ICT Innovations for Disaster Risk Management

Tonga Case Study

Presentation by

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I. Why is ICT useful for DRR in Tonga?

ICT can be a powerful tool for DRR

In Tonga, we use ICT to map the damage and assess vulnerabilities in our more remote islands. This way, through ICT we can better:

- Respond to areas affected by disaster to “build back better”
- Collect data to mitigate the effect of future disasters – eg
- Preparedness and ability to strengthen state of readiness
- Accurate Risk estimation
- Fast action during disasters
II. What innovative technologies are we using?

**Measures undertaken to date include:**

- Geo portal
- Utilizing UAV/drone for risk/damage assessment
- Kobo tools for post-disaster rapid assessment
- Lidar survey for tsunami inundation mapping (for main island of Tongatapu)

**In progress:**

- Implementing Nationwide Early Warning Systems (installation of sirens for multi-hazard warnings)
- Upgrading the only national radio for broadcasting and utilizing it to alert or send out warnings
Example: Drones or Unmanned Aerial Vehicles (UAV)

The data generated from UAVs can be used to inform disaster risk management decisions such as:

- evacuation, flood, tsunami and storm surge modelling
- urban planning
- mapping and surveying
- post-disaster damage reconnaissance
Drones/UAVs

**Purpose:**
- Collecting accurate, real-time information for monitoring
- Feed data on damage sustained into early-warning systems (short-term) and policy plans (long-term)

NEMO GEOPORTAL
https://www.unescap.org/sites/default/files/Tonga-NEMO.pdf
III. What challenges do we face in implementing ICT for DRR?

• Financing
• UAV creates large datasets – need computing power and skills
• Need large data storage
• Transferring technologies – need fast internet connection to transmit data, especially from outer islands
• Converting data to information
• Inter-ministries coordination of ICT, information and data management
IV. Way Forward and Opportunities

- Sustainable access to data i.e availability and timeliness
- Capacity building for interpretation of data
- End-user communication and dissemination
- Mechanism in place for line ministries to:
  - Share and use data and information
  - Build and manage ICT for overall disaster management
Thank you