GEO Climate Workshop:

Earth Observations for the Paris Agreement

Concept Note

Date: Wednesday 13 June, 2018 (after the GEO Symposium, 11-12 June);

Location: WMO (Salle Obasi), Geneva, Switzerland

WORKSHOP OBJECTIVES

The overall objectives of the workshop are to:

- enhance the understanding of how the Earth Observation community can support the implementation of the Paris Agreement, and;
- to discuss a more integrated approach to climate across the GEO Work Programme.

The workshop will take stock of the current assets in the GEO Work Programme and beyond, including the work of key organizations, such as GCOS, IPCC, WMO and UNFCCC, in order to identify gaps (where GEO may have a role) and develop tangible action areas. It will address all relevant areas in the Paris Agreement recognizing existing, robust work in the mitigation space (e.g. GFOI, GEO-C). However, the key areas where GEO can provide most added value are probably around Adaptation, Loss & Damage and Capacity Development.

The relevant articles in the Paris Agreement (refer to background section) can be grouped into a set of pillars to which Earth observations (EO) can make a significant contribution (Fig. 1). However, while the potential action areas for the EO community are fairly well known, it remains unclear how well it is currently positioned to provide direct support to the individual areas, and where immediate opportunities are. There is great potential of activities in the GEO Work Programme to support areas such as adaptation and loss & damage but a systematic process to tailor the activities to the climate policy needs and align them with other ongoing efforts is lacking.

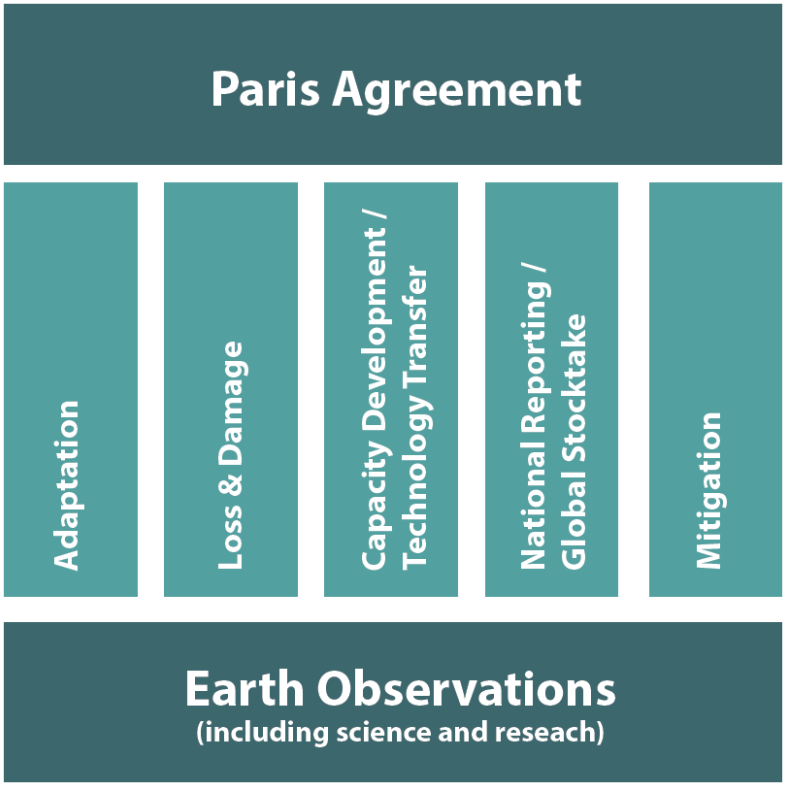

Figure 1. *Pillars relating to articles in the Paris Agreement to which Earth observations are foundational. Refer to Appendix B for additional information on the pillars.*

The workshop is expected to provide recommendations on how to better align the existing Work Programme activities to support the Paris Agreement and potentially call for new Initiatives in order to better fulfill the needs emerging from the Paris Agreement.

GEO´s advantage is manifold: firstly, GEO has a broad thematic overview beyond the traditional meteorological community, e.g. agriculture, water resources, land degradation, ecosystems, disasters. Therefore, GEO could eventually come up with a typology of requirements for adaptation. Secondly, GEO is also looking across different spatial scales (global, regional, national, local). In particular, adaptation needs high-resolution data, e.g. of land surface properties. Lastly, GEO brings together in situ and satellite data from meteorological and non-meteorological entities. While the workshop and the associated mapping exercise / gap analysis need to primarily focus on downstream areas of the value chain (how products are being used, implications for policy etc.), the terrestrial and in situ domains are areas where GEO has to concentrate on more upstream components (observing system coordination, product definition and generation etc.)

In advance of the workshop, a mapping exercise will be carried out to identify potential contributions to the Paris Agreement across the GEO Work Programme. This exercise is expected to facilitate a gap

analysis that will further inform the workshop. An initial mapping has been done by the GEO Secretariat and will be complemented by a more systematic analysis involving all relevant GEO activities. It is foreseen to further extend this analysis beyond GEO Work Programme activities in the future.

The GCOS Steering Committee has currently charged a task team to investigate into the question of how climate observations can help to address the Paris Agreement. The outcomes of this task team will be an important input to the workshop which aims on complementing the efforts of GCOS and building synergies. Further, the outcomes of a workshop organized by GCOS in 2015 on "Enhancing Observations to Support Preparedness and Adaptation in a Changing Climate"[1] will be taken into account.

A two-stage approach is envisaged to reach the objectives beyond this event, including a first workshop in 2018 focusing on the EO community with guidance from organizations within the UN, such as GCOS, IPCC, WMO, UNFCCC, and other key stakeholders involved in national policy processes related to Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs), followed by a second event in late 2018 or 2019, which will focus on a broader, more policy-relevant audience.

The specific objectives are as follows:

Pre-workshop (Jan-May)

Identify relevant articles in the Paris Agreement
Develop a set of pillars from those articles
Map GEO Work Programme activities and those of key partners to these pillars

1st Workshop (June)

Discuss the current situation of how EO is contributing to the Paris Agreement
Showcase ongoing Work Programme activities in line with the pillars (including success stories)
Learn about relevant activities beyond the GEO Work Programme
Identify gaps that provide opportunities for GEO and develop concrete action areas
Recommend new Work Programme activities or alignment of existing activities

Post-workshop (after June)

Align GEO Work Programme activities with the action areas identified in the workshop
Explore development of new Work Programme activities according to the action areas
Plan for a second workshop, involving a broader policy-relevant audience

[1] http://unfccc.int/files/documentation/submissions_from_non-party_stakeholders/application/pdf/543.pdf

PARTICIPANTS

1) Representatives of relevant GEO activities*:*
- *GEO-C, GFOI, Blue Planet, Regional Initiatives and others*

2) International organizations:
- *UNFCCC, IPCC, WMO, CEOS, GCOS, WCRP etc. (*to give guidance/advice and ensure policy linkages)

3) National representatives
- In particular from Small Island States and Least Developed Countries (to bring the perspective on needs for adaptation and loss & damage)

EXPECTED OUTCOMES

Enhanced understanding of GEO's role in implementing the Paris Agreement and involvement of relevant stakeholders

Identified gaps of current activities and opportunities

Recommendations to better align ongoing activities (within or outside the GEO community) or potential new activities

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 Agreement[2] 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 Plan[3], 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

[2] http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

[3] http://www.earthobservations.org/documents/GEO_Strategic_Plan_2016_2025_Implementing_GEOSS.pdf

on “systematic observations” - a term used within the UNFCCC context for EO. At COP 22 (Marrakech, 2016), an Earth Information Day[4] 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 Note[5] by the SBSTA Chair was presented to support Parties in their work at SBSTA 47 on systematic observations, listing GEO as a key partner. SBSTA 47[6] 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[7] during the exhibition and a joint Side Event[8] 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[9] 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[10]. Important progress is made by the satellite community, in collaboration with GCOS, on the development of an Inventory of Essential Climate Variables – an effort based on a “Strategy

[4] http://unfccc.int/files/science/workstreams/systematic_observation/application/pdf/earthinformationday.2016.1. summaryreport.pdf

[5] http://unfccc.int/files/science/workstreams/systematic_observation/application/pdf/so_2017_1_informationnote_29.10.17.pdf

[6] http://unfccc.int/resource/docs/2017/sbsta/eng/l21.pdf

[7] https://www.earthobservations.org/geoatcop23.php

[8] Presentations available at https://www.earthobservations.org/geoatcop23.php?t=mit_adapt, and report available at http://enb.iisd.org/climate/cop23/enbots/8nov.html#event-3

[9] http://www.un-spider.org/news-and-events/events/united-nationsgermany-international-conference-international-cooperation?utm_source=mailing-list&utm_medium=referral&utm_campaign=oct-nov-17-update

[10] https://www.oneplanetsummit.fr/IMG/pdf/paris_declaration_towards_a_space_climate_observatory-2.pdf

Towards an Architecture for Climate Monitoring from Space"[11] which was developed by CEOS, CGMS and WMO.

The GCOS Implementation Plan[12] (IP) 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)
Global Stocktaking (Article 14)

[11] http://www.wmo.int/pages/prog/sat/documents/ARCH_strategy-climate-architecture-space.pdf

[12] WMO (2016): The Global Observing System for Climate: Implementation Needs. GCOS-200

APPENDIX A. Planning Team

GEO PROGRAMME BOARD SUB GROUP 1

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GEO SECRETARIAT

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Steven Ramage, Senior External Relations Manager

APPENDIX 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).