



Jet Propulsion Laboratory
California Institute of Technology



UN GGIM Subcommittee on Geodesy Education, Training, and Capacity Building Working Group 2019 Activity Summary

**Report to the United Nations International Committee on GNSS
December 2019 – Bangalore, India**

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**United Nations General Assembly Resolution 2015:
Global Geodetic Reference Frames
for Sustainable Development**

New York, 26 February 2015

Photo: Kyung-Soo Eom

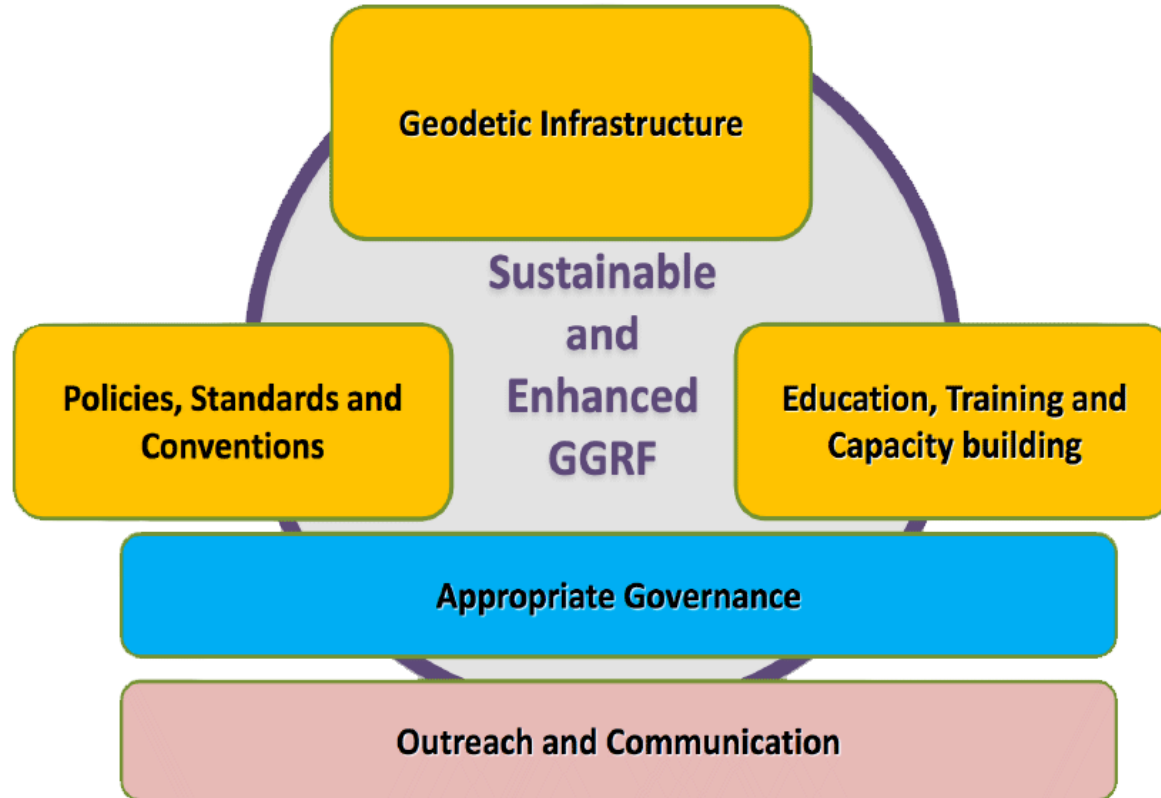
A nighttime photograph of a cityscape viewed from an elevated position. The city lights are visible through a layer of mist or fog. The sky is dark blue with some clouds. A semi-transparent dark grey box is overlaid on the upper half of the image, containing yellow text.

UN GGIM Subcommittee on Geodesy

Working toward an accurate, sustainable and accessible
Global Geodetic Reference Frame
to support science and society

Road Map VISION

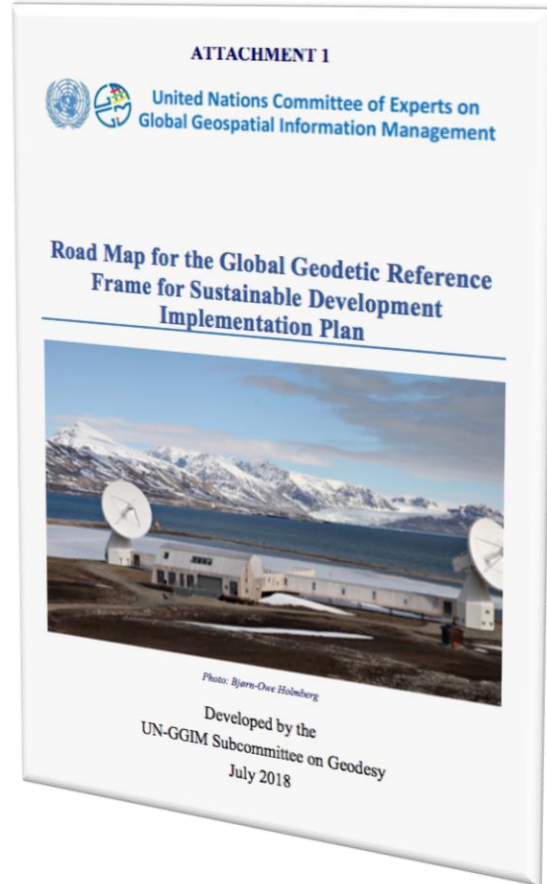
An accurate, sustainable and accessible Global Geodetic Reference Frame to support science and society



*“A global reference frame is key if you want to be able to compare data from all continents; and to **empower** scientists from all parts of the world – to really give precise information, to make the planet a better place.”*

*– Erik Solheim, Executive Director
United Nations Environment Programme*

SCoG Education, Training, and Capacity Building



Current situation

- Utilisation of the GGRF helps build a foundation for a country's development and sustainability. A lack of geodetic skills blocks this utilisation. Hence, **a lack of geodetic competence and capability hinders a Member States [geodetic] development and sustainability**
- The skills required to install and operate geodetic instruments, and analyse the data, are very specific and mastered by only a small number of people worldwide
- The aforementioned skillsets are not generally taught in mainstream higher education programs
- Some countries have geodetic capability, but only in small numbers of people, resulting in reduced capacity to contribute to the GGRF
- Other countries have neither capability nor capacity
- IAG and FIG currently offer some capability development activities

2019 Focus: Capacity Building through International Cooperation



Sendai Framework
for Disaster Risk Reduction
2015 - 2030



INTEGRATED GEOSPATIAL
INFORMATION FRAMEWORK

- **Geodetic capacity assessment and gap analysis**
- **Ongoing identification of existing capacity building resources** and enabling discovery and intuitive interoperability
- **Regionally-focused** capacity building **workshops**
- Special sessions at large international conferences and workshops (**FIG, IGS, and IAG collaborations**)
- Cross-linkages to **Sendai Framework for Disaster Risk Reduction and Sustainable Development Goals (SDGs)**
- Nomenclature standardization and framework organization in alignment with the **UN GGIM-World Bank Integrated Geospatial Information Framework**

UN GGIM-World Bank

Integrated Geospatial Information Framework



Why do we need this Framework?

“Everything happens somewhere”

- Increasing recognition that spatial information is fundamental to good decision making.
- To maximise the use of our spatial data, there is a need to:
 1. standardise how we talk about spatial data;
 2. identify gaps and develop ‘fit for purpose’ plans; and
 3. improve the quality, accuracy, interoperability and accessibility of spatial data.
- The Integrated Geospatial Information Framework aims to help achieve these goals.

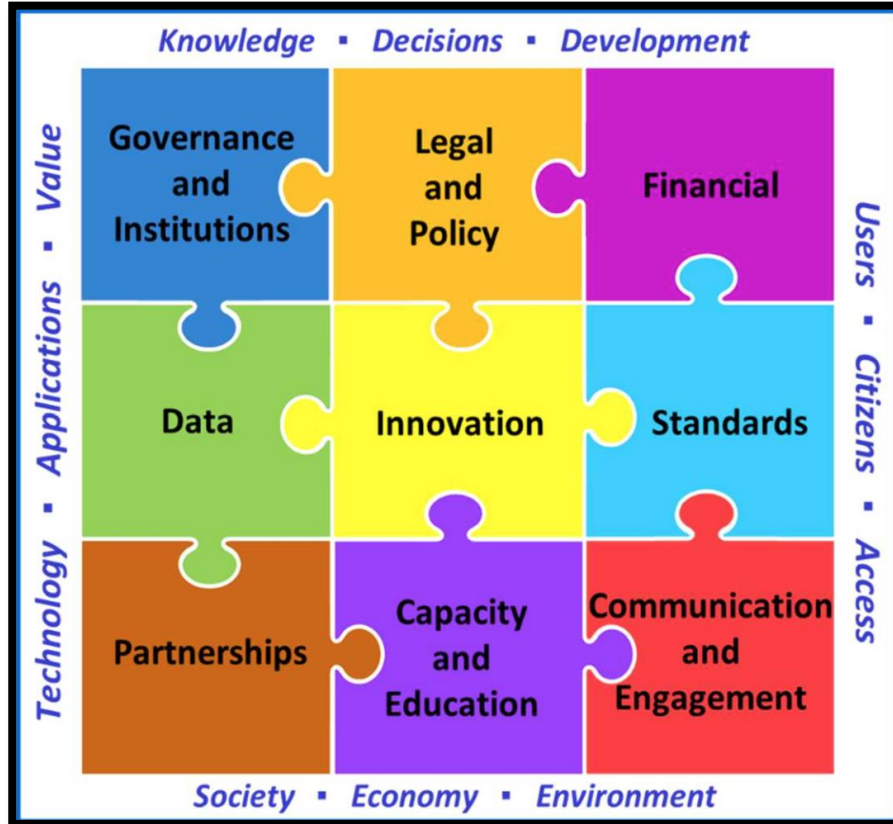
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Integrated Geospatial Information Framework

Governance →

Technology →

People →

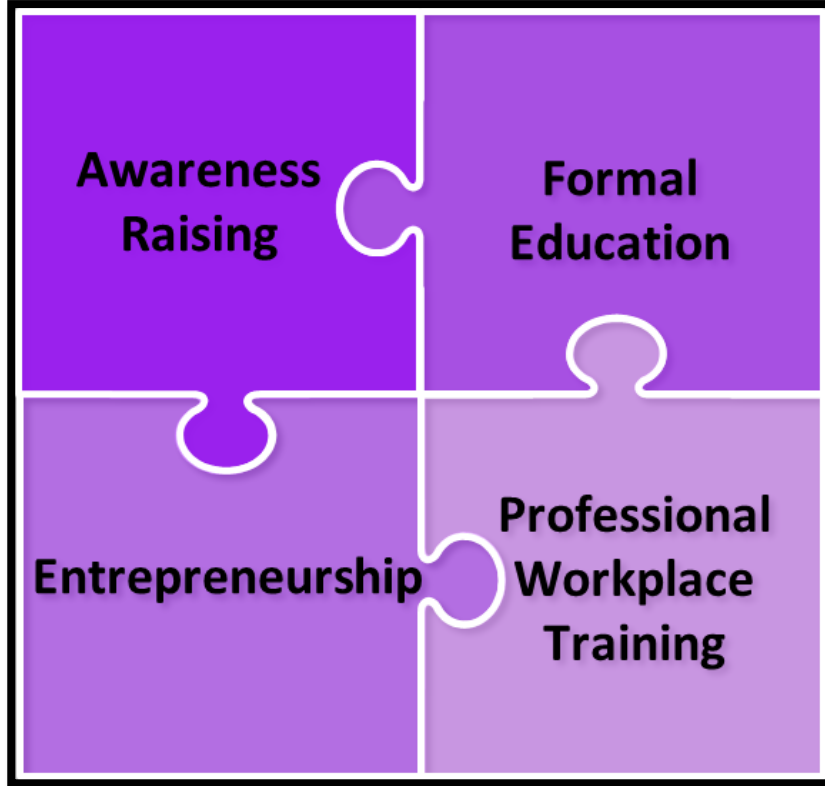


- 9 strategic pathways
- 3 main area of influence:
 - **governance;**
 - **technology;** and
 - **people.**
- Seek to maximise the geospatial information by making it **available and accessible** to governments, community, businesses, academia, and civil societies **innovate, co-create and develop new products, services, and applications that deliver new knowledge for evidence-based policy and decision-making.**

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Integrated Geospatial Information Framework

STRATEGIC PATHWAY 8: CAPACITY AND EDUCATION



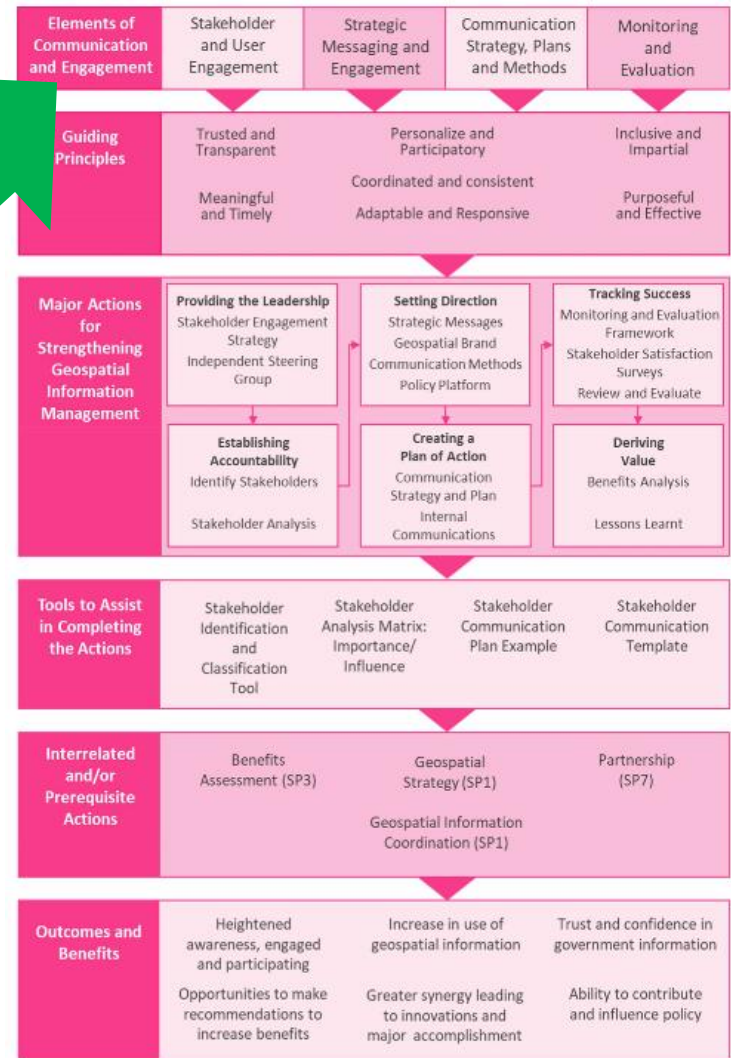
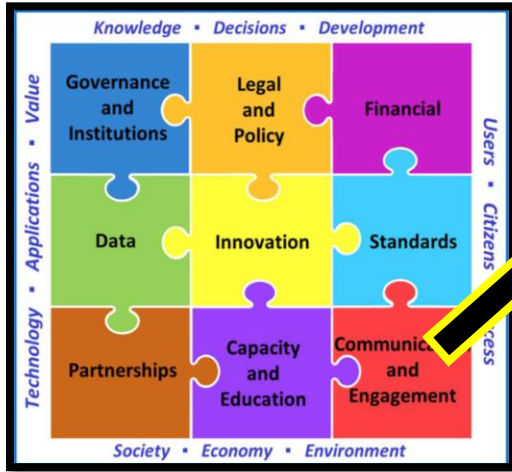
- *This strategic pathway establishes **enduring capacity building programs and education systems** so that geospatial information management and entrepreneurship can be sustained in the longer term.*
- *The objective is to **raise awareness and develop and strengthen the skills, instincts, abilities, processes and resources** that organizations and communities require to utilize geospatial information for decision-making*

Identify gaps and develop 'fit for purpose' plans



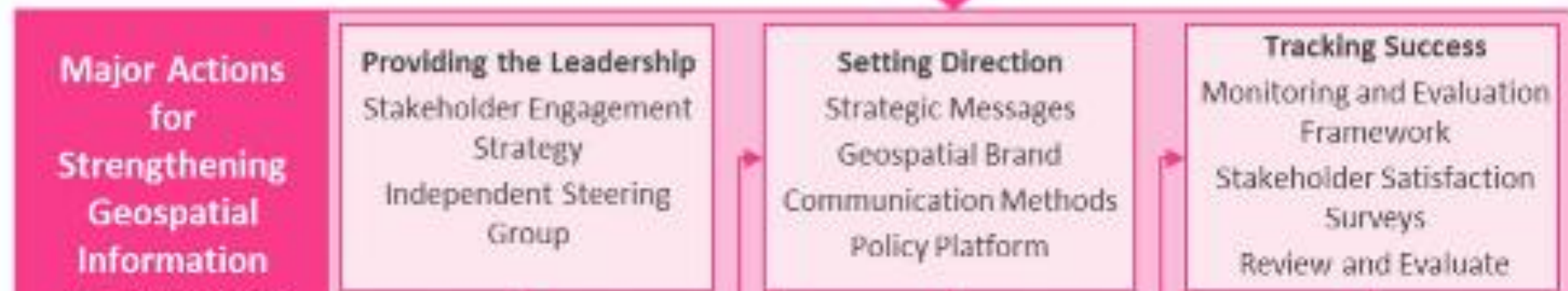
- Identify critical gaps in spatial data infrastructure and describe them in a standardised way.
 - This can be used to support applications for assistance (e.g. World Bank).
- Developing countries can compare their IGIF to developed countries IGIF and develop a plan for further development.
 - This plan can be tailored to individual country's situations and circumstances.

Part 2: Implementation Guide Overall Structure Communications Example



The overall structure shows the four key elements, guiding principles, actions and interrelated actions; and the tools provided to support the achievement of these outcomes

http://ggim.un.org/meetings/GGIM-committee/9th-Session/documents/IGIF_SP9-Communication_and_Engagement_FIRST_DRAFT.pdf



Tools to Assist in Completing the Actions	Stakeholder Identification and Classification Tool	Stakeholder Analysis Matrix: Importance/Influence	Stakeholder Communication Plan Example	Stakeholder Communication Template
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Interrelated and/or Prerequisite Actions	Benefits Assessment (SP3) Geospatial Strategy (SP1) Partnership (SP7) Geospatial Information Coordination (SP1)		
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Outcomes and Benefits	Heightened awareness, engaged and participating Opportunities to make	Increase in use of geospatial information Greater synergy leading	Trust and confidence in government information Ability to contribute
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Next Steps

- Continue targeted participation at workshops and conferences
 - Present results of Geodetic Capacity Survey at FIG Working Week, May 2020 in Amsterdam, Netherlands
 - Organize or support Capacity Building sessions at ICG workshops and other events
- Develop a “geodesy thematic layer” identifying various potential geodetic elements that can be used in developing an IGIF Action Plan
- Work with countries currently in the pilot project cohort of IGIF Action Plan applications

For more Information and
to download newsletters
and other resources
prepared by the
Subcommittee on Geodesy:

GGIM.un.org

www.unggrf.org

@UNGGRF

Factsheet
December 2015

UN-GGIM – Global Geodetic Reference Frame Working Group

The UN-GGIM Roadmap for the Global Geodetic Reference Frame
In February 2015 the UN General Assembly adopted the resolution "A Global Geodetic Reference Frame for Sustainable Development" - the first resolution recognizing the importance of a globally-coordinated approach to geodesy. The GGRF Working Group is working on the development of a roadmap that will describe how governments can contribute to the sustainability and enhancement of the Global Geodetic Reference Frame. unggrf.org

Actions forward

– From a UN mandate to a roadmap for global geodesy

"The momentum the adoption of the UN resolution has created will position the global geodetic community well for the complex task ahead, developing a roadmap for GGRF enhancement."
Gary Johnston, co-chair UN-GGIM/GGRF Working Group



NEW YORK: Ambassador Peter Thomson from Fiji introducing the resolution to the UN General Assembly.

After the UN General Assembly adopted the resolution "A Global Geodetic Reference Frame for Sustainable Development", the GGRF Working Group has been working on a roadmap for global geodesy.

Role of the roadmap
The UN-GGIM Roadmap for the Global Geodetic Reference Frame is intended to identify the role that governments, through UN-GGIM, can play in improving the sustainability and enhancement of global geodesy.

"The roadmap is intended to provide an understanding interface between the geodetic community, who are scientifically skilled, and administrators in the national mapping and space agencies, and their governments," says co-chair Gary Johnston. He explains that the roadmap is not intended to be a full scale technical document describing every element of geodesy. "It is rather intended to be an actions focused document that references existing technical material, or recommends the development of more detailed plans," says Johnston.

The roadmap needs to address the operational paragraphs from the UN General Assembly resolution

- Global cooperation in providing technical assistance in geodesy for those countries in need to ensure the development, sustainability and advancement of a GGRF
- Implement open geodetic data sharing
- Improve and maintain national geodetic infrastructure
- Enhanced multilateral cooperation that addresses infrastructure gaps and duplications globally
- Improved outreach to make the GGRF more visible and understandable to society

The roadmap needs to indicate a series of recommended actions

- Infrastructure
- Policy, Standards and Conventions
- Education, Training and Capacity building
- Communication and Outreach
- Governance

 **UN-GGIM** | United Nations Committee of Experts on Global Geospatial Information Management ggim.un.org

United Nations
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