

GCOS Adaptation task team (GATT) : How Can GCOS Best Support Adaptation in the UNFCCC Space?

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GCOS established in 1992

A Key Purpose in setting up GCOS.

Regularly reports on the adequacy of the current climate observing system to the [United Nations Framework Convention on Climate Change](#) and thereby identifies the needs of the current climate observing system

*GCOS until now has been substantially involved in support of activities of IPCC WG1, but since COP22 the imperatives have changed with a new focus to include what we can do to support WG2, especially around adaptation. Mostly, **but not entirely** within the realm of TOPC*

The Paris Agreement (2016 COP22)

The Paris Agreement established the Global Stocktake as a tool to track global efforts, including adaptation. Article 14 specifies these measures. *The Global Stocktake shall,*

- *Recognize adaptation efforts of developing countries;*
- *Enhance the implementation of adaptation action taking into account adaptation communication*
- *Review the adequacy and effectiveness of adaptation and support provided for adaptation*
- *Review the overall progress made in achieving the Global Goal on Adaptation in light of global climate goals*

The GCOS Response to Call from COP22

Included two adaptation-relevant actions in its 2016 GCOS Implementation Plan

- Action G1: Produce guidance and best practice for adaptation observations
- Action G4: Identify indicators for adaptation and risk

GCOS-TOPC formed a Scoping Group on Observations for Adaptation, a small group of invited experts on adaptation to help develop a way forward, including identification of how current ECVs could be used or adapted to inform the adaptation community.

GCOS's Role in Adaptation

The previous diagram suggests that GCOS, through its ECVs etc. can provide

1. *Clear indicators to inform adaptation (**indicators for adaptation**) e.g. key information about hazards and the links to exposure/risk, as well as*
2. *the possibility, through some ECVs, to directly observe adaptation (**indicators of adaptation**)*

*Clear GCOS opportunities to contribute to the **Global Stocktake** (The Conference of the Parties shall undertake its first global stocktake in 2023 and every five years thereafter every 5 years from 2023) that tracks national and global progress on implementation of, among other matters, adaptation*

Report of GCOS STEERING COMMITTEE, 2019

- GCOS can contribute both to *supporting adaptation* and also can *monitor the progress* and implementation of adaptation in some cases. Global observations will need to be supplemented by local monitoring.
- GCOS should consider the needs of adaptation in defining ECVs and their requirements to the extent possible for a **global observing system**.
- A Task Team should consider how the existing ECVs can further be used to support adaptation or monitoring of adaptation. The task team should develop some case studies and report back at the next steering committee.
- GCOS will actively invite relevant partners to form a joint ad-hoc group and work together on advancing observations for and of adaptation

Opportunities for GCOS to Contribute

(possibly within existing capabilities/ECVs etc.)

A. Improved understanding of climate change impacts and adaptation imperatives through provision of geospatial data inputs relevant to bio-geophysical modelling (observations for adaptation)

e.g. input to regional climate models, agro-ecological models, coastal and flood risk models (relevant ECVs would include sea-level, soil moisture, LULC change, etc).

Opportunities for GCOS to Contribute

(possibly within existing capabilities/ECVs, etc.)

B. Improved assessment of climate-related risk and thus adaptation imperatives through provision of relevant geospatial data inputs (observations for adaptation)

e.g. input of geospatial data on geographic distribution of developed land cover (described by Land Use, Land Use Change and Forestry from the land cover ECV) subject to certain climate hazards, spatial distributions of active fire/fire burnt area (ECV), etc.

Opportunities for GCOS to Contribute

(possibly within existing capabilities/ECVs, etc.)

C. Use of existing ECVs (possibly enhanced) to extract information on the spatiotemporal development of adaptation (i.e. observations of adaptation) for a limited number of examples

e.g. shifts in LULC (ECVs reflecting changes in agricultural patterns, urban land cover change), anthropogenic use of fire, prescribed burning (active fire ECV), etc.

Opportunities for GCOS to Contribute

D. Possible. New ECV(s) to provide information on human adaptation (i.e. observations of adaptation) for certain examples – these might be related to existing ECVs or could be completely new ECVs, not necessarily physical/climate related.

e.g. tracking green cover in cities, tracking national budgets on adaptation, investment in coastal infrastructure, mapping development of coastal defenses, etc.

Outcomes of meeting May 2021

The task team should broaden its consideration to explicitly include *extremes* since they constitute a critical element of risk that is required to be mitigated through adaptation.

Consideration should be given to finding a Co-Chair from the OOPC or AOPC.

- The need to engage with the user community is critical. This could involve a process of co-design of observations for adaptation (e.g. with the UNFCCC).
- Engaging with the national adaptation planning process will be important – since an evaluation of National Adaptation Plans is a key component of the forthcoming Global Stocktake.
- Refocus on climate impacts at the national-to-local scale. Example case studies for various sectors (to be fully defined as below) would be a useful approach and should be started.

WG1 Opportunities and User Needs Working Group.

Identification of Opportunities and User Needs (UNFCCC and UNEP involvement critical here).

Tasks:

- Identify the key stakeholders in this space
- Develop a strategy for engagement/consultation, including possible workshops
- Facilitate/initiate partnerships among adaptation experts, reanalysis centres, finance (inc. insurance sector, IPCC-WG2, UNFCCC)
- **Develop gap analysis – what GCOS can deliver v's what users require**
- Consult with Working Group 2 on mechanisms by which adaptation user requirements continuously feedback to new observation capabilities /data provision?

WG2 Critical Sector Working Group Identification of Critical Sectors/Areas of Concern

Tasks:

- Undertake a systematic review to identify what the critical sectors are that require GCOS data – using resources as **National Adaptation Plans**
- This will take into consideration the level of granularity required (e.g. Agriculture & Forestry, Forest Fire management...)
- Consider the ECV observations (*including extremes*) that are already supporting or may support the user-identified needs in the various sectors
- **Within the sector/area consider observation needs for (including minimum and ideal temporal and spatial scales)**
 - Assessing vulnerability for NAPs
 - Tracking effectiveness of NAPs
 - Modifying/updating NAPs
- Consult with Working Group 1

WG3 Capabilities Working Group. Assessment of GCOS Capabilities to Deliver the Required Observations for Adaptation

Based on the list of requirements, the tasks are:

Initial objective: start with existing GCOS ECVs and evaluate which existing ECVs in their current specifications could inform adaptation. Identify possible observations for and of adaptation

Medium-term objective: evaluate where there are current observation capabilities (e.g., temporal and spatial scales) for an ECV parameter that go beyond what is specified in existing ECV suite, that could move the parameter from “not useful in specification” to minimum or ideal level for adaptation

Long-term objective: consider new ECVs (parameters not in current GCOS suite) and need for promoting additional observation capabilities for adaptation that likely will be needed and that future global observations could support

Approach through the case studies

What does a Case Study Contain?

- Context (e.g. what IPCC says about the hazard, what SDG says about relevant issues – why does this matter?)
- What information is needed in order to inform adaptation planning (data inputs and data quality for the relevant ECVs), including *extremes*
- What information is needed to monitor change over time?
- List of data needs
- A list of currently available ECVs, gaps and future opportunities
- What else (new ECVs, ECV products) would be useful?
- A table including the list of ECVs relevant to observations of impact, adaptation actions, model development, calibration and validation for the selected case study.

Three Case Studies

- Forest Fire Management (lead TOPC)
- Urban Pluvial Flooding (lead AOPC)
- Ocean Extremes (lead OOPC)

WG2 & WG1: Collecting requirements (Fire Management)

WG2 & WG3: Connecting requirements to the multiple dimensions of adaptation needs (the Matrix)

Challenges and open questions

- Matrix as Thematic assessment, Suitability criteria what needed?
- Granularity
- How much downstream?
- Extremes is one aspect
- Local, regional and transboundary versus global
- Data integration with other domains (economic, societal)
- New ECVs
- Multiple Hazards & major sources of uncertainty
- Traceability
- barriers to accessing climate information

How to incorporate GATT information into GCOS & next steps

Report

- Identifying whether some extra ECVs/products are needed and for which purpose;
- Assessing whether -for relevant ECVs, the current requirement were enough

GCOS Climate Conference: Present and get feedback from the UNFCCC,
Abstract submitted

GCOS SC December:

Report presented & delivered, with recommendations

The way forward will be decided (a workshop, a paper?...)