Session #6 “Towards nationally integrated geospatial management”

Capacity development and education to deliver the data ecosystem for sustainable development

Dequing International Seminar on United Nations Global Geospatial Information Management
21 – 22 October 2019

Set up of the session

2:00 - 2:05
Presentation of the session topic and introduction of the panelists.

2:05 - 2:20
Scene-setting presentation from moderator

2:20 - 3:00
Opening statement from 4 panelists

3:00 - 3:20
Open discussion

3:20 - 3:25
Concluding statements

3:25 - 3:30
Closure of the session

Our panelists

Ms. Jie Jiang
Professor Beijing University of Civil Engineering and Architecture, China
President, Technical Commission on Remote Sensing, ISPRS

Mr. Mohammad Muniruzzaman
Survey of Bangladesh - Surveyor General

Ms. Myagmarjargal Mendbayar
Agency for Land Administration and Management, Geodesy and Cartography, Mongolia
Specialist Geospatial Information and Technology Department

Mr. Jean Claude Ntirenganya
Rwanda Land Management and Use Authority/Ministry of Environment.
Spatial Data Infrastructure Specialist

Capacity development and education to sustain the data ecosystem for sustainable development

Session #6 "Towards nationally integrated geospatial management"

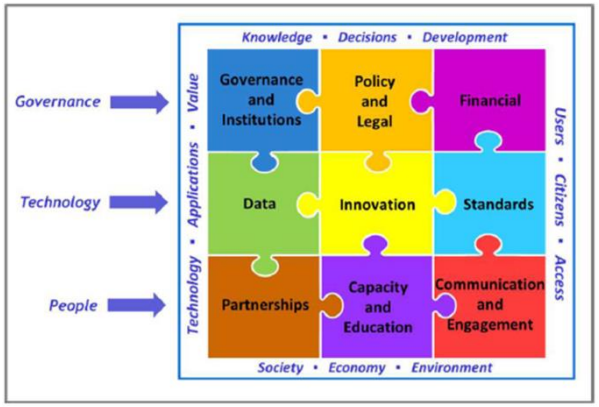
ECLAC Statistics Division

Deqing International Workshop and Seminar on United Nations Global Geospatial Information Management, 21 – 22 October 2019

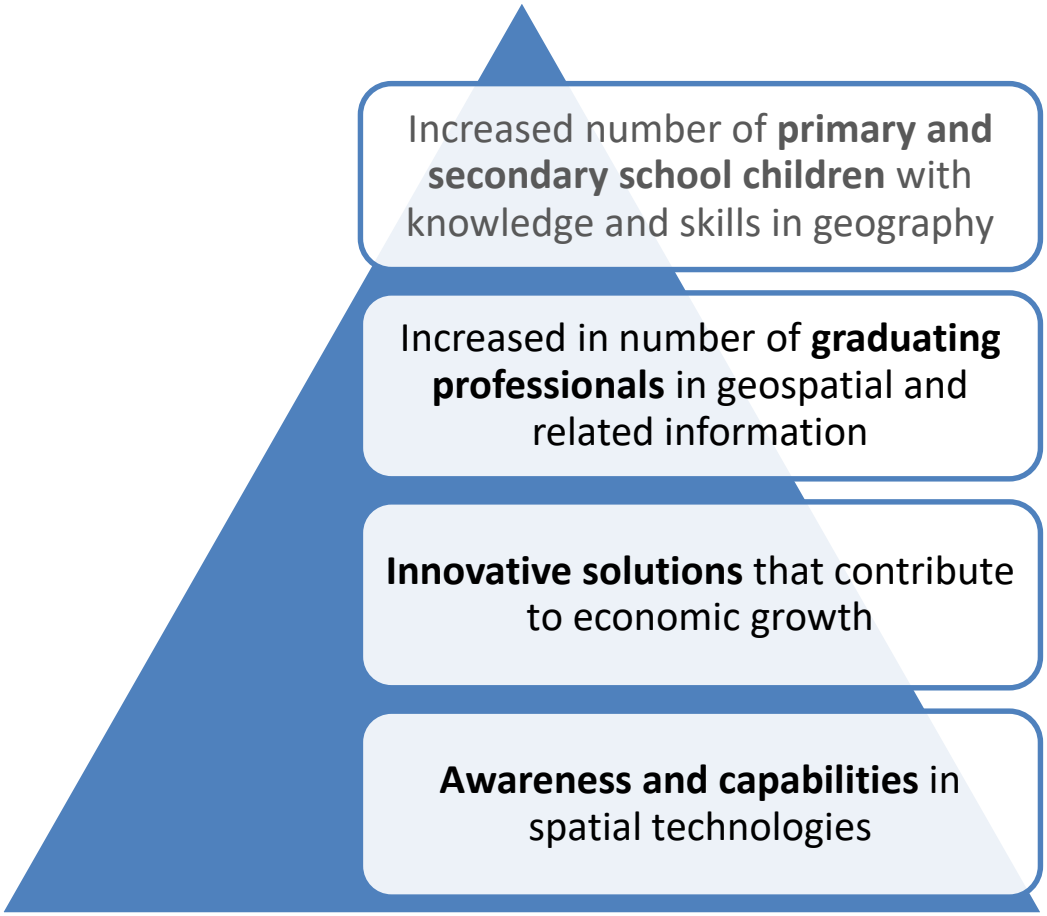
Why education and capacity building is important to deliver the data ecosystem for sustainable development?

To **raise awareness** and **develop and strengthen the skills, instincts, abilities, processes and resources** that organizations and communities require to utilize the data ecosystem for decision-making and service delivery.

To **improve government capacity** to facilitate capturing, sharing and integrating data from this ecosystem and their components



What is intended to achieve?



What actions could be implemented?

Strategic Pathway 8

Capacity and Education

This strategic pathway establishes enduring capacity building programs and education systems so that geospatial information management and entrepreneurship can be sustained in the longer term.

The objective is to raise awareness and develop and strengthen the skills, instincts, abilities, processes and resources that organizations and communities require to utilize geospatial information for decision-making and service delivery. Government capacity to facilitate capturing, sharing and integrating spatial information is part of this objective.

Summary

Knowledge, skills, education, training, opportunity, and continual development are components of the Capacity and Education pathway for organizations, individuals, and communities.

Capacity development and education is about change and transformation through designing and facilitating culturally appropriate solutions to strengthening integrated geospatial information management, and to make a real difference to the wellbeing of citizens though good policy and decision-making.

There are significant challenges to operationalizing programs that contribute towards sustainable geospatial information management. This pathway considers these challenges by introducing a change in operations and practice to achieve a degree of shared understanding about the principles and values of capacity development for government, businesses, entrepreneurs, academics and the community.

Common to all capacity building programs and education systems are four key elements that are required to develop and strengthen the skills, instincts, abilities, processes and resources that organizations and communities require to utilize geospatial information for decision-making and service delivery. These elements are:

- **Awareness Raising** - promotes the value and benefits of geospatial information via techniques including 'contact' courses, online courses, and outreach programs involving different interest groups, individuals and communities.

Strategic Pathway 8: Capacity and Education 1 | Page

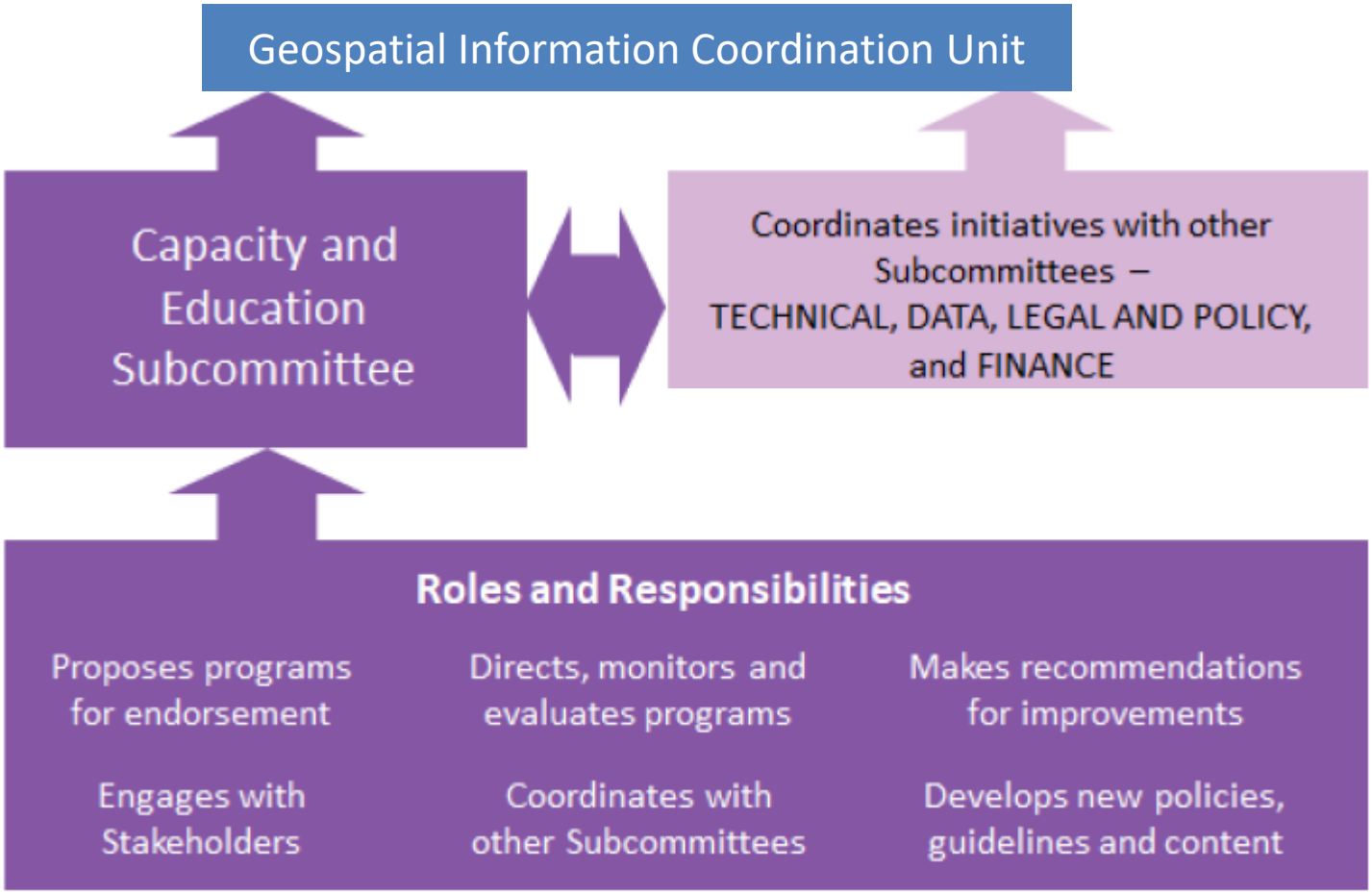
Develop a Capacity Development and Education Strategy

STRATEGIC DIRECTION AND COORDINATION

IGIF SP 9

Appoint a Capacity and Education Subcommittee

IGIF SP 1



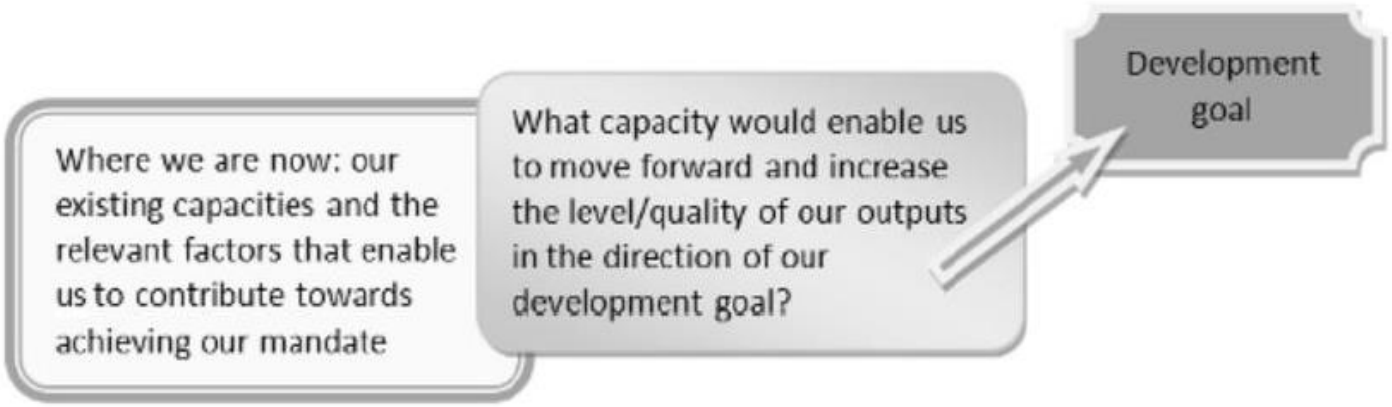
Ref: IGIF Draft Implementation Guide SP8

Identify Target Groups for Engagement

Leadership Transformation	• **Senior sector policy makers**, legislative (Parliamentary Committees) and **industry leaders**.
Government ICT Capacity	• **Experts in thematic application areas**, management and professional staff, ICT sector professionals, technical support staff.
Research and Business Development	• **Academics, technicians and earth scientists, researchers** from a broad cross-section of knowledge domains; entrepreneurs and businesses.
Integrated Planning Capability	• **Planners, policy makers**, mid-level development managers and technical support staff.
Citizen Transformation	• **Professional Associations , Trade Associations,** Providers of location-based services, and Volunteer Geographic Information Providers, and general community.

Conduct a Capacity Needs Assessment

INCREMENTAL APPROACH



GAP ANALYSIS APPROACH

Ref: IGIF Draft Implementation Guide SP8

Produce an Inventory of Knowledge, Skills and Resources

IGIF
SP 4

Skills /Knowledge	Resources	PERSON 1 Team Leader	PERSONS 2-6 Subject Matter Experts	PERSON 7-8 ITC Expert	PERSON 9-12 Research and Development Expert	PERSON 13-14 GIS Analyst	PERSON 15 Support Staff
Geospatial Information							
General GIS Concepts	Computer Internet Access	✓	✓	✓	✓	✓	✓
Geospatial Data Entry, Conversion and Maintenance	Computer (High-end) Internet Access GIS Software		✓		✓	✓	
Cartography and Graphic Design	Computer (High-end) Internet Access GIS Software Publishing Software		✓		✓	✓	
Metadata creation and editing	Computer Internet Access Metadata editor		✓	✓	✓	✓	
Image Interpretation	Computer (High-end) Internet Access Image analysis Software		✓				
GIS Analysis	Computer (High-end) Internet Access GIS Software		✓	✓	✓	✓	
GIS Workflows	Computer (High-end) Internet Access GIS Software	✓	✓	✓	✓	✓	
3D Modelling	Computer (High-end) Internet Access GIS Software		✓		✓	✓	
4D Modelling	Computer (High-end) Internet Access GIS Software		✓		✓	✓	
Basic understanding of programming			✓	✓	✓	✓	

An inventory establishes a baseline (current situation) of a nation's current knowledge and skills.

Ref: IGIF Draft Implementation Guide SP8

Review Existing Education Programs

- ✓ Does the curriculum appropriately cover the geospatial sciences?
- ✓ What are the **strengths and weaknesses** of the academic program?
- ✓ Are there **elements that should be modified** in order to better achieve goals?
- ✓ Are the **learning outcomes** appropriate?
- ✓ Have there been changes that require **academic program improvements**?
- ✓ Have specific initiatives been undertaken to **retain talented student**?
- ✓ Are the **methods of teaching appropriate** to the course and of **high quality**?
- ✓ What steps have been taken to provide students with **enriched learning experiences**?
- ✓ What is done to offer students **exposure to global dimensions of the discipline**?

Develop a Capacity Development Implementation Plan

- ✓ **Linkages with previous or existing initiatives** for potentially scaling up
- ✓ **Recognition of existing capacities** and how to use them as a basis
- ✓ An **understanding of what is happening in related-sectors** and how geospatial information capacity building initiatives may support/build capacity in these sectors.
- ✓ **Priorities - Solving urgent problems first and achieving quick wins** is critical to engaging support for long-term activities.
- ✓ **Identifying the resources that need to be in place** before capacity development and education programs can get underway.
- ✓ Determine **when the target groups can realistically take on capacity development** – given that organisations often have overly busy periods.

Build a Community of Practice

The key to a **successful knowledge sharing Community of Practice** is to develop solutions that:

- ✓ Identify **specific topics** or **thematic issues** around which to center knowledge sharing. This could be something or **leveraging data for achieving progress towards SGDs**;
- ✓ **Use existing platforms** for communication mechanisms;
- ✓ Use a country-led knowledge hub infrastructure for successful development results;
- ✓ **Optimize existing funding activities** and **new financial resources** – including from the private sector, foundations and cooperation partners.

IGIF SP 7

IGIF SP 9

Innovation hubs and Outreach Programs

IGIF SP 5

Innovation hubs

Social community work spaces or **research centers that provide an environment for knowledge** sharing and discussion on complex business challenges between researchers, business experts, industry, government and academics

Outreach programs

Provide capacity building to those who might not otherwise have access to education services.

A key element of outreach programs is that the learning is delivered at the location where those in need are

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What is happening in our countries?

Thank you !!

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ECLAC Statistics Division

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FOR SUSTAINABLE DEVELOPMENT WITH EQUALITY

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Let´s discuss !!

1) What of the actions included in this scene setting presentation would you prioritize in your country, and why?

Let´s discuss !!

2) In what areas of the data ecosystem for sustainable development does your country have the major gaps in terms of professional skills: Earth Observation processing, geospatial data analysis, integration of statistical and geospatial information. What would be the priorities, facing the Agenda 2030 implementation requirements?

Let´s discuss !!

3) How is your country facing the transition from cartographically-driven production methods to data-driven generated content methods in terms of capacity development?