



GLOBAL PARTNERSHIP
FOR SUSTAINABLE DEVELOPMENT DATA

Defining the Context – The 2030 Agenda, “Leaving No One Behind” and Official Statistics

4th International Conference on Big Data for Official Statistics

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- 17 Goals, 169 Targets, 230 Indicators = Huge Data Needs

THE CHALLENGES:

Data are not available, dynamic, disaggregated, high quality, useable, accessible, open, or used effectively.

- Data on entire groups and key issues are unavailable.
- Data are not dynamic or disaggregated.
- Data quality is poor and major gaps remain.
- Data that exist are often not useable.
- Data that are useable are not accessible or open.
- Data that are accessible are often not used effectively.

DATA CHALLENGES LEAVE TOO MANY BEHIND

DATA FOR WHAT?

Improved Decision-Making and Policy

Increased Citizen Empowerment

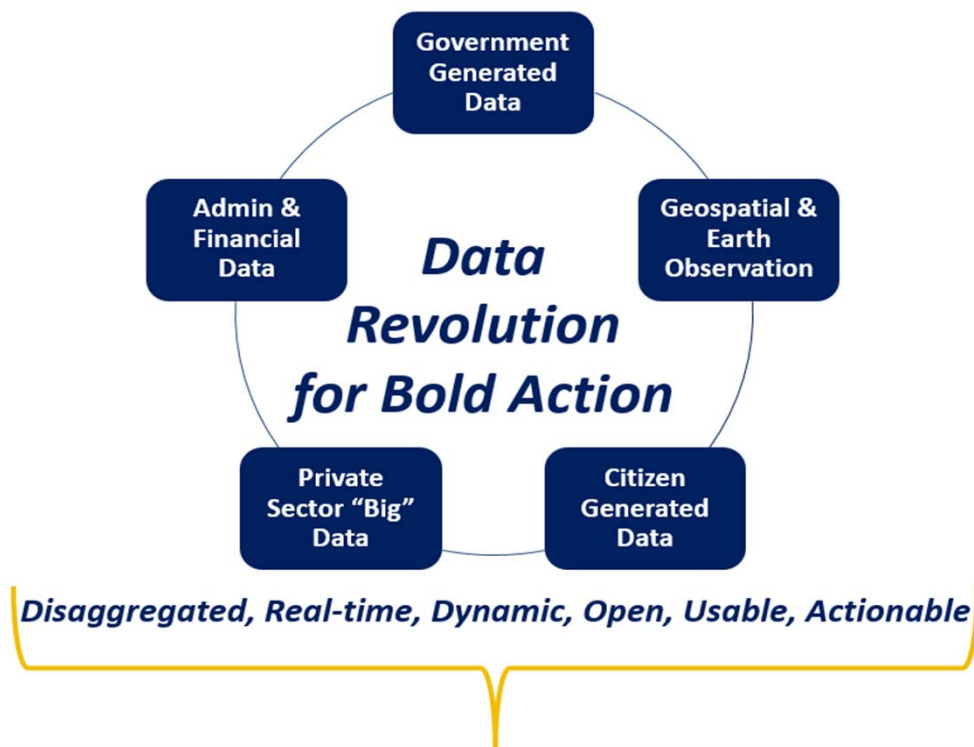
Increased Innovation and Entrepreneurship



To Achieve and Monitor
Sustainable Development

Harnessing the Data Revolution

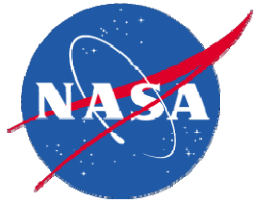
"Data is the Oil of the 21st Century"



- Supporting and complementing government and civil society efforts to generate data for statistics for the formal SDG monitoring framework
- Unleashing innovation in production, accessibility and use of real-time, dynamic, disaggregated data from multiple sources

Earth Observation Data

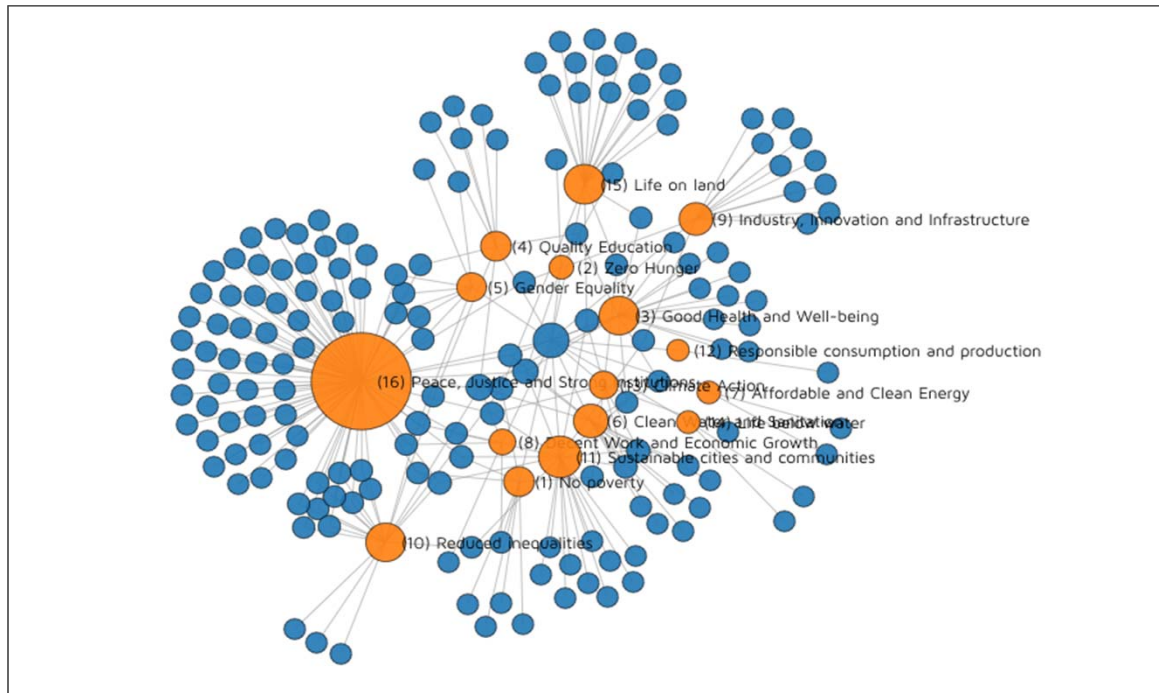
GEO GROUP ON
EARTH OBSERVATIONS



CEOS Committee on
Earth Observation Satellites

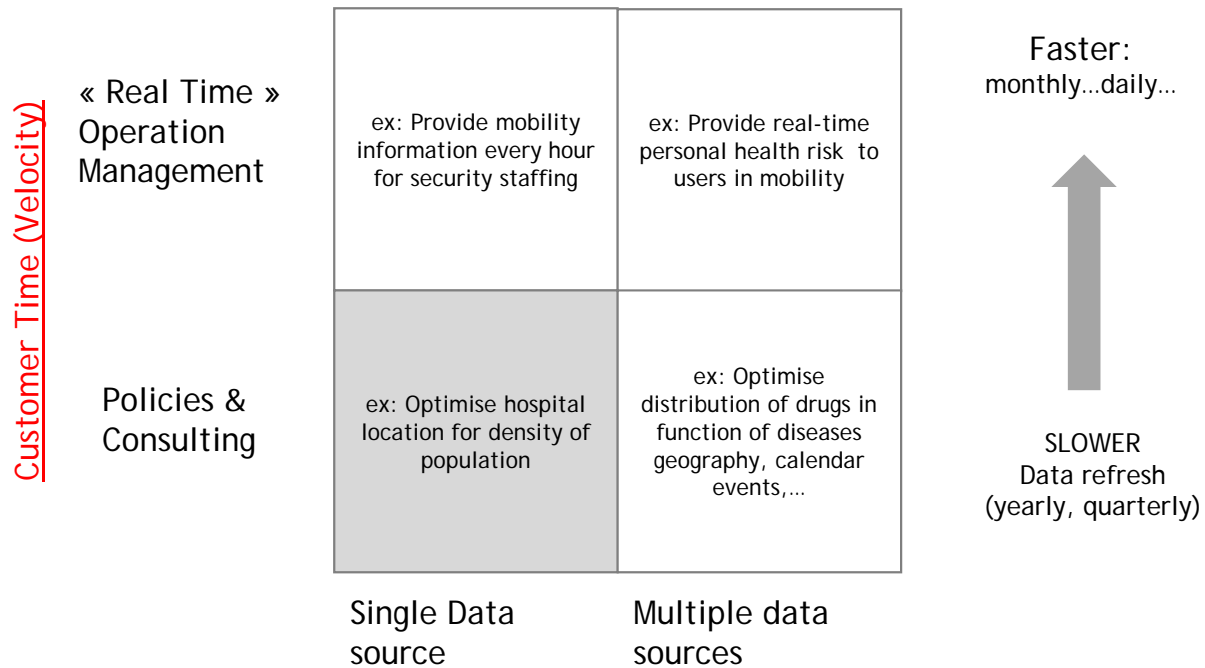


Citizen-Generated Data



<http://staging.winguweb.org/2015/datashift/>

Privately Held (Big) Data



Variety of Sources for Data Analysis



Open Data



1. Open by Default



2. Timely and Comprehensive



3. Accessible and Usable



4. Comparable and Interoperable



5. For Improved Governance and Citizen Engagement



6. For Inclusive Development and Innovation

opendatacharter.net

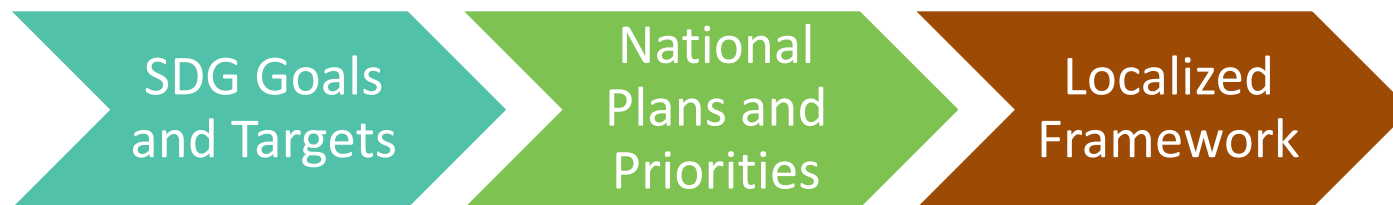
Data Roadmaps for Sustainable Development

Support countries at national and sub-national levels to develop and implement **whole of government** and **multi-stakeholder** data roadmaps for harnessing the data revolution for sustainable development, with particular emphasis on the SDGs and local priorities articulated in national plans.

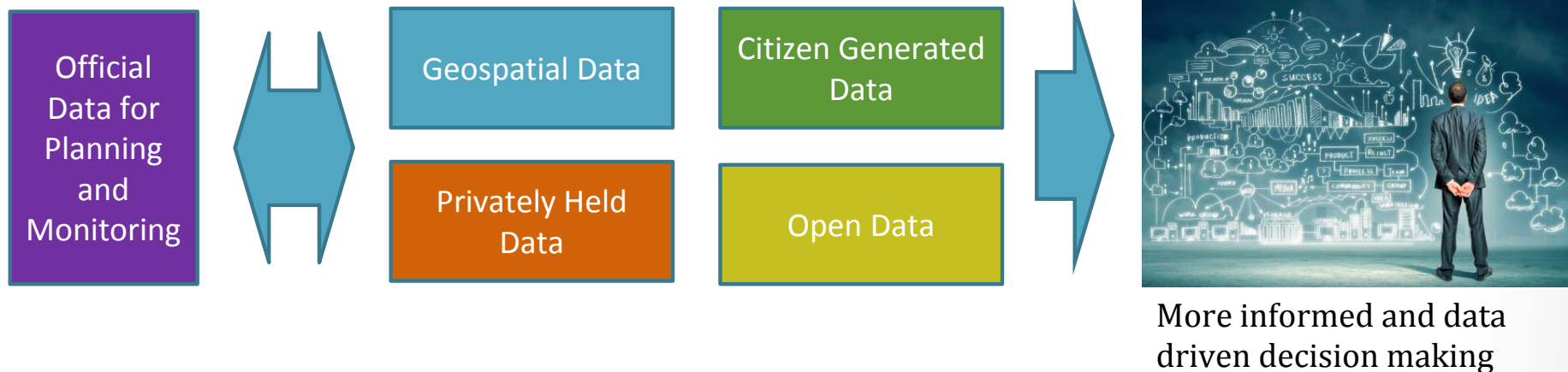


Country Led Approaches

- The Data Roadmaps for Sustainable Development approach is iterative, based on experiences and implementation models from partner countries
 - Colombia
 - Philippines
 - Sierra Leone
 - Kenya
 - Tanzania
 - Senegal
 - USA
 - Ghana



Data for Action



- Fill data gaps more efficiently, frequently and cost effectively
- Real-time, dynamic, disaggregated data
- Official and non-official data
- Use innovative approaches and range of stakeholder to solve problems

Country Level Lessons Learned

INSTITUTIONAL

- Strengthening institutional cooperation
- Engagement with the private sector
- Mobilization of funding and resources
- Data literacy

TECHNICAL

- Interoperability
- Alignment between open data and the SDGs
- Data sharing frameworks
- New innovation, data and platforms
- Environmental data
- Geospatial methods

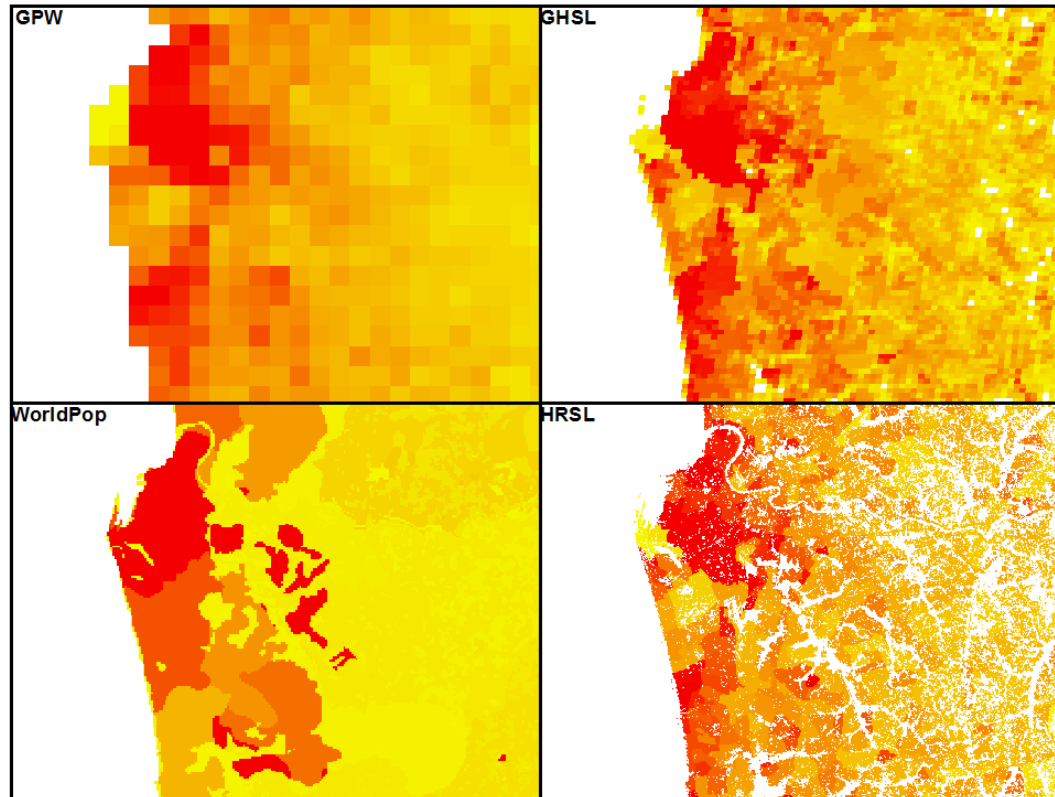
Data Collaboratives - 2017

- Leave No One Behind
 - Data disaggregation
 - Citizen generated data
 - Marginalized populations
 - Inclusive Data Charter
- Data Interoperability
 - Addressing core issues at the country level and piloting methods for increased interoperability
- Environmental Data
 - Climate open data – Tanzania and Sierra Leone
 - Earth observation data applied to environmental issues
 - Illegal mining in Ghana

Other Initiatives

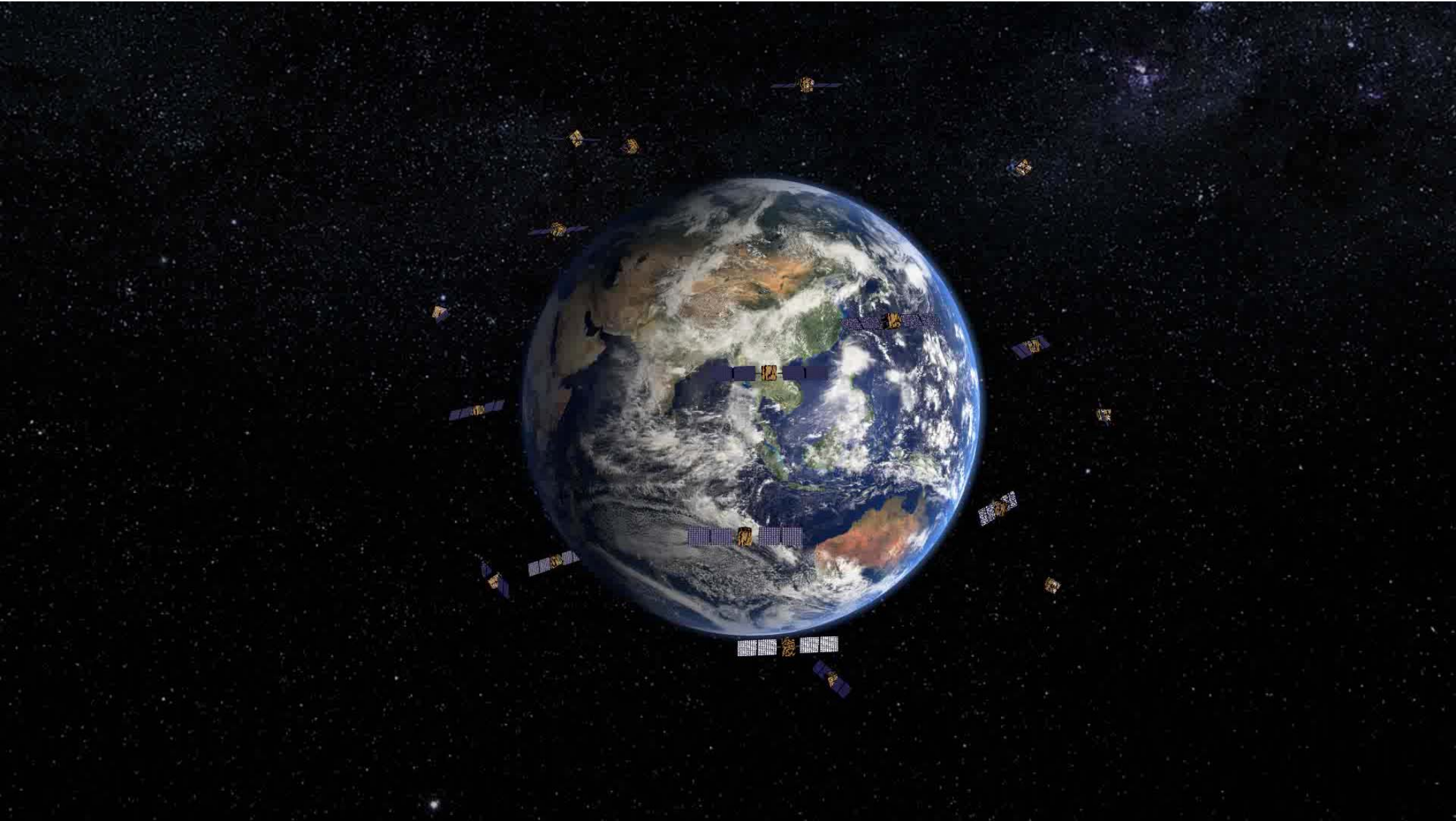
- Better engagement with the Private Sector
- What makes a successful private-public-partnership
- Working with DIAL and GSMA on mobile data for the SDGs
- Innovation Fund with the World Bank and DFID
 - 2nd call focused on environment and leave no one behind. Total 4.5 million USD
- Financing on data for development
- A new, integrated GPSDD website to be launched any day

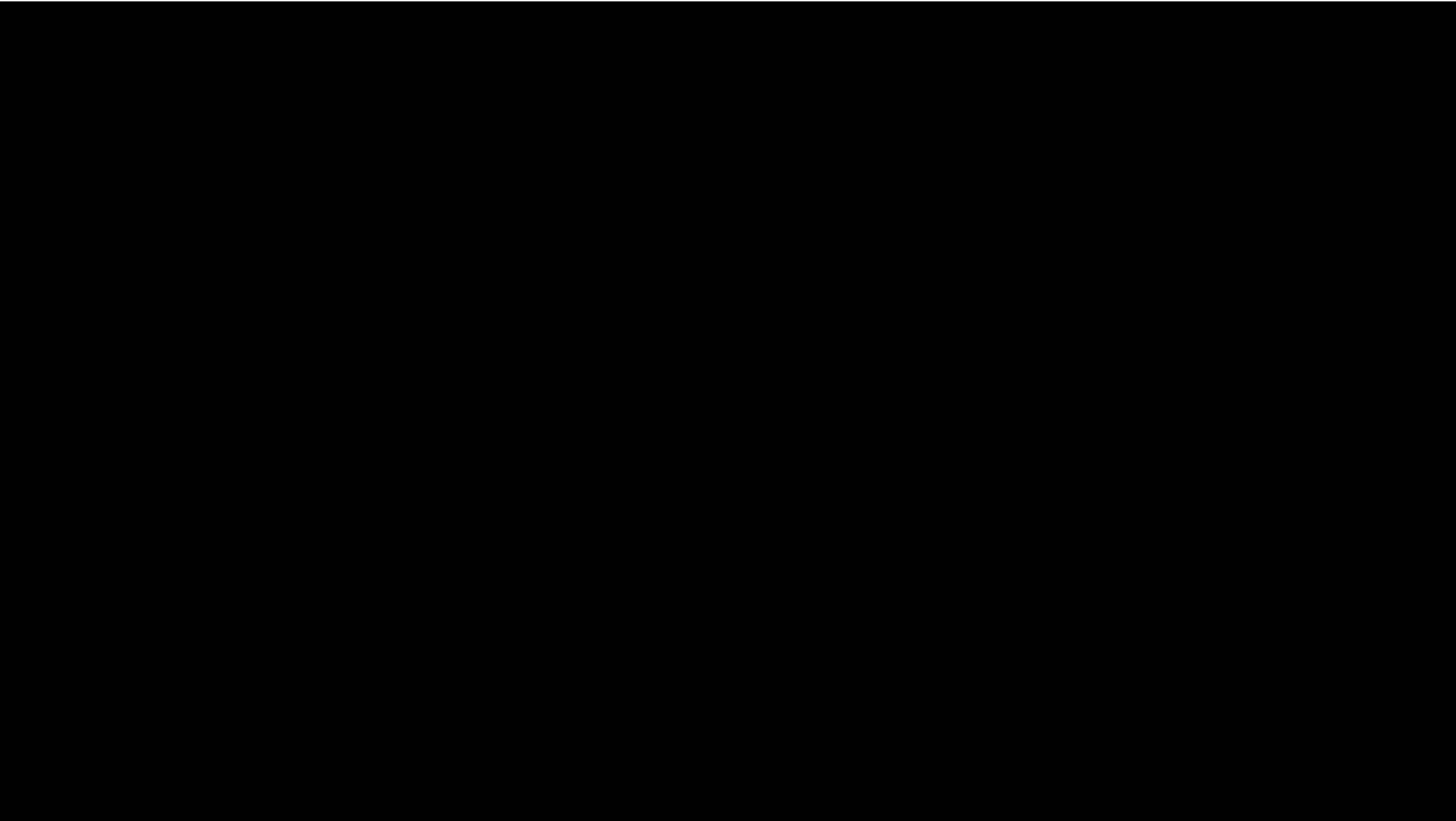
Population Distributions



Alex de Sherbinin, CIESIN

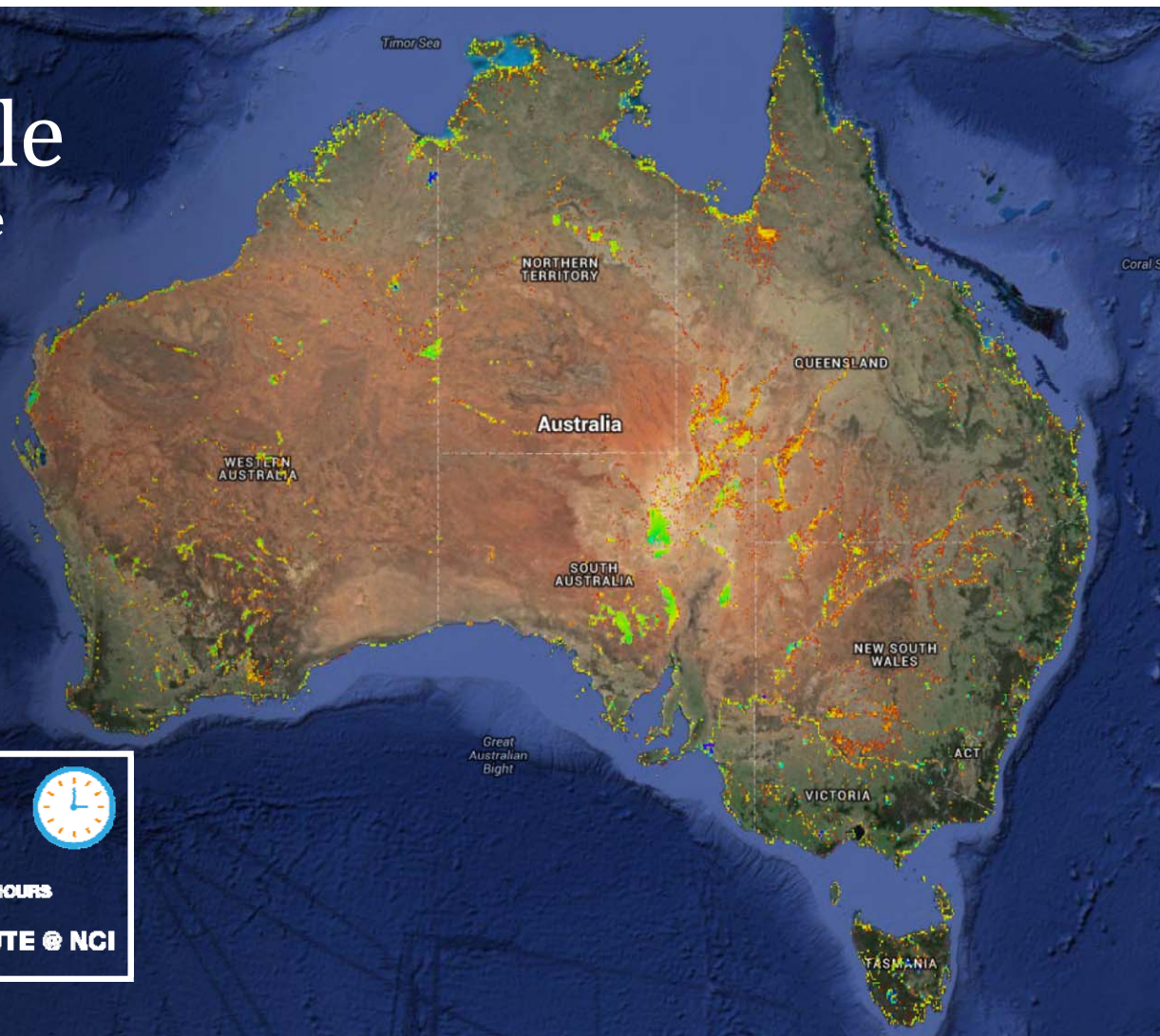
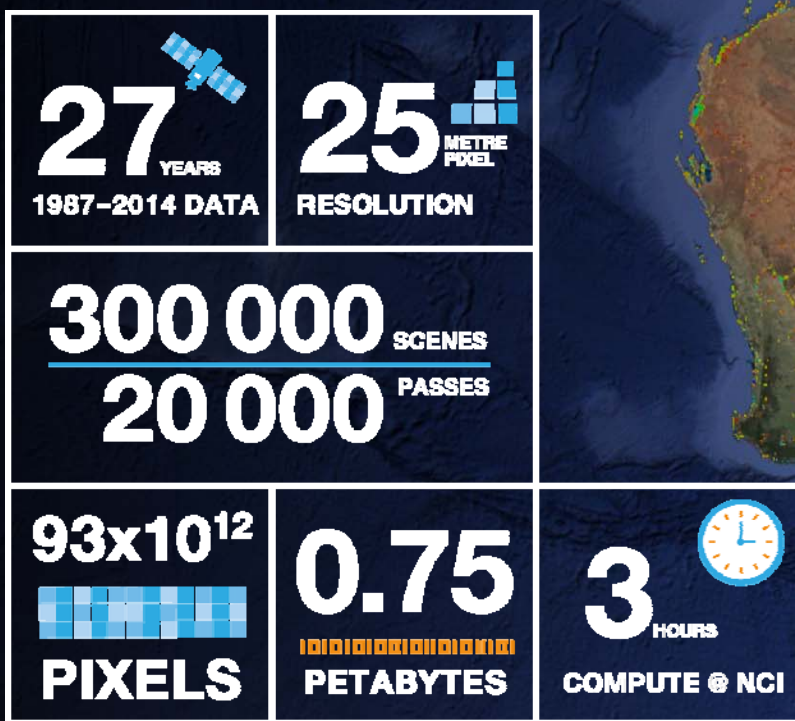
Population estimate results at various resolutions from multiple methods





Continental Scale

Water Observations from Space





1988

2000

2006

2014

■ green

■ dry

■ soil

Water quality monitoring: Lake Burley Griffin

1987

2001

2013



325

0



Some prototyped applications for the data cube:

- Vegetation change, agricultural production
- Flood inundation mapping, farm dam development
- Wetland management and characterisation
- Carbon accounting
- Seagrass and substrate mapping
- Coastal change and water quality
- Shallow water bathymetry
- Mining footprint and urban development
- Bushfire scar mapping and forestry inventory



Australian Government
Geoscience Australia



Digital Earth
AUSTRALIA

www.ga.gov.au/dea
opendatacube.org

- Dr Stuart Minchin,
- Geoscience Australia

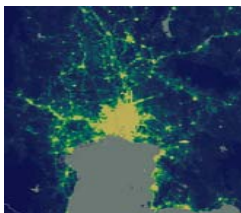
Further Information

Email: Earth.Observation@ga.gov.au

Address: Cnr Jerrabomberra Avenue and
Hindmarsh Drive, Symonston ACT 2609



Country Engagement on EO Data



- Intergovernmental Network on Open Data for Agriculture and Nutrition
- Dynamic and real-time data for smallholder farmers
- Establishing data cubes initially focused on a particular thematic issue
- Making upcoming population censuses more dynamic and cost-effective
- Waste management



EARTH OBSERVATIONS FOR THE SUSTAINABLE DEVELOPMENT GOALS



EO Case Studies for the 2030 Agenda

UN Environment-GEO-NASA -UMD Collaboration on SDG 6

TECHNICAL BRIEF
Reporting on SDG Indicator 6.6.1 Using Satellite Earth Observations

Indicator 6.6.1 tracks changes over time in the extent of water-related ecosystems. While analysis of ground-based, survey data and in situ measurements is an important part of SDG monitoring and reporting, there is potential for countries to utilize satellite-based Earth observations to meet some of the reporting requirements of indicator 6.6.1, pertaining to both spatial water extent and quality of waterbodies and wetlands. In collaboration with the Group on Earth Observations (GEO) and space agencies such as NASA, ESA, and JAXA, UN Environment has identified a series of activities that focus on the use of Earth observations to support the monitoring and data collection process for this indicator.

The UN Environment-NASA collaboration
 Global monitoring of Sustainable Development Goal (SDG) 6 - ensure availability and sustainable management of water and sanitation for all - was initiated in 2017 following development, testing, and validation of methodologies for monitoring the ecosystem indicator Target 6.6.1 (G6.1) calls for the protection and restoration of water-related ecosystems, including mountains, forests, wetlands, rivers, wetlands, and lakes. The key indicator of this target, Indicator 6.6.1, tracks changes over time in the extent of water-related ecosystems. UN Environment is the central agency for this indicator and has developed a range of reporting methodologies that enable how to monitor change in the extent of water-related ecosystems over time. A pilot initiative by UN Environment and NASA has been developed to explore the applicability of Earth observations datasets and tools that can be used with existing and generated data to support national reporting on this indicator.

Proven concept for select pilot countries
 A NASA University of Maryland research team carried out a proof of concept for the indicator. Based on the extensive experience of experts within United States and other countries, the team developed a methodology for monitoring the indicator. The methodology was used to monitor water extent and quality in the Lake Tanganyika region. The UN Water publication 'Integrated Monitoring Guide for SDG 6.6.1' was compiled and finalized. The guide details water-related ecosystem, and the quality of water within these ecosystems. The following aspects of the indicator were used by the team:
 1. Spatial extent for open waterbodies.
 2. Time and Change for closed waterbodies.
 3. Spatial extent for coastal mangroves.

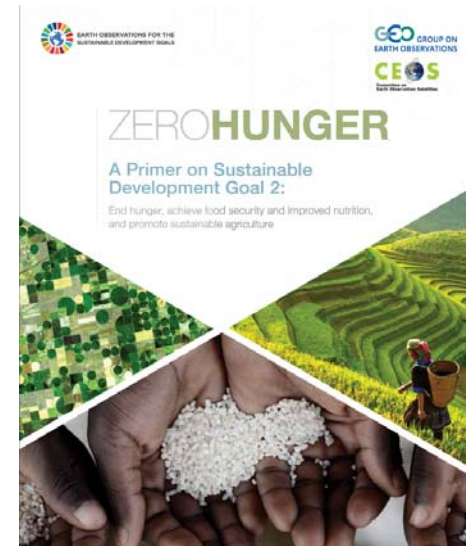
For the extent of open waterbodies the pilot countries included
 Cambodia, Jamaica, Peru, Philippines, Senegal, Uganda and Zambia.

Water Extent Monitoring	Subsidence Monitoring	Threats	Spatial Resolution (m)
Open water	Spatial extent	MCD45R CLP	100
Lake & reservoir	Spatial extent	LandSat 7, 5, and ET	30
Wetland (swamp) management	Spatial extent	LandSat 7, 5, and ET	30-30
		LandSat 8 OLI, Sentinel 1A, Sentinel 2A	10

United Nations and Open Assessment (UNOA) - UN Geospatial Survey (UNGS) - Country: Peru April 2018

The UN Environment-NASA pilot effort often does not intend to replace the current process of SDG data collection and submission, rather, this initiative seeks to explore the applicability of Earth observation data to complement existing generated data. The goal of this initiative is to assess information relevant to meeting the reporting requirements of SDG Indicator 6.6.1. Some Earth observation data for a subset of pilot countries, including water-related ecosystems, change datasets and tools. In collaboration with the UN Environment and other agencies, UN Environment will subsequently aim to establish a framework for monitoring and reporting on indicator 6.6.1. The framework will include a methodology for monitoring and reporting on indicator 6.6.1. The framework will include a methodology for monitoring and reporting on indicator 6.6.1. The framework will include a methodology for monitoring and reporting on indicator 6.6.1.

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A Primer on SDG 2, Zero Hunger

Data for Action

- Earth Observation Data for the SDGs
- Making Use of Citizen Generated Data
- Youth and SDGs Data Revolution
- Telco Data for Sustainable Development
- Subnational Data for Sustainable Development
- Open Data for Sustainable Development
- Open Mapping for the SDGs
- Geospatial Data and Planning for the SDGs
- Data Visualization and Analytics
- Decision Support Systems

Toolbox: Data for Action



EO4SDG-GPSDD-DANE Workshop at DANE HQ, Colombia

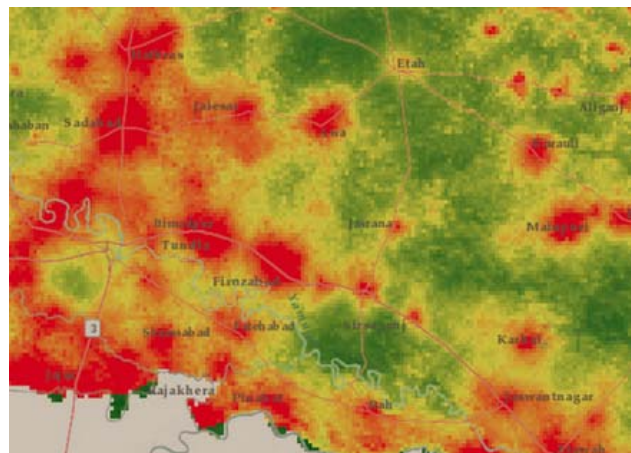
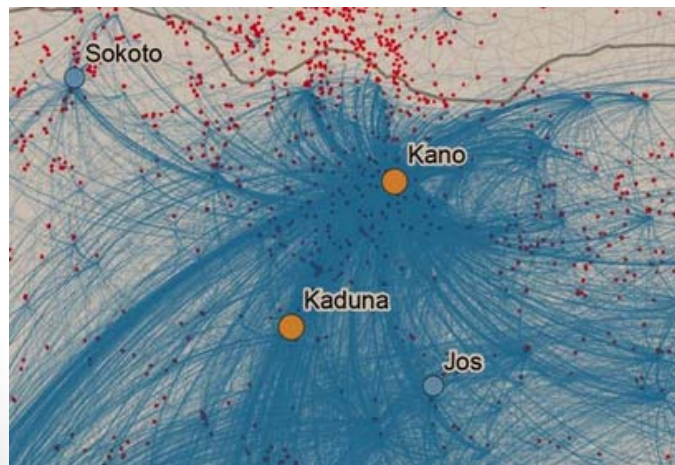
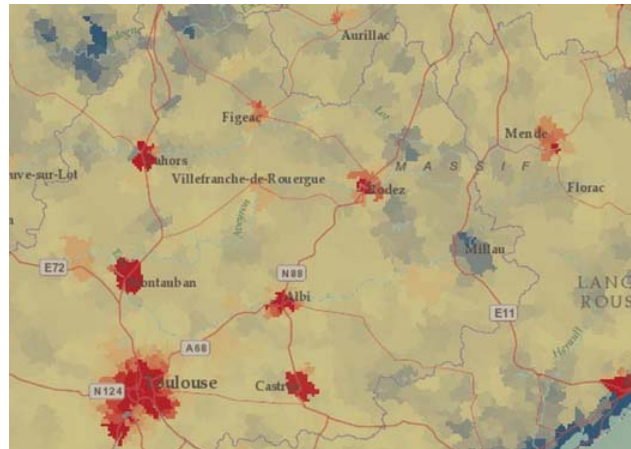
In person trainings & webinars



Pilot Activities Outreach & Engagement

Capacity Building Information Products

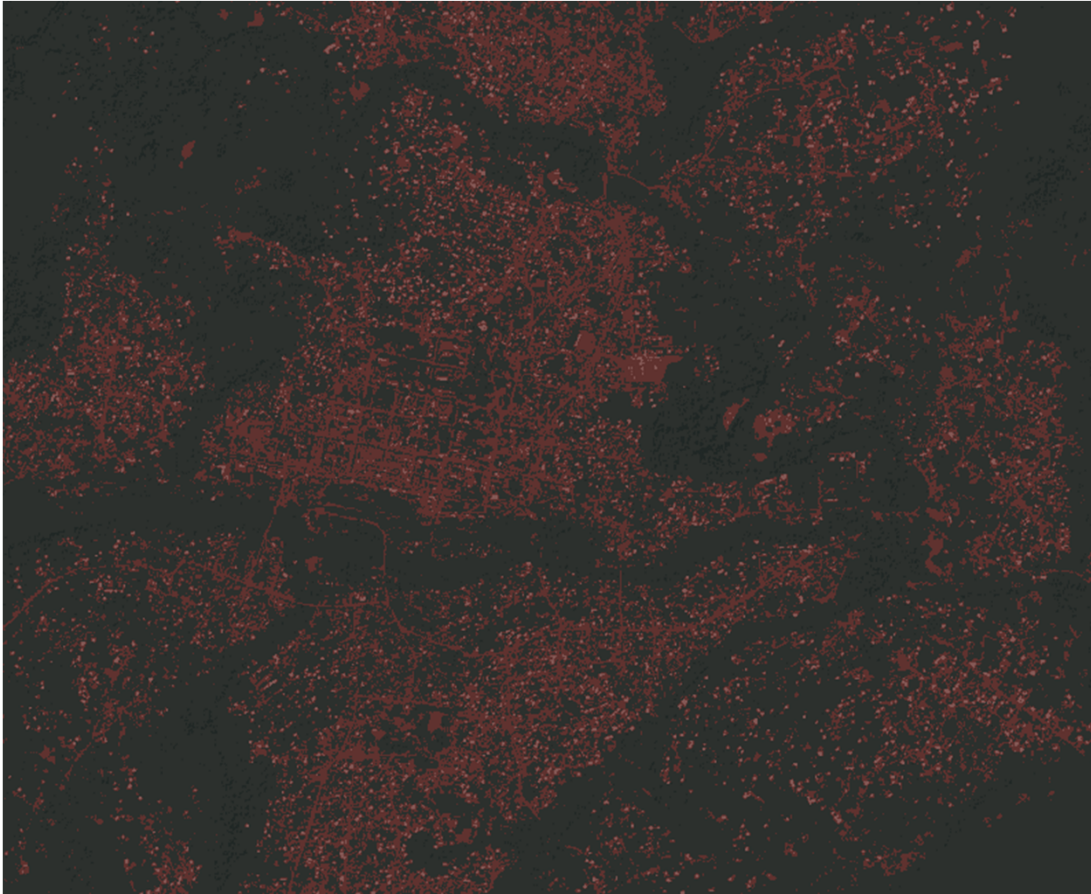
Bringing Data Sources Together



Geospatial
+
Mobile Data
+
Surveys

WorldPop Project
Flowminder.org
<http://www.worldpop.org.uk/>



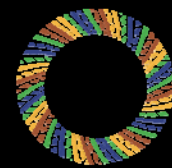


Mamou, Guinea

29 hours
68 contributors
20,105 buildings

Humanitarian OpenStreetMap

apihighways.data4sdgs.org



GLOBAL PARTNERSHIP
FOR SUSTAINABLE DEVELOPMENT DATA



bio.007 Marine and Terrestrial Protected Areas

IUCN & UNEP-WCMC

Javascript

Node

Ruby

Go

Java

Php

Python

Shell

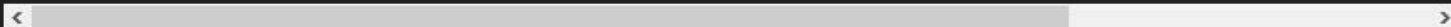
```
var data = null;

var xhr = new XMLHttpRequest();
xhr.withCredentials = true;

xhr.addEventListener("readystatechange", function () {
  if (this.readyState === this.DONE) {
    console.log(this.responseText);
  }
});

xhr.open("GET", "https://api.resourcewatch.org/v1/query/de452a4c-a55c-464d-9037-8c3e9fe48365?sql=SELECT%20*%20");

xhr.send(data);
```





Conflicts related to protected areas | **Regions with greatest water risks**



Data4SDGs Toolbox: Data for Action

<http://www.data4sdgs.org/toolbox>

■ Currently Available
 ■ In Development
 ■ Planned

Getting Started With Data Roadmaps for Sustainable Development

- ▶ Data Roadmap for Sustainable Development: Guidelines
- ▶ Getting Started with the Sustainable Development Goals
- ▶ Mapping Data Ecosystems

Data for Action

- ▶ Earth Observation Data for the SDGs
- ▶ Making Use of Citizen Generated Data
- ▶ Youth and SDGs: Data Revolution
- ▶ Mobile Data for Sustainable Development
- ▶ Subnational Data for Sustainable Development
- ▶ Open Data for Sustainable Development
- ▶ Open Mapping for the SDGs
- ▶ Geospatial Data and Planning for the SDGs
- ▶ Data Visualization and Analytics
- ▶ Decision Support Systems

Official Statistics for SDGs

- ▶ Minimum Essential Data Package
- ▶ Advanced Data Planning Tool (ADAPT)
- ▶ Assessing and Modernizing the SDG in the Context of the Data Revolution
- ▶ COVID Digitalization Guidebook
- ▶ Administrative Data to Achieve the SDGs in Production of Official Statistics

Institutional, Financial and Capacity Foundations

- ▶ Demand-Driven, Cost-Effective Integrated Information Systems
- ▶ Policy and Legal Frameworks
- ▶ Business Models for Public-Private Partnerships
- ▶ Data Literacy Workshops and Knowledge Platform for Professionals
- ▶ Data Financing and Mutual Accountability Tool
- ▶ Global Philanthropy Data Charter

Data for Action

- ▶ Earth Observation Data for the SDGs
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- ▶ Data Visualization and Analytics
- ▶ Decision Support Systems

What's Needed Moving Forward

- We must change our normal ways of working, break down silos, and become **more collaborative across sectors**
- We need to **embrace innovation** and be okay with failure – as long as we learn from it
- We need to **work at multiple scales** bringing national and sub-national planning efforts together in the interest of the SDGs
- We need to **unlock innovative funding** models that are sustainable and develop **public-private partnerships** that work
- Increase **data literacy and capacity** for data science focused on how data is used for decision making and action
- Better **link initiatives** with a common purpose to reach further impact