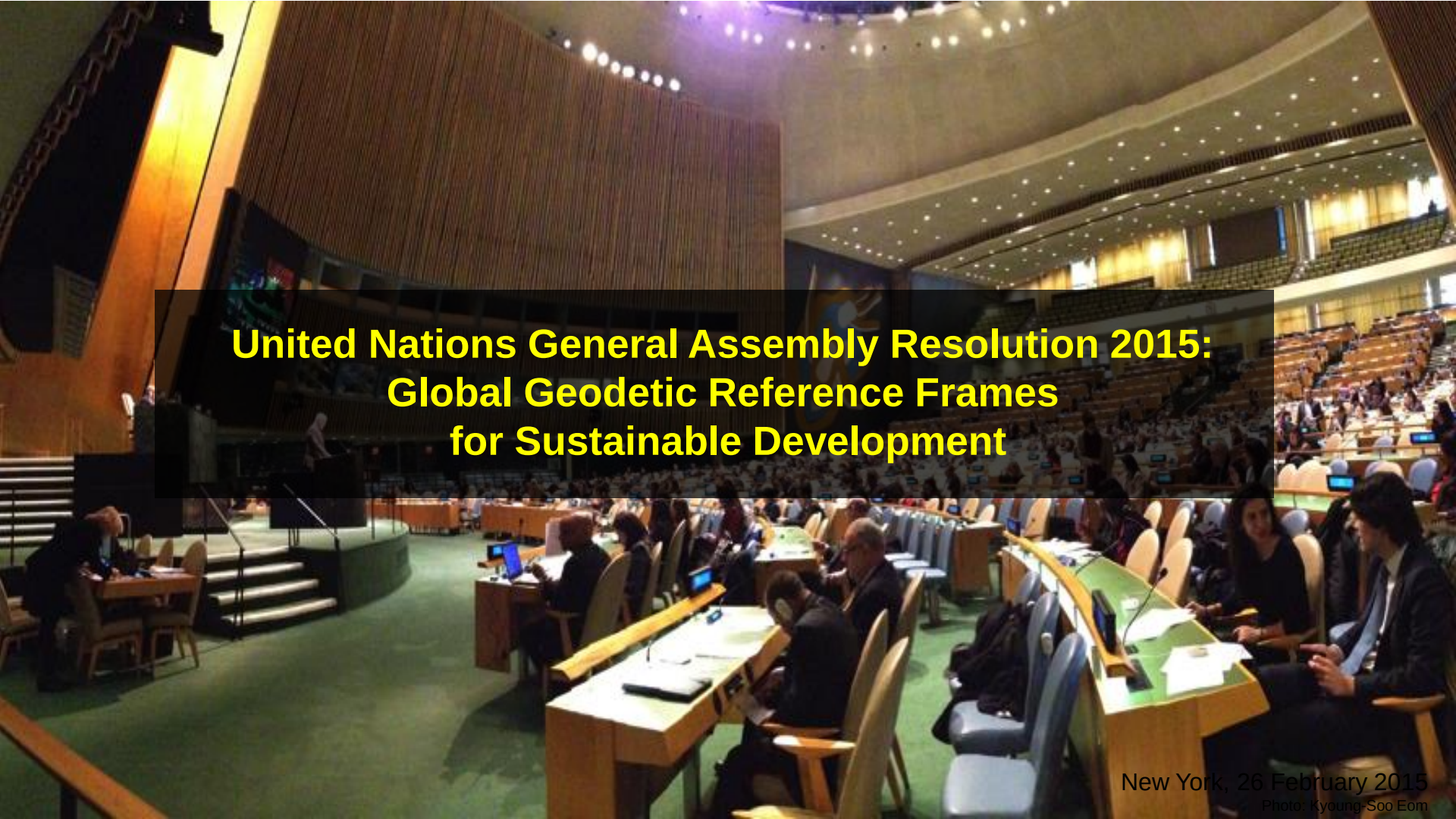
Jet Propulsion Laboratory
California Institute of Technology

LANTMÄTERIET

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

Mikael Lilje[1] and Allison Craddock[2]
[1]Manager, International Department, Lantmäteriet, Sweden
[2]Director of the International GNSS Service Central Bureau, NASA Jet Propulsion Laboratory, USA

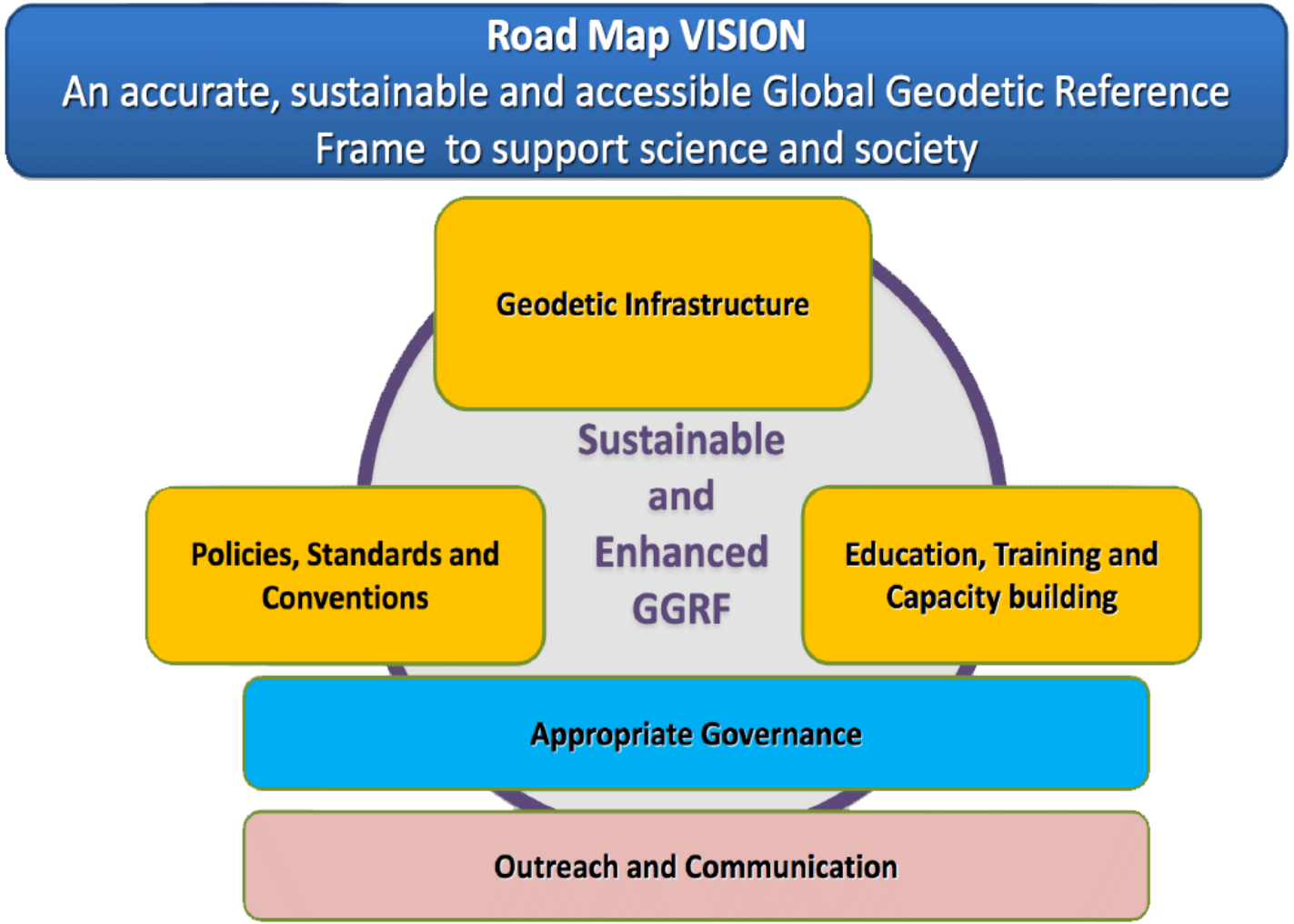


United Nations General Assembly Resolution 2015: Global Geodetic Reference Frames for Sustainable Development

New York, 26 February 2015

Photo: Kyoung-Soo Eom


UN GGIM Subcommittee on Geodesy
Working toward an accurate, sustainable and accessible
Global Geodetic Reference Frame
to support science and society

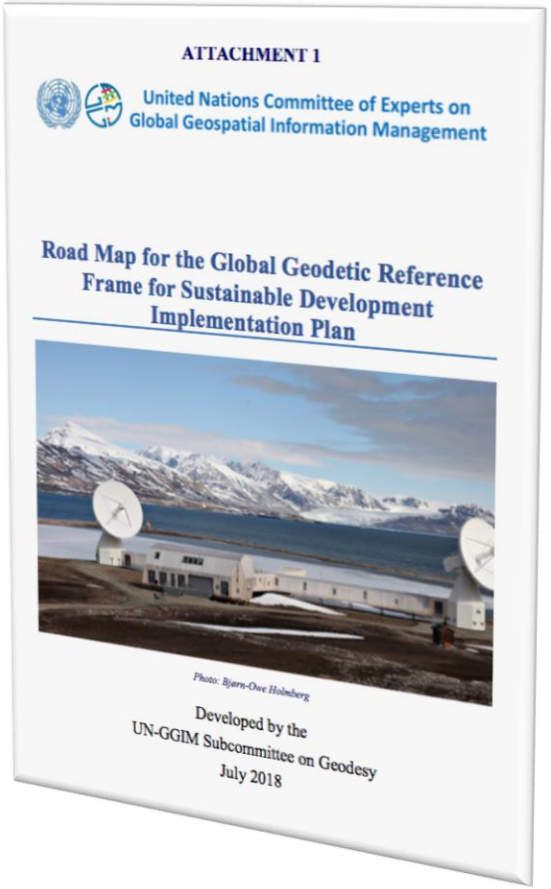


Graphic courtesy of Gary Johnston/ UN GGIM SCoG

*“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

UNDRR
UN Office for Disaster Risk Reduction

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.

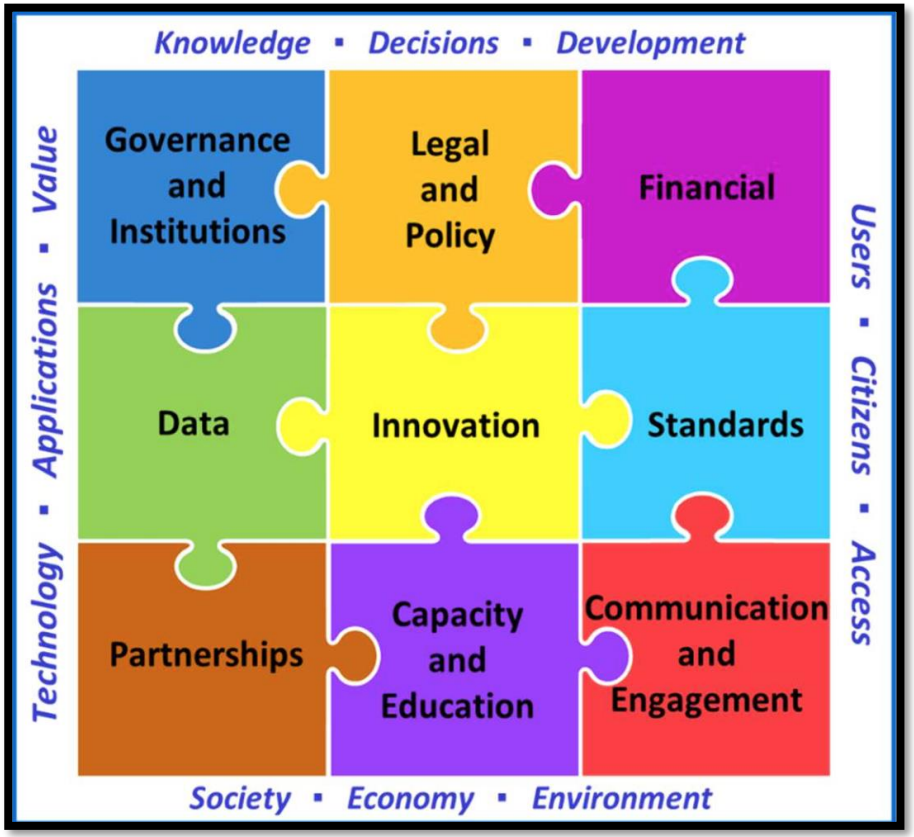
Slide courtesy of Nick Brown, Geoscience Australia

UN GGIM-World Bank
Integrated Geospatial Information Framework

Governance →

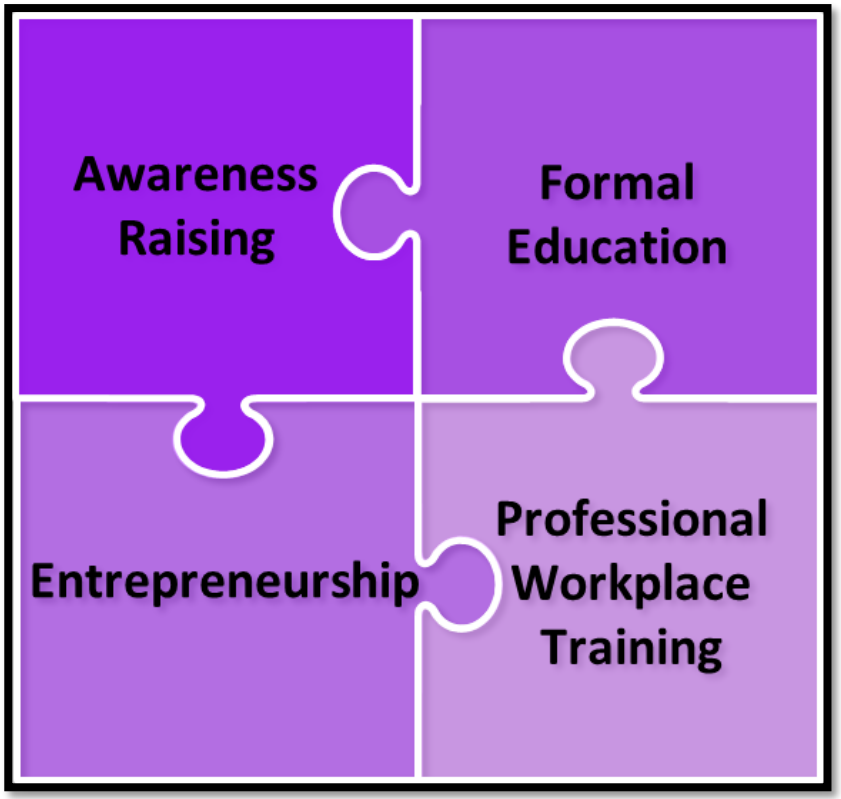
Technology →

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**.

UN GGIM-World Bank
Integrated Geospatial Information Framework
STRATEGIC PATHWAY 8: CAPACITY AND EDUCATION



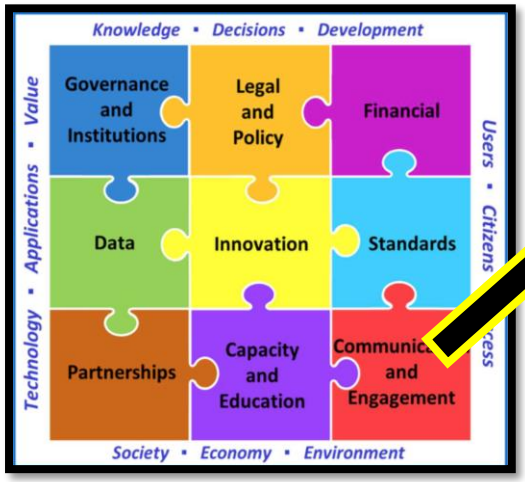
- *This strategic pathway establishes **enduring capacity building programs and education systems** so that geospatial information management and entrepreneurship can be sustained in the longer term.*
- *The objective is to **raise awareness and develop and strengthen the skills, instincts, abilities,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

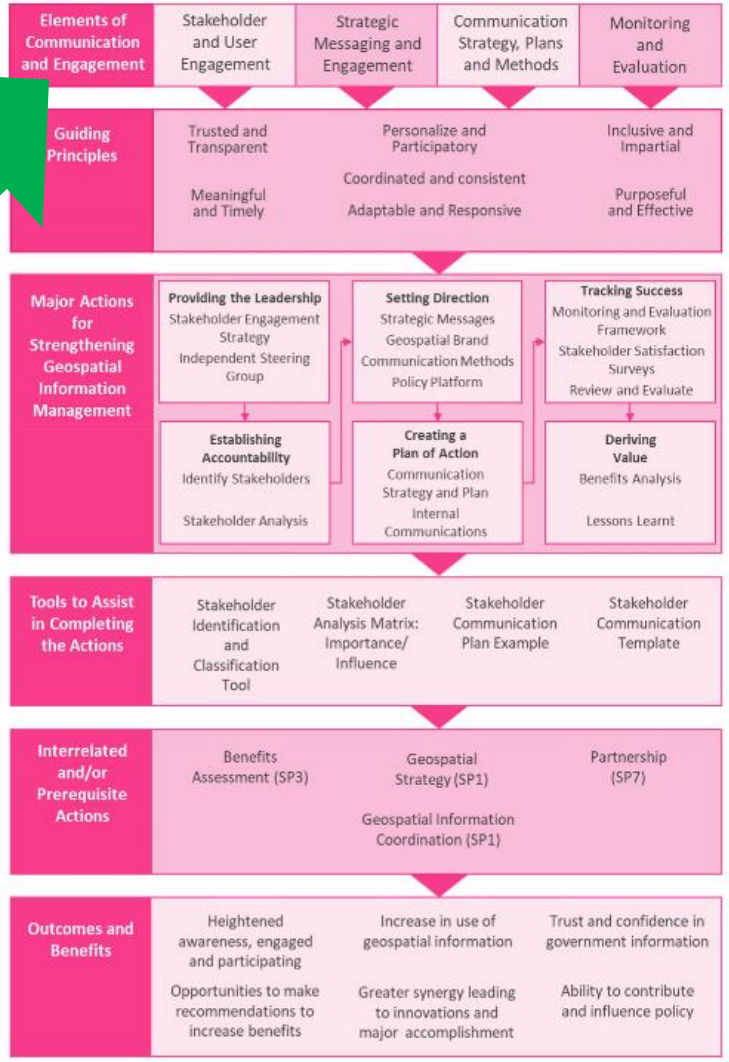
Identify gaps and develop ‘fit for purpose’ plans

- 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.

Slide courtesy of Nick Brown, Geoscience Australia

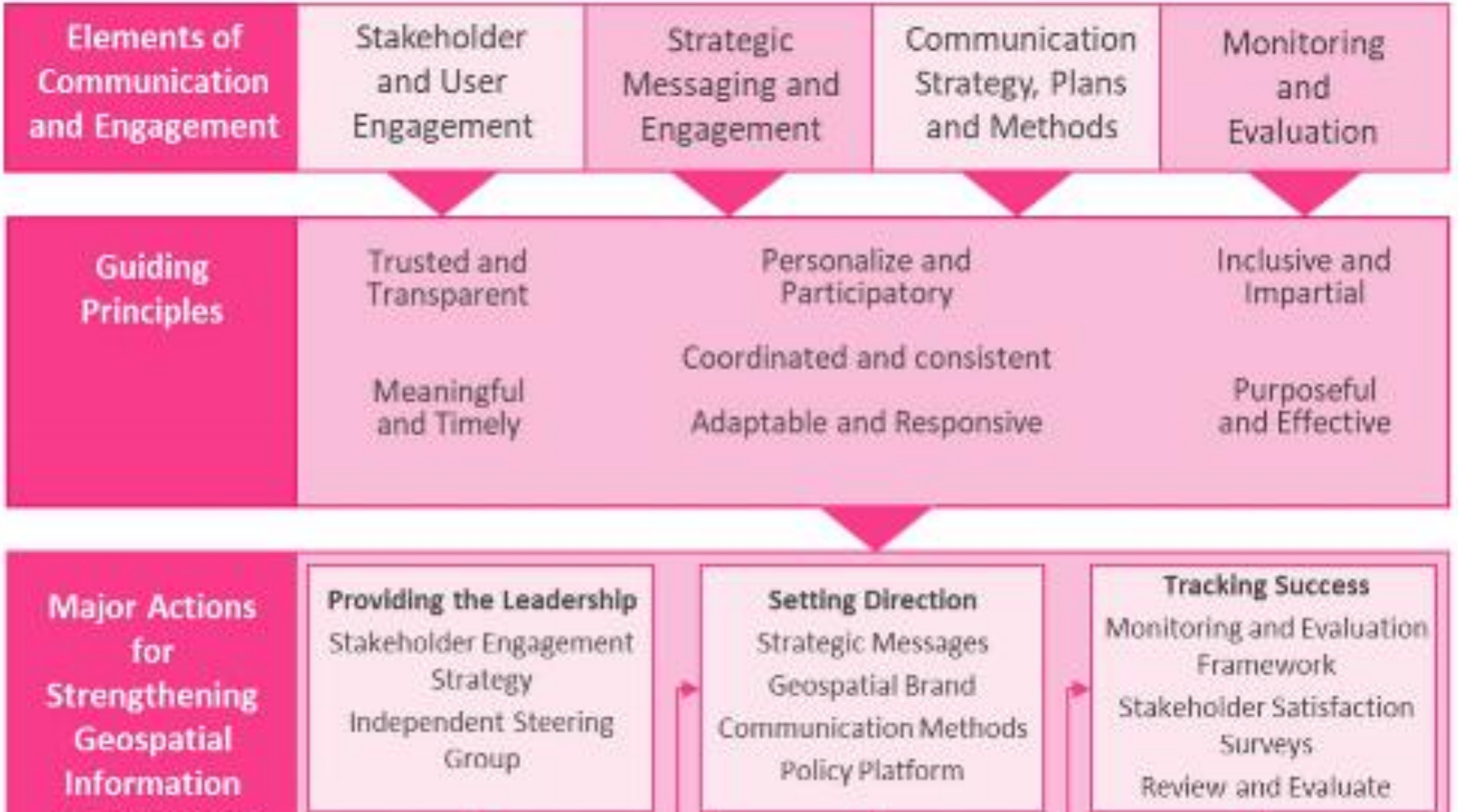
Part 2: Implementation Guide Overall Structure Communications Example





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


Elements of Communication and Engagement
Stakeholder and User Engagement
Strategic Messaging and Engagement
Communication Strategy, Plans and Methods
Monitoring and Evaluation
Guiding Principles
Trusted and Transparent
Meaningful and Timely
Personalize and Participatory
Coordinated and consistent
Adaptable and Responsive
Inclusive and Impartial
Purposeful and Effective
Major Actions for Strengthening Geospatial Information
Providing the Leadership
Stakeholder Engagement Strategy
Independent Steering Group
Setting Direction
Strategic Messages
Geospatial Brand
Communication Methods
Policy Platform
Tracking Success
Monitoring and Evaluation Framework
Stakeholder Satisfaction Surveys
Review and Evaluate

Tools to Assist in Completing the Actions

- Stakeholder Identification and Classification Tool
- Stakeholder Analysis Matrix: Importance/ Influence
- Stakeholder Communication Plan Example
- Stakeholder Communication Template

Interrelated and/or Prerequisite Actions

- Benefits Assessment (SP3)
- Geospatial Strategy (SP1)
- Geospatial Information Coordination (SP1)
- Partnership (SP7)

Outcomes and Benefits

- Heightened awareness, engaged and participating
- Increase in use of geospatial information
- Trust and confidence in government information
- Opportunities to make
- Greater synergy leading
- Ability to contribute

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
Global Geospatial Information Management
Subcommittee on Geodesy
Education, Training and Capacity Building Working Group

Mikael Lilje (Sweden, Working Group Lead)
Augustin Bamouni (Burkina Faso)
Graeme Blick (New Zealand)
Nick Brown (Australia)
Allison Craddock (United States)
Paul Cruddace (United Kingdom)
Ryan Keenan (Private Sector)
Basara Miyahara (Japan)
Maria Cristina Pacino (International Association of Geodesy)
Dan Roman (United States)
Robert Sarib (Australia)
Sharafat Gadimova (UNOOSA International Committee on GNSS)

December 2019

Jet Propulsion Laboratory
California Institute of Technology

LANTMÄTERIET