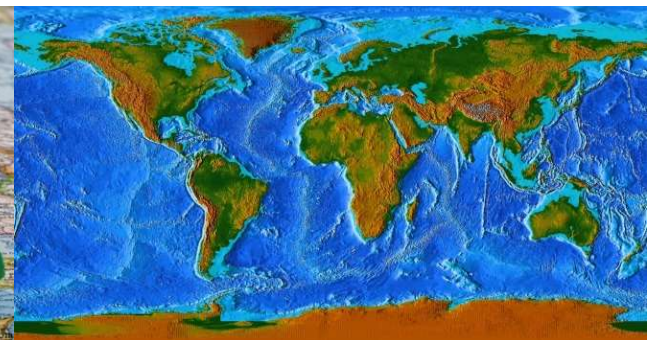


Transforming our world -
The 2030 Agenda for
Sustainable Development



Addressing the Data Demands of the 2030 Agenda: Some perspectives!

Greg Scott, UN-GGIM Secretariat

United Nations Statistics Division
Department of Economic and Social Affairs
United Nations, New York

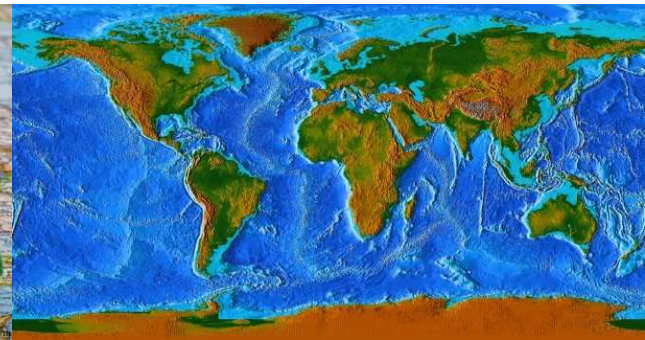


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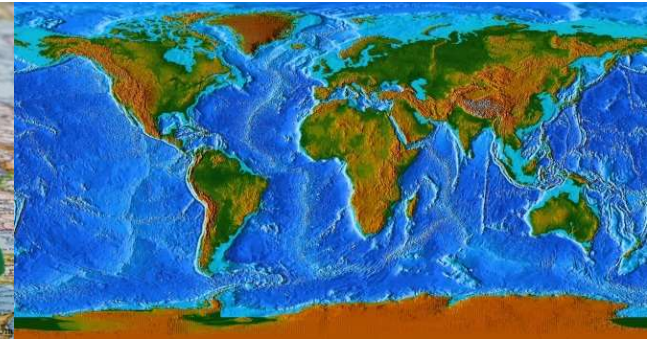
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Why are we doing this?
What are the means and methods?
Where is the data that is needed?
How are we going to deliver?
When?





Why are we doing this?

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Transforming our World: The 2030 Agenda for Sustainable Development



Follow up and review:

76. We will support developing countries, particularly African countries, LDCs, SIDS and LLDCs, 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 observations and geospatial information*, while ensuring national ownership in supporting and tracking progress.



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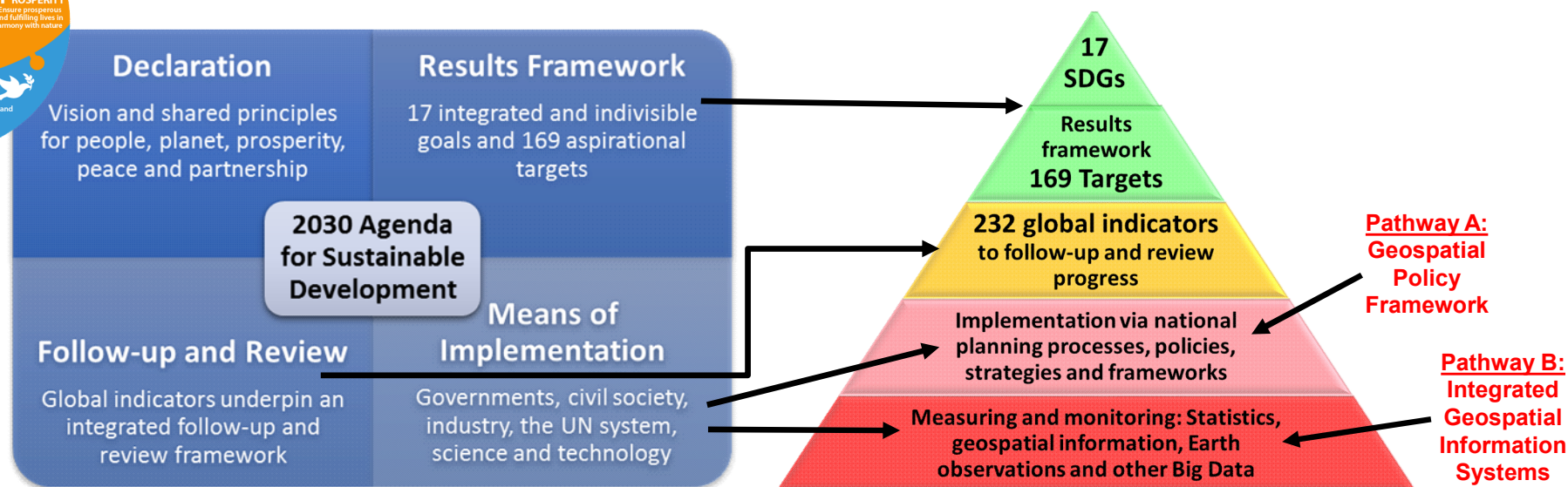
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2030 Agenda: Integrated Plan of Action



The 2030 Agenda is an integrated plan of action structured in four main parts: (i) a vision and principles for transforming our world as set out in the Declaration; (ii) a results framework of 17 SDGs and 169 targets; (iii) a means of implementation through governments, society and global partnership; and (iv) a follow-up and review framework of global indicators. **Any national SDG implementations will be sub-optimal without strategies and frameworks to integrate geospatial information into the measuring, monitoring and reporting processes.**



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The Sustainable Development Goals Report 2017

“Implementation has begun, but the clock is ticking. This report shows that the rate of progress in many areas is far slower than needed to meet the targets by 2030”

“This report provides a snapshot of our efforts to date. It stresses that high-level political leadership and new partnerships will be essential for sustaining momentum. It also underscores the need for reliable, timely, accessible and disaggregated data to measure progress, inform decision-making and ensure that everyone is counted”

António Guterres
Secretary-General, United Nations

The Sustainable Development Goals Report 2017



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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.

To fully implement and monitor progress on the SDGs, decision makers need data and statistics that are accurate, timely, sufficiently disaggregated, relevant, accessible and easy to use. Data availability and quality have steadily improved over the years. However, statistical capacity still needs strengthening and data literacy must be enhanced at all levels of decision-making. This will require coordinated efforts on the part of data producers and users from multiple data systems. It will also demand innovative ways to produce and apply data and statistics in addressing the multifaceted challenges of sustainable development.



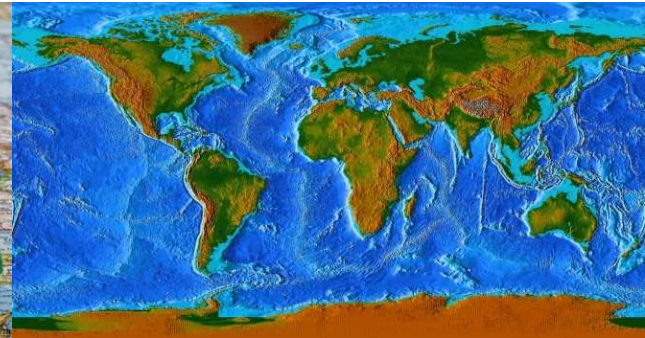
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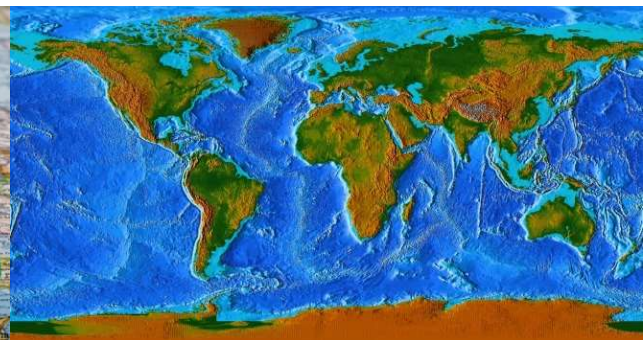


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Sustainable Development Goal indicators should be disaggregated, where relevant, by income, sex, age, race, ethnicity, migratory status, disability and geographic location, or other characteristics, in accordance with the Fundamental Principles of Official Statistics.

The 2030 Agenda must be “country owned and country led.....in order to leave no one behind”

1. Determine means, methods and approaches to geospatially enable and map the global indicator framework.
2. Consider relevant geospatial data sources, availability, consistency, readiness and comparability.
3. Consider the ‘coordinated’ data flow processes for SDG reporting. There are global reporting requirements, but national voluntary reporting, and subsequent national implementations, are growing quickly.



Addressing the data needs for the 2030 Agenda

- The scope of the 2030 Agenda requires high-quality and disaggregated data that are timely, open, accessible, understandable and easy to use for a large range of users, including for decision making at all levels.
- There is a need for a reporting system on the SDGs that would have benefit from the sub-national (local) to the national level; and allow for global reporting that builds directly on the data shared by countries.
- Important to create an opportunity for countries to directly contribute to the global reporting. While the challenges are immense, the digital technology that is available today allows the necessary transformation.
- An aspiration is to strengthen countries' national geospatial and statistical information systems to facilitate and enable a '***data ecosystem***' that leverages an accessible, integrative and interoperable local to global system-of-systems.



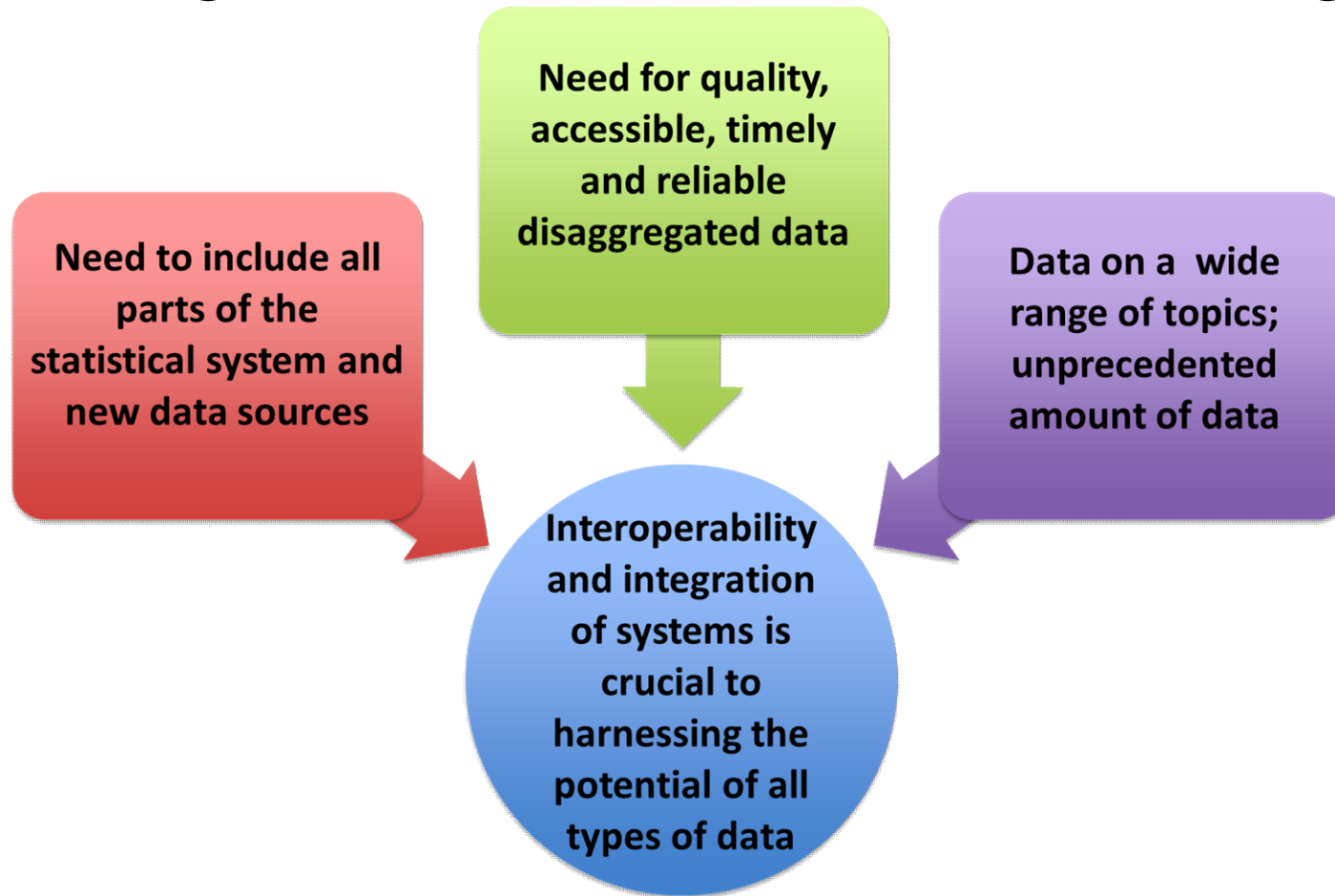
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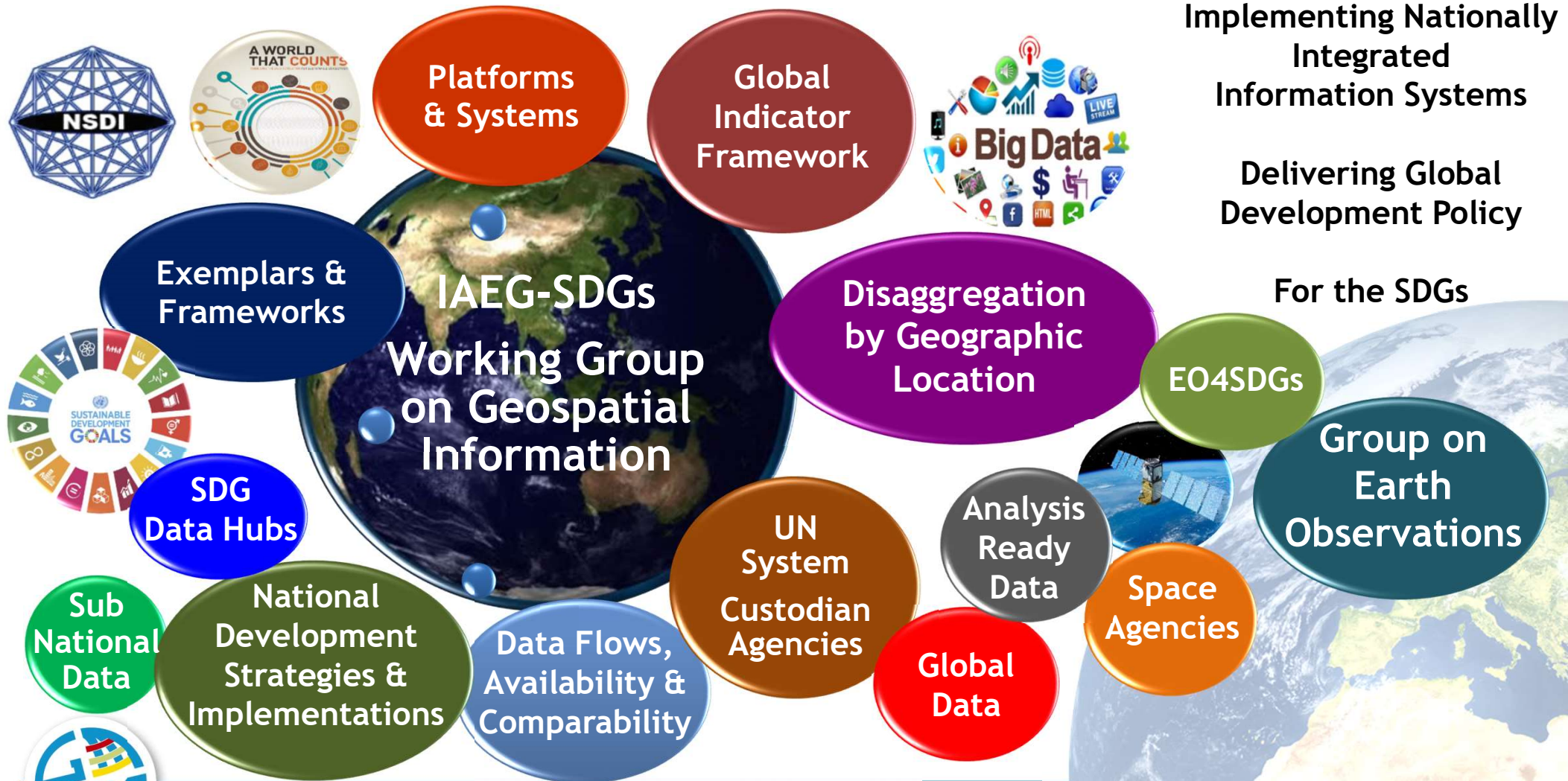
Addressing the data needs for the 2030 Agenda



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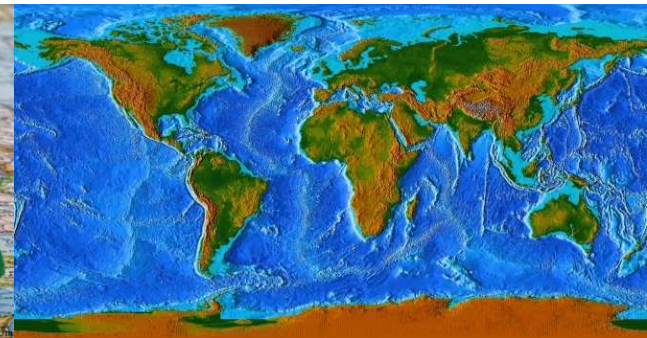


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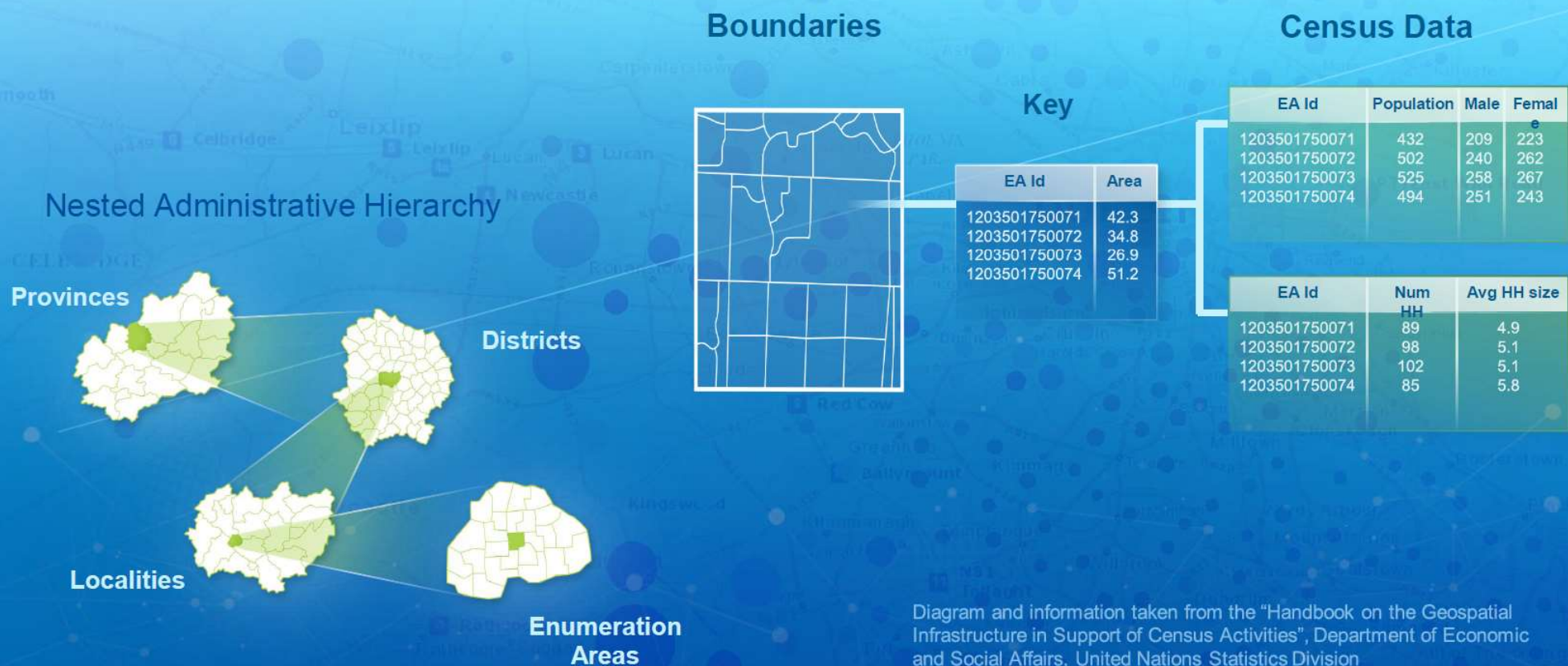
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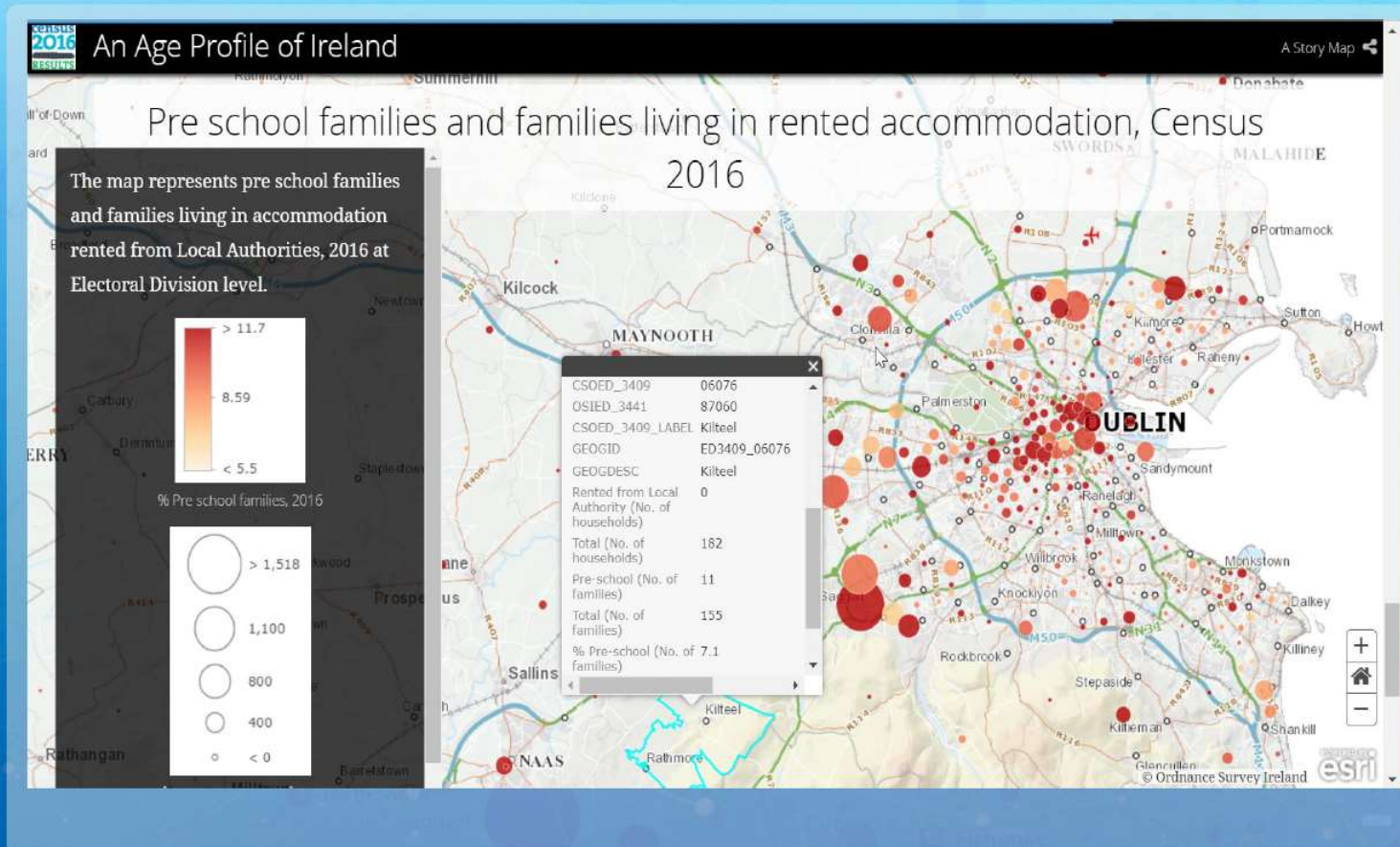
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Geography and Statistical Data Are Foundational

An Integrated Data Model is Essential



Enabling Understanding



Integration of Statistical and Geospatial Data

Geospatial
Framework
(GSGF)



Statistical Process Model (GSBPM)

Planning/
Pre Enumeration

Enumeration

Post Enumeration/
Dissemination

Usable

Interoperable

Common Geographies

Geocoded Units

Fundamental Geospatial Infrastructure

Specify
Needs
Design
Build

Collect
Process
Analyze

Disseminate
Evaluate

Quality / Metadata Management

Imagery is an Essential Data Source

Integrating Earth Observations and Providing Periodic Reporting

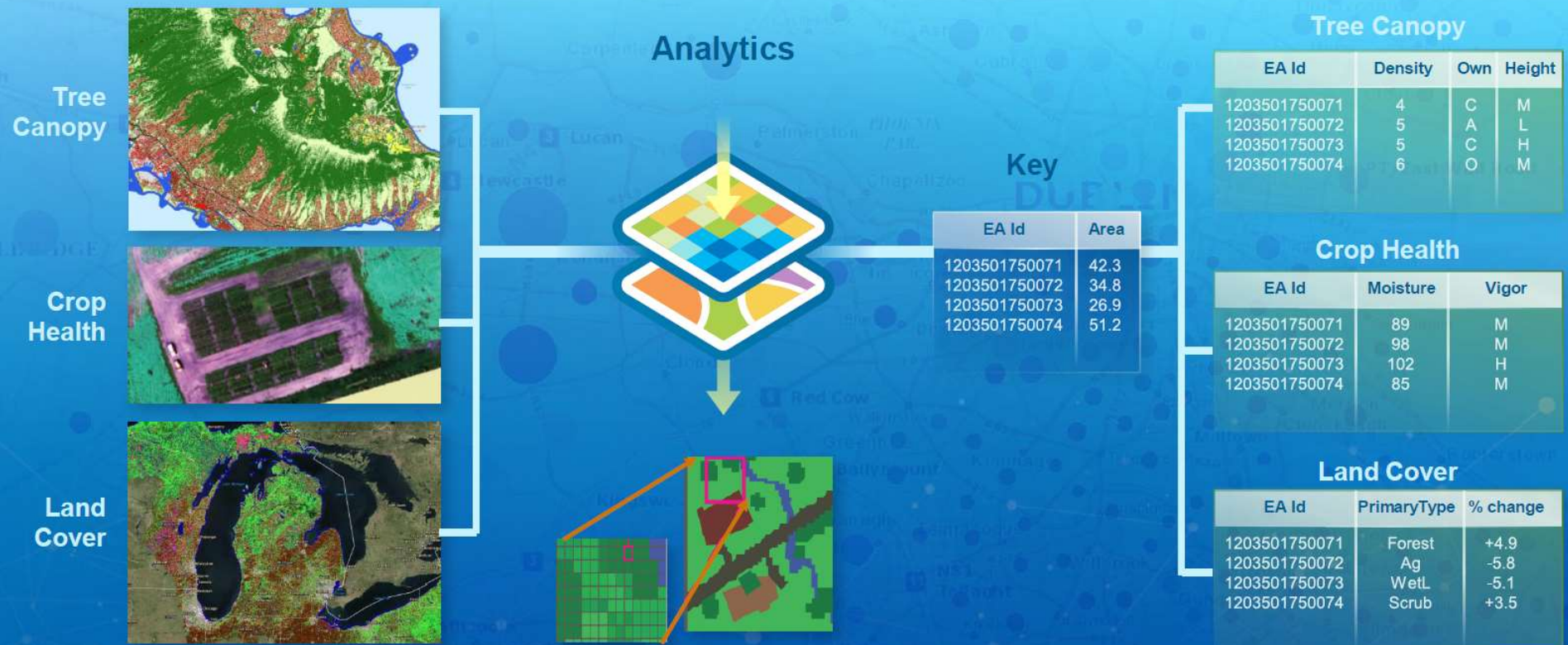
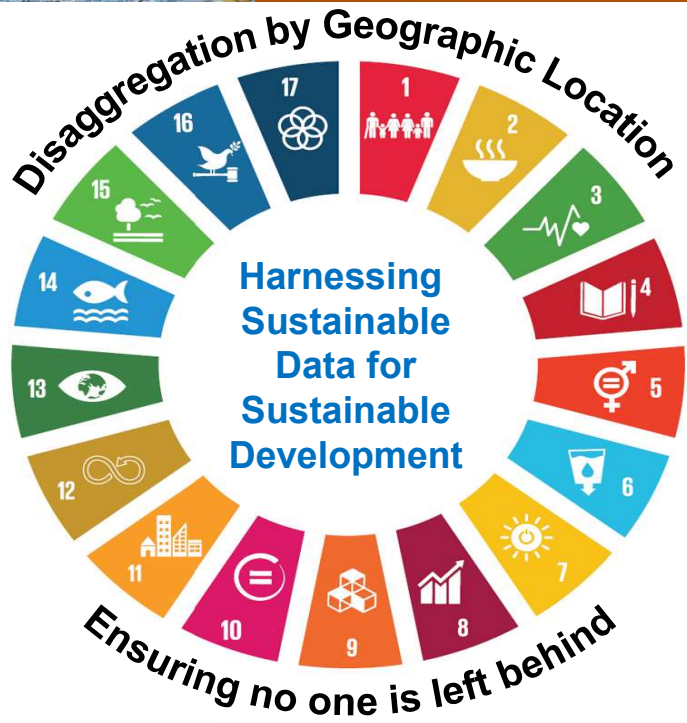


Image Integration and Machine Learning are Becoming a Fundamental Part of a Modern GIS

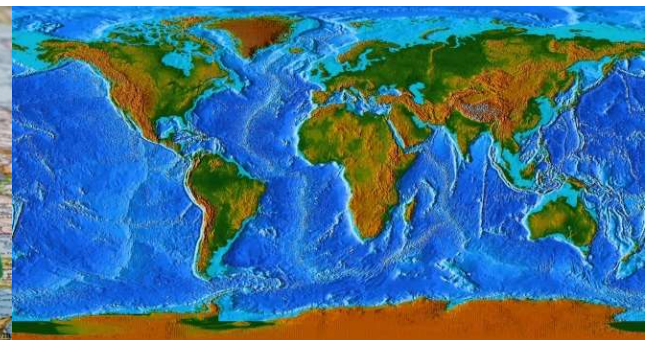
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1. Development of the global indicator framework has largely been a ‘statistical’ data approach.
2. Counting ‘people’ as national aggregations is no longer acceptable. The complexity of the SDGs requires us to measure and monitor ‘where’ and ‘place’ - the geographic location of people at a sub-national and disaggregated level.
3. The critical need for ‘disaggregation by geographic location’ is now well recognized, but how to address it is not yet widely understood.
4. Effective use of geospatial technologies, combined with statistical and other demographic data, enables countries to analyze and model where conditions are changing, evaluate impacts across sectors and regions, monitor change over time in a consistent and standardized manner, and vastly improves decisions, policy and accountability for the SDGs.



To Leave No One Behind, Data Disaggregation Needs to Catch Up

For SDG indicators, disaggregation matters

In the [2030 Agenda for Sustainable Development](#), the UN recognized that measuring progress across all populations requires reliable disaggregated data. The Inter-Agency and Expert Group on Sustainable Development Goal Indicators [requires disaggregation](#) of SDG indicators, where relevant, by income, sex, age, race, ethnicity, migratory status, disability, geographic location, and other characteristics. (Phew!) All of this will undoubtedly require increased investments in data collection worldwide; current estimates stand at [\\$1 billion per year](#).

With such an enormous price tag on data collection, why does disaggregation matter? If “leave no one behind” is to be more than a catchy slogan, those of us tracking SDG progress need to pay special attention to the most vulnerable—women, youth, the elderly, and rural and migrant populations, among other disadvantaged groups. And paying attention to the most vulnerable requires data that zooms in on these groups in finer detail. National-level statistics only show aggregate improvements in poverty reduction, school enrollment, and access to clean water, for example. These aggregate statistics may mask much slower progress (or even decline) for populations that are harder to reach.

<https://www.cgdev.org/blog/leave-no-one-behind-data-disaggregation-needs-catch>



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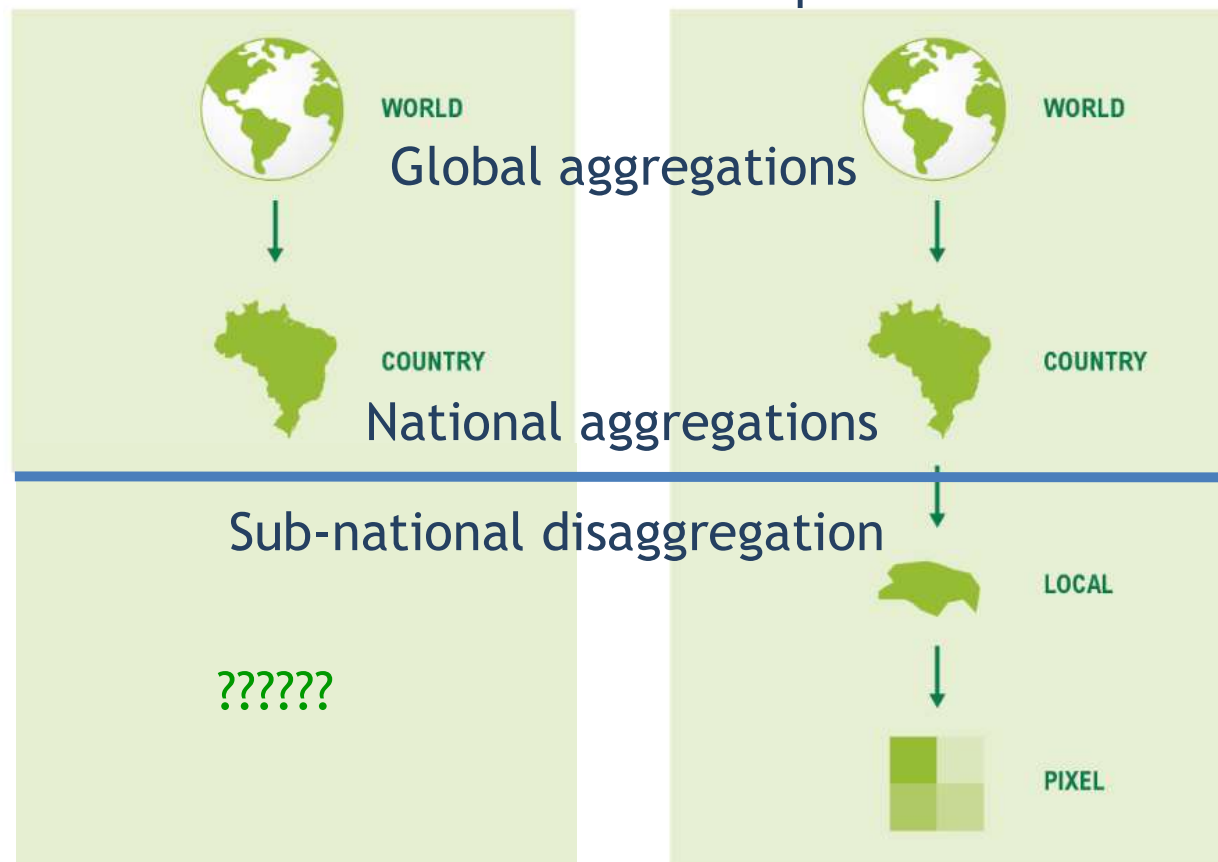
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Disaggregation by geographic location?

Statistics

Geospatial information

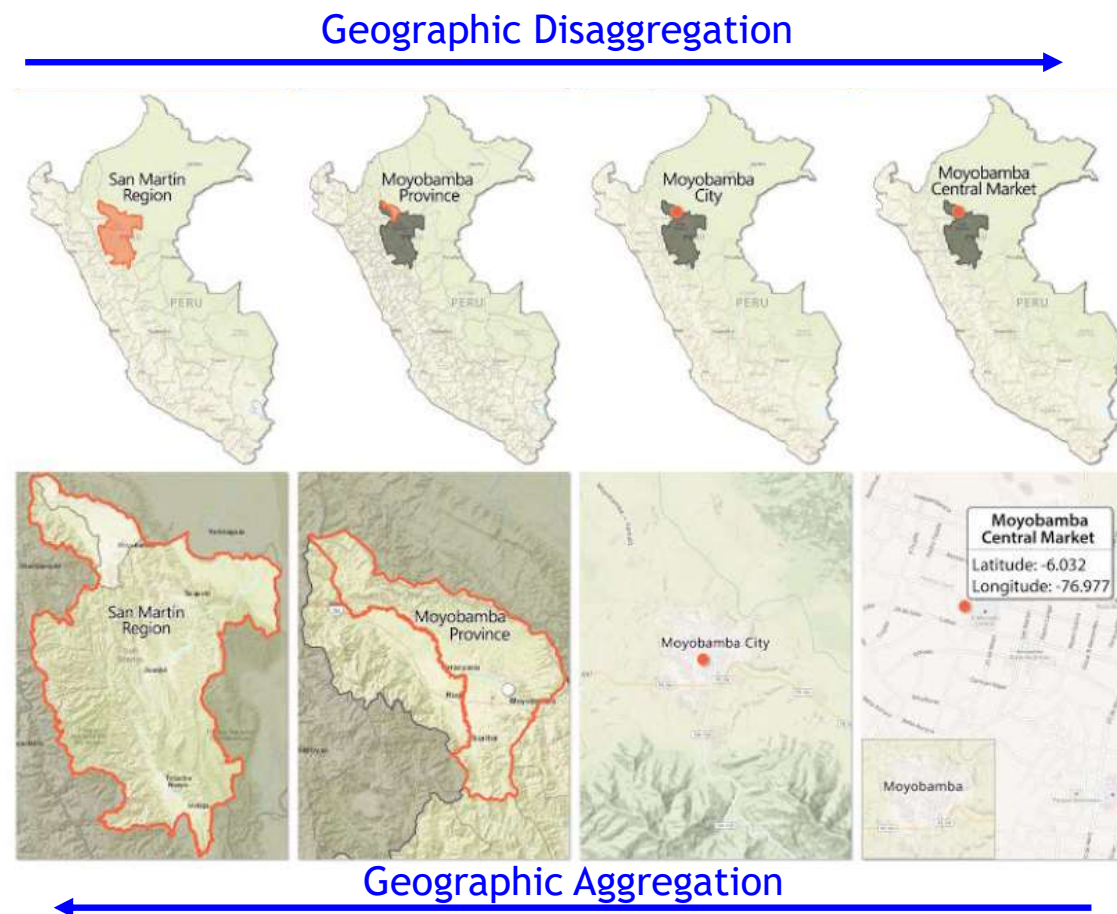


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Map View: The maps below display a range of geographic scales at which indicator data can be collected, from the lowest level of geographic detail on the left ([administrative unit 1](#)) to the highest level of geographic detail on the right (exact location using latitude/longitude coordinates).



Source: USAID



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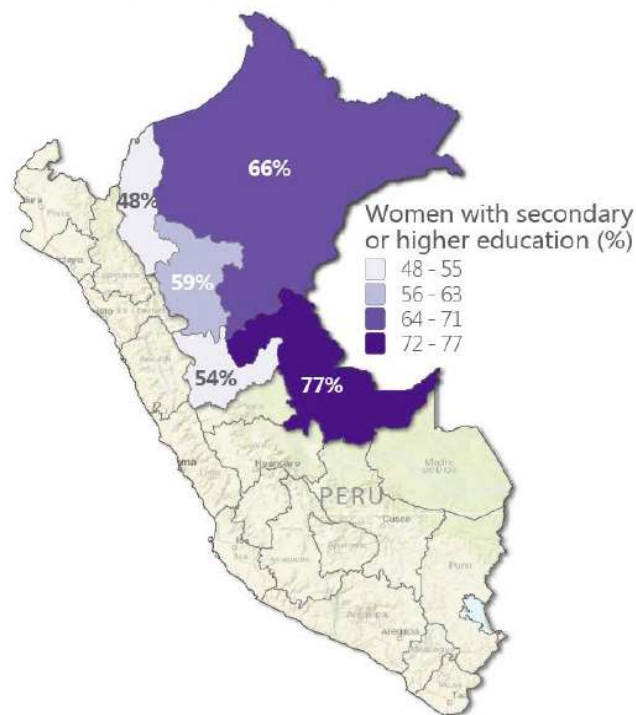
Example: Peru – Comparing Performance and Context Indicators

With geographically disaggregated indicators, one can explore questions, such as: “Does the nutrition activity appear to perform better (performance indicator) in areas where female education rates (context indicator) are higher? Why might this be?” This type of analysis can support learning and adaptation of programs.

Performance Indicator



Context Indicator



The nutrition activity is underperforming in areas where women are less educated

Source: USAID

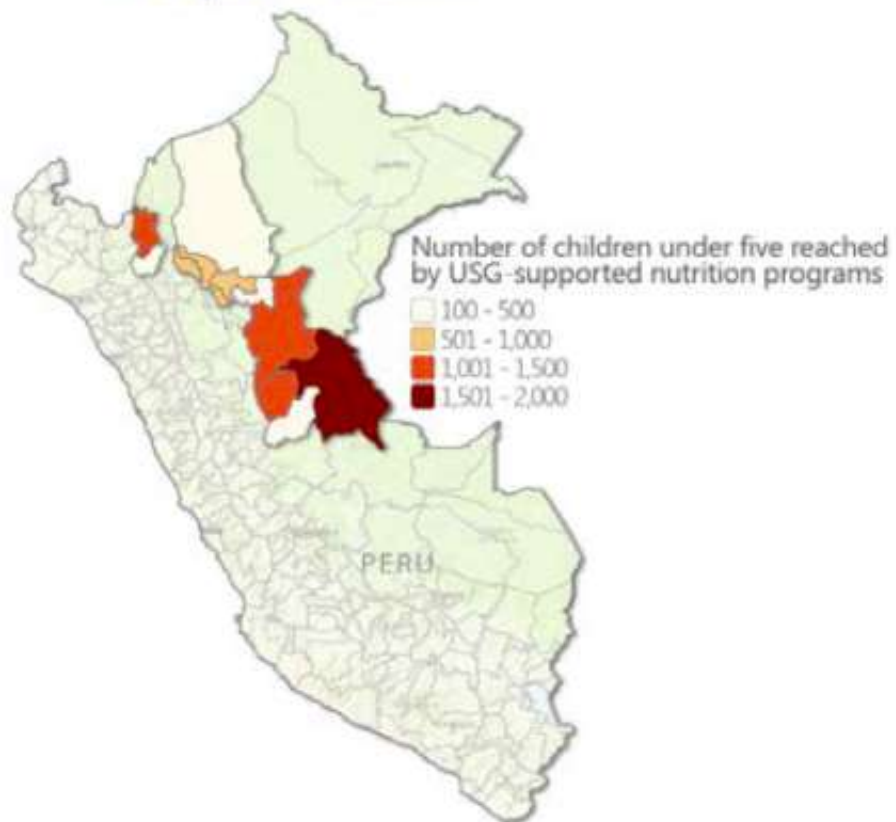


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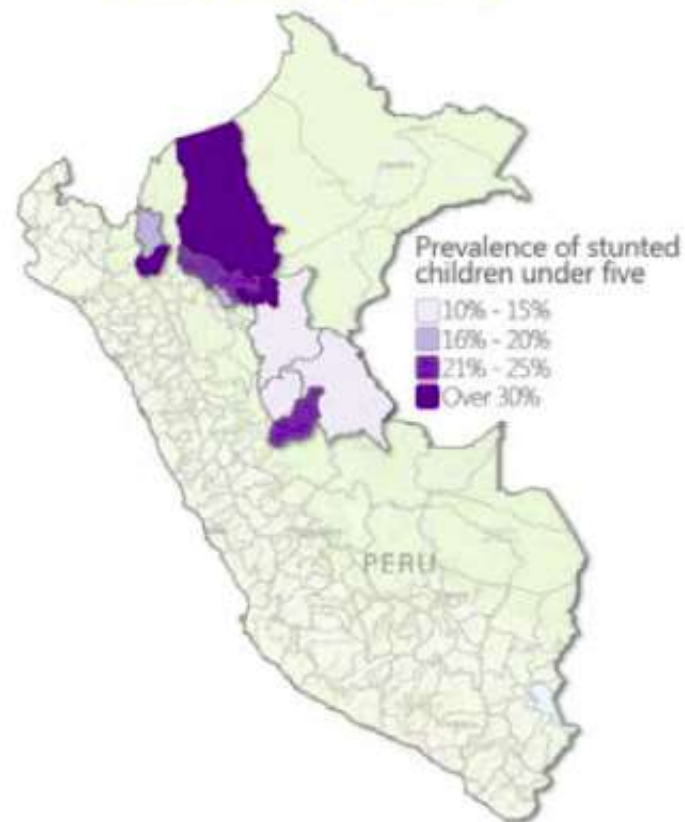
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Output Indicator



Outcome Indicator



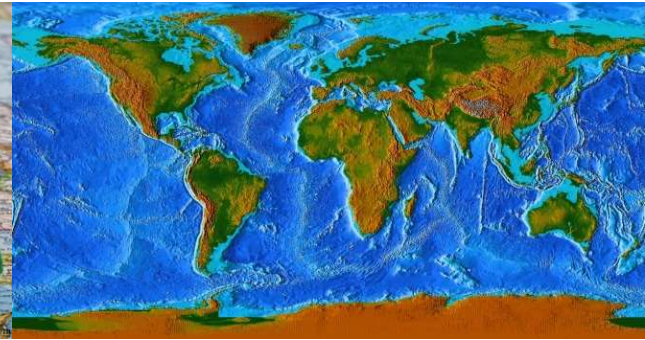
Source: USAID



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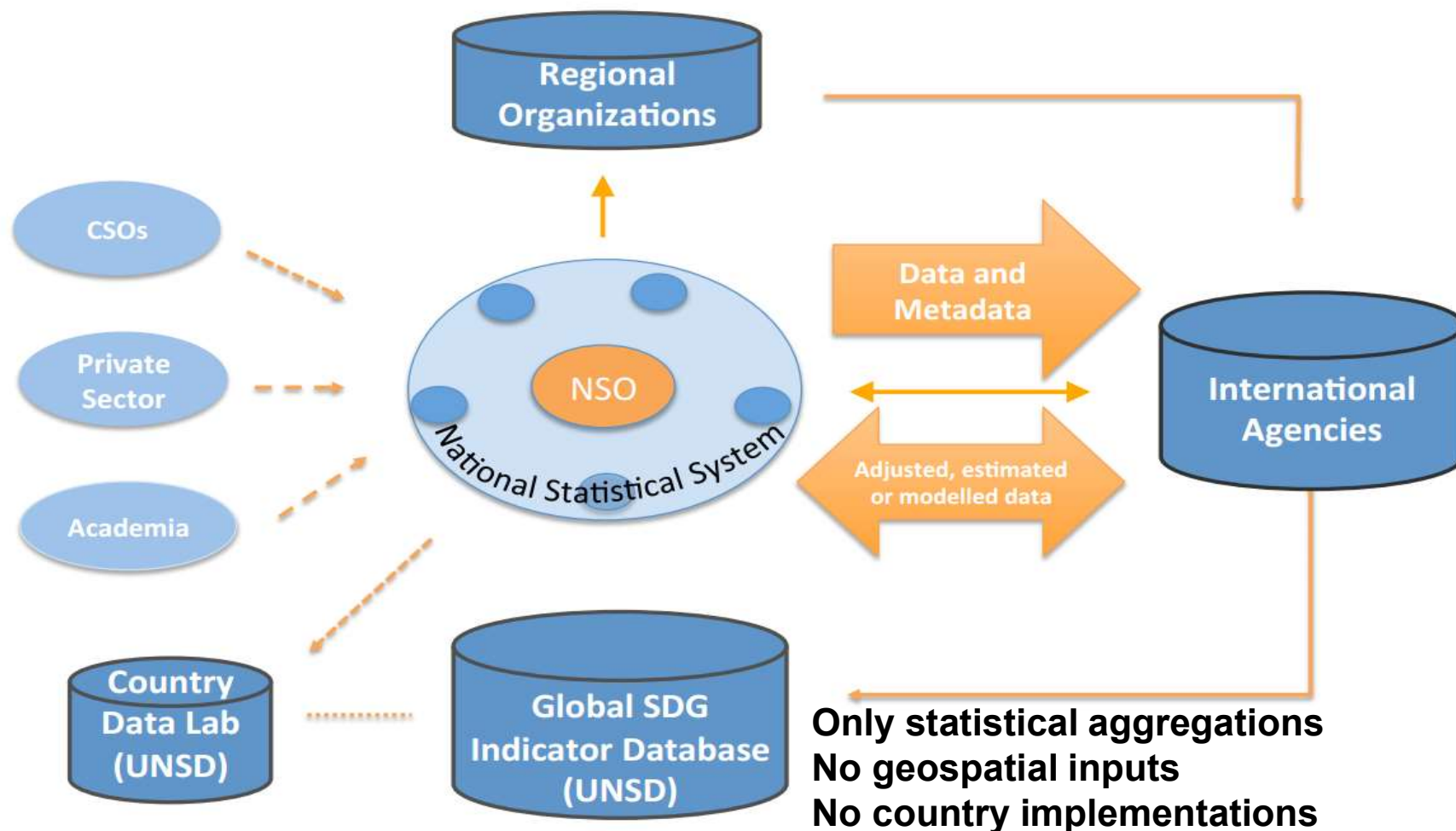
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Present and agreed data flows in global SDG reporting



Issues with the present Data Flows in global SDG reporting

1. The present data flows and its coordinated integration from multiple sources does not function well for countries. It is focused on global reporting by custodian agencies, but causing concern for the developing countries.
2. How are countries supposed to do this? They need guidance, direction, processes, and they need data. We need to bring the data to the table, but the guidance and process is as important to leverage existing data.
3. Presently the global SDG reporting is completely disconnected to national country reporting needs and priorities. What is the key to implementation? Goals, targets and indicators that are country owned and country led.
4. We need a better and more informed means to report annually on development progress. Countries will not cover all indicators. They will prioritize their indicators based on national development strategies and needs. This provides considerably more benefits to countries, and the UN system. Outcomes are more tangible.
5. Global reporting is one need, and this can eventually be achieved through the current process and the custodian agencies, but the national implementations are what really matter for countries and their people.
6. Critically, global data from the custodian agencies may (and actually does) differ from national data. For example, it may be used to: adjust national country data; estimate missing data; or produce regional and global aggregates. But, to do so, we need to ensure data interoperability and comparability between national and global datasets.
7. So we need a much better national data flow process for SDG reporting and answering the specific indicators for countries, and then subsequent national implementations.



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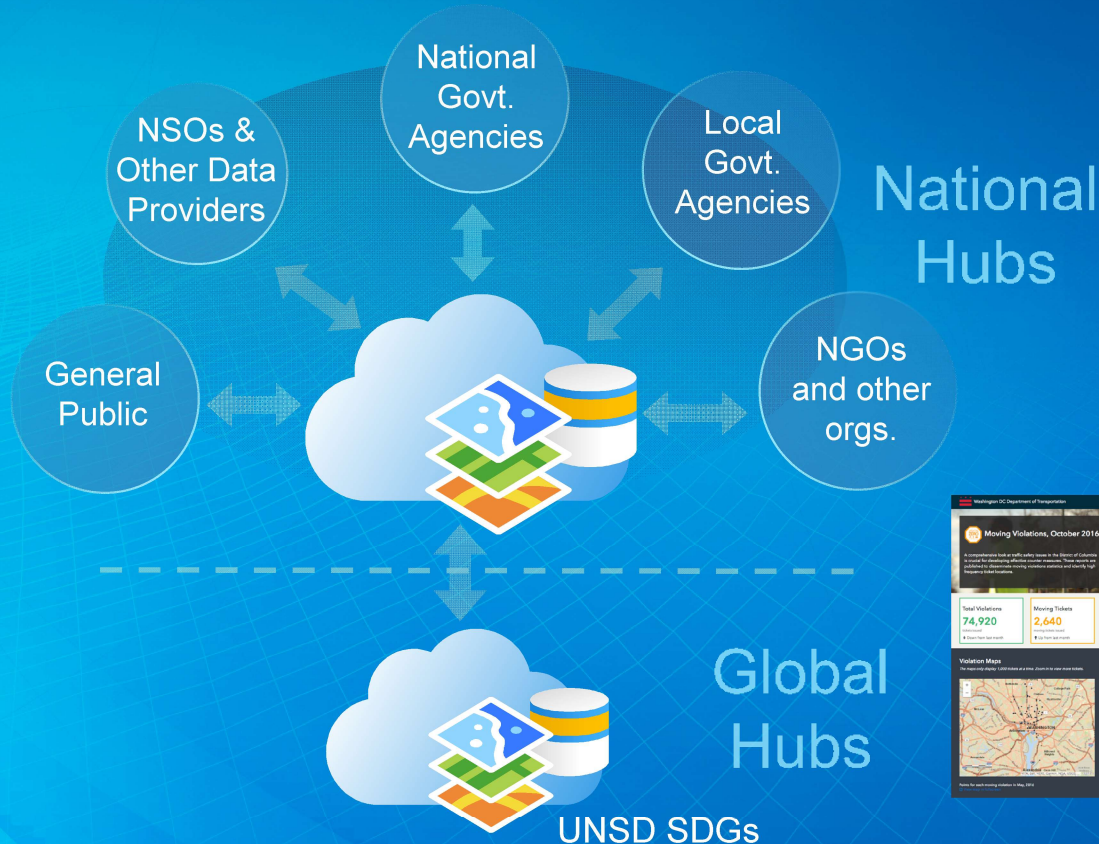
Implementing SDG Data Hubs

Federated Information System for the SDGs

Data Hubs

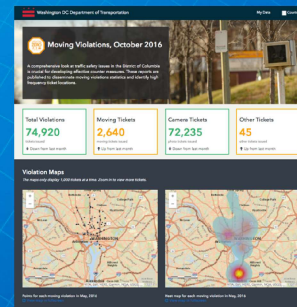
A New Cloud-Based Information System for Community Engagement

Connecting Organizations, Governments & Citizens



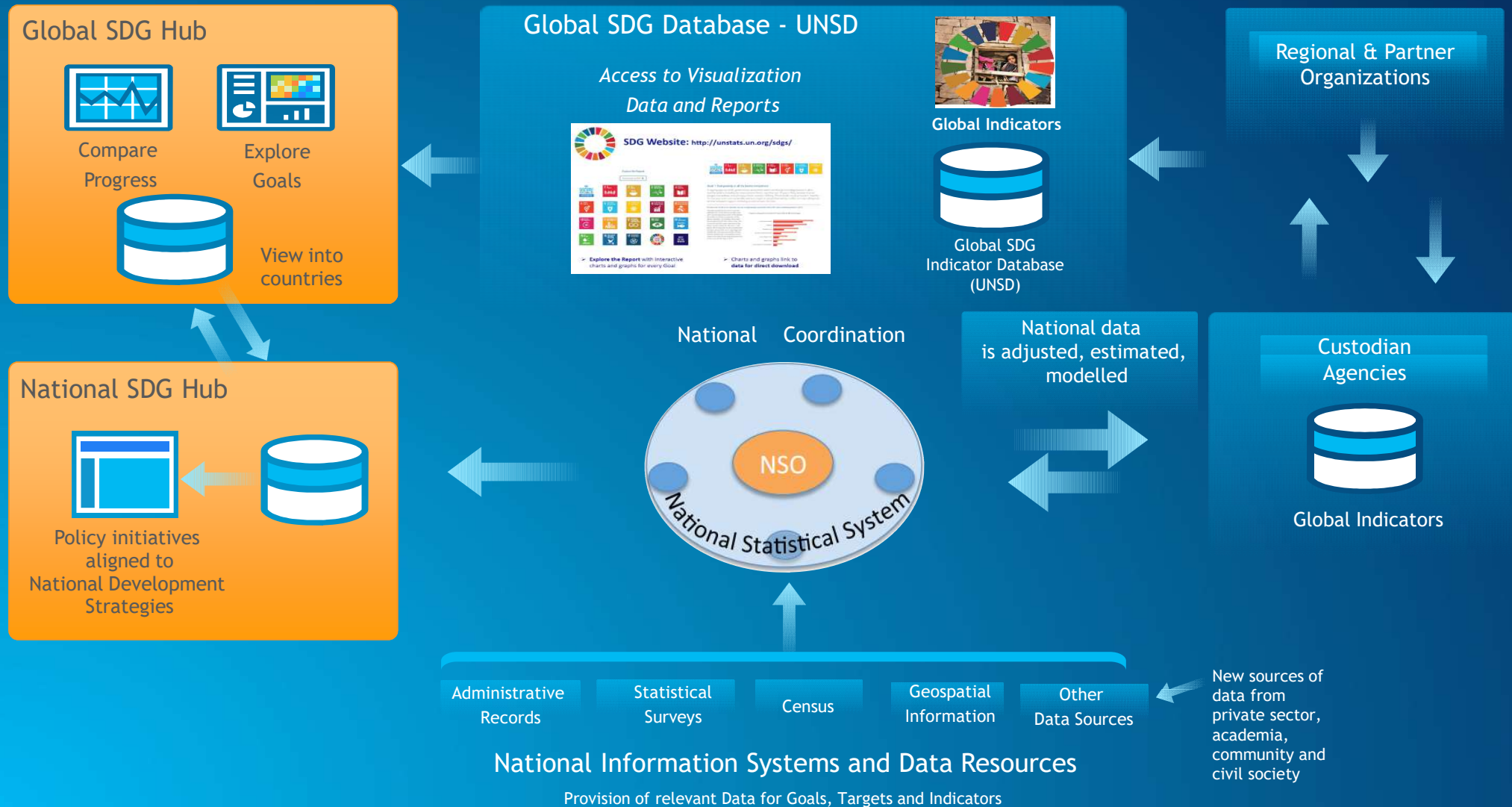
Providing / Supporting

- Open Data and Standards
- Scalability
- Governance (Access Control)
- Semantic Interoperability (Rich Metadata)
- Status Reporting and Dashboards
- Data-Driven Analysis (Policy Initiatives)
- Collection of Citizen-Generated Data (Crowdsourcing)



... New Cloud Offering Including Citizen User Roles

Federated Information System for the SDGs



SDG Report 2017



Overview Goal 1 Goal 2 Goal 3 Goal 4 Goal 5 Goal 6 Goal 7 Goal 8 Goal 9 Goal 10 Goal 11 Goal 12 Goal 13 Goal 14 Goal 15 Goal 16 Goal 17

SDG Report 2017

Goal 1: End poverty in all its forms everywhere



In signing Agenda 2030, governments around the world committed to ending poverty in all its manifestations, including its most extreme forms, over the next 15 years. They resolved that all people, everywhere, should enjoy a basic standard of living. This includes social protection benefits for the poor and most vulnerable and ensuring that people harmed by conflict and natural hazards receive adequate support, including access to basic services.

Photo Credit : © The World Bank/Dominic Chavez

Nearly a billion people have escaped extreme poverty since 1999; three quarters of a billion remain in its grasp

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SDG Report 2017

- Overview
- Goal 1
- Goal 2
- Goal 3
- Goal 4
- Goal 5
- Goal 6
- Goal 7
- Goal 8
- Goal 9
- Goal 10
- Goal 11
- Goal 12
- Goal 13
- Goal 14
- Goal 15
- Goal 16
- Goal 17

SDG Report 2017

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Photo Credit: © The World Bank/Dominic Chavez

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Interactive Map: Proportion of population below the international poverty line of US\$1.90 per day - 2013

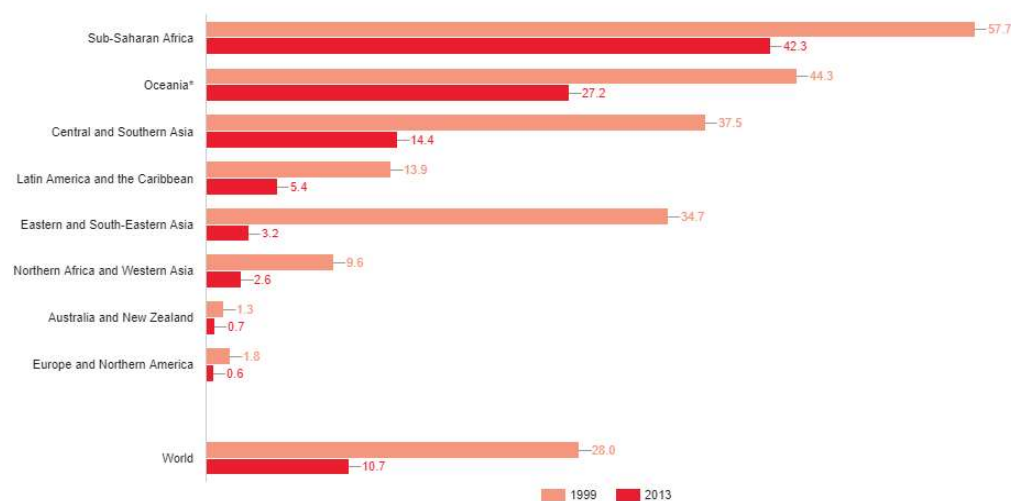
Interactive Map: Proportion of population below the international poverty line of US\$1.90 per day - 1999

Working poverty has decreased, but it is still pervasive in many regions and disproportionately affects the young

Many of the world's workers live in extreme poverty due to a lack of decent work opportunities. Almost 10 per cent of the employed population globally lived with their families on less than 1.90 US dollars per person per day in 2016.

While the percentage of the "working poor" has been cut by more than half since 2000—when it stood at 28 per cent—it remains pervasive in a few regions. In sub-Saharan Africa, 34 per cent of workers and their families continued to live in extreme poverty in 2016. Working poverty affects youth at a much higher rate than adults: in 2016, 15 per cent of young workers worldwide lived under the international poverty line, compared to

Proportion of the population living below 1.90 US dollars a day, 1999 and 2013 (percentage)



Note: Oceania* refers to Oceania excluding Australia and New Zealand.

Show Data Download to CSV

Goal 1: End poverty in all its forms everywhere

Ending poverty in all its manifestations, including its most extreme forms, over the next 15 years. They resolved that all people, everywhere, should enjoy a basic standard of living. This includes social protection benefits for the poor and most vulnerable and ensuring that people harmed by conflict and natural hazards receive adequate support, including access to basic services.

Photo Credit: © The World Bank/Dominic Chavez

Nearly a billion people have escaped extreme poverty since 1999; three quarters of a billion remain in its grasp

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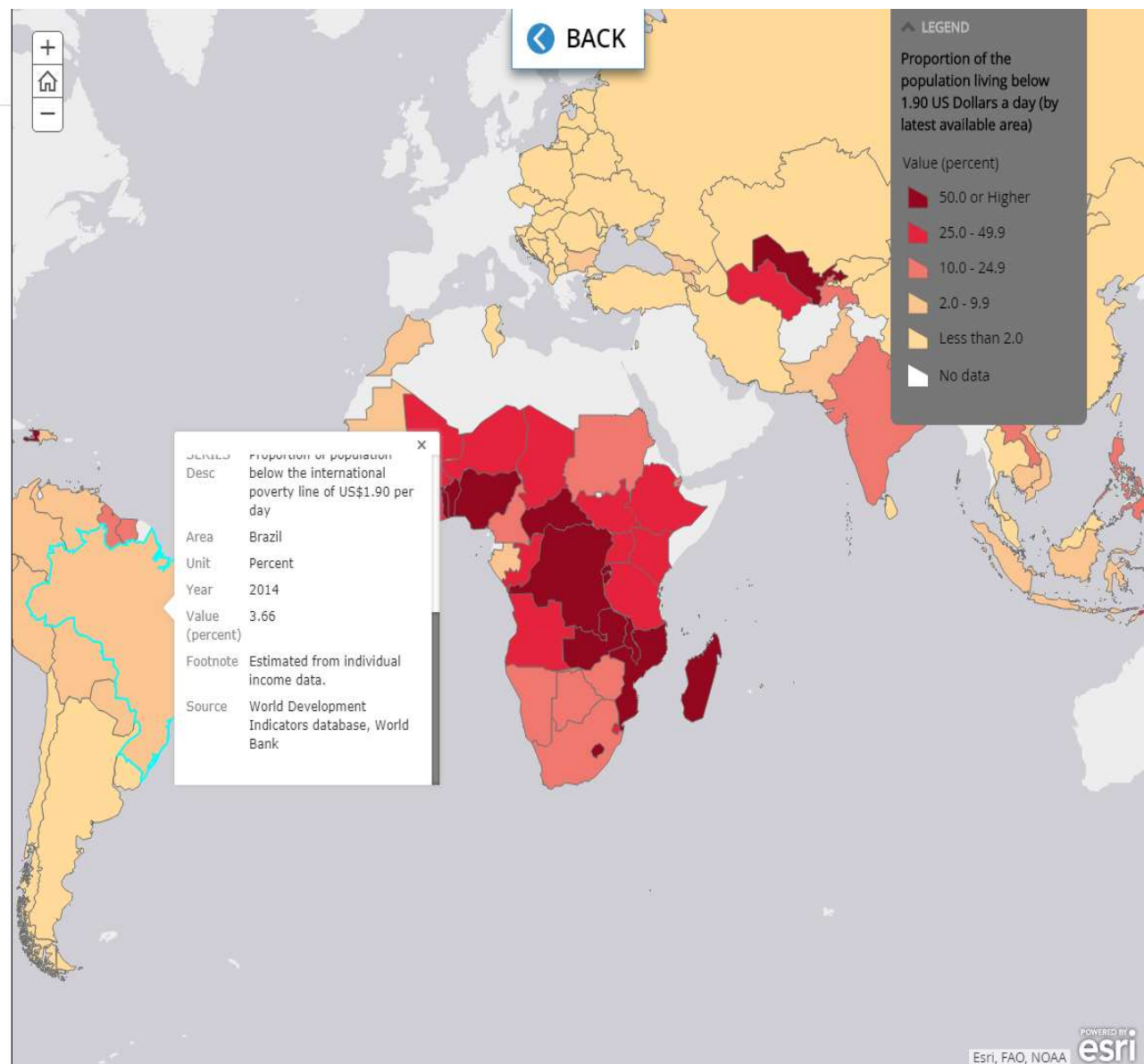
Interactive Map: Proportion of population below the international poverty line of US\$1.90 per day - 2013

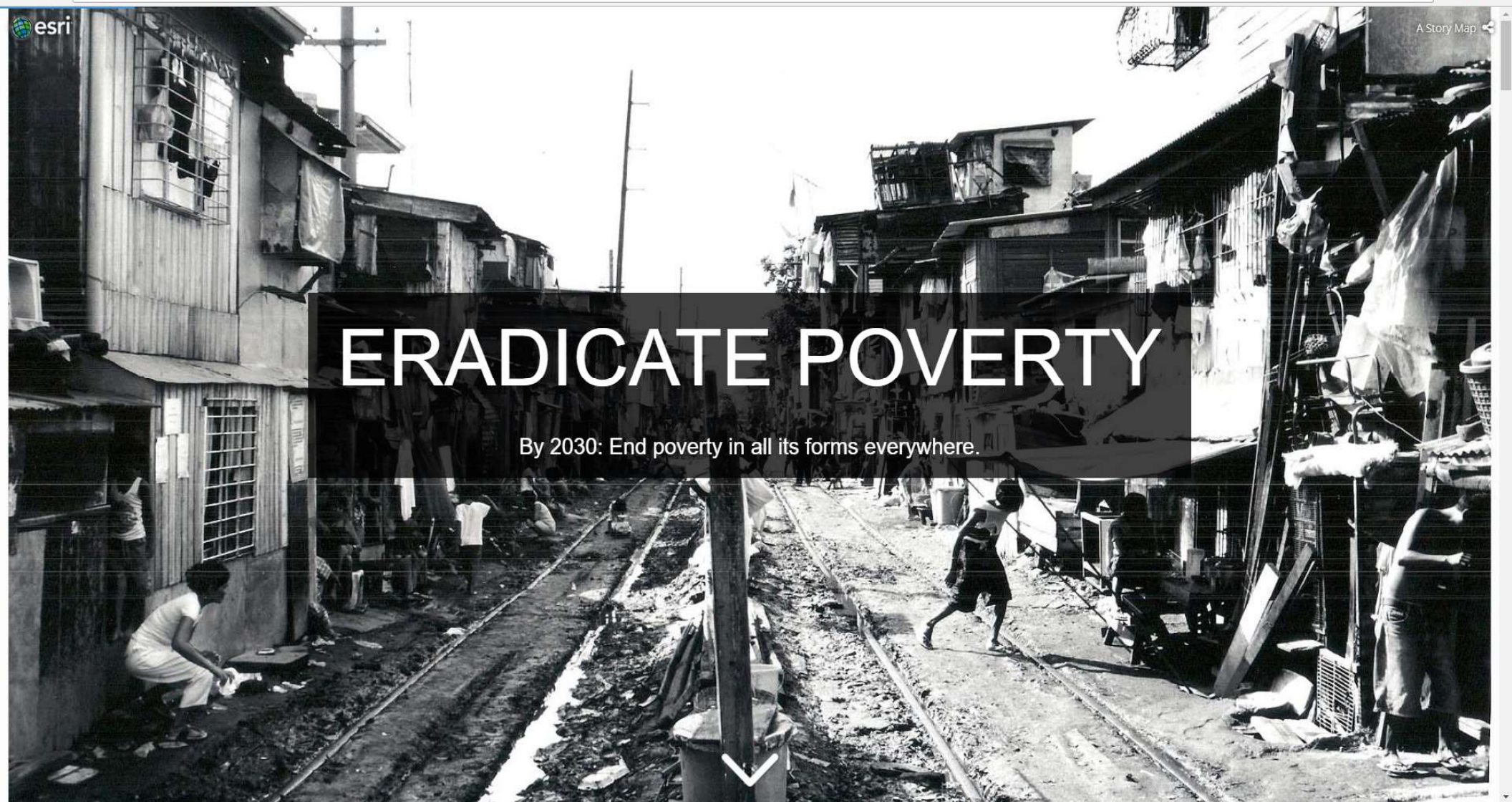
Interactive Map: Proportion of population below the international poverty line of US\$1.90 per day - 1999

Interactive Map: Proportion of population below the international poverty line of US\$1.90 per day (by latest available area)

Working poverty has decreased, but it is still pervasive in many regions and disproportionately affects the young

Many of the world's workers live in extreme poverty due to a lack of decent work

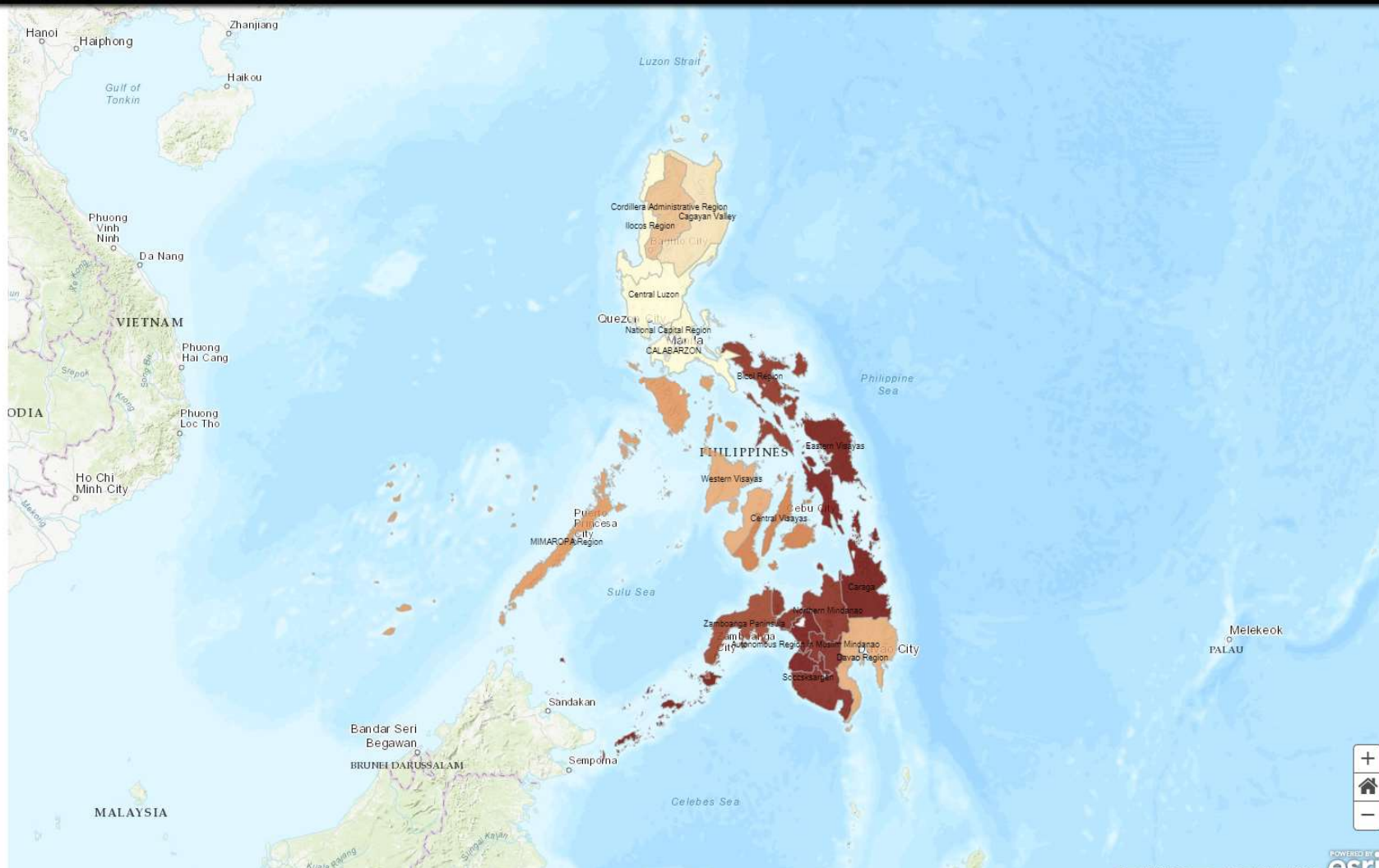


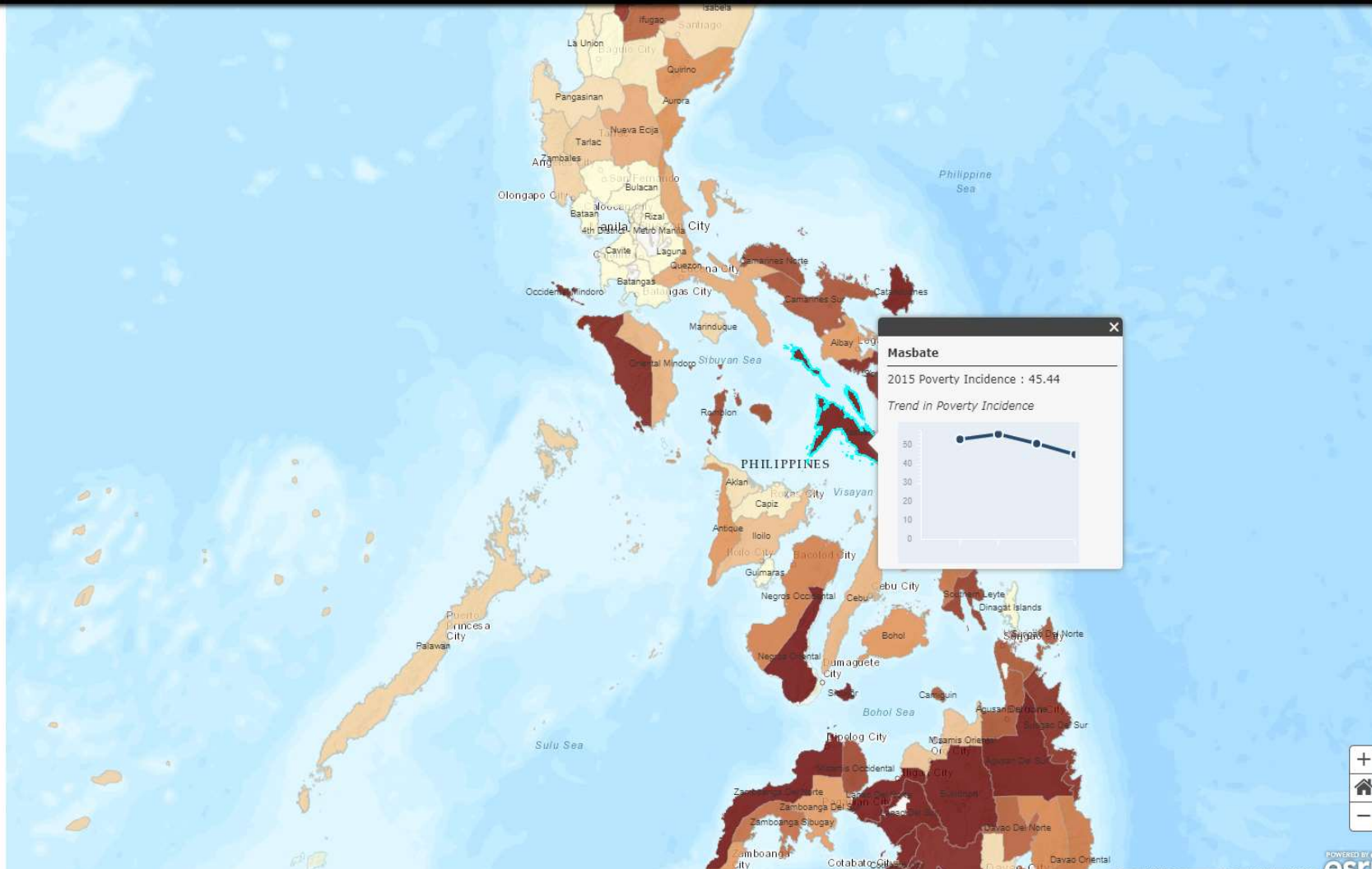


ERADICATE POVERTY

By 2030: End poverty in all its forms everywhere.









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1. The future reporting needs of the global indicator framework will need to consider ‘geographically disaggregated’ data, from the sub-national to national level, while also allowing for ‘aggregated’ global reporting that builds directly on the national data developed by countries, as well as that provided from custodian agencies.
2. Additionally, national level indicators will be developed by countries, and likely not be produced by each country in the same way. The good news is that the statistical community is familiar with data aggregations and national data, while the geospatial community is familiar with geographic data disaggregation and sub-national data.
3. With a unique understanding of context and circumstances, our combined professional expertise is well positioned to contribute to measuring and monitoring the SDGs, and tracking annual progress with statistics, geospatial information, and other sources of data.



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Mexico City Declaration - 30 November 2017

1. Affirm that to achieve the Sustainable Development Goals (SDGs), there is an urgent need to accelerate the collaboration, coordination and building of public-private partnerships across government sectors, academia, industry, the private sector, and civil society to create and improve data, tools and methodologies to ensure access to reliable, unbiased, accurate, timely, accessible and disaggregated information to inform decision-making, enable action and measure progress, and ensure that everyone is counted;
2. Noting that the 2030 Agenda has generated great expectations from global citizens to make real development progress, we confirm our duty and role to ensure that these expectations can be met with easily accessible and affordable geospatial technologies, digital transformation and innovation, including enabling developing countries to have universal access to these fundamental capabilities, and to ensure that we can progress the economic pathways for all, towards achieving a 'digital global record' for the SDGs;



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Mexico City Declaration - 30 November 2017

3. Appreciate that while the challenges are immense, the geospatial technology, innovation, platforms, data and solutions that are available today, and facilitated by strong and growing public-private partnerships, allow the necessary means to strengthen countries' geospatial and statistical information capabilities towards integrative national information systems that enable an evolving 'data ecosystem' that leverages an accessible and interoperable local to global system-of-systems;
4. Advocate and communicate to political decision makers the importance and impact of geospatial technologies, including Earth observations, in informing policy, and that tech savvy, flexible and open leadership is fundamental to establishing and sustaining data innovation and its associated creation, systems and services, sharing and management to support the measurement and monitoring of the SDG's;
5. Commend UN Statistics Division and Esri on its joint research exercise, and endorse the concept of a federated system of open SDG Data Hubs as a practical means for enabling technologies and capabilities to strengthen the ability of the national and global statistical systems to manage and share data and good practices for the SDGs, and allow countries to strive for better data interoperability and integration, to enhance relationships between national and global data, and to measure, monitor and report on the SDGs in a geographic context;



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IAEG-SDGs WGGI

- A core alliance of actors conduct a strategic discussion to best leverage and align activities towards the objectives that are common to all of us - measuring, monitoring and reporting, and the associated data flows.
- Actors may include UNSD, GEO, ESA, NASA, JAXA, World Bank, UN-Habitat, UNFPA, UN Environment, UNCCD, FAO, WHO, etc. and a few others to determine how we will work together on 2 key fronts:
 - Supporting the custodian agencies with the global indicator framework; and
 - Supporting national country implementations of indicators for the SDGs, and then disaggregation by geographic location.
- Regarding the data flows, national and global reporting is required; national reporting should be the foundation of the global reporting.
- The IAEG-SDGs WGGI should be the main conduit to facilitate such an exercise. We need to ensure that the major actors are coordinated and consistent in message. But how do we engage? By thematic area, indicators, countries, custodian agency?



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IAEG-SDGs WGGI

A proposal as a practical means to initiate such a strategic approach:

- The WGGI recognized as the formal and official intergovernmental communication mechanism for geospatial on the SDGs
- The EO4SDGs is providing the critical operational and scientific means to demonstrate capability, country implementations and exemplars.
- In essence, there is the high-level messaging and agreement, while there is also the work at the coal face. EO4SDGs is already doing the work at the coal face.
- The EO4SDGs can report into GEO and to the GEO community, but could also report its work into the WGGI as action and activity towards the common cause.
- The WGGI can report up and into the IAEG-SDGs, UN-GGIM and the Statistical Commission. We need to leverage our combined and coordinated resources more.



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