EARTH OBSERVATIONS FOR THE SUSTAINABLE DEVELOPMENT GOALS

GEO GROUP ON EARTH OBSERVATIONS

2024 ANNUAL SUMMARY

The Earth Observations for the Sustainable Development Goals Initiative

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INTRODUCTION

MESSAGE FROM THE CO-CHAIRS

As the Group on Earth Observations (GEO) continues supporting ways to advance the United Nations 2030 Agenda for Sustainable Development, we're excited to share with you this report about the GEO EO4SDG Initiative we co-lead with a fantastic team and community. Together, we're realizing the potential that Earth observations (EO) and geospatial information offer to enable societal benefits through achievement of the Sustainable Development Goals.

Water security, energy access, EO education, OneHealth, climate resilience – all these topics and more were ways that the EO4SDG Initiative worked to advance the use of Earth Observations and geospatial data to advance the Sustainable Development Goals (SDG) in 2024. Truly, it was a productive year. This report captures a range of ways that EO4SDG engaged with organizations to connect EO and sustainable development, and more is on our website, EO4SDG.org.

The year featured several engagements and interactions with new organizations. We're extremely grateful for the fruitful discussions we had and the opportunities they generated. It was also a strong year for the Initiative's outreach efforts, including a new blog series on resilience, a new EO4SDG Instagram account, and a new website feature highlighting people across the Initiative.

This year, we began efforts to align with the new GEO Strategy and upcoming Work Programme. These developments provided the chance to re-assess and update EO4SDG's purpose and roles and our relationship with the GEO Secretariat and support for GEO's goals and vision. While continuing the key activities EO4SDG has done, we'll lean into opportunities to reach new communities and advance sustainable development under GEO's new direction.

As you read and explore this report about connections between EO and the SDGs, we hope that it sparks ideas for how you and your organization can use EO. If it does, this EO4SDG Initiative is ready to help.

Finally, we want to give a big shout out to EO4SDG's Executive Director, Corena Pincham, and Lead Coordinator, Lillian Schaeffer. They were critical to keeping the Initiative organized and productive. We're similarly appreciative to the EO4SDG Board members and Board Chair, Lorenzo De Simone, and especially grateful to everyone involved with the Initiative.

Thanks,

Lawrence Friedl
Co-Chair

Osamu Ochiai
Co-Chair

Overview of EO4SDG

In September 2015 the United Nations adopted the *2030 Agenda for Sustainable Development*, a global framework for countries and stakeholders to use as a blueprint for progress on economic, social, and environmental sustainability. Soon after, the Group on Earth Observations (GEO) launched an initiative to advance the coordination and use of Earth observations (EO) and geospatial information for the U.N.'s Sustainable Development Goals (SDG). Thus, the primary purpose of the Earth Observations for the SDGs (EO4SDG) Initiative — is to realize the potential of EO to advance the 2030 Agenda and enable societal benefits, especially by fostering the integration of EO into national development activities and monitoring frameworks.

The EO4SDG team maintains four elements as lines of business: Projects, Capacity Building, Data and Information Products, and Outreach and Engagement. The EO4SDG Initiative team includes people and organizations from across the globe. EO4SDG maintains a Board which provides strategic direction and oversight to the leadership team and serves as a community-based forum to identify issues and opportunities.

The Initiative engages with GEO Member Countries, Participating Organizations (PO), and Associates in its work, and it collaborates with GEO Work Programme elements on shared interests. The Initiative also coordinates with several U.N. entities to ensure alignment with latest developments and trends. In particular, EO4SDG works with SDG Custodian agencies to support development EO-integrated indicator methodologies, and it works with the U.N. Statistics Division and the Inter-Agency Expert Group on SDGs (IAEG-SDG) and its Working Group on Geospatial Information (WGGI).

This Annual Report highlights the EO4SDG Initiative's progress and accomplishments in 2024, along with outreach efforts and significant activities involved in managing the Initiative and supporting the work of member organizations.

Community Engagement

WHOLE INITIATIVE MEETINGS

We held two virtual meetings for community members to hear about key updates and ongoing activities of member organizations. In May, board member Marwa ElKabbany and colleague Donna Lyndsay, presented on the UK Ordnance Survey's geospatial solutions, customer use cases, and global partnership supporting progress for numerous SDGs. They detailed projects from the United Kingdom, United Arab Emirates, and Zambia, as well as solutions addressing issues around supply chain data, waste management, and greenspace identification. The EO4SDG team also debuted the newly created Education webpage and Instagram profile during this meeting, displaying opportunities for the community to support new methods for public outreach. This strategy is detailed further in the Digital Communications section of this report.

During the September meeting, Juan Guillermo Gil García and colleague Eduardo Forero González presented about the pursuit of advanced remote sensing and 3D modeling for urban planning in the city of Pereira, Colombia. Additionally, Co-Chair Osamu Ochiai shared updates about JAXA's production of SDG indicators 15.4.2 and 11.3.1 with high resolution satellite imagery. These member project highlights generated knowledge exchange between the attendees and informed the EO4SDG team of new resources to share with our stakeholders.

GEO INTERACTIONS

GEO Symposium 2024

Figure 1 *- GEO Symposium*

EO4SDG Co-Chair Lawrence Friedl represented the Initiative at the GEO Symposium and Open Data and Open Knowledge Workshop in Hangzhou, China, in September. This symposium set out to advance the implementation of the GEO Post-2025 Strategy and foster dialogue and collaboration between Work Programme activity representatives. He co-moderated a session on the GEO community's support to the One Health framework across an array of EO application areas. The speakers emphasized the reciprocal cross-benefit and connections of the GEO Work Programme to One Health, and suggested opportunities for joint activities with EO4HEALTH and the Health Community of Practice.

Community Engagement

GEO Health Community of Practice

EO4SDG's relationship with the GEO Health Community of Practice (GEO HCoP) provides mutual support to the respective communities through joint interest in applying EO for global well-being. The Executive Director participated in a roundtable during a July telecon with the GEO EO4HEALTH Initiative associated with GEO HCoP. The event highlighted how the cross-cutting nature of the One Health concept manifests across GEO activities. Her discussion of EO-based platforms supporting food security, water security, marine ecosystems, and urban sustainability reinforced that advancement of the SDG Agenda aligns with the optimization of human, wildlife, and environmental health outcomes. This event also led to a connection being made with GEO HCoP member Ajay K. Gupta to understand how healthcare infrastructure risk and resilience planning is conducted through Earth observations and AI integration.

MEMBER HIGHLIGHTS

We invited members to share remarks on the Initiative's 2024 activities. Here is a sample of the full commentary that is available on the EO4SDG website:

What SDG-related endeavors of your individual organizations are you most proud of from the past year?

> ***The development of yet more lessons and activities that bring SDGs into K-12 classrooms, including an Earth Science textbook we are revising for Activate Learning. AGI also presented at 9 educator and geoscience conferences in which we discussed the use of SDGs by teachers and students."***
>
> **Lindsay Mossa,** *American Geosciences Institute*

GEO Space and Security

Figure 2 *- EU Satellite Centre*

EO4SDG took part in a webinar hosted by the GEO Space and Security Pilot in May. This activity, led by the EU Satellite Centre, aims to develop and promote solutions improving citizen safety and security through space-based data and technologies. Themed "Exploiting Earth Observation (EO) capabilities to address SDGs indicators for the safety and security of the citizens," this event set out to present use cases addressing relevant SDGs in different domains of human security to the GEO community and beyond.

The EO4SDG team presented on the Initiative's use cases and resources connecting to applications for food and water security. Additionally, this event provided an opportunity to feature the work of a 2023 SDG Award-winning project, the World Resources Institute's Energy Access Explorer (EAE). Dimitris Mentis presented on the value EAE brings for energy-scarce communities as an open-source, integrated

Community Engagement

mapping and data analytics platform. Our participation in the telecon provided insights on tools and analysis leveraged across GEO for human security. Additionally it led to the outreach of AfriGEO and other groups in attendance.

AfriGEO

The EO4SDG team reconnected with the AfriGEO Secretariat in May through its desire to develop closer ties with GEO Work Programme activities. In discussion of how the Initiative could support AfriGEO's 2024 priorities, we learned of challenges to regional coordination and differentiation in member country data infrastructure systems and data needs. Various EO4SDG members contributed resources over the summer to expand the AfriGEO Secretariat's awareness of externally led projects happening across Africa and consider EO use cases relevant to member country needs. These interactions resulted in the submission of a video presentation to the 8th Annual AfriGEO Symposium, which conveyed the importance and effectiveness of open-source EO resources for SDG monitoring and highlighted 2 GEO SDG Award-winning projects that have been valuable for African countries.

UNITED NATIONS ENGAGEMENT

IAEG-SDGs WGGI

As an invited group of the IAEG-SDGs WGGI, EO4SDG participated in the development process of the "Rescuing the SDGs with Geospatial Information" report throughout 2024. Through the mandate given by IAEG-SDGs, this working group is responsible for advising UN bodies and the larger statistical community on geospatial data integration pathways for the production and dissemination of global indicators for the SDG Agenda. The "Rescuing" paper, planned for and endorsed by the Statistical Commission in 2025, advocates for strengthened use of geospatial data to address needs and demands of the 2030 Agenda. In 2024, EO4SDG members provided feedback to WGGI throughout the report's drafting process. The Initiative contributed EO-based use cases as supporting metadata for a shortlist of SDG indicators WGGI identified with minimal global reporting rates. EO4SDG's longstanding relationship with the group's leadership allows our community's areas of expertise to advance international policy for broader Earth observations application.

MEMBER HIGHLIGHTS

> *"SDGs Today is proud of the successful 2024 Eco Ambassadors Solutions Lab, with over 40 sustainability projects developed by high school students from around the world. SDGs Today was also awarded Best Story at the UN World Data forum StoryMap Competition for our work assessing the impact of war on healthcare and education in Gaza, and gained recognition for our digital data driven VNR and VLR initiative."*
>
> **Maryam Rabie,** *Sustainable Development Solutions Network*

Community Engagement

UN-GGIM

Figure 3 *- UN-GGIM*

The Executive Director represented the Initiative at the 14th Session of the UN Committee of Experts on Global Geospatial Information Management (GGIM) in August. As part of the UN Statistics Division, GGIM leads agenda-setting for development and use of geospatial information to address complex global issues through coordination between UN Member States and international organizations. This annual meeting facilitates dialogue for enhanced cooperation between Member Countries and affiliated organizations for global geospatial management in support of the United Nations Integrated Geospatial Information Framework (IGIF) and SDG Agenda. As a GGIM Observer, the Initiative actively participated to:

- Catalog agenda items and interventions on geospatial applications for sustainability and other environmental applications helpful for the missions of EO4SDG and GEO.
- Identify new connection points for EO4SDG by gaining awareness of the geospatial information focal points, needs, and good practices of represented Member Countries.
- Engage with representatives of the UN Statistical Commission's Inter-Agency and Expert Group on SDG Indicators Working Group on Geospatial Information (IAEG-SDGs WGGI) and assorted EO4SDG members in attendance.

There were notable interventions made during the sessions on marine and land data management, climate resilience, geospatial ecosystems, and sustainable development. We were pleased to hear a nod to GEO's capabilities in an intervention made by the United States during the climate resilience session. EO4SDG's presence resulted in strengthened understanding of global geospatial data implementation efforts through the UN system, as well as opportunities to collaborate with Initiative partners to support the continuation of those activities.

NEW CONNECTIONS

Individuals who are interested in exploring EO4SDG are typically first connected with the Executive Director, who gets to know them and their organizations and where mutual support can be fostered. The insights shared about the stakeholders they represent expand the Initiative's understanding of countries and groups making tangible advancement towards SDGs, enabling us to identify the appropriate expertise to lend in support of those capabilities or the best channels to showcase impacts.

Community Engagement

Finnish Environment Institute (Syke)

In the spring, the EO4SDG team met with a GEO Programme Board member from the Finnish Environment Institute leading a Eurostat-funded project to elevate Finland's capacity to report on SDG indicators 6.3.1, 6.6.1, 11.3.1, 14.1.1a, 15.3.1, and 15.4.1 with EO and spatial data. The conversation illuminated how the Finnish government organizes its SDG reporting and the challenges for cost-effective data processing. EO4SDG committed to providing support to the project team through use case materials on the aforementioned indicators and connecting them to community members and representatives from the UN Custodian Agencies with relevant technical expertise for EO implementation. We look forward to seeing the trajectory of the project over its 2-year duration, and championing future work done across the Nordic region.

IEEE Geoscience and Remote Sensing Society REACT

The Institute of Electronic and Electrical Engineers Geoscience and Remote Sensing Society (IEEE-GRSS) formed the Remote sensing Environment, Analysis and Climate Technologies (REACT) subgroup in 2022 as a venue for remote sensing scientists and engineers to share knowledge on environmental research around the cryosphere, biosphere, hydrosphere, atmosphere, and geosphere. IEEE-GRSS connected us with REACT to develop stronger ties across the GEO community, leading to a May meeting between members of the subgroup and the Executive Director.

The group shared information about the interdisciplinary, community-based research processes within the REACT'S four Local Focus Areas, and the engagement maintained with young professionals through award, upskilling, and publication opportunities. This discussion illuminated IEEE-GRSS's work as a GEO Participating Organization that aligns with EO4SDG's interest in location-specific application of EO techniques for sustainable development challenges. The REACT team and EO4SDG maintain ongoing dialogue about events and other collaboration opportunities for our shared benefit.

MEMBER HIGHLIGHTS

> *"EARSC engaged with stakeholders, including the statistical community, to discuss advancements in SDG monitoring and data innovation for the 2030 Agenda. In those discussion, we tried to highlight the transformative potential of satellite-derived data in complementing traditional methods for SDG reporting. In 2025, EARSC will continue these discussions on how EO can enhance environmental monitoring and decision-making while addressing data gaps."*
>
> **Monica Miguel-Lago,** *European Association of Remote Sensing Companies*

Netherlands Ministry of Infrastructure and Water Management

Over the summer, the Ministry of Infrastructure and Water Management for the Kingdom of the Netherlands (IWM) reached out with interest to get involved with EO4SDG. An introductory meeting revealed how the country takes biodiversity and ecosystem health into consideration within national water and soil

Community Engagement

management policy, and how voluntary reporting is provided to UNEP for SDG 6.5.1. In December, EO4SDG learned more about IWM's interaction with the Netherlands Space Office for satellite applications, as well as SDG 14 reporting and marine policy around the North Sea and Dutch territories in the Caribbean. As the Netherlands formalizes its GEO activities, EO4SDG looks forward to sharing expertise with IWM through the country's desire to expand EO data use for its domestic and international work and capturing the impact of such integration along these themes.

EO4SDG AT AGU2024

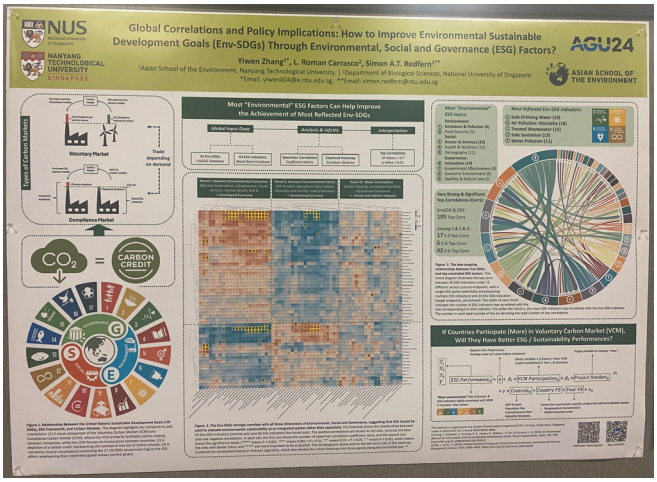

Figure 4 *- SDGs-ESG Poster*

The Initiative continued its yearly presence at the American Geophysical Union Annual Meeting. At this year's meeting in Washington D.C., EO4SDG convened a poster session titled "Earth Observation Applications Supporting UN Sustainable Development Goals: Monitoring Indicators, Analytics, and Assessments." It featured six research posters illuminating how data-driven

Figure 5 *- AGU U51A Session*

action can be taken on human-environmental nexus issues, resource management policymaking, and SDG indicator monitoring. The EO4SDG team had informative discussions with the presenters on cropland data disparities, agroforestry classification, deep learning methods for slum management, and policy overlaps between sustainable development and Environmental, Social, and Government (ESG) factors. These posters represented researched conducted at Nanyang Technological University, University of Maryland College Park, Peking University, Massachusetts Institute of Technology, Yale University, and the University of Twente.

Session co-conveners held conversations about how participation interest in EO applications for sustainable development can be maintained at scientific meetings in light of climate and environmental change subjects often receiving more attention. Moving forward, EO4SDG will use thoughtful rhetoric to connect SDG themes to such trending topics for convening sessions at AGU and elsewhere. Attendance of other oral and poster sessions that week exposed the team to numerous organizations carrying out research and applications

Community Engagement

that can expand the EO4SDG knowledge base, as well as new areas of analysis. EO4SDG members also used the conference as an opportunity to promote the SDG Awards Program.

YOUTH ENGAGEMENT

GEO has committed to empower youth participation in the global movement to produce and distribute EO data through its Post-2025 Strategy. We view this as an opportunity to support EO exploration by young people and early career professionals within our mission an endeavor that also supports the aims of SDG 4 (Access to Quality Education). This additionally enables connection with educators interested in illuminating environmental and social challenges through new technologies.

American Geosciences Institute Earth Science Week

EO4SDG's partnership with the American Geosciences Institute (AGI) served as a key catalyst for the Initiative's youth engagement pursuits in 2024. AGI is a nonprofit network of geoscience associations representing the voices of those within academia and industry. The organization also engages the public on the importance and relevance of the geosciences to environmental management, resilience, and natural resource use. AGI's Geoscience and Society program is the venue through which outreach is conducted to young professionals, schools, and universities to tie geoscience fields to sustainability.

Figure 6 *- Board Game*

AGI hosts Earth Science Week (ESW) every year to highlight how geoscience applications assist global SDG advancement. The events involve educational resources, webinars, contests, and events promoting Earth science awareness. EO4SDG constructed a pre-recorded webinar for ESW 2024 describing how satellites and ground-based systems generate EO data, how the derived information supports sustainable development, and the value of science collaboration. Co-developed with scientists from NASA Earth Science Division and the GLOBE

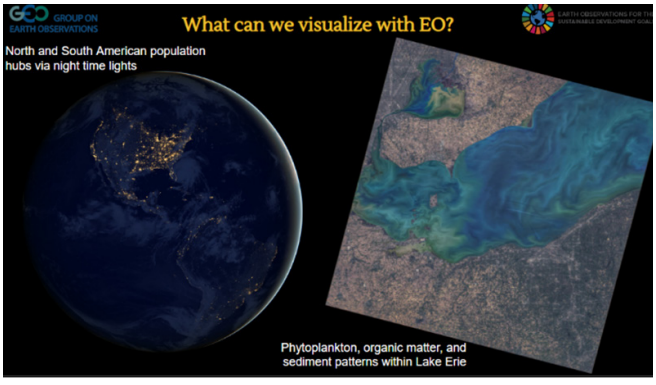

Figure 7 *-ESW screenshot*

Community Engagement

Program, EO4SDG's webinar "Views from Above and Below: Supporting Sustainability with Earth Observations" reached science educators interested in understanding real-world applications of EO and citizen science techniques suitable for the classroom. At the end of 2024, the recording received over 860 views.

The Initiative contributed materials as part of the physical and digital resources AGI sent to 9,000 educators as part of ESW 2024. EO4SDG developed a flyer providing a simplified overview of the Initiative's mission as well as a printable board game to help students understand which EO data supports sustainable agriculture. We also curated a collection of web resources that introduce newcomers to the SDG Agenda and the fundamentals of Earth observations, which can be found at eo4sdg.org/education. The EO4SDG team is grateful for the opportunity to support ESW and connect with educators as a new stakeholder group for EO resources.

NASA International Space Apps Challenge 2024

In October, EO4SDG sponsored an SDG data challenge within the annual NASA International Space Apps Hackathon. This annual event issues challenges for people of all ages and skill backgrounds to build innovative solutions using Earth and space science. It serves as an opportunity for the public to explore open data resources and engage in creative science and technology thinking. In fact, there were two SDG-related challenges in 2024 with the SDGs featured in a challenge sponsored by another group.

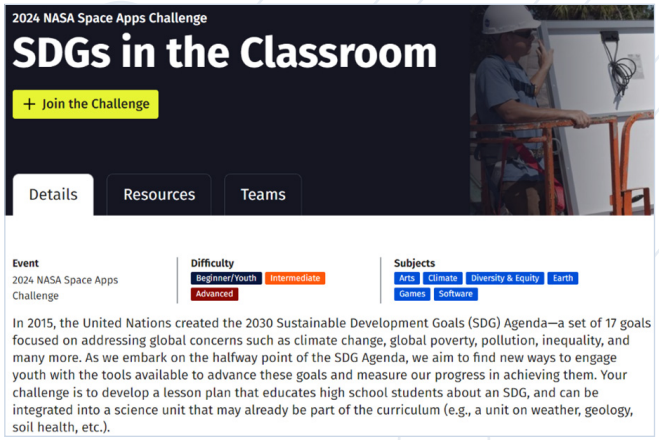

***Figure 8** - ESW Screenshot*

Our challenge, "SDGs in the Classroom," asked participants to envision a lesson plan that could educate high school students about the *2030 Agenda* with Earth observations. We designed the challenge to help illuminate connections between essential goals and concepts of the SDGs for primary and secondary level science curricula. We were thrilled to see that one of the teams that participated in the SDGs in the Classroom challenge was one of 10 Global Winners from the over 9,900 projects submitted. *Innovisionaries*, representing the U.A.E., won the "Most Inspirational" award for their city-building game that can show students how EO data supports sustainable urban planning and natural resource management.

Many of the other 43 projects submitted to our challenge were impressive. Our involvement in the preliminary judging process allowed us to find inspiration to develop educational materials for students and educators. We found it fulfilling to offer young people around the world the opportunity to emulate the initiative's mission of applying science to sustainable development.

Digital Communications

EO4SDG introduced several new digital outreach strategies in 2024. These served to increase public awareness for the Initiative, generate meaningful community engagement, and communicate ongoing activities to encourage participation and involvement. High-level activities include the creation of an Instagram account, the completion of the blog series, *Mapping Progress: EO and the SDGs*, the launch of a new series titled *Climate Resilience: EO for SDG 13*, and the addition of a new Education page on www.eo4sdg.org.

MEMBER HIGHLIGHTS

> *"The most important advances...have been made by DANE by developing platforms to track and monitoring of some indicators , which ultimately have allowed inclusion of the conclusions and reflections on the SDGs in some of the territorial planning guidelines."*
>
> **Juan Guillermo Gil Garcia,** *Mayoralty of Pereira, Colombia*

INSTAGRAM

In April 2024, we launched the EO4SDG Instagram account, @eo4sdg. The account shows the world the impact and beauty of Earth observation data, reaches an audience of existing potential community members, and increase the available mechanisms to promote relevant activities. At the end of 2024, the account averaged 2,555 views per month.

The account features a variety of content, including posts about our blog series, Earth observation imagery and facts about the planet, and general events and activities.

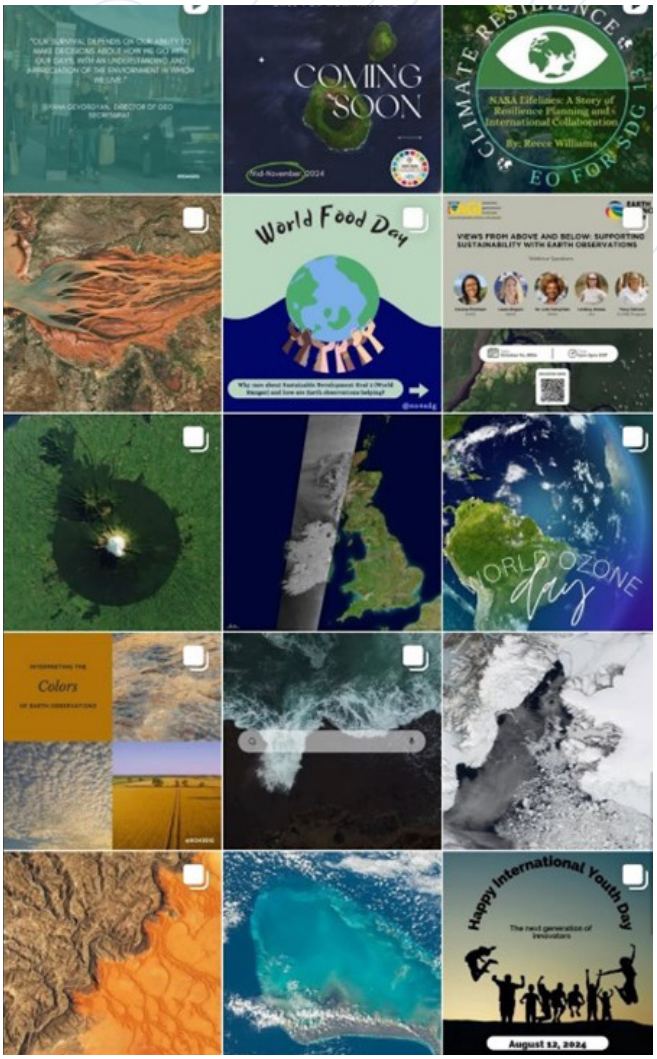

Figure 9 *- Instagram*

When developing content, EO4SDG prioritizes information accuracy, digestibility, and fascination to audience interests.In addition to creating content of high quality and subject matter, EO4SDG also considered the overall color theme and branding for the collection of content. We prioritized shades of dark blue, light blue, green, orange, and white as the Instagram branding.

Digital Communications

WEBSITE ADDITIONS

EO4SDG Blogs

We built upon the successful effort started in 2023 to expand EO4SDG's thought leadership. Through the publication of thematic blogs, we showcase our community's perspectives of the status and future of EO and the SDGs. The Lead Communications Coordinator produced the continuation of the "Mapping Progress" blog with guest authors from April to August 2024:

- Rachel Hor contemplated EO data's ability to illuminate risks for agroecological resilience.
- Sabrina Delgado Arias, Edil Sepúlveda Carlo, and Juan Badouin wrote about the 2023 Space and Sustainability Colloquium's advancement of knowledge transfer and capacity building for Earth observations in Latin America.

Figure 10 *- EO4SDG Bloggers*

Figure 11 *- Lifelines Blog*

- Rafael Monge examined how Costa Rica uses EO-enabled decision making for reporting on deforestation and emissions and monitoring SDG 15.

The success of these blogs motivated the team to develop a new theme in late 2024, "Climate Resilience: EO for SDG 13." This series highlighted thought leadership on EO data use in strengthening resilience measures to changing climate dynamics at local to global scales. Representatives from four EO4SDG-affiliated organizations published blogs from October to December:

- Reece Williams detailed the interdisciplinary, multisectoral projects the NASA Lifelines program manages in Yemen and Sudan.
- Mónica Miguel-Lago, Chiara Aquino, and Manuela Balzarolo wrote about EO-power fire emission calculations in Italy through the HorizonEU SDGs-EYES project.

Digital Communications

- Ajay K. Gupta described how Earth observations can illuminate risks at the intersection of urban heat and human health.
- Eman Sadig and Ian Bohachek wrote about their experience supporting the NASA Climate Resilience program with internship projects on adaptation planning & evaluation and data accessibility.

5 Simple Questions (5SQ)


5SQ Profile: Marwa Farouk ElKabbany

Where do you currently reside?

Dubai, UAE – an international hub for trade and tourism built on a sandy coastal desert

What organization do you work with and what is your title?

I am a Principal Geospatial Consultant at the UK Ordnance Survey.

How does your work contribute to the SDGs and incorporate EO data?

In my current roles, I use Earth observation data to help governments improve quality of life, monitor environmental changes, manage resources better, and enhance urban planning. This work promotes sustainable development and encourages sharing knowledge and technology to benefit communities and create a better future for everyone.

What is a favorite moment in your career?

One of my favorite moments in my career is when I get to share my knowledge and skills with others. Whether it's teaching a team member a new geospatial technique or helping someone understand the intricacies of sustainable development, seeing that "aha" moment on their faces is incredibly rewarding. It's not just about imparting knowledge; it's about empowering others to grow and succeed, which brings me immense joy and fulfillment.

Figure 12 *- 5SQ*

We introduced another method of highlighting the skills and perspectives of EO4SDG community members through the "5 Simple Questions" series. Publishing brief career profiles demonstrating the many paths individuals can take within the sustainable development field furthers our objective to showcase the impact of Earth observations. We also view this as a valuable resource for young professionals interested in Earth science and sustainability work. There are four profiles for the Executive Director and three Board members, representing four different countries and three different industries.

Education Page

Figure 13 *- Resource Image*

We created a new Education webpage to hold content for students, educators, and everyday people to learn about EO and geospatial data, and their contributions to the SDGs. Resources are available here. These include links to informative websites, self-guided trainings, and classroom materials, including those developed for Earth Science Week.

MEMBER HIGHLIGHTS

> ***For DANE, one of the biggest achievements for our organization in 2024 was the partial update of indicator 11.7.1, "Average proportion of built-up area of cities that is public-use open space for all, by gender, age and persons with disabilities," where the proportion devoted to public-use open space was determined for a new and expanded sample of 19 cities in Colombia in 2023, using medium-resolution Earth observation sources, such as Planet sensor satellite imagery, as well as using collaborative sources such as Open Street Map and local government information, among others."***
>
> **Sandra Liliana Moreno,** *National Administrative Department of Statistics of Colombia (DANE) / UN IAEG-SDGs WGGI*

SDGs in the Post-2025 GEO Work Programme

In late 2024, the EO4SDG community devised a concept for how GEO's cooperation on the SDG Agenda will advance as 2030 approaches. GEO hopes to accelerate the abilities of the Member Countries and Participation Organizations to co-produce user-centric solutions for global, societal, and environmental challenges through the "Earth Intelligence for All" Post-2025 Strategy. The Work Programme is reorganizing its former Initiative, Pilot, and Flagship elements into groups deemed Conveners or Research to Operations (R2O) activities to begin in January 2026.

MEMBER HIGHLIGHTS

> *As I began focusing on energy this past year, EO4SDG has been instrumental in connecting me with professionals who are also exploring the intersection of Earth observations and renewable energy. These connections have greatly enriched my understanding and expanded my professional network."*
>
> **Rafael Monge,** *U.S. National Renewable Energy Laboratory*

Conveners will be activities supporting connection and integration across the entire Work Programme along 8 thematic Focus Areas. EO4SDG recognized that the Convener model would be most sufficient for continued action on the Sustainable Development Goals, and submitted its proposal to the GEO Programme Board in November. Below is an excerpt of the convener's purpose:

"The EO4SDG Convener will help GEO organize to promote Earth Intelligence in support of the advancement of the UN SDG Agenda and the multilateral framework(s) on sustainable development to follow after 2030.

The cross-cutting nature of the SDG Agenda lays out paths for specific Earth intelligence solutions in support of human and environmental prosperity via targets and indicators. It is crucial that an outlet remains for the GEO community to keep sharing expertise and amplifying EO data and methodology successes forbsustainable development policy, and elevate external awareness of GEO's capacity to assist countries with progress monitoring and reporting as frameworks evolve. This convener will also reinforce the complementary nature of in-situ and remotely sensed EO data, geospatial data, and citizen science to advance cooperation between national statistical, mapping, and space agencies, and UN Custodian agencies. Likewise, it will be welcoming of new people from across the GEO community to bring multiple perspectives to the acceleration of sustainable development through technology.

The convener will play 3 key roles for the GEO community:

- *Internal and external communication of achievements to foster replication of successful Earth intelligence methods for sustainable development themes in coordination with the respective GWP elements.*

SDGs in the Post-2025 GEO Work Programme

- *Consulting GEO Members and Work Programme elements on navigating the SDG policy landscape for decision-making, solutions deployment, and engagement with UN Custodian Agencies.*
- *Advocating for GEO's participation in planning activities of the post-2030 sustainable development agenda and other MEAs to maintain a strong voice on the integration of Earth observations, ensuring it remains integral to decision-making at global, regional, national, and local levels."*

EO4SDG members provided valuable input through a survey and virtual discussion as we envisioned the objectives and preliminary work plan items for the convener. The process fostered reflection upon the Initiative's strengths and the potential for enhancement of the GEO community's contributions to the SDG Agenda through its existing capabilities. We will further refine the convener's structure, desired outputs, and membership through dialogue with internal and external partners throughout 2025.

MEMBER HIGHLIGHTS

> ***In collaboration with the UN-Habitat, we monitored SDG 11.3.1 Land Use Efficiency across 800+ cities worldwide and presented our results at ESA Urban Insights from Space (URBIS24) in Session on Mapping and modelling urban growth: from informal settlements to SDG indicators in September in Frascati, Italy (see attached presentation). We also developed globally applicable urban green mapping methods and tools., such as the Google Earth Engine app for mapping urban green using Sentinel-2 and Landsat data that is being user-tested."***
>
> **Yifang Ban,** *KTH Royal Institute of Technology*

Looking Ahead

The new year notes the 10-year mark for the Sustainable Development Goals and progress toward the UN's *Agenda 2030*. In addition to taking stock of major advances, EO4SDG will identify priority areas to address and partnerships to form on the road to 2030. In addition, EO4SDG will increase engagements with UN bodies advocating for expanded roles for Earth observations and geospatial information in the global sustainability framework that will follow.

In 2025, EO4SDG plans to hold a meeting of the entire EO4SDG Initiative team. Scheduled for the eve of the GEO Global Forum in May, this meeting is a key opportunity for EO4SDG to discuss what works in connecting EO with sustainable development. The meeting will support the identification of prospective partnerships with key Participating Organizations, Associates, and Work Programme elements, including connections to pursue during the Global Forum.

At the Global Forum, the Initiative will conduct the 6th EO4SDG Awards Ceremony to honor those making an impact on the 17 global goals. These Awards will again recognize productivity, innovation, novelty, and exemplary efforts in the use of Earth observations to support sustainable development. The 2025 Awards introduces a new category to acknowledge the work of youth and early career researchers. This cycle's Honorees will add to the 40 awards EO4SDG has granted since the start of the program.

In 2025, EO4SDG will continue its prosperous and flourishing communications and outreach efforts. The Initiative will boost its Instagram presence with a continued push for creative, informative, and fun posts. The Initiative will invite more and more people to be part of the 5 Simple Questions series. We plan to grow the successful EO4SDG Blog series to include new authors and introduce one or more new themes in the new year.

Building on progress in 2024, EO4SDG will continue to strengthen its connection with Regional GEOs. The Regional GEOs can play a key role in promoting exchange on best practices across GEO. Thus, these connections can seek ways to replicate or scale successful applications across countries efficiently or support uses of EO for regional-specific activities.

In 2025, the UNSC will review results of the Comprehensive Review of the global indicator framework, the annual High-level Political Forum on Sustainable Development (HLPF) will convene, and UN entities will continue planning for the post-2030 sustainable development framework. EO4SDG will actively monitor these efforts, especially to advocate for larger roles for EO in the SDGs and follow-on framework.

The new year will be an important transition year for the Initiative and GEO in general with the move to the Post-2025 Strategy and new Work Programme. At the end of 2025, EO4SDG will convert from being an Initiative in the GEO Work Programme to being a Convener. Thus, this transition brings significant opportunities for EO4SDG to conclude major activities as an Initiative, re-focus its roles and set priorities, pursue on-going and new partnerships, and organize to enter 2026 as an effective GEO Convener.

Looking Ahead

Through the year and carrying into the future as a Convener, EO4SDG will continue its pursuit of enabling the sustained and effective use of Earth observations to drive progress on meeting development challenges around the world and enabling progress on the SDGs.

Building on a productive 2024, EO4SDG is excited for the new year and all that awaits it. We welcome you to join the Initiative in helping people around the world use Earth observations to advance sustainable development and the world we share.

EARTH OBSERVATIONS FOR THE
SUSTAINABLE DEVELOPMENT GOALS

GEO GROUP ON
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