GEO's Efforts in Support of the Paris Agreement

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The Group on Earth Observations

GEO is comprised of 103 Member States, including the European Commission, and 103 Participating Organizations. Established in 2005, GEO strives to improve the world's Earth observation systems and provide policy makers and scientists with accurate and useful data that can be used to make informed decisions on issues affecting the planet.

Climate change – central to GEO's activities

Supporting sustainable development agendas while tackling the effects of climate change reveals the inter-linkages between climate and GEO's Societal Benefit Areas (SBAs). Climate change is affecting most, if not all, SBAs, in particular:

Food Security and Sustainable Agriculture, Disaster Resilience, Health Surveillance and Water Management. GEO commits to engage providers and users of climate data resources to ensure a sustained dialogue around the information needs of those seeking to integrate climate products and services into adaptation processes and decisions.

Building GEOSS

GEO's primary focus is to develop a Global Earth Observation System of Systems (GEOSS) to enhance the ability of end-users to discover and access Earth observation data and convert it to useable and useful information. GEOSS is a federated, brokered system that links a myriad of existing data portals and observing systems. The GEOSS Portal makes information and knowledge available in support of effective policy responses for climate change adaptation and mitigation: www.geoportal.org.

Climate change cuts across all GEO Societal Benefit Areas (SBAs)

In the GEO Mexico City Declaration, adopted in November 2015, Ministers affirmed that GEO and its Earth observations and information will support the implementation of the United Nations Framework Convention on Climate Change

The GEO Carbon and GHG Initiative -

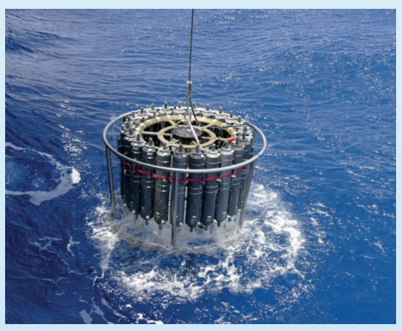
Towards policy-relevant global carbon cycle observation and analysis

Mission

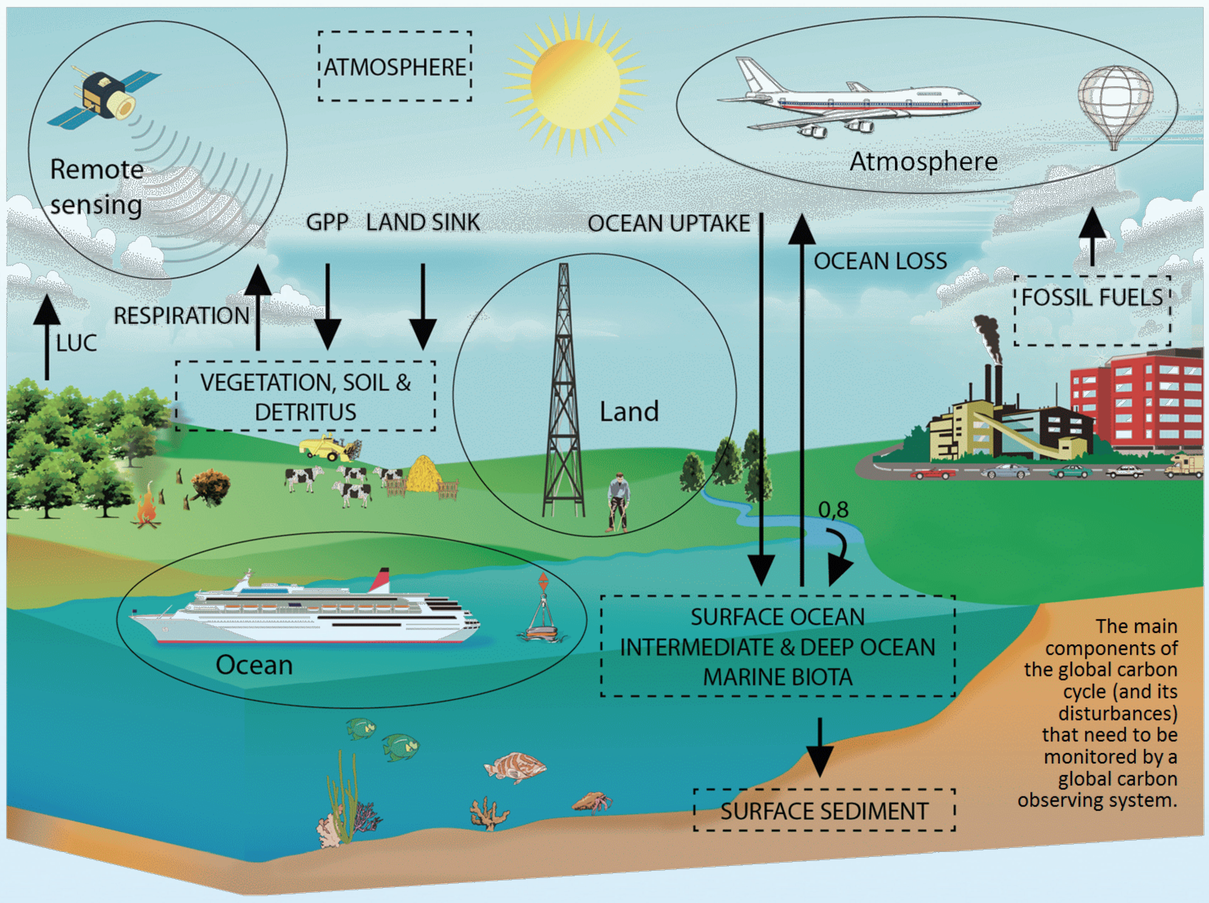
The *GEO Carbon and GHG Initiative* is a global effort proposed in the framework of GEO to promote interoperability and provide integration across different parts of the system, particularly at domain interfaces. The final users, in addition to the scientific community, are countries and decision makers that can benefit from the improved information flow and use it to address climate change policy. The approach builds on existing initiatives and networks, supporting their continuity and coherence, facilitating their cooperation and interoperability, and filling in the missing pieces to obtain a comprehensive, globally coordinated carbon and greenhouse gases (GHGs) observation and analysis system.

Objective

The main aim is to facilitate cooperation to develop a coordinated system of observations across domains and evaluation of changes in the carbon and other cycles, and GHG emissions as they relate to human activities and climate change, and to provide decision makers with timely and reliable policy-relevant information.



The *GEO Carbon and GHG Initiative* cross-cuts all domains (atmosphere, land, ocean) and will be coordinated with other observing systems, complementing each other for the carbon and GHG component. Full coordination is envisaged in particular with the Integrated Global Greenhouse Gas Information System (IG3IS). The initiative seeks to contribute to GCOS with a particular focus on carbon and GHGs.



Activities

***Task 1* – User needs and policy interface:** to engage with users and policy makers and ensure consistency with their evolving needs, to drive the activities of the GEO Carbon and GHG Initiative and address the policy agenda.

***Task 2* – Data access and availability:** a carbon cycle and GHGs monitoring system to provide long-term, high quality and open access to near-real-time data and data products, complying with the GEOSS principles, across domains.

***Task 3* – Optimization of observational networks:** to develop and implement on an ongoing basis, a procedure for obtaining observations of identified essential carbon cycle variables within user-defined specifications and at minimum total cost.

***Task 4* – Budget calculations and breakdown across scales to inform policy implementation:** to develop consistent budgets of GHGs (CO_2, CH_4, and N_2O) from urban/local to global scales using a combination of observations, inventories, models and data assimilation techniques.

Policy relevance

The Initiative is motivated by the long-term vision of a data-driven system to provide comprehensive knowledge on changes in the global carbon cycle and GHG emissions as a result of human activities and global change, and to support decision makers with timely policy-relevant information to inform mitigation and adaptation actions. In particular, the policy need for research, systematic observations and scientific data emerges from the Paris Agreement (Article 7.7 on "scientific knowledge and systematic observations" and Article 14.1 on "global stocktake"). All activities and deliverables of this Initiative will be aligned, improved and adapted to address the climate policy agenda, particularly to contribute to the successful implementation of the Paris Agreement.

Contributors to the GEO Carbon and GHG Initiative: