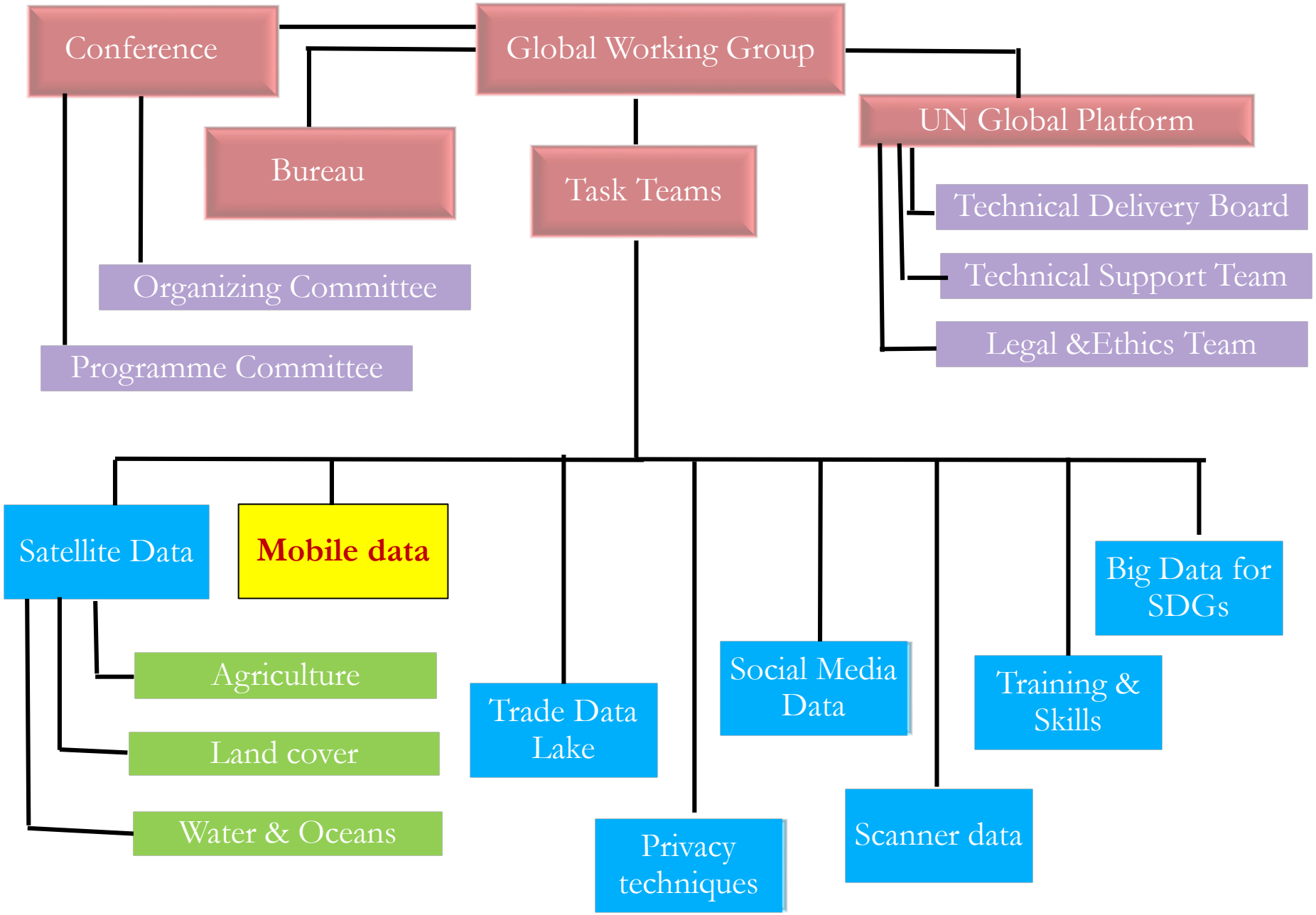
Satellite data for official statistics

Ronald Jansen
Assistant Director
Chief of Data Innovation and Capacity Branch
United Nations Statistics Division

Big Data UN Global Working Group

- **Created in March 2014 by the UN Statistical Commission**
- **Mandated to give direction to the use of Big Data for Official Statistics**
- **Consisting of 28 countries and 16 international organizations**


Conference
Global Working Group
Bureau
Task Teams
UN Global Platform
Technical Delivery Board
Technical Support Team
Legal &Ethics Team
Organizing Committee
Programme Committee
Satellite Data
Mobile data
Agriculture
Land cover
Water & Oceans
Trade Data Lake
Privacy techniques
Social Media Data
Scanner data
Training & Skills
Big Data for SDGs

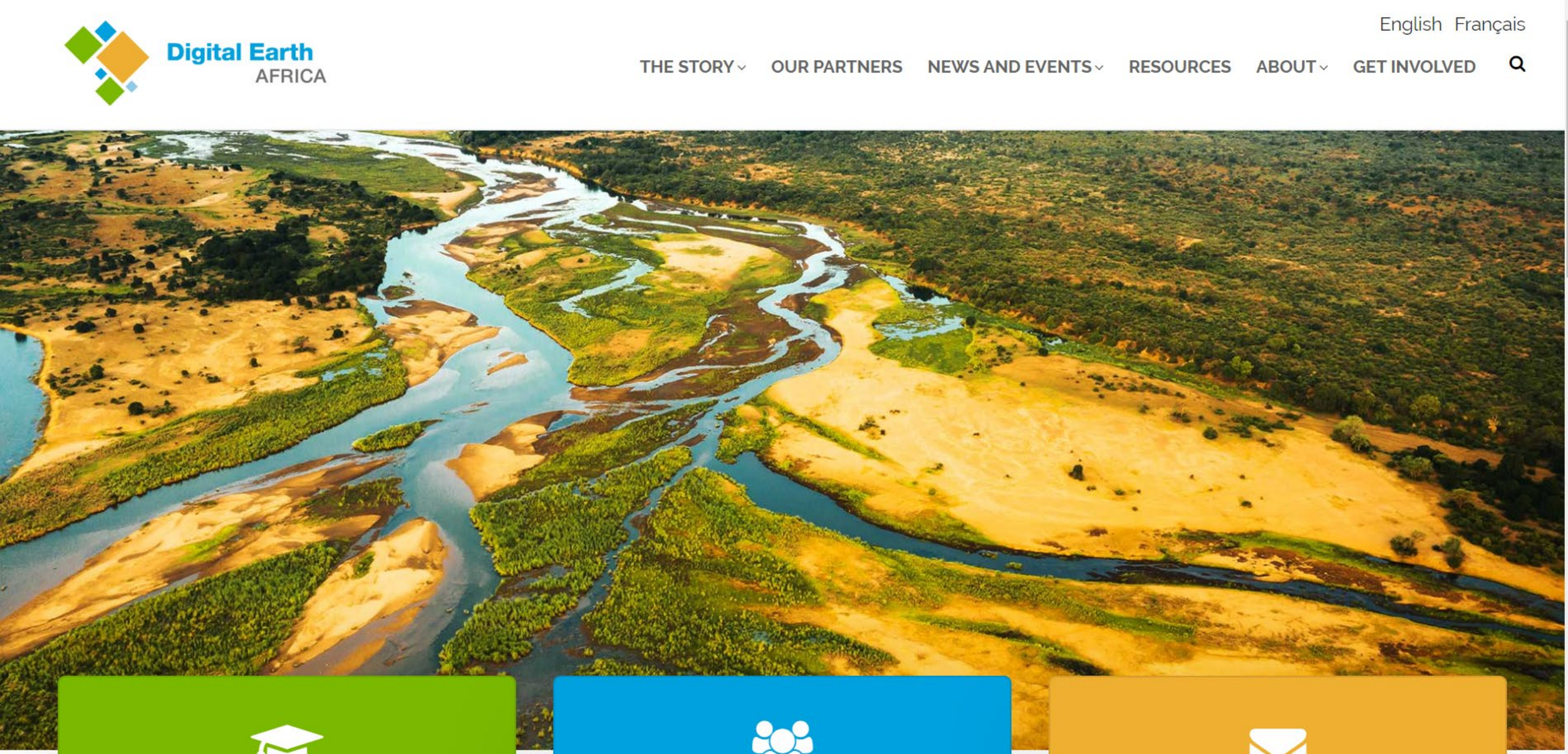
Task Team on the use of Satellite and remote sensing data for official statistics

- **Accomplishments:**
  - Handbook on the use of Satellite data for official statistics
  - Workshops in Bogota and Bangkok
  - E-learning course
  - Algorithms and methods

Deliverable	Milestone	Due Date	Status
Trusted Learning	Material Finalised, learning Delivered and access to data sources to support learning	December 2019	On going
Trusted Application	Open source code available for review	December 2019	On going
Trusted Methods	Guidance material – short-term deliverables	December 2019	On going
Determine scope of Phase 2	Through consultation, determine priorities and deliverables for Phase 2	December 2019	

Key Players in GWG Task Team

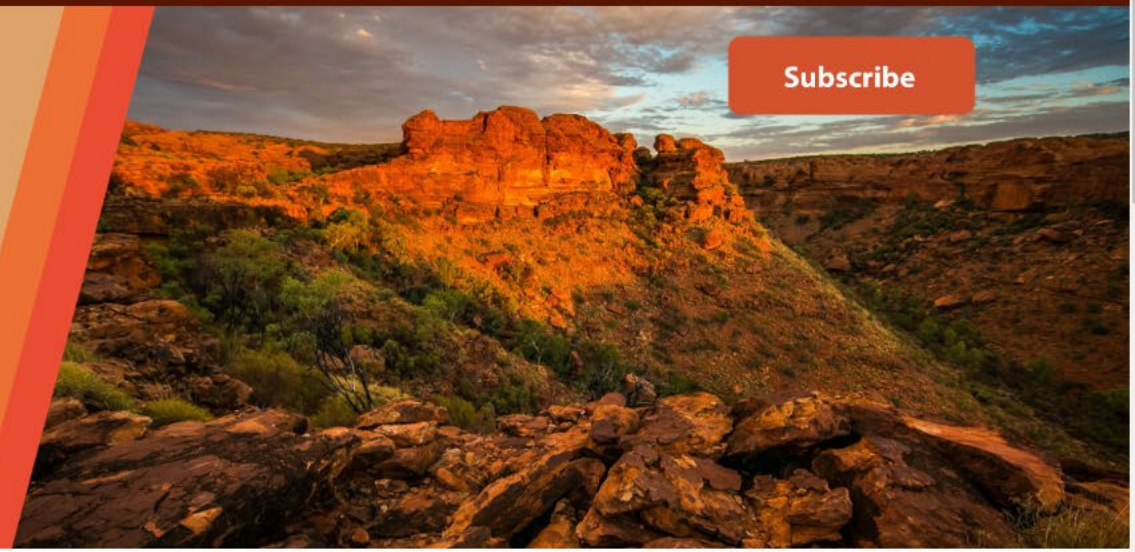
- Statistics Canada
- DANE Colombia
- INEGI Mexico
- Statistics Netherlands
- Statistics Poland
- NISR Rwanda
- Queensland University of Technology (Australia)
- FAO
- UNSD
- UNEP


Digital Earth
AFRICA
English Français
THE STORY
OUR PARTNERS
NEWS AND EVENTS
RESOURCES
ABOUT
GET INVOLVED
Learn
The technology and what it means for policy
Engage
Participate and collaborate in upcoming events
Support
Realising the benefits of decision ready

GEO WEEK 2019 MINISTERIAL SUMMIT #GEOWEEK19

4 - 9 NOVEMBER / CANBERRA, AUSTRALIA

Subscribe



GEO WEEK 2019 MINISTERIAL SUMMIT

GEO WEEK 2019 GEO-XVI PLENARY

GEO WEEK 2019 INDUSTRY TRACK

UN environment | SCIENCE POLICY BUSINESS FORUM

GEO WEEK 2019 SIDE EVENTS

EO4SDGs

Task Stream II:
Application of satellite EO data for the SDG indicators

Task II:
Document national experiences and good practices (case studies)

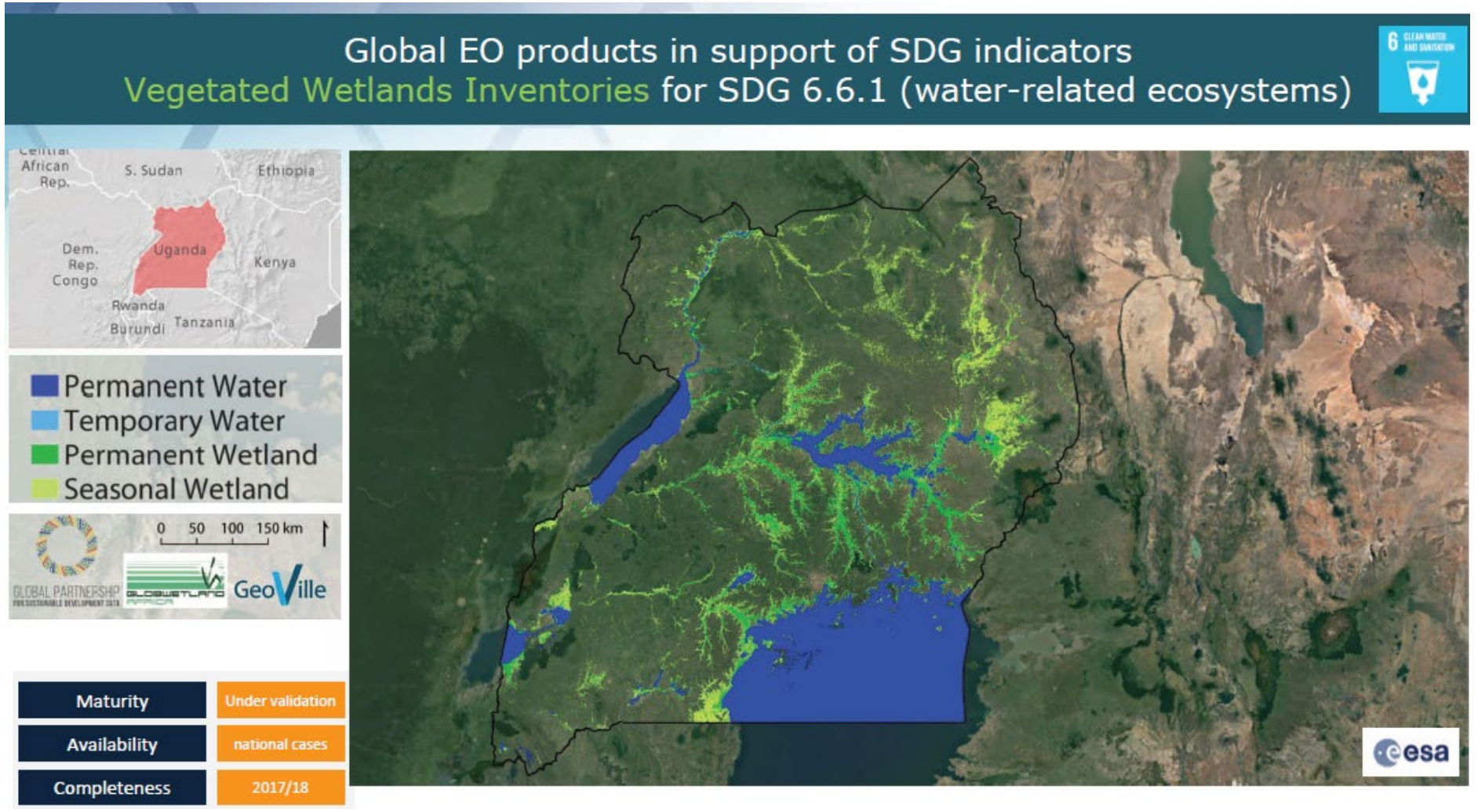
Deliverables

- Primers and Technical guidelines, with national good practices, on the integration of EO data streams into the production of SDG indicators.
  - 6.3.1 (wastewater management)
  - 6.3.2 (ambient water quality)
  - 6.6.1 (spatial extent of water-related ecosystems)
  - 9.1.1 (rural population within 2 km distance from all-season roads)
  - 11.3.1 (land consumption per population growth)
  - 15.3.1 (proportion of degraded land per total land).

EO4SDGs


Global EO products in support of SDG indicators
Global Surface Water Extent for SDG 6.6.1 (water-related ecosystems)
Water Occurrence
Global Surface Water Explorer
Powered by Google Earth Engine
European Commission
Paper | Full Text
The European Commission's Joint Research Centre developed this new water dataset in the framework of the Copernicus Programme. This maps the location and temporal distribution of water surfaces at the global scale over the past 32 years and provides statistics on the extent and change of those water surfaces. The dataset, produced from Landsat imagery (courtesy USGS and NASA), will support applications including water resource management, climate modelling, biodiversity conservation and food security.
Note: Click anywhere on the map to obtain temporal profile charts for that location.
Download Datasets
FAQ | Contact: jrc-surfacewater@ec.europa.eu
Water Occurrence (1984-2015)
Sometimes Water
Always Water
Water Occurrence Change Intensity (1984-1999 to 2000-2015)
Decrease
No Change
Increase
Water Seasonality (2014-2015)
Maturity
validated
Availability
global
Completeness
1984-2015
Zambia
Zimbabwe
Mozambique
Lusaka
Harare
Kitwe
Ndola
Kabwe
Lilongwe
Blantyre
Victoria Falls
Kasane
Chimoio
Beira
Parque Nacional da Cameia
Kafue National Park
Hwange National Park
Coutada Pública do Longa Mavinga
Coutada pública do Luiana
JRC
EUROPEAN COMMISSION

EO4SDGs


Global EO products in support of SDG indicators
Vegetated Wetlands Inventories for SDG 6.6.1 (water-related ecosystems)
6 CLEAN WATER AND SANITATION
Central African Rep.
S. Sudan
Ethiopia
Dem. Rep. Congo
Uganda
Kenya
Rwanda
Burundi
Tanzania
Permanent Water
Temporary Water
Permanent Wetland
Seasonal Wetland
0 50 100 150 km
GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT DATA
GLOBWETLAND AFRICA
GeoVille
Maturity
Under validation
Availability
national cases
Completeness
2017/18
esa

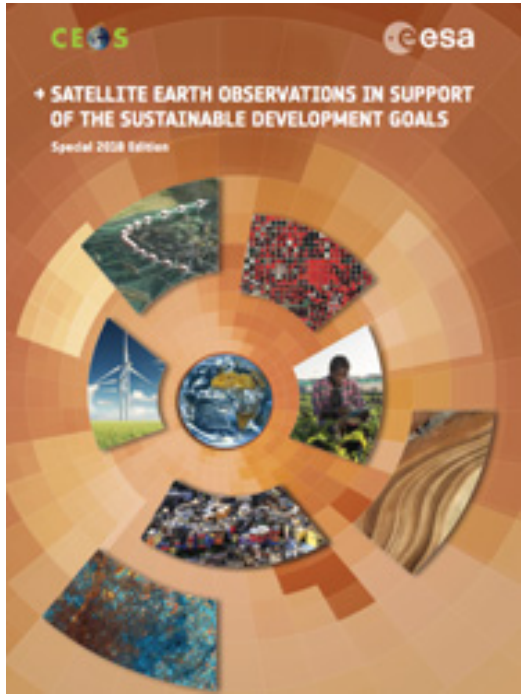
EO4SDGs

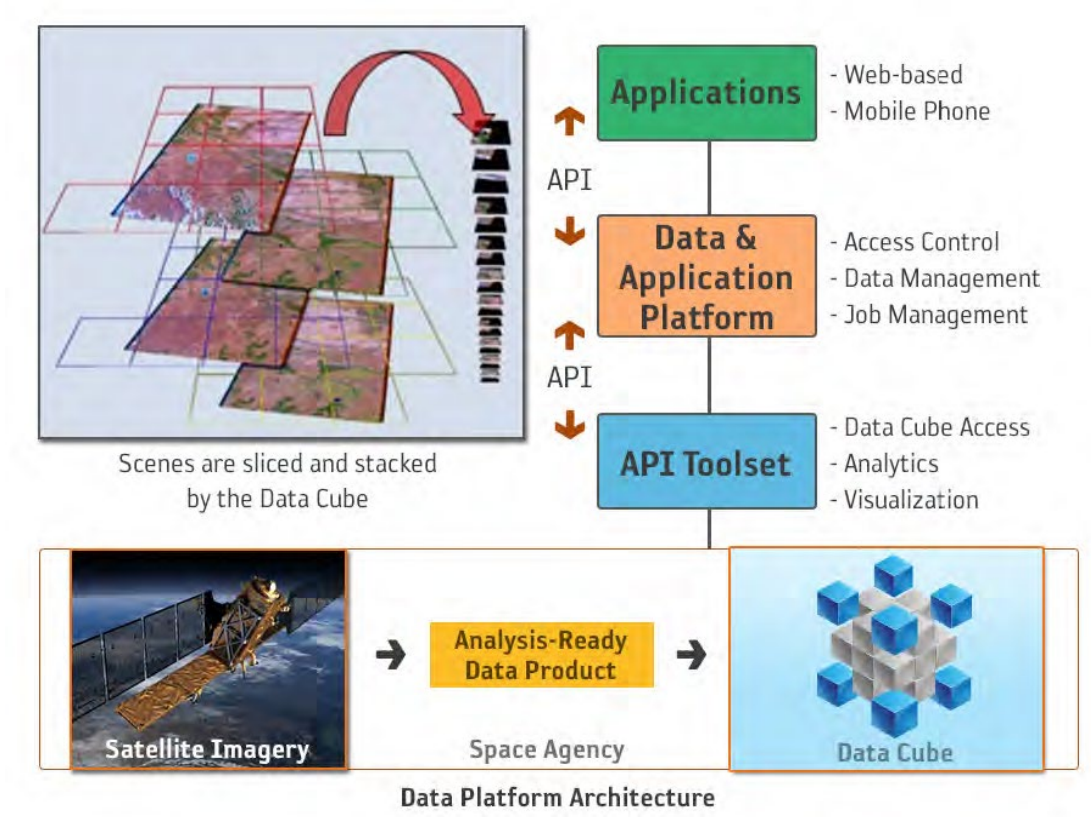
SDG 6.6.1

Custodian	UN Environment, Ramsar
Indicators	Change in extent of water-related ecosystems over time
Sub-Indicators	•Spatial extent of open water bodies •Spatial extent of vegetated wetlands •Lake Water Quality •*Other not relevant for EO*
Custodian's expert group	ESA, NASA, EC/JRC (GSWE), JAXA (GMW)
EO in Custodian guidelines	Level 1 includes 2 Sub-Indicators based on EO global data from which will be validated by countries against their own methodologies and datasets.
EO products	•Dynamics of surface waters •Vegetated Wetland inventory (with high level classification) •Surface Water quality (Chl-a /Trophic State Index, TSM / Turbidity)
Source of EO	•Landsat, Sentinel 1, Sentinel 2, ALOS-2 Palsar-2 (ScanSAR) •Palsar-2, Landsat-8, S1, S2 •MODIS, VIIRS, S3 OLCI & S2 + L8

Global Datasets	•Global Surface Water Explorer (GSWE), EC/JRC •Global Mangrove Watch (GMW), JAXA •Copernicus Global Land Service, Lake Water Quality, EC
EO good practice examples	•Examples from SWOS (EC), GW Africa (ESA), EO4SD Water (ESA), other projects •GPSSD project in Uganda (wetlands) •NASA pilot projects
Platforms (with data analytics)	•GSWE (global-surface-water.appspot.com) •ESA TEP Hydro (hydrology-tep.eo.esa.int)
S/W Toolbox	•Open Data Cube (free, open source) •SWOS Toolbox (free) •GlobWetland Africa Toolbox (free, open source)
GEO Initiative	•GEO Wetlands
Knowledge Hub	•GEO Wetlands Portal (in construction) http://portal.swos-service.eu/mapviewer/
National Experience	•Colombia •Australia •Others?

CEOS Earth Observation Handbook presents the main capabilities of satellite observations and their applications





Thank you