

# EO4SDG ANNUAL MEETING

18-19 November 2020



# INTRODUCTION & WELCOME

**OPENING WORDS** | *PALOMA MERODIO, LAWRENCE  
FRIEDL, CHU ISHIDA AND OSAMU OCHIAI, CO-CHAIRS,  
EO4SDG*

**OBJECTIVES OF THE WORKSHOP** | *ARGYRO KAVVADA,  
EXECUTIVE SECRETARY, EO4SDG*



# MEETING OBJECTIVES

- » Share highlights from the **GEO Week 2020** and discuss links to & opportunities for EO4SDG
- » Share **2020 EO4SDG highlights and successes**, discuss **gaps and recommendations** for inspiring **multi-stakeholder partnerships** and review preliminary results from EO4SDG questionnaire
- » Reflect on the draft concept note on the development of the **EO4SDG federated approach** and listen to perspectives from GEO WGs, Sub-Groups, Work Programme Activities, Participating Organizations, and partners.
- » Share progress and perspectives on **EO4SDG Goals and Objectives** as outlined in the Implementation Plan 2020-2024 and identify individual contributions for 2021 via interactive exercises.

# INTERACTIVE EXERCISE I



# GEO WEEK 2020, 2-6 Nov 2020

Steven Ramage,  
GEO Secretariat

GEO Week 2020 showcased efforts to implement the [Canberra Declaration](#) highlighting initiatives from GEO Members, Participating Organizations and Associates via live discussions and interactive content (including SDG awards).

The GEO Highlights Report will be launched as an interactive website and PDF showcasing the impact of the GEO Work Programme since last year's report.

[www.earthobservations.org/geoweeek2020](http://www.earthobservations.org/geoweeek2020)



# MONDAY 2 NOVEMBER

## Introduction

Opening remarks from GEO Co-Chairs and the GEO Secretariat Director for an overview of the event, progress over the past year, and how to get involved in the GEO Pledge Campaign, a way to contribute financially to the work of GEO.

## Speakers

GEO Co-Chairs & GEO Secretariat Director



Mmboneni Muofhe  
Deputy Director-General (DDG)  
Department of Science and Innovation in South Africa



Stephen Volz  
Assistant Administrator  
National Science and Innovation Administration (NSIA)



Huang Wei  
Vice Minister and Member  
LPC Leading Group  
Ministry of Science and Technology



Patrick Child  
Deputy Director General  
DG Research and Innovation



Gilberto Camara  
Secretariat Director  
GEO Secretariat

## Member Statements

11:30-12:30 CET | 05:30-06:30 EDT | 20:30-21:30 AEST

[www.earthobservations.org/statements2020](http://www.earthobservations.org/statements2020)

Discover new initiatives, commitments and policies in GEO Member Statements. GEO Member Statements will be hosted here showing videos, photos and quotes from GEO's Members.



# GEO Pledge Campaign

Make your pledge NOW!



Our 2021 Goal:  
CHF 5.5 Million

[www.earthobservations.org/pledgecampaign2020](http://www.earthobservations.org/pledgecampaign2020)

**Current Pledges** are not legally binding and depend on the fiscal arrangements of the pledge maker.



Stephen Volz  
GEO Co-Chair  
United States

*"The United States is committed to the vision and mission of GEO. GEO provides an effective way for our community's collective efforts to promote uses of Earth observations in decision-making. Together we can achieve a broader reach and impact than any individual country or organization working alone. Supporting us in this pursuit are the men and women of the GEO Secretariat whose work is funded from the GEO Trust Fund. Sustained funding to the Trust Fund is essential to the mission of GEO. We rely on the Secretariat for the functioning of GEO's key processes and continuity of member interactions, support to the foundational elements of the GEO Work Programme, engagement with strategic partners, and advocacy and communications on behalf of GEO globally. We are pleased to continue our essential contribution to the GEO Trust Fund to help realize the ever-growing potential that Earth observation represents for humanity, the environment, and a sustainable future on our home planet."*



United States



CHF 949'759.00



GEO  
WEEK  
2020



## 53rd Executive Committee meeting - Day 2

12:00-16:00 CET | 06:00-10:00 EDT | 21:00-01:00(+1) AEST

Videoconference for Executive Committee Members and other GEO Member Principals to adopt decisions on selected topics.

## Industry Track - Day 2

13:00-17:00 CET | 07:00-11:00 EDT | 22:00-02:00(+1) AEST

<https://geoweeek2020industrytrack.confluence.works/>

# Industry Track

**GEO** GROUP ON  
EARTH OBSERVATIONS

ZASPACE Inc.

**sansa**  
SPACE AGENCY

SPACE IN AFRICA

Enabling Access To Markets • Partners • Resources • Insights




## GEO Awards

16:00-17:00 CET | 10:00-11:00 EDT | 01:00(+1)-02:00(+1) AEST

Meet the winners of the second annual GEO Individual Excellence Awards and the Earth Observations for the Sustainable Development Goals Awards (EO4SDG Awards). Learn about their projects and get inspired from their stories using Earth observations for impact.

**GEO**  
**WEEK**  
**2020**



☰
!  Hendrik ▾

Sessions

DAY 1  
**Plenary**

Plenary  
03 Nov 09:00 - 09:50

DAY 1  
**Expert Talk**

Stream 1: Expert Talk  
03 Nov 10:00 - 10:45


DAY 1  
**Company Profiling**

Stream 2: Company Profiling  
03 Nov 10:00 - 10:45





DAY 1  
**Expert Talk**

Stream 1: Expert Talk  
03 Nov 10:50 - 11:35

● LIVE **GEO Week 2020**  
Industry Track



ENABLING ACCESS TO Markets · Partners · Resources · Insights

**Plenary**

09:00 Opening and welcome - Kamal Ramsingh, Chairperson of ZASpace

09:10 Introduction to GEO – Prof. Gilberto Camara, Secretariat Director of GEO

09:25 Keynote address – Mmboneni Muofhe, Deputy Director General: Technology Innovation @ Department of Science and Innovation and Co-chair of the GEO Executive Committee


📅 03 Nov 09:00 - 09:50

Q&A      Chat

☰      Day 1: Plenary ▾      H

Ask the speaker

✍️ Type your question



There are no questions asked yet.

Ask the first one!

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*"A conversation with GEO Principals: Deriving value from GEO."*

Learn how countries are addressing national priorities and building resilient societies and economies by leveraging Earth observations and their membership in GEO. This discussion will feature expectations from GEO Principals from countries not typically featured in Plenary sessions.



**David Harper**  
Director General  
Monitoring and Data Service Directorate (MDS) within  
the Meteorological Service of Canada (MSC) at  
Environment and Climate Change Canada



**Yolanda González Hernández**  
Forestry Engineer / Director  
Institute of Hydrology, Meteorology and  
Environmental Studies (IHMETS)



**Rafael Monge**  
Director  
National Center of Geo-Environmental  
Information (CENIG)



**Driss ELHADANI**  
Director  
Royal Centre for Remote sensing (CRS)



**Steven Ramage**  
Head of External Relations  
GEO Secretariat



**Trevor Dhu**  
Branch Head  
National Earth and Marine  
Observations, Geoscience Australia



**Karine Siegwart**  
Vice Director  
Federal Office for the Environment (FOEN)



**Natalia Kassul**  
Deputy Director and Head  
Space Information Technologies  
Department, NASU-SSAU



**Dr Vu Anh Tuan**  
Vice Director General  
Vietnam National Space Center (VNSC)



## FRIDAY 6 NOVEMBER

### *“Challenges and approaches to data sharing: The future of open data”*

Panelists discuss approaches to open data, expanding access to in situ data and analysis ready data for continued integration in the digital economy and sustainable development, including experience from GEO Initiatives and Flagships.



**Dr Zhou Xiang**  
Professor  
Remote Information Research Institute (AIR)  
Chinese Academy of Sciences (CAS)



**Adam Lewis**  
Managing Director  
Digital Earth Africa Establishment team  
Geoscience Australia (GA)



**Mir Matin**  
Theme Leader  
Geospatial Solutions  
International Centre for Integrated Mountain  
Development (ICIMOD)



**Toshio Koike**  
Executive Director  
International Centre for Water Hazard and  
Risk Management (ICHARM)



**Anastasia Wahome**  
Science and Data Lead for SERVIR EBSA  
RCMFD



**Dr. Werner Kutsch**  
Director General  
Integrated Carbon Observation System  
(ICOS)



**James Rattling Leaf Sr.**  
Consultant  
Great Plains Tribal Water Alliance



**Conor Delaney**  
Technical Coordinator  
Secretariat of the European Marine  
Observation and Data Network (EMODnet)



**Fabio Andres Bernal**  
Official of the Hydrology Division of the  
Institute of Hydrology, Meteorology and  
Environmental Studies IDEAM in Colombia



**Henrik Steen Andersen**  
Contract Manager  
European Environment Agency (EEA)





[www.earthobservations.org/indigenoussummit](http://www.earthobservations.org/indigenoussummit)

## ***The GEO Indigenous Summit 2020***

**7-9 December 2020**

**Online**

Join Indigenous leaders from around the world as they discuss Indigenous-led innovation in Earth observations data, science and technology. This will build on the GEO Indigenous hackathon, bringing together Indigenous knowledge and state-of-the-art science and technology, as well as the global GEO community.



# EO4SDG ANNUAL MEETING, 18-19 Nov 2020

## 2020 EO4SDG Highlights

Argyro Kavvada, Ph.D.

EO4SDG Executive Secretary



# Timeline of Recent Activities with EO4SDG Engagement



- 1/14** Coordinated Capacity Development & SCADB
- 1/21-24** GFOI Workshop on Alignment of SDGs, NDCs, NFMS
- 2/8-13** Global Urban Forum 2020
- 3/9-13** CEOS WGCapD Meeting
- 3/9-11** 6<sup>th</sup> WGGI Meeting
- 3/ 24-27** CEOS SIT 2020
- 4/15** EO4SDG, AmeriGEO, AOGEO Mtg
- 4/23** Virtual Meeting with Peru's ANA & UNEP
- 4/27** CEOS SDG AHT Mtg



- 5/5** Monthly SDG 11/NUA Toolkit Meeting
- 6/10** 9<sup>th</sup> Virtual WGGI Mtg.
- 6/15-18** GEO Symposium 2020
- 7/8** 8<sup>th</sup> Virtual WGGI Mtg
- 7/8** USGEO IAWG Mtg
- 7/9** SDG 11/ NUA Toolkit Panel Mtg
- 7/7-16** UN HLPF 2020
- 7/31** CEOS Urban SDG Sub-team Mtg
- 8/26-27 & 9/4** 10<sup>th</sup> UN GGIM Session
- 9/ 7-8** 2020 Americas Symposium & UN-GGIM Americas 7<sup>th</sup> Session



- 9/15-17** CEOS SIT TW 2020
- 10/14-16** IAC 2020
- 10/19-21** UN World Data Forum 2020
- 10/20-22** 2020 CEOS Plenary
- 10/22** 1<sup>st</sup> Workshop EO SDG 11 Toolkit
- 11/10** NASA Project Life on Land Annual Workshop
- 11/ 2-6** GEO Week 2020
- 11/5-18** NASA ARSET Webinar on SDG 6.6.1
- 11/11** 11<sup>th</sup> Virtual WGGI Mtg.
- 11/16** IDEAMAPS Webinar



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# COUNTRY USE CASES

- Includes a total of 22 cases from 8 countries [7 country EO use cases — from Sweden, Portugal, Germany, and the European Commission — consolidated by the UN-GGIM Data Integration Working Group]
- Thank you to Chu Ishida, JAXA, EO4SDG Co-lead for leading this compilation
- Next steps: work with AOGEO, AmeriGEO, other regional initiatives

<https://eo4sdg.org/get-more-information/country-use-cases/>



# GEO SDG AWARDS 2020

## Sectoral Awards

- **GEO Member:** Ministry of Environment and Energy of Costa Rica; UK Space Agency
- **GEO Participating Organization:** Global Partnership for Sustainable Development Data
- **GEO Observer:** UN-GGIM:Europe
- **SDG Custodian Agency:** United Nations Convention to Combat Desertification
- **Not-for-Profit:** HR Wallingford
- **Academia:** The Earth Observatory of Singapore; The Rights Lab, University of Nottingham, UK
- **For-Profit:** Geospoc; CirroLytix Research Services

## Special Awards

- **Innovation:** International Water Management Institute
- **Statistical-Geospatial Integration:** Tanzania National Bureau of Statistics
- **Collaboration:** GEO Blue Planet Initiative and Esri
- **Testimonial:** CODATA, Committee on Data of the International Science Council



Watch the [recording](#). Read about the [awarded projects](#).



## GEO SDG AWARDS 2020 EVALUATION PANEL

## GEO SDG AWARDS 2020 PROGRAM MANAGEMENT TEAM



**Krystal Azelton**

Director of Space Applications Programs, Secure  
World Foundation



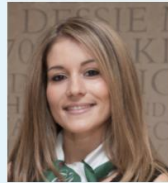
**Lawrence Friedl**

Director for Applied Sciences Program, NASA  
Co-chair, EO4SDG



**Chu Ishida**

Senior Expert, JAXA  
Co-chair, EO4SDG



**Argyro Kavvada**

Lead, Sustainable Development Goals, NASA  
Executive Secretary, EO4SDG



**Monica Miguel-Lago**

Senior Project Manager, EARSC



**Phoebe Oduor**

Thematic Lead LULC, Servir ES&A, RCMRD  
POC, AfriGEO Secretariat



**Rhiannan Price**

Managing Director, DevGlobal Partners



**Karin Tuxen-Bettman**

Program Manager, Google Inc.



**Argyro Kavvada**



**Jessica Chau**

## GEO 2020 INDIVIDUAL EXCELLENCE AWARD

- Mr. Chu Ishida has fulfilled the role of Co-lead of our initiative, EO4SDG, as the representative of Japan. He has substantially advanced the EO4SDG activities since its foundation.
- Of particular note is his achievement of connecting the Earth observation community with the national statistics community. His deep knowledge and passion for Earth observations and belief in the potential power of Earth observation to underpin sound decision making, sustained for more than 30 years, is apparent in the trust afforded to him by his GEO colleagues.
- **Thank you for your leadership and notable contributions, Chu!**
- Watch the [recording](#).



**ANNOUNCING THE  
INDIVIDUAL  
EXCELLENCE  
AWARDS**

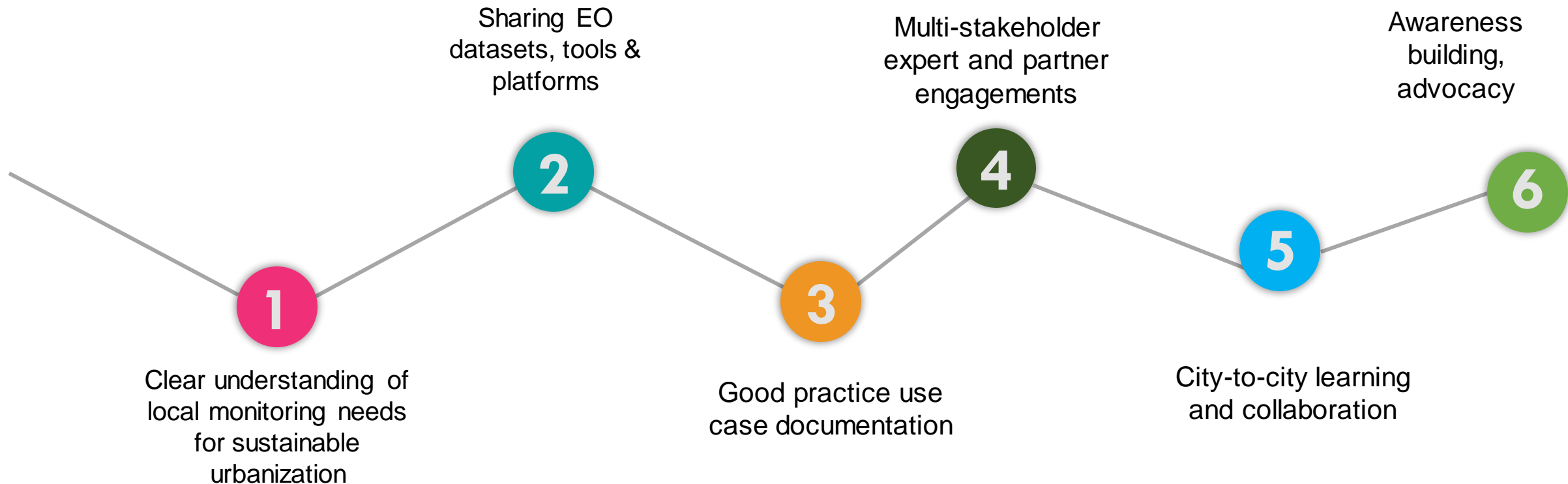


Mr. Chu Ishida, Japan [JAXA]  
EO4SDG Co-Chair, 2016-2020

## EO TOOLKIT FOR SUSTAINABLE CITIES & COMMUNITIES

### Objectives

- Identify local monitoring needs & recommend ways to address these, building appropriate skills and capacity with EO
- Understand & share how cities are already applying EO to implement the SDGs locally
- Approach targeted countries & cities of different **size, development** and **geography**
- **Joint call** with UN Habitat received over 60 responses received
- 19 **selected national & city governments based on interest + needs** + a global network of experts & practitioners from thematic initiatives

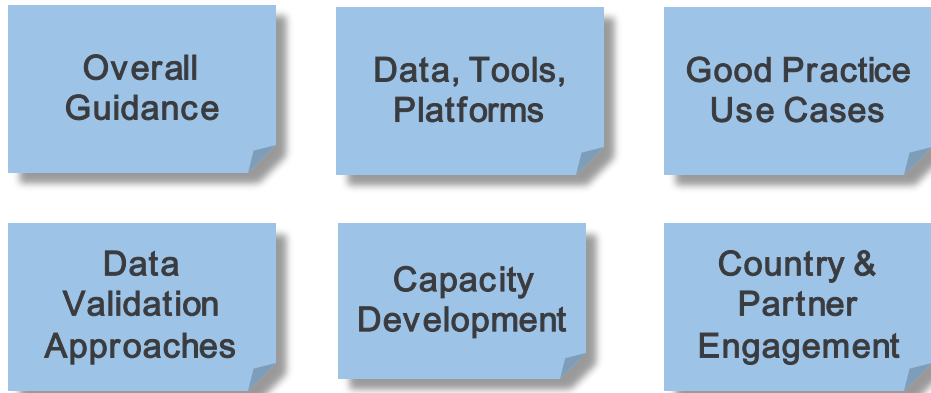




## GEO SDG 11 & NUA TOOLKIT



### Key Components



<https://eo4sdg.org/get-more-information/geo-sdg-toolkits/>

EO4SDG is working with UN Habitat, GEO Human Planet, GUOI & partners to support Sustainable Cities & Communities

- Addressing capacity gaps
- Co-design with UN-Habitat and stakeholders
- Comparisons among existing tools and data sets
- Tailored support to meet UN-Habitat, country and city requirements
- Coordination among GEO Work Programme activities & Participating Organizations

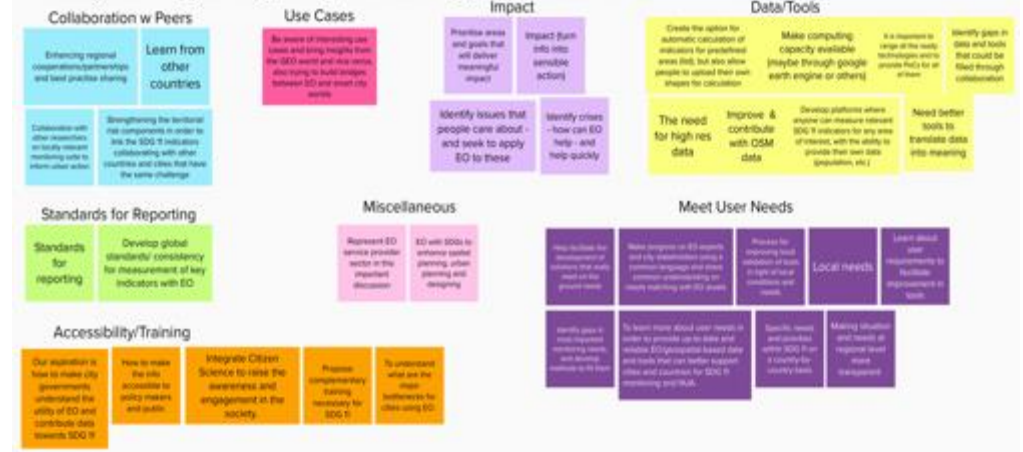
# FIRST VIRTUAL WORKSHOP ON OCTOBER 22



- Reviewed use cases at country/ city level
- Discussed priority areas of interest among partners
- Virtually mapped existing + desired capacity needs & opportunities for addressing these needs



## What is your #1 goal for joining the Steering Committee for SDG 11/NUA Toolkit?



## How will we know when we are successful?

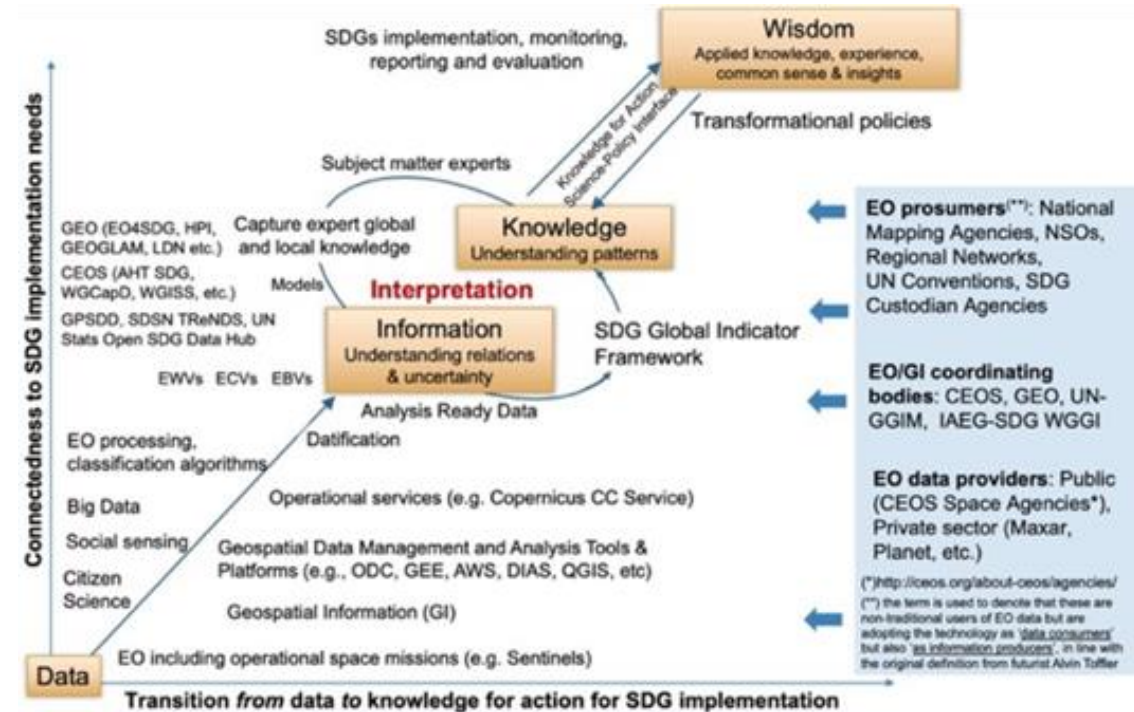


- Establish small groups of technical experts & city/country-level partners
- Map relevant and feasible data products to thematic needs; support + capacity development

## ADDITIONAL RESOURCE: RSE SPECIAL ISSUE ON EO4SDG

17 publications and an editorial illustrating the application of EO to support countries in SDG target setting including baseline determination, tracking progress of implementation & informing planning and decision making.

- Primary focus of on SDGs 6 (Water & Sanitation), 15 (Life on Land), 14 (Life Below Water), 11 (Sustainable Cities & Communities)
- Criteria to evaluate progress on establishing an enabling environment for EO for SDG
- Need for a systematic process to generate knowledge from data for addressing policy goals



EO for SDG Frameworks for focused on 'Knowledge' element of the Data-Information-Knowledge -Wisdom are needed (Kavvada et al., 2020)



<https://www.sciencedirect.com/journal/remote-sensing-of-environment/special-issue/10RFDS7BFNH>

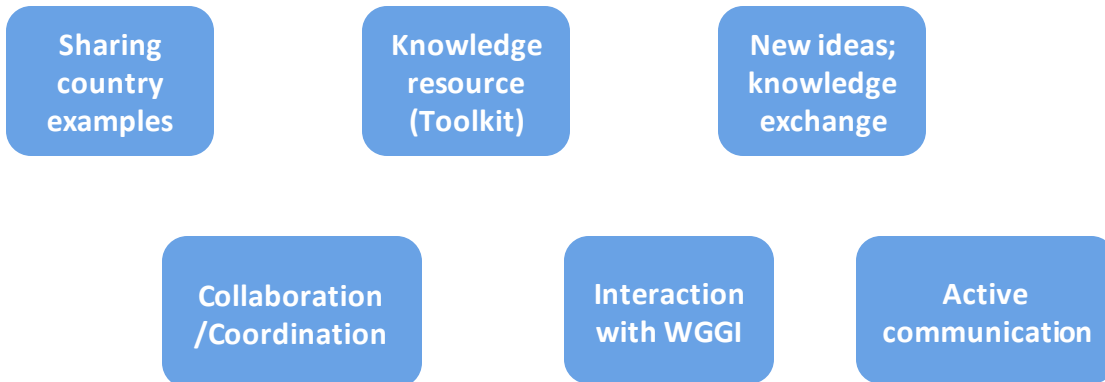


## EO4SDG SURVEY — PRELIMINARY RESULTS (17 RESPONSES RECEIVED)

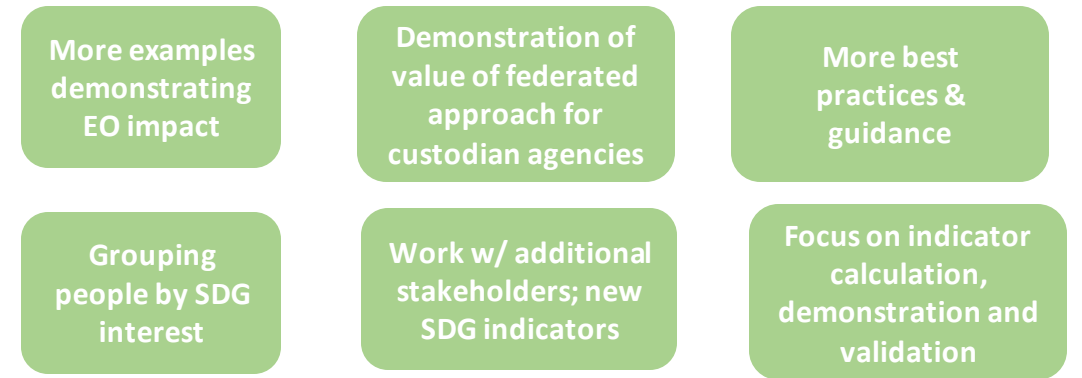
### EO4SDG UNIQUE VALUE

- It's the most **comprehensive single resource** for proving EO can indeed support the SDG framework
- **Coordinated** efforts
- Allowing **focus on SDGs from the EO perspective**
- **Collaborative** agenda on EO
- Overview of EO **across GEO** and for **many SDGs**
- A **forum to exchange** information on the use of EO for SDG

### What are we doing well?



### What can we be doing better?



### How can EO4SDG work with/ support you?



## ADDITIONAL RESOURCES

- Blog Post, [Tools to enable UN Member States at national and local level to use Earth observations to help deliver SDG 11 and the New Urban Agenda](#)
- [RS Special Issue on EO Solutions to Help Countries Address the SDGs](#)
- Blog Post, [Protecting Belize's Barrier Reef World Heritage Site](#)
- Prakash, M., Ramage, S., Kavvada, A., & Goodman, S. (2020). [Open Earth Observations for Sustainable Urban Development](#). Remote Sensing, 12(10), 1646.
- Whitcraft, A. K., Becker-Reshef, I., Justice, C. O., Gifford, L., Kavvada, A., & Jarvis, I. (2019). [No pixel left behind: Toward integrating Earth Observations for agriculture into the United Nations Sustainable Development Goals framework](#). Remote Sensing of Environment, 235, 111470.
- Hakimdavar, R., Hubbard, A., Policelli, F., Pickens, A., Hansen, M., Fatoyinbo, T., ... & Carroll, M. (2020). [Monitoring Water-Related Ecosystems with Earth Observation Data in Support of Sustainable Development Goal \(SDG\) 6 Reporting](#). Remote Sensing, 12(10), 1634.
- Dhu, T., Giuliani, G., Juárez, J., Kavvada, A., Killough, B., Merodio, P., ... & Ramage, S. (2019). [National open data cubes and their contribution to country-level development policies and practices](#). Data, 4(4)
- Kavvada, A., Cripe, D., Friedl, L. Earth Observation Application & Global Policy Frameworks, AGU Geophysical Monograph Series (in progress)
- [CEOS EO Handbook 2018 Special Edition:Satellite Earth Observations in Support of the Sustainable Development Goals](#)
- Twitter: [@EO4SDG](#)
- [EO4SDG Website](#); [CEOS Website](#); [WGGI Website](#)

# EO4SDG ANNUAL MEETING, 18 Nov 2020

## Federated Approach

### Panel I: Perspectives from GEO WGs

#### Speakers:

GEO WG on Capacity Development | Joost Teuben

GEO WG on Disaster Risk Reduction | Kene Onukwube

GEO WG on Climate Change | Virginia Burkett

GEO PB Urban Resilience Sub-group | Evangelos Gerasopoulos

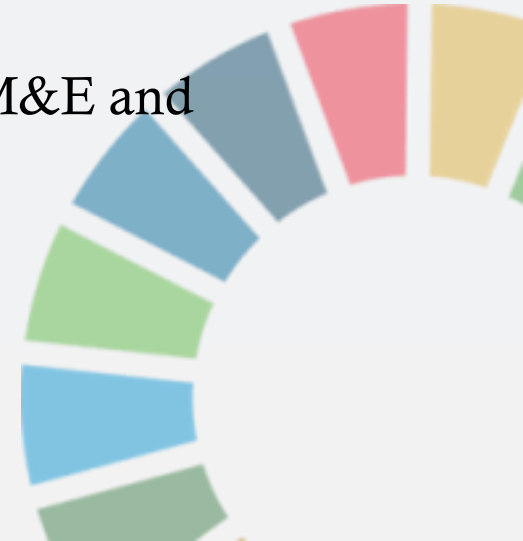
**Moderator:** EO4SDG | Lawrence Friedl





# THE CAPACITY DEVELOPMENT WORKING GROUP; SUPPORTING THE GEO WORK PROGRAMME

- **Joost Teuben**, GEO Coordinator of the CD-WG
- **Hanna Albrecht**, co-chair/lead of subgroup “GEO mapping and needs assessment”
- **Allison Craddock**, co-chair/lead of subgroup “Collecting, sharing and developing CD tools”
- **Nancy Searby**, co-chair/lead of subgroup “Organizing dissemination events, M&E and impact assessment”



# MAIN GOALS OF THE GEO CD-WG

## **Purpose**

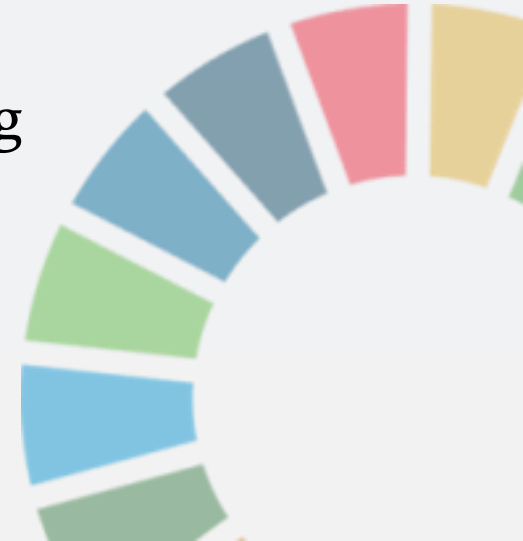
The Capacity Development Working Group (CD-WG) is convened to facilitate GEO's efforts on capacity development, promoting the principle of co-creation and providing conceptual support to the design, development, implementation and evaluation of capacity development activities at various levels of intervention.

## **Duties**

- Support GEO Flagships, Initiatives and Regional GEOs, on request, in the design, implementation, and evaluation of capacity development interventions.
- Develop, improve, and provide capacity development tools for use by the GEO community.
- Collect, document, and share good practices for capacity development related to Earth observations.
- Promote, facilitate and analyze the inclusion of capacity development data, information and knowledge through the GEO Knowledge Hub.
- Organize seminars, teleconferences, side-events and other means for disseminating information related to capacity development for Earth observations;
- Support the planning and implementation of impact assessments for capacity development activities within GEO.

# LINKING THE CD-WG TO THE EO4SDG INITIATIVE

- Developing tools and methodologies to co-create CD interventions based on end-user needs assessments
- Sharing best practices of the GEO Work Programme on CD for SDGs
- Establishing connections between the EO4SDG, CD-WG and GEO knowledge platforms
- Building awareness and use of monitoring, evaluation & learning approaches to increase impacts from SDG related CD activities





# POTENTIAL NEXT STEPS

- Contributing to the development and creating awareness on the GEO OPEN SCIENCE STATEMENT
- Organizing a bi-annual co-chair meeting between EO4SDG and the CD-WG to align activities and annual action plans
- Identifying EO CD targets and indicators of SDGs





EARTH OBSERVATIONS FOR THE  
SUSTAINABLE DEVELOPMENT GOALS

**Kene Onukwube on behalf of:**

**David Borges, Co-Chair SG1 and members;**

**Janet Edwards, Co-Chair SG2 and members; and**

**SG3 and members**

18/11/2020

# GEO DISASTER RISK REDUCTION WORKING GROUP

## **EXISTING OR PLANNED APPROACHES THAT INCLUDE DIRECT (OR INDIRECT) LINKS TO THE POST-2015 DEVELOPMENT AGENDA AND THE SDGs**

- GEO DRR WG is developing and implementing a coherent and crosscutting approach within GEO to advance the use of Earth observations (EO) in support of national and local disaster risk reduction and resilience efforts.
- DRR WG planned approaches focus on providing tangible solutions and use cases that bring together the EO sector, civil protection organizations and other stakeholders which are critical to increasing and improving DRR strategies at national and local scales, towards the SDGs.

*“There is recognition in the proposals for both the SDGs and the Sendai Framework that their desired outcomes are a product of complex and economic processes with overlap across the two agendas.”* PreventionWeb

# GEO DRR WG SUBGROUPS

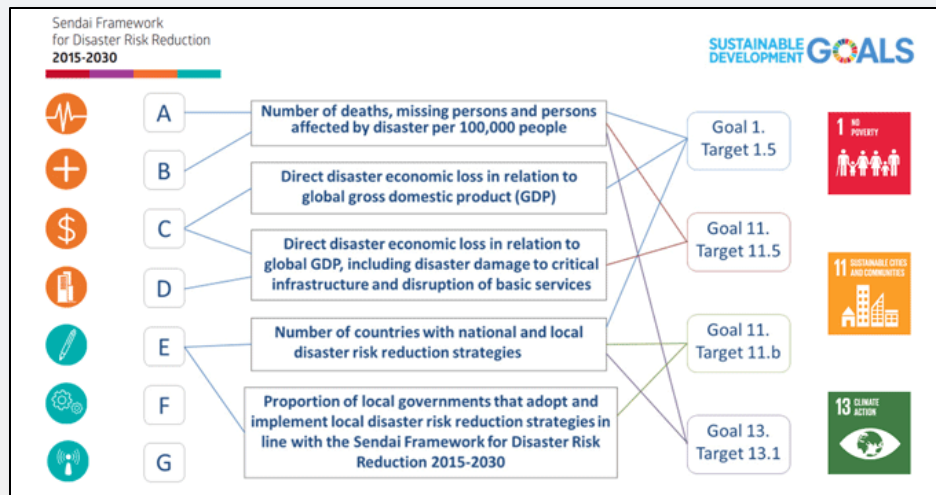
- **SG1** leads coordination activities of DRR-related activities across the GEO Work Programme, and work to improve the GEO community's ability to reduce disaster risk. The SG also aim to develop “GEO Sendai Toolkits” in partnership with SG2 and SG3 which will integrate existing efforts within the GEO Work Programme, providing coordinated and sustained information about the use and relevance of, and access to, Earth observations for Sendai Framework policy and actions.
- **SG2** promotes the dissemination and use of earth observation data to strengthen capabilities to reduce disaster risk according to the needs of countries as identified by UNDRR
- **SG3** provides an overview of the links between climate change and SDG activities in the GEO work programme. The group connects to the Climate Change Working Group (CC-WG), which is convened to develop and implement a comprehensive GEO climate change action strategy to advance the use of Earth observations in support of climate adaptation, mitigation, loss and damage and other areas.
- Link to the work plans of the 3 sub-group: [https://drive.google.com/drive/u/1/folders/1githtE6TVkb6Hc4P7RyvqU8sQQ7\\_ijD8](https://drive.google.com/drive/u/1/folders/1githtE6TVkb6Hc4P7RyvqU8sQQ7_ijD8)





# FEEDBACK ON OPPORTUNITIES FOR COLLABORATION WITH, AND SUPPORT FROM, THE EO4SDG INITIATIVE

- Identify subset of SDG Goals and Indicators that EO4SDG and DRR WG can address together.
- Potential focus SDGs
  - Target 1.5: Build resilience to environmental, economic and social disasters.
  - Target 11.5: Reduce the adverse effects of natural disasters.
  - Target 11.B: Implement policies for inclusion, resource efficiency and disaster risk reduction.
  - Target 13.1: Strengthen resilience and adaptive capacity to climate-related disasters



## 2020 GEO SDG Awards, Academia Sector, Earth Observatory of Singapore

“...the Advanced Rapid Imaging and Analysis-Singapore project, in collaboration with the NASA-JPL and Caltech, which uses satellite data to provide timely maps for post disaster situations, thus, supporting SDGs 11, 13, and 17.. Other EOS projects support sustainable cities and communities (SDG 11) by analyzing risks from anthropogenic hazards and studying the role of nature-based solutions.”

# PERSPECTIVES FROM GEO'S CLIMATE CHANGE WORKING GROUP

- Virginia Burkett, USGS
- Mark Dowell, EC
- Lucia Perugini, CMCC
- Angel Valdiviezo, National Service for DRR and Emergencies, Ecuador
- Sara Venturini, GEO Secretariat



# Climate Change Working Group

## Terms of Reference



The CC-WG aims to develop and implement a **comprehensive strategy to advance the use of EO in support of climate adaptation and mitigation** including actions related to the Paris Agreement. In this way the WG will support the translation of the Canberra Declaration into concrete actions within the GEO Work Programme

CC-WG ToR: [http://www.earthobservations.org/documents/gwp20\\_22/geo\\_wp\\_cc\\_wg\\_tor.pdf](http://www.earthobservations.org/documents/gwp20_22/geo_wp_cc_wg_tor.pdf)

Canberra Declaration: [http://earthobservations.org/documents/geo16/MS%204.2\\_Draft%20Canberra%20Declaration\\_final.pdf](http://earthobservations.org/documents/geo16/MS%204.2_Draft%20Canberra%20Declaration_final.pdf)



Duties involve **improving coordination and uptake of GEO Work Programme activities** relevant to climate change, **support countries' action within the UNFCCC and IPCC**, and **strengthen the collaboration with WMO and partners**



The CC-WG will ultimately drive actions to **promote the GEO climate engagement priority**





	Population distribution	Cities and infrastructure mapping	Elevation and topography	Land cover and use mapping	Oceanographic observations	Hydrological and water quality observations	Atmospheric and air quality monitoring	Biodiversity and ecosystem observations	Agricultural monitoring	Hazards, disasters and environmental impact monitoring
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										

## 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.”

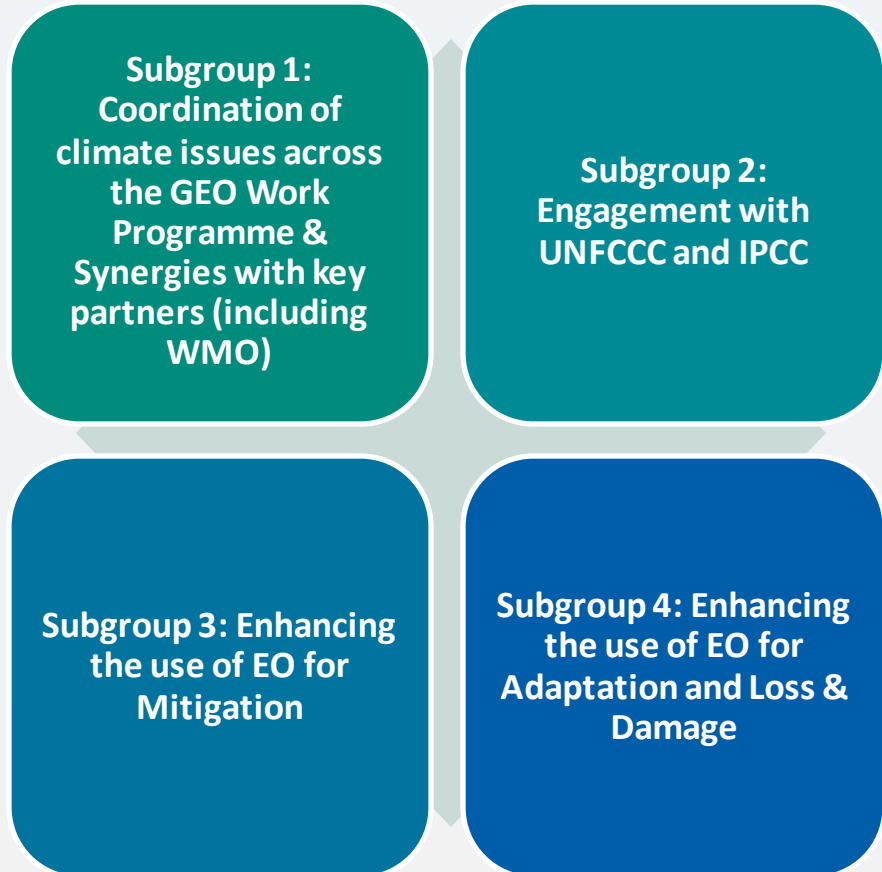
(UN General Assembly, 2030 Agenda, resolution adopted 25 September 2015)



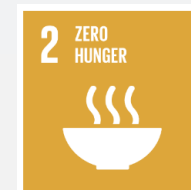


**Climate Change Working Group** - established in March 2020 under GEO Foundational Tasks, overseen by GEO Programme Board

### CC-WG Structure



- **CC-WG has 98 confirmed members**, covers a wide range of countries, casting a “broad net”.
- A Roadmap will guide the work of the CC-WG over the **2-year mandate covering the 2020-2022 GEO Work Programme** and prioritize action based on the approved ToR.
- The Roadmap also outlines the way in which members will engage and contribute to the objectives of the CC-WG. **The Roadmap summarises the activities outlined in the Subgroup work plans and presents a consistent timeline for implementation.**
- One of first CC-WG tasks is the inventory of relevant work across the GEO Work Programme.
- **Collaboration with EO4SDG will help avoid duplication of effort and leverage climate-related work across GEO.**



## Subgroup 1: Coordination of climate issues across the GEO Work Programme and synergies with key partners (including WMO) – Major tasks:

- I. **Review the current GEO Work Programme (2020-2022) and identify activities that are responsive to GEO's climate change engagement priority** and the 2019 Canberra Declaration, which calls for GEO to be more proactive in addressing GEO Members' needs for EO to **support climate action**. This scouting of the GEO flagships, initiatives and community activities will aim to identify potential disconnect and synergies.
- II. **Establish an ongoing, close dialogue with WMO and its partners on climate services, climate observations and Earth system modeling.**
- III. **Facilitate communication between the leads and participants of relevant GEO Work Programme activities and between them and relevant partners**, mainly through the engagement with the liaison person and the organization of dedicated meetings and workshops. Plan and host the **second GEO Climate Workshop**.
- IV. **Identification of gaps/synergies and proposal for a way forward**, in collaboration with Subgroups 3 and 4: **A report on gaps and a way forward as an input to the next GEO Work Programme** will be developed by Q4 2022.

Subgroup 3  
and Subgroup  
4 to conduct  
the mapping  
for mitigation  
and  
adaptation  
elements



13 CLIMATE  
ACTION



## Subgroup 4: Enhancing the use of EO for Adaptation and Loss and Damage

This subgroup will contribute to developing a **comprehensive strategy to support action on climate change** adaptation and account of loss and damage through the enhanced use of Earth Observation (EO). In particular, it will facilitate the improvement of targeted EO data to assist countries with enhancing and monitoring their adaptation actions and better fulfil the current and forthcoming reporting obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.

To this aim:

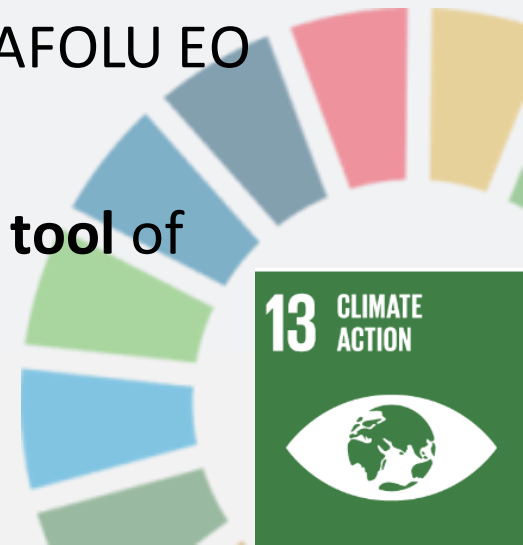
- I. **The subgroup will identify GEO Work Programme activities that best fulfil the adaptation and reporting needs.**
- II. **The subgroup will support country action with the mainstreaming of EO into National Adaptation Plans.**
- III. **The subgroup will identify how GEO can better serve the global stocktake process under the Paris Agreement.**



## EXAMPLES OF PARTICIPATING ORGANIZATIONS AND GEO ASSOCIATES THAT WOULD BE ESPECIALLY APPROPRIATE TO WORK ON ITEMS CONNECTING YOUR AREA WITH EO4SDG AND/OR THE SDGS MORE BROADLY

**CEOS** – CCWG Subgroups 2 and 3, on the mitigation aspect of “Climate Action”, will establish a framework for holistic EO support combining synergistically GHG emission and AFOLU EO support to the Parties reporting obligations to the Convention and Global Stocktake process. This will entail contributing to a **planned joint Copernicus/CEOS Workshop** bringing together GHG and AFOLU EO Communities.

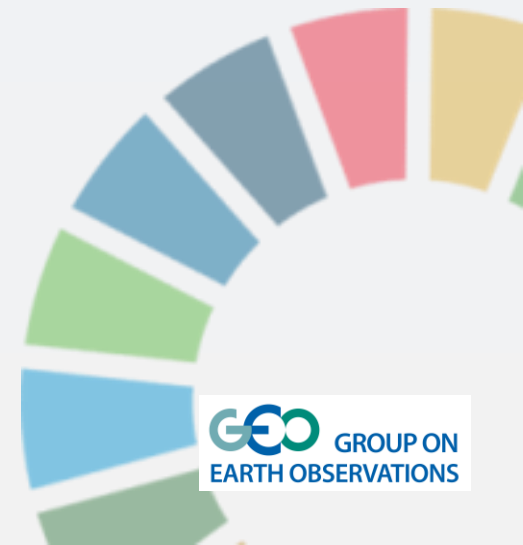
**Esri** – engaged in CCWG Subgroup 1 - helping design an **on-line survey tool** of climate related activities across the GEO Work Programme.







**THANK YOU!**





GEO PROGRAMME BOARD  
URBAN RESILIENCE SUBGROUP (UR-SG)

Dr. Evangelos Gerasopoulos (co-chair)

EO4SDG Virtual Annual Meeting - 18 November 2020



## The Urban Resilience Subgroup

1. Inventory of urban GEO activities, pave the way for the preparation of a GEO roadmap on urban resilience
  - Bring together of initiatives/foster collaboration – HPI, GUOI, **EO4SDG**
2. Initiating engagement with external parties
  - Already engaging with EIP-SCC, GRCN, UN-Habitat; further identification ongoing
3. Bring successful EO use cases to the attention of the PB and city stakeholders
  - Incorporate ongoing GEO WP activities & external examples relevant to city stakeholders
  - Subgroup has been created to decide on use case categories, pools of examples and criteria
4. Engagement with Regional GEOs
  - Raise the issue of urban resilience to Regional GEOs, & identify synergies within existing agendas
5. Identifying synergies with the New Urban Agenda
  - Engaging w UN-Habitat; establishment of long-term collaboration to respond to UN-Habitat request
6. Consolidation of case for urban resilience as 4<sup>th</sup> GEO priority engagement
  - Introduced at the 53rd Executive Committee Meeting (November 3, GEO Week)



## EO Use Cases for Urban Resilience

**WHO:** Subset of URSG members representing EO4SDG, HPI (& JRC), GUOI, UN-Habitat, Global Resilient Cities Network, SC Marketplace & Eurisy

**AIM:** to identify, align and disseminate the growing compendium of EO city case studies to close the awareness gap in cities/local administrations, and stimulate market uptake.

**HOW:** pulling from existing sources – EO4SDG, EU projects, Eurisy/SC Marketplace, GRCN – practically categorizing them and promoting/hosting the cases





# Urban Resilience 4<sup>th</sup> GEO Engagement Priority

## HISTORY

- In **2016**, “**Urban resilience and human settlements**” was one of five proposed candidate engagement priorities for GEO (ExCom concerns: lacked clear policy mandate & WP better positioned to support the three priorities)
- In **2019**, UN-Habitat officially requested assistance in the development of indicators for reporting on SDG 11
- In **2020**, Urban Resilience was presented again at the 53<sup>rd</sup> ExCom meeting (Nov 3) receiving **positive feedback, but decision has been postponed**

## REASONING

- **NUA as the key policy driver** in the area of urban resilience and sustainable urbanisation;
- Efforts within the PB to **increase coordination** among urban-related activities;
- Growing **engagement with GEO of international organizations** focused on urban issues;
- Benefits to the GEO community and to GEO Members; and
- **Cuts across the existing 3 engagement priorities** – aid in integration



## Next Steps

- Continue engagement with urban related GEO initiatives
- Move forward EO use case identification:
  - Criteria/categorization to be used for gathering EO use cases for urban resilience
  - Language/packaging of use cases to enhance city stakeholder infiltration
  - Identifying short and long term plan in term of hosting and advertising
- Contact with Regional GEOs to identify urban resilience workflows
- Continued effort to promote Urban Resilience as the 4<sup>th</sup> Engagement Priority for GEO



# INTERACTIVE EXERCISE II



# EO4SDG ANNUAL MEETING DAY 2 19 NOVEMBER 2020

## INTERACTIVE EXERCISE I





# EO4SDG ANNUAL MEETING, 19 Nov 2020

## Federated Approach

### Panel I: Perspectives from GEO WGs

#### Speakers:

GFOI | Sylvia Wilson

GEO Blue Planet | Emily Smail

GEO Human Planet | Bob Chen

EuroGEO & EARSC | Monica Miguel Lago

CEOS SDG Ad Hoc Team | Marc Paganini

UN WGGI | Paloma Merodio

**Moderator:** EO4SDG | Osamu Ochiai





Sylvia Wilson, USGS – SilvaCarbon Program

Thomas Harvey, GFOI Secretariat FAO

11/19/2020

# GLOBAL FOREST OBSERVATION INITIATIVE LINKS TO SDGs



# WHY FOREST MONITORING IS IMPORTANT FOR COUNTRIES?

Many countries are establishing **National Forest Monitoring Systems (NFMS) & related procedures for the Measurement, Reporting and Verification (MRV) of greenhouse gas emissions from forests** to inform decision making, policy development, reporting and action following international and national requirements. NFMS are important to:



Track progress towards their **Nationally Determined Contributions (NDCs)** under the Paris Climate Change Agreement



Reduce emissions from **deforestation, forest degradation** and related activities, commonly known as **REDD+**



Contribute to achieving the **Sustainable Development Goals (SDGs)**



Enable **national policies and programmes** that improve sustainable land use


# WHAT IS GFOI

- The Global Forest Observations Initiative is a partnership for coordinating international support to help developing countries address their international and national information needs on forest monitoring and greenhouse gas (GHG) accounting for REDD+ and related climate reporting and activities.
- GFOI mobilize country stakeholders to share information on the current state of data sharing across governmental institutions that affect interactions among REDD+, NDCs, SDGs 13 and 15, and management decisions.
- GFOI address issues of technical capacity gaps and explore ways to address these gaps such as approaches to mobilize resources and technology innovation.
- **White paper: “Barriers and potential solutions on how to use REDD+ data for management, policy, and reporting mechanisms in Ecuador, Guatemala, Paraguay and Peru.”**



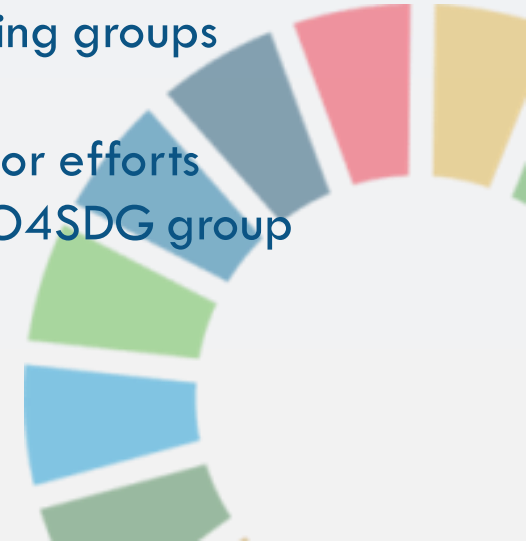


# WHITE PAPER: “BARRIERS AND POTENTIAL SOLUTIONS ON HOW TO USE REDD+ DATA FOR MANAGEMENT, POLICY, AND REPORTING MECHANISMS IN ECUADOR, GUATEMALA, PARAGUAY AND PERU.”



The cover page of the white paper features logos for SilvaCarbon GFOI, Global Forest Observations Initiative, USGS, USAID, and Earth Observations for the Sustainable Development Goals. The title is "Barriers and potential solutions on how to use REDD+ data for management, policy, and reporting mechanisms in Ecuador, Guatemala, Paraguay and Peru." The authors listed are Sylvia Wilson, Betty Hernandez, Evan Newman, Christa Straub, Monica Jorda, and Timothy Stryker. Contributors include Chris Barber, Virginia Burkett, Paula Durubay, Jim Ellenwood, Jose Galvez, Inge Lovelace, Edmund Molder, Jocelyn Montalban, John Steller, Fred Stolle, Kimberly Todd, and Holger Zambrano. The summary states that USAID, NASA, and other GFOI members worked together in tropical countries to harmonize REDD+ data with national MRV systems. The workshop was held in Colorado in 2020 and focused on how data can be used for REDD+ results-based payments, sustainable development, and carbon emission reduction. The workshop also addressed challenges in data sharing and management across government institutions.

1. A plan for south – south collaboration among countries facing the same issues for reporting.
2. A data science platform that guides countries on how to report to SDG 13.
3. An effective set of indicators that help measure the capacity developed within each country.
4. A mechanism to link country partners with existing groups physically based in countries such as UNDP, FAO.
5. Greater involvement by country officials in major efforts related to assistance to SDGs, such as the GEO EO4SDG group and the development of the toolbox.



## GOAL II OF THE GEO EO4SDG STRATEGIC PLAN:

“Increase skills and capabilities in uses of Earth observations for SDG activities and their broader benefits.”

### Planned Training:

- Improve methodologies to reduce uncertainties of country reference levels.
- Develop capacity in the use of multiple sensors in a monitoring system: Radar, Lidar and Optical data land change algorithms.
- Improvement of processes for collecting, systematizing and analyzing information from the National Forest Inventory (NFI).
- Statistical quality control for reporting indicators.

Partners of GFOI: World Bank, SilvaCarbon, FAO, Norway, welcome other partners.





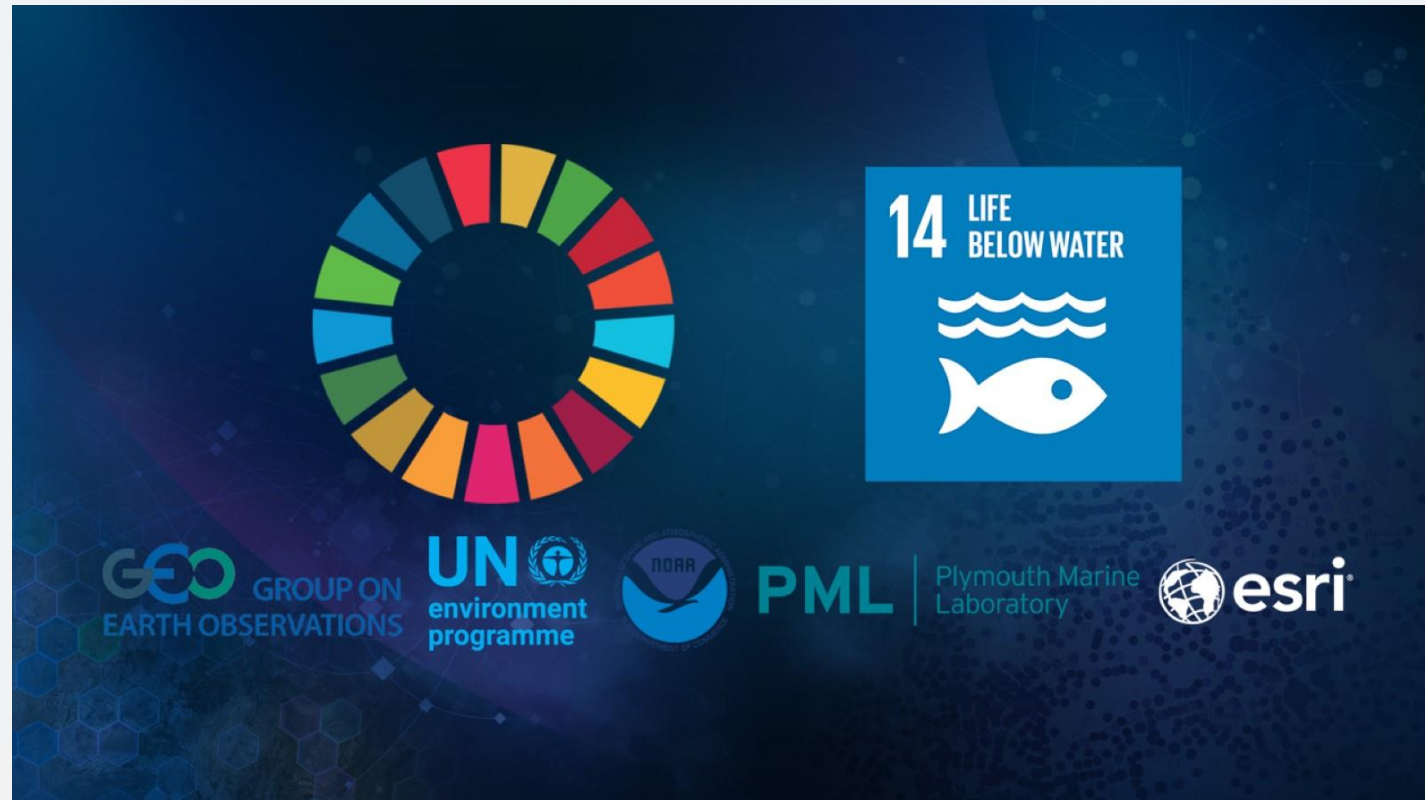
Emily Smail, NOAA/UMD

November 19, 2020

# GEO BLUE PLANET PERSPECTIVES ON FEDERATED APPROACH

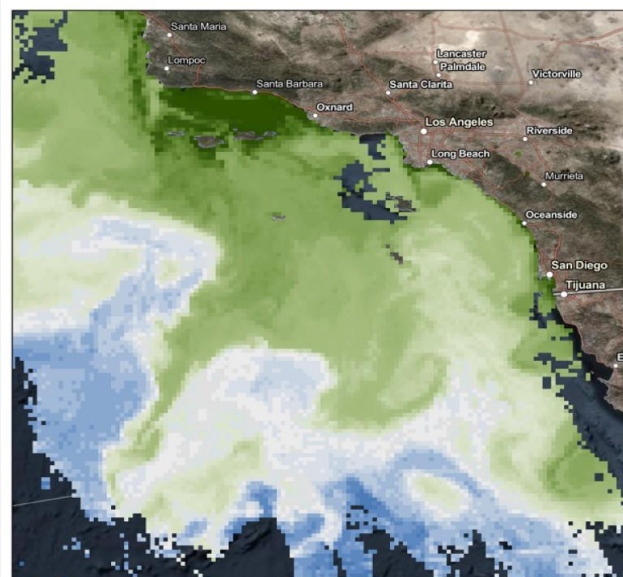
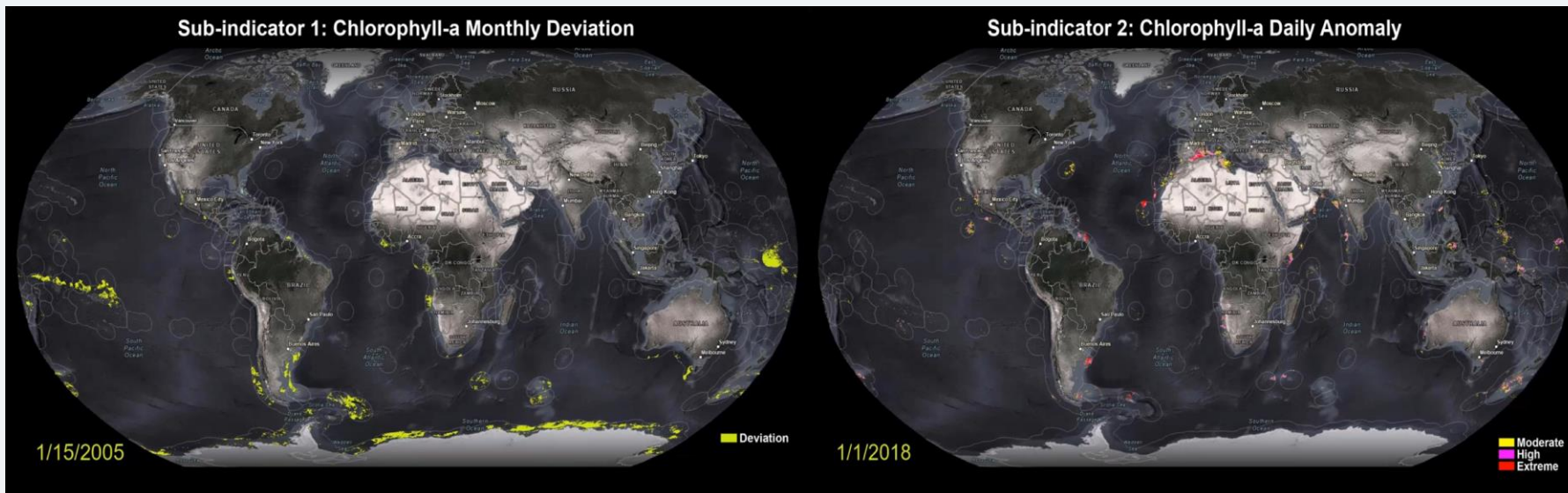
# GEO BLUE PLANET SDG ACTIVITIES

<https://chlorophyll-esriocceans.hub.arcgis.com/>

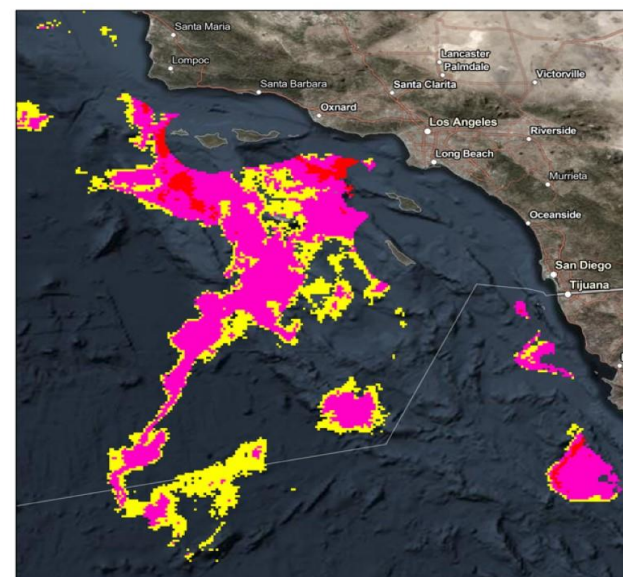




# GEO BLUE PLANET SDG ACTIVITIES



low      high



moderate      high      extreme



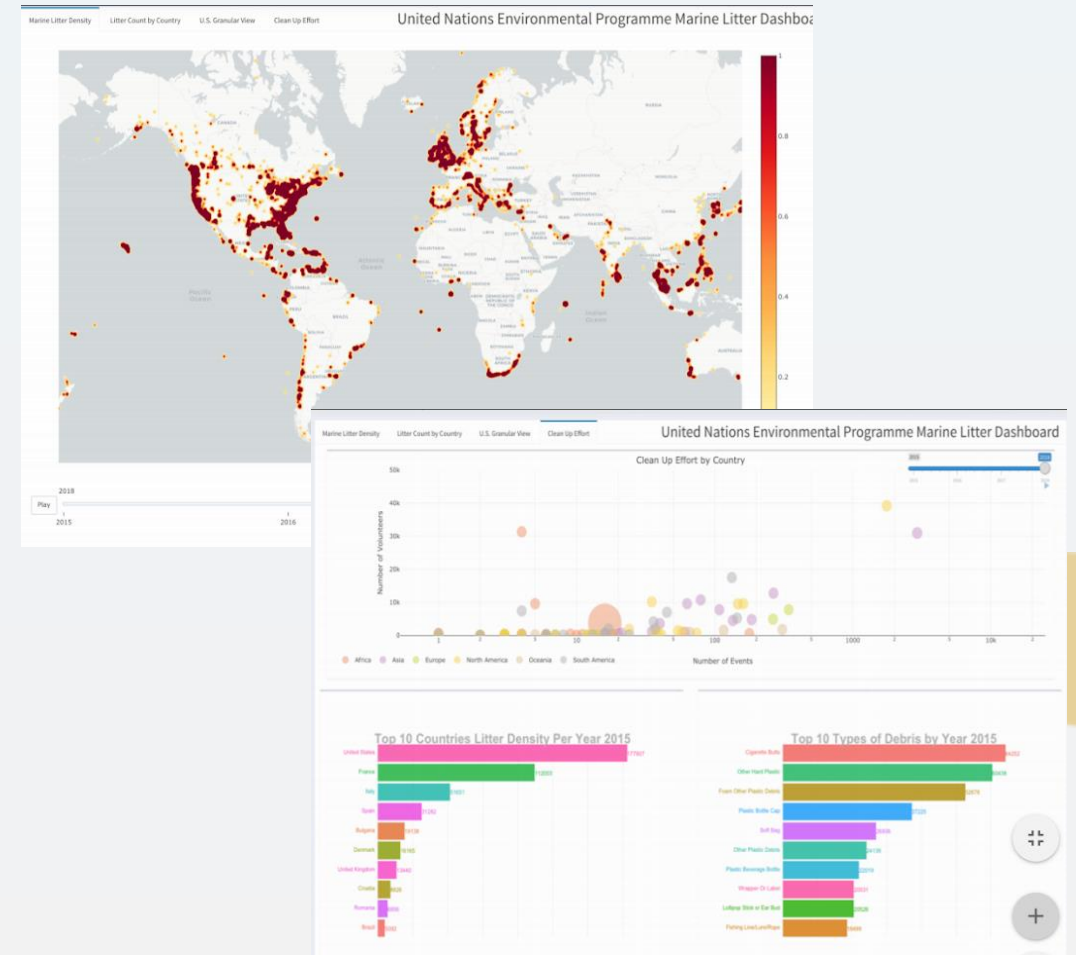
# GEO BLUE PLANET SDG ACTIVITIES

## The challenge:

- Marine litter comes in many forms and data are available in various formats at different time scales

## Approach:

- Publishing UNEP white paper “Global Platform for Monitoring Marine Litter and Informing Action”
- Harness AI to integrate datasets
- Developing a digital ecosystem for the environment
- Foster collaborations with tech industry



# COLLABORATION WITH EO4SDG

- SDG 14 toolkit
- Advice on SDG process
- Linkages with other SDG indicator activities
- GEO SDG Awards – Thanks!





EARTH OBSERVATIONS FOR THE  
SUSTAINABLE DEVELOPMENT GOALS

# EO4SDG Annual Meeting

## Human Planet Initiative Coordination

19 November 2020



- Advance the integrated **understanding of the human presence** on planet Earth in support of global policy processes with agreed, actionable and **goal-driven metrics**.
- Generate the **global-scale data** and knowledge needed to advance our understanding of societal processes and their impact on Earth systems
  - **modelling exposure and vulnerability** to natural hazards, conflict, and environmental change
  - measuring the **impact of human activities** on life supporting ecosystems , and
  - estimating **human/societal demand** for natural and other resources.
- Co-leads:
  - Martino Pesaresi, European Commission, Joint Research Centre
    - Daniele Ehrlich, Thomas Kemper
  - Robert Chen, SDSN (+ CIESIN, Columbia University and NASA/SEDAC)







EARTH OBSERVATIONS FOR THE  
SUSTAINABLE DEVELOPMENT GOALS

# EO4SDG Annual Meeting

## *Human Planet Initiative Coordination*

*19 November 2020*



### *Work Plan Activities 2020-21*

- Delineation of cities, urban and rural areas for international comparison
  - Method endorsed by UN Statistical Commission
  - Data on degree of urbanization
- Use of EO-based population and settlement data for many SDG indicators
  - Urban indicators, slum mapping (11.1.1, 11.3.1, 11.7.1...)
  - Access to services/infrastructure (7.1.1, 9.1.1, 11.2.1...)
  - Exposure and vulnerability (1.5.1, 11.6.2...)
  - Leave No One Behind (refugee/displaced populations, ...)
- Contribution to EO4SDGs SDG11 /NUA Toolkit initiative
- Development of Knowledge Hub Resource
- *Human Planet Atlas 2020*
- *Human Planet Forum 2021 (tbd)*



United Nations

Statistical Commission





EARTH OBSERVATIONS FOR THE  
SUSTAINABLE DEVELOPMENT GOALS

# EO4SDG Annual Meeting

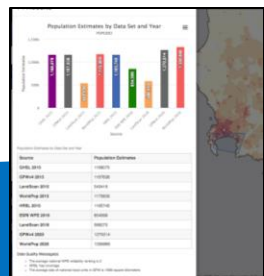
## Human Planet Initiative Coordination

19 November 2020



### SDG 11/New Urban Agenda Toolkit Contributions

- More than 25 relevant data sets identified
- More than 10 interactive tools identified, e.g.:
  - MASADA <https://ghsl.jrc.ec.europa.eu/tools.php>
  - POP2GRID Tool <https://ghsl.jrc.ec.europa.eu/tools.php>
  - Land Use Efficiency Calculator  
[https://ghsl.jrc.ec.europa.eu/documents/LUE\\_User\\_Guide.pdf?0.7046611217374041](https://ghsl.jrc.ec.europa.eu/documents/LUE_User_Guide.pdf?0.7046611217374041)
  - Degree of Urbanisation Grid  
[https://ghsl.jrc.ec.europa.eu/documents/DUG\\_3\\_1\\_User\\_Guide.pdf?0.1428499250512405](https://ghsl.jrc.ec.europa.eu/documents/DUG_3_1_User_Guide.pdf?0.1428499250512405)
  - Global Man-made Impervious Surface & Settlement Extent from Landsat  
<https://sedac.ciesin.columbia.edu/mapping/gmis-hbase/explore-view/>
  - POPGRID Viewer <https://sedac.ciesin.columbia.edu/mapping/popgrid/>
  - Global COVID-19 Viewer <https://sedac.ciesin.columbia.edu/mapping/popest/covid-19/>





EARTH OBSERVATIONS FOR THE  
SUSTAINABLE DEVELOPMENT GOALS

# EO4SDG Annual Meeting

## *Human Planet Initiative Coordination*

19 November 2020

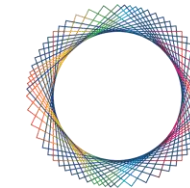


### *Next Steps*

- Continued coordination on stakeholder engagement
- Possible stronger PO linkages:
  - Global Partnership for Sustainable Development Data
  - UN Sustainable Development Solutions Network
    - SDGs Today: The Global Hub for Real-Time SDG Data  
<https://www.unsdsn.org/sdgs-today> (Esri also involved)
- Coordination of Knowledge Hub Resources
- Planning for Human Planet Forum 2021



Global  
Partnership  
for Sustainable  
Development Data



**SDGs Today**  
The Global Hub for Real-Time SDG Data



Monica Miguel-Lago, EARSC

GEO EO4SDGs AGM

19/11/2020

# LEVERAGING EO SERVICES WITH AND FOR USERS



EuroGEO Showcases: Applications Powered by Europe





# e-shape



EuroGEO Showcases: Applications Powered by Europe



The e-shape project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 820852

55 + 8  
partners

7 show cases  
27 +5+ 5 pilots

ends  
May 2022

**APPROACH**

EO4SDGs Annual General Assembly 18-19 November 2020





# E-SHAPE: PILOTS

Pilot 1.1 GEOGLAM  
Sven Gilliams

Pilot 1.2 EU-CAP Support  
Vasileios Sitokonstantinou

Pilot 1.3 VICI - Vegetation-Index Crop-Insurance in Ethiopia  
Andy Nelson

Pilot 1.4 Agro industry  
Sven Gilliams

Pilot 1.5 | Linking EO and Farm IoT for Automated Decision Support  
Conrad Bielski, Riscognition GmbH

Pilot 1.6 | Service for SDG 2.4.1 and 15.3.1 indicators  
Nataliia Kussul, Space Research Institute NASU-SSAU

## SC1 agriculture

Pilot 2.1 EO-based surveillance of mercury pollution  
Sergio Cinnirella

Pilot 2.2 EO-based surveillance of POPs pollution  
Jana Klanova  
Katka Sebkova

Pilot 2.3 EO-based pollution-health risks profiling in the urban environment  
Evangelos Gerasopoulos

Pilot 4.1 mySPACE  
Blonda Palma

Pilot 4.2 mySITE  
Peterseil Johannes

Pilot 4.3 myVARIABLE  
Nestor Fernandez

## SC4 ecosystem

Pilot 5.1 Improved historical water availability and quality information service  
Ilias Pechlivanidis

Pilot 5.2 Satellite Earth Observation-derived water bodies and floodwater record over Europe  
Patrick Matgen

Pilot 5.3 Dive - Diver Information on Visibility in Europe  
Peter Walker

Pilot 5.4 Sargassum detection for seasonal planning  
Marion Sutton

Pilot 5.5 Monitoring fishing activity  
Aida Campos

Pilot 5.6 | EO based phytoplankton biomass for WF reporting  
Marnix Laanen, Water Insight B.V

Pilot 5.7 Rheticus® AquaculturePlus  
Angelo Amodio, Planetek Italia

## SC5 water

Pilot 6.1 EO4D\_ASH - EO Data for Detection, Discrimination and Distribution (4D) of Volcanic ash  
Lucia Mona

Pilot 6.2 GEOSS for Disasters in Urban Environment  
Antonio Parodi  
Martina Lagasio

Pilot 6.3 Assessing Geo-hazard vulnerability of Cities and Critical Infrastructures  
Pablo Ezquerro Martín

Pilot 6.4 ReSAgri - Resilient and Sustainable ecosystems including Agriculture and food  
Nikos Bartsotas

Pilot 7.1 Global Carbon and Greenhouse Gas Emissions  
Ville Kasurinen

Pilot 7.2 Urban resilience to extreme weather - climate service  
Petra Fuchs

Pilot 7.3 Forestry conditions - climate service  
Mikko Strahlendorff

Pilot 7.4 Hydropower in snow reservoir – climate service  
Jaakko Ikonen

Pilot 7.5 Seasonal preparedness  
Andrea Vajda

## SC6 disasters

## SC7 climate

## SC2 health

Pilot 3.1 nextSENSE: solar energy nowcasting and short-term forecasting system  
Stelios Kazadzis  
Panagiotis Kosmopoulos

Pilot 3.2 High photovoltaic penetration at urban scale  
Philippe Blanc  
Lionel Menard

Pilot 3.3 Merging offshore wind products  
Ioanna Karagali

Pilot 3.4 | WindSight - First class input data for wind energy models  
Torsten Bondo, DHI GRAS A/S

## SC3 energy

**SDG target contributions:**



- improved understanding of flood hazard/risk and its changes over time.
- raise of awareness and improved capacity of CC mitigation, adaptation, impact reduction and early warning

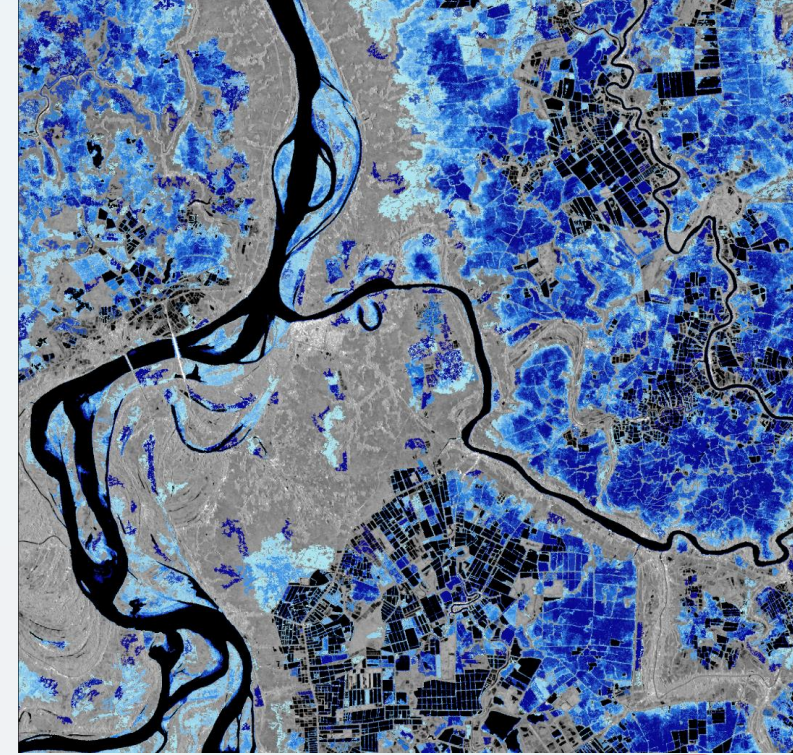
**Pilot status:** baseline products have been defined, processing chains have been setup on a DIAS and results have been validated over large scale test areas in Europe and SE Asia.

**Next steps:** Operational flood monitoring system currently being setup, water bodies and floodwater record (2014-2020) is being generated

**Data:** Sentinel-1 data collection & large scale hydrodynamic simulations

## Pilot description:

- Generation of a Water bodies and floodwater record over Europe at 20 m resolution (Sentinel-1) spatial resolution (2014 – present)
- Mapping of flood hazard at continental-scale based on EO-derived flood maps and long-term hydrological modelling simulations
- Value adding activities to support research activities and operations in the fields of climate research, large scale flood forecasting, flood hazard and risk analyses, land use monitoring etc.



**Lessons learnt:**

- Need for product refinement & adaptation to reduce classification errors due to wet snow, dense vegetation and urban settlements.
- Benefit of co-designing products with **new user communities** (e.g. input data for parametric insurance models)

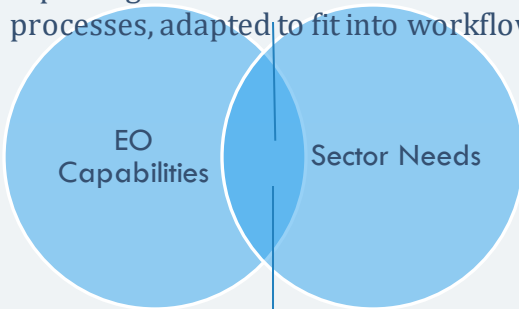




1



Available EO technologies suitable for reporting needs on the business processes, adapted to fit into workflows

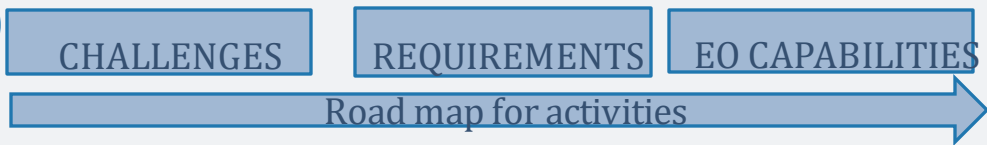


EO technologies that could be suitable for business sector challenges (EO capabilities)

4

Product	Business Processes	Thematic	Sector	EO Service
Near Real Time (NRT) Service	<ul style="list-style-type: none"> <li>Underwriting</li> <li>Loss adjustment</li> <li>Claims handling</li> </ul>	Land	Agriculture	
Soil Moisture	<ul style="list-style-type: none"> <li>Product development</li> <li>Product sales</li> <li>Underwriting</li> <li>Loss adjustment</li> <li>Claims handling</li> </ul>	Land	Land Ecosystems	Assess land ecosystems and biodiversity
Vegetation Growth Monitoring	<ul style="list-style-type: none"> <li>Product development</li> <li>Product sales</li> <li>Underwriting</li> <li>Loss adjustment</li> <li>Claims handling</li> </ul>	Land	Land Ecosystems	Assess land ecosystems and biodiversity
Vegetation Indices: LAI, NDVI	<ul style="list-style-type: none"> <li>Product development</li> <li>Product sales</li> <li>Underwriting</li> <li>Loss adjustment</li> <li>Claims handling</li> </ul>	Land	Land Ecosystems	Assess land ecosystems and biodiversity
Water Bodies Detection	<ul style="list-style-type: none"> <li>Product development</li> <li>Underwriting</li> <li>Loss adjustment</li> </ul>	Land	Inland water	Assess and monitor water bodies
Yield Estimation	<ul style="list-style-type: none"> <li>Underwriting</li> <li>Loss adjustment</li> <li>Claims handling</li> </ul>	Land	Agriculture	Monitor and forecast crop yields

2

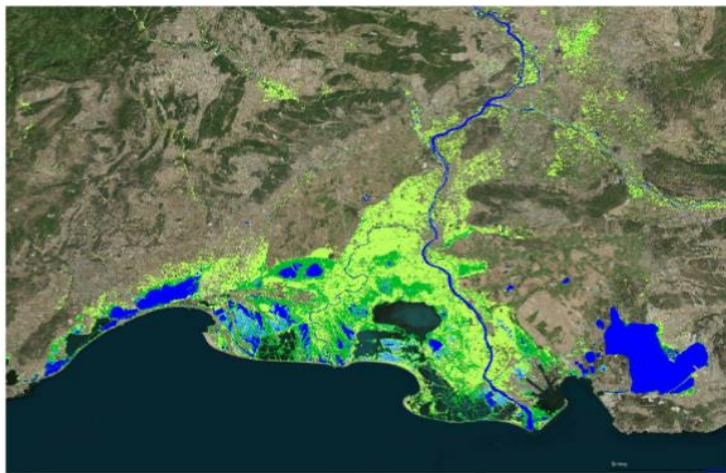


3



## APPROACH to COLLABORATION





Detailed water and wetness classification (Source: GeoVille)

## CATEGORY

Product Development    Product Sales    Underwriting    Loss Adjustment    Claims Handling

## DESCRIPTION

This product identifies open water bodies, including natural lakes as well as man-made reservoirs such as ponds or lakes and wide rivers showing their extent. Furthermore, changes in water body outline can be monitored over a period of time to detect seasonal changes.

Analysing the frequency in periodical water masks based on time series allows to monitor any changes of water body extents over time as well as the frequency of water occurrence. High accuracy is reached due to the contrast in radar backscatter from open water surfaces and land.

This service may be used for product development, underwriting and loss adjustment purposes.

## PRODUCT SPECIFICATIONS

Main processing steps	The product is derived by applying a suite of dynamic water detection processing chains optimized for various target areas. The production workflows mainly operate on Sentinel-2 time-series imagery (optical) and Sentinel-1 Synthetic Aperture Radar (SAR) data but can also be applied to many other optical and SAR data for historical analysis. Individual processing chains are applied to these data inputs and their results are combined using a rule-based fusion algorithm that ensures the detection strengths of each sensor are incorporated into the final product.
Input data sources	<u>Optical</u> : Landsat-8, Sentinel-2, VHR imagery <u>Radar</u> : Sentinel-1 <u>Supporting data</u> :
Spatial resolution and coverage	<u>Spatial resolution</u> : 10 – 500 m <u>Coverage</u> : global <u>Availability</u> : globally available

Accuracy / constraints	<u>Thematic accuracy</u> : > 95% accuracy / limitations for densely forested areas <u>Spatial accuracy</u> : Absolute geolocation is constantly monitored for S2A and S2B. The long-term performance is close to 11 m at 95% for both satellites.
Limitations	Topography is a major issue in mountainous regions due to geometric and radiometric effects causing radar shadow and thus false detections.
Frequency / timeliness	<u>Frequency</u> : monthly to multi-annual; observation may be required over a specified period <u>Timeliness</u> : within 3 days after last satellite pass
Delivery / output format	<u>Data type</u> : raster and vector formats <u>File format</u> : GeoTIFF, Shapefile
Accessibility	Near real time water and wetness information is commercially available on demand from EO service providers. A water and wetness layer for Europe showing the occurrence of water and wet surfaces over the period from 2009 to 2015 for the status year 2015 is publicly available through the Copernicus Land Monitoring Service ( <a href="https://land.copernicus.eu/pan-european/high-resolution-layers/water-wetness">https://land.copernicus.eu/pan-european/high-resolution-layers/water-wetness</a> ), an updated layer for the status year 2018 will be available soon.

## CHALLENGES ADDRESSED

## Product Development:

- Market analysis
- Elaboration of crop profile: Field crops, vegetables, horticulture, greenhouses
- Elaboration of livestock profile: Cows, sheep, pigs, poultry
- Radar data (eliminated cloud cover effects)

## Underwriting:


- Seasonal portfolio monitoring
- Online platforms or easy-to-use interfaces integrating various data sources (e.g. vegetation stress, field boundary changes, comparison, etc.)
- Risk / crop zoning
- Crop calendar and practices
- Regular assessment of risk pricing and product rating


## Loss Adjustment:


- Regularly updated consistent long-time series of reliable data for index insurance
- Benchmark physical field observations against yield loss detection (e.g. product calibration)



### Best Practices

 The ESA Earth Observation Best Practice for Oil & Gas Industry (EO4OG) provides comprehensive insights into the geo-information requirements of the oil & gas sector and how EO services and products can help meet those needs. The work has been carried out by G-CORE, CLS, Hatfield Consultants and QTM. Find out more [here](#).

 The ESA Earth Observation Best Practice for Agro-Insurance (EO4I) is a knowledge platform on the current geo-information requirements and needs of the agro-insurance sector. The platform highlights how exactly Earth observation services can provide state-of-the-art solutions and meet the challenges of agricultural insurance industry. The work has been conducted by a consortium of European Earth Observation companies including GeoVista, VITO and DGI. Find out more [here](#).

 The ESA Earth Observation for the Mining of Raw Materials (EO4RM) is a platform bringing together expert knowledge from both the Mining and Earth Observation sector to identify key challenges of the mining sector and suitable solutions drawing from modern and future Earth Observation capabilities. The project comprised a consortium of European Earth Observation companies including Delmas, S&T, L3MS and GeoVista. Find out more [here](#).

**Leveraging EO services to help countries monitoring SDGs**  
The industry contribution  
3rd of December 2020, 16:00-16:45 CET

EOcafe  
EARSC

The industry contribution  
Thursday 3rd of December 2020, 16:00-16:45 CET



# E-SHAPE: BRIDGING EUROGEO

Call for EO-based products 2020

**APPLY**

At e-shape

<https://helpdesk.e-shape.eu/>

Starting 8th June → Ending 4th September

Call for EO-based products 2021 – 2<sup>o</sup> round June 2021

**e-shape**

EuroGEO Showcases  
Applications Powered  
by Europe

UNITY IS  
STRENGTH

[www.e-shape.eu](http://www.e-shape.eu)

agriculture health renewable energy ecosystem water disasters climate

**Sustainable Development Agri Project**

Partners: Space Research Institute NASU-SSAU (Ukraine), CREODIAS (Poland) and Ukrainian Hydrometeorological Center of the State Emergency Service of Ukraine (Ukraine)

Service for SDG 2.4.1 and 15.3.1 indicators assessment:

- RS-based methodology developed by authors within the ERA-Planet **GEOEssential** project
- 10 m spatial resolution land productivity and crop type maps
- TRL 7 pilot implemented in the CREODIAS VM

Within the e-shape project:

- Co-design and cooperation with the key users and e-shape partners
- Extend of pilot area to full coverage of Ukraine and one European country
- TRL 8

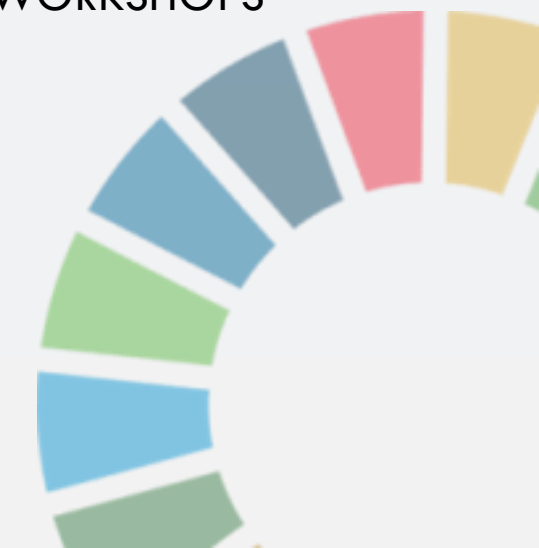
SDG 2.4.1 Indicator: Proportion of agricultural area under productive and sustainable agriculture

CREODIAS One Classification Map

Resolution satellite data: International pp. 309-321, 2019.



- GEO SDGS TOOLKIT
- GEO SDGS COUNTRY USE CASE
- DEDICATED e-shape WORKSHOPS



**NEXT STEPS**

# Thank You!

EARSC

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[www.e-shape.eu](http://www.e-shape.eu)

[www.earsc.org](http://www.earsc.org)

[www.eopages.eu](http://www.eopages.eu)

[www.earsc-portal.eu](http://www.earsc-portal.eu)

[www.eoMALL.eu](http://www.eoMALL.eu)

[www.earsc.org/sebs](http://www.earsc.org/sebs)







EARTH OBSERVATIONS FOR THE  
SUSTAINABLE DEVELOPMENT GOALS

### **CEOS SDG-AHT Leads**

Alex Held, CSIRO, SDG-AHT Co-lead

Marc Paganini, ESA, SDG-AHT Co-lead

Flora Kerblat, CSIRO, Andreia Siqueira, GA

SDG-AHT Executive Secretary

### **4 CEOS SDG-AHT sub-teams**

- **Water (SDG 6.6.1)**

M. Paganini/ESA, A. Carbonnière/CNES

- **Urban (SDG 11.3.1)**

A. Kavvada/NASA, N. Mudau/SANSA

- **Coastal (SDG 14.1.1)**

E. Smail/NOAA/CEOS-COAST

- **Land degradation (SDG 15.3.1)**

N. Sims/CSIRO, U. Heiden/DLR



# Ad-Hoc Team on SDGs (CEOS SDG-AHT)



## CEOS SDG AHT - Work Plan 2020-2021

CEOS SDG AHT established by the 30<sup>th</sup> CEOS Plenary (Oct 2016) with the objective to coordinate the efforts of the CEOS agencies in supporting the Group on Earth Observations (GEO) to advance the uptake of Earth Observation in the implementation of the 2030 Agenda on sustainable development.

- **Support GEO efforts** to advance the uptake of EO in the implementation of the 2030 Agenda on Sustainable Development, acting as a **“Space Enabler”** to facilitate access and use of satellite data.
- **Participate to the GEO federated approach on SDGs** that aims at harnessing all expertise inside and outside GEO Work Programme (including CEOS) in order to maximize impact.
- **Contribute to the development of the GEO Toolkits on SDGs** coordinated by GEO EO4SDG, which will package all available EO assets in practical guidelines for easy appropriation by countries.
- **Analyze, in cooperation with GEO, the “satellite data needs” for four selected SDG indicators:** 6.6.1 on water-related ecosystems; 11.3.1 on urban land consumption, 14.1.1 on coastal eutrophication, and 15.3.1 on land degradation.
- Liaise with other CEOS entities (VCs, WGs, SEO) to **harness CEOS collective expertise and maximize benefits.**

## CEOS SDG-AHT streamlined activities

### Starting with an analysis of the satellite data needs for 4 SDG Indicators :

- 6.6.1 (water-related ecosystems) in partnership with GEO Wetlands, AquaWatch, GEO GLOWS
- 11.3.1 (urban land consumption) in partnership with GEO HPI, GEO GUOI
- 14.1.1 (coastal eutrophication) in partnership with GEO Blue Planet
- 15.3.1 (land degradation) in partnership with GEO LDN

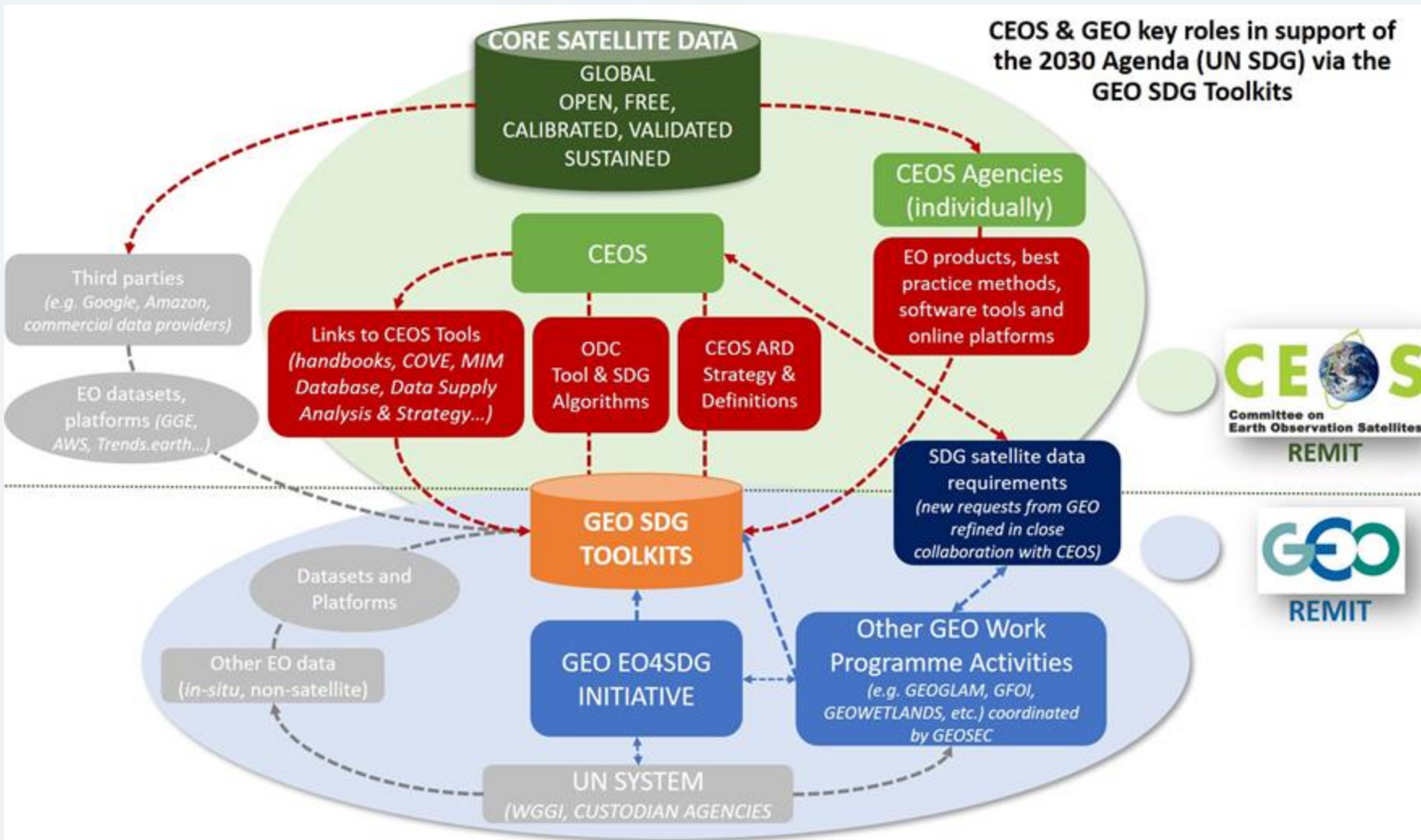
### Selected by SDG-AHT because:

- **need to focus on a limited number of SDG indicators.**  
*“Start small, Think big”*
- **selected by UN IAEG-SDGs WGGI as primary indicators for EO uptake.**  
*“Use SDG channels to maximise Impact”*
- **EO recognised as data sources by UN custodian Agencies in the indicator monitoring guidelines.**  
*“Build on proven EO technologies”*





# Opportunities for CEOS collaboration with GEO EO4SDG



### CEOS Core Products

- Analysis Ready Data (ARD)
- Guidance on satellite data access.
- Open Data Cube (ODC) workflows for SDGs
- In-depth satellite data analyses of SDG indicators (*in partnership with the GEO Work Programme activities*)

### CEOS Agencies Products

- EO Methodological Guidelines / EO Good Practices
- EO Global and Regional reference products.
- EO Enabling Infrastructures (S/W tools and IT platforms)
- Capacity Building (skills transfer) / Training material



## Future Steps

- **Transfer all SDG AHT activities into a permanent operating structure**, inside or outside of CEOS, by the end of 2021  
(AHT extension until end 2021 with transition roadmap approved by CEOS principals)
- **Complete the satellite data analyses** done by the 4 sub-teams on the first set of SDG indicators (6.6.1, 11.3.1, 14.1.1 and 15.3.1).
- **Initiate the other SDG-AHT sub-teams activities** (good practice guidelines, EO best practices, EO enabling infrastructures, EO global datasets).
- Continue the development and testing of **ODC algorithms for SDGs** and release free/open “Landsat ODC Sandbox” and “Google Cloud ODC Sandbox” to test SDG algorithms
- **Jointly organise with CEOS WGCapD SDG Training** on Land Use Efficiency (11.3.1): EO Data, Indicator Methodology, and Tool Training Webinar

All CEOS resources will be integrated in the GEO SDG Toolkits



11<sup>th</sup> Meeting of the IAEG-SDGs 3-5 November 2020

# Working Group on Geospatial Information

Co-Chairs:

Kevin McCormack, Central Statistics Office, Ireland

Paloma Merodio, INEGI, Mexico

# Key Facts



## Leadership

- Mr Kevin McCormack, Central Statistics Office, Ireland
- Ms Paloma Merodio, Instituto Nacional de Estadística y Geografía, Mexico



**Convened its 6<sup>th</sup> meeting in Mexico City, Mexico on 9-11 March 2011**

## **Work Plan 2020 – 2021**

Developed at the 6<sup>th</sup> meeting of the WGGI, provided to the IAEG-SDGs in June 2020, noted by the UN Committee of Experts on Global Geospatial Information Management in its Decision 10/105 of August 2020.

## **29 Members**

### **Member States (14)**

- IAEG-SDGs: Ireland, Mexico, Canada, **Colombia**, Malaysia, Niger, Oman, and **Tanzania**
- Other Member States: Netherlands, Denmark, Indonesia, Italy, Namibia, and Senegal

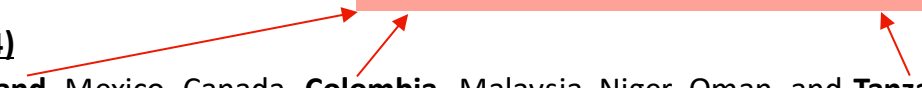
### **SDG Custodian Agencies (9)**

- European Commission - EuroStat, FAO, OECD, UNAIDS, UNEP, UNFPA, UN-Habitat, UN-Women, and WHO

### **Regional Commissions and Invited Groups/Experts (6)**

- ECLAC, Group on Earth Observations – Earth Observations for the SDGs (GEO – EO4SDGs), Japan Aerospace Exploration Agency (JAXA), National Aeronautics and Space Administration (NASA), European Space Agency (ESA), Wageningen University

IAEG-SDGs Focal Points





# Progress of the Work Plan 2020 - 2021

Activity		Current Status	Proposed Timeline/Next Steps	
Short Term	1	Review the 'shortlist' of SDG Indicators	<ul style="list-style-type: none"> <li>Consolidated into the WGGI "List of Indicators". Identifies 99 indicators which can be disaggregated by geographic location (by administrative unit or other geography, urban/rural, ecosystem etc.) or where geospatial information, Earth observations can be used to directly or inform the production, measurement and monitoring of SDG indicators.</li> </ul>	<ul style="list-style-type: none"> <li>Review of the IAEG-SDGs</li> <li>Incorporate indicator metadata</li> <li>Update content as appropriate</li> <li>Update with examples of how geospatial information is being used, when available</li> </ul>
	2	Developing a "long list" of SDG indicators		
	3	Strengthen communication	<ul style="list-style-type: none"> <li>Initiated a wiki is a mechanism that enables the development of work, including collation of storymaps, good practices and practical guidance.</li> <li>Tanzania and Colombia are Focal Points between the IAEG-SDGs and WGGI.</li> </ul>	
Longer Term	<b>The SDGs Geospatial Roadmap</b>		<ul style="list-style-type: none"> <li>6-8 Month Period of Development</li> <li>Developed by the WGGI</li> <li>IAEG-SDGs Members are invited to participate</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Roadmap Vision</b> <i>"To see geospatial and location-based information being recognized and accepted as official data for the SDGs and includes key strategic messages and facts"</i></li> </ul>			

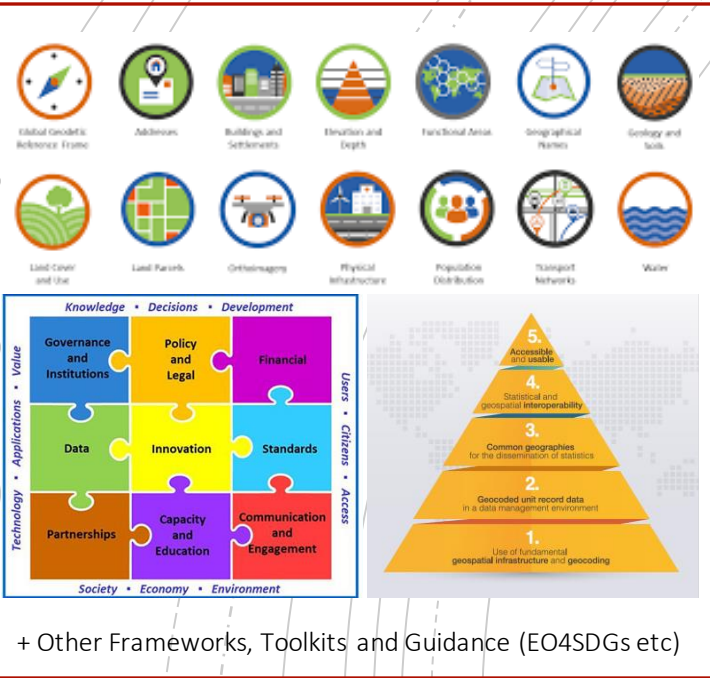


# The SDGs Geospatial Roadmap

- Consolidates existing Work Plan Activities (Capability Inventory, Strengthening Interlinkages, Toolkits and Methodologies, and Guidance and Recommendations) into the **SDGs Geospatial Roadmap**
- Communicates the value of the support already provided to the IAEG-SDGs, UN custodian agencies, and Member States and elaborates on the vision to see geospatial and location-based information being recognised and accepted as official data for the SDGs and their global indicators.
- The Roadmap will highlight how to ‘build the bridge’ between the statistical and geospatial actors working within the global indicator framework, through three phases in a concise 15-20 pages, executive document.
- Provided as an outline, framed by “key guiding questions”, with each member responding to a question.
- Focused to ensure that the Roadmap is representative of the views of the WGGI membership and the stated needs of the IAEG-SDGs

# The SDGs Geospatial Roadmap

## Phases of the SDG Geospatial Roadmap



### Phase 1

**Prepare and Plan: Assessing capability and readiness. Identifying data methods, gaps, issues, disaggregation**

- How to decide on data and actions to implement
- Prioritising data needs in-line with national circumstances

### Phase 2

**Design, Development and Testing**

- What are the outcomes of implementing frameworks?
- Regional cooperation to implement high-level frameworks, standards and tools
- How can countries prioritise and optimise their resources for the maximum benefit?
- What is nice to have – what is essential?
- How can developed capacity and skills be sustained?

### Phase 3

**Measuring, monitoring and reporting geospatially enabled SDG indicators**

- How can the Measurement, monitoring and reporting of geospatially enabled SDG Indicators be achieved?
- How can mandated tools, such as the FIS4SDGs – be leveraged to empower and accelerate digital transformation?
- What are the examples and stories of “measuring, monitoring and reporting”?

*“To see geospatial and location-based information being recognized and accepted as official data for the SDGs”*



# The SDGs Geospatial Roadmap

- Timeline and process for its development over the next 6-8 months
- Perspective from the co-Chairs of the WGGI to the IAEG-SDGs
- Request for contributions from the IAEG-SDGs

# The WGGI List of Indicators

Disaggregation	Level of Geographic Dissagregation	Metadata	A Shortlist? Geodata needed	B Shortlist? Geodata as support	EO4SDGs Listing?	UN-GGIM: Europe's shortlist	Links to National, Regional, Global Examples of Good Practice/Shared Experiences in Communicating or Producing SDG Indicators
<b>Type of Disaggregation</b> <i>e.g. (Age, Gender, employment, household, geographic location etc. )</i>	<b>Type of Geography</b> <i>(eg. Grid or Admin Boundary, Rural/Urban etc. )</i>	c.f.Secretariat	yes/no	yes/no	yes/no		Including URLs to examples

- Activities 1 & 2 were consolidated into the WGGI “List of Indicators”.
- Extends the “Tier Classification for Global SDG Indicators” developed by the IAEG-SDGs
- Identifies 99 indicators which can be disaggregated by geographic location (by administrative unit or other geography, urban/rural, ecosystem etc.) or where geospatial information, Earth observations can be used to directly or inform the production, measurement and monitoring of SDG indicators.
- Consolidates previous work of the WGGI [1] with complementary work by GEO/EO4SDGs, UN-GGIM: Europe and an updated expert review by the WGGI.
- Provides links to resources, communication materials and further background information
- The IAEG-SDGs is invited to contribute to sharing their National, Regional, Global Examples of Good Practice/Shared Experiences in Communicating or Producing SDG Indicators to further illustrate the potential of geospatial information for the indicator framework.

[1] Shortlist: results of the analysis of the Global Indicator Framework with a “geographic location” lens



# The Wiki of the WGGI

- It was agreed to develop an internal wiki for the group as a means of progressive reporting and provides a mechanism to showcase the work of the WGGI to the IAEG-SDGs and others.
- The wiki was also seen as an efficient internal means for the group to centralize relevant information and references for the group, as well as the progress of their work plan, and a sample of their collective work.
- It is a group integration platform that allows an efficient and pleasant induction of any new member and collaborator.

The screenshot shows the UN Statistics Wiki page for the Working Group on Geospatial Information of the IAEG-SDGs. The page title is "The wiki of the Working Group on Geospatial Information of the IAEG-SDGs" and it was created by Mark Iliffe (UNSD) and last modified on August 04, 2020. The page content includes an overview of the group's aim, its objectives, key aims, and a list of reports and resources developed by the group. There are also sections for Geospatial Frameworks, Virtual Meeting Summary Notes, and a Wiki Map.

**Panel** 184 views

## The wiki of the Working Group on Geospatial Information of the IAEG-SDGs

Creado por Mark Iliffe (UNSD), modificado por última vez en ago 04, 2020

The overarching aim of the WGGI is to ensure from a statistical and geospatial perspective that one of the key principles of the 2030 Agenda, to leave no one behind, is reflected in the global indicator framework.

### Objectives of the WGGI

The primary objective of the Working Group is to ensure from a statistical and geospatial perspective that one of the key principles of the 2030 Agenda, to leave no one behind, is reflected in the global indicator framework.

Key aims are to:

- Provide expertise and advice to the IAEG-SDGs, custodian agencies and the larger statistical community 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.
- Review options and 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.

### Geospatial Frameworks

- [Integrated Geospatial Information Framework](#)
- [Global Statistical Geospatial Framework](#)

### Reports and Resources Developed by the WGGI

- [Global and complementary geospatial data for SDGs](#)
- [Land cover datasets for SDGs](#)
- [The Geospatial Roadmap for the SDGs](#)
- [Guidelines for Creating Storymaps](#)

### Virtual Meeting Summary Notes

Fichero	Modificado
> <a href="#">6th Virtual Meeting 5 May 2020 WGGI.pdf</a>	jul 30, 2020 by Mark Iliffe (UNSD)
> <a href="#">7th Virtual Meeting 10 June 2020 WGGI.pdf</a>	jul 30, 2020 by Mark Iliffe (UNSD)
> <a href="#">Working Meeting 16 June 2020 WGGI.pdf</a>	jul 30, 2020 by Mark Iliffe (UNSD)

[Descargar todo](#)

### Wiki Map

- [Consolidating the Lists of Geographic Information](#)
- [Creating Storymaps](#)
- [Summary Notes 2020](#)
- [WGGI Milestones and Key events](#)
- [The Geospatial Roadmap for the SDGs](#)
- [List of participating members](#)

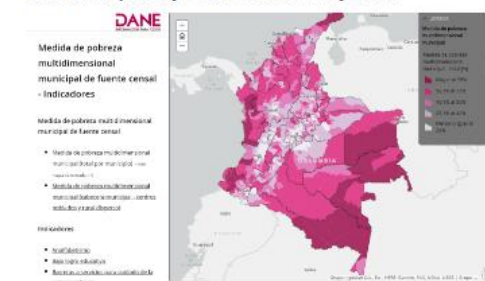
Herramientas de espacio

# Storymaps: Better Visualisation and Communication of the Indicators

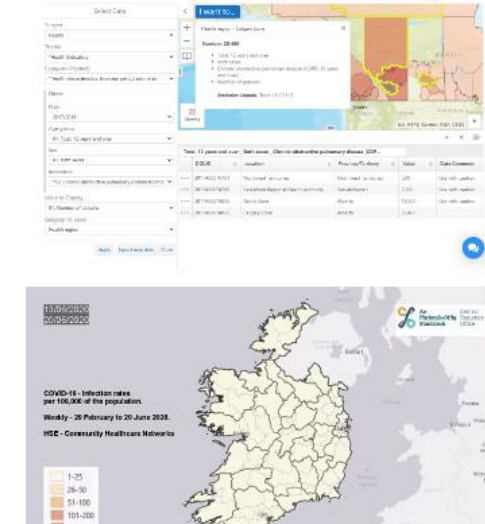
- Storytelling methods can strengthen communication and coordination with international statistical and geospatial information communities and the IAEG-ODD
  - FAO noted the importance of Story maps in conveying messages to decision-makers and in helping their capacity development efforts
  - Good practices were collated on collecting information on the indicators in the form of Story maps from members of the WGGI
  - [WGGI committed to sharing their own Story maps, showing a sample of diverse approaches and methods](#)
- Story telling translates the methodological and practical effort of collecting geospatial data on a local, national or global scale, and the development of analyzes and indicators as well as their monitoring, into understandable and attractive interactive documents, accessible for all. This has the potential to improve the joint work between groups of experts, to showcase in an illustrative way the progress on the monitoring effort, and to democratize the SDGs towards any other public allowing the better assimilation of the Agenda 2030.

we show here some examples of interactive visuals, and story maps developed by national institutes of statistics and geography with a geospatial approach, organized by main goal.

## Goal 1. End poverty in all its forms everywhere



## Goal 3. Ensure healthy lives and promote well-being for all at all ages



## Goal 8. Promote sustained, inclusive and sustainable economic growth, and productive employment and decent work for all



## Women and Sustainable Development: Building a Better Future for All...



## Goal 13. Take urgent action to combat climate change and its impacts



Panel / ... / Guidelines for Story maps 17 views

## How to make storytelling documents with MapBox

Creado por Celine Jacquin el ago 20, 2020

The Mapbox Storytelling Template provides a low-code, modularized template that anyone can use to input copy, select the elements of the map that they want to feature for each "chapter," and quickly publish a highly interactive story experience with high-quality visuals to support the content.

The template can be used as is, without ever having to style or upload any data to Mapbox Studio. You need a **Mapbox account**, an **access token** to start building a simple "scrollytelling" story that showcases different places in a region or a timeline of events with chapters and basic markers on an animated map. For example, in a story about the changing size of glaciers, maps of the glaciers at different points in time displayed alongside the text describing those changes.

See this demo:



Me gusta Sé el primero al que le gusta esto

Escribe un comentario...

Panel / ...

/ Creating Ireland's Storymaps: A Step-by-step guide 19 views

## Introduction - About Storymaps

Creado por Mark Iliffe (UNSD), modificado por última vez en ago 04, 2020

Story Maps is a mapping application hosted by Environmental Systems Research Institute (ESRI). Story maps can be created by using geographic data that is previously created in ArcGIS Pro, ArcGIS Desktop & ArcGIS online in combination with images, charts and descriptive text.

*"They make it easy to harness the power of maps and geography to tell your story."*

There are a variety of different templates to choose from and a variety of different topics that are displayed using Story Maps, check the blog posts below for some inspiration.

- <https://www.esri.com/arcgis-blog/products/story-maps/mapping/including-charts-in-story-maps/>
- <https://www.esri.com/arcgis-blog/products/story-maps/mapping/hot-numbers-behind-the-scenes/>
- <https://www.esri.com/arcgis-blog/products/mapping/mapping/our-favorite-story-maps-from-2018/>

We will create a **SWIPE** Story Map which will display the number of Births in comparison to the number of Deaths in Ireland in 2016. The SWIPE template is useful for comparing two simultaneously. Story maps have several templates to choose from, which are displayed in Figure 1 below.



# Guidelines for Storymaps

Guidelines have been developed by the group to facilitate the use of different tools with sensitivity for inclusion (varying levels of difficulty and costs).

Support was offered between members.

# Increasing Engagement Between the WGGI and the IAEG-SDGs

- The WGGI welcomes the IAEG-SDGs to “commission work”
- Seeks engagement from the IAEG-SDG members in developing the Roadmap and its phases
- The Secretariat is providing a “WGGI box” to place geospatial information on the IAEG-SDG wiki to better communicate and update members
- Providing the example that building and strengthening the Bridge within and between IAEG-SDGs, UN Agencies and UN-GGIM leads to tangible benefits and enhanced outcomes



# Increasing Engagement Between the WGGI and the IAEG-SDGs

- The WGGI is the exemplar that building and strengthening the Bridge within and between IAEG-SDGs, UN Agencies and UN-GGIM leads to tangible benefits and enhanced outcomes...

# EO4SDG ANNUAL MEETING, 19 Nov 2020

## Federated Approach

### Panel I: Perspectives from GEO WGs

#### Speakers:

GFOI | Sylvia Wilson

GEO Blue Planet | Emily Smail

GEO Human Planet | Bob Chen

EuroGEO & EARSC | Monica Miguel Lago

CEOS SDG Ad Hoc Team | Marc Paganini

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