



GEOSS Asia-Pacific Symposium

*Earth Observations Supporting the Implementation
of the SDGs in the Asia Pacific Region*

Date

11th-13th January 2017

Venue

Tokyo International Exchange Center, Plaza Heisei, Japan



The GEO Carbon and GHG Initiative

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Euro-Mediterranean Center on Climate Change, Italy





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GEO
CARBON AND
GHG INITIATIVE

GEO-C: toward policy-relevant global carbon cycle observation and analysis

The main aim of the GEO Carbon and GHG Initiative is to facilitate cooperation to develop a coordinated system of domain overarching observations (atmosphere, land, oceans) from different platforms (space-based, air- and ship-borne and in-situ monitoring systems) for monitoring and evaluating 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.





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GEO-C will

- establish a common platform to plan joint strategies and implement joint activities
- engage with users and policy makers and ensure the consistency with their needs, to drive the activities of the GEO Carbon and GHG Initiative and address the policy agenda.
- provide long-term, high quality and open access near-real-time data and data products, complying with the GEOSS principles, from a domain-overarching carbon cycle and GHGs monitoring system.
- develop and implement on an ongoing basis, a procedure for achieving observations of identified essential carbon cycle variables within user-defined specifications and at minimum total cost.
- develop consistent budgets of GHGs from urban to global scales using a combination of observations, inventories, models and data assimilation techniques.

Ultimately, decision makers will be provided with policy-relevant data, information and products, of sufficient accuracy, coverage and timeliness that will support them in addressing climate policies and anthropogenic climate change.





Engagement Priorities 2017-2019

Five priorities:

- 2030 Agenda for Sustainable Development
- Climate Change – Greenhouse Gas Monitoring
- Disaster Risk Reduction
- Resilient cities and human settlements
- Ecosystem accounting



Criteria:

- **Political relevance** building on well-established, recent or upcoming international agreements
- **Strong and active communities and activities in GEO**
- **Potential to secure resources** → ... looking for

Paris Agreement

10 yrs of history
(GEO carbon task + GEO
Carbon Community of Practice)

- All 22 **Initiatives** contribute to SDGs (specific targets), for example

[illegible]



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GEO-C is directly relevant to the following SDGs Goals:

CLIMATE SDG

SDGs Goal	Possible GEO-C contribution
Goal 13. Take urgent action to combat climate change and its impacts	
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	By providing information useful for strategies on reduction of climate risk.
13.2 Integrate climate change measures into national policies, strategies and planning	By providing information needed for climate policies, strategies and planning.
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	By providing information important for raising awareness and educational purposes, and that are needed for adaptation and mitigation strategies.
13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	The GEO Carbon and GHG Initiative is global, and should carefully address developing countries' needs, including the provision of information relevant to climate change-related planning and management.

GEO-C is directly relevant to the following SDGs Goals:

OCEAN and ECOSYSTEMS SDGs

SDGs Goal	Possible GEO-C contribution
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	The GEO Carbon and GHG Initiative will measure, among others, ocean acidification (e.g. pH, pCO ₂) that is not only a measure of the ocean status, but also of CO ₂ uptake from the atmosphere.
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	By monitoring forests carbon stocks and fluxes. These data are needed for forest conservation, and studies on biodiversity, forest services, etc.
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	By monitoring forests carbon stocks and fluxes. These data are needed for sustainable forest management.
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Soil carbon management is a key activity to combat desertification and land degradation.



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GEO-C can be indirectly relevant to the following SDGs Goals

SDGs Goal	Possible GEO-C contribution
Goal 1. End poverty in all its forms everywhere	By providing information for policy strategies to reduce the poor's exposure and vulnerability to climate-related extreme events.
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	By providing results useful to monitor and predict climate change and its extremes and the following impacts on agriculture, and to better manage land while conserving carbon stocks.
Goal 3. Ensure healthy lives and promote well-being for all at all ages	Climate change implications on health and well-being can be significant.
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	Well preserved and managed carbon stocks, like forest plantations, can be a renewable source of energy.
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	By providing information on carbon emissions, that are the basis for the carbon footprint of material production and consumption along their entire life cycle.
Goal 10. Reduce inequality within and among countries	Climate change can trigger mass migration, and so climate-relevant information should be taken into account by migration policies.
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	Cities are usually hotspots of carbon and GHG emissions. Information on carbon cycle and GHG sources and sinks, and how to manage them at urban level, is very important for mitigation of and resilience to climate change.
Goal 12. Ensure sustainable consumption and production patterns	Natural resources are often directly linked to carbon cycle, and information on it is the basis for the carbon footprint of material production and consumption.