



BUILDING A GLOBAL
EARTH OBSERVATION
SYSTEM OF SYSTEMS



OBSERVATIONS. INFORMATION. DECISIONS.

Global environmental change is placing enormous pressure on the Earth's natural resources and on human society. It is altering the climate, multiplying disasters, degrading the oceans and forests, triggering new diseases and depleting supplies of food and freshwater. Preventing such dramatic consequences will require informed responses from governments, the private sector and civil society. To be effective, these responses must be grounded in comprehensive and timely information. The way we inform decision makers must change. More than ever before, decision makers, managers and experts must have [access to the information they need, when they need it and in a format they can use.](#)

Today, vital information about our planet is being gathered by land, sea, air and space-based Earth observation systems. The problem is that the current process of collecting, storing, analyzing and distributing this information remains fragmented, incomplete or redundant. The world has an urgent need for a [coordinated, comprehensive and sustained information system.](#)

GEO: WORKING TOGETHER

Recognizing the need to link and expand Earth Observations systems, over 100 governments and leading international organizations have founded the [Group on Earth Observations](#), or GEO, to coordinate the construction of a Global Earth Observation System of Systems (GEOSS) by the year 2015.

The implementation of GEOSS is being ensured by Members and Participating Organizations [working together](#) on specific programmes and activities under the guidance of four technical Committees.

This coalition of countries and international organizations, collaborating under the auspices of GEO, has already transformed the ability of governments to manage their resources and promote the well-being of their citizens.

GEO'S CREDENTIALS

GEO was established in February 2005 after the World Summit on Sustainable Development, the Group of Eight leading industrialized countries (G8) and three ministerial Earth Observation Summits each called for improving observation systems.

GEO is governed by a Plenary, takes decisions by consensus of its Members and is funded by voluntary contributions.

The GEO Secretariat plays a lead role in coordinating the Global Earth Observation System of Systems effort.

GEO: FACILITATING. COORDINATING. STRENGTHENING.

GEO links together all existing Earth observation systems and organizations, allowing users to gain a complete picture of the planet.

GEO ensures that Earth observation data and information remain universally accessible as a global public good.

GEO builds trust and promotes multi-stakeholder collaboration on information gathering and dissemination; in this way, it encourages international cooperation on solving complex global problems.

GEO is supporting individuals, institutions and governments eager to acquire the skills and technologies they need to use Earth observations more effectively.

THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS



ACCESS. CONNECTING. USERS.

The Global Earth Observation System of Systems will provide [decision-support tools](#) to a wide variety of [users](#). As with the Internet, GEOSS will be a global and flexible network of content providers allowing decision makers to access an extraordinary range of information at their desk.

This 'system of systems' will proactively [link](#) together existing and planned [observing systems](#) around the world and support the development of new systems where gaps currently exist. It will promote [common technical standards](#) so that data from the thousands of different instruments can be combined into [coherent data sets](#).

The 'GEOPortal' offers a single Internet access point for users seeking data, imagery and analytical software packages relevant to all parts of the globe. It [connects users](#) to existing data bases and portals and provides reliable, up-to-date and user friendly information – vital for the work of decision makers, planners and emergency managers. For users with limited or no access to the Internet, similar information is available via the 'GEONETCast' network of telecommunication satellites.

SYNERGIES. BENEFITS. SOLUTIONS.

The Global Earth Observation System of Systems is simultaneously addressing [nine areas of critical importance](#) to people and society. It aims to empower the international community to protect itself against natural and human-induced [disasters](#), understand the environmental sources of [health](#) hazards, manage [energy](#) resources, respond to [climate](#) change and its impacts, safeguard [water](#) resources, improve [weather](#) forecasts, manage [ecosystems](#), promote sustainable [agriculture](#) and conserve [biodiversity](#).

GEOSS coordinates a multitude of complex and interrelated issues simultaneously. This cross-cutting approach avoids unnecessary duplication, encourages synergies between systems and ensures substantial economic, societal and environmental benefits.

GEOS: PROVIDING SOLUTIONS



Forecasting meningitis outbreaks

Recognizing that knowledge of environmental risk factors help provide early warnings of epidemics in Africa's 'meningitis belt', GEO is helping health experts intergrate this information into proactive vaccination programmes for meningitis.



Protecting biodiversity

The GEO Biodiversity Observation Network is combining ground and ocean-based observations with imagery from satellites to improve assessments of threatened plants and animals, track the spread of invasive alien species and promote information sharing and cost savings.



Improving climate observations in Africa

A partnership of climate information providers and users is strengthening observation networks and data analyses in Africa, thus empowering the region's policymakers while supporting global climate modeling and weather prediction.



Supporting disaster management in Central and South America

SERVIR is a system which provides a continuous flow of satellite observations on rainfall, coastal areas, river beds and other environmental variables to help decision makers respond to disasters and focus their efforts where they will have the greatest impact.



Managing water resources in Asia

Eighteen countries are cooperating through the Asian Water Cycle Initiative to improve decision making on water resources. The Initiative is linking users to systems and support tools and establishing local and global data sharing policies.



Promoting solar energy planning

GEO is implementing a solar data programme that offers one-stop access to databases, applications and the information relating to solar radiation in order to better inform energy policy planning.



Improving agriculture and fisheries management

GEO Members are coordinating the use of seasonal forecasts in agriculture to alleviate food shortages due to droughts and desertification. GEO is increasing the use of Earth Observations in forestry, fisheries and aquaculture.



Mapping and classifying ecosystems

Under GEO, projects have been initiated to classify and map African ecosystems. Similar projects are being launched around the globe to help natural resource industries and managers evaluate resource production potential and limits.



Forecasting weather for the 2008 Beijing Olympics

The Olympic Games are a major international event in which weather can have a significant impact. A number of international weather systems will be coordinated to provide real-time forecasts to users, including information on temperature, humidity, wind and rain for Beijing and other future Olympic venues.

“Observing the Earth and monitoring its host of complex systems is a role no one organization masters. GEO is providing the structure and opportunity for governments and organizations to actively seek better solutions for our changing planet.”

GEOSS as an emerging public infrastructure could prove as essential to economic and social progress in the 21st century as new transport and communications systems were in the 20th.”

José Achache
GEO Secretariat Director





For more information please contact:

GEO Secretariat

7 bis, avenue de la Paix, CP 2300

CH-1211 Geneva 2, Switzerland

E-mail : secretariat@geosec.org

Telephone : +41 22 730 8505

www.earthobservations.org

