



GEO INITIATIVE 18:
EARTH OBSERVATIONS
IN SERVICE OF THE
2030 AGENDA FOR
SUSTAINABLE DEVELOPMENT

*Strategic
Implementation
Plan
2016-2020*

THE GLOBAL GOALS
For Sustainable Development



PREFACE

Well-being, economic growth, hunger, sanitation, poverty, energy, disease, fresh water, disasters, air quality, biodiversity, deforestation, hygiene, urbanization, food security, environmental challenges These all happen somewhere in space and through time.

A significant opportunity exists to address these challenges by bringing together data and applying information about people and places into national monitoring and evaluation systems to improve human and environmental conditions.

In September 2015 the United Nations General Assembly endorsed *Transforming Our World: the 2030 Agenda for Sustainable Development*, a global development agenda for all countries and stakeholders to use as a blueprint for progress on economic, social and environmental sustainability.

Seventeen Sustainable Development Goals and associated Targets and Indicators anchor the *2030 Agenda*, which specifically calls for new data acquisition and exploitation of a wide range of data sources to support implementation. In fact, Article 76 states, “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 geospatial information*, while ensuring national ownership in supporting and tracking progress.”

The Group on Earth Observations began GEO Initiative 18, or GI-18, to contribute to the *2030 Agenda* and realize the potential that Earth observations and geospatial information offer to the SDGs and the normative benefits they represent.

This document provides the strategic implementation plan for GI-18, guiding GEO’s activities for 2016-2020. In these first five years toward 2030, we expect to lay a strong foundation for the role of Earth observations and geospatial information in supporting the SDGs. We will demonstrate practical and innovative uses of the data, build capacity, promote data access, and support country and stakeholder adoption, hopefully enabling the use of EO in broader ways to inform decisions and actions.

In reality, multiple activities of GEO Member Countries and Participating Organizations, as well as GEO partners, will be the way this plan is carried out and the objectives achieved – a cooperative collection of activities to pursue this collective opportunity.

We welcome your involvement and contributions in the service of the GEO community and Earth observations to the societal benefits achievable through the Sustainable Development Goals.

Cordially,

The GEO GI-18 Team

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INTRODUCTION

The *2030 Agenda for Sustainable Development* provides a universal development agenda for all countries and stakeholders to use as a blueprint of action for people, the planet and prosperity. The agenda is anchored by seventeen Sustainable Development Goals (SDGs), associated Targets, and a global Indicator framework. Collectively, these elements enable countries and the global community to measure, manage and monitor progress on economic, social and environmental sustainability.

The *2030 Agenda* specifically demands new data acquisition and integration approaches to improve the quality, coverage and availability of data to support the implementation of the development agenda at all levels. The *2030 Agenda* includes efforts “to exploit the contribution to be made by a wide range of data, including Earth observation and geospatial information, while ensuring national ownership in supporting and tracking progress” on the SDGs.

Earth observations and derived information have already played key roles in supporting sustainable development. Serving the *2030 Agenda*, they can play insightful roles in monitoring targets, planning, tracking progress, and helping nations and other stakeholders make informed decisions, plans, and on-going adjustments that will contribute toward achieving the SDGs. Combined with demographic and statistical data, these sources enable nations to analyze and model conditions, create maps and other visualizations, evaluate impacts across sectors and regions, monitor change over time in a consistent and standardized manner, and improve accountability.

The Group on Earth Observations (GEO) began GEO Initiative 18 (GI-18) to contribute to the *2030 Agenda*. The primary purpose of GI-18 is to organize and realize the potential of Earth observations and geospatial information to advance the *2030 Agenda* and enable societal benefits through achievement of the SDGs. This Initiative supports efforts to integrate Earth observations and geospatial information into national development and monitoring frameworks for the SDGs.

Activities within GI-18 underscore and support GEO’s emphasis on sustained observations, open data, and capacity building. The Initiative also serves to advance GEO’s strategic engagement with entities at national to international levels, such as UN agencies, foundations, and development banks. Overall, GI-18 enables countries and organizations to leverage Earth observations to support the implementation, planning, measuring, monitoring, reporting, and evaluation of the SDGs and their normative societal benefits.

VISION Countries, stakeholders, and the global community desire additional Earth observations and geospatial information to continue progress on improved social, economic, and environmental sustainability.

By 2030, the Group on Earth Observations envisions a world in which uses of Earth observations and geospatial information to support progress on the Sustainable Development Goals are valuable, routine and customary. In the first five years of the *Agenda*, GEO envisions that the foundation has been laid for governments and organizations to capitalize fully on the benefits Earth observations provide to monitor, plan, and report on the SDGs through 2030.

Realizing this vision implies that: the global community is aware of effective ways to use Earth observations and geospatial information relative to the SDGs; countries and stakeholders have the skills and capabilities necessary to apply the data and information; the global community employs smart practices and solutions on uses of Earth observations in planning, tracking, and reporting; Earth observations provide real, value-added benefits and are recognized for their contributions to support positive social, economic, and environmental impacts; and there is demonstrated progress on the Goals and broad desire for more.

Achieving this vision also implies that countries and stakeholders have timely access to needed data and information, and they can seamlessly integrate them where applicable – that data is openly available, especially where achieving SDGs requires multi-national or regional approaches and coordination. There are on-going collaborations among Earth observation providers, stakeholders, and countries, especially with national statistical offices. Additionally, there are open lines of dialogue to consider and appropriately support needs for data, training, method testing, and capacity building. Countries and stakeholders recognize the value of the data and information for the SDGs, and they want additional data and enhanced information for the SDGs and for broader activities, planning, and decisions. Overall, they envision and are motivated to pursue new opportunities to enable societal benefits.

PURPOSE Organize and realize the potential of Earth observations and geospatial information to advance the *2030 Agenda* and enable societal benefits through achievement of the Sustainable Development Goals.

GEO Initiative 18 serves a fundamental role to advance global knowledge about effective ways that Earth observations and geospatial information can support the SDGs. The Initiative seeks to advance the benefits of the SDGs through sustained, effective use of Earth observations. And, these uses can lead to greater awareness of and interest in Earth observations to enable even greater societal benefits.

The Initiative involves technical, organizational and programmatic components. Collectively, these items meld in the projects, data, outreach and engagement, and capacity development related to how Earth observations can support the *2030 Agenda*.

When countries and stakeholders use Earth observations on a sustained basis for their SDG activities, the GEO Initiative 18 will be successful. And, if their SDG-related use of Earth observations leads to broader uses or stimulates new and improved collections of Earth observations, this Initiative will have truly helped GEO fulfill its overall purpose and vision.

INITIATIVE GOALS

GEO Initiative 18 has three goals and associated objectives to realize the vision and serve the purpose described above. The goals describe overarching, desired outcomes, and the objectives articulate specific, measurable results.

- GOAL I Demonstrate how Earth observations, geospatial information, and socio-economic and other data contribute in novel and practical ways to support achievement of the SDGs.

- GOAL II Increase skills and capabilities in uses of Earth observations for SDG activities and their broader benefits.

- GOAL III Broaden interest and awareness of Earth observations support to the SDGs and contributions to social, environmental, and economic benefits.

GOAL I Demonstrate how Earth observations, geospatial information and socio-economic and other data contribute in novel and practical ways to support achievement of the SDGs.

Goal I focuses strongly on the development and uptake of quality methods using Earth observations for the SDGs, associated Targets, and the global Indicator Framework. Applied research, feasibility testing, development and operationalization of innovative and practical methods are part of this goal, including assessments across users and regions as well as of data availability. User engagement and co-development of methods and testing are important and integral to successful development and uptake. The prime users of GI-18 are National Statistical Offices (NSOs), international statistical agencies, and UN entities. GI-18 promotes the emergence and scaling-up of joint efforts and collaborations between these users and the EO/GI community to demonstrate the effective uses of EO/GI data in complementing traditional data systems such as census data, administrative data, household survey data, and vital statistics, to help achieve the Sustainable Development Goals. In addition to addressing timely access to needed data and information, the goal includes efforts to integrate Earth observations and geospatial information into national development and monitoring frameworks for the SDGs. Partnerships with organizations and communities to support broad use of effective methods and solutions is implicit, and this goal entails significant work to enable the adoption of these methods.

The data contributed to national SDG measuring and monitoring efforts may be extant in the Global Earth Observation System of Systems (GEOSS), or they may be new data resources developed to address specific national/regional needs. The additional data resulting from GI-18 in-country engagements will reside with the country involved in the pilot project and will contribute to the national reporting requirements on the SDGs mandated by the United Nations. The extent to which the data is made fully and freely available by each government is an internal decision, but the GI-18 team will make every effort to encourage that the data be made freely and openly available, and subsequently incorporated into GEOSS, in keeping with GEO's Data Sharing Principles.

The following are objectives under this goal:

By 2016 determine Targets and Indicators best served by Earth observations.

The Initiative establishes priority areas for the development of methods applying Earth observations to the SDGs.

The Initiative seeks to ensure the methods are endorsed and meet the statistical community's standards.

Propose that IAEG accept seven methods by 2018 and ten methods by 2020.

Produce effective methods for five SDGs by 2018 and eight SDGs by 2020.

The Initiative seeks a spread across environmental, social, and economic themes.

Generate one example per continent by 2017 and uptake of two methods within each continent by 2019.

The Initiative strives to ensure geographic breadth of the methods and broad distribution.

Develop a SDG EO/GI interactive knowledge resource.

The Initiative seeks to develop a dynamic, web-based resource, and project database that describes the EO/ GI data projects and tools/resources in support of the SDGs, Targets and Indicators.

Advance 25% of projects by one Method Useability Level per year; ¹deliver one project per year to MUL-7 in 2018-2020, and show three new Earth observation products in planning with ties to the SDGs by 2020.

The Initiative promotes demonstrable progress in the development of methods, while encouraging new data and information collection.

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

¹ See the Implementation and Performance sections.

Goal II improves underlying capabilities with Earth observations, focusing especially on support to countries and stakeholders in the implementation of methods using Earth observations to address the *2030 Agenda*. The goal includes activities to coordinate and foster capacity building to effectively employ methods, enable data awareness and access, and sustain use of Earth observations in the context of the SDGs. The goal spans human, scientific, technological, organizational, institutional, and resource-based capacities.

Efforts to develop capabilities to substantiate and quantify the social, environmental, and economic benefits from Earth observations in serving the SDGs are included, especially as this articulation may contribute to greater uptake. Activities to build capabilities within GEO and the Earth observations community about SDG statistical principles and practices are included, as are new capabilities to use data visualization methods to support alternatives analysis and planning regarding the SDGs. This initiative will also serve to “federate” all of GEO’s community Activities, Initiatives and Flagships that include an SDG element so as to increase SDG-related knowledge sharing across the GEO Work Programme.

The following are objectives under this goal:

Conduct trainings on 5 SDGs by 2018 and 10 SDGs by 2020.

The Initiative seeks a spread across social, environmental, and economic themes.

Develop and maintain a handbook on SDGs and Earth observations by 2017.

The Initiative provides a platform for knowledge sharing across all GEO Work Programme activities that include an SDG element.

Engage a minimum of 25 countries in trainings on rolling three-year average.

The Initiative strives to ensure continuous geographic breadth.

Roll-out a SDG toolbox for Earth observations data by 2018.

The Initiative supports capacity building through functional tools, which will also be integrated into other vehicles (e.g., the Global Partnership for Sustainable Development Data (GPSDD), the UN Sustainable Development Solutions Network (SDSN)).

Produce a primer for the GEO community on SDG statistical practices by 2017.

The Initiative supports collaboration with national statistical offices, including building capacity within GEO on statistical practices for purposes of the SDGs.

Produce valuations and impact assessments of eight methods by 2020.

The Initiative strives to ensure the methods are valuable in addition to being sound.

GOAL III Broaden interest and awareness of Earth observations support to the SDGs and contributions to social, environmental, and economic benefits.

Goal III addresses outreach, engagement, and communications to showcase effective uses of Earth observations to achieve benefits and positive impacts, thereby encouraging nations and

stakeholders to pursue uses themselves. Traditional and innovative approaches are included to convey achievements and quality stories about roles of Earth observations and GEO to serve development goals. In communicating examples and successes, the Initiative emphasizes where nations and stakeholders clearly gain from their use of Earth observations for the SDGs. The materials showcase the nations and stakeholders and the benefits they achieved. Communication efforts on the progress of the Initiative overall are included. Outreach and engagement activities include efforts to support user-generated method ideas, refinement of the ideas, and brokering connections between users and technical experts. The goal involves innovative work to visualize and convey status and trends in progress toward the SDGs. A foundational element of this Goal is to increase awareness of the need for open data and information, especially in underserved communities and emerging economies, to enable decision makers at all levels to make better use of Earth observations.

The following are objectives under this goal:

Produce videos, handouts, and podcasts on three SDGs by 2017 and seven by 2019.

The Initiative seeks a spread across social, environmental, and economic themes.

Conduct one or more events at UN, GEO, scientific conferences, or trade shows in 2016-2020.

The Initiative demonstrates benefits of Earth observations for the SDGs at places where users gather.

Arrange partnerships with two major entities at the nexus of science, decision support, and sustainability.

The Initiative supports institutions and leverages assets to achieve mutual benefits.

Issue annual awards in 2017-2020 on uses of Earth observations for SDGs.

The Initiative recognizes excellence and innovation, generating examples that users can consider and pursue.

Publish one article per year in popular and scientific/trade literature on Earth observations and SDGs for 2017-2020.

The Initiative shares examples about effective ways to apply Earth observations to the SDGs.

Produce annual reports and a 2020 Summary Report.

The Initiative documents activities and conveys smart practices.

IMPLEMENTATION ELEMENTS

This section describes the primary implementation elements to address the goals and objectives. For the 2016-2020 period, the GI-18 Initiative Team maintains four elements as lines of business: Projects, Capacity Building, Data and Information Products, and Outreach and Engagement. Each line serves each of the goals and contributes to the objectives. Some lines may have desirable overlaps and synergies with other lines, and they collectively address technical, organizational and programmatic aspects of the Initiative.

The GI-18 team of GEO Member Countries, Participating Organizations, and additional contributors pursue these implementation elements in partnership with suitable, apposite organizations (see Partnerships).

The seventeen Goals of *Agenda 2030* entail 169 Targets and 230 Indicators in the Indicator framework. Some Goals, Targets, and Indicators are well-suited for Earth observations support. In some cases, Earth observations can directly serve an Indicator. In others, Earth observations may provide ancillary information toward indirectly serving an Indicator. Still, in others, Earth observations may not meet the stated Indicator, yet they can contribute to progress on the associated Target (and the results will show up in the Indicator). Appendix A indicates the most likely Goals, Targets and Indicators that Earth observations can contribute to as a direct measure or as indirect support. This appendix also includes a figure indicating alignments of the seventeen Goals with specific types of Earth observations and geospatial information. The team uses these assessments in guiding its foci during implementation.

Projects

The GI-18 Initiative directly supports and pursues projects for method development, distribution, and adoption. The Initiative also provides technical and other guidance for projects developed under other GEO activities, serving a coordination role in a federated approach to GEO's overall service to the SDGs.

Collectively, this portfolio of projects develops and deploys uses of Earth observations to support the tracking of and reporting on the SDGs, including integration with national statistical accounts for the indicators. The projects conceive, develop, test, and validate relevant methods, building on proven, existing methods and applications when appropriate. Projects and methods may range from traditional and practical approaches to novel and innovative ones.

Projects encompass simple feasibility studies, pilot projects, and in-depth endeavors. As projects mature, their activities address suitability assessments, sensitivity analyses, frequency testing, and other factors to characterize uses of Earth observations and their appropriateness across users² and regions. Their activities may involve innovative uses of visualizations, dashboards, infographics, and graphic design approaches to communicate status and trends in SDG indicators.

Some project activities may focus on one country and address several SDG indicators; others may focus on a particular SDG indicator and apply it to several countries. Overall, the Initiative pays particular attention to the ability to scale a method to multiple nations or stakeholders on a regional or global scale. In addition, the Initiative emphasizes the strong collaborations that projects must have with the statistical community at national and global levels.

² E.g., The U.S. Census Bureau, the Statistical Office of the European Union (Eurostat), The Institute of Statistics in Albania (INSTAT), the Fiji Bureau of Statistics (FBoS), the United Nations Initiative on Global Geospatial Information Management (UN-GGIM), and the United Nations Environment Program (UNEP).

The range of activities in the GEO Work Programme provide multiple ways for GEO and Earth observations support to the SDGs. As part of a federated approach, the GI-18 Initiative serves a communication function to share smart practices and provide guidance, encouraging consistent approaches and quality standards. Collectively, the projects contribute to enhance the global knowledge and capacity on how to use Earth observations in the implementation and monitoring of the SDGs.

Building on these projects, the GI-18 initiative documents and broadcasts examples, case studies, lessons learned, and smart practices using Earth observations with the SDG indicators. The initiative identifies and conveys feedback from user organizations on their experiences with and recommendations for Earth observations data and derived information, such as formats and access. The projects include efforts to support qualitative and quantitative evaluation on the broader benefits of Earth observations to enable societal benefits. The projects will also illustrate how Earth observations can be employed in the development and implementation of policies and programs that extend beyond the SDGs.

Capacity Building

A portfolio of capacity building activities provides support to institutions and individuals in the ideation, development, and implementation of methods. The activities build capabilities directly with the SDG methods and more broadly with accessing and applying Earth observations. Activities here draw on and contribute to GEO's established capacity building activities and expertise, and they may examine inventive approaches, such as social media, to support the testing and refinement of methods by users.

This element supports the use of Earth observations for the SDGs in all aspects, such as planning, tracking, and reporting. The portfolio includes virtual and physical activities, such as trainings, webinars, joint projects, applied research, and workshops, among many other successful capacity building practices. The element uses and supports GEO's efforts to characterize user needs, especially in fostering effective ways to enable sustained uptake of the methods and related data access.

Given the basis of the SDGs in statistical data, this element includes engagement with the SDG statistical community about Earth observations, as well as capacity building within GEO and the Earth observations community about SDG statistical principles and practices.

Data and Information Products

The element encompasses a portfolio of activities advancing the provision, access, discoverability, and applicability of Earth observations and geospatial information for use with the SDGs. The element draws on GEO's efforts to characterize user needs, especially in the collection of information from SDG user organizations about data characteristics, usability, preferred formats, etc. to help GEO refine approaches to enable greater use of Earth observations for the SDGs. This element especially includes efforts to provide feedback from user

communities in less-developed areas about data and information products.

The activities in this element support GEO's efforts to promote and encourage open data policies. In particular, this element focuses on open availability of data and information products where achievement of SDGs needs multi-national or regional approaches and coordination. The element includes data visualization methods to support alternatives analysis and planning regarding the SDGs. The element assesses data and information needed to be available, working with GEO data activities and others to improve discovery, access, and usability. This element also supports activities to identify and enable new observing systems, data acquisition, and exploitation of a wide range of data sources, supporting data systems enabling this.

Outreach and Engagement

This element focuses on outreach and engagement to encourage nations and stakeholders to use Earth observations as part of their SDG activities. Working closely with the other elements, this element includes the creation and maintenance of a portfolio of materials that showcases effective methods, available capacity building support, and accessible data and information products to promote the consideration and adoption of Earth observations for the SDGs by nations and stakeholders. Appendix B describes a web-based resource tool designed to facilitate the accessibility and dissemination of information, lessons, products and other material. Development of this tool will be dependent on the availability of human, technical and other resources to design, populate and maintain it. This element also encourages collaborations between GEO and stakeholders in developing new methods and approaches.

The materials include a range of traditional to innovative approaches for outreach and engagement. For instance, a series of thematic examples can articulate how Earth observations relate to specific SDGs and can be integrated with traditional statistical approaches; these examples also support efforts by GEO member countries to engage with their own national statistical offices. Additional outreach and engagement activities envisioned include events, such as workshops and sessions at key conferences; trainings, including webinars and hands-on sessions; awards for innovative uses of Earth observations to advance the SDGs; and publications, such as a handbook or library of guidance handbooks on uses of Earth observations with SDG indicators. The element also pursues social media and crowdsourcing to solicit ideas and support the testing and refinement of methods by users.

PARTNERSHIPS

Numerous organizations from local to regional to global levels recognize the importance of the SDGs to advance human and environmental conditions. Each has its own assets and capabilities to contribute to the pursuit of the Goals. And, the 2030 Agenda specifically calls for collective action efforts based on the concept of an enhanced global partnership and the use of a wide range of tools, aimed at developing shared value products in service of the SDGs.

The GI-18 Initiative pursues partnerships as a key element of the strategic implementation, leveraging knowledge, resources, and skills of partner organizations in collective support of the SDGs. The Initiative focuses on organizations with sound activities related to the SDGs, working with established GEO partners and seeking to expand GEO's set of partners where possible. Involvement of the individual GEO Member Countries and Participating Organizations is central to the Initiative's activities, including efforts to support the engagement of and collaboration with national statistical offices. The Initiative seeks to enhance GEO's strong relationship with the United Nations and will continuously engage and inform the global Earth observations and geospatial information communities of developments and opportunities. Some key additional potential partners include development banks, non-governmental organizations, corporations, foundations, and civil society.

Engagement and partnership with these entities help build processes, mechanisms, and human capacity to include Earth observations in national development plans and to integrate them with national statistical accounts to improve the measuring, monitoring and achievement of the SDGs. These partnerships and collective efforts can support broader societal ownership of the Goals and Targets to strengthen the effectiveness and accountability of their implementation.

Key organizations that the GI-18 Initiative will pursue partnerships with include the following, adding others over the course of the initiative:



Sustainable Development Solutions Network, SDSN

The SDSN is a UN-sanctioned body mobilizing global scientific and technical expertise to promote practical problem solving for sustainable development. Supporting the implementation of the SDGs at all scales, SDSN promotes integrated approaches to interconnected social, economic, and environmental challenges. With national and regional networks, SDSN promotes Solutions Initiatives to accelerate progress toward sustainable development. <http://unsdsn.org>

The GI-18 Initiative works with SDSN to support the broad distribution of successful, productive methods to use Earth observations and geospatial information for the SDGs and sustainable development decisions overall.



UN Committee of Experts on Global Geospatial Information Management, UN-GGIM

The United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) is a UN intergovernmental entity which guides the

making of joint decisions and sets directions on the production and use of geospatial information within national and global policy frameworks. UN-GGIM provides a platform for the development of effective strategies to strengthen national capacity on geospatial information, disseminates best practices, and promotes the use of geospatial information to address key global challenges. <http://ggim.un.org/>

The GI-18 Initiative partners with UN-GGIM and its Secretariat to work effectively with the UN Statistics Division, IAEG-SDG, and other UN System entities. A partnership can also pursue opportunities for new information products, disseminate smart practices, and showcase effective methods and successful projects.



Global Partnership for Sustainable Development Data

The Global Partnership for Sustainable Development Data is a global network of governments, NGOs, and businesses working together to strengthen the inclusivity, trust, and innovation in the way that data is used to address the world's sustainable development efforts. The Global Partnership supports data-driven decision-making by initiating more open, new, and usable data. <http://www.data4sdgs.org/>

The GI-18 Initiative works with the Global Partnership on the openness, availability, and usability of Earth observations data and geospatial information to support the SDGs. The activities include opportunities for new observing systems, data collection, and visualizations to inform development decisions.



International Institute for Sustainable Development, IISD

IISD promotes human development and environmental sustainability through research, communication, and partnerships. IISD provides practical solutions to the challenge of integrating environmental and social priorities with economic development. IISD's work covers strategies, policy advice, and tools across a range of programs and topics. IISD is a GEO Participating Organization. <http://iisd.org>

The GI-18 Initiative partners with IISD to support the broad distribution of productive methods to use Earth observations and geospatial information for the SDGs and sustainable development decisions. A partnership can support efforts to integrate Earth observations into government policy and public management practices as well as strong outreach and communications activities.

The GI-18 Initiative collaborates with other activities in the GEO Work Programme that have established or potential connections to the SDGs.

The Initiative also pursues partnerships with major scientific unions and management-oriented associations. Organized efforts with these groups can integrate the sustainable development goals in the context of these organizations' duties. They can include and feature the SDGs in their meetings and conferences, allowing opportunities to engage researchers, technicians, managers, and others to inform and energize them and catalyze contributions.

INITIATIVE MANAGEMENT

This section describes the management of the GI-18 Initiative, including governance, internal communications, resources, schedule, and evaluation. Overall, there are three levels of involvement in GI-18: Community, Team, and Board. The Community includes the broad universe of people who are interested in GEO's activities with the SDGs, but are not necessarily involved in any specific activity. The Team includes those people who are directly involved with GI-18 activities. The Board, as described below, is a subset of the GI-18 Team - a core group of people leading and managing the GI-18 Initiative.

Governance

The GI-18 Initiative uses a governance and management approach akin to an organization's Board of Directors. This GI-18 Board provides corporate-level oversight and serves corporate interests of the initiative. The Board tracks functions that support operations and enable the initiative to be productive, spanning strategic direction-setting to tactical aspects.

The Board is comprised of individuals (anticipated to be 8-10 individuals) committed to GI-18. The GEO GI-18 co-leads head the Board, and they provide a facilitation role, guide agenda-setting, and set priorities and make decisions when a board consensus among the Team is unachievable. The GEO Secretariat point of contact for GI-18 effectively serves as a co-lead for the purposes of this initiative.

The Board has standing bodies to address on-going functions (developing pilot projects, methods and products, capacity development, communications and publications, etc.), and forms ad hoc groups as needed for special activities, topics, and events that arise. Standing bodies address strategic planning, membership, projects, capacity building, data and information, outreach, partnerships, evaluation, and reporting. The GI-18 Team articulates the number of standing bodies and their respective functions in a separate document. Interaction among standing bodies is encouraged and expected.

Board members represent their respective country or organization. They (or their country or organization) are expected to actively participate in GI-18 Initiative activities. Members serve on at least one standing body, and they serve on ad hoc groups as needed. Board members are expected to participate in board teleconferences, identify agenda topics, actively support one or more major Initiative activity per year, contribute to a GI-18 annual report, and attend annual meetings. The Board co-leads have responsibility to review annually the participation of Board

members. Board members serve staggered terms. Geographic and gender balance of the Board is a priority.

The Initiative periodically makes calls for nominations, and members of the GI-18 Team can nominate themselves to be on the GI-18 Board. The Board will review nominations and make selections of new Board members. At an annual meeting each year, Board members can nominate themselves to be co-leads. Subsequently, the Board will review nominations for co-leads and select the new, incoming co-leads, who assume the role after a brief transition period with the outgoing co-leads. Co-leads serve staggered terms to ensure continuity in the leadership of the Initiative.

The Initiative has an executive secretary to coordinate and track the Initiative's activities. This person coordinates with the co-leads, standing bodies, and board members as well as with projects and other activities as needed to expedite the GI-18 workings, progress, and results. The GEO Secretariat point of contact serves as the executive secretary unless the board selects someone separately.

Internal Communications

The Initiative Board holds routine teleconferences to review status and progress reports of GI-18 activities. Standing bodies of the Board provide routine status reports, and Board members identify new topics and opportunities. The executive secretary and co-leads develop the teleconference agendas with input from Board members, and the executive secretary provides a summary.

The Initiative regularly holds open teleconferences or webinars for the broader GI-18 community. These open teleconferences and webinars provide the community with information on the Initiative, new activities, directions, opportunities for support, and other topics.

There is an annual, in-person team meeting for the GI-18 Initiative. The annual meeting reviews the Initiative in depth and provides a key time to evaluate the Initiative (see Evaluation below). The annual meetings provide dedicated time for attendees to address and resolve major issues requiring longer discussions than the status teleconferences provide. The annual meetings involve the partners, and the meetings are open to the broad GI-18 Team and Community.

As needed, the Board and its standing bodies arrange in-person meetings in conjunction with major GEO events, such as the GEO Plenary and Work Programme Symposium. As possible, these meetings allow teleconference capabilities for Board members not present at the event.

The Board may arrange special meetings to address GEO requirements and requests, such as input to GEO Plenary documents or Work Programme revisions.

Evaluation

The annual meeting (and preparations for it) serves as the primary event for the Board, Team, and Community to reflect on the Initiative – its progress, its challenges, and its direction. The attendees review projects and activities, discussing successes as well as items that did not go as planned. Attendees assess progress and performance with respect to expectations, review resource needs, and evaluate the Initiative’s ability to execute plans with acceptable risk.

The Board evaluates whether the functional and performance requirements for the Initiative are properly formulated, responsive to GEO objectives, and represent achievable capabilities. The Board assesses the credibility of the Initiative’s targets and schedule, and it sets or revises targets and the schedule for the upcoming year. A key decision for each annual meeting is the status of the Initiative and whether to recommend changes to the GEO Programme Board.

Standing bodies also conduct evaluations of their respective functions. They report at periodic teleconferences as well as the annual meeting.

See also the Performance section below.

Resources

The GI-18 Initiative operates through in-kind contributions of financial and other resources to conduct the activities. As in-country pilot projects and other activities articulated in each two-year GI-18 Work Plan, the GI-18 Board develops a clear statement of the types of resources the GI-18 Board and Team are prepared to commit to successfully implement the Initiative. While specific resource allocations will depend on the needs of a given project or activity, it is critical that representatives of GI-18 be able to demonstrate to potential country-level partners a strong commitment to engaging in collaborations early in the development of the projects. Resources can take multiple forms, including: engagement by staff and officials from GI-18 participating organizations in planning, oversight and management of GI-18 activities; provision of data resources and other technical capabilities to pilot countries; in-kind services related to capacity development training sessions and materials, as well as publications and other communication related to GI-18 activities. The Initiative maintains a resources plan in a separate document.

Schedule

The GI-18 Initiative has general events and activities that occur every year and ones specific to a given year. Examples of events and activities include GEO Plenaries, UN Statistical Commission meetings, conferences, annual meetings, trainings, workshops, and webinars, among others. In addition, the Initiative may hold special events, such as a biennial conference of the partners.

The Initiative maintains a detailed two-year schedule. At the annual meeting each year, the board (with input from the team and community) approves the ensuing two-year schedule, updating it as needed. The two-year schedules are added as addenda to this plan.

The following is a list of recurring annual events that are part of a general schedule:

QI: January - March

UN Statistical Commission meeting
GI-18 Annual Report published
Release of GI-18 award nominations

QII: April - June

EGU and JpGU meetings
GEO Work Programme Symposium
Release of GI-18 board nominations

QIII: July-Sept

GI-18 Annual Meeting
Establish GI-18 two-year schedule
GEO Plenary materials due

QIV: October - December

GEO Plenary & GI-18 side Events
GI-18 award announcements
AGU meeting

The executive secretary maintains the schedule.

PERFORMANCE

A key measure of the Initiative's performance is the achievement of the objectives for the three GI-18 goals. The team will strive to achieve all of them, and it recognizes that the complete set serves as an ambitious target. At the half-way mark of this implementation plan, the team will assess the Initiative's performance and make adjustments to activities and expectations.

Largely, the GI-18 initiative promotes the uptake of Earth observations and geospatial information by nations and stakeholders in SDG planning, tracking, and reporting. Such use is through sound, accepted SDG methods. A primary focus of the Initiative's performance is the enablement of these methods in their development and use, which inherently includes the capacity building, data and information products, and outreach activities of GI-18.

The GI-18 team employs a seven-stage metric to track the maturation of SDG methods using Earth observations and geospatial information. This Method Useability Level (MUL) index provides a scale for the expected advancement along a continuum – from initial idea, through development and field testing, to adoption and sustained utilization. The MUL index allows the GI-18 team to convey expectations for project and method development, assess progress and diagnose problems, and report on GI-18 performance both for individual projects and the overall portfolio.

Appendix C provides additional information on the MUL index and the definitions for each level.

COMMUNICATIONS

In addition to outreach focused on encouraging nations and stakeholders to use Earth observations for the SDGs, the GI-18 Initiative conducts broad activities to communicate progress of the Initiative overall. The Initiative communicates achievements and quality stories as ways to inform the global community about GEO, Earth observations, and GEO's activities to serve development goals. The Initiative regularly informs the GI-18 team and community of its progress, potentially encouraging community members to become more involved in activities. And, the Initiative communicates with the GEO community, partners, and stakeholders to demonstrate GEO activities and achievements in the use of Earth observations to provide societal benefits.

The Initiative works with the GEO communications teams and others to prepare stories, infographics, and messages; coordinate with partners; and support communications across appropriate channels. These efforts include the creation and maintenance of a portfolio of materials, such as examples, stories, articles, and web features. These materials are ones the GI-18 team and community can use to broadcast GI-18 activities, progress, and successes broadly. Appendix B describes a web-based resource tool designed to facilitate the accessibility and



dissemination of information, lessons, products and other material. Development of this tool will be dependent on the availability of human, technical and other resources to design, populate and maintain it.

The Initiative articulates a communications plan in a separate document, including a message frame, audiences, and channels. The team updates this plan as needed, with a review at least once a year at the annual meeting. The Initiative's two-year schedule includes key communications activities.

APPENDIX A: EARTH OBSERVATIONS AND SDG GOALS, TARGETS, AND INDICATORS

This table indicates the most likely Targets and Indicators that Earth observations can contribute as a direct measure or as indirect support.

Table I.

 Sustainable Development Goals 																	
Earth Observations in Service to Agenda 2030																	
Target											Goal	Indicator					
<i>Contribute to progress on the Target yet not the Indicator per se</i>												<i>Direct measure or indirect support</i>					
											1.5	1					
				2.3	2.4						2.c	2	2.4.1				
			3.3	3.4	3.9						3.d	3	3.9.1				
												4					
												5	5.9.1				
	6.3	6.4	6.5	6.6	6.a	6.b					6.b	6	6.3.2	6.4.2	6.5.1	6.6.1	
					7.2	7.3	7.a	7.b			7.b	7	7.1.1				
											8.4	8					
				9.1	9.4	9.5	9.a				9.a	9	9.1.1				
												10					
	11.3	11.4	11.5	11.6	11.7	11.b	11.c				11.c	11	11.3.1	11.6.2	11.7.1		
					12.2	12.a	12.b				12.b	12					
					13.1	13.3	13.b				13.b	13	13.1.1				
	14.1	14.2	14.3	14.4	14.6	14.7	14.a				14.a	14	14.3.1				
15.1	15.2	15.3	15.4	15.5	15.7	15.8	15.9				15.9	15	15.1.1	15.2.1	15.3.1	15.4.1	15.4.2
												16					
				17.6	17.7	17.9	17.16	17.17			17.17	17					

APPENDIX B: CURATED WEB-BASED RESOURCE ON EARTH OBSERVATIONS FOR SDG INDICATORS

The GI-18 Initiative will develop and maintain an updated, interactive, web-based database that describes the state of EO and geospatial information (data, projects and tools/resources) in support of the SDGs, Targets and Indicators. This will be both an Objective and a task/product within Goal I (but also related to Goals II and III).

The resource will be modeled after Tables I and II and be curated and regularly updated. This will provide the capability for each SDG to be consulted to determine what EO resources, projects and tools are available for each SDG, Target, and Indicator. The resource will also include references by country/region, and an estimate of the level of maturity achieved for each SDG in terms of: amount of data available, existing methodologies, indicators developed, and the level of coordination with National Statistical Offices (NSOs), as well as the IAEG and the intergovernmental/UN Indicator process.

Data embedded within the resource will include: 1) countries and regions (and other partners) where resources exist or are currently being developed; and 2) a detailed view of the types of data and resources that are being combined to measure a particular Indicator. The information will be color-coded, corresponding to the level of maturity, depending on agreed criteria, similar to those described in Appendix C (MUL levels). The level of maturity will also depend on the institutional maturity (coordination with NSOs, level of acceptance and discussion within the IAEG).

This web resource will help visualize, in graphic, dynamic and geo-referenced form, the state of the art/landscape at the national, regional and global level. It will include both completed, ongoing and proposed projects and indicators. The resource will also reveal gaps, challenges and opportunities in the SDG landscape *to stimulate the GEO community to both identify resources to address needs and to propose specific projects within GI-18 to enrich/complement SDG indicators using EO and geospatial data.* It will serve as both a tool/resource for the GEO community, and to help illustrate to NSOs, national decision makers, other data producers and the international community of the EO/GEO contribution to the 2030 Agenda and the SDG Indicator framework (Goal III).

APPENDIX C: SDG METHOD USEABILITY LEVELS (MULs)

The GI-18 Initiative introduces a seven-stage metric to track the maturation of SDG methods using Earth observations and geospatial information. This Method Useability Level (MUL) index provides a scale for the expected advancement along a continuum – from initial idea, through development and field testing, to adoption and sustained utilization. The MUL index allows the GI-18 Task Team to convey expectations for project and method development, assess progress and diagnose problems, and report on GI-18 performance for both projects and the overall portfolio.

The MUL reflects three main stages in method development. In general, MUL levels 1-2 encompass conception and feasibility; MUL 3-5 address development, testing, and demonstration; and, MUL 6-7 focus on deployment and adoption.

The following are the seven MUL levels:

1. Idea and Method Invention

Method invention and formulation of concept begins here. Initial understanding and characterization are articulated for how Earth observations and geospatial information can support the SDG Target and Indicator. The method is still speculative and there is no proof or detailed analysis to support the assumption.

Key milestone: Convincing plan to prove feasibility is established.

2. Proof of Method Concept

Feasibility studies to assess the potential viability of and provide a proof-of-concept for the method are conducted. A more complete characterization of the Target and Indicator and the role of Earth observations and geospatial information is completed. Performance standards are established. An information template on geospatial components for an indicator is drafted and submitted to IAEG-SDG.

Key milestone: Convincing case made for method is made and viability is established.

3. Method Verification and Validation

Basic components of Earth observations and geospatial information are integrated into a prototype method to establish they work together and are tested in a simulated environment(s). At this level, the technical, organizational, and human process issues are considered and worked out, as is the initial standardization of the method. Verification and validation that the information functions to performance standards is achieved.

Key milestone: Potential to address the Target/Indicator is determined and articulated.

4. Field Testing and Refinement

Prototype method is demonstrated and field-tested in relevant user environments for usability (e.g., difficulty vs. expectation, user error rates, data access, etc.). Modifications are made and the method is further refined and standardized to conform to end-users' environments and standard interfaces. Documentation of the method as a standardized process is established. Achieving this level represents a major increase in the method's demonstrated readiness.

Key milestone: Potential to address the Target/Indicator is demonstrated and documented.

5. Method Approval

The completed method is fully characterized and qualified for deployment, including data availability and possible succession plans for data sources. Functionality of the method is demonstrated to win the confidence of IAEG-SDG. The method is presented for approval by the IAEG-SDG. Upon approval, the method is presented for adoption by the SDSN.

Key milestone: Approval by IAEG-SDG.

6. Deployment and Use

Deployment plan to encourage adoption is established and pursued. Most user documentation, training documentation, and maintenance documentation are completed. Outreach, training, and capacity building about the method are conducted. User experience assessment conducted. Case studies with testimonials developed.

Key milestone: Demonstrated use by 5 countries.

7. Widespread Sustained Utilization

On-going outreach, training, capacity building, and adoption activities are conducted. On-going usability and user experience assessments are conducted. Necessary maintenance, refinements, and improvements of method occur and support is given for any succession of data sources. On-going publication of results and testimonials are conducted. Communication with IAEG-SDG (or successor organizations) and the UN Statistical Commission is maintained.

Key milestone: Demonstrated use by 20 countries.

Key milestones for each level are listed above, and the GI-18 Initiative describes the specific milestones for each level in a separate document. A project's MUL is determined at any given time by the highest level for which all milestones preceding it have been completed in full.

APPENDIX D: ACRONYMS AND ABBREVIATIONS

AGU	American Geophysical Union
EGU	European Geosciences Union
GEO	Group on Earth Observations
GGIM	UN Initiative on Global Geospatial Information Management
GI	GEO Initiative
IAEG	Inter-agency and Expert Group
IISD	International Institute for Sustainable Development
JpGU	Japan Geoscience Union
MUL	Method Useability Level
SDG	Sustainable Development Goals
SDSN	Sustainable Development Solutions Network
UN	United Nations
UNSC	United Nations Statistical Commission