The Global Statistical Geospatial Framework and Use of Geospatial Information in Measuring SDGs Indicators

Regional Workshop on the Integration of Big Data and Geospatial Information for the Compilation of SDG Indicators in Arab Countries

13-15 October 2020

Amor Laaribi, PhD
UN Retiree/Former UN-GGIM Coordinator

Economic and Social Commission for Western Asia

UNITED NATIONS

الاسكوا

ESCWA

Outline

❖ **Context – Global Drivers**

❖ **Importance of Geospatial Information**

❖ **Integration of Statistical and Geospatial Information: Need for a Statistical-Geospatial Framework**

❖ **Geospatial Information in Support of the SDGs Indicator Framework**

❖ **Key Messages**

Context

❖ **2030 Agenda for Sustainable Development**
- 17 Goals, 169 Targets, 232 Indicators
- Sustainable Development Goals (SDGs) Indicator Framework
- It 'calls out geospatial information and earth observations as key methods for tracking progress and informing people about these global development policies'

❖ **2020 Round of Censuses**
- Adoption of GIS should be a major strategic decision
- See: UN Principles and Recommendations – Revision 3, 2017, United Nations Publications, New York. Available at: https://unstats.un.org/unsd/publication/seriesM/Series_M67Rev3en.pdf

Location is…the 'link'.

❖ "Knowing where people and things are, what the things are, and their relationship to each other, are essential for informed decision-making".

❖ 'Link', as a common reference frame.

❖ **Geographic location:** An important **link** to enable a richer picture of our countries and the world.

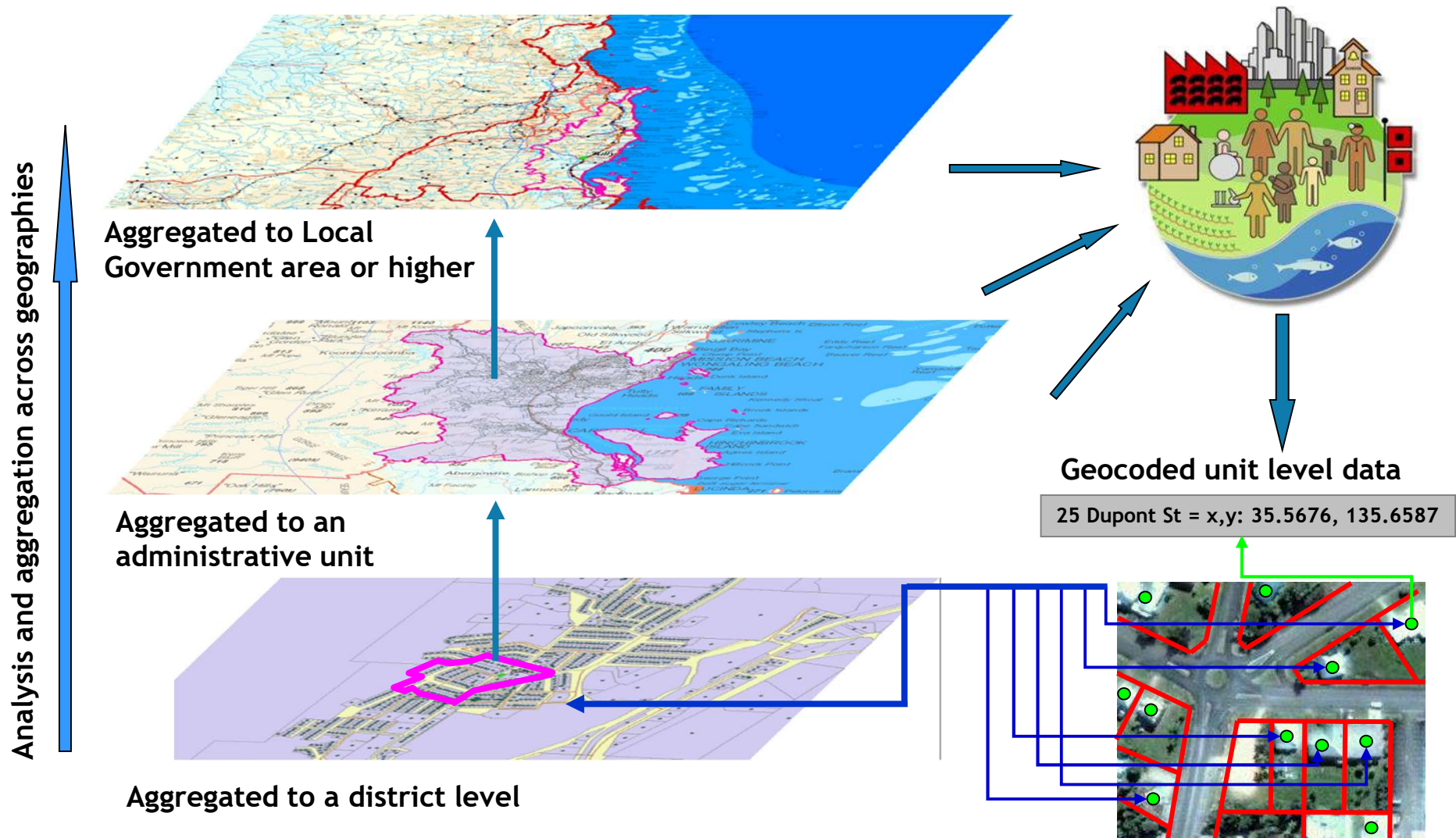❖ Enabling data from diverse sources to be brought together - for analysis and decision making".

Integration of Statistical and Geospatial Information

❖ **Integrating statistical and geospatial information is critical for**:

- Measuring and monitoring the targets and global indicator framework for SDGs of the 2030 Agenda for Sustainable Development;

- Being needed for small geographic areas to monitor the development goals and indicators at local and community scales

- Supporting data sharing between institutions and enhancing the interoperability of geospatial and statistical information;

- Unlocking new insights and data relationships that would not have been possible by analyzing socio-economic, environmental or geospatial data in isolation;

- Building institutional collaboration between geospatial and statistical communities; and

- Examining new sources of data that includes geospatial information, for example mobile phone data.

Need for a Statistical Geospatial Framework

Analysis and aggregation across geographies

Aggregated to Local Government area or higher

Aggregated to an administrative unit

Aggregated to a district level

Geocoded unit level data

25 Dupont St = x,y: 35.5676, 135.6587

A common geographic framework is fundamental to integration
Need for appropriate standards to support the linking of socio-economic information to location
The Global Statistical Geospatial Framework

UN-GGIM EG-ISGI: Global Statistical Geospatial Framework

Principle 1: (about (NSDI), Seamless integration);
Principle 2: (Unique identifiers);
Principle 3: (Output geographies);
Principle 4: (Technical standards, data sharing);
Principle 5: (Analysis, policy impact).
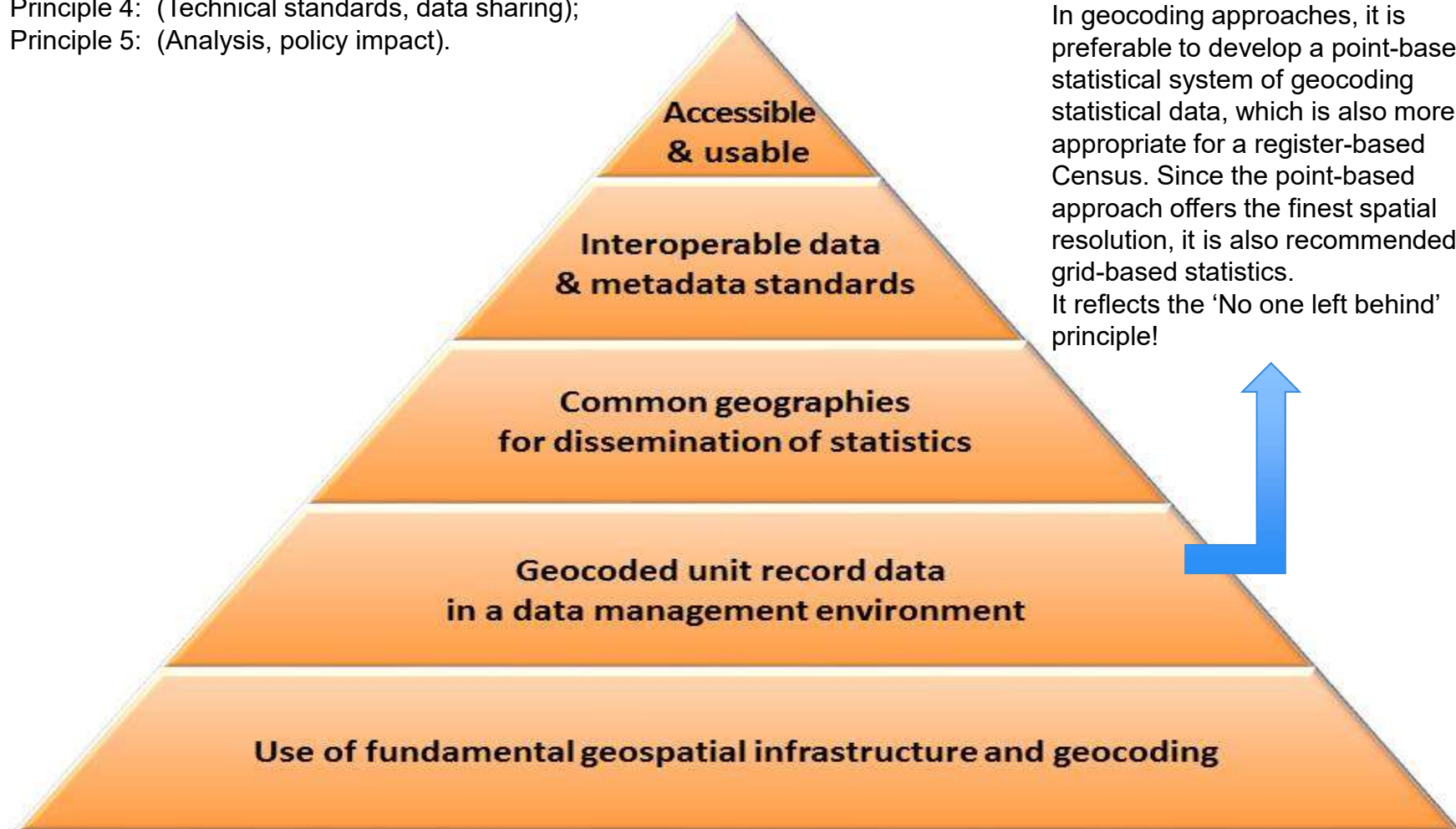
In geocoding approaches, it is preferable to develop a point-based statistical system of geocoding statistical data, which is also more appropriate for a register-based Census. Since the point-based approach offers the finest spatial resolution, it is also recommended for grid-based statistics.
It reflects the 'No one left behind' principle!

Accessible & usable

Interoperable data & metadata standards

Common geographies for dissemination of statistics

Geocoded unit record data in a data management environment

Use of fundamental geospatial infrastructure and geocoding

GSGF: as a standard for the integration of statistical and geospatial information
Regional WGs on the integration: UN-GGIM:Arab States has a WG dedicated to the Integration of S&G Info.

Working Group on Geospatial Information of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGS)

- ❖ IAEG-SDGs recognized that "the integration of statistical data and geospatial information will be key for the production of a number of indicators"
- ❖ Created the Working Group on Geospatial Information in 2016.
  Key aims are to:
    - ▪ "Provide expertise and advice as to how geospatial data, Earth observations and other new data sources can reliably and consistently contribute to the production and dissemination of the indicators.
    - ▪ Provide guidance to the IAEG-SDGs, as to the role of national statistical offices (NSOs) in considering geospatial data and Earth observations, as a mean to contribute to and validate datasets as part of official statistics for SDG indicators."

Global Driver: The 2030 Agenda for Sustainable Development

❖ The blueprint to guide the world until 2030, is reflected by **17** goals, **169** targets, and **232** indicators (The global indicators will be yearly refined - comprehensively reviewed by the UNSC 51st session in 2020 and its 56th session in 2025).

❖ **By 2020**…..'increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, **geographic location** and other characteristics relevant in national contexts' – 17.18 Final Draft, 8 July 2015.

❖ Measuring and monitoring, from local to global, requires 'data'. But how many of these goals capture or include elements of geography, place, and location?

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	SUSTAINABLE DEVELOPMENT GOALS

Earth Observations and Geospatial Information

Support to SDGs

An analysis by GEO and CEOS has identified specific Targets and Indicators that can be supported by Earth observations, summarized in Figure

GEO: The Intergovernmental Group on Earth is leading a worldwide effort to build a Global Earth Observation System of Systems (GEOSS)

SDGs Indicator Framework : Contribution of Geospatial Information

Geospatial data can contribute to monitoring of the 2030 Agenda in four ways:

❖ As data in itself – geospatial data is used directly for the indicator construction (geospatial data = indicator)
- ✓ **Indicator 15.1.1:** Forest area as a percentage of total land area

❖ Support statistical data – geospatial data is used in combination with other data to estimate an indicator (geospatial and other data -> indicator)
- ✓ **Indicator 11.2.1:** Proportion of the population that has convenient access to public transport, by age, sex and persons with disabilities

❖ Enrich statistical data – geospatial data is used to enrich the indicators, although the indicator does not require a geospatial breakdown (analysis, enrichment of the indicators)
- ✓ **Indicator 6.3.2:** Percentage of water bodies with good ambient water quality

❖ Geospatial data can help in communication and gives possibilities for geographical disaggregation of data:
- • 232 Indicators disaggregated by geographic location, urban/rural, region, etc.
- • Administrative data often come with geospatial information (e.g. address, administrative unit, etc.).

Examples

❖ Tomorrow, I will have the opportunity to present some illustrative examples on how to use geospatial data to measure SDGs Indicators.

Some Key Messages

❖ Socio-economic/Statistical data are important (censuses, surveys, administrative data…). Still new data acquisition and integration approaches are needed to implement better policies for sustainable development, and to ultimately 'leave no one behind'

❖ Geospatial information and earth observations as key methods for tracking progress and informing people about these global development policies

❖ ICT, including Geospatial Information Technology, is a cross-cutting technology to help achieve SDGs - It is not a short-cut or panacea to Development, but an **Enabler/Accelerator** to Development.

Thank you   شكرا جزيلا

Email: amorlaaribi7@gmail.com

UNITED NATIONS

الاسكوا

ESCWA