Broadening and Deepening the Space and GIS Applications for Disaster Risk Reduction and Sustainable development in Asia-Pacific Region

Keran Wang

Information and Communications Technology and Disaster Risk Reduction Division (IDD), UNESCAP

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I. Why ESCAP is participating in initiatives of global mapping for sustainable development

➢ 62 Governments – 58 within the region, i.e., from Turkey in the west to Kiribati in the east, and from the Russian Federation in the north to New Zealand in the south.

➢ ESCAP's regional strategy on space and GIS applications focuses on promoting the regional/sub-regional cooperative mechanisms and substantive programmes for effective support disaster risk reduction and sustainable development.

Policy analysis

Advisory Services

Technical Cooperation Projects

Capacity Building

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

Strengthening regional cooperation
for disaster risk reduction and
sustainable development

RIO+20
the future
we want

7 Priority Areas

- green jobs and social inclusion
- energy access, efficiency and sustainability
- Food security & sustainable agriculture
- sound water management
- sustainable cities
- sustainable management of the oceans
- improved resilience and disaster preparedness

ESCAP's Regional Cooperative Mechanism for Drought Monitoring and Early Warning

RESAP networks for Education and Training for remote sensing & GIS applications in agricylture and food security

Harmonizing the regional/international cooperation mechanisms (International Charter, Sentinel Asia, UNITAR, UNSPIDER) in support of more effectice disaster reponse to the member Countries

Networking with RESAP members for access to satellite data in the event of major disasters

Building the capacity for geo-spatial disaster information in the specific context of countries with spacial needs.

RESAP networks for Education and Training for space applications in DRR/M

Our Partners

ISDR

- Investment Tracking on **DRR** promoting investment
- Risk Transfer and Resilient Sectoral Development
- Emerging Issues related to CCA and **DRR**
- Asia Pacific Disaster Report

ECLAC

UNDP

Capacity building for Damage and Loss Assessment (DaLA) – Post Disaster Needs Assessment (PDNA)

DaLA/PDNA for low impact & high frequency disasters –focused on highrisk LLDC, LDCs and SIDs

Joint programming for space applications
Capacity development, Technical Assistance Mission

UNITAR/UNOOSAT Memorandum of Agreement between **ESCAP** and
UNOOSA/SPIDER UNITAR /ONOSAT

WMO

Typhoon Committee, Panel on Tropical Cyclone

Ministerial Roundtable Panel Discussion:

Building resilience to natural disasters and major economic crises

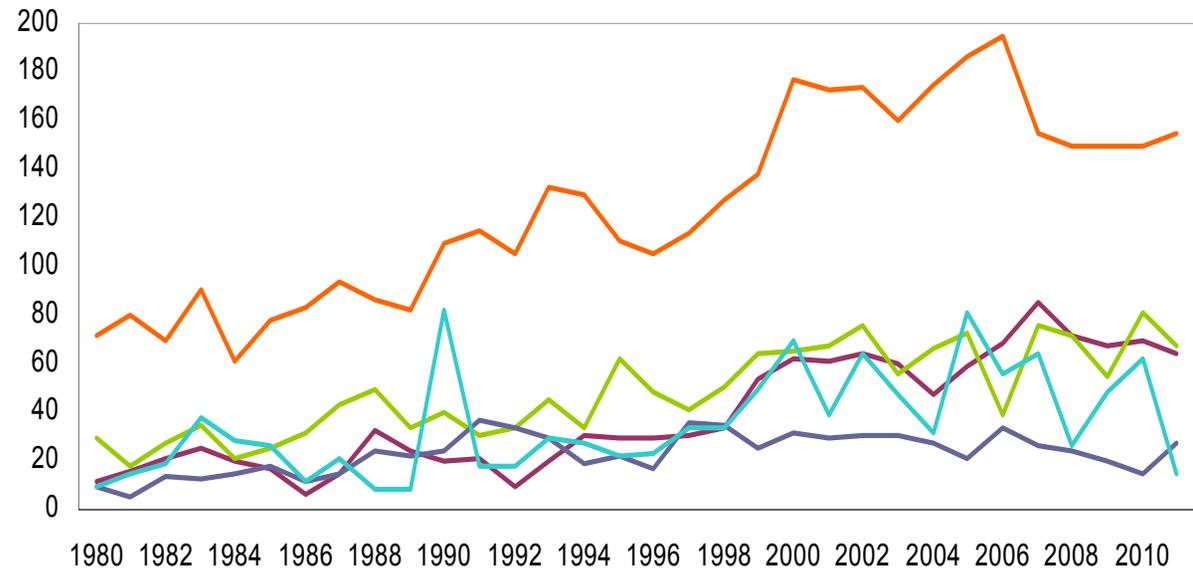Building Resilience to Natural Disasters and Major Economic Crises
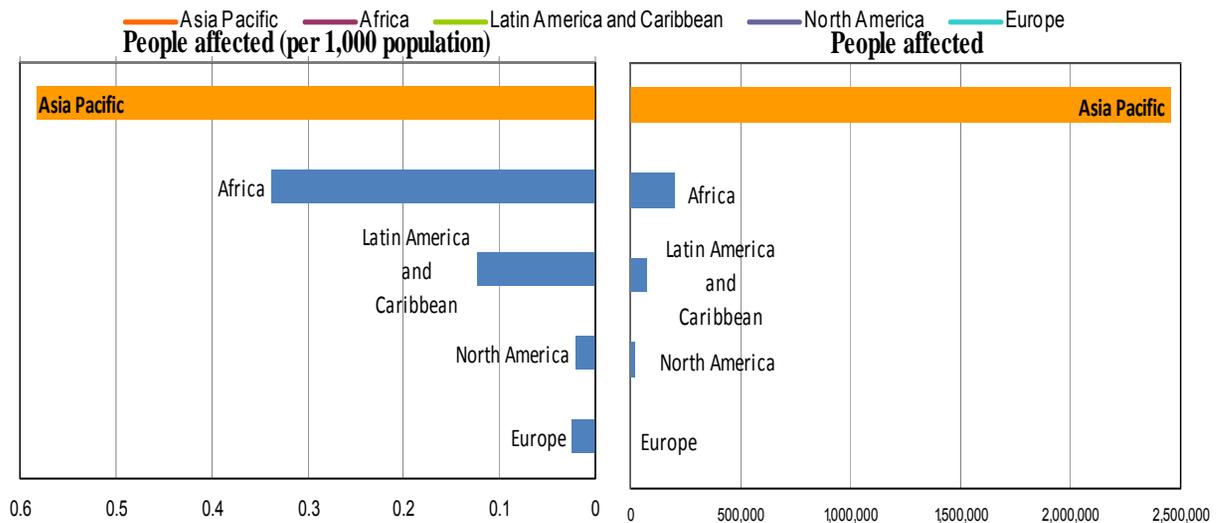
2013 ESCAP Theme Study

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Strengthening regional cooperation
for disaster risk reduction and
sustainable development

- Asia-Pacific is the most disaster prone region in the world

- …and the most affected

Disasters by region (1980-2011)

Legend: Asia Pacific, Africa, Latin America and Caribbean, North America, Europe

People affected (per 1,000 population)

People affected

UNITED NATIONS
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- Economic losses from disasters are rising globally

Economic damage (Billion dollars 2005)   Expon. (Economic damage (Billion dollars 2005))

Japan: Great East Japan Earthquake

United States: Katrina Storm

Japan: Kobe Earthquake

Japan: Chūetsu Earthquake

China: Sichuan Earthquake

Turkey: Earthquake

China: Drought

Algeria: El Asnam Earthquake

Iran: Manjil-RudbarEarthquake

Spain: Floods

350
300
250
200
150
100
50
0

1980   1982   1984   1986   1988   1990   1992   1994   1996   1998   2000   2002   2004   2006   2008   2010

- …and low-income countries are the most affected

Low income

Lower middle income

Upper middle income

High income

0.0   0.2   0.4   0.6   0.8   1.0   1.2

Economic damage (%GDP) (2006-2010)
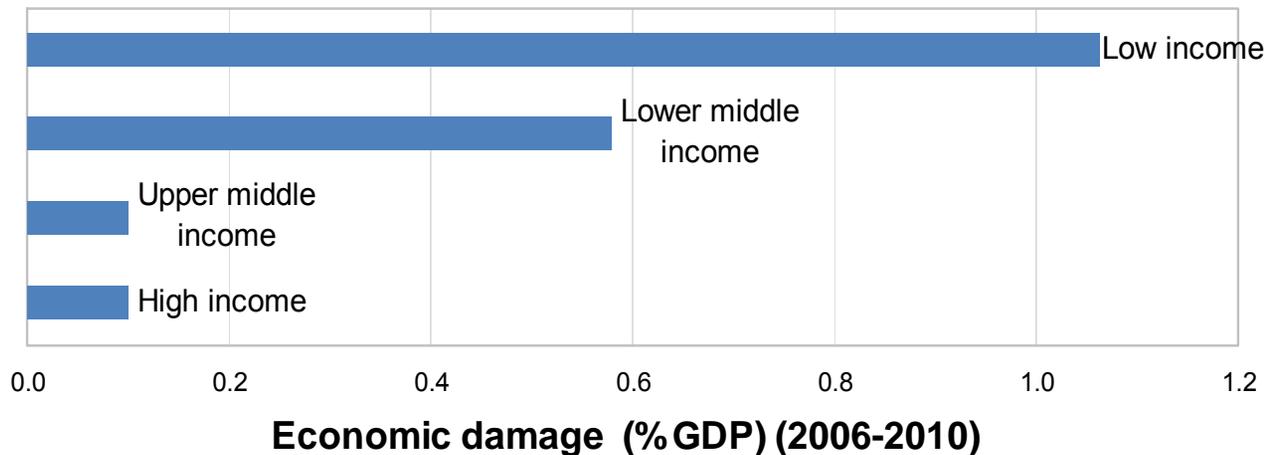
Building Resilience

Regional Cooperation

Critical Infrastructure

Economics of Resilience

"The capacity of countries and their people to withstand, adapt to, and recover from natural disasters and major economic crises – so that their people can continue to lead the kind of lives they value."

Supply Chains

Financial Cooperation

Land, Water, Energy

Community Resilience

II. What ESCAP is doing for supporting disaster risk reduction and sustainable development in the Asia-Pacific region

1. Implementation of the Asia-Pacific Plan of Action for Applications of Space Technology and GIS for Disaster Risk Reduction and Sustainable Development, 2012-2017

-The Plan of Action is divided into two major areas:

- Towards Disaster Risk Reduction
- Towards Sustainable Development

-Works to be done at the

- Regional and Subregional Level
- National Level

-Harmonize regional programmes and encourage the use of space technology and GIS for Disaster Risk Reduction and Management and Sustainable Development in member States.

-ESCAP secretariat will take the lead of the implementation of the Plan of Action.

-Member States propose a Ministerial Conference in 2015 to evaluate progress made and provide further guidance for the successful implementation of the Plan of Action and to build stronger political support and ownership among all stakeholders.

2. Regional Space Applications Programme (RESAP)

➤ Space applications for disaster risk reduction and management is addressed by ESCAP in both sectoral and multi-sectoral approaches, through its flagship programme---The Regional Space Applications Programme for Sustainable Development for Asia the Pacific (RESAP) .

➤ RESAP aims to promote the use of space applications for inclusive, resilient and sustainable development in Asia and the Pacific.

➤ Strengthens regional cooperation and networking of the space agencies in the region.

- Rapid disaster mapping

- Capacity development

- Operational Drought Monitoring and Early Warning Mechanism, start from Mongolia

3. Asia-Pacific Gateway for Disaster Risk Reduction and Development

ASIA-PACIFIC GATEWAY FOR DISASTER **RISK REDUCTION & DEVELOPMENT**

Professional Resources	Technical Services	Experts Directory	Networks of Communities	Discussion forums / helpdesk
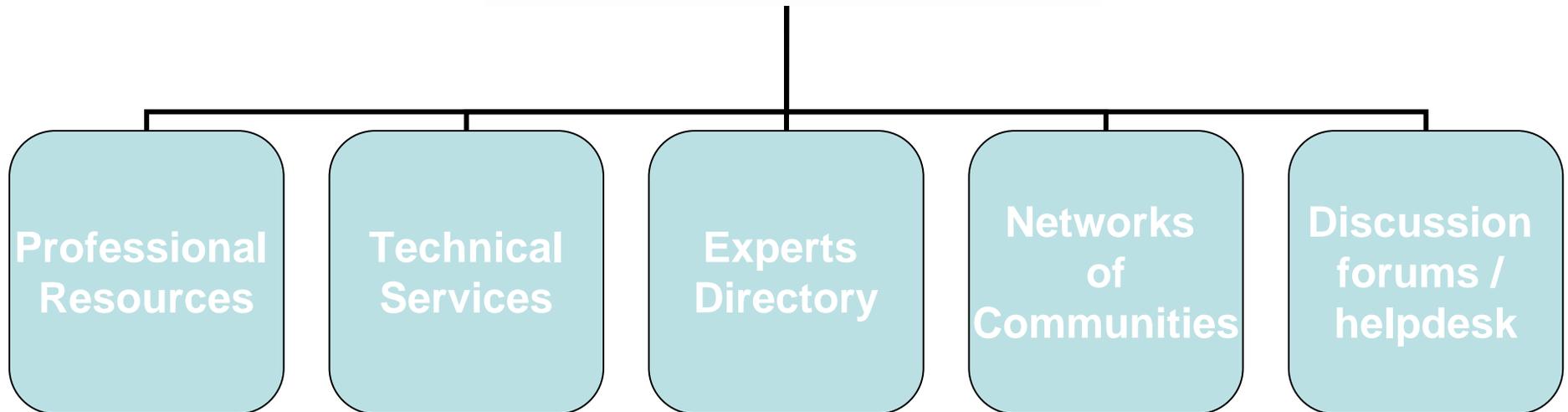
www.drrgateway.net

4. Community of Practices and online expert networks

RESAP Space

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GAP Analysis through "Current Capabilities and Needs survey"

Capabilities Survey(1)

- Institutional
- Technical
- Human Resource

Gaps

Needs Survey(2)

- DRR/M
- Agriculture
- Environment
- Natural Resource
- Water
- Transport, etc

Technical/Data gap

Institutional gap

Capacity Building/ Training
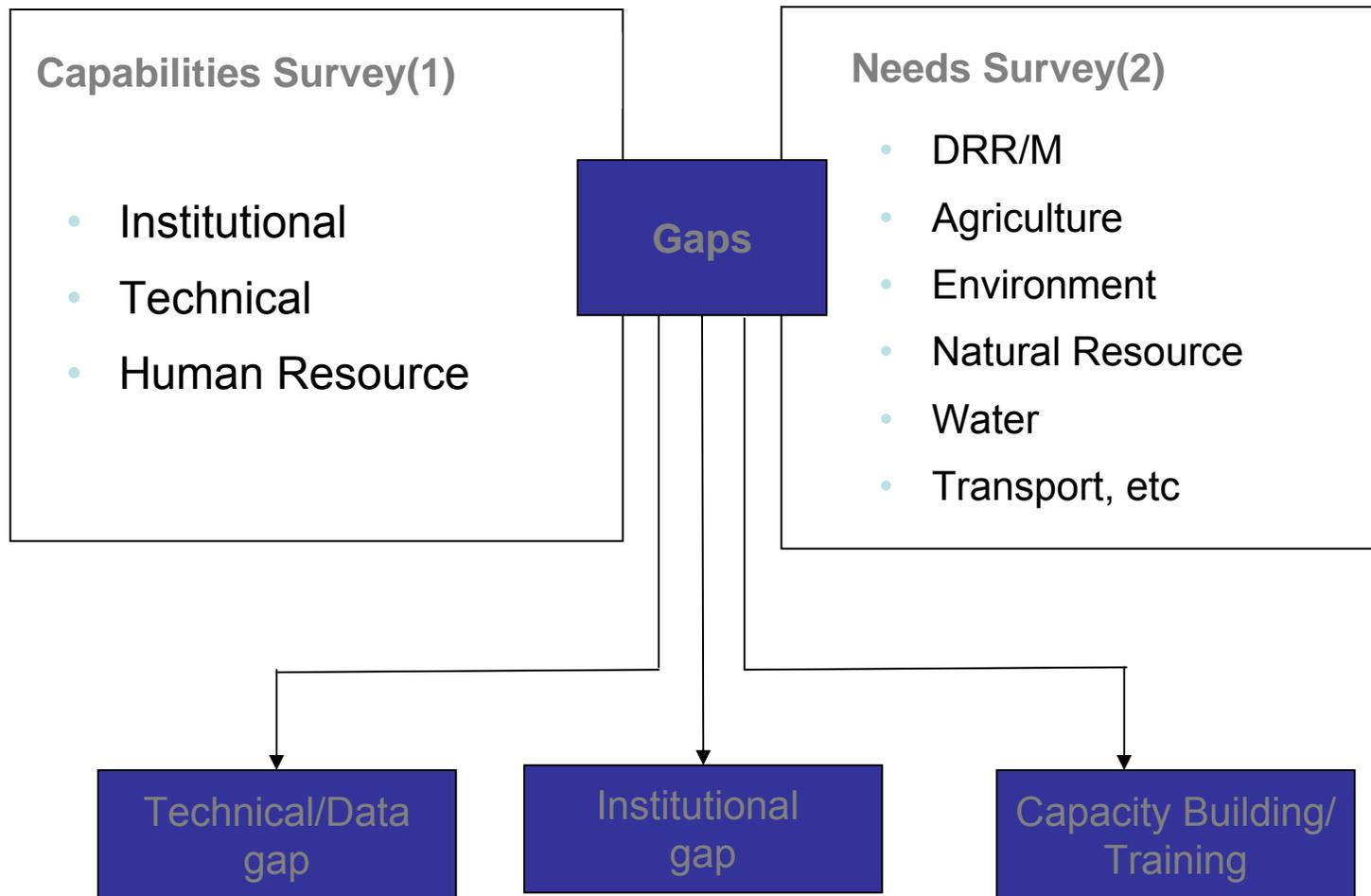
Towards Customized Capacity Building

5. ESCAP initiative: Improving disaster risk preparedness in the Asia-Pacific region

➢ ESCAP has embarked on a UNDA project entitled "Improving disaster risk preparedness in the ESCAP region".

➢ Aims to support the establish and use geo-reference/geospatial information at national level and strengthen the capacity of governments of CSNs in accessing up-to-date and accurate socioeconomic data with satellite imagery in disaster-affected areas.

➢ Enhances the capacity of ESCAP member states towards managing the disaster risks more efficiently and effectively, and reduce losses, and build resilience to hazards through the use/sharing of standardized geo-spatial information among and within the countries.

➢ **Developed the prototype of the national geo-DRM portals for Mongolia, Cook Islands, Kyrgyzstan, CSNs in SAARC members and other countries. The computer-based platform combines data management with map display, allowing planners and emergency managers to graphically display hazard impact areas, and relate them to people and property at risk.**

➢ **Promote the collaboration and partnership with UNOSAT, UNISDR, UNDP, UNOCHA and subregional organizations (SAARC DMC, ASEAN AHA, SOPAC), to develop geo-DRM portal based on existing knowledge networks.**

➢ **Capacity development activities: more than 200 decision makers, project managers and practitioners have been trained in last two years.**

➢ **Provided technical assistance to Mongolia, Cook Islands for customizing the geo-portal. More will be conducted in Kyrgyzstan, Afghanistan, Bangladesh, Nepal and Fiji before the end of 2013.**

III. How ESCAP may support UN-GGIM

-Support the initiatives and activities from the Asia-Pacific perspective.

-Joint projects on using space and GIS for disaster risk management and inclusive, sustainable and resilient development.

-Rapid Mapping of disasters, including urban hazard and disasters.

-Capacity building for developing countries in the region.

Pilot project proposed for implementation of the Asia-Pacific Regional Plan of Action :

Information sharing towards integrated geographic information systems and disaster/hazard mapping in rapid urbanization areas, 2014-2016
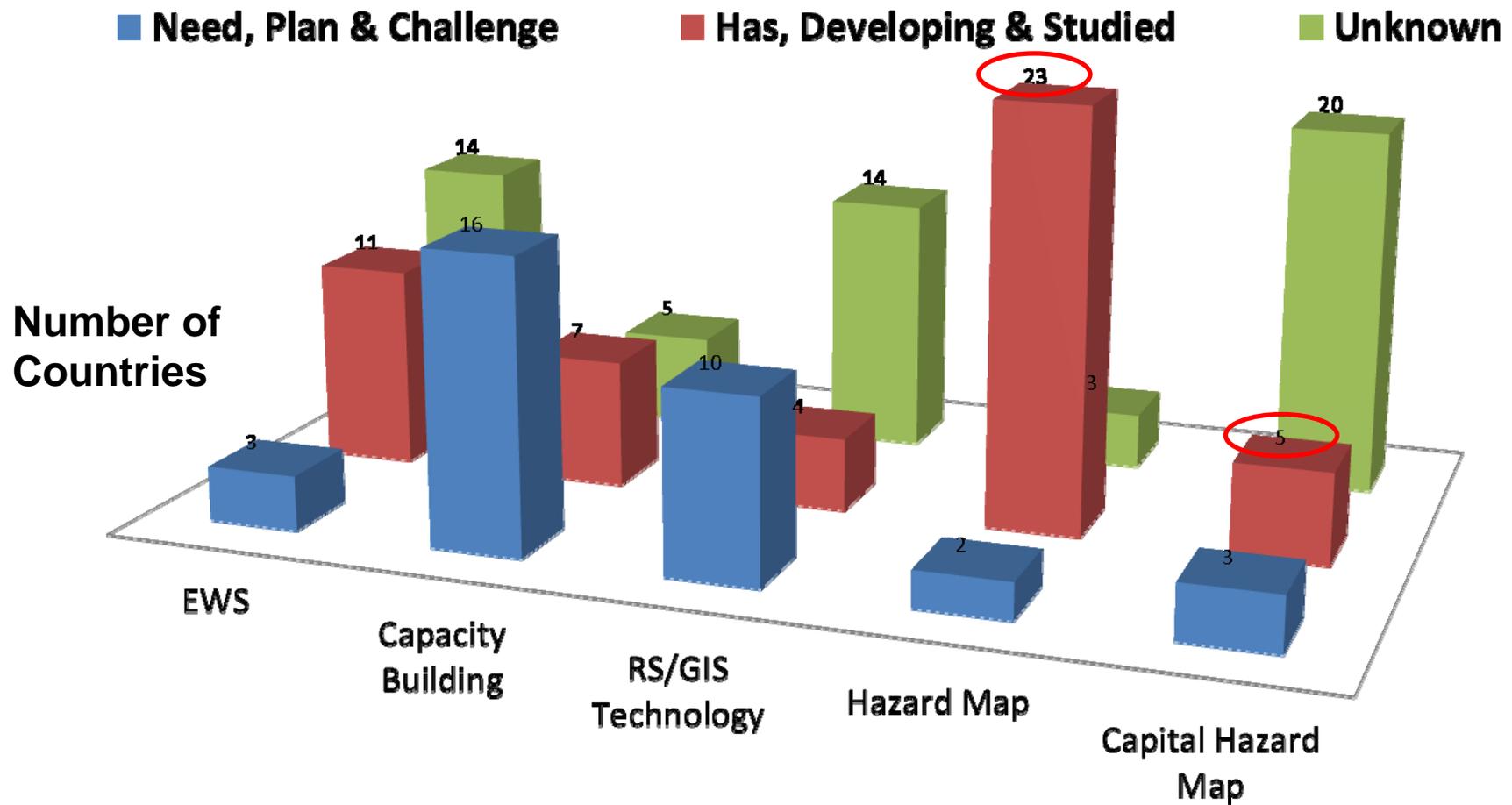
Country Status of GIS Infrastucture

12 countries need data sharing and

18 countries has GIS data, but only

7 countries have National Geo-Spatial Data Information (SDI) systems
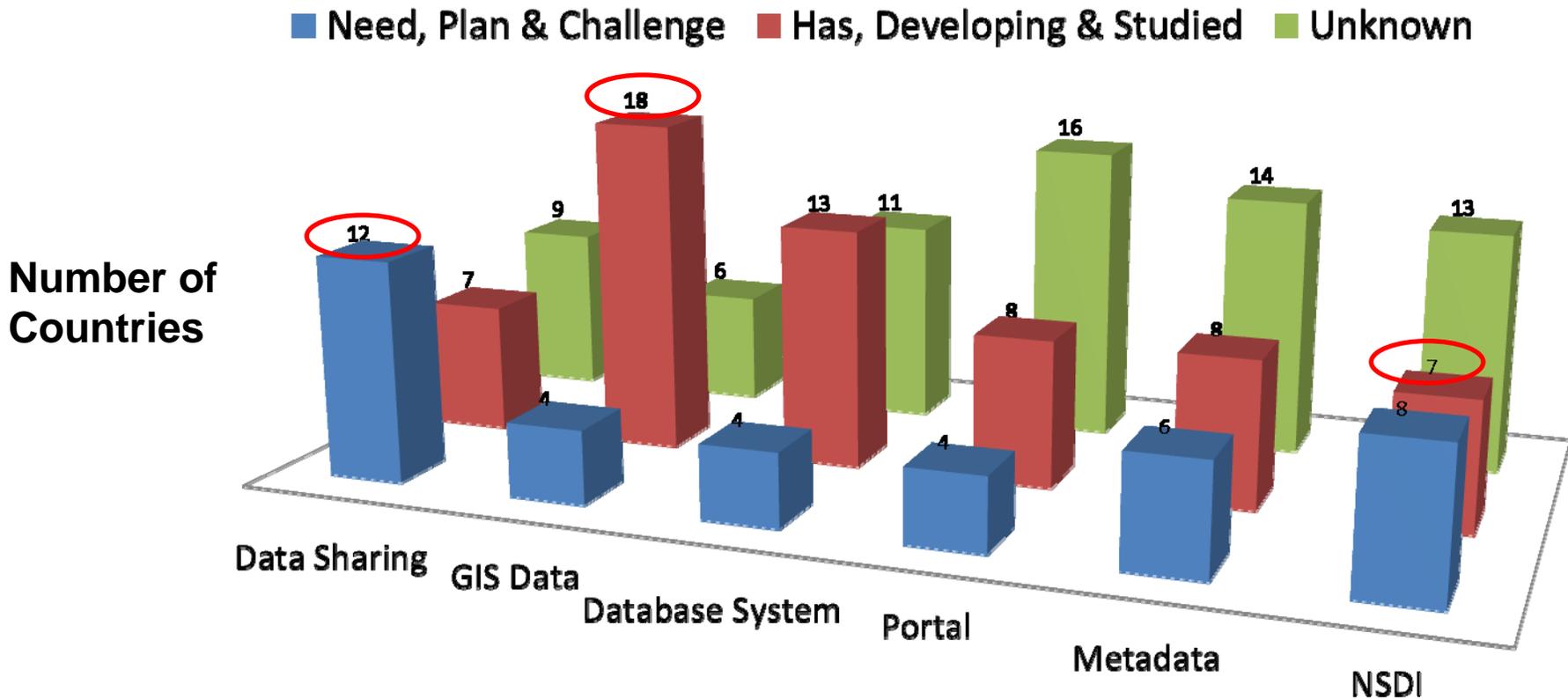
Country Status of GIS Infrastucture

23 countries have some sort of hazard maps,

but 5 countries do not have Capital hazard maps

-Developing countries face challenges in sharing information and lack of necessary critical information in DRR/M.

-Implementation plan needs a pilot project in two or three countries in the region to showcase the use of space and GIS for DRR/M. Pilot project aims to:

•Develop a dataset toward Integrated GIS;

•Make disaster area maps if disaster occurs;

•Make hazard maps for disaster preparation;

•Contribute to risk reduction in rapid urbanization.

Strengthening regional cooperation
for disaster risk reduction and
sustainable development

-Decision making of disaster response activities needs evidenced-based and updated information between NDMA and other stakeholders including the mapping agencies.

-GIS experts are recently encountering challenges to utilize various and sepcific information, and consolidate all related data in one Integrated GIS platform.

-The platform will cover not only the disaster data but also the critical socio-economic information.

Rapid Urbanization

-Rapid urbanization may increase the risk of catastrophe due to the rapid increased population and lack of plan and preparedness.

-City services, managements, emergency rescue and recover needs actual land use information and other related socio-economic information.

-Activity of information sharing towards Integrated GIS is to standardize actual data for the preparation to reduce disaster risk and management and promote sustainable development in the highly urbanized area.

<u>Draft Project Plan</u>
<u>-to be discussed in the High Level Decision Maker Meeting from 26-28 November 2013</u>

<u>Methods</u> : Two or three countries implement a pilot project.

<u>Schedule</u> : From 1/12/2013 to 31/12/2016

Contents of Draft Implementation Plan

1) Information Sharing

  (1) Metadata Request

  (2) Metadata Collection

  (3) Data Standardization

  (4) Metadata Catalogue Distribution

  (5) Actual Data Acquisition

2) Disaster Risk Reduction and Management

  (1) Disaster Area Map Production if Disaster Occurs

  (2) Hazard Map Production of Rapid Urbanization Area

3) Assessment

  (1) Country Assessment……..(mid of 2016)

  (2) Regional Assessment….. (end of 2016)

Thank you for your kind attention.