

Draft Concept Note for the 2nd GEO Climate Workshop

This document is submitted to the Program Board for discussion.

1 WORKSHOP OBJECTIVES

The overall objectives of this workshop are to:

1. Identify the climate pillars for primary pilot activities, and develop 1 or 2 pilot activities for possible inclusion in the 2020-2022 Work Programme;
2. Initiate a roadmap of potential climate-related activities within the scope of GEO; and
3. Initiate a set of supplementary guidelines for the consideration in a supplementary guidance report to the NAP process on the use and potential of Earth Observations.

2 INTRODUCTION

The overarching goal of these workshops has been to demonstrate the value that GEO can bring to the question of climate impacts in general, and the Paris Agreement process in particular. This second Workshop will build upon the outcomes and recommendations from the first Workshop, and continue to focus GEO's support of the Paris Agreement. The objectives of the 1st GEO Climate Workshop, held 13 June 2018 in Geneva, Switzerland, were:

- Develop an enhanced understanding of GEO's role in implementing the Paris Agreement; involvement of relevant stakeholders;
- Identify gaps of current activities and opportunities; and
- Develop recommendations to better align ongoing activities (within or outside the GEO community) or potential new activities.

These objectives were partially achieved through a mapping exercise of current GEO activities to the Paris Agreement Pillars. All the presentations and reports of the 1st Workshop can be found in the following links:

- GEO Symposium (see session 7, The Role of Earth Observations in Supporting the Paris Climate Agreement) http://www.earthobservations.org/me_201806_wps.php?t=outcomes
- GEO Climate Workshop (including mapping exercise which is in the presentation of "Results of GEO Work Programme (Andre Obregon – GEO Secretariat)") http://www.earthobservations.org/me_201806_wps.php?t=climate_workshop

From the 1st Workshop, three recommendations were delivered to the GEO Programme Board (in no particular order):

- Establish a coordination mechanism for climate across the GEO Work Programme:
 - Focal points nominated by activities;
 - May have specific focus/policy area e.g. adaptation.
- Develop Pilots for dedicated tasks within the existing activities e.g. on adaptation:
 - Initially case studies to demonstrate uptake and information flow through the end-to-end value chain.

- Mid-term target: GEO to formulate supplementary guidance report to NAP process on the use and potential of Earth Observations.

At the GEO Plenary in Kyoto, Japan, the Paris Agreement Workshop participants further agreed the following, also in no particular order:

- GEO should strengthen involvement in the UNFCCC process as the global response strengthens.
- A coordination mechanism is required across the GEO Work Programme: Mitigation, Adaptation, Loss and Damage, National Reporting and Global Stocktake, Capacity Development and Technology Transfer (as well as infrastructure support).
- Mapping the potential of Earth observation to provide informed decisions is the first step. Now pilots should be developed to demonstrate information flow across the value chain.
- Terrestrial ecosystems and oceans provide important sinks but are also vulnerable to climate change. Adaptation needs to consider these ‘services’ by nature and Earth observation is a key instrument to guide measures to preserve them.
- GEO members: your national contribution to GEO is to strengthen the existing in-situ observational capacities, whether national agencies or in research infrastructures, and encourage them to provide FAIR and open data. In return, you will receive knowledge through those observations to guide your national action plan.

While the Plenary outcomes map nicely to the 1st Workshop outcomes, what is worthy of attention at the next workshop is to develop a pilot capability in support of Recommendation 2.

The first Objective (Identify the climate pillars for primary pilot activities and develop 1 – 2 pilot activities for possible inclusion in the 2020-2022 Work Programme) stems from the mapping exercise for the 1st Workshop, and from the relationships shown in Figure 1, below.

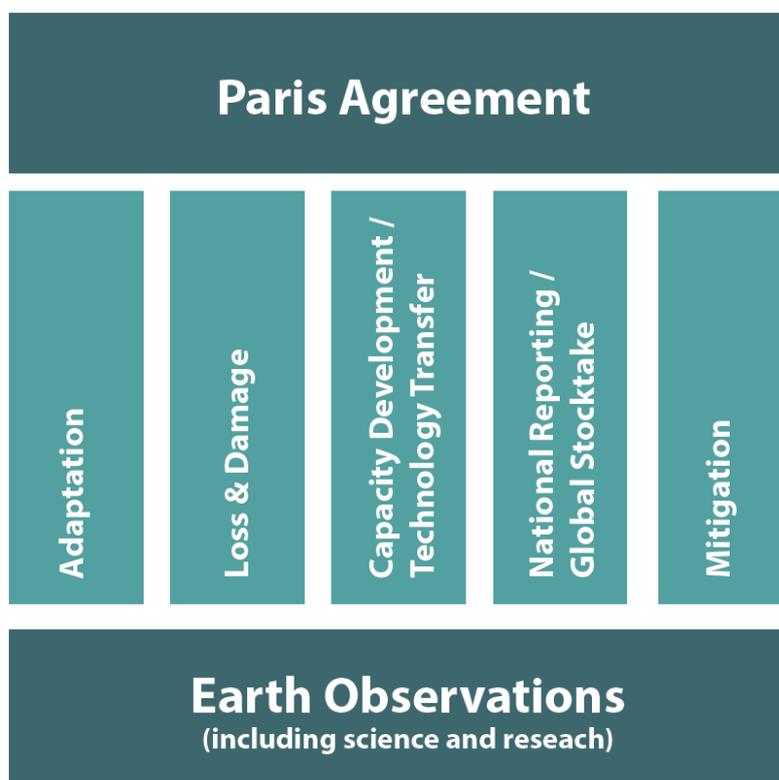


Figure 1. Pillars relating to articles in the Paris Agreement to which Earth observations are foundational. Refer to Annex B for additional information on the pillars.

This 2nd Workshop is expected to identify one or two pillars for which enough data and resources are available to initiate 1 - 2 pilot projects. These pillars will have one or more case studies identified so that teams may demonstrate uptake and information flow through the end-to-end value chain. Besides clarifying how the GEO work supports the Paris Agreement, this exercise will also provide further evidence of the value of GEO in the policy arena.

The second Objective (Initiate a roadmap of potential climate-related activities within the scope of GEO), will place the other pillars and potential case studies onto a longer-term draft roadmap for consideration by the GEO community.

In advance of the 2nd workshop, the Call for submissions to the GEO 2020-2022 Work Programme will ask for any climate-related activities already in progress. Any submissions during the Call will be factored into workshop discussions.

The third Objective (Initiate a set of supplementary guidelines for the NAP process), will provide GEO and Workshop participants an opportunity to gather best-practices and other advice to enable better implementation of National Adaptation Plans.

3 WHO SHOULD ATTEND?

The objectives of this 2nd Workshop call for expertise from mid-level and senior managers, subject-matter experts, and national climate-relevant ministries. This is a wide range of expertise, and so workshop will be divided into two parts.

The first part will concentrate on GEO-internal efforts, including objectives 1 and 2, and attendance from GEO Work Programme leads is encouraged. The first part of this workshop is envisioned to be held during the GEO Work Programme Symposium in late May. Representatives from GEO Flagships and Initiatives with climate elements or a climate focus are encouraged to attend.

The second part of the workshop will be held during the GEO Ministerial in Canberra, Australia. Key to this decision is the fact that objective 3 can best be addressed with the results from several major conferences happening during 2019 which will have an impact on these conversations. The conferences include, but are not limited to, the 49th Session of the IPCC meets in Kyoto, Japan in early May and the 50th session is in mid-August; the UN Climate Change Conference takes place in Bonn in June 2019; and the GEO Ministerial takes place in Canberra, Australia in November 2019. For this 2nd part, national representatives of UNFCCC technical bodies, representatives of relevant UN organizations and programs, representatives of IPCC, and anyone involved with Paris Agreement implementation are especially welcome. In addition, representatives from departments or organizations concerned with strategic planning of climate-focused activities are most welcome to attend. It is hoped that many of these attendees will be at the GEO Ministerial Week.

In addition, we can leverage the Ministerial emphasis on island nations to focus NAPs towards that subject, if desired.

4 EXPECTED OUTCOMES

- List of potential case studies for all climate pillars
- Draft identification of near-term and long-term activities for the GEO community
- One or two confirmed pilot case study topics for completion by the next Workshop (2020)
- Initial set of guidance for implementing NAPs.

5 BACKGROUND INFORMATION

Earth observations can support effective policy and decision making for climate change mitigation and adaptation. The Group on Earth Observations (GEO) is working to enhance global observation systems in support of the Paris Climate Agreement¹, which was adopted in 2015 and entered into force in 2016. GEO's strategic engagement priorities include the Paris Agreement, the UN 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction.

Climate change cuts across all areas of GEO's work, as highlighted in the GEO Strategic Plan², which emphasizes the crucial role that EO can play in addressing climate change and supporting the work of the United Nations Framework Convention on Climate Change (UNFCCC). The Paris Agreement calls on Parties to “strengthen scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making” (Article 7.7c).

In 2016, GEO was endorsed to have independent eligibility to apply for side events and exhibits at UNFCCC Sessions, demonstrating the increasing recognition of the value of EO for the Convention. The Subsidiary Body for Scientific and Technological Advice (SBSTA) has recently increased emphasis on “systematic observations” - a term used within the UNFCCC context for EO. At COP 22 (Marrakech, 2016), an Earth Information Day³ was held to connect information and requirements between the science community, Party and non-Party stakeholders to benefit the implementation of the Paris Agreement. The event featured speakers from the UN and international organizations, including GEO, and the scientific community. Ahead of COP 23 (Bonn, 2017), an Information Note⁴ by the SBSTA Chair was presented to support Parties in their work at SBSTA 47⁵ on systematic observations, listing GEO as a key partner. SBSTA 47 noted, among other things, the “increasing capability to systematically monitor greenhouse gas concentrations and emissions, through in situ as well as satellite observations, and its relevance in support of the Paris Agreement”, and “encouraged Parties and relevant organizations to enhance systematic observations related to the monitoring of GCOS essential climate variables and the understanding and prediction of extreme events and slow onset events”. During SBSTA 47, the SBSTA Chair met with members of the systematic observation community including WMO, GCOS, CEOS, CGMS, GEO, WCRP and IPCC for an informal strategy meeting, looking at how the observation community can synergize its work to support processes for annual reports on the state of the climate, the global stocktake and for the National Adaptation Plan (NAP) and Loss & Damage work streams.

GEO articulated the potential of EO to respond to specific articles in the Paris Agreement at COP-23 during the exhibition and a joint Side Event with GCOS and RESTEC on “Integrated observations for mitigation and adaptation & Practical support to Parties”. The event highlighted the importance of collaborative work and partnerships to scale up data solutions at the international and national levels. This was followed by the Bonn Declaration from the UN/Germany International Conference on International Cooperation for Low Emission and Resilient Societies which calls on “the World Meteorological Organization, other relevant United Nations entities, the Group on Earth Observations, and other relevant organizations, to facilitate together the identification of relevant satellite data and information as a way to respond to the demand for such data and information from stakeholders, particularly from developing countries, for the implementation of the Sendai Framework, the Paris agreement and the 2030 Agenda for Sustainable Development.” Recently, heads of space agencies acknowledged the requirement for sustained, high accuracy space observations. Important progress is made by the satellite community, in collaboration with GCOS, on the development of an Inventory of

1 http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

2 http://www.earthobservations.org/documents/GEO_Strategic_Plan_2016_2025_Implementing_GEOSS.pdf

3 https://unfccc.int/files/science/workstreams/systematic_observation/application/pdf/earthinformationday.2016.1.summaryreport.pdf

4 http://unfccc.int/files/science/workstreams/systematic_observation/application/pdf/so_2017_1_informationnote_29.10.17.pdf

5 <http://unfccc.int/resource/docs/2017/sbsta/eng/l21.pdf>

Essential Climate Variables – an effort based on a “Strategy Towards an Architecture for Climate Monitoring from Space” which was developed by CEOS, CGMS and WMO.

The GCOS Implementation Plan considers observational requirements to monitor emissions and emission reductions, information needs for assessing adaptation to climate change and climate resilience, data needs for public awareness and capacity development. Table B in the GCOS IP links GCOS actions to different articles in the Paris Agreement, including:

- National Reporting (Articles 4 and 13);
- Mitigation: Knowledge of evolution of sinks and sources (Article 5);
- Adaptation: Strengthening cooperation (Article 7.6);
- Scientific knowledge and systematic observations (Article 7.7);
- Loss and Damage (Article 8);
- Technology Transfer (Article 10);
- Capacity Development (Article 11); and
- Global Stocktaking (Article 14).

ANNEX A – 2ND GEO CLIMATE WORKSHOP PLANNING TEAM

GEO PROGRAMME BOARD PARIS AGREEMENT SUBGROUP

Japan (Lead)	Osamu Ochiai, Hiroyuki Muraoka
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COSPAR	David Halpern
ESA	Ivan Petiteville
ESIP	Kathleen Fontaine, Erin Robinson
IUGG	Michael Sideris
IOC	Albert Fischer
WDS	Arona Diedhiou

GEO SECRETARIAT

Akiko Noda	Disaster Expert and Climate Support
Steven Ramage	Senior External Relations Manager

ANNEX B – GLOSSARY

Sources: IPCC / UNFCCC

Adaptation

Adaptation is the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. In Article 7 of the Paris Agreement, Parties recognize the importance of support for and international cooperation on adaptation efforts. Each Party shall, as appropriate, engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, including the process to formulate and implement national adaptation plans (NAPs).

Loss & Damage

In Article 8 of the Paris Agreement, Parties recognize the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.

Areas of cooperation and facilitation to enhance understanding, action and support may include: (a) Early warning systems; (b) Emergency preparedness; (c) Slow onset events; (d) Events that may involve irreversible and permanent loss and damage; (e) Comprehensive risk assessment and management; (f) Risk insurance facilities, climate risk pooling and other insurance solutions; (g) Non-economic losses; and (h) Resilience of communities, livelihoods and ecosystems.

Capacity Development / Technology Transfer

According to Article 11, capacity-building under the Paris Agreement should enhance the capacity and ability of developing country Parties, to take effective climate change action, including, inter alia, to implement adaptation and mitigation actions, and should facilitate technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness, and the transparent, timely and accurate communication of information.

Technology transfer includes a broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change among different stakeholders. According to Article 10 of the Paris Agreement, Parties share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions.

National Reporting / Global Stocktake

According to Article 4 paragraph 2 of the Paris Agreement, each Party shall prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions. Each Party shall communicate a nationally determined contribution every five years. Article 13 outlines the framework for transparency of action. Parties need to regularly provide (a) a national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases, prepared using good practice methodologies accepted by the IPCC and agreed upon by the COP

and (b) information necessary to track progress made in implementing and achieving its nationally determined contribution.

According to Article 14, Parties shall periodically take stock of the implementation of the Paris Agreement to assess the collective progress towards achieving the purpose of the Agreement and its long-term goals (referred to as the "global stocktake"). It shall do so in a comprehensive and facilitative manner, considering mitigation, adaptation and the means of implementation and support, and in the light of equity and the best available science.

Mitigation

In the context of climate change, a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere. Article 5 of the Paris Agreement calls on Parties to take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases, including forests (reducing emissions from deforestation and forest degradation).