ESCAP – *ICT and Disaster Risk Reduction (DRR)*

- ESCAP is the regional development arm of the UN and provides the intergovernmental platform for member States:
  - **Building Resilience to Disasters**: build and monitor their resilience – to have the capacity to withstand, adapt to, and recover from natural disasters;
ESCAP Initiatives on Multi-hazard Regional Early Warning Systems

Building Resilience for Cross-border Disasters: Protecting the Poor and the Vulnerable

International Network for Multi-Hazard Early Warning System (IN-MHEWS) led by WMO

Regional Cooperation Mechanisms for Multi-hazard Early Warning System

ESCAP Intergovernmental Platform: Commission and Committee on DRR

ESCAP/WMO partnership

ESCAP-led Regional Cooperation Mechanisms

ESCAP’s Innovative financing mechanisms

Typhoon Committee, Panel on Tropical Cyclone

Regional Cooperative Mechanism for Drought Monitoring & Early Warning

Regional Cooperation Mechanism for Transboundary Flood Early Warning

Research Networks for GLOFs, Flash Floods and Landslides

Multi-Donor Trust Fund for Tsunami, Disaster & Climate Preparedness
ESCAP – *ICT and Disaster Risk Reduction (DRR)*

- **Digital Inclusion** - promote digital inclusion through its analysis of the economic and social impacts of future and near-future ICT trends;

- **ICT Indicators** - measure progress in the development of ICT that allows policymakers to make informed decisions in not only the ICT sector, but also health, education, & other government services;
ESCAP – ICT and Disaster Risk Reduction (DRR)

• Regional cooperation in Disaster Risk Reduction (DRR) - Address natural disaster challenges, discuss & adopt regional disaster risk reduction strategies that are integrated with an inclusive, sustainable development agenda for the Asia-Pacific region;

• ESCAP supports the greater synergy between intergovernmental mechanisms, encourages greater cooperation within and between the various subregions and regional cooperative mechanisms, and facilitates the expansion of benefits to other countries in the region, particularly countries with special needs
ESCAP – *ICT and Disaster Risk Reduction (DRR)*

- **Monitoring Drought from Space** - Provide timely & free access to space-based data/products & services to participating countries to monitor droughts from space, & also receive training & other capacity building through the Drought Mechanism.

- **Space and GIS for Disaster Management** - Promotes integrated use of space-based data for disaster risk reduction to complement socio-economic indicators & ground-based data for inclusive and sustainable socio-economic development;
ESCAP – *ICT and Disaster Risk Reduction (DRR)*

- ESCAP’s Regional Space Applications Programme for Sustainable Development (RESAP), promotes the application of space technology and Geographic Information Systems (GIS)
  - Just in 2015, 130 Near real-time satellite imagery and 25 damage maps have been provided to Vanuatu, Tuvalu and Nepal for effective disaster response and relief;
  - Guidelines on rapid assessment of damage and losses (with SAARC);
  - SOPs for utilizing space based data during disasters (with ASEAN);
  - ESCAP will enhance the collaboration with ASEAN, SAARC and Pacific countries on effective utilizing space-based information for disaster management.
ESCAP – ICT and Disaster Risk Reduction (DRR)

• ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness - Promote Tsunami, Disaster and Climate Preparedness through ESCAP’s trust fund, which contributes to narrowing the capacity gaps in the region & ensures the development of an integrated regional early warning system.
ESCAP – *ICT and Disaster Risk Reduction (DRR)*

- **Committee on Information and Communications Technology** addresses the following issues:
  - Integration of ICT-related issues in development policies, plans and programmes;
  - Transfer and application of ICT at the regional and subregional levels;
  - Development of human and institutional capacity in the use of ICT;
  - ICT applications for disaster risk reduction.
ESCAP Analysis on Key E-resilience Components

- Shortening the time for telecom restoration: 72 hours after a disaster = critical period
- Knowing disaster risks
- Designing for resilience
- Ensuring last mile connectivity
- New and emerging solutions, such as airborne base station, use of mobile phones for disaster data collection and early warning
Resilient ICT

- Dependable Wireless Networks in Disasters

Source: Resilient ICT by NICT and available at https://www.itu.int/dms_pub/itu-t/oth/06/5B/T065B00001E0024PDFE.pdf
Resilient ICT - Emergency Alternative Network System for Disaster-stricken Areas

- Maintenance personnel can carry the equipment on foot or by bicycle.
- Appropriate measures can be taken in the event of a loss of power at damaged stations.
- Surviving network resources (buried fiber) can be fully utilized.

Source: Resilient ICT by NICT and available at https://www.itu.int/dms_pub/itu-t/oth/06/5B/T065B00001E0024PDFE.pdf
ESCAP ASSISTANCE IN THE ASIA-PACIFIC REGION

SNAP SHOTS
Satellite Image of Nepal (a whole scene)

- Satellite: ChinaGF-1
- Location: Kathmandu, Nepal
- Date: 2015 Apr 11
Satellite imagery: Before and After a disaster

Before and after images of Kathmandu for 2015 Nepal earthquakes

Source: Provided to ESCAP by UNITAR UNOSAT, CNES and AIRBUS, 2015.
Regional cooperation for resilience

Cyclones in past used to kill 10s of thousands, it's changed now...

Cyclone Hud India, 22 dead

Cyclone Hagiput Philippines, 18 dead
ESCAP facilitated Bangladesh, Cook Islands, Fiji, Kyrgyzstan, Mongolia and Nepal establishing the Geo-DRM portal.
Technical assistance to Bhutan
Participants from Department of Disaster Management (DDM), Ministry of Home & Cultural Affairs (MoHCA) and Department of Hydro Met Services, Ministry of Economic Affairs (MoEA) have been trained and the Geo-DRM portal have been established.
Drought Monitoring System for Sri Lanka

• Development of data processing tools, customized for Sri Lanka

• Highlights are
  • User-friendly software package - open source tools
  • Customized for Sri Lankan conditions
  • Provision to use multiple data sets for Drought Assessment
  • Designed for rapid customization, deployment and use
  • Optimized learning curve, explicit Help, Easy to use and adopt
Gateway Portal for DRR

http://www.drrgateway.net
AP-INFORMATION SUPERHIGHWAY?

• Regional Initiative supported by ESCAP
• A regional broadband network covering ESCAP Member countries and associate Member countries from Turkey to Kiribati
• A pillar in ESCAP’s regional connectivity initiatives (together with transport and energy), which aims to facilitate movement of people, goods, money, information and knowledge for sustainable socioeconomic development in the region
• …which addresses the causes of digital divides, develops Internet ecosystem which supports the implementation of the SDGs and stimulates digital economy
ESCAP Resolution 69/10

(b) To promote the exchange of best practices and experiences and knowledge related to the development of ICT infrastructure, including in-depth analysis of the policy and regulatory barriers that may impede efforts to synchronize the deployment of infrastructure across the region in a seamless manner;

(c) To assist member States, through the provision of policy studies and capacity-building activities, in their efforts to integrate ICT into national development processes;

(d) To pursue the facilitation and coordination of the regional review of progress in implementation of the targets set out in the outcome documents of the WSIS

(f) To work towards a regional framework for action, guided by the outcome of the United Nations Conference on Sustainable Development, that strengthens regional policymaking processes related to ICT for inclusive and sustainable development.
Asia-Pacific Information Superhighway (AP-IS) Map

https://www.itu.int/itu-d/tnd-map/
AP-IS Programmatic View

- Physical network design, development, management at regional level
- Inter-governmental negotiation
- Improving regulations based on open access

- Resilient ICT Networks
- Support to disaster management systems
- Ensuring last mile disaster communication

- Ensuring efficient and effective Internet traffic and network management at regional, sub-regional and national levels

- Bridging digital divides
- Promoting affordable access to underserviced areas
- Policy and technical support to governments
ESCAP Resolution 71/10 – formation of AP-IS Working Group

- (a) To promote the sharing of experiences, good practices and lessons learned in ICT for DRR, management and response, and building e-resilience;
- (b) To provide the necessary support to facilitate the work of the open-ended working group on the Asia-Pacific information superhighway;
- (c) To continue the fact-finding initiatives and analysis on the Asia-Pacific information superhighway, including by enhancing its maps, through partnerships with ITU and regional policy research institutions;
- (d) To continue working on the Asia-Pacific information superhighway in collaboration with international and regional partners;
- (e) To promote, in collaboration with national, regional and international development partners, civil society and the private sector, the exchange of best practices and experiences and knowledge related to the development of ICT infrastructure, including in-depth analysis of the policy and regulatory barriers that may impede efforts to synchronize the deployment of infrastructure across the region in a seamless manner;
- (f) To explore further ways to harness cross-sectoral synergies, including through the review of best practices to recommend solutions to leverage synergies among ICT, energy and transport infrastructures across the region.
AP-IS Working Group

• AP-IS Working Group:
  • Draft master plan of the Asia-Pacific Information Superhighway
    • Strengthening regional broadband terrestrial back-bone network
    • Establishing sufficient Internet Exchange Points (IXPs) and harmonizing Internet traffic management systems and policies
    • Enhancing ICT infrastructure resilience
    • Providing inclusive access to broadband internet
  • Draft regional cooperation framework for the Asia-Pacific Information Superhighway

• First Working Group on the Asia-Pacific Information Superhighway (AP-IS), met for the first time in Incheon, Korea on 1 and 2 September 2015
ESCAP studies report

- Findings:
  - Most ASEAN countries are already interconnected with fiber optic connectivity
  - Some fiber connectivity are weak or insufficient capacity
  - Most ASEAN countries for Internet connectivity are currently dependent on global transit providers
  - Some missing links in trans-border terrestrial fiber optic links
ESCAP studies report

- Findings (contd.)
  - Domestic network – some are excellent others limited.
  - Broadband penetration – Gaps between and within countries.
  - IP transit cost expensive; exchange of traffic between ASEAN countries limited in the absence of regional IXP.
  - Level of direct peering is poor and some countries lack interconnectivity even between domestic ISPs
<table>
<thead>
<tr>
<th>Country</th>
<th>Bangladesh</th>
<th>Bhutan</th>
<th>India</th>
<th>Iran (Islamic Republic of)</th>
<th>Maldives</th>
<th>Nepal</th>
<th>Pakistan</th>
<th>Sri Lanka</th>
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<td>No direct submarine cable links</td>
<td>SEA-ME-WE-4</td>
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Source: ESCAP report 2014
ESCAP studies report

- Weak Physical Fiber Connection (Intra-ASEAN region)
  - Malaysia-Indonesia(Borneo)
  - Vietnam-Philippines
  - Malaysia(Sarawak)-Philippines
  - Malaysia-Thailand
- Insufficient Capacity or Direct IP Connectivity
  - Laos PDR, Myanmar, Cambodia

* Source: Terabit Consulting, 2013 and some updates in 2014
THANK YOU