United Nations | Department of Economic and Social Affairs
Statistics

International Workshop and Seminar on
United Nations Global Geospatial Information Management
"The Data Ecosystem for Sustainable Development"

The Global Statistical Geospatial Framework:
A tool for the integration of administrative data, big data and geospatial information for the compilation of SDG indicators

Technical learning event on Data Ecosystem for Sustainable Development - Integrative Technologies and Processes
17 - 19 October 2019, Deqing International Convention Centre
Deqing, China

The 2030 Agenda

- **Declaration**

  Vision and shared principles for people, planet, prosperity, peace and partnership
- **Results Framework**

  17 integrated and indivisible **goals** and 169 aspirational **targets**
- **Follow-up and Review**

  Global **indicators** underpin an integrated follow-up and review framework
- **Means of implementation**

  Governments, civil society, industry, the UN System, science and technology

Global SDG Indicator Framework

- List of **232 unique indicators**
  - Developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs)
  - Agreed at the 48th session of the UN Statistical Commission in March 2017
  - Adopted by the General Assembly on 6 July 2017

The SDG data challenge

- 2030 Agenda for Sustainable Development demands high-quality, timely, and reliable data for policy and decision making, disaggregated and supplemented with necessary contextual information.
- The challenge is not only to fill data gaps, but also to integrate and make existing SDG-related data and information easily accessible to users in a meaningful way

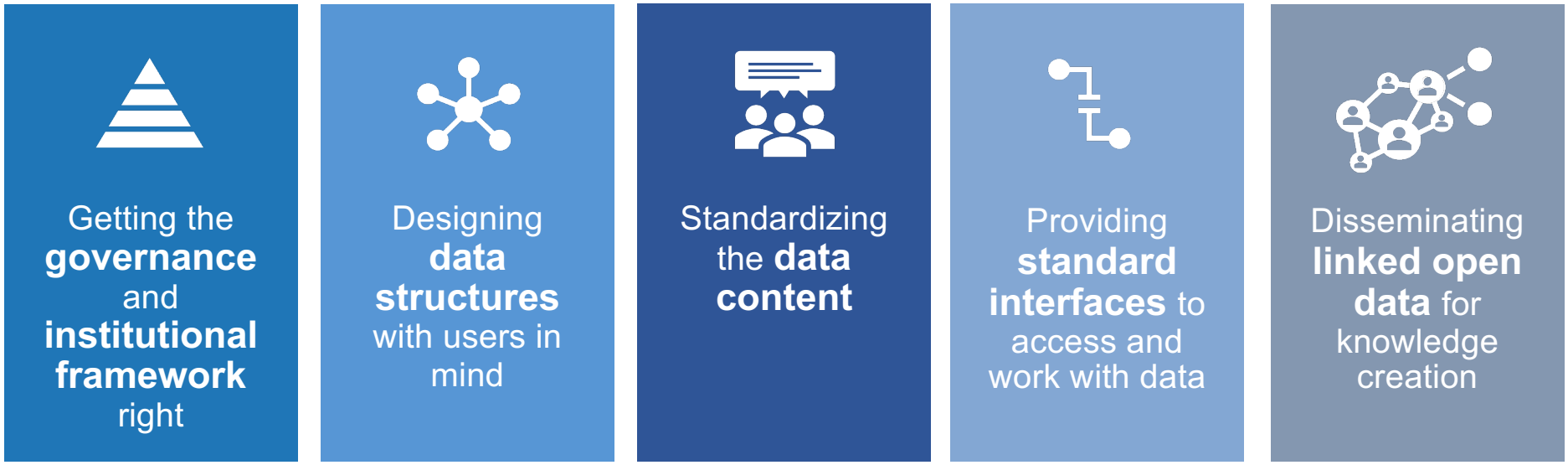
Data interoperability for the SDGs

- There are many unrealized opportunities to extract value from data that already exists to meet information needs of the 2030 Agenda

- Investing time and resources in the development and deployment of data interoperability solutions will help us make better use of the data that currently sits in sectoral and institutional silos to implement and monitor the SDGs

Vision

- Integrating and joining up data from multiple sources, and across systems, to realize the data revolution for sustainable development, where more and better data is open, accessible, and used to the fullest extent possible in improving people's lives



Pathway to data interoperability

Global statistical geospatial framework

- Adopted and endorsed by UN GGIM and UNSC in 2016
- Goals:
  - Improve NSO's capability to integrate geospatial data, methods and processes into mainstream statistical production
  - Support production of disaggregated data for small-area geographies
  - Link aggregate statistical outputs to standard geographies
  - Provide the basis for collaboration between NSO's, Mapping Authorities, and other providers of geospatial and EO data

2030 Agenda and statistical capacity building

"*We will support developing countries, particularly African countries, least developed countries, small island developing States and landlocked developing countries, in strengthening the capacity of national statistical offices and data systems to* ***ensure access to high-quality, timely, reliable and disaggregated data****. We will promote transparent and accountable scaling-up of appropriate public-private cooperation to* ***exploit the contribution to be made by a wide range of data, including earth observation and geospatial information****, while ensuring national ownership in supporting and tracking progress.*"

Cape Town Global Action Plan for Sustainable Development Data

- **Objective 3.4: Integrate geospatial data into statistical production programmes at all levels**.
  - Promote the integration of modern geospatial information management systems within mainstream statistical production programmes by highlighting synergies between the two systems.
  - Promote the integration of geospatial and statistical metadata.
  - Encourage the use and adoption of technologies that promote integration of geospatial and statistical information.
  - Support the implementation of the **Global Statistical and Geospatial Framework**

New geospatial capabilities

- **Ability to collect more accurate and timely information about people, the economy and the environment**
  - Advances in Global Navigation Satellite Systems (GNSS)
  - Availability of affordable aerial and satellite imagery
- **Powerful data analysis tools to identify patterns and inter-relationships**
  - Geographic information systems (GIS)
- **More efficient and impactful dissemination of statistical data**
  - Online access to geospatial data visualizations, including the ability to create maps and embed them in web applications

Global statistical geospatial framework

- **Principle 1**: Use of fundamental geospatial infrastructure and geocoding
  - Assign to every statistical unit accurate and unambiguous location information from authoritative, relevant and nationally agreed fundamental data sources
  - So that they can be placed as points on the earth's surface (and therefore on a map)

Global statistical geospatial framework

- **Principle 2**: Geocoded unit record data in a data management environment
  - Implement persistent storage of the geo-coded statistical microdata in a relational database management system
  - So it can be efficiently retrieved, analyzed, and combined into time-series and geographic aggregates.

Global statistical geospatial framework

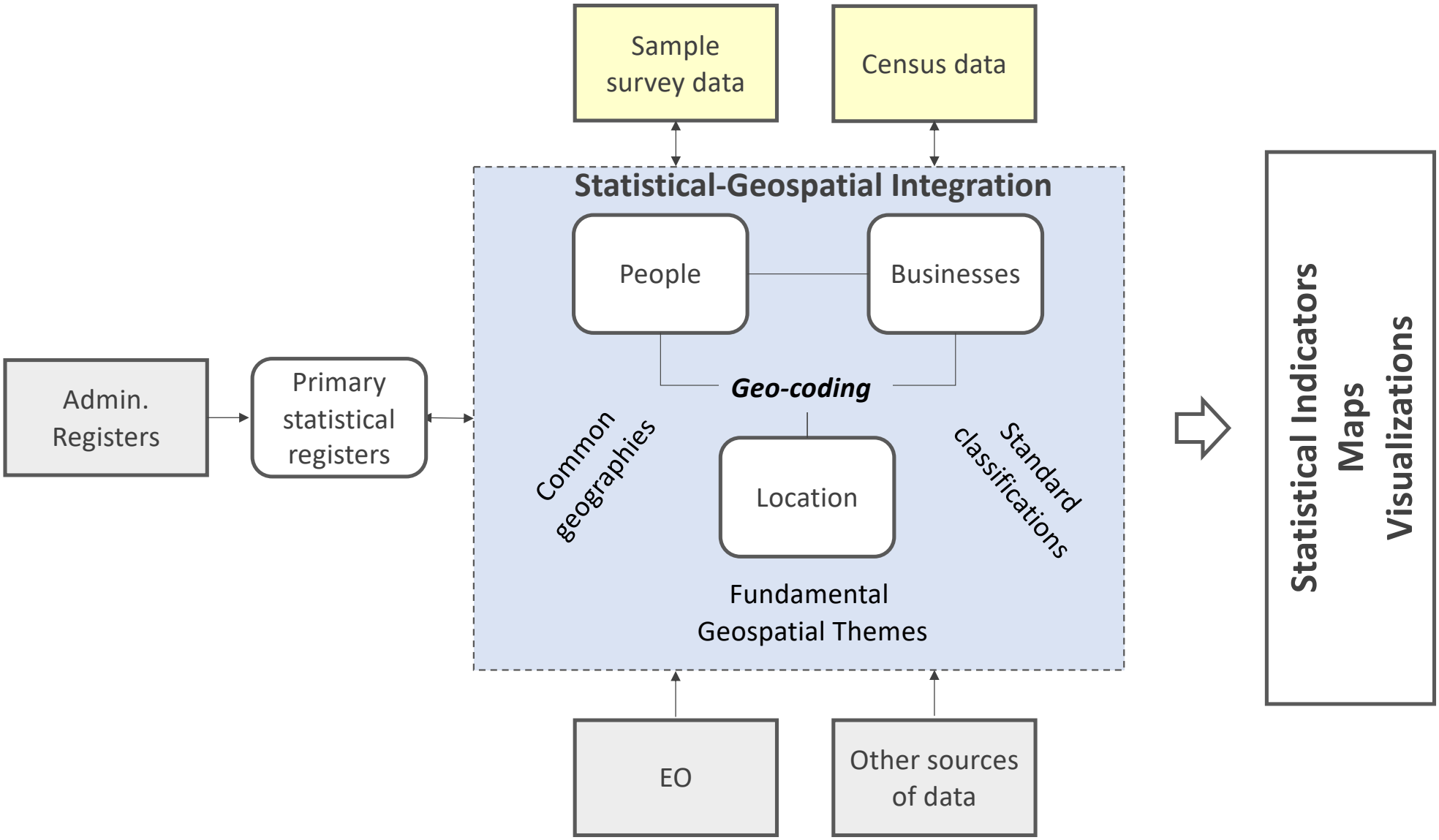
- **Principle 3**: Common geographies for dissemination of statistics
  - Make use of authoritative geographies to disseminate all statistical outputs
  - So users can discover, analyze and integrate different statistical datasets using common administrative or functional geographies

Global statistical geospatial framework

- **Principle 4**: Statistical and geospatial interoperability
  - Overcome structural, syntactic and semantic barriers between statistical and geospatial data and metadata
  - So as to improve the potential for data sharing and re-use between different systems and applications within and across organizational boundaries

Global statistical geospatial framework

- **Principle 5**: Accessible and usable geospatially enabled statistics
  - Support the release, access, analysis and visualization of geospatially enabled information
  - So user can easily derive insights and fully use the data available for local action


Sample survey data
Census data
Statistical-Geospatial Integration
People
Businesses
Geo-coding
Location
Common geographies
Standard classifications
Fundamental Geospatial Themes
Admin. Registers
Primary statistical registers
EO
Other sources of data
Statistical Indicators
Maps
Visualizations

A Federated Information System for the SDGs

- Interoperability and web-based collaboration
  - The interface to each SDG data hub is based on **open standards** and the use of **common vocabularies** for describing and organizing data content
  - Web-GIS technology enables collaboration within and across organizations.
    - Anyone within and outside a data provider's organization can directly access data and applications made publicly available through the organization's open data hub
    - Users with proper credentials can access content shared with specific user groups.

UN Data HUB

Welcome to the Open SDG Data Hub

To fully implement and monitor progress on the Sustainable Development Goals, decision makers everywhere need data and statistics that are accurate, timely, sufficiently disaggregated, relevant, accessible and easy to use. This open data website promotes the exploration, analysis and use of authoritative SDG data sources for evidence-based decision-making and advocacy. Its goal is to enable data providers, managers and users to discover, understand, and communicate patterns and interrelationships in the wealth of SDG data and statistics that are now available.

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