

## **Discussion Paper on Action on Sustainable Development**

This Document is submitted to the GEO-XVI Plenary for information.

### **1 GEO PLENARY IS ASKED TO CONSIDER:**

- In the context of the theme of the GEO Ministerial “Earth observations: investments in the digital economy”, how can National and Regional GEO Frameworks coordinate with national statistical offices and key line ministries to integrate Earth observations into the effective monitoring, reporting, and implementation of the SDGs?
- What are the best strategies for incorporating internationally accepted, Earth observation-enabled indicator methodologies in country settings and for sharing results and national experiences?
- Are new methods and tools needed to enhance the use of Earth observations for Sustainable Development Goals? How can existing and new methodologies be coupled with coordinated capacity development to enhance their adoption and sustained, long-term use?

### **2 GEO’S ENGAGEMENT IN THIS AREA**

The United Nations (UN) 2030 Agenda for Sustainable Development is a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. At the same time it provides a strategic opportunity to integrate Earth observations and geospatial information with statistical data systems to empower countries to better assess progress of their societies and economies, while taking into account the dynamics of our planet and the unprecedented impact of human influence on Earth.

#### **2.1 GEO AND UN GGIM**

GEO and the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) have worked closely with the statistical community to provide inputs into the processes that created the Global Indicator Framework (Scott, 2017), a mechanism that supports countries in measuring progress against a number of the 17 Goals and 169 Targets of the 2030 Agenda. At the 2015 GEO Ministerial, the GEO Mexico City Declaration affirmed that “GEO and its Earth observations and information will support the implementation of, inter alia, the 2030 Global Goals for Sustainable Development...” and called on GEO to “...launch a GEO initiative to leverage EO to support the implementation, monitoring, and evaluation of the 2030 Global Goals for Sustainable Development, building on the recent success of GEO’s engagement with the United Nations on this issue.”

In addition, UN-GGIM recently adopted 14 fundamental geospatial data themes taking into consideration the data required for the implementation of the SDGs, including baseline measurement, monitoring and reporting, evidence-based policy making, and implementation of actions. These include buildings and settlements, elevation and depth, geology and soils, land cover and land use, physical infrastructure, population distribution, transport, and water, among others. Earth observations, including global or regional data sets that can complement national data, provide an important source of information for the majority of the 14 themes, and can help facilitate improvements in support of critical data needs of the 2030 Agenda for Sustainable Development. GEO and UN-GGIM are working closely together to ensure that these efforts support a pathway for Earth observations to be integrated in the monitoring and achievement of the SDGs, while enabling enhanced harmonization across the targets and indicators.

## 2.2 GEO WORK PROGRAMME SUPPORTING SUSTAINABLE DEVELOPMENT

In 2016, GEO launched the Earth Observations for Sustainable Development Goals (EO4SDG) Initiative to organize and realize the potential of Earth observations to support the 2030 Agenda and enable societal benefits through achievement of the SDGs. EO4SDG works with GEO Members, Participating Organizations including the Committee on Earth Observation Satellites (CEOS), and other GEO Work Programme initiatives to integrate Earth observations in subnational, national, and global SDG processes. Since the SDGs contain quantifiable targets and indicators to serve as benchmarks against which progress towards sustainable development is ascertained, EO4SDG focuses on developing reproducible indicator methodologies and use cases where countries have integrated Earth observations into SDG monitoring frameworks. This is with a view to encouraging more countries, UN agencies, and GEO Work Programme activities to follow the same approach.

EO4SDG collaboration with the UN Inter-agency and Expert Group on Sustainable Development Goals (IAEG-SDG) Working Group on Geospatial Information (WGGI) and UN Custodian Agencies<sup>1</sup>, including UN Environment Programme (UNEP), the UN Convention to Combat Desertification (UNCCD), and UN-Habitat, has led to proposals within the UN system to elevate the readiness status of methodologies related to fresh water, terrestrial ecosystems, and sustainable urbanization, with Earth observations integrated as notable inputs. This resulted in the precedent setting amendment of four indicator methodologies to a higher classification tier, with GEO having been recognized as a key contributor in this process. As a result of these efforts, UN Environment now uses global Earth observation products for official SDG reporting and for assessing indicator 6.6.1 (freshwater ecosystems) at global, regional and national levels. In addition, UN Environment works with EO4SDG and other elements of the GEO Work Programme to assist countries in using Earth observation data to measure relevant indicators and take action toward protecting water-related ecosystems.

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<sup>1</sup> Custodian agencies are United Nations bodies (and other international organizations) responsible for compiling and verifying country data and metadata, and for submitting the data, along with regional and global aggregates, to the United Nations Statistics Division (UNSD).

These efforts also created the dynamics for a precedent setting request from the UNCCD Committee of the Parties to partner with GEO on a global initiative regarding Land Degradation Neutrality (LDN). The recently-formed GEO LDN initiative aims to advance the collaborative development, provision, and use of Earth observation datasets, quality standards, and analytical tools to achieve Land Degradation Neutrality, and assist countries and regions with monitoring and reporting on SDG 15, Life on Land. As a result of this activity, 145 UN Member States are already considering the use of Earth observation data for tracking progress and reporting on indicator 15.3.1, proportion of land that is degraded over total land area.

Additional GEO activities are working in collaboration with EO4SDG or other activities in the GEO Work Programme to identify opportunities for connecting their products and services with the UN 2030 Agenda, and to assist countries with SDG tracking, monitoring, and implementation. GEO Blue Planet is working with UN Environment to develop an inventory of existing marine litter databases and datasets in support of indicator 14.1.1, Index of coastal eutrophication and floating plastic debris density. GEOGLAM, in close collaboration with EO4SDG, has mapped Earth observation products and best practices for agriculture monitoring to SDG 2 (Zero Hunger) targets and indicators (or sub-indicators), and identified additional EO-based metrics that can further support relevant targets (Whitcraft et al., under review). Furthermore, GEOGLAM plans to support the piloting of EO-based workflows within country settings, and to document best practices of shareable and reusable methodologies for the quantitative monitoring of SDG 2 indicators, in collaboration with EO4SDG, UN agencies (e.g. FAO) and national stakeholders (e.g. national statistical offices and line ministries). EO4SDG, Human Planet, and the Global Urban Observation and Information initiatives are also working with UN-Habitat and countries to improve urban SDG monitoring via harmonization of urban definitions, provision of Earth observation derived datasets and essential urban variables, technologies and tools, and capacity development activities that are essential for the implementation of SDG 11 (Sustainable Cities and Communities).

### **3 THE KEY CHALLENGES AND OPPORTUNITIES FOR FURTHER PROGRESS**

A movement toward an ecosystem that brings together open and shareable data, reproducible methodologies, tools and platforms, and application insights, along with capacity development and co-design efforts is essential for the sustained, widespread utilization of Earth observations in support of the UN 2030 Agenda and for timely policy intervention and informed decision making. Furthermore, to fully realize the vision of a world in which uses of Earth observations and geospatial information to support progress on the SDG are valuable, routine and customary, it is essential to optimize dialogue and collaboration mechanisms across and within the statistical, geospatial, and Earth observation communities, at global to regional, national, and sub-national levels.

GEO, as an intergovernmental partnership that advances the availability, access and usability of Earth observations for a sustainable planet, has a clear role to play in enabling the integration of Earth observations into national development and monitoring frameworks for the SDGs. National GEOs and GEO Participating Organizations can assist in this process, by coordinating with respective national

statistical offices, mapping agencies, line ministries, and other relevant actors involved in SDG monitoring, reporting, and evidence-based policy making at the national level to: test internationally accepted, Earth observation-based methodologies; and, document best practices and experiences in using Earth observations to achieve SDG targets and indicators.

GEO and its dedicated EO4SDG initiative, in partnership with other GEO Work Programme activities, UN agencies, international initiatives, and member countries can further strengthen the widespread utilization of Earth observations for the UN 2030 Agenda by developing packages of robust, reproducible Earth observation methodologies for pertinent SDG targets and indicators. It is essential that these methods are presented in an openly accessible and easily discoverable manner, and are coupled with coordinated capacity development to enhance their adoption and sustained, long-term use. This can promote stronger national ownership in the monitoring and implementation of the 2030 Agenda, and help address supplemental policy priorities and reporting frameworks that are interdependent or overlapping in nature.