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Integrated Geospatial Information Framework
strengthening NSDIs and geospatial information management capacities

United Nations Secretariat for Global Geospatial Information Management
Statistics Division, Department of Economic and Social Affairs

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.
The NSDI approach...origins in the 1990s

- Coordinated actions that promote the awareness and implementation of complimentary policies, common standards and institutional arrangements for the development and availability of interoperable digital geographic data and technologies to support decision making at all scales for multiple purposes.

- The NSDI of a country can be generally defined as a framework of policies, standards, technology and institutional arrangements that facilitate data providers to publish and users to access and integrate, distributed heterogeneous geospatial information.

- A long-standing and well understood enabling infrastructure to provide the ‘institutionally’ coordinated policies, common standards, arrangements, and effective mechanisms for the development and availability of interoperable geospatial information at multiple levels of government.

Developing Spatial Data Infrastructures:

The SDI Cookbook

Spatial Data Infrastructures

The term "Spatial Data Infrastructure" (SDI) is often used to denote the relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. The SDI provides a basis for spatial data discovery, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general.

The word infrastructure is used to promote the concept of a reliable, supporting environment, analogous to a road or telecommunications network, that, in this case, facilitates the access to geographically-related information using a minimum set of standard practices, protocols, and specifications. The applications that run "on" such an infrastructure are not specified in detail in this document. But, like roads and wires, an SDI facilitates the conveyance of virtually unlimited packages of geographic information.
NSDI KEY PILLARS

- Establishing overarching governance mechanism to coordinate geospatial activities
- Developing enabling environments: fundamental datasets, standards, e-Services
- Fostering spatial literacy, spatial awareness, promoting infrastructural capabilities
- Engendering and facilitating synergies with international programs and initiatives

United Nations Economic Commission for Africa

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Global Geospatial Information Management

Positioning geospatial information to address global challenges

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HOLISTIC FRAMEWORK FOR GEOSPATIAL INFORMATION MANAGEMENT

Geospatial Information for Sustainable Development (Gi4SD) in Africa
Collective approach in addressing information needs for key global challenges

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Infrastructures Nationales de Données Spatiales

Une réalité virtuelle au Cameroun

- Activités (8 activités identifiées)
  - Activité 1: Matrice des services à validation spatiale
  - Activité 2: Inventaire
  - Activité 3: Forum des Acteurs
  - Activité 4: Comité de rédaction
  - Activité 5: Sensibilisation
  - Activité 6: Arrangement institutionnel
  - Activité 7: Liaison:
  - Activité 8: Validation et adoption
- Méthodologie, Planification et Budget
- Bénéficiaires
Virtues of NSDIs are their ability to promote geospatial data sharing throughout all levels of government and society, enabling effective use of geospatial data for sustainable national development and other every day requirements.

Two factors challenge the limitations of a traditional NSDI:

1. The availability of more data and more data types. Big data, structured and unstructured data, and other realities pressure the current limitation of NSDI as more of these external data add potential value to everyday queries for information. Some data are geospatially referenced while others are not, which identifies a need for geolocation information.

2. The need for data integration and analysis. Traditional NSDIs are very structured (silo) repositories of valuable geospatial information, with defined and managed (separate) data themes, such as transport, elevation and depth, boundaries, addresses, water, etc. These assets now must meet diverse and specific local and national requirements and need to be "integrated" with other data (especially statistics) and sectors.
Global fundamental geospatial data themes

Positioning (Geodetic)
Address (Buildings)
Cadastre (Tenure)
Names (Gazetteer)
Water (Hydrology)
Administrative Boundaries
Transport
Bathymetry (Hydrography)
Land cover (Vegetation)
Elevation
Imagery (Satellite & Photo)

Goals, targets, indicators, measuring...fundamental data
The principal focus of NSDIs is geospatial data. What is needed to establish or maintain an integrated national geospatial program is not sufficiently addressed by the NSDI.

While an NSDI is a core and valuable component, a national geospatial program is much more than the data. The Integrated Geospatial Information Framework (IGIF) defines each of the interrelated 9 strategic pathways required for an integrated national geospatial program.

Building on the existing benefits and practices of NSDIs. The IGIF is more comprehensive than the traditional efforts of NSDIs.

What is the driver for why we have the IGIF rather than the NSDI? More diverse data types and needs that are now more relevant and dependent on geospatial data than were originally considered. This is a reflection of both technology evolution and the new and emerging data ecosystem that is more dependent on “location” and “integration”.
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.

“The technology, policies, standards, human resources and related activities to acquire, process, distribute, use, maintain and preserve spatial data” (OMB 2002).
Positioning geospatial information to address global challenges

The Framework will augment and build upon existing NSDI arrangements, providing a holistic, integrated national information system-of-systems approach to the data life cycle

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Interactions