

May 2018

Broadening of GEO 2030 Sustainable Development Agenda Activities

During the 8th GEO Programme Board meeting held January 31, February 1st of this year, the Board discussed the breadth of focus of GEO activities regarding the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) noting concern that current activities put too specific a focus on UN processes creating data support methodologies for a specific limited set of SDG Indicators. It was noted that the focus should include broader examination of data and information research and synthesis, including Earth observations, to support innovation and progress toward societal sustainability policies.

The following is a suggested array of responses and actions designed to continue to increase the breadth of GEO 2030 Agenda for Sustainable Development related activities. Some of these are aimed at better communication, some at efforts to drive synthesis across GEO activities and consideration of cross-domain innovation and novel approaches to metrics and sustainability policy.

Responses

Need to communicate broader aspects of on-going UN Global Experts Group for Geospatial Information Management (GGIM) engagement – GEO works with UNGGIM on a number of technical activities including development of national and global platforms for sustainable development data reporting, development and diffusion of data syntax for reporting (SDMX) and other geospatial data issues. All these lead to broader engagement across the geospatial and Earth observations global community beyond SDG reporting.

Highlight existing instances where SDG Indicator work is resulting in broader applicability, policy and user base ie Land Degradation Neutrality (LDN), water related indicators, urban resilience communication will highlight the broader impacts – Reports and engagement during 2018 will focus on the areas where GEO engagement is creating consensus on metrics and integration of Earth observations data across information and technical domains. Examples will include the LDN Initiative where carbon carrying, land productivity and land cover classification work immediately provides broader multi-domain policy and technical relevancy. Aquatic ecosystems work is having similar impact on population and settlements data and has now incorporated marine as well as freshwater ecosystems and human health infectious disease. GEO work on urban sustainability measures are combining Sendai Framework, resiliency and policies for sustainable urban development.

Describe broader aspects of Global Partnership for Sustainable Development Data (GPSDD) engagement on LNOB, gender, food security, poverty – GEO’s engagement with the GPSDD is based on the additive nature of the relationships GPSDD maintains in the development data area and GEO’s Earth observations focus. GPSDD and GEO partnership activities have led to engagement with the development by CEOS of Open Data Cubes for regional application, capacity building and data ecosystems assessment in specific countries, identification of opportunities for the integration of population, gender and economic opportunities for marginalized populations through the Leave No One Behind (LNOB) initiatives in the development data community augmented by new techniques from the Earth observations, GEO community. Nutrition, public health, gender equity, educational opportunities are all a part of this agenda that now includes GEO input.

Identify domain specific Work Programme elements as source for broader input, innovation – During the summer of 2017, a questionnaire to all GEO Flagships, Initiatives was sent to their respective leadership to gather information on cross-SDG activities and potential for synthesis across information/research domains. Further one-on-one consultation with GEO activities have been organized based on opportunities where substantive engagement appeared fruitful. To date, these consultations include: Blue Planet and Aquawatch; GEO Bon; GEOGLAM; GOS4Hg; Health Community of Practice; Human Planet Initiative; regional Initiatives AmeriGEOSS and AfriGEOSS. Additional opportunities will be identified and developed during 2018. The outreach and engagement here has been based on substantive opportunities for engagement presented through on-going work processes.

Limitations of GEO Member Countries, and PO volunteer and Secretariat bandwidth – All of GEO’s valued volunteers in Flagships, Initiatives and Community Activities give their time to the extent possible in their professional lives. Many volunteer because of very specific technical interest and capacities. For the Secretariat, resources have dictated focus on specific outcomes, processes and accountability functions. A few suggestions for actions to encourage this follow next.

Suggested Actions

Better sustained communications on this topic – The GEO Secretariat and the EO4SDGs initiative will work to include more reporting with a focus on this topic, blog posts, periodic reports, organization of appropriate topics at GEO events such as the GEO Symposium and Plenary will be included. A series of blog posts from GEOBON, GEOGLAM, Blue Planet and Resilient Cities are in process.

Review web presence for specific messaging – The EO4SDGs and GEO web pages will be examined for ways to highlight this topic and encourage engagement of multi-disciplinary groups on innovation and synthesis on the 2030 Agenda for Sustainable Development.

Consider benchmarking relevant institution, data community, science domain where broader focus exists for insights and new processes – A specific institution or cross disciplinary domain could be selected for examination of processes that lead to broader synthesis thinking for development data that could be implemented in the GEO Work Program. Academic research could also be commissioned.

Identify and characterize innovated approaches like datacubes, Participating Organization innovations and approaches etc in this context – Specific efforts to reach out to Participating Organizations for their input could be implemented along with consortia developed approaches for information and analytical synthesis such as Data Cubes.

In general, improve and add the sustainability data topic to cross-Work Program element coordination, matrix management – Management activities are already making progress on general matrix management and coherency, this specific topic could be introduced in analysis and review processes, development of matrix management indicators.

Organize the GEO Symposium Session relevant to development data focused on this topic

Invoke gender equity and attention to disadvantaged populations for sustainable development policy in all GEO activities – Each GEO Work Programme activity should be urged to identify and take action where possible to include consideration of gender equity, disadvantaged populations and members of society in it work including conflict areas and population, refugee migration. These very salient issues drive synthesis and integration across the Earth science data domain focus of GEO.

Designate a GEO Member Country to lead an effort to broaden the focus of GEO on innovation and synthesis in the 2030 Agenda for Sustainable Development area - The EO4SDG Initiative (perhaps in consultation with the Programme Board) will consider asking a Member Country representative to lead a specific activity under the Initiative that will accomplish and further extend the areas of action and outcomes described here.

Update on the EO4SDG Initiative, *Earth Observations in Service of the 2030 Agenda for Sustainable Development*

Background

The Earth Observations for the Sustainable Development Goals (EO4SDG) Initiative organizes and extends the potential of Earth observations (EO) and geospatial information to advance the 2030 Agenda and enable societal benefits through achievement of the Sustainable Development Goals (SDGs). In particular, the Initiative aims to advance a portfolio of national pilot projects in one or more GEO Member countries focused on integrating EO with national statistics to better measure, monitor and achieve the SDGs. Supplemental implementation mechanisms include: capacity building activities to help provide support to institutions and individuals in the use of EO methods and data to achieve the SDGs; dissemination of data and information products to advance the provision, access, discoverability and applicability of EO for use with the SDGs; and outreach and engagement activities to promote the consideration and adoption of EO for the SDGs by nations and stakeholders. EO4SDG has also become a focal point for coordination across the breadth of the Group on Earth Observations (GEO) Work Programme, including relevant Flagships, Initiatives and Community Activities, around the Sustainable Development Goals (SDGs).

EO4SDG participates in the Inter-Agency and Expert Group on Sustainable Development Goals (IAEG-SDGs) Working Group on Geospatial Information (WGGI) and works to enhance its engagement with the UN, expand GEO's current collaborations and ensure alignment with international coordinating organizations, foundations and initiatives, such as the Global Partnership for Sustainable Development Data (GPSDD) and the UN Sustainable Development Solutions Network (SDSN).

The initiative is co-led by the U.S. (NASA), Japan (JAXA), and Mexico (INEGI).

Key Activities and Updates

- EO4SDG continued its engagement with UN Environment, custodian agency for several indicators under Goal 6, *Ensure availability and sustainable management of water and sanitation for all*. To pilot the applicability of Earth observations for supporting indicators 6.6.1 (Change in the extent of water-related ecosystems over time) and 6.3.2 (Change in ambient water quality)¹, UN Environment initiated two pilot studies, in collaboration with

¹ In general, Indicator 6.6.1 lends itself to satellite-based Earth observations, and Indicator 6.3.2 favors greater use of in situ Earth observations.

the European Commission's Joint Research Center (JRC) and US/ NASA and the University of Maryland.

Further, and in collaboration with experts from the GEO Secretariat and contributors, EO4SDG provided recommendations to update the step-by-step global methodology of measuring indicator 6.6.1. The updated methodology includes a progressive monitoring approach, whereby different levels of country ambition allow for countries to monitor and report changes in water-related ecosystems using data generated by Earth observations and validated by countries. Further, the method calls for countries with higher levels of capacity to report additional data. The overall process aims to ensure country ownership and method adoption for SDG monitoring and reporting.

At the seventh IAEG-SDGs meeting on 9-12 April 2018, **both SDG indicators 6.6.1 and 6.3.2 were upgraded to Tier II.**

In 2018, EO4SDG will work with UN Environment, partner nations and contributors to support a series of activities related to advancing the maturation and country adoption of SDG methods using Earth observation data for monitoring progress and reporting on 6.6.1 and 6.3.2 indicators. EO4SDG will ensure that this activity is coordinated with the GEO Wetlands and AquaWatch initiatives, among other Work Programme elements within GEO.

- EO4SDG engagement has created the dynamics for a precedent setting request from the UN Convention to Combat Desertification (UNCCD) Committee of the Parties to partner with GEO on a global initiative regarding Land Degradation Neutrality. Implementation of the Initiative tasks has begun as a Community Activity. In 2017, EO4SDG participated in the Task Team of the Inter-Agency Expert Group on the Sustainable Development Goals (IAEG-SDGs) Working Group on Geospatial Information (WGGI) on SDG indicator 15.3.1, Proportion of land that is degraded over total land area. This team provided recommendations about a reproducible, scalable combination of EO and traditional data sources to assist in the development of global implementation strategies. **The SDG indicator 15.3.1 was upgraded to Tier II during late fall 2017**, following the sixth IAEG-SDGs meeting.
- Several national agencies in Colombia have been working to integrate national statistics, household surveys and routine administrative data with Earth observations, geospatial information, and other data to monitor and implement the SDGs at country level. During 2018, building on past engagement with Colombia's National Statistics Office (DANE), EO4SDG will collaborate with DANE to refine and standardize their methodology on SDG indicator 11.3.1, Land consumption rate per population growth rate, vis-a-vis a global method developed by UN-Habitat, custodian agency for this indicator. This activity will seek to extend a completed, fully-characterized method to countries in collaboration with UN Habitat and partners, to help enable EO method adoption for monitoring and

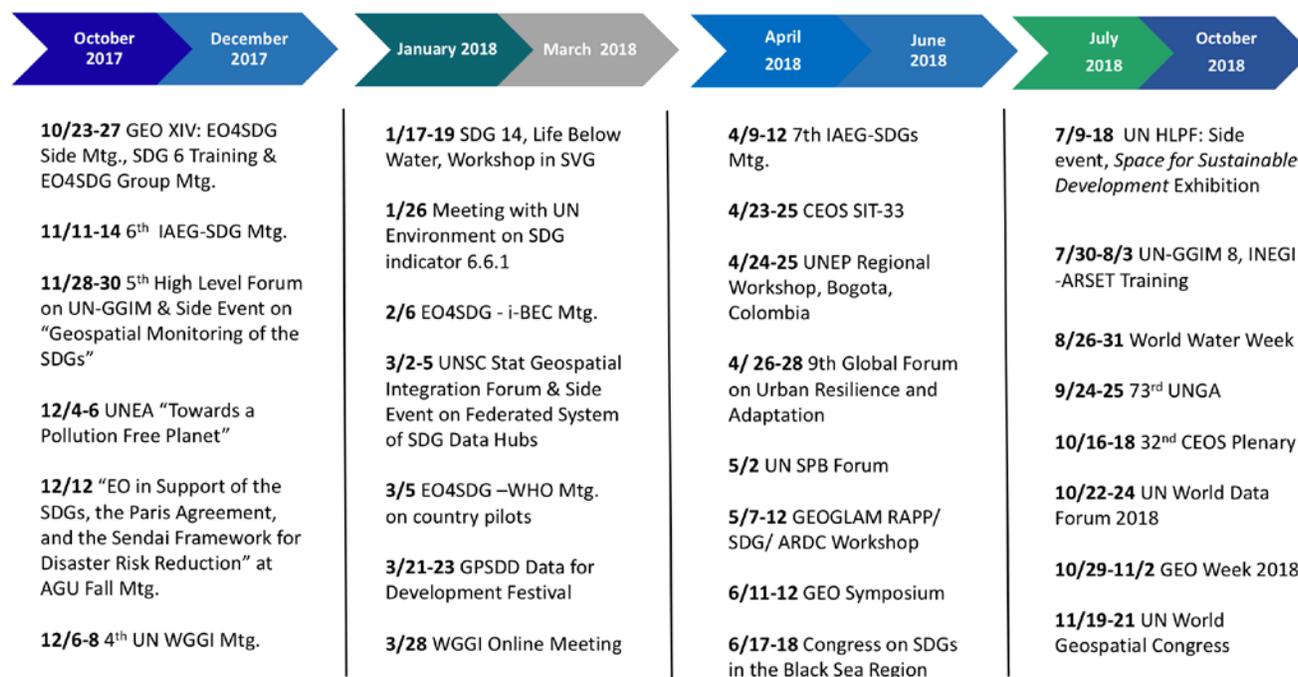
reporting on SDG 11.3.1. EO4SDG will ensure that this activity is coordinated with the GEO Human Planet initiative, among other relevant GEO Work Programme elements.

- Through the EO4SDG Initiative, GEO is organizing Member country resources to help demonstrate applied use of Earth observations in pilot countries. Examples include continued work with Colombia, Ghana, Kenya, Uganda, Senegal, Tanzania, Sierra Leone Greece, Albania and other countries of the Balkan region. Also, on January 2018, EO4SDG and a GEO Secretariat representative participated in a workshop held to address Goal 14 Oceans related issues for Small Island Developing nations. Much of this country specific work leverages the activities of the Global Partnership for Sustainable Development Data, GPSDD.
- The GEOGLAM Rangeland and Pasture Productivity (RAPP) Activity, in collaboration with the CEOS Systems Engineering Office (SEO), GEO (including EO4SDG) and the CEOS SDG-AHT, organized a workshop in Nairobi, Kenya on 7-12 May, 2018. Participating countries included Kenya, Senegal, Ghana, Tanzania, and Sierra Leone. The meeting supported a number of users, including Government Ministries, National Statistical Agencies, Geographic Institutes, Research Scientists and Civil Society on issues of food security and agriculture, land use and land degradation, among others, and on the use and applications of analysis-ready EO data to address data gaps and challenges around the aforementioned themes.
- EO4SDG developed the terms of reference for, and will co-chair, a Task Stream within the UN Working Group on Geospatial Information (WGGI) on the use of analysis-ready EO for the SDGs. In 2018, the Task Stream will i) develop expert advice and guidance to IAEG-SDGs and the larger statistical community; ii) document national experiences and good practices including case studies; and iii) provide recommendation on the role of national statistical offices (NSOs) on the uptake of analysis-ready EO.
- EO4SDG released a new website, which serves as a GEO community resource; a resource for the UN SDG community; national government institutions including national statistical offices and line ministries; and other key stakeholders involved in the SDG implementation process. The website can be accessed at: <http://eo4sdg.org>. The initiative also has an active Twitter account, @EO4SDG. In 2018, EO4SDG will develop a calendar of SDG-relevant events for inclusion in the EO4SDG website. Further, with support from the GEO Secretariat, EO4SDG will develop a series of blog posts on how GEO Work Programme elements are addressing issues that relate to the UN 2030 Agenda for Sustainable Development via their work plans and existing activities.
- The initiative developed communication and outreach material, and technical briefs including: a primer on SDG 2, *Zero Hunger* in collaboration with the CEOS AHT-SDG; and a technical brief, [*Reporting on SDG Indicator 6.6.1 Using Satellite Earth Observations.*](#)

- In collaboration with the University of New South Wales, the CEOS AHT-SDGs and the GEO Secretariat, EO4SDG is co-organizing a Special Issue for the Remote Sensing of the Environment (RSE) Journal on '[Earth Observations for the Sustainable Development Goals](#)'. This will be a collection of technical as well as review papers on application of EO systems for SDGs at global, regional, national, and sub-national levels.
- EO4SDG held a side event at the GEO-XIV Plenary with a focus on four SDGs on water and sanitation (SDG 6); sustainable cities and communities (SDG 11); life on land (SDG 15); and life below water (SDG 14). In addition, the initiative organized a side meeting, and co-organized a plenary session, at the First *Data for Development Festival* of the Global Partnership for Sustainable Development Data.
- In 2018, EO4SDG will develop and maintain a database of country pilot projects to help better track and share information on the maturity level of EO method development and adoption by countries in support of SDG monitoring and reporting. The initiative has developed a seven-tier system, Method Useability Levels (MULs), to provide a scale for the expected advancement of projects and EO method development for the SDGs – from initial concept, through development and field testing, to adoption and sustained utilization. More information can be found at Appendix C of the [2016-2020 Strategic Implementation Plan](#) of EO4SDG.
- The Committee on Earth Observation Satellites (CEOS) developed an EO Handbook on SDGs to promote and showcase the EO contribution to the realization of the 2030 Agenda for Sustainable Development. The official release of the handbook occurred at the 49th UN Statistical Commission Meeting on 5 March, 2018. The GEO EO4SDG initiative contributed an article on use cases of EO applications for the SDGs. The SDG Handbook is available at: <http://eohandbook.com/>.
- By early 2019, EO4SDG, in collaboration with the GEO Secretariat, will publish a manuscript as part of the American Geophysical Union (AGU)'s Geophysical Monograph Series on 'Earth Observation Applications and Global Policy Frameworks'. The primary purpose of this publication is to showcase evidence-based use cases of EO applications in support of integrated approaches to disaster risk reduction, climate change action, and sustainable development. Chapter contributions will include several GEO Work Programme elements and their approaches in supporting the aforementioned, global policy frameworks.

Appendix A. Recent and Upcoming Activities with EO4SDG Engagement

Timeline of Recent Activities with EO4SDG Engagement



Appendix B. Glossary of Terms and Acronyms

SDGs

The Sustainable Development Goals, otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. These 17 Goals build on the successes of the Millennium Development Goals, and include 169 Targets and a Global Indicator Framework to help countries measure and monitor progress through to at least 2030.

UN HLPF

The United Nations High Level Political Forum is the UN central platform for follow-up and review of the 2030 Agenda for Sustainable Development and the SDGs, providing for the full and effective participation of all States Members of the United Nations and States members of specialized agencies.

UNSC

The United Nations Statistical Commission has the mandate for the development and implementation of the Global Indicator Framework. The Statistical Commission oversees the work of the United Nations Statistics Division (UNSD).

IAEG-SDGs

The Inter-agency and Expert Group on Sustainable Development Goals, established at the forty-sixth session of the UN Statistical Commission, is responsible for developing, reviewing, and supporting the implementation of the Global Indicator Framework, for the Goals and Targets of the 2030 Agenda for Sustainable Development.

WGGI

The Working Group on Geospatial Information, established at the forty-seventh session of the UN Statistical Commission, reports directly to the IAEG-SDGs and is responsible for ensuring from a statistical and geospatial perspective that one of the key principles of the 2030 Agenda, to leave no one behind, is reflected in the Global Indicator Framework.

UN Custodian Agencies

Agencies responsible for developing the work plan (metadata) for SDG Indicators, compiling all relevant data at global level, and for global reporting.

UN-GGIM

The United Nations initiative on Global Geospatial Information Management aims at playing a leading role in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges. It provides a forum to liaise and coordinate among Member States, and between Member States and international organizations.

Tier Classification for SDG Indicators

Tier 1: Indicator is conceptually clear, established methodology and standards are available and data are regularly produced by countries; **Tier 2:** Indicator is conceptually clear, established methodology and standards are available but data are not regularly produced by countries; **Tier 3:** Indicator for which there are no established methodology and standards or methodology/standards are being developed/tested.

GPSDD

The Global Partnership for Sustainable Development Data is an open, multi-stakeholder network that focuses on building an enabling environment for harnessing the data revolution for sustainable development.

UN SDSN

The UN Sustainable Development Sustainable Solutions aim to mobilize global scientific and technological expertise to promote practical problem solving for sustainable development, including the design and implementation of the Sustainable Development Goals (SDGs).

IISD

The International Institute for Sustainable Development promotes human development and environmental sustainability through innovative research, communication and partnerships.

UNEP

The **UN Environment Programme** is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment.

UNCCD

Established in 1994, the **UN Convention to Combat Desertification** is the sole legally binding international agreement linking environment and development to sustainable land management.