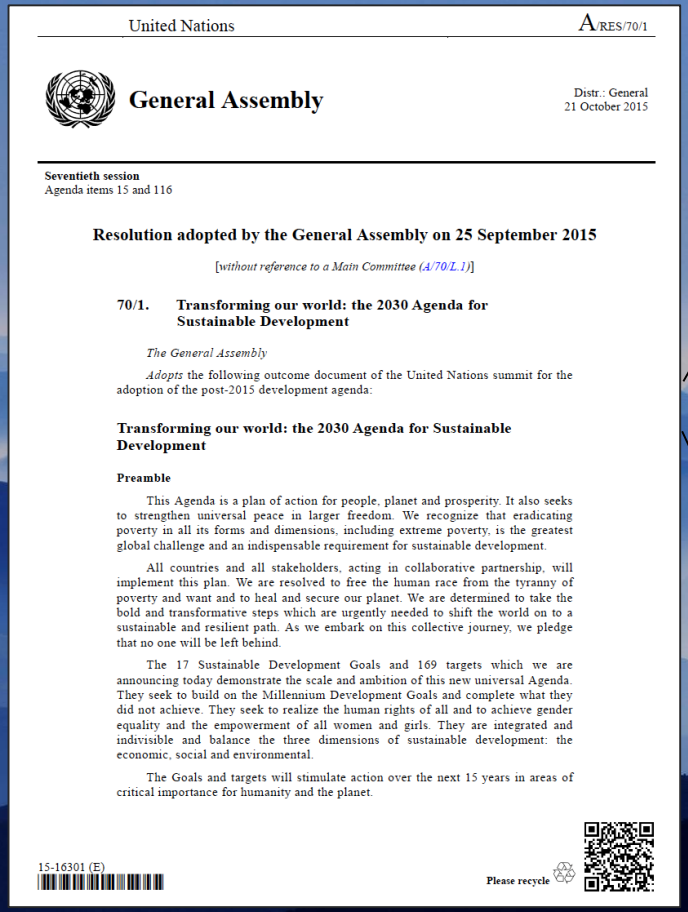
UN Agenda 2030
Sustainable Development Goals (SDGs)

ESA contribution to CEOS AHT on SDGs


PEOPLE
End poverty and hunger in all forms and ensure dignity and equality
PLANET
Protect our planet's natural resources and climate for future generations
Sustainable Development
PROSPERITY
Ensure prosperous and fulfilling lives in harmony with nature
PARTNERSHIP
Implement the agenda through a solid global partnership
PEACE
Foster peaceful, just and inclusive societies

2030 Agenda for Sustainable Development: 17 goals, 169 targets, 229 Indicators

New norms to integrate the principles of sustainable development into country policies and programs



United Nations A/RES/70/1

General Assembly

Distr.: General
21 October 2015

Seventieth session
Agenda items 15 and 116

Resolution adopted by the General Assembly on 25 September 2015

[*without reference to a Main Committee (A/70/L.1)*]

70/1. Transforming our world: the 2030 Agenda for Sustainable Development

The General Assembly

Adopts the following outcome document of the United Nations summit for the adoption of the post-2015 development agenda:

Transforming our world: the 2030 Agenda for Sustainable Development

Preamble

This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. We recognize that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development.

All countries and all stakeholders, acting in collaborative partnership, will implement this plan. We are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world on to a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind.

The 17 Sustainable Development Goals and 169 targets which we are announcing today demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what they did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.

The Goals and targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet.

15-16301 (E)

Please recycle

Transforming our World: The 2030 Plan for Global Action

Article 76:

… 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 geo-spatial information**, while ensuring national ownership in supporting and tracking progress.

Holloway

17 GOALS

Sustainable data for sustainable development

- The monitoring of the MDGs taught us that **data are indispensable elements of the development agenda**.
- Despite improvement, **critical data** for informed policy making on development **are still lacking**.
- **New technology** is changing the **way data are collected** and disseminated.
- Data should be **open**, **easily accessible** and **effective for decision--making.**

A World That Counts: **Mobilising the Data Revolution for Sustainable Development**, Nov. 2014

UN SG Independent Expert Advisory Group on data revolution for sustainable development

- **Global Action Plan for Sustainable Development Data** launched at UN WDF in Jan 2017 – to be adopted at UNSC-48
- **modernizing NSOs** is essential to achieving the 2030 SDGs.
- **Integrating geospatial and statistical data** is a necessity.

First UN World Data Forum on Sustainable Development Data
15-18 January 2017
Cape Town, South Africa.

United Nations WORLD DATA FORUM

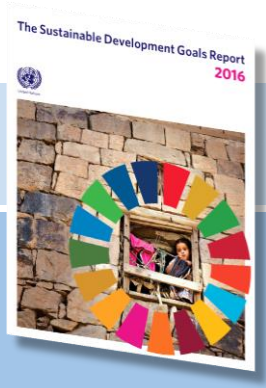
The importance of Earth Observations

Multiple variables from multiple data sources can be integrated into consolidated indicators ….
if the data is **consistently available over space and time**

Key Stakeholders of the SDGs implementation

HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT

SG annual report on "Progress towards the Sustainable Development Goals"



ECOSOC United Nations

United Nations Statistical Commission

BETTER DATA BETTER LIVES

unstats.un.org

@UNStats

UN-GGIM UNITED NATIONS INITIATIVE ON GLOBAL GEOSPATIAL INFORMATION MANAGEMENT

UNDESA - UN Statistics Division (UNSD)

IAEG-SDGs

Inter-agency Expert Group on SDG Indicators

National Statistical Offices

National governments and agencies

UN Custodian Agencies

UNEP

UN Habitat

FAO

WHO

UNISDR

UNCCD

UNICEF

WB

OECD

UNSD

Working Group on Geo-spatial Information (WGGI)

Working Group on Inter-linkages of SDGs

Working Group on SDMX

The Global Indicator Framework

- Limited in number and **globally harmonized**
- Simple, single-variable indicators, with **straightforward policy implications**
- Allow for **high frequency monitoring**
- **Consensus based**, in line with international standards and system-based information
- Constructed from **well-established data sources**
- Can be **disaggregated**
- **Universal**
- Mainly **outcome-focused**
- **Science-based** and forward-looking
- A proxy for **broader issues** or conditions

IAEG-SDGs
Inter-agency Expert Group on SDG Indicators

- NSOs
- Custodian Agencies
  - WG on Geo-spatial Information (WGGI)
  - WG on Inter-linkages of SDGs
  - WG on SDMX

IAEG-SDGs ToR

- Develop a list of indicators for monitoring SDG targets.
- Provide technical support for country implementation.
- Regularly review methodological developments.
- review CB activities in NSOs.
- Report progress

WGGI ToR

- Advice IAEG-SDGs how geo-spatial and EO can contribute.
- Identify existing geospatial data gaps & methodological issues.
- Provide GEO/EO best practices
- Propose strategies for methodological work on specific areas

To monitor progress, inform policy and ensure accountability of all stakeholders

IAEG-SDGs Program of Work

- **Classify indicators into 3 tiers**, based on methodological development and data availability
- Establish adequate **methodology for Tier III indicators**, in conjunction with specialized agencies and relevant experts
- Discuss **available data sources** and methodology for improved coverage of **Tier II indicators**
- Explore **new data sources and data collection technologies**, including through partnerships with civil society, private sector and academia
- Regularly rev**iew methodologies for indicators**
- Establish **baseline for tracking indicators**
- Address question of **periodicity of reporting**
- Review **data gaps** and related **capacity--building priorities**, and transmit results to HLG
- Agree on format of compilation and **dissemination of metadata on global indicators**

GEO/CEOS/ESA Involvement in the SDG Process

GEO

CEOS

GEO Initiatives on SDGs (EO4SDGs)

Leads: NASA, JAXA, INEGI

GEO, UN-GGIM, WHO, EPA, ESA …

CEOS Ad-hoc team on SDGs

Leads: CSIRO, CSA, ESA

NASA, USGS, NOAA, ISRO, JAXA…

UN Statistical Division

IAEG-SDGs

Inter-agency Expert Group on SDG Indicators

WG on Geo-spatial Information (WGGI)

UN Habitat | UNCCD | UNEP

UN Custodian Agencies

National Statistical Offices

GEO EO4SDGs initiative

Realize the potential of EO and geospatial information to **advance the *2030 Agenda*** and enable societal benefits through achievement of the Sustainable Development Goals.

GOAL I: **Demonstrate** how EO and geospatial information, with socio-economic and other data contribute in novel and practical ways to support achievement of the SDGs.

GOAL II: **Increase** skills and capabilities in use of EO for SDG activities and their broader benefits.

GOAL III: **Broaden interest and awareness** of EO support to the SDGs and contribution to social, environmental, and economic benefits.

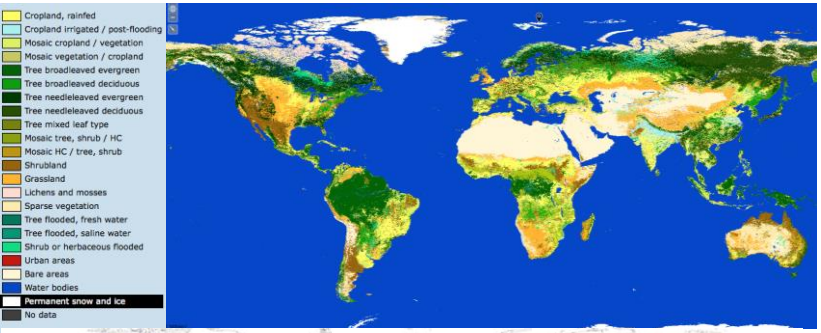
Target *Contribute to progress on the Target yet not the Indicator per se*								*Goal*	*Indicator* *Direct measure or indirect support*				
							1.5	1					
					2.3	2.4	2.c	2	2.4.1				
				3.3	3.4	3.9	3.d	3	3.9.1				
								4					
								5	5.9.1				
		6.3	6.4	6.5	6.6	6.a	6.b	6	6.3.2	6.4.2	6.5.1	6.6.1	
				7.2	7.3	7.a	7.b	7	7.1.1				
							8.4	8					
				9.1	9.4	9.5	9.a	9	9.1.1				
								10					
	11.3	11.4	11.5	11.6	11.7	11.b	11.c	11	11.3.1	11.6.2	11.7.1		
					12.2	12.a	12.b	12					
					13.1	13.3	13.b	13	13.1.1				
	14.1	14.2	14.3	14.4	14.6	14.7	14.a	14	14.3.1				
15.1	15.2	15.3	15.4	15.5	15.7	15.8	15.9	15	15.1.1	15.2.1	15.3.1	15.4.1	15.4.2
								16					
			17.6	17.7	17.9	17.16	17.17	17					

Contents

SDG 15.3 Land Degradation Neutrality (LDN)

Target 15.3 By 2030, combat desertification, restore degraded land & soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

Indicator 15.3.1 "Percentage of land that is degraded over total land area"

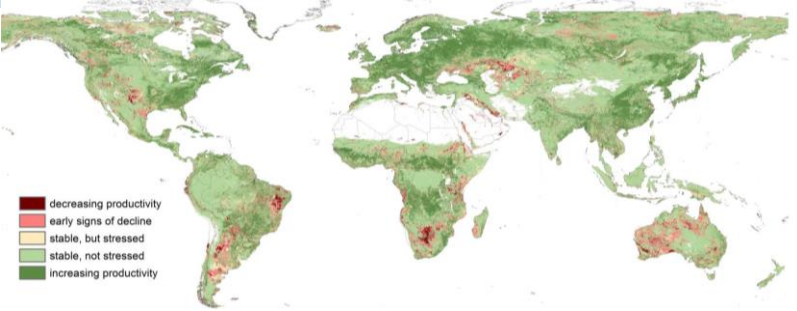


Land Cover

GLOBAL LAND COVER MAP, EPOCH 2010

ENVISAT MERIS FRS, 300m

ESA Land Cover CCI



Land Productivity Dynamics

LPD derived from 1999-2013 NDVI phenological analyses

SPOT VEGETATION, 1km

EC Joint Research Center (JRC)

Custodian Agency:

- UNCCD (secretariat and Global Mechanism)

Other Involved Agencies

- FAO, UNEP/WCMC

CSIRO Contracted by UNCCD to provide good practice guidance for indicator 15.3.1

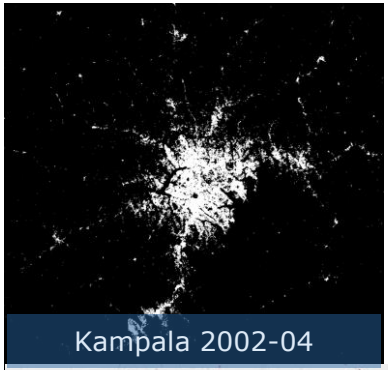
TIER III

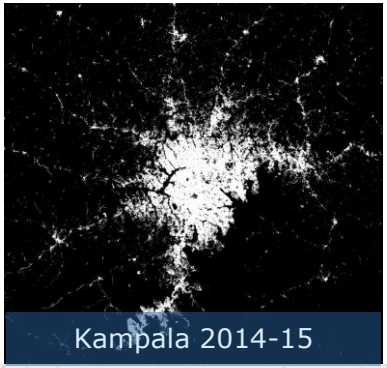
Monitoring 15.3.1. on the status & trends in land degradation is based on sub-indicators:
(1) **Land Cover and Land Cover Changes** (2) **Land Productivity** (3) **Soil Organic Carbon**

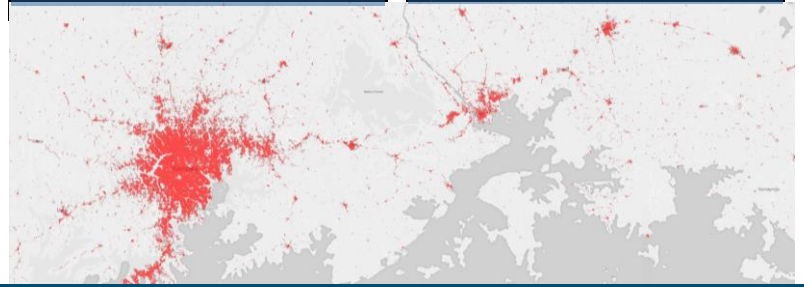
SDG 11.3 Sustainable Urbanization

Target 11.3 By 2030, enhance inclusive & sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

Indicator 11.3.1 "Ratio of land consumption rate to population growth rate"


Kampala 2002-04


Kampala 2014-15



City Urban Extent

Kampala, Uganda

2002-04 based on ENVISAR ASAR and Landsat 5/7

2014-15 based on SENTINEL 1 C-SAR and Landsat 8

DLR, ESA SAR4URBAN

Custodian Agency:

- UN Habitat

Other Involved Agencies

- UNDP, UN-DESA

Global Urban Footprint 2015

Southern Uganda extract

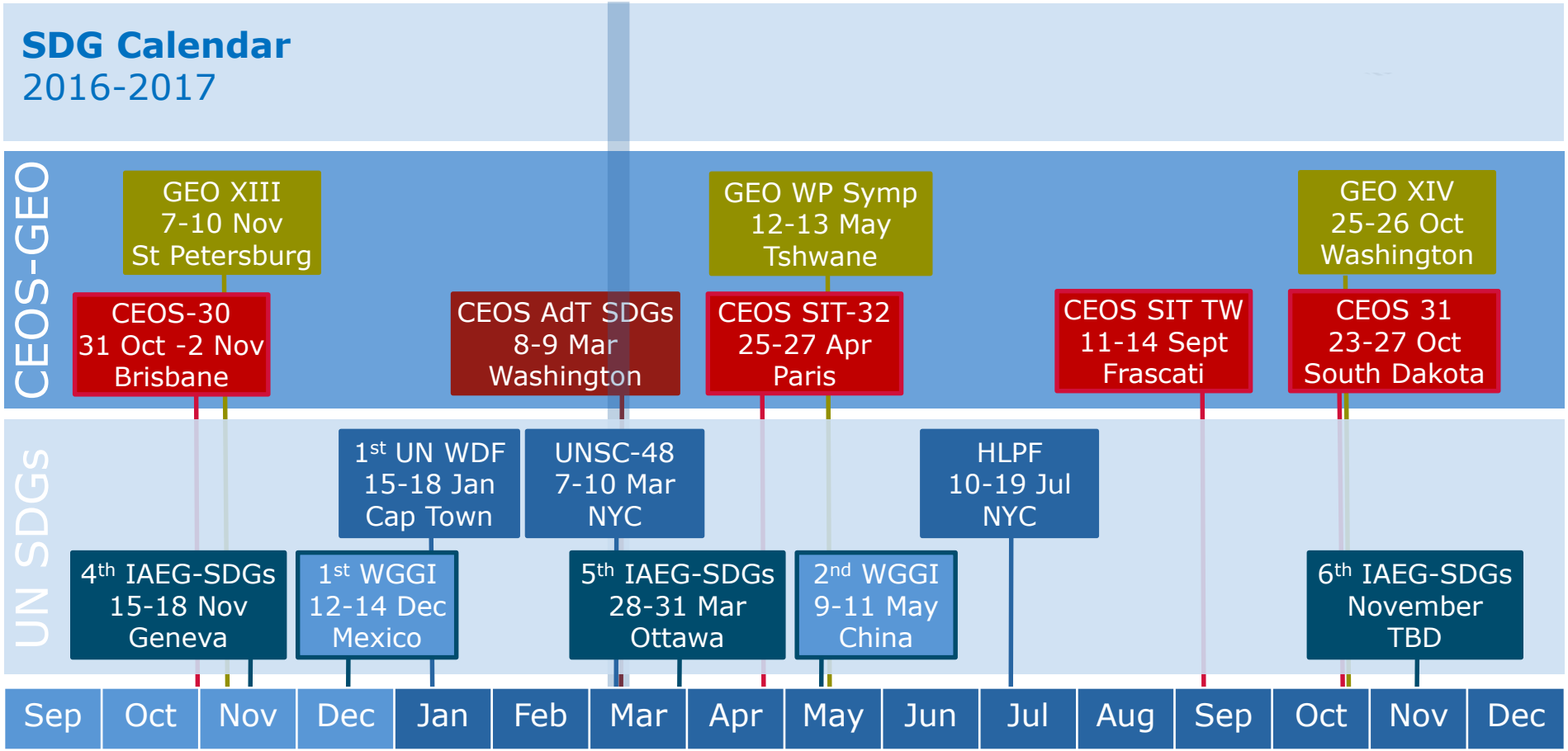
Urban Footprint based on Sentinel 1 C-SAR and Landsat 8 OLI

DLR, ESA SAR4URBAN, ESA Urban TEP

TIER II

Monitoring 11.3.1 on sustainable urbanization is based on 2 main inputs:
(1) **Urban Extent maps** (2) **Population Density map**

SDG Calendar
2016-2017



EO support to SDG implementation

Global Datasets	Methodological Guidelines	Country Support	Capacity Building	EO Software Toolboxes	EO knowledge Hub & platforms

Custodian Agencies

- Access to global / regional datasets.
- in the absence of or to complement and enhance, national data sources.
- countries which face major difficulties in collecting national data

- Support custodian agencies to develop method. guidelines to countries.
- EO Best Practices.
- Scientifically sound approaches.
- Product validation.
- Show Cases.

NSOs and governments / agencies

- Targeted activities to support NSOs and ministries to report on SDG indicators.
- Support country level efforts to apply EO to track, monitor and achieve SDGs.

- Build capacity to exploit EO
- Training courses
- Training material on EO best practices
- Mainly in developing and emerging economies
- Critical mass of technical centers

Key Stakeholders

- Free of charge
- Open source
- Easy to use
- EO Processing Toolboxes (ESA SNAP)
- Thematic Toolboxes

- Knowledge sharing
- Facilitate access to satellite data
- Access to global / regional datasets
- EO Best practices
- Method. guidelines
- Visualisation and Analysis tools
- On-line processing
- Toolboxes

SDG 6.6 Water-related Ecosystems

Tier 3 | Tier 2 | Tier 1

Global Datasets	Methodological Guidelines	Country Support	Capacity Building	EO Software Toolboxes	EO knowledge Hub & Platforms

UNEP custodian of SDG 6.6.1

6.6 Expert Workshop, Switzerland, Sept 2015

SDG 6.6 Target Team: UNEP, Ramsar, IWMI, UN WATER, CBD, UNEP WCMC, UNEP DHI, ESA, IUCN

- Global Mangrove Watch (JAXA)
- Global Surface Waters (JRC)
- *Global Wetland Extent (ESA GW Africa with GEO-Wetlands)*

Step-by-Step Monitoring Methodology for SDG indicator 6.6.1

NSOs and governments / agencies

GPSDD funded "EO support for SDG 6.6. monitoring and reporting on wetlands", **Uganda**

GW Africa

- ESA GW Africa Regional Trainings
- ESA TIGER Capacity Building Facility
- GEO-Wetlands Capacity Building Working Group

water resources management eo4sd

Ramsar STRP

GLOBWETLAND AFRICA Toolbox

SWOS Satellite-based Wetland Observation Service

GEO WETLANDS

- Knowledge sharing Hub
- EO Best Practices
- Mapping Standards
- Monitor. Guidelines
- Benefit Showcases
- Toolboxes
- On-line processing

SDG 15.3 Land Degradation Neutrality

Tier 3 | Tier 2 | Tier 1

Global Datasets	Methodological Guidelines	Country Support	Capacity Building	EO Software Toolboxes	EO knowledge Hub & Platforms

UNCCD custodian of SDG 15.3.1

15.3 Expert Meeting, Washington, Feb 2016

15.3 Framework and Guiding Principles

Inter-Agency Advisory Group (FAO, UNEP, UNSD, CBD, UNFCCC)

CSIRO contracted by UNCCD

Reviewers: ESA

- CCI 300m Global Land Cover (ESA)
- 1km Land Productivity Dynamics (JRC)
- 1km Soil Organic Carbon (ISRIC)

Good Practice guide for reporting on SDG indicator 15.3.1

UNCCD Global Mechanism

LDN Target Setting Program
(LDN TSP)
100+ countries

With support from JRC, ESA and ISRIC

agriculture and rural development
eo4sd

UNCCD Secretariat
Scientific Knowledge Brokering

GEO

New GEO initiative on LDN under discussions between GEO, UNCCD, ESA and CSIRO

SDG 11.3 Sustainable Urbanization

Tier 3 | Tier 2 | Tier 1

Global Datasets	Methodological Guidelines	Country Support	Capacity Building	Software Toolboxes	Knowledge Hub & Platforms

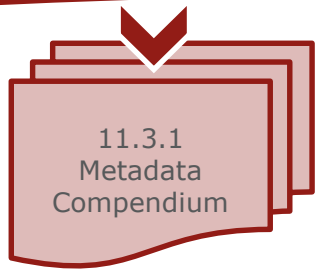
UN Habitat custodian of SDG 11.3.1

NSOs and city authorities

11.3 Expert Group Meeting, NYC, Feb 2016

Monitoring of SDG 11.3

- Atlas of Urban Expansion (NYU and Lincoln Institute)
- GHSL - Global Human Settlement Layer (JRC)
- *GUF - Global Urban Footprint* (DLR/ESA)



urban development eo4sd

urban tep

- Access to global data sets (GUF)
- Explore thematic layers
- On-demand processing
- On-line Analysis & visualisation
- Collaborative community sharing

2030 Agenda for Sustainable Development: 17 goals, 169 targets, 229 Indicators

New norms to integrate the principles of sustainable development into country policies and programs

EOEP-5 EO4SDGs project objective

Support CEOS, ESA and its Member States and the EO community at large to play a leading role in the full realisation of Earth Observations in the 2030 agenda for SD

- Analyse in depth the **Metadata Repository** of all SDG indicators (17 goals, 169 targets, 230 indicators) and assess the **current and potential contribution of EO** to the SDG indicators' implementation.
- Review the **Tier 2 and 3 monitoring guidelines** produced by the custodian agencies for a number of key SDG indicators (**at least 5**) and propose areas of EO improvements.
- Perform **one country demonstration**, by partnering with the NSO and the relevant national governmental authorities (for the indicators selected) in **one developing country** to support implementation of a number of SDG indicators (**at least two**)
- Study how the **EC/ESA/MS developed platforms and big data initiatives (Datacube)** can serve the data and information needs of the large community of SDG stakeholders (UN-GGIM, Custodian Agencies, National Statistical Offices, etc.).

EOEP-5, 400 KEUR, 18 months, ITT in 2017 Q2