The Data Ecosystem for Sustainable Development

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The 2030 Agenda is an Integrated Plan of Action structured in four main parts: (i) Vision and principles for transforming our world as set out in the Declaration; (ii) Results framework of 17 SDGs and 169 targets; (iii) Means of implementation through governments, society and global partnership; and (iv) Follow-up and review framework of global indicators.
Any national SDG implementations will be sub-optimal without strategies and frameworks to integrate statistics, geospatial information, Earth observations, and other new data into the measuring, monitoring and reporting processes. An integrated data ecosystem is needed.
An integrative and interconnected data ecosystem

There needs to be more institutional collaboration, coordination and integration across the various national data frameworks, information systems and platforms.

Positioning geospatial information to address global challenges

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“It is abundantly clear that a much deeper, faster and more ambitious response is needed to unleash the social and economic transformation needed to achieve our 2030 goals. From our advances, we know what works. This report therefore highlights areas that can drive progress across all 17 SDGs: financing; resilience; sustainable and inclusive economies; more effective institutions; local action; better use of data; and harnessing science, technology and innovation with a greater focus on digital transformation. In everything we do, we must diligently ensure that policy choices leave no one behind, and that national efforts are supported by effective international cooperation, grounded in a commitment to diplomacy and crisis prevention.”

António Guterres
Secretary-General, United Nations
The disruptive nature of digital transformation, technology, innovation, and their exponential impacts, means that society’s expectations on how, and at what level of detail, we record what is happening where and when are changing at a rapid pace.
The disruptive nature of digital transformation
“Within the past generation, hundreds of millions of people have emerged from extreme poverty, and access to education has greatly increased for both boys and girls. Further, the spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide, to develop knowledge societies, and scientific and technological innovation.”

2030 Agenda for Sustainable Development, para. 14-15

Providing and exploiting the new data needs, information systems, analytics and associated enabling technologies and tools to support the implementation of the SDGs is going to take strategic policy leadership and transformational change - a digital transformation that is able to bridge the ‘geospatial digital divide’ which continues to inhibit development progress for all developing countries.

Greg Scott, November 2016
“develop an overarching Geospatial Framework……”

“prepare and implement country level Action Plans…..”
The Integrated Geospatial Information Framework provides a basis and guide for developing, integrating and strengthening geospatial information management.

**INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK**

A STRATEGIC GUIDE TO DEVELOP AND STRENGTHEN NATIONAL GEOSPATIAL INFORMATION MANAGEMENT

**PART 1: OVERARCHING STRATEGIC FRAMEWORK**


The Overarching Strategic Framework is a mechanism for articulating and demonstrating national leadership, cultivating champions, and developing the capacity to take positive steps.
The Integrated Geospatial Information Framework (IGIF) comprises 3 separate, but connected, documents. The Overarching Strategic Framework was completed and adopted by UN-GGIM in August 2018. The structure and main elements of the Implementation Guide were provided for discussion, and had ‘in-principle’ approval by UN-GGIM. The Country-level Action Plans were acknowledged as ‘work in progress’ and to be developed through case studies.
The Vision recognizes the responsibility for countries to plan for and provide better outcomes for future generations, and our collective aspiration to ‘leave no one behind’.

The Mission is designed to stimulate action towards bridging the geospatial digital divide; to find sustainable solutions for social, economic and environmental development; and to influence inclusive and transformative societal change for all citizens according to national priorities and circumstances.
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**VISION**
The efficient use of geospatial information by all countries to effectively measure, monitor and achieve sustainable social, economic and environmental development – leaving no one behind.

**MISSION**
To promote and support innovation and provide the leadership, coordination and standards necessary to deliver integrated geospatial information that can be leveraged to find sustainable solutions for social, economic and environmental development.

**STRATEGIC DRIVERS**
- National Development Agenda
- National Strategic Priorities
- National Transformation Programme
- Community Expectations
- Multilateral trade agreements
- Transforming our World: 2030 Agenda for Sustainable Development
- New Urban Agenda
- Sendai Framework for Disaster Risk Reduction 2015–2030
- Addis Ababa Action Agenda
- Small Island Developing States Accelerated Modalities of Action (SAMOA Pathway)
- United Nations Framework Convention on Climate Change (Paris Agreement)
- United Nations Ocean Conference: Call for Action

**UNDERPINNING PRINCIPLES**

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<th>Strategic Enablement</th>
<th>Transparent and Accountable</th>
<th>Reliable, Accessible and Easily Used</th>
<th>Collaboration and Cooperation</th>
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**GOALS**
- Effective Geospatial Information Management
- Sustainable Education and Training Programs
- Increased Capacity, Capability and Knowledge Transfer
- International Cooperation and Partnerships Leveraged
- Integrated Geospatial Information Systems and Services
- Enhanced National Engagement and Communication
- Economic Return on Investment
- Enriched Societal Value and Benefits

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.

The 8 Goals reflect a future state where countries have the capacity and skills to organize, manage, curate and leverage geospatial information to advance government policy and decision-making capabilities.
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Anchored by 9 Strategic Pathways, the Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps.
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9 Strategic Pathways

- Governance and Institutions
- Policy and Legal
- Financial

- Data
- Innovation
- Standards

- Partnerships
- Capacity and Education
- Communication and Engagement

- Knowledge
- Decisions
- Development

Society • Economy • Environment

Technology • Applications • Value

Users • Citizens • Access

Governance and Institutions

Policy and Legal

Financial

Data

Innovation

Standards

Partnerships

Capacity and Education

Communication and Engagement

Governance

Technology

People

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“The technology, policies, standards, human resources and related activities to acquire, process, distribute, use, maintain and preserve spatial data” (OMB 2002).
IGIF: Linkages to the GSGF

**PRINCIPLES**
- Accessible & usable
- Statistical and geospatial interoperability
- Common geographies for dissemination of statistics
- Geocoded unit record data in a data management environment
- Use of fundamental geospatial infrastructure and geocoding

**INPUT**
- Geospatial
- Statistical

**OUTPUT**
- Integration
- Interoperability
- Harmonised and standardised information
- Analysis
- Decision making
- Diffusion

**KEY ELEMENTS**
- Standards and Good Practices
- National Laws and Policy
- Technical Infrastructure
- Institutional Collaboration

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Harnessing the power of data for sustainable development

Leave no one behind

National averages, even city averages, often mask wide disparities among population groups. The identification of people suffering from deprivation therefore requires sufficiently detailed data across multiple dimensions, including age, sex, geography and disability status, among others. Any global or national statistical system must ensure that the coverage and level of data disaggregation for the follow-up and review of the 2030 Agenda leaves no one behind.

Towards this end, national statistical systems need to invest in the technology and skills necessary to collect and integrate data from multiple sources, including integration of geospatial information with statistics and other data. This means making better use of traditional statistical surveys, censuses and administrative records. It also means harnessing the power of technology to leverage new sources of data, such as from cell phone records, Earth observations, other sensors and social media. More citizen-generated data are also being used to monitor the needs and progress of vulnerable groups. However, new methodologies need to be developed to ensure the quality and reliability of such data.
The Changing Patterns of Unemployment and Poverty in Ireland, 2011 -

A focus on cities

The map displays unemployment rate and total unemployed population from the Census 2016 at ED level. A closer look at Dublin illustrates varying unemployment rates within the area.

Data at this level provide a detailed representation of unemployment trends. This visualisation highlights the divide (North East, South West divide) in high and low levels of unemployment.
Strengthening geospatial information management will assist countries in bridging the geospatial digital divide, secure socio-economic prosperity, and leave no one behind.