

A satellite image of the Lena River Delta in Russia, showing a complex network of dark blue and purple river channels winding through a landscape of green and brown vegetation. The channels are highly convoluted and interconnected, creating a maze-like pattern.

**Una breve introduzione al  
GROUP ON EARTH OBSERVATION  
(GEO)**

**Silvia Giamberini – IGG - CNR**

# Cosa è il Group on Earth Observation



The Group on Earth Observations (GEO) is an **intergovernmental partnership** that improves the **availability, access and use of Earth observations** for a sustainable planet.

GEO promotes **open, coordinated and sustained data sharing** and infrastructure for better research, policy making, decisions and action across many disciplines.

The GEO community focuses on three global priority engagement areas: the United Nations 2030 Agenda for Sustainable Development, the Paris Agreement, and the Sendai Framework for Disaster Risk Reduction.

## What are Earth observations?

Earth observations are **data and information collected about our planet, whether atmospheric, oceanic or terrestrial.**

This includes **space-based** or remotely-sensed data, as well as **ground-based** or *in situ* data. Coordinated and open Earth observations enable decision makers around the world to better understand the issues they face, in order to shape more effective policies.

## What does GEO offer?

In addition to over 70 Work Programme activities and initiatives that address global needs, coordination and knowledge gaps, the GEO community is building the **Global Earth Observation System of Systems** (GEOSS) and has already made more than **400 million data and information resources accessible** via [www.geoportal.org](http://www.geoportal.org).



# GEO supporta il monitoraggio degli Obiettivi per lo Sviluppo Sostenibile dell' ONU (SDGs)

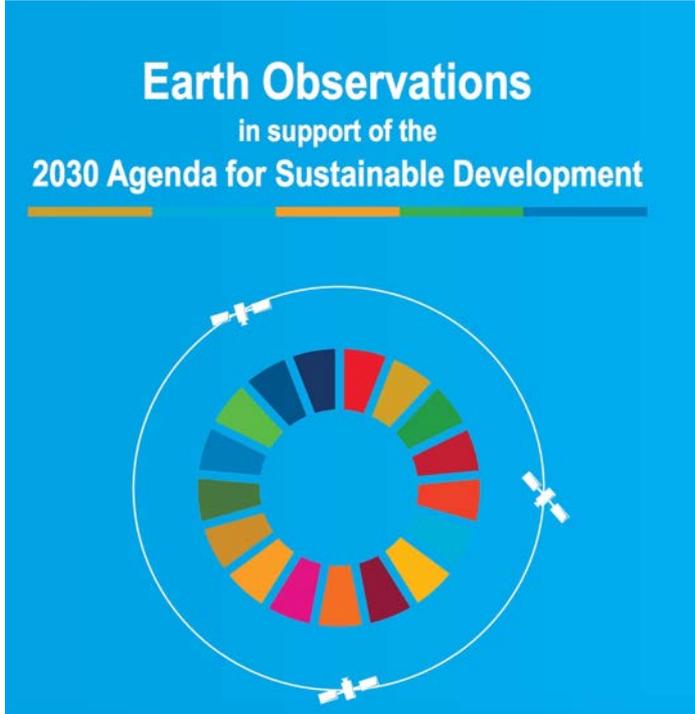


	Population distribution	Cities and infrastructure mapping	Elevation and topography	Land cover and use mapping	Oceanographic observations	Hydrological and water quality observations	Atmospheric and air quality monitoring	Biodiversity and ecosystem observations	Agricultural monitoring	Hazards, disasters and environmental impact monitoring
1 No poverty										
2 Zero hunger										
3 Good health and well-being										
4 Quality education										
5 Gender equality										
6 Clean water and sanitation										
7 Affordable and clean energy										
8 Decent work and economic growth										
9 Industry, Innovation and infrastructure										
10 Reduced inequalities										
11 Sustainable cities and communities										
12 Responsible consumption and production										
13 Climate action										
14 Life below water										
15 Life on land										
16 Peace, justice and strong institutions										
17 Partnerships for the goals										

*“Without timely, relevant, and disaggregated data, policymakers and their development partners will be unprepared to translate their promises into reality for communities worldwide.”*

<https://www.earthobservations.org/article.php?id=367>

[http://www.earthobservations.org/documents/publications/201703\\_geo\\_eo\\_for\\_2030\\_agenda.pdf](http://www.earthobservations.org/documents/publications/201703_geo_eo_for_2030_agenda.pdf)

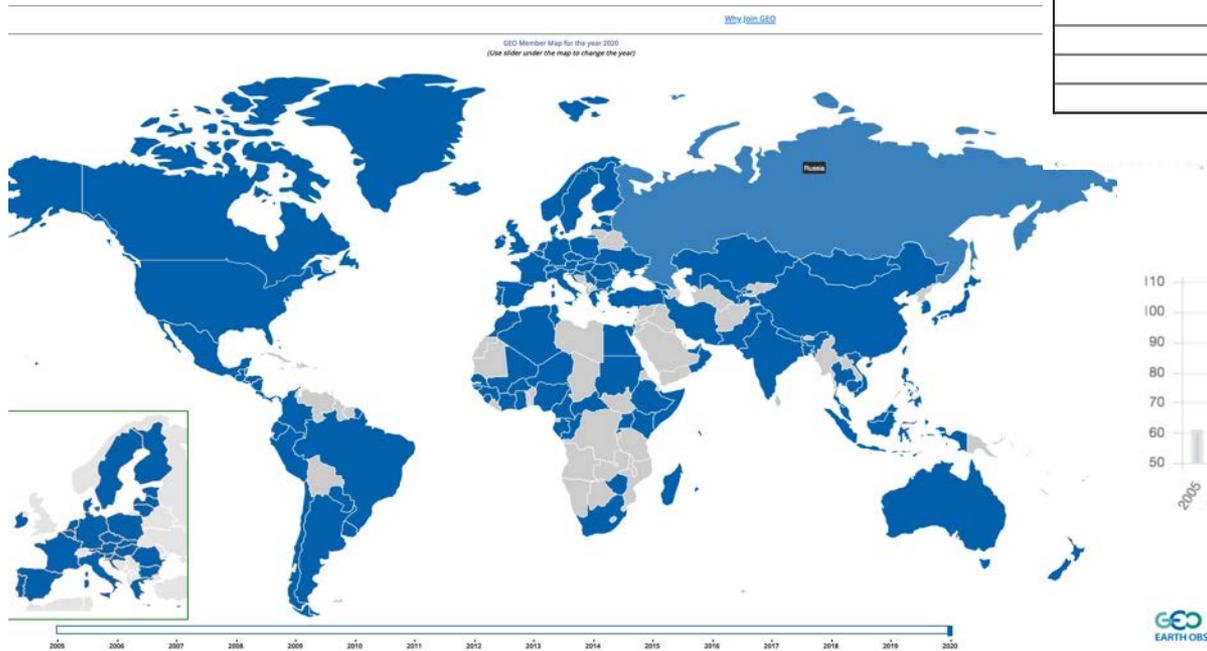




# GEO: Group on Earth Observations

## GEO: an intergovernmental body that promotes open Earth Observation data availability, access and use

<https://www.earthobservations.org/members.php>



Number of Members (2020)

Africa:	29
Americas:	19
Asia/Oceania:	22
C.I.S.:	6
Europe:	35
Total:	111



<https://www.earthobservations.org>







<https://www.youtube.com/watch?v=AIdC0aU47XY&list=PLDoDhwKfg32BTFqwJnRr3AJBaJJP76I0A>

## BARBARA J. RYAN



Barbara J. Ryan, is the Secretariat Director of the intergovernmental Group on Earth Observations (GEO) in Geneva, Switzerland. GEO is comprised of nearly 104 Member States, the European Commission, and 126 international scientific and technical partner organizations, including IAF.

Under Ryan's leadership, millions of satellite images and other Earth observation data have been made available to the general public at no charge, allowing scientists, planners and policy makers to make better-informed decisions on problems that transcend political boundaries. Her work addresses critical issues in agriculture, biodiversity, climate change, disaster planning, energy, health and water.

Since becoming Director of GEO in 2012, Ryan has worked to integrate Earth observation systems from around the world into a single, comprehensive system that uses coordinated data to understand how environmental factors impact human life. Like Ryan's career body of work, the system helps guide decision makers toward better agricultural, energy and land-use decisions.

After graduating from the State University of New York (SUNY) at Cortland with a degree in geology in 1974, Ryan joined the United States Geological Survey (USGS), the nation's largest civilian mapping agency. She became an expert in groundwater contamination and eventually was selected as staff assistant to the Department of the Interior's top official for water and science.

Ryan advanced steadily in the USGS, earning master's degrees in geography from the University of Denver and in civil engineering from Stanford University along the way. As associate director for geography at the USGS, she was responsible for the agency's remote sensing, geography and civilian mapping programmes, including the Landsat satellites. It was during this time she led the effort to change the decade-old Landsat data policy to full and open, an action resulting in more than 72 million scenes being downloaded globally to date. Ryan has served as chair of the international Committee on Earth Observation Satellites, which coordinates information from more than 100 civilian satellite missions, and in 2008 became director of the World Meteorological Organization's space programme. Ryan has been awarded an honorary doctorate of science degree from SUNY Cortland. She was recently named an Honorary Fellow of the American Geographical Society, and in January 2017, was one of 10 global Leaders to be named to the Geospatial World Forum's Hall of Fame.

<http://www.iafastro.org/biographie/barbara-j-ryan/>

# La visione di GEO sui benefici dell' Open Data

## II. THE MANY DIVERSE OPPORTUNITIES FROM OPEN DATA

### A. Supporting Broad Economic Benefits and Growth

### B. Enhancing Social Welfare

1. Evidence of societal benefits, both individual and collective
2. Meeting society's expectations for access to and use of digital information
3. Promoting reputational benefits
4. Implementing ethical principles

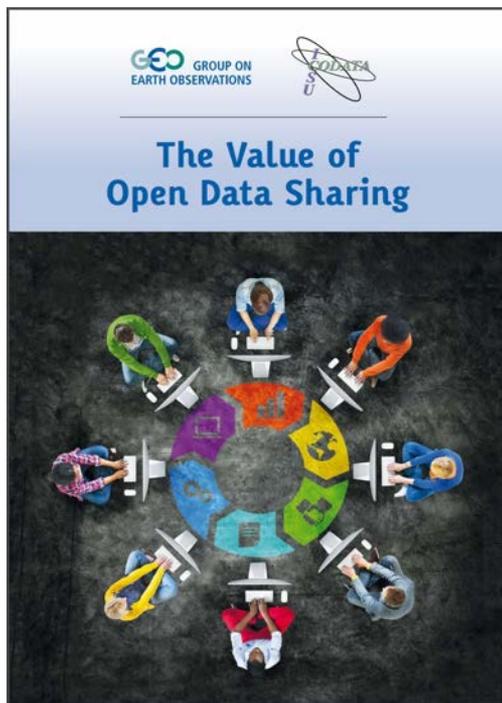
### C. Growing Research and Innovation Opportunities

1. Enhancing interdisciplinary and international research
2. Enabling data mining
3. Permitting interoperability in the creation of new data sets
4. Reducing inefficiencies, including duplication of research
5. Promoting new research and new types of research
6. Facilitating citizen scientists and crowdsourcing approaches
7. Stimulating downstream applications and commercial innovation
8. Encouraging the verification of previous results

### D. Facilitating the Education of New Generations

### E. Benefits for Effective Governance and Policy Making

1. Improving decision making
2. Demonstrating leadership and broadening influence
3. Promoting capacity building in developing countries
4. Helping to implement "data repatriation" objectives of developing countries
5. Building freedom and trust



[http://www.earthobservations.org/documents/dsp/20151130\\_the\\_value\\_of\\_open\\_data\\_sharing.pdf](http://www.earthobservations.org/documents/dsp/20151130_the_value_of_open_data_sharing.pdf)

# 2020-2022 GEO Work Programme

## 70 Work Programme activities

[https://www.earthobservations.org/geoss\\_wp.php](https://www.earthobservations.org/geoss_wp.php)

## Temi principali

- Open EO Data
- GEO & SDGs
- Climate Change
- Disaster Resilience
- Sustainable Urban Development
- Biodiversity and Ecosystem Sustainability
- Energy and Mineral Resources Management
- Food Security and Sustainable Agriculture
- Infrastructure and Transportation Management
- Public Health Surveillance
- Water Resources Management

### Implementation Plans

GEO Flagships			
GEO Biodiversity Observation Network GEO BON	GEO Global Agricultural Monitoring GEOGLAM	Global Forest Observation Initiative GFOI	Global Observation System for GOS4P
GEO Initiatives			
AquaWatch AQUAWATCH	Data Access for Risk Management GEO-DARMA	Data Integration and Analysis System DIAS	Earth Observations for EO4D
GEO Capacity Building in North Africa, Middle East, Balkans and Black Sea Region GEO-CRADLE	GEO Global Water Sustainability GEO-GLOWS	GEO Human Planet HUMAN-PLANET	GEO Land Degradation GEO-LD
Geohazard Super-sites and Natural Laboratories GSNL	Global Drought Information System GDIS	Global Network for Observations and Information in Mountain Environments GEO-GNOME	Global Observation System for GOS4P
Oceans and Society: Blue Planet BLUE-PLANET			
GEO Community Activities			
Advancing Communication Infrastructure and Services ACIS	Arctic GEOSS ARCTIC-GEOSS	Chinese High-resolution Satellite Data Resources CSDR	Climate Observation, Services and CLIMAT
Digital Earth Africa DE-AFRICA	Earth Observation and Copernicus in support of Sentinel Monitoring EOD4ENVI-MONITORING	Earth Observation Industrial Innovation Platform for Sustainable Development EO-IP	Earth Observations for EO4D
Earth Observations for the Water-Energy-Food Nexus EO4WEEF	Enhancing Food Security in African Agricultural Systems with the Support of Remote Sensing AFRICULTURES	GEO Citizen Science GEO-CITSCI	GEO Essential GEO-E
Global Agricultural Drought Monitoring AGRI-DROUGHT	Global Crop Pest and Disease Habitat Monitoring and Risk Forecasting CROP-PEST-MONITORING	Global Ecosystems and Environment Observation Analysis Research Cooperation GEOARC	Global Flood Area GLOF
Global Observation of Deltas and Estuaries DELTA-ESTUARY	In-Situ Observations and Applications for Ecosystem Status of China and Central Asia IN-SITU-ECS	Multi-source Synergized Quantitative Remote Sensing Products and Services MUSTQ	Next Generation Earth Observation Services NEXT-EOSS
Space Climate Observatory SCO	The International Grand Global Ensemble TIGGE	Understanding the Impacts and Value of Earth Observations GEO-VALUE	Night-Time Light Remote Sensing for Sustainable Development Goals NIGHT-LIGHT
			Space and Security SPACE-SECURITY
Regional GEOs			
African Group on Earth Observations AFRIGEO	Americas Group on Earth Observations AMERIGEO	Asia-Oceania Group on Earth Observations AGGEO	European Group on Earth Observations EURGEO
Foundational Tasks			
GEO Engagement Priorities Coordination	GEOSS Data, Information and Knowledge Resources	GEOSS Infrastructure Development	GEO Work Programme Support
			GEO Secretariat Operations

[Info on GEOSS portal:](#)

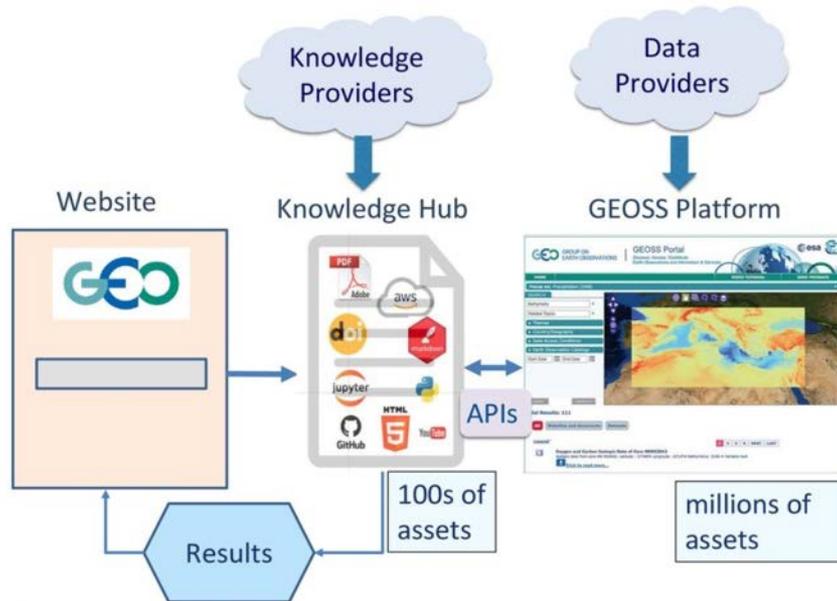
[https://www.earthobservations.org/geo\\_blog\\_obs.php?id=298](https://www.earthobservations.org/geo_blog_obs.php?id=298)

<https://www.geoportal.org/?f:dataSource=dab>

The screenshot displays the GEOSS Portal search interface. At the top, there is a header with the GEOSS Portal logo and a navigation menu. Below the header, the main search area is visible, featuring a search bar with the placeholder text "Enter search words". To the right of the search bar are icons for search, share, and close. Below the search bar, there is a section for "ADVANCED SEARCH" with several filters:

- Geolocation:** A dropdown menu with a globe icon and an input field labeled "Enter location".
- Earth observations catalogs:** A dropdown menu.
- Thematic areas:** A dropdown menu.
- Relation to the selected area:** Three radio buttons: "Overlaps" (selected), "Contains", and "Disjoint".
- Date range:** A date range selector with a yellow bar. The start date is "06.05.2000" and the end date is "06.05.2020". Below the bar are four radio buttons: "Last 10 Years", "Last Year", "Last Month", and "Last Week".

## Results-oriented GEOSS: A framework for transforming Earth observation data to knowledge for decision making



Component of GEOSS Infrastructure  
(integrated with Portal, Platform)

Repository for GWP results

Discovery of reproducible, reusable  
methods, software to support UN  
conventions and treaties

# Due parole su GEO Italy

[www.geoitaly.org](http://www.geoitaly.org)

**l'Italia coordina molte attività che fanno parte del GEO Strategic Work Programme, che comprendono una GEO Flagship (GOS4M, [www.gos4m.org](http://www.gos4m.org)), GEO initiative (GEO ECO, GEO GNOME) e varie foundational tasks**

## **La governance:**

**1** Rappresentante nazionale (GEO Principal): Nicola Pirrone(CNR)

**1** Un Alternate del GEO Principal: Giovanni Rum (ASI)

**Un GEO Programme Board con tre rappresentanti**

**Un gruppo di esperti associati al GEO Programme Board**

**Un gruppo di esperti designati per ogni area tematica strategica**



# RISORSE PER SAPERNE DI PIÙ

<https://www.earthobservations.org/cb.php>

The capacity building activities in GEO aims to assist developed and developing countries and regions in increasing their technical and human capacity to acquire, share, store, maintain and fully utilize Earth observation data and information in the decision-making process; demonstrate solutions, disseminate best practices showcasing the value of Earth observations and promote the engagement of institutional users worldwide

## **QUALI INFORMAZIONI SI TROVANO IN QUESTA PAGINA:**

- Data Catalogs and Portals**
- Training Courses and Tutorials**
- Training Material**
- Open Source Software**

Interactive webinars and virtual discussions  
**GEO VIRTUAL SYMPOSIUM 2020**  
15 - 19 JUNE 2020  
**Save the date!**

