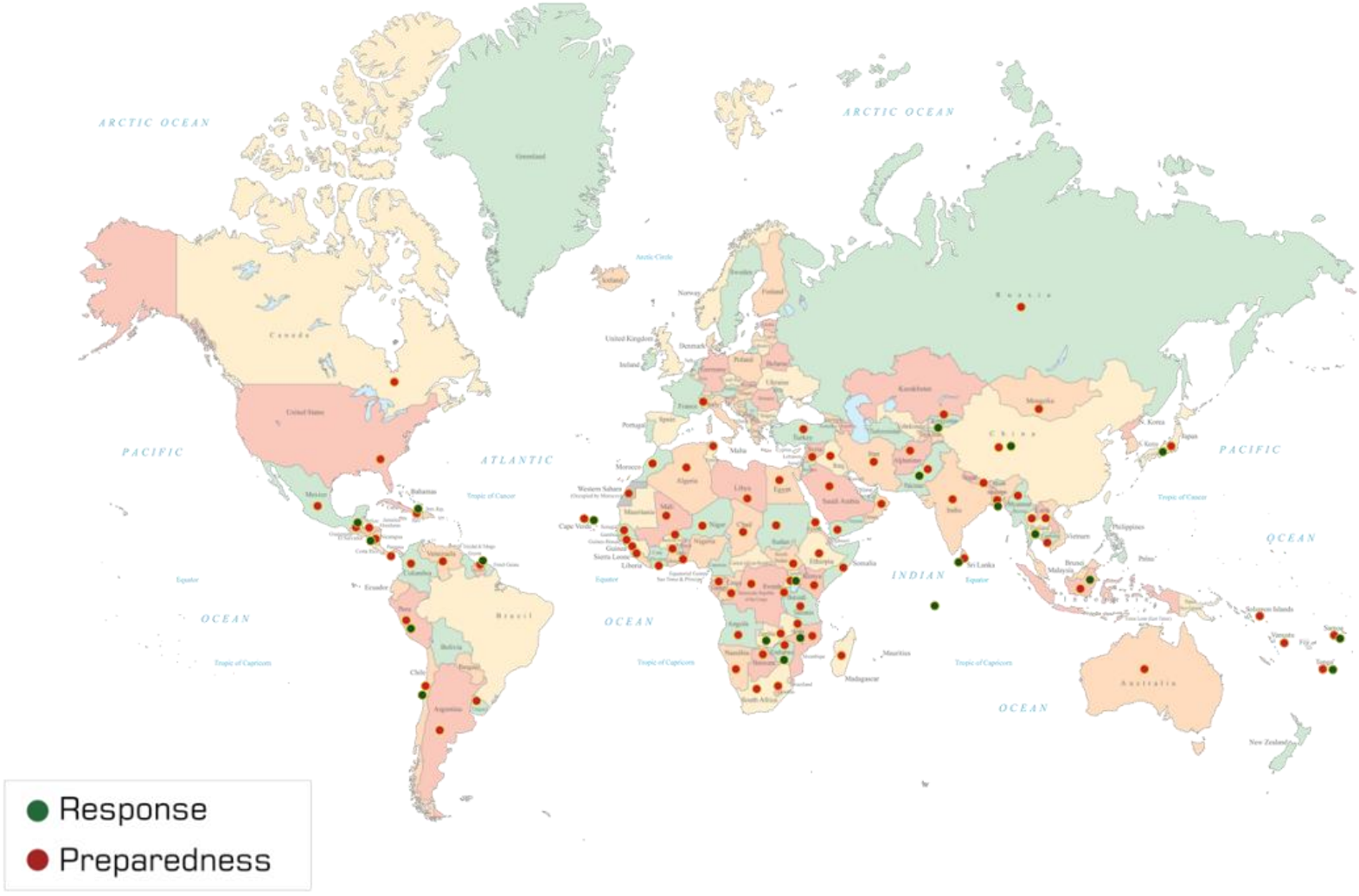
Public-Service Vehicles (Fire engines)

Indoor receivers Citizens

Public-Relations Vehicle (Official Vehicles)

ITU ASSISTANCE

IN EMERGENCY TELECOMMUNICATIONS



Importance of ITU's Assistance

Providing a communication equipment for the government that is critical in:

- Coordinating rescue and relief operations;
- Setting up telemedicine links between hospitals and medics in the field;
- Providing call centers where disaster victims can contac their loved ones.
- Coordinating infrastructure recovery/re-building operations.

ITU bears the costs for the delivery of equipment, service subscription and airtime charges.

ITU Framework for Cooperation in Emergencies (IFCE)

Technology Cluster

- Satellite Operators and Service Providers
- Land Earth Station Operators
- Telecom Operators
- GIS and Remote Sensing Operators
- Radio Communication Equipment Providers

Financial Cluster

- Governments
- Private Sector
- Development Banks
- Regional Economic Groups
- Philanthropic foundations
- International Organizations

Logistics Cluster

- International Couriers
- Air-Transport Operators
- National Airlines
- International Organizations

The Process during disasters

- Country sends requests to ITU/Telecommunication Development Bureau (BDT)
- An agreement signed between ITU and the requesting country
  - ITU provides satellite phones and terminals
  - ITU pays for airtime
  - ITU pays for sending and returning of equipment
- ITU will respond quickly to meet the needs

POWER OF PARTNERSHIPS

PENDRELL

ICO

THURAYA

中华人民共和国工业和信息化部
Ministry of Industry and Information Technology of the People's Republic of China

Terre Star Networks

VIZADA

QUALCOMM

Wireless Reach

Collabria
come together

smartBridges
to the future ...

iridium

AID & INTERNATIONAL DEVELOPMENT FORUM
June 6-7 2012 | Washington D.C. USA

КЫРГЫЗТЕЛЕКОМ
акционерное общество

KYRGYZTELECOM
joint stock company

FedEx Express

STC
الاتصالات السعودية

POTRAZ

tsf
TELECOMS SANS FRONTIÈRES
Communications for life

ROHDE&SCHWARZ

Government of Canada
Gouvernement du Canada

Australian Government

GEO GROUP ON EARTH OBSERVATIONS

Industry Canada
Industrie Canada
Canada

inmarsat

adpc Asian Disaster Preparedness Center
Safer communities and sustainable development through disaster risk reduction

TANA GROUP
"National Telemedicine Agency"
Research-and-Production Union
VITANET

Knowledge to Lead
UNOSAT
unitar
United Nations Institute for Training and Research

An institute of the Order of Malta
Holy Family Hospital
Bethlehem

WGET COLLABORATION
Working Group on Emergency Telecommunications
IASC

IARU and ITU

- 2007 ITU signed an MOU with IARU to collaborate in work on emergency telecommunication
- Invite ARU speakers at regional forums
  - Guatemala Nov 2012
  - Gyrgyztan 19-21 August 2013
  - Barbados 23-25 Sept 2013
- ITU also continue to look for partners to help with emergency telecommunication assistance for rural and remote communications

Concluding Remarks

- Integrate National Emergency Telecommunication Plans into Disaster Management Plans
- Develop Standard Operating Procedures
- Establish multi-disciplinary partnerships
- Develop and use ICTs for disaster prediction, detection monitoring, and response
- Design and Develop Early Warning Systems
- Establish collaboration platforms to 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