

UN-GGIM: Americas, Fifth Session

“Global strategic guidelines for the Management of Geospatial Information”

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United Nations, DESA/UNSD, UN-GGIM Secretariat
Mexico City, Mexico 7 November 2018



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United Nations Committee of Experts on
Global Geospatial Information Management

Positioning geospatial information to address global

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OUTLINE

Questions to keep in mind

Setting the Scene

- Economic and Social Performance of the Region
- Why geospatial data and spatial data infrastructures matter

The Global Geospatial Information Management Work Programme

Moving from global to local

What do you the geospatial practitioner do?

Take away points



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Questions to keep in mind

- Why am I attending this meeting?
- What benefits are to be gained personally, by my organization and my country?
- What is my role, am I making a difference with the use of geospatial information?
- What is the objective of the Committee of Experts on GGIM?
- Is the UN-GGIM strategic framework and related programme of work relevant to my organization and my country?
- Can the work of the Committee of Experts positively impact the sustainable development of my country?
- If yes how can this be done?
- How do I to apply/leverage the outputs from the global level at the national level?



Economic and Social Performance of LA&C

Latin America and the Caribbean

World

Economic indicators	2005	2010	2018	2018
GDP: Gross domestic product (million current US\$)	2 859 841	5 339 905	5 241 624	75 648 868
GDP growth rate (annual %, const. 2010 prices)	4.3	5.8	- 1.6	2.4
GDP per capita (current US\$)	5 102.0	8 954.0	8 218.0	10 134.0
Unemployment rate (% of labour force)	8.0	7.3	7.9	5.5
Social indicators				
Population growth rate (average annual %)	1.3	1.2	1.1	1.2
Urban population (% of total population)	77.1	78.6	80.7	55.3
Life expectancy at birth (females/males, years)	75.5 / 68.8	76.8 / 70.1	78.0 / 71.4	73.7 / 68.6
Education: Secondary gross enrol. ratio (f/m per 100 pop.)	90.3 / 83.5	92.8 / 85.7	97.2 / 92.1	75.9 / 76.9
Environment and infrastructure indicators				
Individuals using the Internet (per 100 inhabitants)	16.6	34.7	56.8	45.7
Research & development expenditure (% of GDP)	0.6	0.6	0.7	1.7
Pop. using improved drinking water (urban/rural, %)	96.3 / 75.7	96.9 / 80.2	97.4 / 83.9	96.4 / 84.5
Pop. using improved sanitation facilities (urban/rural, %)	85.1 / 53.6	86.7 / 59.4	87.9 / 64.1	82.2 / 50.5



Governments & Businesses are Challenged





United Nations Committee of Experts on Global Geospatial Information Management

Regional Committees & Chairs:



UN-GGIM Bureau:

Co-Chairs: Cameroon, China,
Netherlands
Rapporteur: Chile

UN-GGIM International Networks:

Academic
Geospatial Societies
Private Sector
United Nations system

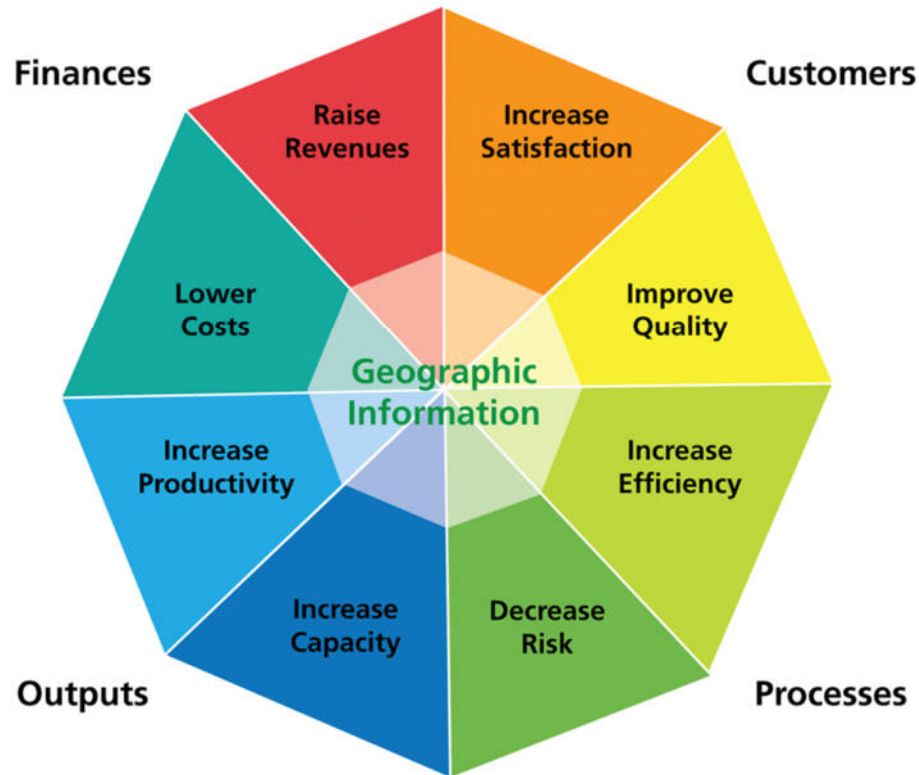
GI and Tools – an enabler

improves planning,
75% reduction in
delivery times and 60%
in data creation and
maintenance costs

Tools -Improved management
water supply and draining

Tools - excavators to get
information on the
ground-situation and helps
prevent damage to cables and pipe
lines, reduces costs and increases
efficiency.

Benefits Spectrum



Ecuador- SDI facilitates
emergency response, earth

Brazil's "crime maps" and tools
10% reduction in police incidents
13% reduction in homicides in May
2012 compared to May 2011.

India plans its rural road core
network, and ensures invest
made at the right places



The UN-GGIM Work Programme

Secretary General's – global priorities

2030 Agenda for SD

**Resolutions of the
General Assembly and
Economic and Social Council**

ECOSOC 2016/27

**UN-GGIM Strategic Framework
2018-2021**

UN-GGIM
Decision 7/101

**Decisions UN-GGIM
Annual Plenary Meetings**



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UN-GGIM Strategic Framework 2018 - 2022

an overview of the Committee of Experts

- Vision
- Mission
- Strategic Objectives
- Global Policy Framework
- Geospatial challenges and drivers
- Benefits and Efficiencies
- Operating Principles and Activities

reference point for prioritizing its work
 living document
 encouraged to align work with objectives
 Framework

CONTEXT	VISION	<i>Positioning geospatial information to effectively address global challenges</i>				
	MISSION	<i>Operating within agreed policies and institutional arrangements, and as an intercommunity of practice, provide leadership to ensure that geospatial information and data are coordinated, maintained, accessible, and able to be leveraged by Member States and to find sustainable solutions for social, economic and environmental development</i>				
	MANDATED STRATEGIC OBJECTIVES	Provide leadership in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges	Provide a forum for coordination and dialogue with and among Member States and relevant international organizations on enhanced cooperation	Provide a platform for the development of effective strategies to build and strengthen national capacity and capability concerning geospatial information, especially in developing countries	Propose work-plans, frameworks and guidelines to promote common principles, policies, methods, standards and mechanisms for the interoperability and use of geospatial data and services	Mal and for and inf and req po

REQUIREMENTS	GLOBAL POLICY FRAMEWORK	Transforming our World: The 2030 Agenda for Sustainable Development					
		Sendai Framework for Disaster Risk Reduction 2015-2030	SIDS Accelerated Modalities of Action (SAMOA) Pathway	Addis Ababa Action Agenda	Paris Agreement on Climate Change	New Urban Agenda	
	GEOSPATIAL CHALLENGES & DRIVERS	Environmental management Urban planning Land management Legal & policy	Disaster management Humanitarian assistance Climate change Health & welfare	Sustainable development Food security Water scarcity Poverty reduction	Education Oceans & marine Sustainable cities	Institution Socio-e	
	DIRECT NATIONAL BENEFITS & EFFICIENCIES	<ul style="list-style-type: none"> • Effective geospatial information management • Reduced duplication of effort in the capture, management, and delivery of fundamental geospatial data • Authoritative, reliable and maintained geospatial data available nationally, regionally, and globally • Increased return on investment through better coordination, use and reuse of data, information and services • Better evidence-based decision making, supported by good data, science and policy • More open, accountable, responsive and efficient governments • Presentation and delivery of timely and 'fit for purpose' data in times of need • Integration of national information systems and services across all levels of government • Best practices and use cases for enriching national processes on geospatial information management • Enhanced stakeholder engagement and communication 					
	OPERATING PRINCIPLES	Sound Nat. Policies, Legal Frameworks & Institutional Arrangements	Provision of Fundamental Authoritative Data and Information	Agreed Standards, Methods, Guides and Frameworks	Principles on Geospatial Information and Open Data	Integration and Interoperability of National Information Systems	Information Sharing and Knowledge Transfer
DELIVERABLES	<ul style="list-style-type: none"> • Geospatial Information for Sustainable Development: 2030 Agenda, Sendai Framework, etc. • Integration of Geospatial & Statistical Information: Implement the Global Statistical Geospatial Framework • Geospatial Information and Services for Disasters: Implement Strategic Framework • Global Geodetic Reference Frame: Roadmap to Implementation • Global Fundamental Geospatial Data Themes: Implementation • Marine geospatial information • Land administration and management • Legal and policy frameworks • National institutional arrangements • Implementation and adoption of standards for the global geospatial information community • National geospatial data and information systems 						

Positioning geospatial information to address global challenges



Substantive Programme of Work

Global **geodetic reference frame**

Trends in national **institutional**

arrangements in geospatial

information management

Determination of global **fundamental**

geospatial data themes

Legal and policy frameworks,

including issues related to

authoritative data

implementation and adoption of

standards for the global geospatial

information community

6. **Integration of geospatial, statistical**
and other information

7. Application of geospatial information
related to **land administration and
management**

8. Activities related to sustainable
development and the **2030 Agenda for
Sustainable Development**

9. Geospatial information and services for
disasters

10. Marine geospatial information



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Substantive Programme of Work

Global geodetic reference frame – GA Resolution Feb 2015

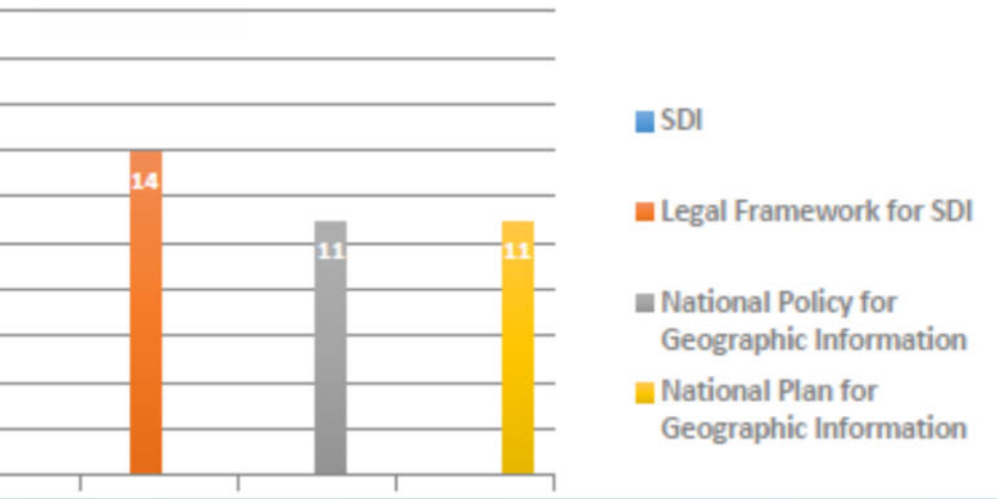
Has the resolution yielded any results at the national level?
Are there existing challenges?
What are the implications of no geodetic reference framework - what are the opportunity costs of not investing in national frames?



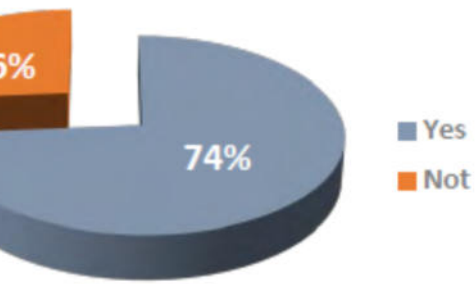
Substantive Programme of Work

ational arrangements –

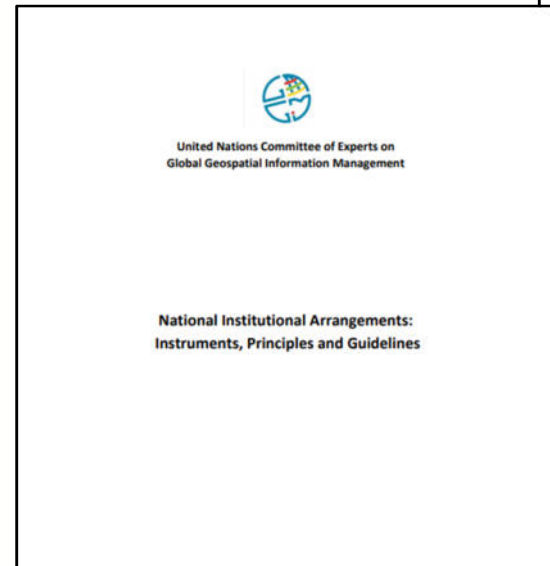
SDI and legal instruments



Legal Framework for SDI



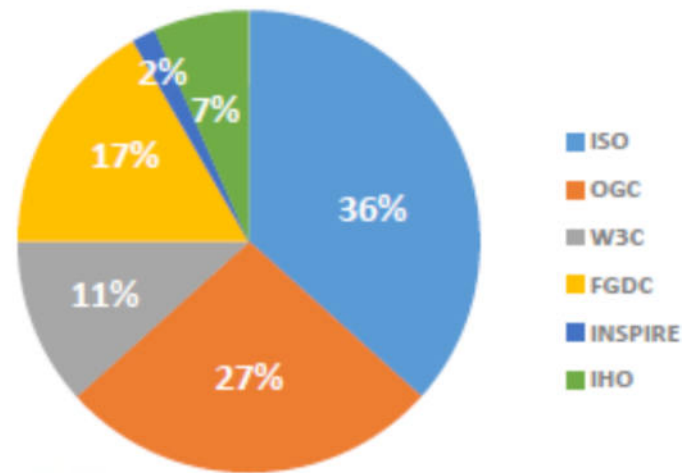
NIA Instruments, Principles and Guidelines



Substantive Programme of Work

Implementation and adoption of **Standards**

Use of international standards



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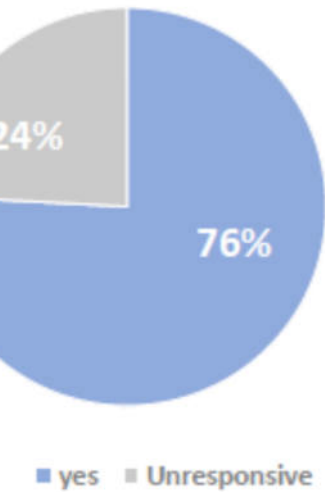
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Substantive Programme of Work

patial information and services for **disasters**

s and use of GI for
reduction



Strategic Framework
Approved by ECOSOC
July 2018



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- Current situation on administrative boundaries
 - No **reliable** global dataset on common geographies
 - Few pan-national or regional reliable geospatial
 - Few standard and harmonized dataset
 - a lot of unstructured and unreliable data available
 - many places to retrieve data
 - from unknown sources
 - many fragmented approaches

How can the **geospatial community** provide **authoritative common geographies globally** so users can discover, analyse and integrate different statistical datasets ?

(from Principle 3 of the Framework for disaggregated and reliable data to link geospatial and statistics)





▪ SALB objectives

The Second Administrative Level Boundaries (SALB) initiative aims at compiling data **worldwide on administrative boundaries and names from authoritative source**

In this context SALB objectives are:

- i. compile authoritative **GIS dataset worldwide for administrative boundaries** and names for level 1 and 2, at 1million scale; and
- ii. identify and maintain **National Geospatial Authorities point of contacts** on administrative boundaries and names; and
- iii. maintain an overview of **historical changes** of national administrative units.





■ Benefits of SALB



One goal users can discover, analyse and integrate different statistical datasets



Institutional approach

National ownership (Geospatial POC)



Common geography

Administrative boundaries/units



One coordinate system

WGS84



Uniform scale range

1 million



Specifications

Towards integration with stats



Common data specifications

Names and attributions



Standard encoding format

.shp and .gml

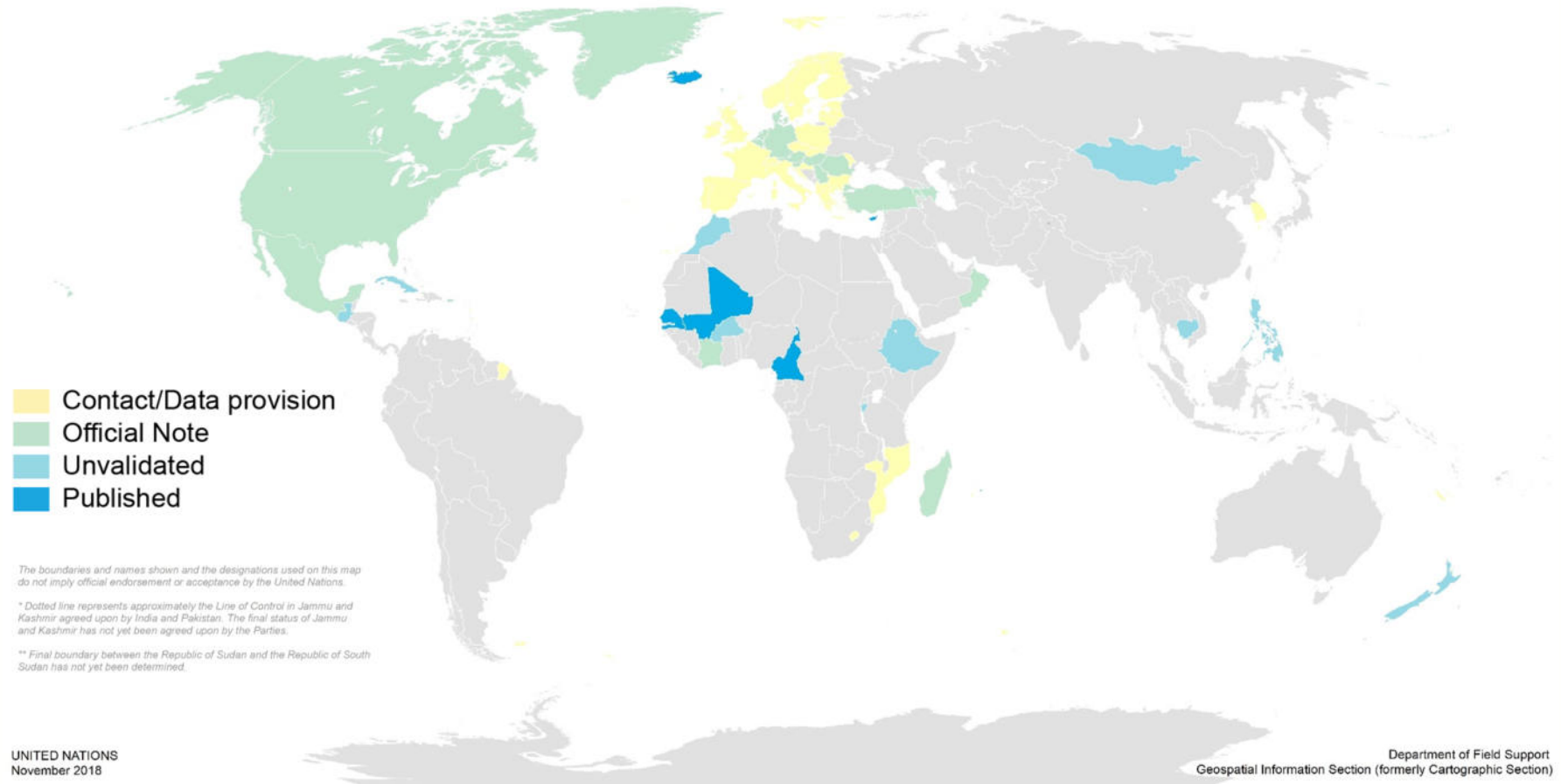


Common dissemination platform

SALB website



- Programme status since August 2017





Submit your
National data



Send to SALB
focal point



Data processing &
standardization



Validate your
National data

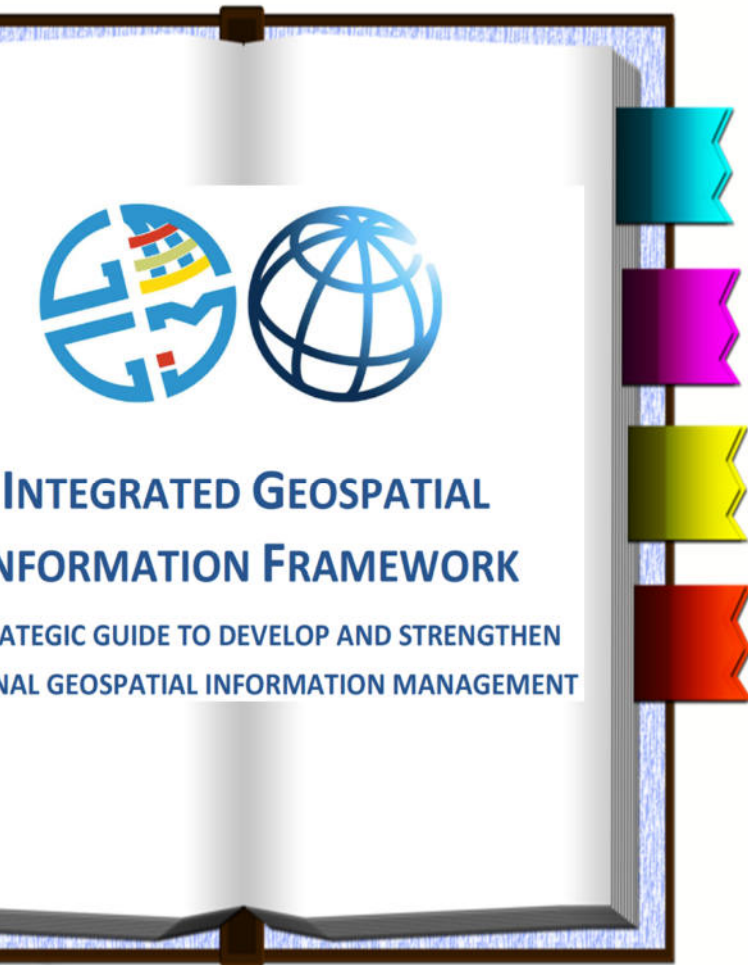


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The IGIF Documents



A three-part document set of connected, documents.
The **Overarching Strategic Framework** is fully developed

The **Implementation Guide** structure and main elements are developed and structure approved in-principle.

The **Country-level Action Plans** are work in progress.



Strategic Framework: Principles

Underpinning Principles:

CIPIE 1: Strategic Enablement

CIPIE 2: Transparent and Accountable

CIPIE 3: Reliable, Accessible and Easily Used

CIPIE 4: Collaboration and Cooperation

CIPIE 5: Integrative Solution

CIPIE 6: Sustainable and Valued

CIPIE 7: Leadership and Commitment



The 7 Principles are the key characteristics and values that provide the compass for implementing the Framework, and allow for methods to be tailored to individual country needs and circumstances.

Strategic Framework: Goals

Goal 1: Effective Geospatial Information Management

Goal 2: Increased Capacity, Capability, and Knowledge Transfer

Goal 3: Integrated Geospatial Information Systems and Services

Goal 4: Economic Return on Investment

Goal 5: Sustainable Education and Training Programs

Goal 6: International Cooperation and Partnerships Leveraged

Goal 7: Enhanced National Engagement and Communication

Goal 8: Enriched Societal Value and Benefits



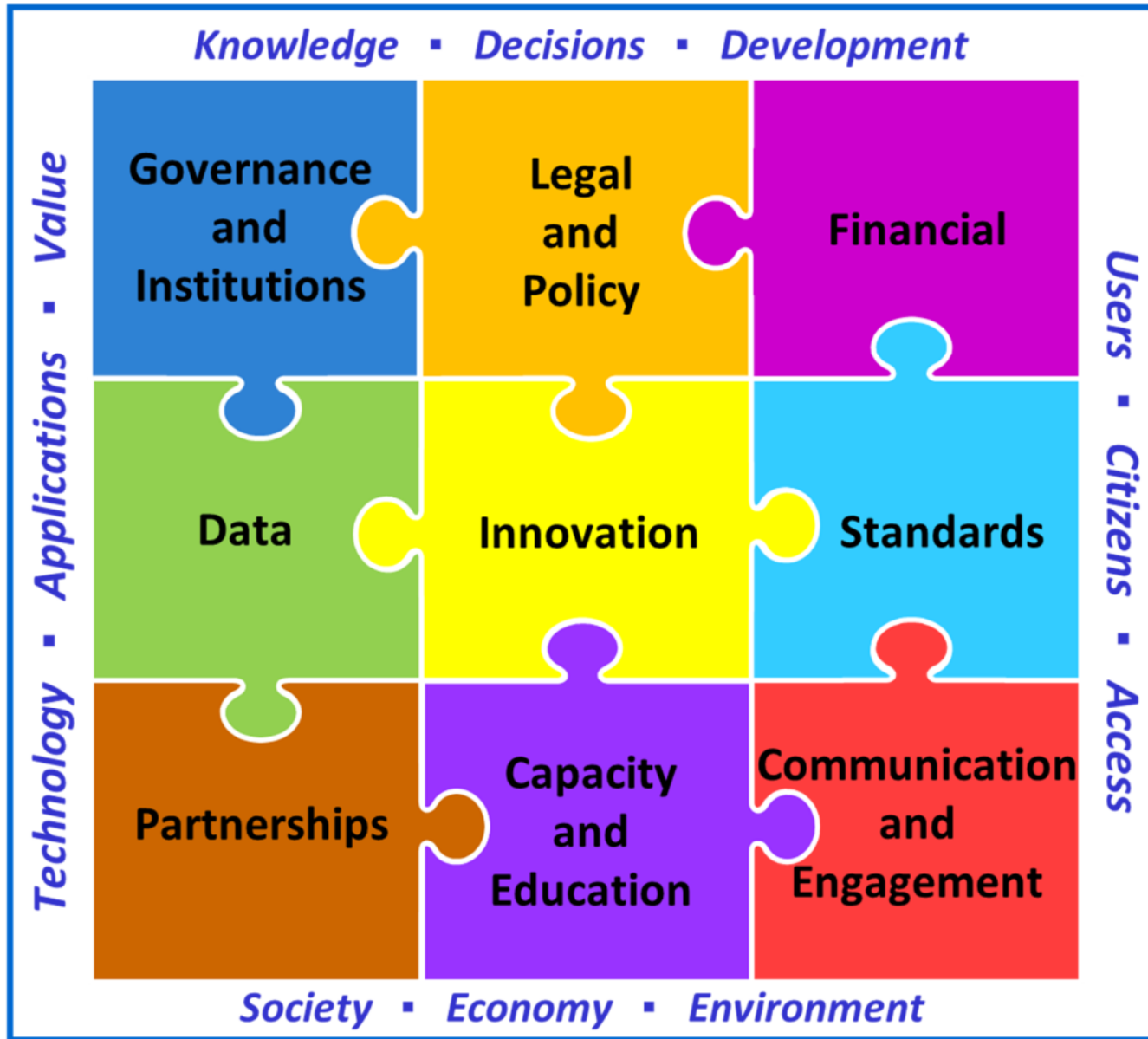
The 8 Goals reflect a future state where countries have the capacity and skills to organize, manage, curate, leverage geospatial information to advance government policies and decision-making capabilities.

Strategic Pathways

Finance →

Technology →

People →



Anchored by Strategic Pathways, the Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps.

Other Elements for Consideration

ICT networks facilitate the diffusion of knowledge and connectivity between governments, firms and societies.

In the last decade the number of Internet users doubled, reaching 54% of the population in 2015 (ECLAC, 2016),

the ICT Development Index (IDI)

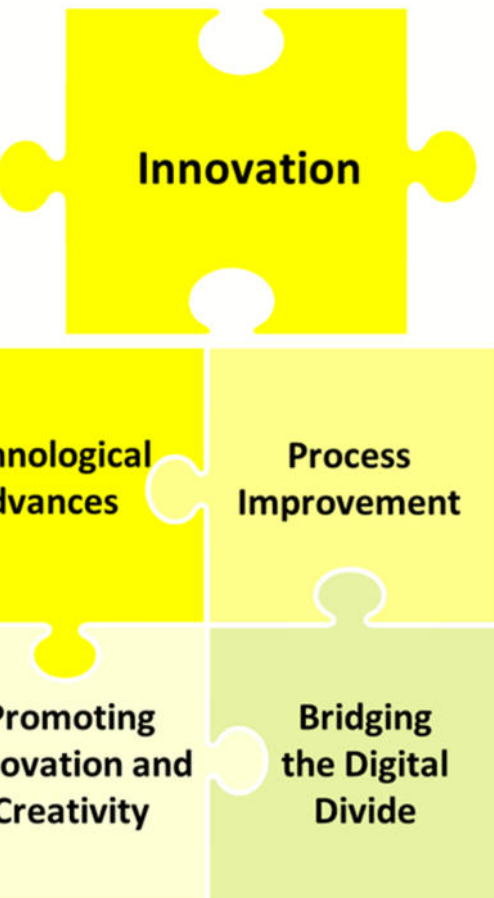
	IDI 2017 Rank	Economy	IDI 2017 Value	IDI 2016 Rank	IDI 2016 Value	Rank Change
1	16	United States	8.18	15	8.13	Down
2	29	Canada	7.77	26	7.64	Down
3	34	Barbados	7.31	37	7.11	Up
4	37	St. Kitts and Nevis	7.24	35	7.18	Down
5	42	Uruguay	7.16	48	6.75	Up
6	51	Argentina	6.79	52	6.68	Up
7	56	Chile	6.57	59	6.28	Up
8	57	Bahamas	6.51	58	6.29	Up
9	60	Costa Rica	6.44	57	6.29	Down
10	66	Brazil	6.12	67	5.89	Up

<http://www.itu.int/net4/ITU-D/idi/2017/index.html#idi2017byregion-tab>

Positioning geospatial information to address global challenges



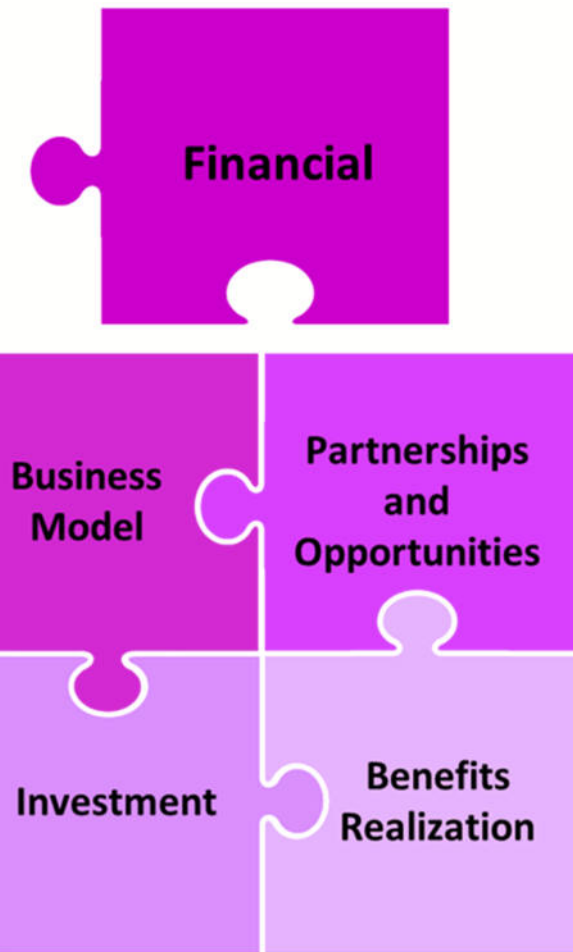
Other elements for consideration



- **innovation** stems from knowledge generation and its diffusion through a complex web of actors and interconnected linkages
- ‘**national innovation system**’ (NIS) -interconnected institutions to create, store and transfer the knowledge, skills and artifacts which define new technologies” (Metcalf, 1995).
- **Investment in R&D** in the region continues to be low compared to developed countries
- Only Brazil, Argentina, Mexico and Costa Rica had R&D expenditure levels above 0.4% of GDP.
- A strong innovation system requires a **critical mass of graduates** in the field of engineering and technology.
- The total number of engineering and technology university graduates in LA&C in 2012 amounted to 314,480. Masters’ graduates (13,500) and PhD graduates (2,477). Social sciences are the most popular field of study for Degree and Master courses while Humanities is the most popular for PhD program



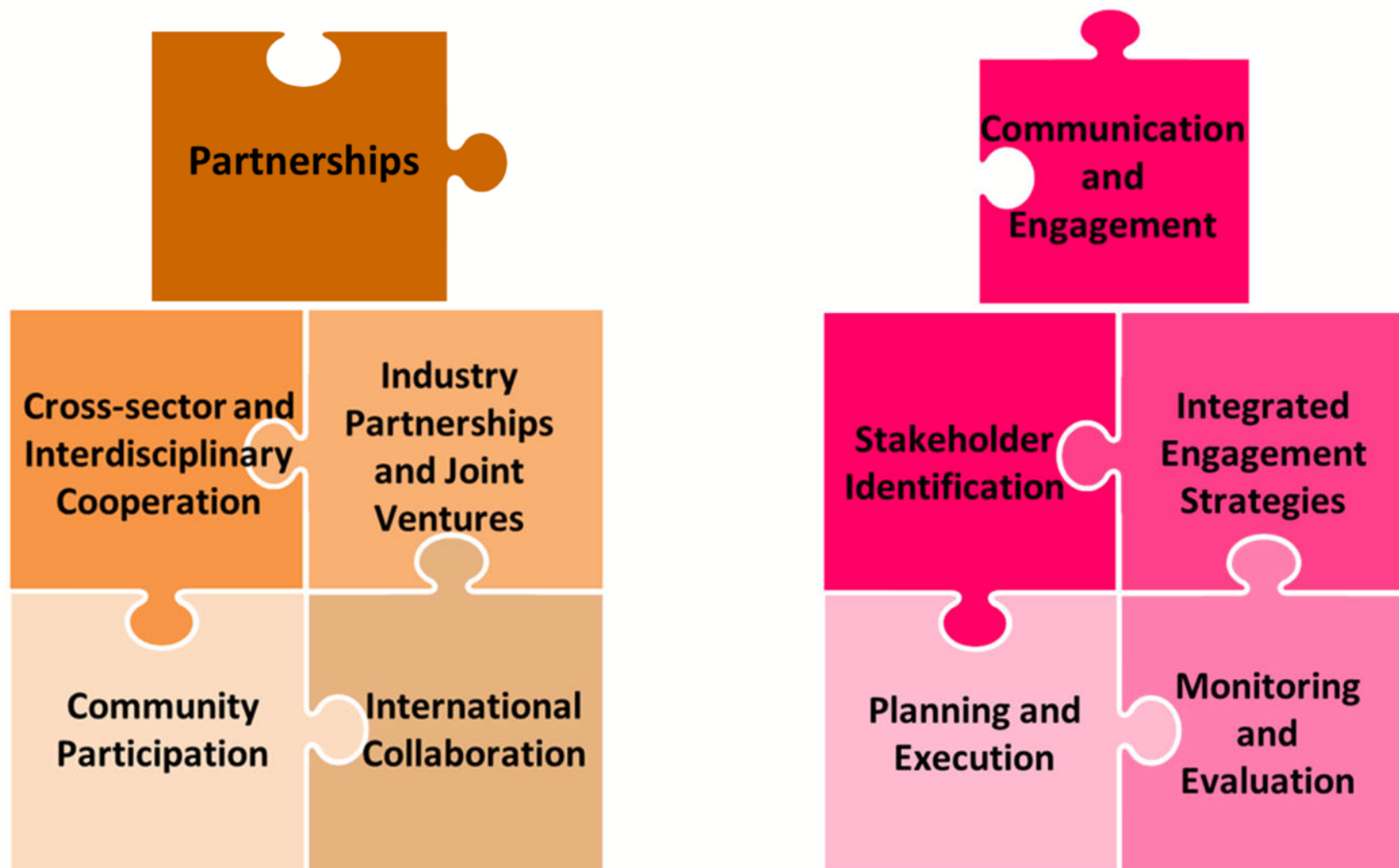
Other elements for consideration



- Gross central government public debt in Latin America stood at 38.8% of GDP at year-end 2017
- In the Caribbean, central government public debt remained stable at 68.6% of GDP in the first quarter of 2018,
- Information and communication technology expenditure (as a % of GDP) in Latin America and Caribbean was reported at 4.8% in 2008, according to the World Bank collection of development indicators.
- Information and communication technology expenditure per capita 387 USD



Other elements for consideration



The Challenges

Strategic Pathway

Financial	The need for greater investments in ICT infrastructure, how to secure a piece of the pie given competing sectors – health, education, safety and security
Data	Its creation, dissemination and use is impacted by advances in other sectors
Innovation	A huge hurdle, multiple actors and spheres of influence, can this be scaled
Partnerships	Many possibilities, is there trust, how do I choose
Communication & engagement	The need to learn the language of politicians, users from different sectors



What do you do?

Do your SWOT and use it –plan and strategize – read “The Art of War” by sun Tzu
Prepare your SMART plan – and execute, monitor, evaluate and amend where necessary
Understand your political, economic and social environment –know when the time is right
take action

Study and know your stakeholders- Ministers, CFO’s, main users, suppliers

Learning the languages of others, employ/engage those to whom you wish to communicate

Evaluate and adopt approaches applicable to your circumstances -Joined-up Government
approach, Public/Private partnerships, community/crowd investment

Develop a clear technical, coordinated and financial framework for data development,
maintenance, and access must be established.

Opportunistic, flexible and innovative funding strategies should be developed

Ensure that initiatives undertaken yield benefits to as many sectors as possible.



Challenges



Change



Cooperate



Collaborate



Commit



Coherence



Conquer



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The Soft Aspects

Trust

Patience – engagement and building relations takes time

Accountability

Agility

Remaining aware and current

Advocacy – a shared common vision

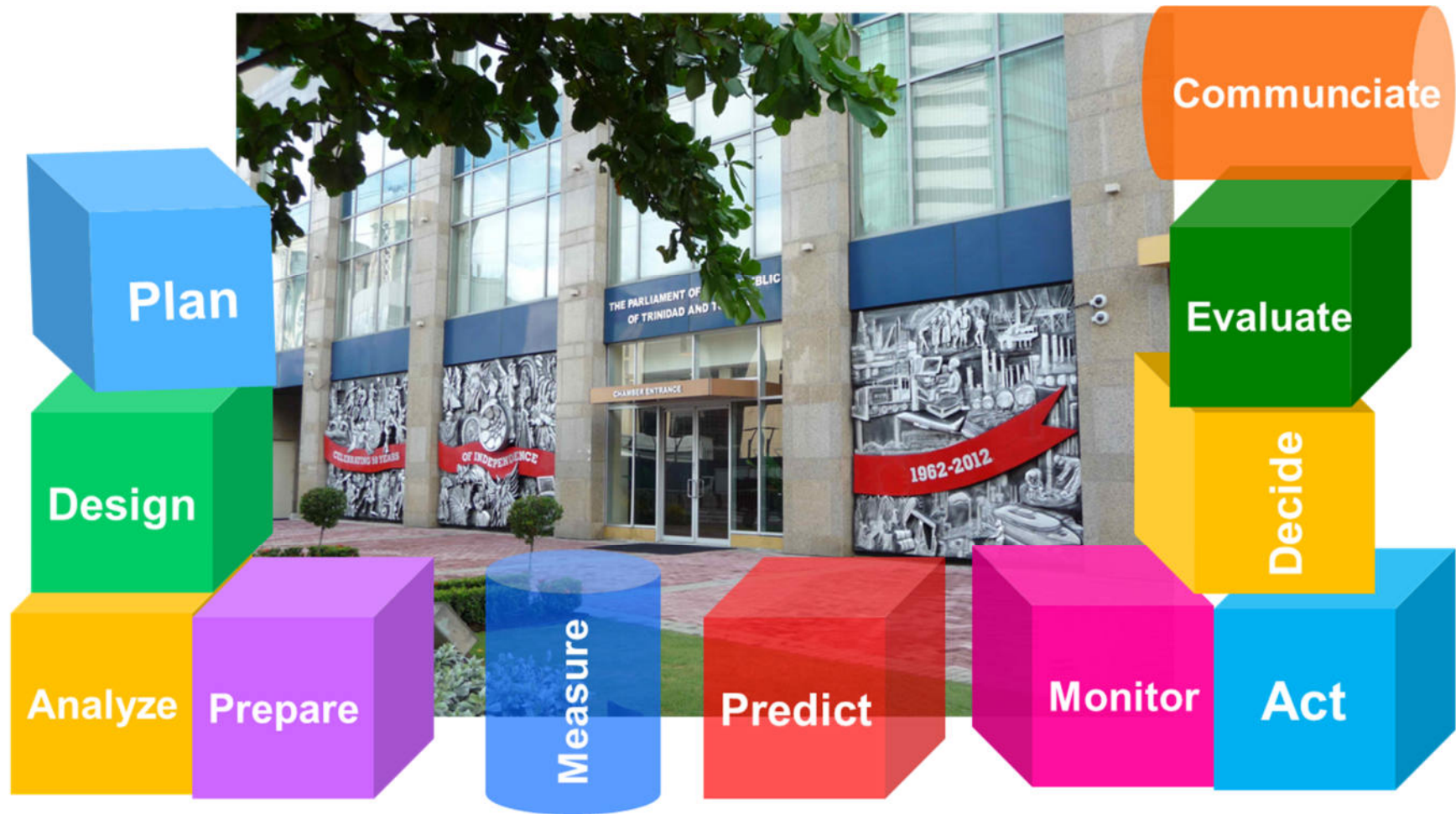
Networking – most deals are made at social gatherings

Be global geo-information champions

Collaborate or die



GI provides a Platform for Action





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