

# The Role of ICTs for Disaster Risk Management (DRM) in Sri Lanka

Sriganesh Lokanathan

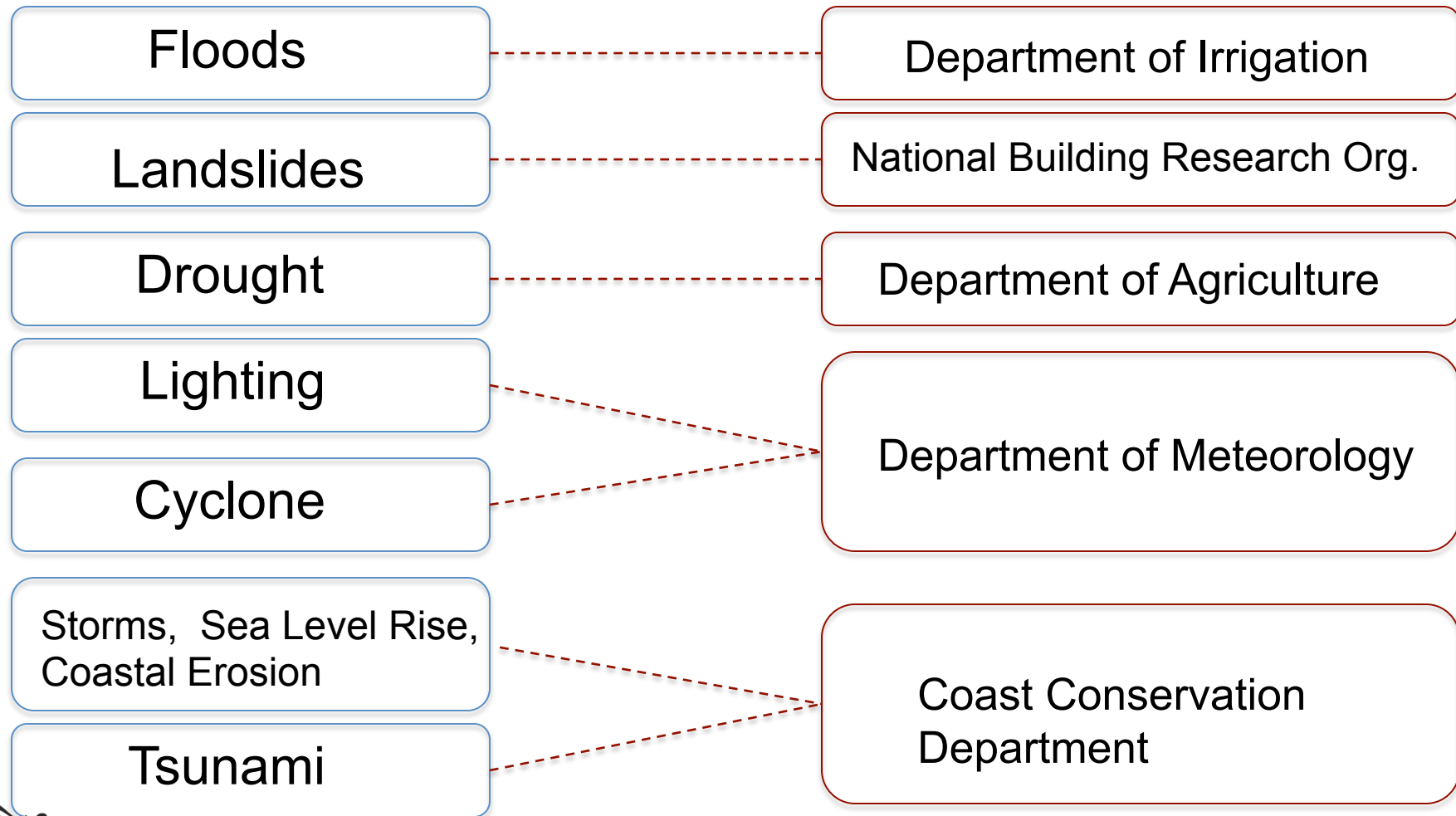
Workshop on ICT for Promoting Inclusive and Disaster Resilient Development

Ulaanbaatar, Mongolia

14<sup>th</sup> May 2015

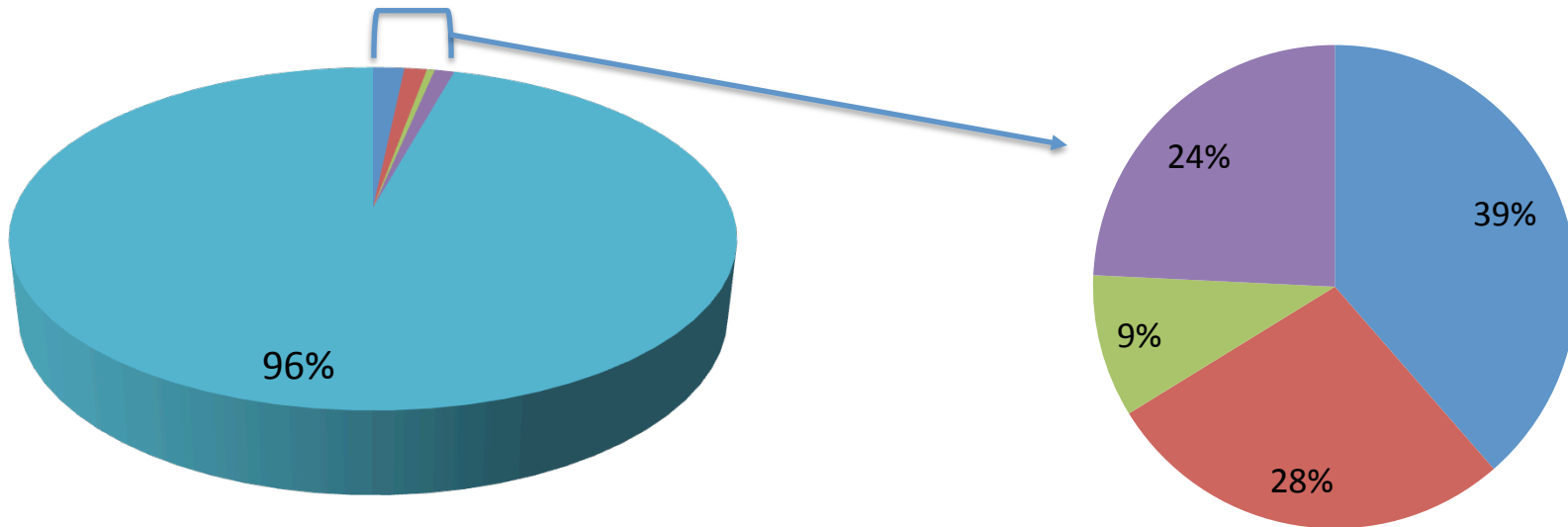


# Sri Lanka is subject to many types of natural disasters



# The 2004 tsunami had the highest impact on human life, but there are other hazards that occur more frequently

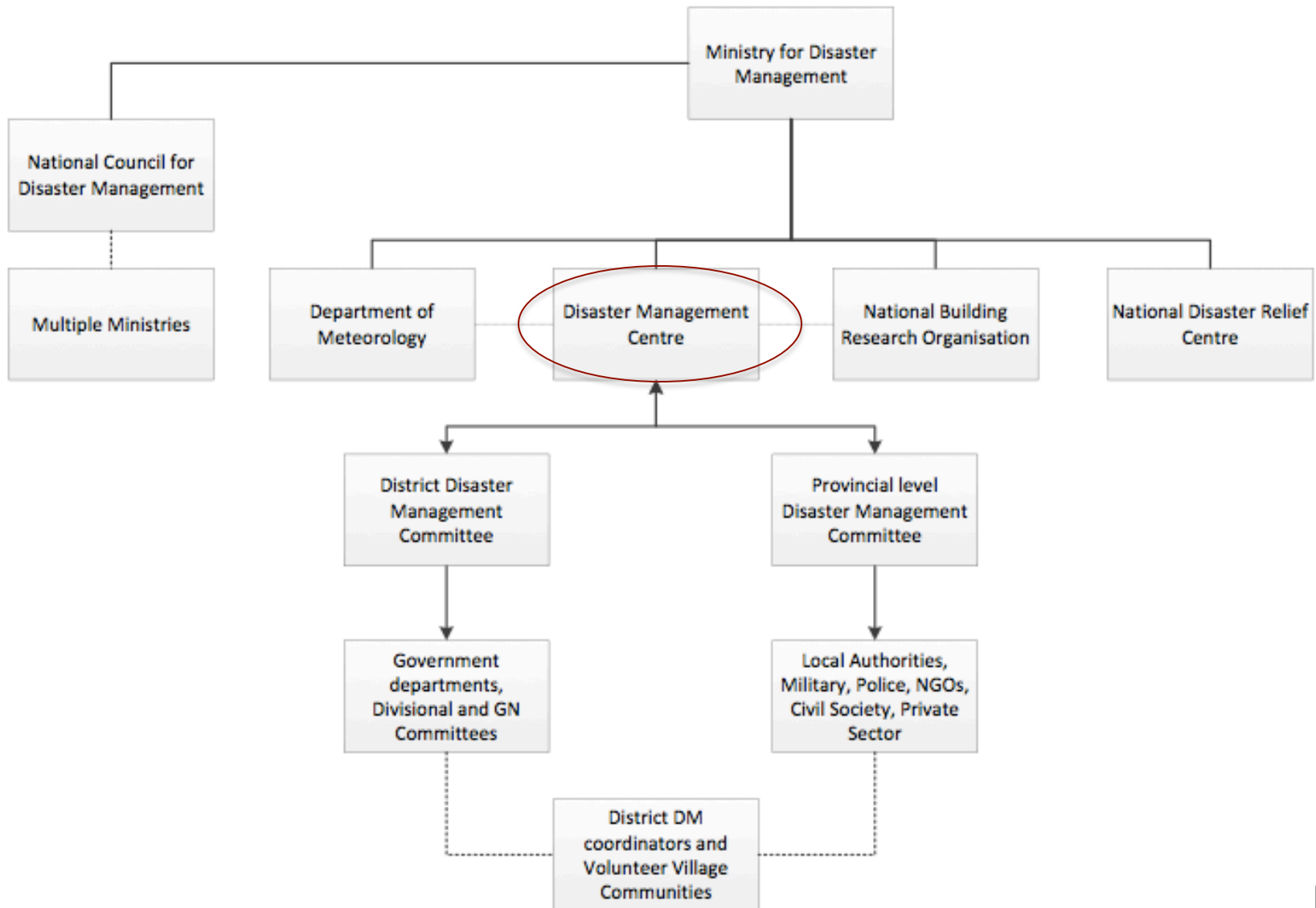
Loss of lives due to frequently occurring hazards (2000 – 2012)



- Flood
- Cyclone/ High winds
- Tsunami
- Landslide
- Lightning

Without the 2004 Tsunami

# The Institutional Framework for DRM in Sri Lanka under the Ministry for Disaster Management



# The DMC is the implementing agency for all stages of the disaster lifecycle

- Runs the Emergency Operations Centre
- Maintains 77 multi-hazard warning towers along the coastal belt
- Maintains a fully equipped vehicle on standby
- Has distributed PA systems to local community organizations, held capacity building programs, mapped evacuation routes etc.

The **lack of open data and insufficient collaboration** between government agencies are the main challenges faced by the DMC

# Use of ICTs for DRM in Sri Lanka

- Landslide mapping using Google's satellite imagery
- Rainfall gauges that transmit data every 30 mins via the mobile network
- Drought prediction app (on Android) → soil-moisture ratio, rainfall, temperature etc.
- Ground Penetration Radar to detect cavities

A critical obstacle in implementing and integrating technology in to DRM has been mind-sets

# Use of ICTs for DRM in Sri Lanka

Stages of the disaster lifecycle

Examples of ICT use in LK

MITIGATION

GIS / Hazard maps

PREPAREDNESS

Early Warning Systems  
(E.g. DEWN)

RESPONSE & RECOVERY

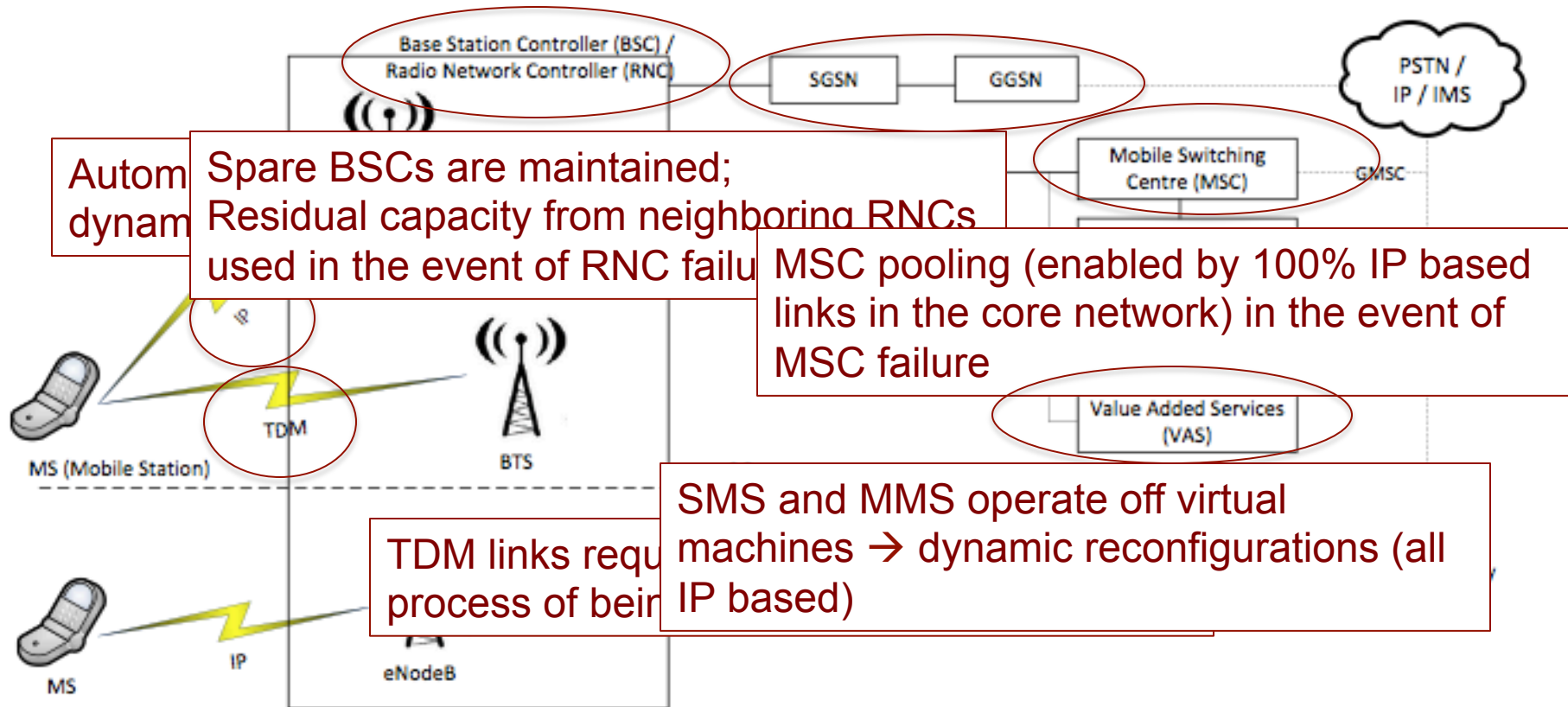
E.g. Sahana Disaster  
Management System

# Resilience of ICTs in Sri Lanka: What are mobile network operators doing?

- Disaster recovery plans are a mandatory pre-requisite for suppliers to the mobile network operators
- KPI: 100% recovery (across all technologies and services) within 96 hours of shut down
- Electricity is critical; often a choke point
  - Back-up batteries are in place at the high-revenue generating Base Transceiver Stations (BTS)
  - Portable generators are made available on a need basis to all BTSs
  - Cell-on-Wheels (COW) deployed when BTS is physically damaged
- Sri Lanka is linked with multiple submarine cables via 2 cable landing stations (CLS) (at present with 2 more in the pipeline); redundancy is in the STM-16 links from the CLS to multiple locations in the city



# Resilience of ICTs in Sri Lanka: An operator perspective



# Policy Recommendations for governments

- Integrate disaster risk reduction (DRR) into development planning
- Infrastructures should be thought of holistically as opposed to in silos
- Create conditions for greater cooperation among different entities of government
- Utilize technological innovations for disaster mitigation and warning; introduce ICT-based elements into the electricity grids to enhance resilience
- Take steps, including open data policies, to ensure that agencies responsible for resilience and disaster response have access to the data they require
- Ensure adequate redundancy international segments of the ICT infrastructure (E.g. location of CLS in diverse locations)
- Define “conditions of exception” that can trigger mandatory national roaming under specified terms.