

*OFFICIAL DOCUMENT (document to be updated for CEOS Plenary 33)*

**CEOS Engagement Plan on SDGs**

***Version 1.1, 29 August 2019   
Prepared by SDG AHT co-leads (CSIRO, ESA), in consultation with the GEO EO4SDG Executive Secretary (NASA)***

## **Summary**

* The **CEOS Engagement Plan on SDGs, version 1.1,** is provided to the members of the CEOS SDG AHT for review, ahead of the SDG AHT side meeting at SIT 2019 TW (Tuesday 10th September 2019, Fairbanks, US).
* Version 1.1 of the CEOS Engagement Plan on SDGs is an **updated version of what was presented at SIT 34**, which takes into consideration the recent developments in CEOS and in GEO that have an impact on how CEOS should organize its engagement on SDGs.
* The CEOS Engagement Plan on SDGs version 1.1 is accompanied by the **CEOS 2019-2021 workplan on SGDs** version 0.1, which is available as a separate document.
* The Engagement plan will be further elaborated during and after SIT 2019 TW and presented for information to the CEOS Principals at CEOS 33rd Plenary in October 2019.
* A summary of the new CEOS Engagement Plan on SDGs and 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 CEOS SDG AHT intends to ask a "one-year extension" of the SDG AHT to the CEOS 33rd Plenary with a 2-year workplan that will be transferred (after one year - which means following the CEOS 34th Plenary) to a new CEOS structure on SDGs that will be decided at CEOS 34 Plenary in October 2020.
* **Why requesting another year of the SDG AHT**? It is justified by several uncertainties (both internal and external to CEOS) that our EO community (including GEO and CEOS) is facing and needs to address to expedite the adoption of EO solutions in the 2030 Agenda on Sustainable Development.
  + Some external factors include the new GEO federated approach on SDGs and related workflows that will soon be defined by the GEO EO4SDG initiative including a more precise role for CEOS.
  + Internal issues include the work of the CEOS Working Group Study Team (WGST) created at SIT 34 to determine how CEOS should organize itself to better respond to future user communities’ requests.

An extension of the AHT, with a flexible workplan, will give the necessary flexibility to CEOS to continue his work to support the SDG process, and will allow the group to plan the future outlook depending on external and internal organizational matters.

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# Scope of 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. It was anticipated that a permanent CEOS Working Group on SDGs would have been proposed for decision at CEOS 32 Plenary. In October 2018 in Brussels, the CEOS 32 Plenary renewed the SDG AHT for a 3rd year with an action to bring a proposal to SIT-34 on the way the CEOS activities on SDGs should be brought forward within the CEOS structure, addressing the organisational aspects regarding the possible creation of a permanent CEOS Working Group on SDGs.

This document contains the CEOS engagement plan for the CEOS activities on SDGs to begin after CEOS Plenary 33 in October 2019.

It follows the strategic discussions on the lifecycle and way forward of the CEOS Ad-Hoc Teams that the CEOS SIT Chair team initiated at the 2018 SIT Technical Workshop in September 2018. It also follows the discussions initiated by CEOS SIT 34 on the concept of a new Working Group on Information Provision (WGIP) for a more efficient CEOS response to increasing user requests for satellite data and information products from user communities (in large parts lead by GEO), including the CEOS support to the 2030 Agenda on Sustainable Development.

# Background

On the 1st January 2016, the **17 Sustainable Development Goals (SDGs)** and the **169 Targets** of the **2030 Agenda for Sustainable Development**, adopted by the world leaders in September 2015, officially came into force. The Sustainable Development Goals and Targets will enable countries to collectively measure, manage, and monitor progress on the three interconnected elements of sustainable development: economic growth, social inclusion and environmental sustainability. They provide new norms to integrate the principles of sustainable development into country policies and programs. The 2030 Agenda on Sustainable Development and the Sustainable Development Goals represent an important milestone in the progress of our society towards a sustainable world, being the **first data-driven international framework for development policies** with the ultimate goal to achieve evidence-based agenda setting and decision making on development issues.

One the key lessons learned from the review of the 2015 Millennium Development Goals (MDGs) was the recognition of the **essential role and value of data in sustainable development policies**, and the importance for all stakeholders - governments, donors, UN agencies, etc - to effectively track and monitor progress towards the targets in a consistent and comparable way.

Satellite observations are fundamental to understanding Earth system functioning and the effects of natural and human induced changes on the global environment. The 2030 Agenda for Sustainable Development is driven by the recognition that sustainable development strategies must be evidence-based and data-driven. In this context, the 2030 Agenda for sustainable development clearly highlights the importance of using Geospatial information and Earth observations: *“... 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.”* Achieving the goals and meeting the targets require many different actors to take actions at all levels, from global, to national and local scales. These efforts and activities can be informed, targeted and assisted by Earth observation satellite data and products.

In support of the monitoring and reporting of progress towards the 17 SDGs and the 169 associated targets, the UN System has established a Global Indicator Framework, designed around 232 SDG Indicators. The **Global Indicator Framework** **on SDGs** was developed by the **Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs)** and adopted by the UN Statistical Commission (UNSC) at its 48th session in March 2017. This Global Indicator Framework has been designed to allow monitoring progress on the SDG Targets, inform development policies and ensure accountability of all SDG stakeholders. It provides a management tool that supports implementation of development strategies as well as reporting on progress. In order to progress towards the achievement of the SDG goals and targets, this framework needs to be assessed using evidence, drawn from accurate and robust data, on a continuous basis. Satellite observations can play an important role in supporting generation of meaningful information on progress that can inform the global indicators on SDGs.

The UN System has established a governance system with a range of formal processes for achieving the goals and monitoring progress towards the targets, and a particular focus to supporting least developed economies and leaving no one behind. These processes include the coordination of international efforts and the sharing of best practices. At international level, **UN specialised agencies** **play a crucial coordinating role as** **custodians of the SDG indicators**, for the compilation and monitoring of global indicators, but also supporting the countries on the indicator implementation. **National governments are at the core of the implementation of the 2030 agenda.** Countries will be facing new data challenges and will be requested to strengthen their national statistical systems, embracing open data initiatives, new technologies and new data sources. Regional structures, NGOs, private sector and many others are also SDG stakeholders who will play a key role in these processes.

Although the development of the Global Indicator Framework on SDGs has primarily been based on statistical data, it is recognized that Geospatial Information (including EO) provides new and consistent data sources that can support and inform official statistics and consequently the SDG indicators. In April 2016, the IAEG-SDGs established three working groups to give guidance to countries on how to implement the monitoring framework by examining different data sources. One of these Working Groups is the **Working Group on Geospatial Information (WGGI)**, with the mandate to review the Global Indicator Framework through a “geographic location” lens, to identify existing geospatial data gaps and methodological issues, and to assess how Geospatial Information and EO can contribute to the Global Indicator Framework.

The 2030 Agenda ‘landscape’ involves a complex and diverse group of stakeholders. These actors have varying degrees of awareness and knowledge of the value satellite observations can offer. Building a well thought out coordination and engagement is essential **to obtain a greater understanding of the value of satellite observations**. It is critical to present Earth observation products and human impacts using tools and terms that can be understood by a wide range of audience, including non-experts, in this field. In this context, the WGGI initiated in 2017 a **WGGI Task Stream on** “**Application of satellite Earth Observation Data for the SDG indicators”,** where CEOS SDG AHT is represented**.** With this activity, the WWGI seeks to build broader understanding on the application of analysis-ready satellite earth observations, technologies and tools for the production of SDG indicators, and to inform sustainable development planning and decision making at the national level.

# CEOS Engagement in the 2030 Agenda for Sustainable Development

Data is at the core of the 2030 Agenda: its success will depend on the availability of high quality, timely and universally accessible data. The effective use of EO data in support of national monitoring and reporting against the Global Indicator Framework, as well as informed decision making on development policies, will require closer collaboration among national statistical offices and the EO data providers and communities.

In the complex and evolving SDG landscape, CEOS must take stock of the UN processes in place for the SDG implementation and of the existing SDG stakeholders. The CEOS role is to focus its activities around the **unique role that CEOS should play as a coordination body of the Space community efforts** in order to address specific issues related to satellite data. In full alignment with the intergovernmentalGroup on Earth Observations (GEO), CEOS principal role should be to support the integration of satellite observations in the SDG processes for a full realisation of the 2030 Agenda on sustainable development by all countries.

**It is essential for CEOS to remain flexible in how it organises its collaborative engagement on the SDGs** and how it coordinates the considerable efforts (i.e. activities, projects, tools, and data sets) existing amongst its member agencies and internally within CEOS in collaboration with its permanent bodies (CEOS Working Groups and Virtual Constellations).

CEOS has chosen to **align its engagement within the 2030 Agenda on Sustainable Development mostly through GEO,** building on the existing relationships CEOS Agencies have with the UN agencies (custodians of the SDG indicators), with individual countries (through their National Statistical Offices and relevant line ministries) and with other SDG stakeholders (e.g. international partnerships, development banks, private sector, universities, etc.).

The approach to **channel CEOS efforts on SDGs mainly through GEO** aims **to benefit from and leverage the GEO's unique "convening power",** through which most Earth Observation actors can be engaged within an internationally coordinated EO framework. It helps provide an entry point and consistent communication vehicle to SDG stakeholders for connecting with the broad EO community.

GEO is currently engaged in the SDG agenda through three complementary channels, with which CEOS principally liaises:

1. Through the work of the GEO Programme Board that ensures that GEO's Work Program aligns with stated GEO priorities, including the SDG agenda.
2. Through implementation of the GEO Engagement Strategy, which identifies the SDG agenda as one of the three priority areas for coordinated and proactive engagement across the entire GEO community..
3. Through the coordination work of the GEO Initiative "Earth Observations in service of the 2030 agenda for Sustainable Development" (EO4SDG) which mission is to advocate and realize the contributions of Earth observations in the implementation, monitoring and reporting of the Sustainable Development Goals.

The CEOS contribution to the GEO Work Program on SDGs should take place at different levels:

* **At Governance/Strategic level**: through the participation of CEOS representatives to the GEO Programme Board to ensure that the GEO's Work Program on SDGs aligns with CEOS priorities, identifying gaps and proposing additions/modifications to the GEO Work Program.
* **At Tactical/Coordination level**: through the coordination of the CEOS agencies’ contribution to the GEO EO4SDG initiative.
* **At Implementation/Technical level**: By strengthening CEOS agencies’ involvement in GEO community activities, initiatives and flagships (with EO relevance for SDGs), promoting an adaptation/tailoring of existing EO methods/products/tools to SDG Targets and Indicators.

# SDG AHT activities (2017-2018)

During its first 2 years of existence, the CEOS SDG AHT has worked jointly with the GEO EO4SDG initiative to assess, showcase and promote the contribution of satellite observations to the SDGs with a particular focus on the SDG Global Indicator Framework.

The Implementation Plan of the SDG AHT was organized along 7 primary activity lines:

1. Compile and maintain a **compendium of CEOS Agencies’ engagement** on the SDGs.

*Objective* Collect and centralize information across CEOS Agencies on their SDG engagement and related activities, through online surveys and other consultation channels (including direct phone calls with the SDG PoCs of the respective CEOS Agencies).

*Purpose* Collect the main points of contacts on SDGs in the various CEOS agencies, identify strengths and weaknesses in the CEOS collective engagement, and better coordinate / align / optimize CEOS agencies' engagement on SDGs.

1. Define a coherent, flexible and adaptive **CEOS engagement plan on SDGs** *(purpose of this document).*

*Objective* Develop a consistent and coherent CEOS engagement strategy on SDGs.

*Purpose* Maximize CEOS efforts and available resources on SDGs for a higher impact on the use of EO in SDGs and for more tangible benefits for CEOS agencies

1. Coordinate **CEOS support to GEO-led SDG activities** (GEO EO4SDG initiative and GEO flagships/initiatives/communities active on SDGs).

*Objective* Coordinate CEOS support to GEO-led SDG activities, through the 3 GEO complementary channels (Program Board, GEO EO4SDG and GEO initiatives/flagships)

*Purpose* Optimize the development and maximize use of satellite observation solutions (methods, tools and products) in GEO SDG-related activities, and their uptake by SDG stakeholders

1. Review and assess the **contribution of EO to the SDG Targets and Indicators**.

*Objective* Assess the current and potential contribution of EO to the SDG Targets and Indicators (through the lenses of space-based EO) and identify areas of better uptake

*Purpose* Increase the effective use of satellite observations and products in the overall SDGs process and by all key players (global to local)

1. Demonstrate, showcase and foster the **added-value of EO data in the SDG monitoring and reporting process**.

*Objective* Showcase the value of EO for achieving the SDG targets and monitoring progress (indicators) though selected pilots that can lead to wide adoption by SDG stakeholders

*Purpose* Increase the use of Earth Observations in the overall SDGs landscape (targets and indicators) and by all actors (from global to local levels)

1. Facilitate **uptake of EO by SDG stakeholders**.

*Objective* Review availability and demonstrate utility of collaborative platforms and Big Data analytics tools to facilitate uptake of satellite observations and products by SDG stakeholders

*Purpose* Facilitate the discovery, access, processing and analysis of EO data and information by all SDG actors (from global to local levels)

1. Conduct impactful **Communication & Outreach activities** on EO for SDGs.

Objective Promote the value EO for SDGs at international, regional and national levels

Purpose Raise awareness of the value of EO amongst SDG community and showcase benefits

The SDG AHT implementation plan had been defined with a long-term perspective, addressing the required partnership to conduct the work (in CEOS and in GEO), the activities initiated in 2017 during the first year of existence of the SDG AHT, the activities planned to be conducted in 2018 and beyond, and the expected products/deliverables.

To fully realize the benefits for CEOS and its agencies to continue their activities on SDGs, it is important to highlight a few **major tangible achievements** during the first 2 years of its existence:

* **Recognition of CEOS (through the AHT) by the UN governance system on SDGs as an expert and key partner to coordinate Space Agencies’ efforts in support of the SDGs**.
  + CEOS, together with GEO, is a member of the IAEG-SDG Working Group on Geospatial Information (WGGI) and a key contributor to the WWGI Task Stream on “*Application of satellite Earth Observation Data for the SDG indicators***”.**
  + CEOS participates to key international fora on SDGs such as the annual session of the UN Statistical Commission (UNSC) in March, the annual session of the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) in August, the annual UN High Level Political Forum (HLPF) on Sustainable Development in July, or the UN World Data Forum (WDF) organized by the UN High-level Group for Partnership, Coordination and Capacity-Building for Statistics for the 2030 Agenda for Sustainable Development.
* The production of the **CEOS Earth Observation Handbook on SDGs** officially released in March 2018, at the 49th Session of the UN Statistical Commission 6-9 March 2018 (NYC) at a side-event of the “Statistical-Geospatial Integration Forum” (*integrating statistical, geospatial, and other Big Data to leave no one behind*)
* The organization, in cooperation with the Australian Government, of a side-event on “the use of Earth observations and SDGs” during the **2018** **UN High Level Political Forum 2018 on Sustainable Development** in NYC, where several countries presented their Volunteer National Review (VNR) reports on SDGs and promoted the value of Earth observation in the SDG process with practical examples from their VNR reports.
* The **country deployment of CEOS Data Cubes** in a number of countries, in partnership with the Global Partnership for Sustainable Development Data (GPSDD), and the demonstration of the potential of the National Data Cubes to help countries meeting their Sustainable Development Goals, monitoring progress on the SDG targets and reporting on the SDG indicators.
* Advocacy and support provided to the Custodian Agencies to integrate Earth Observation data in their “**Monitoring Guidelines for measuring and reporting on the SDG indicators**”, starting with SDG 6.6.1 on water-related ecosystems (with UN Environment) and SDG 15.3.1 on land degradation neutrality (with the UN Convention to Combat Desertification).
* (under review) The production of a detailed compendium on the **EO contribution to the SDG Indicators** with Indicator Fact Sheets (including short EO methodological guidelines), and a companion policy brief for decision makers.
* **Awareness and Capacity building activities (communication, webinars, workshops)**, together with GEO EO4SDG, to support countries (National Statistics Offices and line ministries) to realize the potential of EO information to complement traditional sources of data. Education and outreach are critical to democratize access, analysis and use of EO (especially satellite data) in the SDG process.

# Lessons Learned from CEOS SDG AHT initial activities (2017-2018)

The first 2 years of existence of the CEOS Ad Hoc Team on SDGs mainly enabled to better understand the global SDG landscape, to come to grips with the UN governance system on the SDG indicators, to identify and liaise with key partners CEOS should work with, and to get CEOS recognized as a key global player in terms of satellite observations by SDG stakeholders.

Ultimately the SDG AHT efforts have led to a clearer definition of scope and unique role that CEOS should play in the SDG process. The primary role of CEOS in the 2030 Agenda on Sustainable Development should be dedicated to a better coordination of the world’s space agencies in support of the provision of satellite data for the 2030 Agenda. In full alignment with the GEO EO4SDG initiative, CEOS activities on SDGs should therefore address principally issues related to access and use of satellite data (e.g. which kind of satellite data are required to monitor the SDG indicators? Is the availability of satellite observations enough in time and in space to derive the EO-relevant SDG indicators, leaving no country behind? How can CEOS help countries better access satellite data and process/analyse satellite-derived information?).

This initial phase of the CEOS SDG AHT also allowed to better evaluate the CEOS resources required to pursue this goal.

The following findings should be highlighted:

* Role of CEOS to be streamlined: The **original goals of the SDG AHT** **were too broad in scope and not fully aligned with the CEOS mandate**. It is important to streamline the work of CEOS on SDGs, giving priority to the activities where CEOS can bring tangible outputs, in relation to its mission.
* Involvement of CEOS bodies to address all SDG aspects: The Sustainable Development Goals is a very broad topic that encompasses the marine and terrestrial ecosystems as well as the atmosphere. From a technical point of view, in order to fully realise the EO potential by end-users, various aspects need to be addressed such as satellite observation requirements, the infrastructure required to access, process and analyse the EO data streams, the needs for building EO capacities in the different SDG sectors, or the integration of EO data into national statistical processes with accuracy assessment. **The** **involvement of existing CEOS bodies in the SDG activities is essential to leverage the broad knowledge and expertise available in CEOS and maximize its impact.**
* Finding the best way in the UN system on SDGs: The UN has established a complex governance system on the SDG Global Indicator Framework with many stakeholders involved both at UN and national levels. **It is important to identify the key partners with whom CEOS should primarily interface.** This is required in order to optimize the resources available in CEOS and maximize impact.
* Alignment of CEOS and GEO activities: The **AHT activities were too similar to the work of the GEO EO4SDG initiate**, which brought some confusion on their respective roles. An alignment of the CEOS and GEO activities was required in order to maximize the impact of both communities and avoid unnecessary overlaps.
* Reinforcing National linkages: Increased efforts and bridges are necessary between national space agencies/EO stakeholders and other departments to convince NSOs (reporting on SDGs) and policy makers (elaborating national development policies) of the unique value of EO data in the SDG processes. If GEO can initiate and stimulate the national linkages, Space agencies should play their role as satellite data providers and key partners.
* Resources and agencies’ commitment: The **impact of the CEOS activities on SDGs is commensurate to the level of resources available**. Even though many Space Agencies (e.g. CSIRO, ESA, NASA, JAXA, NOAA, CSA, EC, SANSA) are actively involved in the SDG process at different levels, the actual involvement and active participation in the CEOS AHT work have been inconsistent or not noticeable enough. As all CEOS activities, it is based on best-effort practices, but a critical commitment should be strongly encouraged by CEOS principals should the efforts continue.

# CEOS / GEO alignment of activities on SDGs

One of the lessons learned from the first 2 years of the SDG AHT has been the need to align the respective activities of CEOS and GEO on the SDGs, in order to maximize the impact of both GEO and CEOS communities and avoid unnecessary duplication of efforts.

The **GEO EO4SDG initiative has just released its** **Strategic Implementation Plan for the period 2020-2024.** This implementation plan will serve as a baseline to synchronize the GEO and CEOS activities on SDGs. The collaboration with CEOS is indicated in different parts of the 2020-2024 GEO EO4SDG implementation plan, to integrate EO in the SDG processes, and to advance the provision, access, discoverability, and applicability of Earth Observation for use within the 2030 Agenda. CEOS is also seen as a key partner of GEO for the development of practical EO guidelines to mainstream “Analysis Ready” satellite datasets into national statistical processes and systems.

The implementation plan of the GEO EO4SDG initiative is built around 3 main goals:

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 Earth Observations for SDG activities and their broader benefits.
3. To broaden interest, awareness and understanding of Earth Observation in support of the SCDGs.

These 3 main goals are further developed into 4 main implementation elements on projects, capacity building, data and information products, and outreach and engagement.

The **GEO EO4SDG initiative has a very strong “country” focus** which is expressed all along its implementation plan. This embraces a number of “country-based” activities such as broadening awareness of EO support to the SDGs in national institutions, increasing skills and capabilities in countries to use EO for the SDGs, and supporting the uptake of EO solutions by countries. This includes the development of national cases where countries have adopted and integrated EO into SDG processes, and which can serve as an example for other countries and UN agencies involved in the SDG processes. This “country focus” draws on GEO’s efforts to characterize user needs in order to enable greater use of Earth observations for the SDGs.

Another important element of the EO4SDG implementation plan is the aim to serve as a “**federator” all of GEO’s Community Activities, Initiatives and Flagships that include an SDG element** in orderto increase SDG-related knowledge sharing across the GEO Work Programme.

The GEO EO4SDG initiative had its annual meeting on the 5th August 2019 in NYC, back to back with the 9th annual session of UN GGIM.

This GEO4SDG annual meeting aimed to review the progress and accomplishments of the GEO initiative on SDGs; to assess the initiative’s current status and planning for the future; to reflect on the lessons learned from the 2018-2019 activities; to review the key items from the EO4SDG 2020-2024 Strategic Implementation Plan. The meeting also addressed how the EO4SDG initiative can amplify its work with other GEO Work Programme Elements (GEO Community Activities, Initiatives and Flagships), and with SDG stakeholders including CEOS.

Ahead of this meeting, the SDG AHT provided relevant inputs to highlight its vision and the key priorities that CEOS agencies should probably address with specific activities to implement in the GEO initiative on SDGs[[1]](#footnote-2).

The meeting was organised along 4 breakout sessions:

1. Good practice examples of methods for measuring and reporting on SDG indicators: Develop guidelines for packaging openly shareable, reproducible methods tailored to NSOs and line ministries.
2. EO4SDG Federated Approach to GEO’s overall service to the SDG: Define a process to coordinate across ongoing and new GEO Work Program elements that are working towards or have the potential to support the UN SDG.
3. Strengthening partnerships and advancing EO use in SDG monitoring, reporting, and decision making.
4. GEO Secretariat support for EO4SDG, Resources, and Prioritization of EO4SDG Deliverables

The main outcomes of the GEO EO4SDG 2019 annual meeting can be summarized in 4 main topics: **Workflows**, **Federated Approach**, **Toolkit** and **GEO Secretariat Support**:

1/ **GEO Workflows on SDG Indicators**

Issue: GEO EO4SDG does not have yet standardized workflows on SDG indicators. Such worflows would simplify the GEO work processes as well as the communication to the SDG community (custodian agencies, country NSO and line ministries).

Decision: It was agreed to 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.

*Impact for CEOS: As space-arm of GEO, there is a set of tasks and deliverables that GEO should/will delegate to CEOS and its Agencies. The GEO Workflows on SDG Indicators will include a number of activities that will be assigned to CEOS.*

2/ **GEO Federated Approach on SDGs**

Issue: GEO EO4SDG has not yet exploited appropriately the expertise available in the GEO (and non-GEO) initiatives/networks active on SDG matters, including CEOS.

Decision: 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. A small Task Team has been tasked to draft a concept paper of the new “GEO Federated Approach on SDGs”.

*Impact for CEOS: The new GEO Federated Approach on SDGs will include a role for CEOS and a number of tasks and deliverables that will be assigned to CEOS.*

3 / **EO Toolkits on SDG Indicators**:

Issue: Countries and custodian agencies that are not acquainted with EO data have difficulties to find their way in the complex landscape of scattered EO datasets, tools and platforms. This makes it very complex for countries when it comes to integrate EO technology in their national systems and processes.

Decision: The GEO E4SDG will start to "package" all available EO datasets, tools and platforms in practical guidelines and toolkits for an easy implementation by countries.

Impact for CEOS: *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 assets can be customized, at minimum cost, to serve the data and information needs for SDG indicators, and hence be included in the EO Toolkits on SDG indicators.*

4 / **GEO Secretariat** **Support on SDGs**

Issue: 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.

Decision: The Terms of Reference for the SDG support staff at GEO secretariat will be defined.

*Impact for CEOS: The ToR of the GEO Secretariat support staff on SDGs should include the relations with the GEO Member States and Participating Organizations (including CEOS)*

The **GEO Federated Approach on SDGs** will directly impact the role that CEOS should play, and consequently the CEOS Engagement on SDGs. Together with the GEO EO4SDG initiative, CEOS SDH-AHT started to work on a GEO-CEOS alignment of activities on SDGs with respective roles and responsibilities. This alignment allows CEOS to prioritize his activities and streamline his engagement on SDGs along the unique role that CEOS should play as a coordination body of Space Agencies’ efforts on SDGs, and to a level that is commensurate with the resources available in CEOS. When defining the overall CEOS Engagement Plan on SDGs and detailing the CEOS activities in the 2019-2021 workplan, the CEOS SDG AHT must include activities and deliverables that CEOS will undertake as CEOS arm of GEO, and which will be fully embedded in the new GEO Federated approach on SDGs and related workflows.

Given **CEOS’ mandate to act as the “space arm” of GEO,** CEOS should focus its efforts on facilitating the exploitation of satellite observations by the SDG stakeholders, while GEO should prioritize 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. The harmonization of GEO and CEOS activities on SDGs is summarised in Table 1 and drives the ***CEOS*** ***engagement on the SDGs***.

|  |  |  |  |
| --- | --- | --- | --- |
| SDG Activities | Lead | GEO | CEOS |
| **Interactions with the Statistical Community** (IAEG-SDGs, UNSD, UN GGIM and NSOs) | GEO | GEO EO4SDG   * Lead the GEO/CEOS contribution to the WGGI. * Represent GEO/CEOS at SDG-related conferences, workshops and meetings (e.g. UNSC, UN GGIM, WDF, HLPF on SDGs). | * Contribution to the IAEG-SDGs WGGI Task Stream on Satellite data. * Attendance to SDG conferences on behalf of CEOS, and in concordance with GEO EO4SDG. |
| **Interactions with UN specialized agencies**  (custodian of SDG indicators) | GEO | GEO EO4SDG and GEO “thematic” initiatives (through the new GEO federated approach on SDG indicators)   * Interact with the UN specialized agencies to facilitate the integration of EO in the methological guidelines * Support the adoption and implementation by countries (including capacity building) | * Integration of satellite data in the SDG indicator methodological guidelines. * Support to capacity building on selected SDG indicators. * Collection of EO best practices from CEOS Agencies. |
| **EO mainstreaming into country processes and systems** (NSOs and line ministries) | GEO | GEO EO4SDG   * Help countries integrating EO in their national systems on SDGs. | * Facilitate access by countries to EO enabling Infrastructures (platforms and tools) |
| **National show cases of EO** for SDG indicators & targets | GEO | GEO EO4SDG   * Lead the collection of lessons learned from national experiences with EO data. | * Help GEO connecting with national authorities to collect national good practices (building on privileged relations between CEOS agencies and their national institutions) |
| **EO best case practices** forSDG targets & indicators | GEO | GEO EO4SDG and GEO “thematic” initiatives (through the new GEO federated approach on SDG indicators)   * Lead the collection of EO best practices from the broad EO community. | * Collection of EO best practices from CEOS Agencies. * R&D activities for improved EO methods (open source) |
| **EO Promotion and Outreach** in the SDG community | GEO | GEO EO4SDG   * Lead the GEO/CEOS promotion activities on the importance of EO for the SDGs. | * Production of CEOS promotion material on SDGs (with support from CEOS SEO) |
| **EO Knowledge Hub** for SDG targets and indicators. | GEO | GEO EO4SDG   * Develop and operate the GEO EO4SDG Portal as a knowledge gateway on the use of EO for the SDGs. | * Delivery of content for the GEO EO4SDG Portal. |
| **EO Capacity building** forSDG targets & indicators | GEO | GEO EO4SDG   * Lead the GEO/CEOS awareness and capacity building activities on SDGs. | * Capacity Building on advanced satellite-based methodologies for selected SDG indicators |
| **EO Satellite Data Requirements** (Including analysis of long-term satellite data continuity for SDG indicators) | CEOS | GEO EO4SDG and GEO “thematic” initiatives (through the new GEO federated approach on SDG indicators)   * Review SDG data requirements for satellite data. | * Analysis of satellite contributions to the SDGs indicators. |
| **Satellite Analysis Ready Data (ARD) for the SDGs** | CEOS | GEO EO4SDG and GEO “thematic” initiatives (through the new GEO federated approach on SDG indicators)   * Review SDG data requirements for satellite data. | * Analyse the satellite data requirements for the SDG Global Indicator Framework * Guidelines on the use of Satellite Analysis Ready Data (ARD) for the SDG indicators. |
| **EO Enabling Infrastructures for SDGs** (EO platforms, data cubes and toolboxes) | CEOS | GEO EO4SDG   * Review the requirements on EO platforms and tools. | * CEOS Data Cube deployment for monitoring and reporting on SDG indicators * CEOS SDG Community Portal for Satellite Data Discovery and access (with CEOS WGISS) * Compendium of CEOS Agencies’ platforms and tools for SDG indicators. |
| **EO Quality standards for SDG indicators** | GEO | * Collect the data qality requirements from the Statistical Community | * Guidelines on the quality assessment of EO products for use in SDG selected indicators. |

**Table 1** GEO/CEOS alignment on SDGs

# CEOS SDG-AHT 2019 Workplan

An effort to streamline the activities of CEOS on SDGs was initiated in the CEOS 2019-2021 workplan. This 2019 plan of work of the CEOS SDG AHT followed the priority tasks that were assigned to CEOS during the GEO/CEOS alignment.

* **Support GEO in its SDG-related initiatives, mainly through the EO4SDG** initiative but also with the relevant thematic GEO activities (flagships, initiatives and communities) active on SDGs, focusing on the unique role that CEOS should play as a coordination body of the Space community efforts.
* **Represent CEOS in SDG-related working groups such as the Working Group on Geospatial Information (WGGI)** of the Inter-Agency and Expert Group on the Sustainable Development Goal Indicators (IAEG-SDGs) and contribute with GEO to the WGGI Task Stream on application of satellite Earth Observation data for the SDG indicators.
* **Produce, in cooperation with the GEO EO4SDG initiative, a “*SDG satellite data requirement Table*” for a number of SDG indicators** that are already or can be supported by satellite data. This table will help CEOS Agencies get more technical and precise information of what is needed in terms of satellite data, coverage, frequency, resolution, etc. for countries to achieve their SDG targets and report on SDG indicators. The table will also contribute to the work of the WGGI in their efforts to compile the satellite data needs for SDG indicators.
* **Assist**, in cooperation with the GEO EO4SDG initiative, **the UN Statistical Division, the custodian agencies and the countries, with their satellite data requirements and acquisition** for the implementation of EO-relevant SDG indicators.
* **Liaise with CEOS permanent structures** (VCs, WGs and SEO) on capacity building (with WGcapD), ARD (with VC-LSI), EO-enabling infrastructures (with SEO and WGGIS) and EO products validation /standardization (with WGCV) to harness CEOS collective expertise and maximize benefits from the use and integration of satellite data in SDG monitoring or reporting processes.
* **Collect and centralize information from individual CEOS Agency activities relevant to the SDGs, and build and maintain a “*Compendium on the CEOS Agencies engagement on SDGs*”,** including CEOS Agencies’ points of contacts on SDGs. The Compendium will be used for internal CEOS purposes, with the objective to identify strengths and gaps in CEOS collective engagement, and better coordinate the CEOS efforts on SDGs and support to GEO. Encourage CEOS space agencies to proactively contact their national governments in the SDG Voluntary National Review process
* **Develop communications material** (brochure, website content) with SEO team’s support and in coordination with GEO, to better inform CEOS space agencies and SDG stakeholders about the critical role of satellite data in the SDG systems and processes.

# Streamlining of CEOS engagement on SDGs

## Criteria’s for streamlining CEOS Engagement on SDGs

While preparing the ***CEOS*** ***Engagement Plan on the SDGs***, a number of criteria had to be defined to prioritize the activities that CEOS should undertake 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 **existing 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** and ultimately optimize the benefits of space-based Earth observation in the SDG context.
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 its Task Stream on the application of satellite Earth Observation data for the SDG indicators,
   * the **Custodian Agencies** to compile monitoring guidelines for measuring and reporting on the SDG indicators, to support countries on their implementation and strengthen national statistical capacities.
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** to deliver as planned.

The above criteria’s have been used by the SDG AHT to streamline the CEO engagement on SDGs and to define the primary activities that CEOS should conduct.

## Priority SDG Indicators

As a demonstration of the effectiveness of the streamlining measures taken by CEOS, the SDG AHT will start with the 3 SDG indicators that are most ready to integrate EO in their processes (Table 2). These 3 indicators are also the 3 primary indicators selected by the IAEG-SDGs WGGI for the Task Stream on satellite Earth Observation data for the SDG indicators.

|  |  |  |  |
| --- | --- | --- | --- |
| Indicator # | 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:** First set of SDG indicators to be addressed by CEOS

The IAEG-SDGs WGGI Task Stream on the “Application of satellite Earth Observation Data for the SDG indicators” was created by WGGI in 2018 to leverage and enhance partnership between the National Statistical Offices (NSOs) and the Space Agencies, with the objective to build a broader understanding by countries of the application and usability of ‘fit-for-purpose’ satellite EO datasets, in combination with national statistics and geospatial information, for the production of SDG indicators and for informing national development policies. This WGGI Task Stream, which is chaired by two National Statistical Offices, seeks to develop guidance to IAEG-SDGs and the larger statistical community on the use of EO, to document national experiences and EO good practices; and to provide recommendation on the uptake of analysis-ready satellite earth observations in the global indicator framework.

GEO EO4SDG and CEOS SDG-AHT have been instrumental in setting up this Task Stream. Anchoring the GEO and CEOS activities on SDGs into the WGGI workplan allows to channel GEO and CEOS work into the SDG process and consequently to increase visibility and maximize impact. The SDG AHT therefore proposes to use these 3 priority indicators of WGGI as initial showcases to harness CEOS expertise in the SDG framework. In a second step, other indicators will be added in the CEOS activities on SDGs.

The Task Stream focusses its work on a number of key indicators, starting with the most promising indicators for EO, namely 6.6.1 on water related ecosystems, 11.3.1 on sustainable urbanization and 15.3.1 on land degradation neutrality.

Starting with these 3 indicators will also allow CEOS to build on the privileged relationships some of the CEOS Agencies already have with the custodian agencies (UNCCD, UN Environment and UN Habitat) of the 3 subject indicators. For all three indicators, some CEOS agencies (e.g. CSIRO, ESA, NASA, EC/JRC, JAXA) already provided some support to the UN Agencies to develop the methodological guidelines.

Although the CEOS efforts will mainly focus on the 3 primary SDG indicators as a start, a number of CEOS activities will be extended to other SDG indicators such as indicator 2.4.1 on sustainable agriculture and indicate 14.1.1 on coastal eutrophication.

## Involvement of CEOS bodies in CEOS activities on SDGs

In order to achieve the full realization of Space-based Earth Observations in the SDGs, it is important to leverage the wide expertise available within the CEOS organizational structure. This implies the involvement of all CEOS bodies (in particular the CEOS Working Groups, the Virtual Constellations and the Systems Engineering Office) which can provide a substantial contribution to the CEOS activities on SDGs. Considering the limited resources available in CEOS, this will also allow to fully exploit the knowledge and expertise available within CEOS at a minimum cost.

The AHT proposes to involve the following CEOS entities in the CEOS engagement plan on SDGs:

|  |  |  |
| --- | --- | --- |
| CEOS Entity | CEOS role | Contribution to the CEOS activities on SDGs |
| Virtual Constellations | CEOS mechanisms for coordinating space-based, ground-based, and/or data delivery systems to meet a common set of requirements within a specific domain. | * Support to the analysis of satellite data requirements for the SDG indicators. * Guidelines on the use of Satellite Analysis Ready Data (ARD) for the SDG indicators |
| WGCapD | CEOS working group to increase the capacity of institutions in less developed countries for effective use of Earth Observation data for the benefit of society and to achieve sustainable development. | * Awareness of the importance of EO for the SDG targets and indicators. * Capacity Building on advanced satellite-based methodologies for SDG indicators. |
| WGGIS | CEOS collaboration in the development of systems and services that manage and supply satellite observatory data. | * Support to the analysis of EO-enabling infrastructures (EO tools and platforms) for the SDG indicators. * Development of a CEOS SDG Community Portal for Satellite Data (and EO datasets) Discovery and Access. |
| WGCV | CEOS working Group to ensure long-term confidence in the accuracy and quality of Earth Observation data and products and to provide a forum for the exchange of information about calibration and validation, including the coordination of cooperative activities. | * Guidelines on the EO Quality standards for SDG indicators. |
| SEO | Systems engineering support to the Virtual Constellations, Working Groups, and other Ad- hoc CEOS activities. | * Customisation of the CEOS Data Cube for monitoring and reporting on SDG indicators. |

**Table 3**: CEOS Entities to be involved in the CEOS activities on SDGs

## Primary CEOS activities on SDGs

As a result of the CEOS prioritization on SDGs, the SDG AHT proposes that CEOS focusses its engagement on the following key activities and deliverables, with the indicated support from the CEOS bodies:

|  |  |  |  |
| --- | --- | --- | --- |
| # | Activity Title | Activity Description | Support from CEOS bodies |
| 1 | **Satellite Data Requirements** | * Review the satellite data requirements for the production of SDG indicators, including satellite data coverage (both for indicator baseline and monitoring), satellite data continuity (until 2030 and beyond), availability of satellite Analysis Ready Data. | LSI-VC (for the 3 primary indicators) |
| 2 | **EO Enabling Infrastructures** | * Review of the EO-enabling infrastructures (EO cloud processing platforms, EO data processing and analytics tools including data cubes) available in the CEOS agencies and which can facilitate the uptake of satellite observations and products by SDG stakeholders. * Development of a CEOS SDG Community Portal for discovery of and access to satellite ARD and EO data sets. | WGISS  SEO |
| 3 | **EO Awareness and Capacity Building** | * Capacity Building on advanced satellite-based methodologies for SDG indicators. * Contribution to GEO Massive Open On-line Courses (MOOCs) on EO for SDG indicators. | WGCapD |
| 4 | **EO Good Practices Guidance** | * 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 a R&D agenda for improved EO methods in response to indicator data gaps. |  |
| 5 | **EO Demonstration Use Cases** | * Support GEO 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. | 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 | WGCV |

**Table 4**: Primary CEOS activities on SDGs

## Outline of CEOS Engagement Plan on SDGs

The SDG AHT proposes to streamline the CEOS engagement on SDGs in 6 cardinal activity lines that will be conducted for each of the SDG indicators, starting with the 3 primary indicators. These activities will be executed with the support of the existing CEOS bodies (VCs, WGs and SEO) and embedded in the GEO Federated Approach on SDGs, together with GEO EO4SDG. It is understood that CEOS will logically prioritize its efforts on the satellite data, infrastructure and capacity building streams (1, 2 and 3), and will continue to support and bring expertise into other activities (Good Practice documents, Demonstration and Quality Standards) when requested.



**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 1:** CEOS Engagement Plan (starting with the 3 primary indicators)

# Proposed CEOS organizational structure on SDGs

The following 5 options for the future of SDG AHT were presented at the CEOS SIT 33 in April 2018:

* ***Option 1:***Continue as an AHT, requesting renewal for another year at Plenary, and continue to use Agencies’ best efforts to support UN and GEO mainstreaming EO in the SDG processes;
* ***Option 2:***Continue as an AHT to ONLY act as a CEOS point of contact for external users, without undertaking new activities, and forward all specific requests to CEOS bodies;
* ***Option 3:***‘Graduate’ and become a CEOS Working Group with a more formal work plan, governance system and reporting mechanisms, and therefore more sustained efforts and support (= commitment) from CEOS and WG members to implement the work plan;
* ***Option 4:***Consider what the SDG AHT achieved, and still needs to be done from a CEOS perspective, and phase out the AHT with transfer of all AHT activities to GEO EO4SDG (including CEOS Agencies support)
* ***Option 5:***Transform the AHT into an “SDG Strategy” (given its cross-cutting essence, following the “Carbon Strategy” path), with a solid work plan and coordination body to map SDG activities to existing CEOS resources (VC, WG, etc.) and continue being the “SDG space arm” focal point for GEO

An **option 6** was introduced by CEOS SIT at SIT-34 with the concept of a new Working Group on Information Provision (WGIP) that would integrate most CEOS activities related to the requests for satellite data and information from user communities (include the SDG community)

The pros and cons of each of the 6 options are discussed in Table 5, highlighting the major negative considerations that prohibit some of these options to be an acceptable option.

|  |  |  |
| --- | --- | --- |
| SDG AHT future options | Pros | Cons |
| Option 1  Continue as an AHT  (best effort basis) | * CEOS still recognised as key partner by the SDG community to mainstream the use of satellite data in the 2030 agenda. * AHT would work with a light structure. | * AHTs meant to have short term objectives. * Need to restrict the AHT activities to a number of prioritized deliverables achievable with the limited resources available. * CEOS impact on the SDG processes cannot be maximized due to limited resources. |
| Option 2  Continue as an AHT  (minimum effort basis)  and act as a CEOS point of contact | * Minimum efforts requested to CEOS agencies | * CEOS role will be minimized. * Impact will be minimal (if not marginal) and would not respond to the objectives of an AHT according to CEOS Governance and Processes. * Maintaining a “quasi permanent” AHT as a CEOS point of contact do not justify the AHT continuation. |
| Option 3  Become a CEOS Working Group with a permanent structure | * High Visibility for CEOS and their agencies * Maximise impact for CEOS Agencies * Would be the 3rd thematic Working Groups (with Climate and Disaster) responding to the 3 top priorities of GEO and main Global Societal Agendas. | * Needs a stronger engagement from the CEOS agencies. * Will require formal work plan, governance system and reporting mechanisms. * Imply more sustained efforts and support (= commitment from the CEOS agencies. |
| Option 4  Phase out the AHT with transfer of all AHT activities to GEO EO4SDG | * No efforts required by CEOS. * CEOS Agencies will still participate but individually under the GEO coordination | * GEO EO4SDG does not have the resources to address all issues related to the adoption of EO solutions for the SDGs. * CEOS role will totally disappear. |
| Option 5  Transform the AHT into an “SDG Strategy”  (given its cross-cutting essence) | * No need for a new working group and hence for new resources from CEOS agencies. | * Would be an exception in the CEOS governance and processes. No similar approach in CEOS (except for the Carbon strategy). * The essential part of the work will be done in the CEOS permanent bodies (VCs, WGs, SEO) and hence fragmented. * Quality of the work will strongly depend on the capacity of the coordination body to coordinate the work done of CEOS bodies. |
| Option 6  Integrate SDG activities in the new Working Group on Information Provision (WGIP) | * *Waiting for the WGST report* | * *Waiting for WGST report* |

Table 5: Pros and Cons of SDG AHT evolutions

Based on the in-depth analysis of the pros and cons, it is proposed to keep only 3 options:

* ***Option 3:*** *CEOS Working Group on SDGs*

Transform the SDG AHT into a CEOS Working Group with a formal work plan, governance system and reporting mechanisms, and therefore more sustained efforts and commitment from CEOS and WG members to implement the work plan.

* ***Option 5:*** *CEOS Strategy on SDGs*

Transform the SDG AHT into a “SDG Strategy” (given its cross-cutting essence, following the “Carbon Strategy” path), with a solid work plan and coordination body to map SDG activities to existing CEOS resources (VC, WG, etc.) and continue being the “SDG space arm” focal point for GEO.

* **Option 6**: *CEOS Working Group on Information Provision*

Integrate SDG activities in the new Working Group on Information Provision (WGIP).

The decision between the remaining options primarily depend on the level of resources committed by the CEOS agencies in the SDG activities. If a critical mass of CEOS agencies’ engagement and of resources commitment (in terms of membership and level of resources) is not achieved, then option 3 will not be retained as a feasible option.

At the 33rd CEOS Plenary in October 2019, the CEOS SDG AHT will ask an additional extension of the AHT for one year, with a 2-year workplan (2019-2021) that will be transferred after one year (following CEOS 33 Plenary) to the new CEOS structure on SDGs that will be decided after the 35th CEOS Plenary in October 2020.

The request for a 4th year of the SDG AHT is justified by the many unknowns (both internal and external to CEOS) still present on how the EO community as a whole (including GEO and CEOS) should organize itself to expedite the adoption of EO solutions in the 2030 Agenda on Sustainable Development. Unknows external to CEOS include the new GEO federated approach on SDGs and related workflows that will soon be defined by the GEO EO4SDG initiative and which will include a role for CEOS. Unknows internal to CEOS include the work of the CEOS Working Group Study Team (WGST) created by SIT 34 on how CEOS should re-organise itself for a more efficient response to user communities requests. An extension of the AHT for one more year, with a flexible workplan, will give the necessary flexibility to CEOS to continue his work on the SDG indicators, and at a later stage to adapt to the structural an organizational decisions that will be taken inside and outside CEOS.

The AHT will use the time available up to the CEOS 33rd Plenary to fully engage CEOS agencies and CEOS Bodies (VCs, WGs and SEO) on the new **CEOS 2019-2021 workplan on SDGs** that has been elaborated in full agreement with the streamlining of the CEOS engagement on SDGs presented in section 8.

The CEOS 2019-2021 Work Plan on SDGs, version 0.1, is provided as a separate document

# Annex A GEO EO4SDG 2019 Annual Meeting, *5th August 2019, UN HQ, NYC* CEOS SDG AHT inputs (extract)

As ‘space-arm’ of GEO, and since 2016, CEOS has been a key contributor to the SDG process, as follows:

1. A dedicated Ad-hoc Team (AHT) on SDGs was established in late 2016, led by CSIRO, ESA, and USGS (initially), with ESA and CSIRO the current co-leads. This AHT counts today ~40 members representing most space agencies that form part of CEOS.
2. In 2018 CEOS published a dedicated “EO Handbook” on the role of EO in the SDG process, which provides several practical examples of how EO data can support the monitoring and reporting on SDG indicators, addressing in particular the opportunities and challenges lying ahead for successfully integrating EO technology within national monitoring and reporting systems on SDG indicators, leaving no country behind. The CEOS EO Handbook on SDGs was coordinated with the GEO EO4SDG initiative and with the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM).
3. AHT representatives joined regular GEO EO4SDG conference calls, contributed to EO4SDG deliveries, and participated in joint CEOS/GEO side-meetings, publications and development of proposals.
4. AHT representatives participated to key international events on SDGs, such as the 2018 UN High Level Political Forum (HLPF) in NYC (July 2018) or the 2018 Word Data Forum (WDF) in Dubai (October 2018), to underline the value and use of Earth Observation technologies in support of SDG monitoring and reporting.
5. AHT representatives took part to a number of international initiatives on SDGs, such as the [IAEG-SDGs Working Group on Geo-spatial Information](https://unstats.un.org/sdgs/iaeg-sdgs/) (WGGI), or UN custodian agencies’ expert teams on SDG indicators, to support the development of EO Good Practice Guidance’s on SDG indicators
6. Informed by the AHT, individual space agencies of CEOS have also engaged directly with their national statistical agencies to help promote the use of EO data, and support the use of EO as part of national reporting.
7. The AHT has undertaken several specific actions in the CEOS 2019 – 2021 Workplan, as follows:
   * + Action SDG-2: Compile and maintain a compendium of CEOS Agencies engagement on SDGs (completed)
     + Action SDG- 3: Review and assess the contribution of EO to the SDG Targets and Indicators. Produce a compendium and policy brief (under final review)
     + Ongoing actions are:
       - SDG-4: New CEOS engagement plan on SDGs
       - SDG-5: Analyse the SDG satellite data requirements
       - SDG-6 Open Data Cube algorithms for the SDGs

Together with the GEO EO4SDG initiative, CEOS AHT on SDGs has started to work on a CEOS/GEO alignment of activities on SDGs with respective roles and responsibilities. This alignment will allow to prioritize the CEOS activities and streamline its engagement on SDGs, along the unique role that CEOS should play as a coordination body of Space Agencies’ efforts on SDGs, and to a level that is commensurate with the resources available in CEOS.

Given CEOS mandate to act as the “space-arm” of GEO**,** CEOS should focus its efforts on facilitating the exploitation of satellite observations by the SDG stakeholders, while GEO should prioritize 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.

Going Forward, CEOS AHT on SDGs is proposing to focus most of its efforts on the following major activities:

1. **Concentrate (initially) on three (3) key SDG Indicators** where EO is considered as a major source of information but for which there are still some methodological and data access issues, with possible expansion to other indicators when additional capacity within the AHT becomes available.

Key focus SDG indicators include:

* + - * 1. 6.6.1 Change in the extent of water-related ecosystems over time
        2. 11.3.1 Ratio of land consumption rate to population growth rate
        3. 15.3.1 Proportion of land that is degraded over total land area

1. As per CEOS mandate of “space-arm” of GEO, and for each of the 3 focus indicators, the AHT will conduct the following core activities:
   1. Broadly, coordinate improved availability and delivery of **satellite EO data**, to help countries measure and report against the above-listed indicators, leaving no country behind (e.g. improved satellite data acquisitions in pacific islands and in tropical areas)
   2. Similar to what has been done previously for other GEO initiatives such as GFOI and GEOGLAM, **translate EO satellite data access and data continuity needs (by GEO, UN-custodian agencies and national governments) into core EO satellite data access and delivery requirements** (from CEOS agencies and commercial suppliers) including the availability of EO enabling infrastructures (EO tools and platforms).
   3. Analogously to the UNCCD request for GEO/CEOS assistance on SDG 11.3.1 indicator and in close cooperation with the GEO EO4SDG initiative, help coordinate the provision of relevant technical expertise from CEOS Agencies, **as requested**, to UN-custodian agencies that are considering- and **developing official EO data analysis guidelines and methodologies** for the above indicators.
   4. **Demonstration of EO applications (as EO best practices)** against each focus indicator and focal geographic regions (see point 3 below) initially, building on the CEOS Data Cube activity undertaken by the CEOS Systems Engineering Office (SEO) and other EO enabling infrastructures developed, in whole or in part, by CEOS Agencies.
2. **Focus initially on smaller geographic regions/countries** (e.g. Africa, Pacific Islands) with clear identified needs and requests, and then roll out globally, the specific activities listed under (2) above.

In parallel of these core “**Satellite EO Data Enabling**” activities, the CEOS AHT also intends to:

* Maintain a flexible and responsive “CEOS Engagement Plan” to support national-level efforts on SDGs, when it comes to National Statistical Offices (NSOs) and national space agencies.
* Support GEO EO4SDG in their leading efforts with GEO members to encourage and facilitate EO uptake in national policy frameworks and associated capacity development, when it comes to space activities

**Opportunities and Challenges**

The **CEOS activities on SDGs must complement rather than duplicate the GEO community efforts on SDGs**. Against a background of limited, ‘best effort’ capabilities available in GEO EO4SDG and CEOS AHT on SDGs, and to reduce duplication and confusion among national governments and agencies, a key topic that requires quite urgent discussion is to clearly define roles and synergies that CEOS and GEO can play together on the SDGs.

1. Extract from the document is provided in Annex A [↑](#footnote-ref-2)