

*DRAFT - WORKING DOCUMENT (document to be finalized for CEOS Plenary 33)*

**CEOS 2019-2021 Work Plan on SDGs**

***Version 0.1, 29 August 2019   
Prepared by SDG AHT co-leads (CSIRO, ESA), in consultation with the GEO EO4SDG Executive Secretary (NASA)***

## **Summary**

* *The* ***CEOS 2019-2021 Work Plan on SDGs, version 0.1,*** *is provided to the members of the CEOS SDG AHT for review ahead of the SDG AHT side meeting in Fairbanks at SIT 2019 TW.*
* *The CEOS 2019-2021 Work Plan on SDGs, version 0.1, is accompanied by the* ***CEOS Engagement Plan on SDGs version 1.1,*** *available as a separate document and which provides the rationale that drives the CEOS 2019-2021 Work Plan on SDGs.*
* *A summary of the CEOS 2019-2021 Work Plan on SDGs will be presented to the CEOS SIT at the SIT Technical Workshop on Thursday 12th September 2019.*
* *The document will be further elaborated after SIT 2019 TW and presented for endorsement to the CEOS Principals at CEOS 33 Plenary in October 2019, depending on the decisions agreed as a way forward at SIT 2019 TW.*

# SCOPE OF THE DOCUMENT

The CEOS Plenary at its 30th session in Brisbane inNovember 2016 established a CEOS Ad Hoc Team on the Sustainable Development Goals (CEOS SDG AHT). The Terms of Reference (ToR) of the CEOS SDG AHT was approved at the CEOS SIT 32 meeting in April 2017 in Paris.

In October 2017 in Rapid City, the CEOS 31 Plenary renewed the SDG AHT for a 2nd year with the same mandate and Terms of Reference. In October 2018 in Brussels, the CEOS 32 Plenary renewed again the SDG AHT for a 3rd year with an action to bring a proposal to SIT-34 on the way forward on how to tackle SDG within CEOS, addressing the organisational aspects depending on the proposed solutions.

Given the current internal discussions in CEOS about the possible creation of a new WG on Information Provision for a more efficient response to user communities’ requests including the SDGs, given the new GEO federated approach on SDGs and related workflows that is currently being defined by the GEO EO4SDG initiative and which will include a role for CEOS, given the lack of CEOS Agencies support to create a Working Group on SDGs (option 3 of possible organisational evolutions of CEOS on SDGs), the SGT AHT will request to CEOS 33 Plenary a renewal of another year as an AHT so that CEOS can continue support GEO (through the coordination of the GEO E04SDG initiative) in all its SDG actions, by ensuring the provision and facilitating the access to accurate, continuous and reliable satellite data , by supporting the development of EO methods, tools and platforms that enable countries to mainstream Earth Observation in their national SDG processes and systems, and by supporting the development of EO capacities and skills in the countries.

This document contains the CEOS workplan to continue its activities after CEOS 33 Plenary. It is provided as a 2-year workplan (2019-2021), which will be transferred within the new “CEOS structure on SDGs” that will be decided at CEOS 34 Plenary in October 2020, including the possibility to transfer some activities outside of CEOS if a light structure on SDGs is decided at CEOS 34 Plenary.

The 2019-2021 workplan on SDGs follows the strategic discussions on the lifecycle and way forward of the CEOS Ad-Hoc Teams initiated by CEOS SIT Chair team in September 2018, reckoning with the work of the CEOS Working Group Study Team (WGST) created by SIT 34 to study how CEOS should re-organise itself for a more efficient response to the increasing requests from user communities (in large parts lead by GEO).Although the CEOS strategic discussions on the lifecycle of the AHTs and on the CEOS reorganization to better respond to user communities are still on-going, the 2-year workplan on SDGs has been defined in a flexible way, first to have a mid-term vision that goes beyond the lifetime of the SDG AHT, and second to be easily adapted to any CEOS organisational evolution that will emerge from the CEOS internal strategic discussions.

The 2019-2021 workplan on SDGs is also aligned with the incoming SIT Chair priorities (CSIRO/GA) for 2020-21 and the proposed timelines and outcomes.

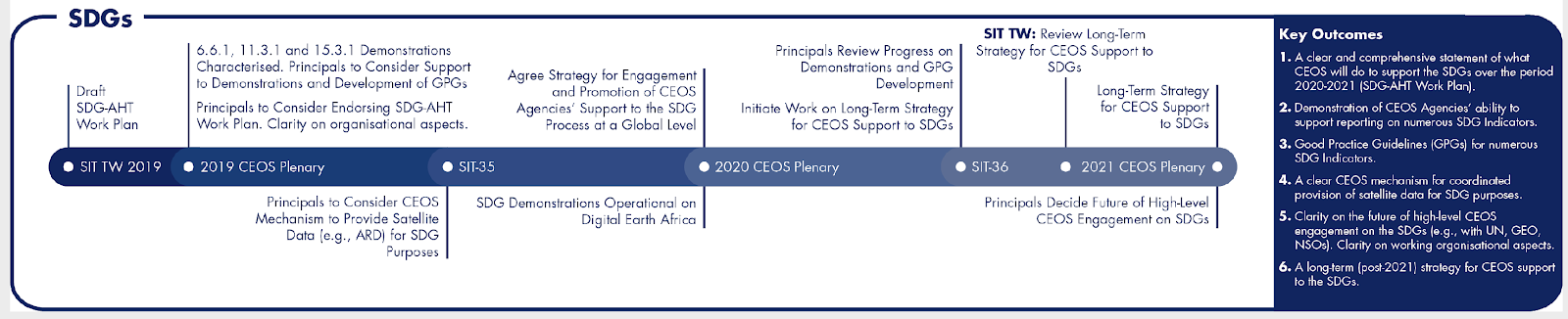


Figure 1 SDG priorities for the SIT Chair 2019-21: timeline and outcomes

To summarize, the incoming SIT Chair (CSIRO/GA) aims at:

* Ensuring efficiency in delivering CEOS SDG outcomes, as well as clarity between CEOS & GEO (EO4SDG) activities.
* Focusing on a few specific indicators and deliver
  + Good Practice, Methods
  + Demonstrations
  + ARD products (TBD)
* Encouraging stronger CEOS Agencies involvement and support Ad Hoc team traction.
* Establishing longer*-term strategy for CEOS support to SDGs.*

# Alignment with GEO EO4SDG Implementation Plan for the period 2020-2024.

**The CEOS 2019-2021 workplan is aligned with the** **GEO EO4SDG Strategic Implementation Plan for the period 2020-2024.**

The GEO EO4SDG 2020-2024 Implementation Plan serves as a baseline for CEOS to synchronize the GEO and CEOS activities on SDGs or better align its activities with the plan of work of EO4SDG, in order to maximize overall impact and avoid unnecessary duplication of efforts.

The EO4SDG implementation plan is built around 3 main goals, which are further developed into 4 main implementation elements on projects, capacity building, data and information products, and outreach and engagement:

1. To demonstrate how EO, geospatial information and socio-economic and other data contribute in novel and practical ways to support the SDGs.
2. To increase skills and capabilities in use of EO for SDG activities and their broader benefits.
3. To broaden interest, awareness and understanding of EO in support of the SCDGs.

Given CEOS mandate to act as the “space arm” of GEO, CEOS focuses its efforts on facilitating the exploitation of satellite observations by the SDG stakeholders, while GEO prioritizes its activities towards mainstreaming the use of Earth Observations (not limited to satellite observations) in the SDG systems and processes at UN and country levels.

GEO EO4SDG has initiated a process to harmonize its workflows (activities and deliverables) and amplify its collaboration with other GEO Work Programme Elements and SDG stakeholders including CEOS. The main outcomes of this reorganisation can be summarized in 4 main topics: GEO Workflows on SDGs, GEO Federated Approach on SDGs, EO Toolkit on SDG Indicators and GEO Secretariat Support on SDGs.

|  |  |  |
| --- | --- | --- |
| Reorganisation aspect | EO4SDG action | Impact on CEOS |
| **GEO Workflows on SDG Indicators** | GEO EO4SDG will define some harmonized workflows of activities with common sets of deliverables, which will be applied to each SDG indicator. The definition of GEO Workflows on SDG Indicators will be followed by the set-up of an EO4SDG organizational structure to optimize the allocation of resources (often available on a best effort basis) and maximize overall quality of delivery. | *As space-arm of GEO, there are a number of tasks and deliverables that GEO will delegate to CEOS and its Agencies.*  *The GEO Workflows on SDG Indicators will include some activities that will be assigned to CEOS.* |
| **GEO Federated Approach on SDGs** | A new federated approach will be defined by GEO EODSDG to make sure all available competence and expertise inside and outside GEO (including CEOS) are properly utilized in order to maximize impact. | *The new GEO Federated Approach on SDGs will include a role for CEOS and a number of tasks and deliverables will be assigned to CEOS.* |
| **EO Toolkits on SDG Indicators** | GEO E4SDG will start to "package" all available EO datasets, tools and platforms in practical guidelines and toolkits for an easy implementation by countries | *Many CEOS agencies* *have activities related to the production of global EO datasets, the development of EO software tools*, *the implementation of* *EO platforms, the production of EO tutorials, the organization of capacity building workshops on EO. All* *these CEOS and CEOS Agencies’ assets can be customized, at minimum cost, to serve the data and information needs for SDG indicators, and included in the EO Toolkits on SDG indicators* |
| **GEO Secretariat support on SDGs** | Although the SDG is one of the 3 engagement priorities of GEO (with the Paris Agreement on climate change and the Sendai Framework on disaster risk reduction), the GEO secretariat does not have currently any staff that supports the SDG activities in GEO. The Terms of Reference for the SDG support staff at GEO secretariat will be defined. | *The ToR of the GEO Secretariat support staff on SDGs will include the relations with the GEO Member States and Participating Organizations (including CEOS).* |

**Table 1**: Main aspects of the GEO EO4SDG re-organization that will follow the EO4SDG 2019 annual meeting

The alignment of the **CEOS 2019-2021 workplan on SDGs** with the **GEO EO4SDG 2020-2024 Implementation Plan,** and in particular with thenew **GEO** **Federated Approach** **on SDGs and related workflows,** allows to embed the CEOS activities and deliverables within an overall SDG framework that include all major SDG stakeholders. It also allows to streamline the work of CEOS on SDGs along the unique role that CEOS should play as a coordination body of the Space Agencies and to a level that is commensurate with the resources available in CEOS, and eventually to maximize benefits for CEOS and its agencies.

# Outline of the CEOS 2019-2021 Work Plan

## Criteria’s for streamlining CEOS activities on SDGs

The following criteria have been used by the SDG AHT to streamline the CEOS engagement on SDGs and to define the primary activities and deliverables that CEOS should conduct and produce in the **CEOS 2019-2021 workplan on SDGs:**

1. The CEOS activities on SDGs must reflect the mandate of CEOS to act as a coordination body of the Space Agencies, and consequently **must** **serve the interest of CEOS and offer tangible benefits to all CEOS Agencies**.
2. The **permanent CEOS entities** (Working Groups, Virtual Constellations, Systems Engineering Office) **must be involved in the SDG activities** in order to leverage their knowledge and skills and maximize overall benefits for the CEOS Agencies and for the SDG stakeholders.
3. The CEOS activities on SDGs **must focus on the unique role that CEOS should play** to enable an easy and seamless exploitation of satellite observations by the SDG stakeholders.
4. The CEOS activities on SDGs **must complement rather than duplicate the GEO community efforts on SDGs** done principally under the coordination of the GEO EO4SDG initiative.
5. The CEOS activities on SDGs **must be connected to the SDG processes in place** and in particular anchored into the workplan of the **IAEG-SDGs Working Group on Geospatial Information (WGGI)** and of the **Custodian Agencies**.
6. The CEOS activities on SDGs and deliverables **must be** **embedded in the GEO Federated Approach on SDGs and related workflows**.
7. The CEOS activities on SDGs and deliverables **must be commensurate with the resources available** **in CEOS to deliver** as planned.

## Priority SDG Indicators

The **CEOS 2019-2021 Work Plan on SDGs will focus its activities on 3 SDG** **indicators that are most ready to integrate EO in their processes** butfor which they are still some methodological and data availability issues. These indicators are also priority indicators in the GEO EO4SDG Strategic Implementation Plan and in the plan of work of the IAEG-SDG Working Group on Geospatial Information (WGGI).

|  |  |  |  |
| --- | --- | --- | --- |
| # | Indicator | EO relevance for the SDG sub-indicators | Custodian Agency |
| 6.6.1 | **Change in the extent of water-related ecosystems over time** | * Changes in the spatial extent of open waters  (lakes, artificial water bodies, rivers and estuaries); * Changes in the spatial extent of vegetated wetlands (including mangroves); * Water quality of lakes and artificial water bodies * Water discharge in rivers and estuaries;  (through modeling); | UN Environment |
| 11.3.1 | **Ratio of land consumption rate to population growth rate** | * Mapping of Human Settlements; * Mapping of Population density;  (through disaggregation of census data); | UN Habitat |
| 15.3.1 | **Proportion of land that is degraded over total land area** | * Land degradation from the changes in land cover; * Land degradation from the changes in land productivity; * Land degradation from the changes in Carbon Stock (above- and below-ground biomass, dead organic matter, and soil organic carbon); | UNCCD |

**Table 2:** Primary SDG indicators addressed in the CEOS 2019-2021 Work Plan on SDGs

Starting with these 3 indicators allows CEOS to build on the privileged relationships some of the CEOS Agencies already have with the 3 custodian agencies. For all three indicators, some CEOS agencies (e.g. CSIRO, ESA, NASA, EC/JRC, JAXA) already provided some expertise to the UN Agencies to develop the methodological guidelines. Although the CEOS activities in the 2019-2021 workplan will mainly focus on the 3 primary SDG indicators, a number of CEOS activities will be extended to other SDG indicators such as indicator 2.4.1 on sustainable agriculture and indicator 14.1.1 on coastal eutrophication.

## Involvement of CEOS bodies in CEOS activities on SDGs

The CEOS SDG AHT will leverage the wide expertise available within CEOS, involving all CEOS permanent bodies that can contribute to the activities of the **CEOS 2019-2021 workplan on SDGs**:

|  |  |
| --- | --- |
| CEOS Entity | Contribution to the CEOS activities on SDGs |
| VCs | * (support) Analysis of satellite data requirements for the SDG indicators. * (lead) Guidelines on the use of Satellite Analysis Ready Data (ARD) for the SDG indicators. |
| WGCapD | * (lead) Awareness webinars of the importance of EO for the SDG targets and indicators. * (lead) Capacity Building webinars on advanced satellite-based methodologies for SDG indicators. |
| WGGIS | * (support) Analysis of EO-enabling infrastructures (tools and platforms) for the SDG indicators. * (lead) Development of a CEOS SDG Community Portal for EO data discovery and access. |
| WGCV | * (support) Guidelines on EO Quality standards for SDG indicators. |
| SEO | * (lead) Customization of the CEOS Data Cube for monitoring and reporting on SDG indicators. |

**Table 3**: CEOS Entities involved in the CEOS 2019-2021 Work Plan on SDGs

## CEOS cardinal activity lines on SDGs

The **CEOS 2019-2021 workplan on SDGs** includes the following **6 cardinal activity lines** that will be spanned along the 2-year time frame, and which will be conducted with the support from the CEOS permanent bodies indicated in **Table 4**. All these activities will be fully integrated in the GEO Federated Approach on SDGs and related workflows coordinated by GEO EO4SDG. Similarly, all CEOS deliverables will be embedded in the GEO deliverables that are defined in the GEO EO4SDG Strategic Implementation Plan for the period 2020-2024.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Activity Title | Activity Description | Deliverable | CEOS bodies |
| 1 | **Satellite Data Requirements** | * Review the satellite data requirements for the production of SDG indicators, including satellite data coverage, satellite data continuity, availability of satellite Analysis Ready Data. * Use CEOS MIM Database with a “SDG Filter”. * Start with a geographical focus on countries with specific data needs (e.g. Pacific Islands, Tropical and small territories). | * ***Technical Notes on “Satellite Data Requirement”*** *(one TN for each SDG indicator)* | LSI-VC (for the 3 primary indicators) |
| 2 | **EO Enabling Infrastructures** | * Review of the EO-enabling infrastructures (cloud processing platforms, EO data processing and analytics tools including data cubes) available in CEOS agencies and which can facilitate the uptake of satellite observations by SDG stakeholders:   + Inventory of tools and platforms developed by CEOS Agencies to assist in data access, storage, and processing, and SDG indicator analysis / reporting.   + Identify synergies between different systems. * Development of a CEOS SDG Community Portal for discovery of and access to satellite ARD and EO data sets. | * ***Technical Notes on EO enabling infrastructures for SDG indicators*** *(one TN for each SDG Indicator)* * ***CEOS Community Portal on SDG*** | WGISS  SEO |
| 3 | **EO Awareness and Capacity Building** | * Support to GEO on Capacity Building on advanced satellite-based methodologies for SDG indicators. * Contribution to GEO Massive Open On-line Courses (MOOCs) on EO for SDG indicators. | * ***Capacity building webinars*** *(one webinar per SDG indicator)* * ***material for the GEO MOOCs on SDGs*** *(one MOOC per SDG goal)* | WGCapD |
| 4 | **EO Good Practices Guidance** | * Support GEO EO4SDG in the collection of EO good practices on SDG indicators (including global data sets and open source s/w) developed by the CEOS agencies, to be included in the EO Toolkits on SDG indicators * Develop with GEO EO4SDG an R&D agenda for improved EO methods in response to indicator data gaps. | * ***EO Good Practice Guidance for SDG indicators*** *(one GPG for each SDG indicator)* * ***R&D agenda on improved methods for SDG indicators*** *(one R&D Agenda for each SDG indicator)* |  |
| 5 | **EO Demonstration Use Cases** | * Support GEO EO4SDG in the demonstration of EO solutions for SDG monitoring and reporting (EO demonstrations coordinated by GEO/CEOS or undertaken by individual CEOS Agencies) done in partnership with the custodian agencies and/or national authorities. * Customisation of CEOS ODC workflows (in whole or in part) for SDG indicator monitoring. | * ***Collection of EO Demonstration Cases for SDG indicators.*** *(one per SDG indicator)* * ***Deployment of EO workflows for SDGs on the CEOS Data Cube*** | SEO |
| 6 | **EO Quality Standards** | * Development of quality standards on the use of EO satellite data in the SDG global indicator framework. * Production of guidelines for countries on the accuracy assessment and associated level of confidence regarding the integration of EO in SDG indicator workflows | * ***EO Quality Standards for SDG indicators*** *(one guideline per indicator)* | WGCV |

**Table 4**: Cardinal activities lines of the CEOS 2019-2021 Work Plan on SDGs

It should be noted that for some of these cardinal activities (e.g. EO Good Practices Guidance, EO Demonstration Use Cases), CEOS and his agencies will be one of many contributors. The overall coordination of these joint activities lies at GEO EO4SDG. Other activities such as “Satellite Data Requirement” are fully delegated to CEOS. The roles and responsibilities of CEOS, including delegation of responsibilities, will be precisely defined in the forthcoming concept note on the “GEO federated approach on SDGs”.

# 2019-2020 Work Plan Schedule

The overall planning of the CEOS 2019-2020 workplan is provided in Figure 2.

The CEOS activities on SDGs will be coordinated by the CEOS SDG AHT until CEOS Plenary 34 (October 2020) and will mainly concern the 3 primary indicators (6.6.1 on water-related ecosystems, 11.3.1 on sustainable urbanization and 15.3.1 on land degradation). Only the first activity line (satellite data requirements) will also address the data requirements of other SDG indicators (starting at SIT 35 and only for SDG 2.4.1 on sustainable agriculture and 14.1.1 on coastal eutrophication).

All activities will be executed with the support of the CEOS bodies (VCs, WGs and SEO) as indicated in Table 4. Stronger links, consultations and joined workshops/ meetings with LSI-VC, SEO and identified WGs will be necessary.

During 2019 Q4, until CEOS 33 Plenary, the CEOS AHT on SDGs will:

* Finalize the Satellite Data Requirement Table for the 3 priority indicators (*action SDG-5 from the 2019-2021 workplan*), which will constitute the baseline for the Indicator TN on the Satellite Data Requirements that the AHT will prepare in 2020 Q1.
* Demonstrate CEOS Data Cube algorithms starting with SDG 15.3.1 (*action SDG -6 from 2019-2021 workplan*) and collect feedback from statistical agencies and other SDG stakeholders (line ministries of the pilot countries).
* Continue the discussion with WGISS on the conceptual design of the CEOS Community Portal SDGs (for discovery of and access to satellite ARD and EO data sets.)

After CEOS 33 Plenary (2020 Q1), the SDG AHT will start preparing the other CEOS activities on SDGs and present the respective approaches at SIT 35. This includes the specification of the TN on enabling infrastructures (in collaboration with WGISS and SEO), the organization of Capacity Building webinars on advanced satellite-based methodologies for SDG indicators (in collaboration with WGCapD), the specification of the R&D agenda on improved EO methods, the approach to the development of Good Practices Guidance, and to the collection of demonstration cases. The preparation of all these activities will follow the overarching guidelines that will prepared by EO4SDG during 2019 Q4. All these activities that will be initiated after SIT 35 will be done in close collaboration with the GEO EO4SDG initiative and integrated in the workflows and deliverables of the GEO federated approach on SDGs.

The CEOS efforts on all activity lines will gradually increase during the second year of the workplan.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Activity** | **Deliverables** |  | 2019 | 2020 | | | | 2021 | | | |
|  |  |  |  | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
|  |  |  |  | 33 Plenary |  | SIT-35 | TW 2020 | 34 Plenary |  | SIT 36 | TW 2021 | 35 Plenary |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | Satellite Data Requirements | TN on Satellite Data Requirements |  | Satellite Data requirement  Table | SDG 6.6.1 - 11.3.1 - 15.3.1 | SDG 2.4.1 - 14.1.1 | | | Other SDG Indicators | | | |
| 2 | EO Enabling Infrastructures | TN on EO enabling Infrastructures |  |  | TN specification | SDG 6.6.1 - 11.3.1 - 15.3.1 | |  | Other SDG Indicators including 2.4.1 and 14.1.1 | | | |
|  |  | CEOS Community Portal on SDG |  | Conceptual design with WGISS | SDG 6.6.1 - 11.3.1 - 15.3.1 | |  |  | Other SDG Indicators including 2.4.1 and 14.1.1 | | | |
| 3 | Awareness and Capacity Building | Capacity Building Webinars |  |  | Webinar Preparation | SDG 15.3.1 | SDG 11.3.1 | SDG 6.6.1 | Other SDG Indicators including 2.4.1 and 14.1.1 | | | |
|  |  | GEO MOOCs on SDGs |  |  |  |  |  | MOOC Preparation SDG 6.6.1 - 11.3.1 - 15.3.1 | | MOOC Execution SDG 6.6.1 - 11.3.1 - 15.3.1 | | |
| 4 | EO Good Practice Guidance | Good Practice Guidance |  |  | GPG  Set-up | SDG 6.6.1 - 11.3.1 - 15.3.1 | | | Other SDG Indicators | | | |
|  |  | R&D agenda on improved methdos |  |  | R&D Agenda Specifications | SDG 6.6.1 - 11.3.1 - 15.3.1 | | |  |  |  |  |
| 5 | EO Demonstration Use Cases | Demonstration cases for SDG indicators |  |  | Demonstration Cases Definition | SDG 6.6.1 - 11.3.1 - 15.3.1 | | | Other SDG Indicators | | | |
|  |  | EO workflows on CEOS Data Cube |  | SDG 15.3.1 | SDG 6.6.1 | SDG 11.3.1 | Other SDG Indicators | | | | | |
| 6 | EO Quality Standards | EO Quality Standards for SDG indicators |  |  |  | TN ToC  Definition | SDG 15.3.1 | | SDG 11.3.1 | | SDG 6.6.1 | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | 2019 | 2020 | | | | 2021 | | | |
|  |  |  |  | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |

**Figure 2** Activity planning of CEOS 2019-2021 Workplan

# List of Deliverables

The following table provide the list of deliverables with the respective timelines and leads/contributors.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CEO Activities | CEOS Deliverables | Timeline | Lead | Contributors |
| Satellite Data Requirements | TN on Satellite Data Requirements | SIT 35 | CSIRO | NASA, ESA, JAXA |
| EO Enabling Infrastructures | TN on EO enabling Infrastructures | SIT TW 2020 | ESA | CSIRO, NASA |
| CEOS Community Portal on SDG | SIT 35 | WGGISS | CSIRO, ESA, NASA, JAXA |
| Awareness and Capacity Building | Capacity Building Webinars |  |  |  |
| GEO MOOCs on SDGs |  |  |  |
| EO Good Practice Guidance | Good Practice Guidance |  |  |  |
| R&D agenda on improved methods |  |  |  |
| EO Demonstration Use Cases | Demonstration cases for SDG indicators |  |  |  |
| EO workflows on CEOS Data Cube |  |  |  |
| EO Quality Standards | EO Quality Standards for SDG indicators |  |  |  |

Table 5: List of Deliverables from CEOS 2019-2021 Workplan

The table will be completed after TWS.

# Work Organization

During the first year of the 2019-2021 workplan (up to CEOS 34 Plenary), all CEOS activities on SDGs will be coordinated by the co-leads of the SDG-AHT with the support of an Executive Secretary provided by CSIRO. The co-leads of the SDG-AHT will be responsible for the overall coordination of the CEOS activities on SDGs and for reporting to CEOS SIT and Plenary.

After CEOS 35 Plenary, the responsibility will be transferred to the leading CEOS body that will be in charge of coordinating all CEOS activities on SDGs.

A light work organization will be put in place during the first year, with a number of sub-teams that will lead the different tasks. This work breakdown would allow to maximize the resources available. It is also expected that an organization of the work with well-defined activities, deliverables and deadlines will create an incentive for CEOS agencies to assign resources.

The following sub-teams will be created:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AHT sub-teams | Responsibilities | Lead | Contributors | CEOS Bodies |
| **Satellite Data Requirements** | Coordinate the review of the satellite data requirements for the production of the SDG indicators. | CSIRO | NASA, ESA, JAXA | LSI-VC |
| **EO Enabling Infrastructures** | Coordinate the Technical Note on EO Enabling Infrastructures, with the support of the thematic sub-teams for the platforms & tools specific to the subject indicators. | ESA | CSIRO, NASA | WGISS, SEO |
| **Capacity Building** | Contribute the GEO/CEOS joint webinars/MOOCs on advanced satellite-based solutions for SDG indicators. | NASA | CSIRO, ESA | WGCapD |
| **EO Quality Standards** | Develop quality standards on the integration of EO data into the SDG global indicator framework (with the support of the thematic sub-teams). |  |  | WGCV |
| **LDN sub-team** | Lead the thematic activities on indicator 15.3.1 (EO Good Practices Guidance, R&D agenda, EO Demonstration Cases). | CSIRO | ESA, SANSA | SEO |
| **Urban sub-team** | Lead the thematic activities on indicator 11.3.1 (EO Good Practices Guidance, R&D agenda, EO Demonstration Cases). | EC ? | NASA, ESA | SEO |
| **Water sub-team** | Lead the thematic activities on indicator 6.6.1 (EO Good Practices Guidance, R&D agenda, EO Demonstration Cases). | JAXA ? |  | SEO |

Table 6 AHT sub-teams, roles and leads

The work of the AHT sub-teams will be fully integrated in the GEO Federated Approach on SDG as depicted in Figure 4.

The table will be completed after TWS.

GEO EOD4SDG

**SDG-AHT  
Marine sub team**

**GEO LDN**

**Human Planet I.**

**Global Urban O.I.**

**GEO WETANDS**

**AQUAWATCH**

**GEOGLAM**

**GFOI**

**SDG-AHT**

**LDN sub team**

**GEOGLAM AHT**

**GFOI AHT**

**SDG-AHT**

**Urban sub team**

**SDG-AHT**

**Water sub team**

**1. Satellite Data Requirements**

**2. EO enabling Infrastructures**

**3. EO Good Practice Guidance**

**4. EO Demonstration Cases**

**5. EO Quality Standard**

**6. EO Awareness and CB**

CEOS AHT SDGs

SDG 15.3.1

SDG 11.2.1

SDG 11.7.1

SDG 6.6.1

SDG 6.3.2

SDG 2.4.1

SDG 6.4.1

SDG 15.1.1

SDG 15.2.1

SDG 11.3.1

SDG 11.1.1

**GEO BLUE PLANET**

SDG 14.3.1

SDG 14.1.1

***Figure 3*** *Linkage between the CEOS 2019-2021 activities and the GEO Federated Approach on SDG*

# Involvement of CEOS Agencies



CEOS Agencies are only indicative

**LSI-VC**

**WGISS**

**SEO**

**WGCapD**

**SEO**

**WGCV**

Surface Water Extent, Vegetated Wetlands, Water Quality

EC, NASA, ESA, JAXA, CSIRO, GA, CSA, CNES

GEO Wetlands, AquaWatch,

GEO GLOWS

1. EO Satellite Data   
Requirements

6. EO Quality   
Standards

5. EO Demonstration   
Use Cases

4. EO Good Practices

Guidance

3. EO Awareness &   
Capacity Building

2. EO Enabling

Infrastructures

Land Cover, Land Productivity, Carbon Stock

CSIRO, EC, ESA, NASA, SANSA, DLR, INPE, JAXA

GEO LDN

Human Settlements, Population Density, Rural/Urban

ESA, DLR, NASA, EC, SANSA

GEO Human Planet

GEO GUOI

**GEO EO4SDG**

**initiative**

UNCCD

UN Habitat

UN Environment

**CEOS Ad-Hoc   
Team SDGS**

15.3.1 Land Degradation Neutralitty

11.3.1 Sustainable Urbanization

6.6.1 water-related ecosystems

UN Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs)

**Working Group on Geo-Spatial Information (WGGI)** Task Stream Application of satellite data for the SDG indicators

***Figure 4****: CEOS agencies and bodies involved in the CEOS 2019-2021 Work Plan on SDGs*