*Third High Level Forum on UNGGIM*
*22-24 October 2014*
*Beijing, China*

# ESCAP Promotes Geo-referenced Information System for Disaster Risk Management in Asia and the Pacific

Keran Wang
Space Applications Section,
Information and Communications Technology and
Disaster Risk Reduction Division (IDD)

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

# Why ESCAP has put in place space applications and GIS to realize its vision?

- Established in 1947 with its headquarters in Bangkok, Thailand. Regional development arm of the United Nations for the Asia-Pacific region.
- Made up of 53 Member States and 9 Associate Members, the region is home to 4.1 billion people, or two thirds of the world's population.
- Geographical scope stretches from Turkey in the west to Kiribati in the east, and from the Russian Federation in the north to New Zealand in the south.

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

# Achieving Sustainable Development in Asia –Pacific

## 7 core areas of work

- Eradicating poverty and narrowing inequality
- Pursuing sustained and inclusive economic growth
- Gender Equality and Empowerment
- Building resilience to economic crisis, climate change and disasters
- Responding to population dynamics and urbanization
- Enhancing resource efficiency and natural resource management
- Deepening regional integration and connectivity

**ESCAP recognizes that space applications leapfrog and fill the gaps**

## Key Enablers

- Financing
- Science, Technology and Innovation
- Trade
- Capacity Building
- Partnership
- Governance

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

# Key developments and challenges in disaster risk reduction

- **In 2013-2014, Asia and the Pacific continued to be the region most affected by natural disasters**
  - 9 of the top 10 world's deadliest disasters struck the region - Typhoon Haiyan (Philippines, Viet Nam and China), flash floods (India and Nepal).
  - Disasters in the region affected more than 85 million people and caused over $62 billion in damages.

- **New developments in space technologies and GIS have brought much potential; these technologies have become more affordable than ever before**
  - Lack of awareness and capacity hinder effective application of space technology and GIS.
  - Growing needs-member States request ESCAP to do more.

**Our work deals with pressing development challenges of today:**

***Building Resilience, and Promoting Connectivity***

# Fostering strong political commitment, ownership and support

**Regional Space Applications for Sustainable Development in Asia and the Pacific (RESAP)**

69/11: Implementation of the Asia-Pacific Plan of Action for Applications of Space Technology and Geographic Information Systems for Disaster Risk Reduction and Sustainable Development, 2012-2017 (2013)

68/5: Asia-Pacific Years of Action for Applications of Space Technology and the Geographic Information System for Disaster Risk Reduction and Sustainable Development, 2012-2017 (2012)

Regional Cooperative Mechanism for Drought Monitoring and Early Warning was launched

.. Institutionalization of RESAP: ESCAP acts as the secretariat of RESAP

2nd Space Ministerial Conference

New Delhi (1999)

RESAP: Education and Training Networks (China, India and Indonesia)

… + Regional /South-South Cooperation

Capacity Building

1st Space Ministerial Conference

Beijing (1994)

Inception of RESAP: – Intergovernmental Consultative Committee, Thematic Regional Working Groups

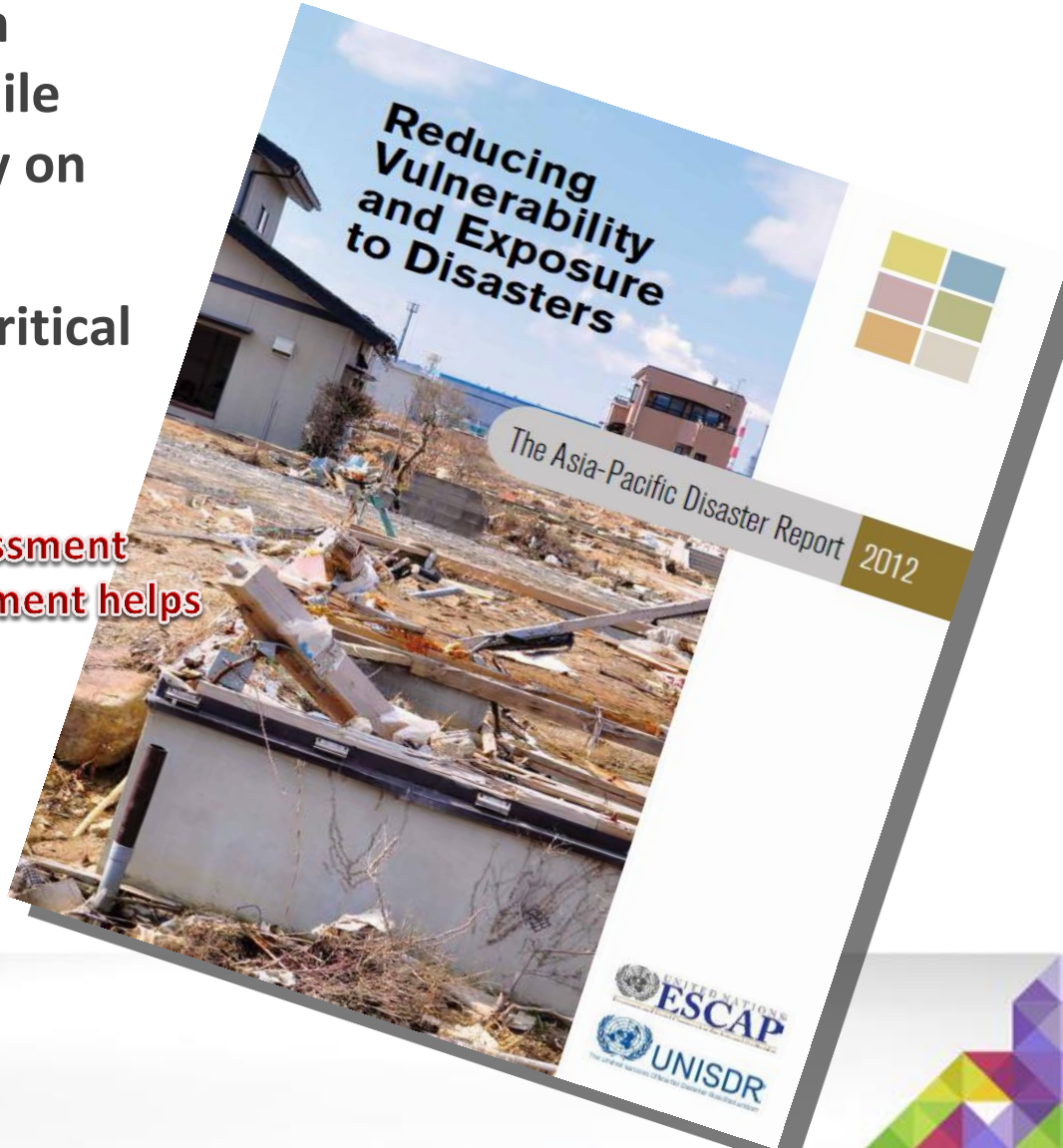
UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

## Asia and Pacific is the world's most disaster-prone region

a.The loss of life is decreasing from hydro-meteorological hazards, while the economic losses are alarmingly on the rise.

b.Spatial land use plans, resilient critical infrastructure help in reducing economic losses.

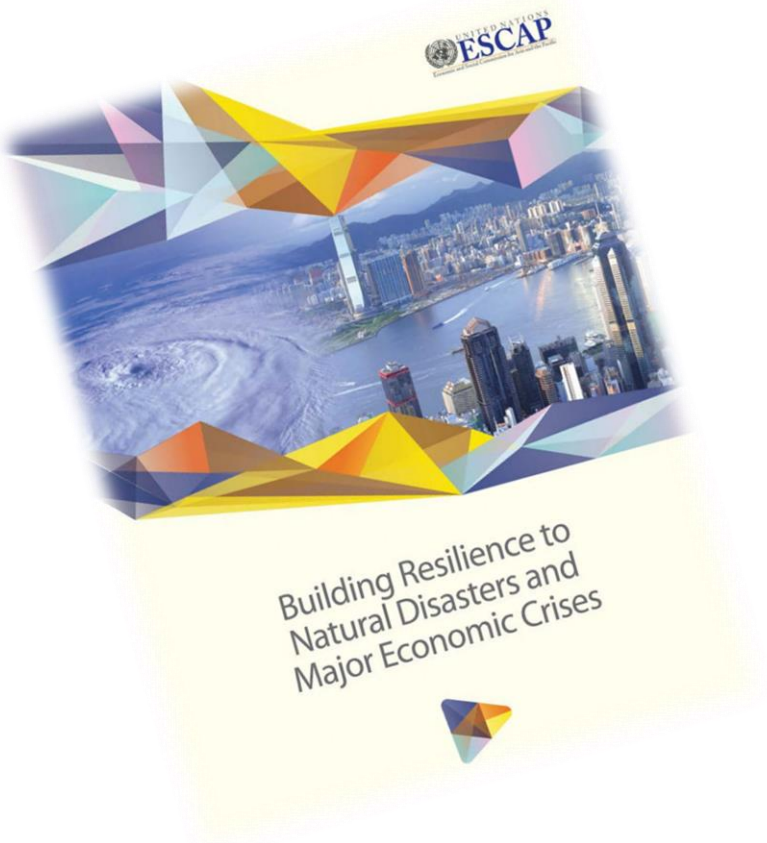
**Space and GIS for early warning, risk assessment and post-disaster damage and loss assessment helps substantially in disaster risk management**



UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

69th Commission Session
25 April - 1 May 2013
Bangkok

**Asia-Pacific Leaders Convene to Discuss Strategies to Build Resilience to Natural Disaster and Economic Crises in the Region**




**Space technologies and geo-referenced information can be used to enhance resilience, economic, social, environment development, build critical infrastructure and strengthen supply chains.**

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

# Why Geo-DRM is important to developing countries in Asia and the Pacific?

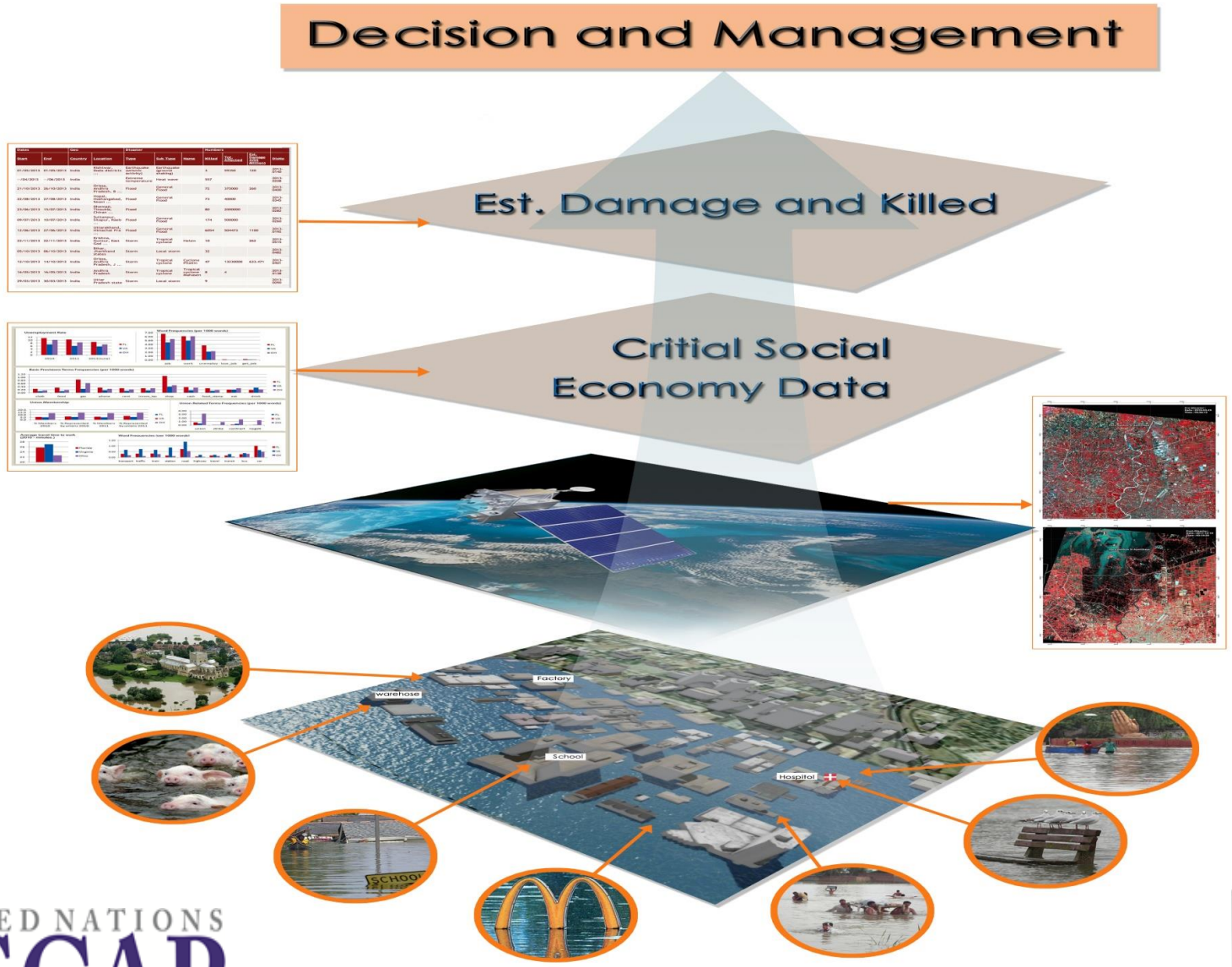
- Asia-Pacific is the most disaster-prone region of the world.
  - *Huge loss caused by severe disasters rolls back the development gains made by CSNs.*
- Utilization of space technology and GIS is now more accessible and affordable than ever.
  - *Comprehensive hazard and risk assessments, disaster response, relief and impact assessments .*
- Space technology and GIS applications continue to be underutilized in CSNs.
  - *Primarily because of the lack of capacity in developing countries in terms of human, scientific, technological, organizational and institutional resources.*

## What are the goals of ESCAP's project?

- LDCs, LLDCs and SIDS in Asia-Pacific region have the capacity to establish and use a geo-referenced information platform for disaster risk reduction and management.
  - *Geo-DRM provides a highly effective tool in support of evidence-based decision making for preparedness, rapid analysis and impact assessment of disasters.*
  - *Through South-South cooperation as well as triangular cooperation.*

- Community of Practices (COP) is developed among stakeholders and link it to a regional-level support network of DRR and DRM.

# Provide right information to the right people at the right time for the right decision




UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

## What is our approach?

- Survey of regional persistent gaps and challenges in CSNs.
  - *Low capacity in space and GIS applications.*
  - *Lack of geo-referenced information systems in the region.*

- Pilot country selection upon request.
  - *Least developed countries: Nepal, Bangladesh, Afghanistan*
  - *Land lock developing countries: Mongolia, Kyrgyzstan*
  - *Small Island developing States: Cook Islands, Fiji*

- Country level needs and gap assessment.

- Increase awareness of policymakers on Geo-DRM and the capacity of the users in key ministries.

## What are our key deliveries?

- Developed standardized prototype Geo-DRM portal 2012.
  - *based on open source software for disaster risk management and shared it with member States, in particular, with LDCs, LLDC and SIDS.*

- Developed a series of knowledge products 2013
  - *Installation of Geo-DRM portal, users' manuals and video guidance, etc.*

- Supported member States to enhance their capacity building 2012-2014.
  - *Supported Bangladesh, the Cook Islands, Fiji, Kyrgyzstan, Mongolia and Nepal in establishing Geo-DRM and provided the specialized training to configure, operate and manage the Geo-DRM.*

- Strengthened regional partnerships.2012-2014
  - *UNISDR, UNDP, UNITAR/UNOSAT, UNOCHA, UNGGIM, SAARC, SOPAC, CSSTEAP and AIT.*

## What is the current status of Geo-DRM ?

- The Geo-DRM which integrating geospatial data and critical socio-economic information has been initially operational in pilot countries.
  - *Bangladesh, Cook Islands, Fiji, Kyrgyzstan, Mongolia, Nepal*
  - *More countries such as Afghanistan, Bhutan, Cambodia, Lao PDR, Kiribati, and Maldives have requested the technical support on establishment and use of Geo-DRMs.*
  - *In the advent of a disaster, the Geo-DRM aims to provide the right information, to the right people, at the right time to enable sound, evidence-based decision making.*

- The online Community of Practice (COP) has been established.
  - *A regional network of more than 100 key stakeholders, has been established and will assist in sharing information, knowledge and resources for disaster management.*

## Good practices in pilot countries:

- *Mainstreamed using innovative technology, such as space and GIS, into their sectoral or national disaster prevention plan.*
- *Bangladesh, Cook Islands, Kyrgyzstan, Mongolia and Nepal have initially exchanged the data and provide support among related ministries.*

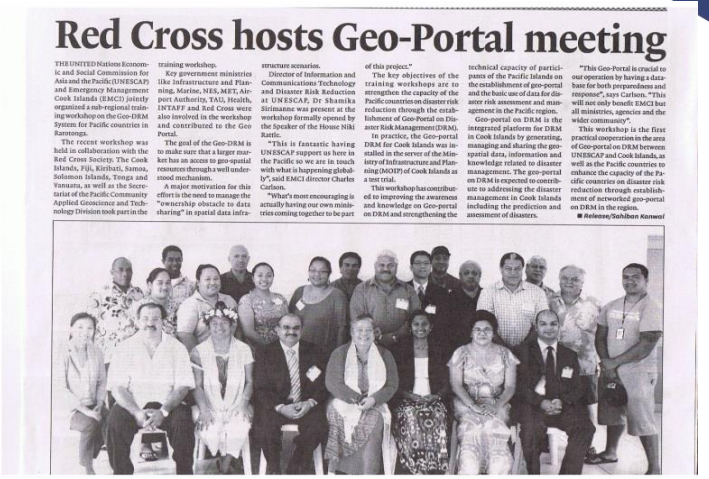
## Network of Networks:

- *Network of policy makers, officials, researchers and project managers from different ministries and academic fields has been setup.*
- *Effective linkage with professional UN agencies, such as UNITAR/UNOSAT, UNGGIM, UNGGIM-AP and GEO, has been further strengthened.*
- *An experienced technical team at AIT will continue to provide technical assistance to all user of Geo-DRM.*

## Continued support:

- *from existing and potential donors, such as Korea, Japan, China and India, are committed to provide financial and technical support to ESCAP in GIS applications for disaster risk reduction.*

# What should be proud of ?

# Red Cross hosts Geo-Portal meeting

THE UNITED Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and Emergency Management Cook Islands (EMCI) jointly organized a sub-regional training workshop on the Geo-DRM System for Pacific countries in Rarotonga.

The recent workshop was held in collaboration with the Red Cross Society. The Cook Islands, Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu, as well as the Secretariat of the Pacific Community Applied Geoscience and Technology Division took part in the training workshop.

Key government ministries like Infrastructure and Planning, Marine, MES, MET, Airport Authority, TAU, Health, INTAFF and Red Cross were also involved in the workshop and contributed to the Geo Portal.

The goal of the Geo-DRM is to make sure that a larger market has an access to geo-spatial resources through a well understood mechanism.

A major motivation for this effort is the need to manage the "ownership obstacle to data sharing" in spatial data infrastructure scenarios.

Director of Information and Communications Technology and Disaster Risk Reduction at UNESCAP, Dr Shamika Sirimanne was present at the workshop formally opened by the Speaker of the House Niki Rattle.

"This is fantastic having UNESCAP support us here in the Pacific so we are in touch with what is happening globally", said EMCI director Charles Carlson.

"What's most encouraging is actually having our own ministries coming together to be part of this project."

The key objectives of the training workshops are to strengthen the capacity of the Pacific countries on disaster risk reduction through the establishment of Geo-Portal on Disaster Risk Management (DRM).

In practice, the Geo-portal DRM for Cook Islands was installed in the server of the Ministry of Infrastructure and Planning (MOIP) of Cook Islands at a test trial.

This workshop has contributed to improving the awareness and knowledge on Geo-portal on DRM and strengthening the technical capacity of participants of the Pacific Islands on the establishment of geo-portal and the basic use of data for disaster risk assessment and management in the Pacific region.

Geo-portal on DRM is the integrated platform for DRM in Cook Islands by generating, managing and sharing the geo-spatial data, information and knowledge related to disaster management. The geo-portal on DRM is expected to contribute to addressing the disaster management in Cook Islands including the prediction and assessment of disasters.

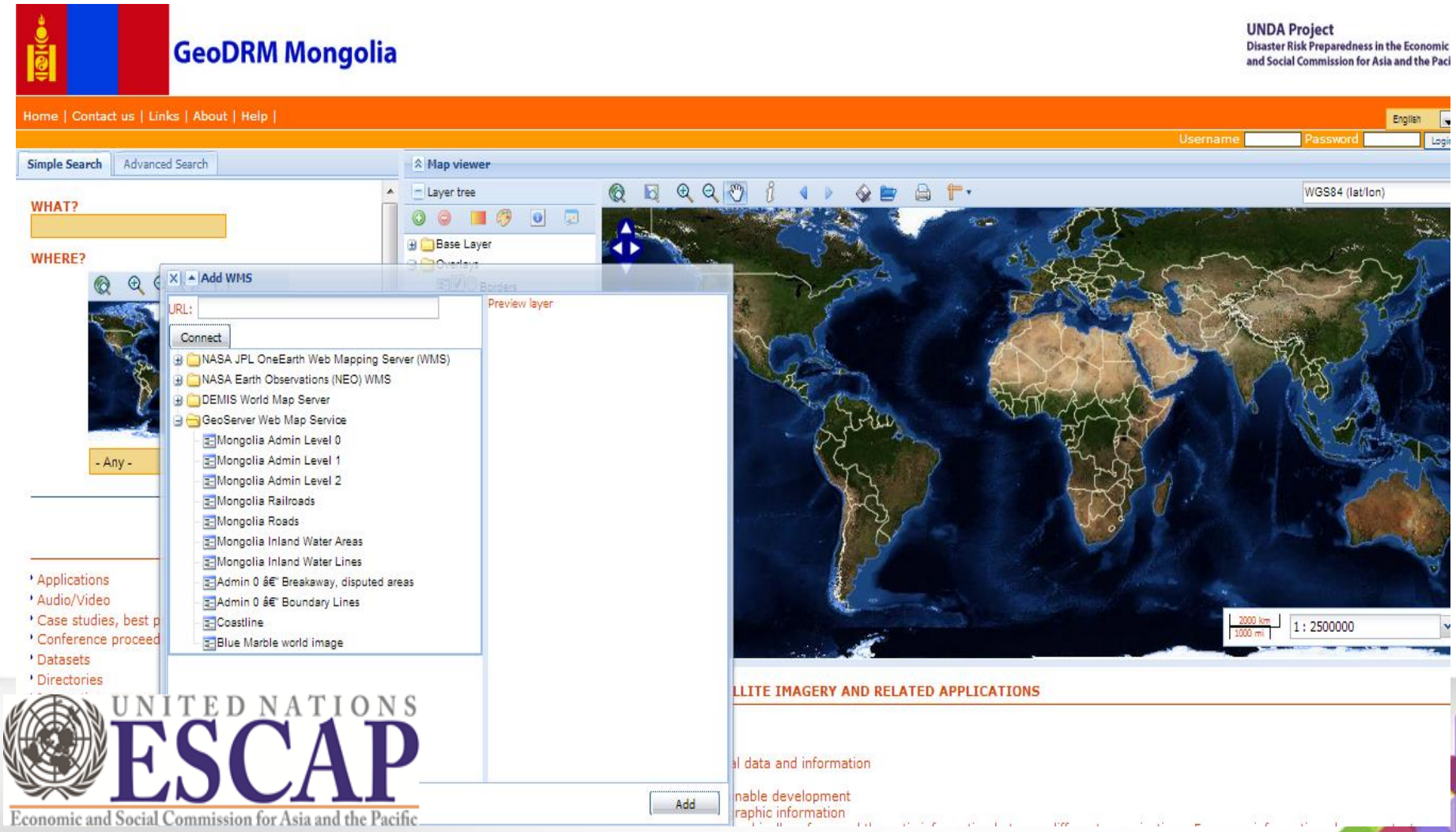
"This Geo-Portal is crucial to our operation by having a database for both preparedness and response", says Carlson. "This will not only benefit EMCI but all ministries, agencies and the wider community".

This workshop is the first practical cooperation in the area of Geo-portal on DRM between UNESCAP and Cook Islands, as well as the Pacific countries to enhance the capacity of the Pacific countries on disaster risk reduction through establishment of networked geo-portal on DRM in the region.

■ Release/Suhiben Konwar


UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

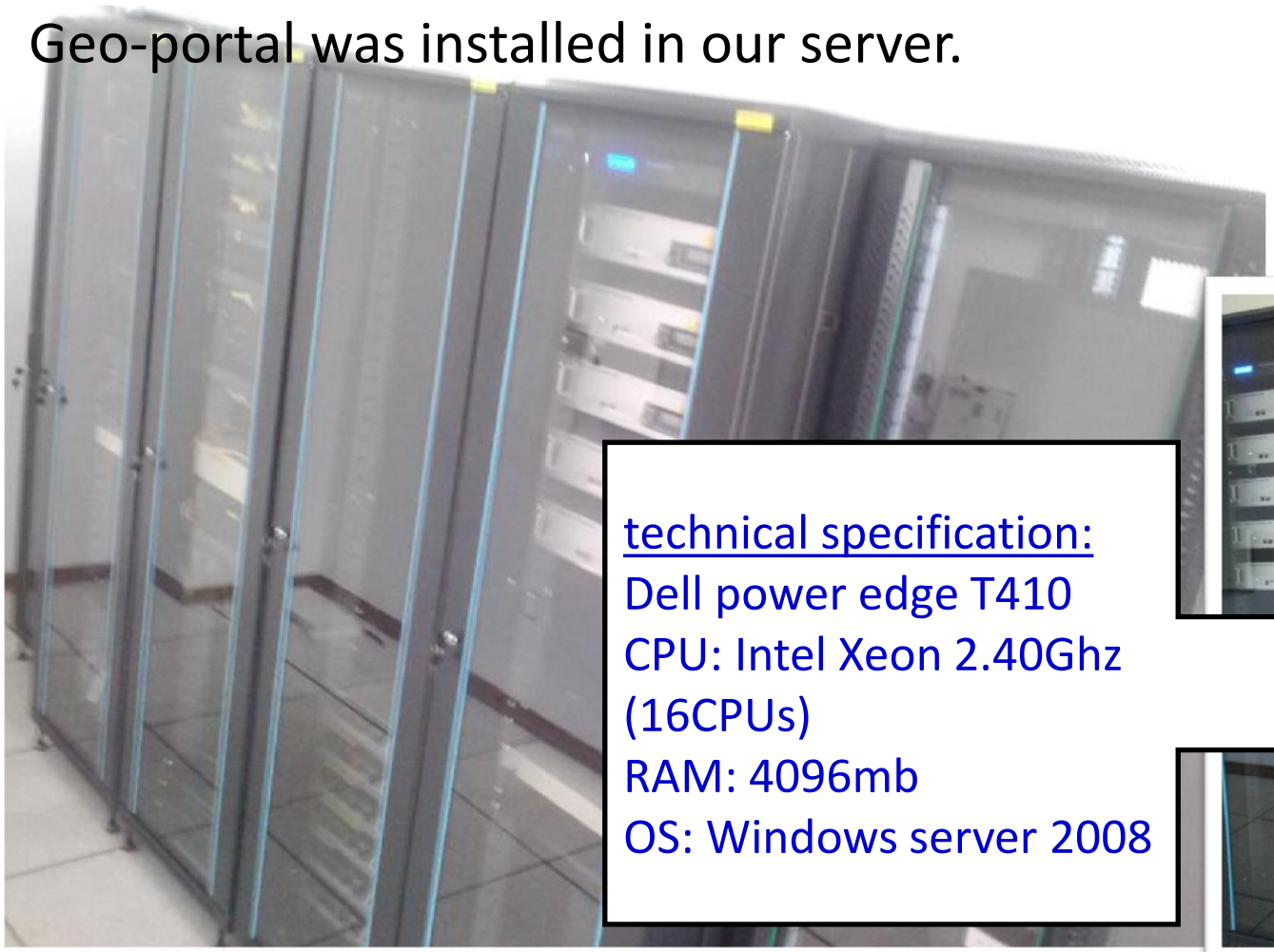
# Mongolia




UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

# Usage of Geo-portal in NEMA, Mongolia

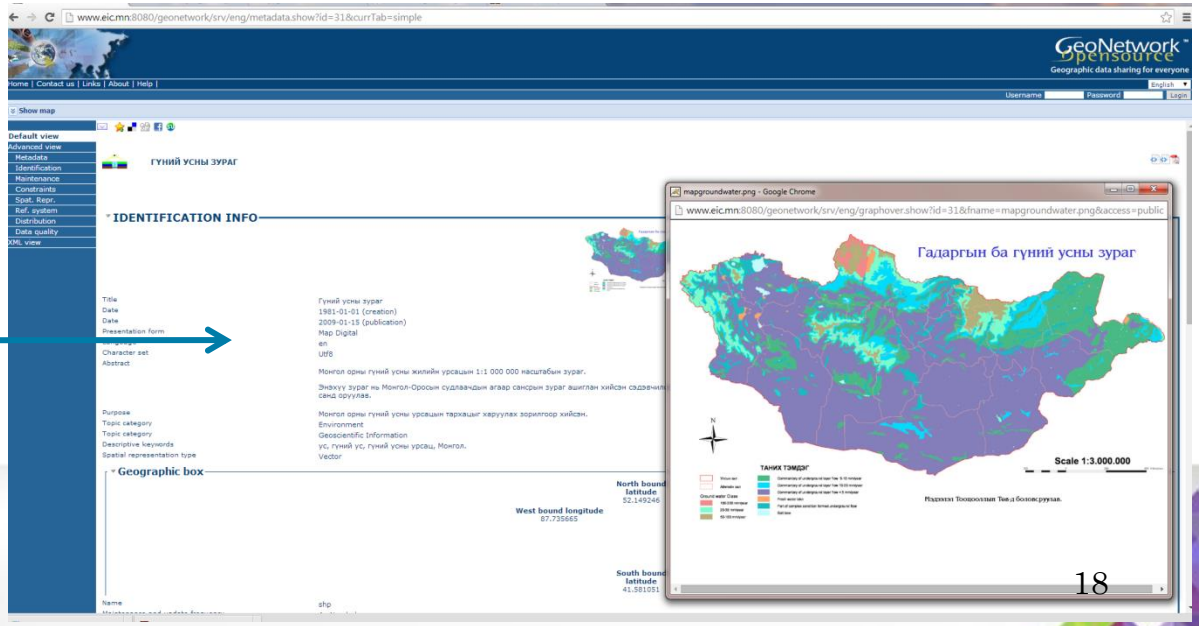
Geo-portal was installed in our server.



<u>technical specification:</u>
Dell power edge T410
CPU: Intel Xeon 2.40Ghz (16CPUs)
RAM: 4096mb
OS: Windows server 2008


Map of fodder resources

Map of groundwater

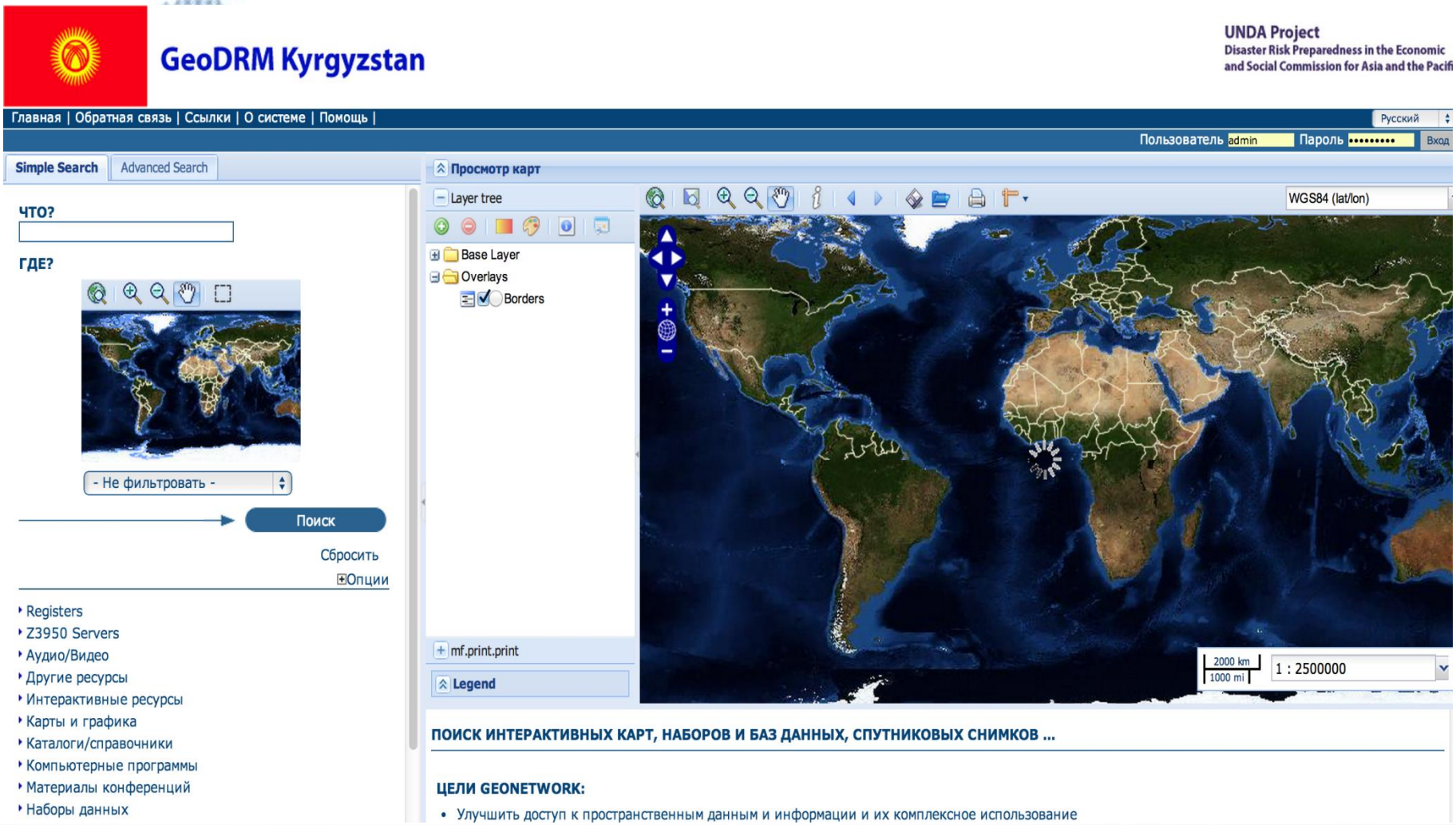



UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

# Executing FERN Mapping System Cook Islands


UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

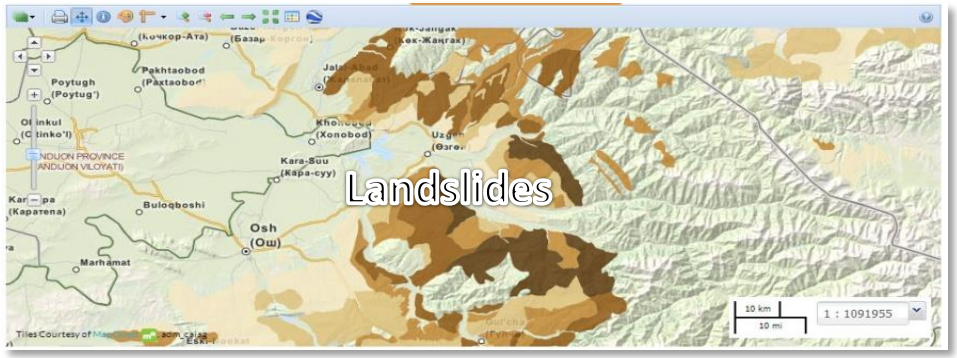
# Kyrgyzstan




UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

# Geodata downloaded into the Data Platform

*Some examples of geo-loaded into the data platform*





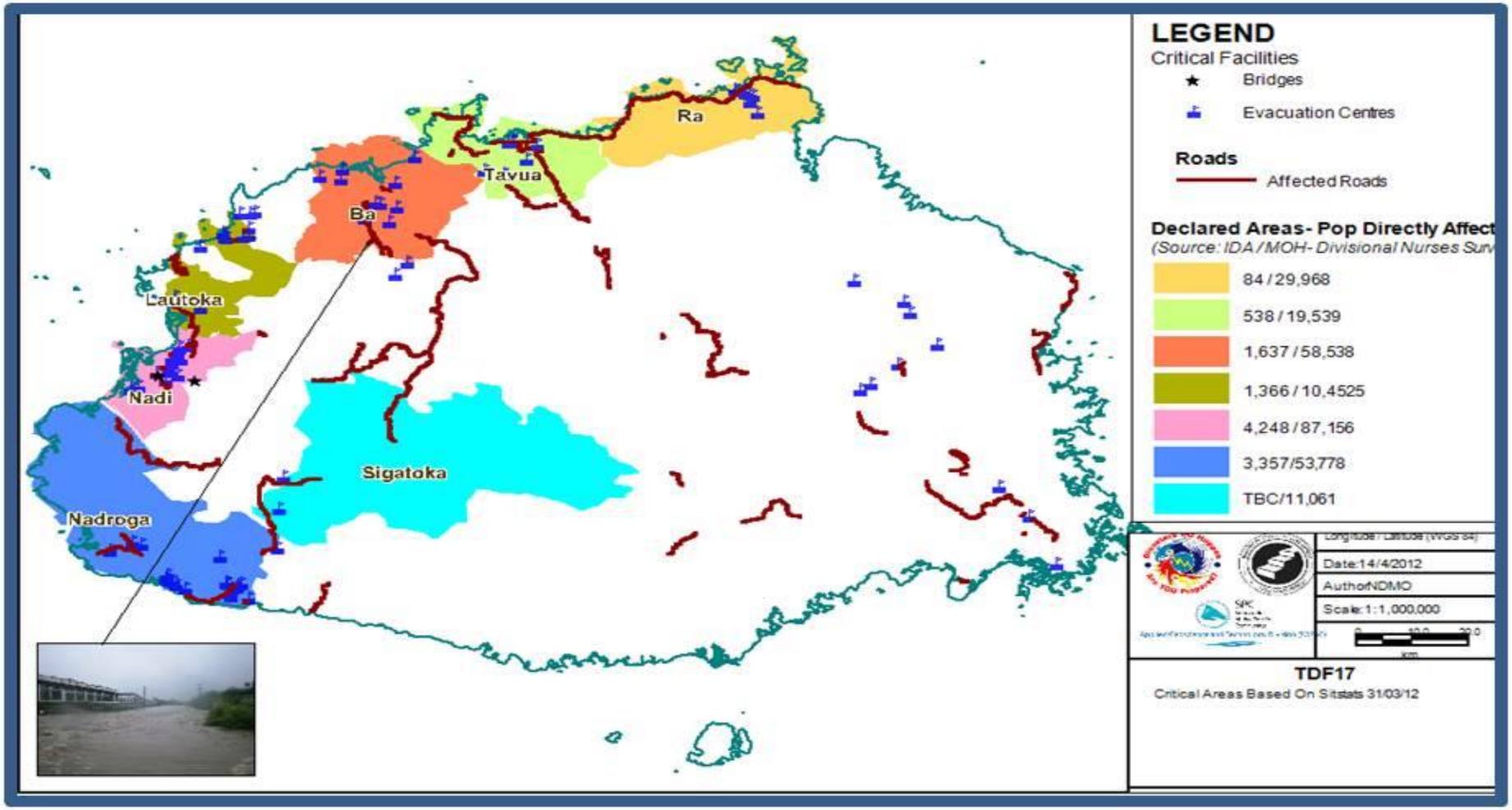



# Fiji


Firefox
My GeoNetwork catalogue
My GeoNetwork catalogue
10.1.132.47:8080/geonetwork/srv/eng/main.home
notepad++
GeoDRM Fiji
UNDA Project
Disaster Risk Preparedness in the Economic and Social Commission for Asia and the Pacific
Home | Contact us | Links | About | Help |
English
Username
Password
Login
Simple Search
Advanced Search
Show map
WHAT?
WHERE?
- Any -
Search
Reset
Options
Applications
Audio/Video
Case studies, best practices
Conference proceedings
Datasets
Directories
Interactive resources
Maps & graphics
Other information resources
Photo
FIND INTERACTIVE MAPS, GIS DATASETS, SATELLITE IMAGERY AND RELATED APPLICATIONS
GEONETWORK'S PURPOSE IS:
To improve access to and integrated use of spatial data and information
To support decision making
To promote multidisciplinary approaches to sustainable development
To enhance understanding of the benefits of geographic information
GeoNetwork opensource allows to easily share geographically referenced thematic information between different organizations. For more information please contact
Start
Initial Config...
2 Windows...
Download J...
2 Firefox
Administrato...
Start server
Untitled - No...
3:15 PM

# GIS Status in Fiji

## Critical Components Within Declared Areas



# Nepal Geo-Portal

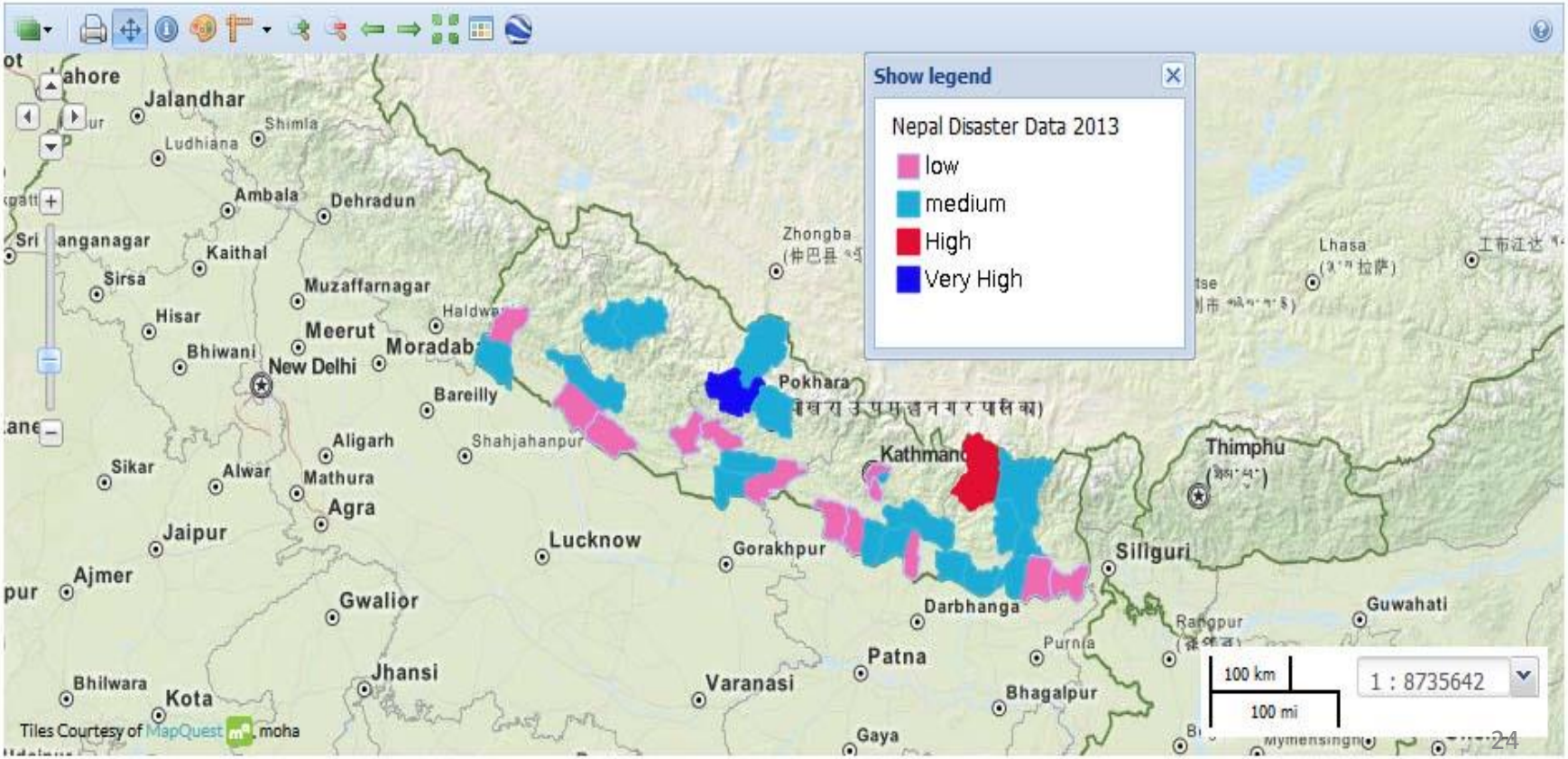
Government of Nepal
Ministry of Home Affairs
Singha Durbar, Kathmandu, Nepal

Search... Sign in

HOME LAYERS MAPS DOCUMENTS PEOPLE SEARCH

## NEPAL DISASTER DATA 2013

Download Layer Download Metadata



# Future plan

1. **Effective use of space and GIS for disaster risk reduction and sustainable development.**

- ✓ Urban planning for building resilient cities;
- ✓ Utilizing Earth observation tools agricultural and land management.
- ✓ Enhance geospatial information management in developing countries for sustainable development

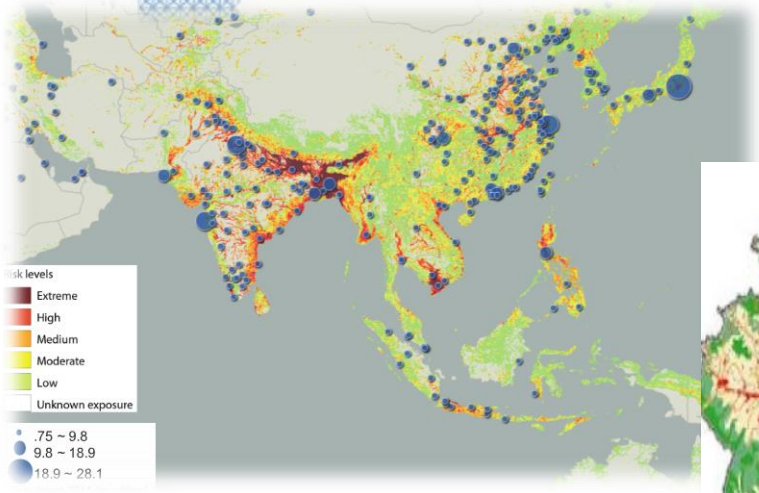
**2. Climate change and disaster risk management**.

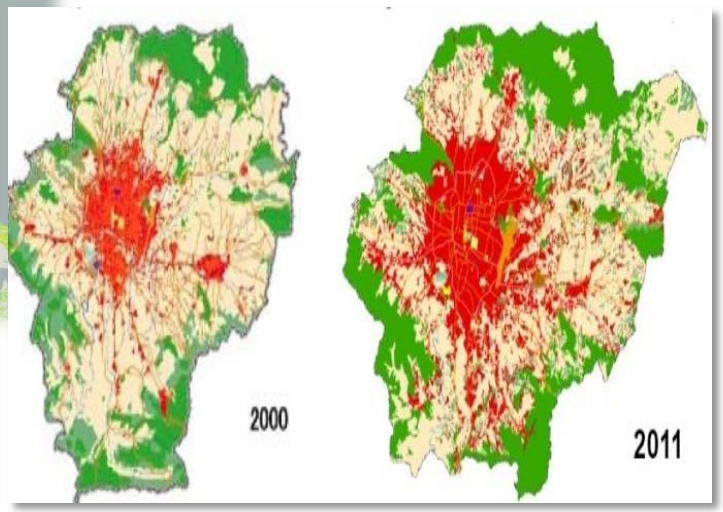
- ✓ Strengthening Climate Risk Knowledge for Pacific Small Island Developing States (SIDS)

**3. Establishing regional standards for disaster – related statistics**

**4. Collaboration with UNGGIM**

# Many urban risk hot spots in Asia-Pacific…





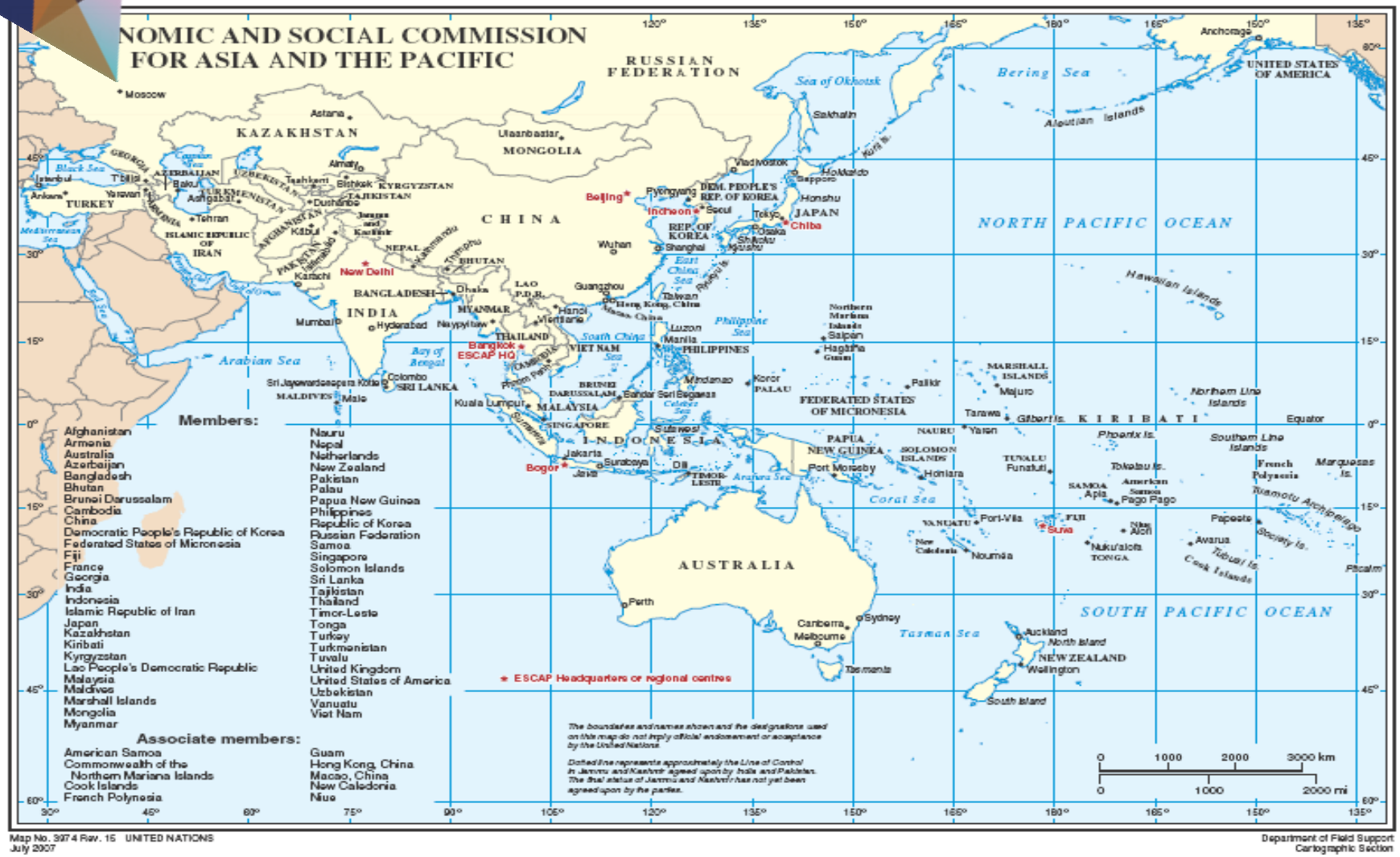
# 4 Collaboration with UNGGIM

1) Regional arm in Asia-Pacific

2) Conduce joint research: standard, methodology, etc.

3) Sharing the good practices in Asia and the Pacific;

4) Joint capacity building for developing countries.




Map No. 3974 Rev. 15 UNITED NATIONS
July 2007

Department of Field Support
Cartographic Section

***Thank you for your kind attention.***

UNITED NATIONS ESCAP

70th COMMISSION SESSION
4 - 8 AUGUST 2014 | BANGKOK