



GCOS

GLOBAL CLIMATE OBSERVING SYSTEM

<http://gcos.wmo.int>



GCOS and the UNFCCC:

The new Implementation Plan and the Paris Agreement



ICSU
International Council for Science



The Global Climate Observing System (GCOS) is an internationally coordinated network of observing systems and programme of activities that support and improve the network. GCOS works with partners to ensure the sustained provision of reliable physical, chemical and biological observations for the whole climate system: across the atmospheric, oceanic and terrestrial domains including the hydrological and carbon cycles and the cryosphere.

- Observations of the global climate system are essential to understand and predict climate variability and change, to provide early warning and plan for extreme events and are an essential input into adaptation planning.
- Using global observations, the IPCC has found that climate change is unequivocal and extremely likely to be the result of human activities.
- The global observing system for climate needs to continue to develop to meet the new challenges posed by planning for extreme events, early warning systems, and climate change adaptation and mitigation.
- Regional improvements, especially in Africa, are needed to fill observational gaps and provide capacity development to ensure their sustainability.
- Access to long time-series of data needs to be ensured by historical data rescue, sustainability of current networks and improved operation of data centres.

The new GCOS Implementation Plan

GCOS is preparing a new Implementation Plan to present to SBSTA at COP22/MOP12 in Marrakech in November 2016. To ensure this plan takes account of the widest range of opinion and support there will be a public review of the draft document in July 2016. You are welcome to distribute the draft widely to relevant experts to ensure a wide review.

New Implementation Plan

Review Period

JULY 2016 (for 6 weeks)

Details will be given at:

gcos.wmo.int



Adaptation

- GCOS is including adaptation in its new Implementation Plan.
- Needs include a combination of global observations together with local and regional data and projections.




Mitigation

- Observations of forests and land use change support mitigation efforts such as REDD+.



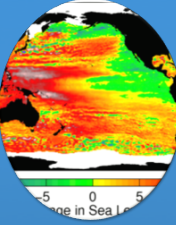
Global Stocktaking

- Information on overall effect of actions should be supplied to the global stocktaking - climate observations will play an important role.



Transparency of Action

- Observations of atmospheric composition will be able to support improved reporting as networks develop.



Public awareness

- GCOS is planning to develop a list of indicators to better communicate the full impact of climate change.



Capacity Development

- The GCOS Cooperation Mechanism is helping parties to improve their observations through practical support to equipment, people and communications.

Paris Agreement

Climate Observations for Science

The assessments of the IPCC have been based, ultimately, on the climate observations. Long time series of data have proved vital in demonstrating change and attributing this change to the human and natural causes.

Monitoring long time periods for gradual changes requires higher levels of accuracy than that traditionally needed for numerical weather forecasting. In addition, the need for long consistent time series of data is difficult to achieve without dedicated operational funding and governmental and institutional support.

Climate Observations to support national emission inventories, mitigation and transparency of action

Accurate knowledge of anthropogenic greenhouse gas fluxes is needed by parties to the UNFCCC. They have a commitment under the convention to report their emissions and removals and, under the Paris Agreement, many commitments are in terms of emission mitigation and monitoring these will require good inventories. However, to date, there is no globally applicable independent way of assessing inventories, although some methods based on inverse modelling approaches have been demonstrated.

Inventory methods must follow the IPCC 2006 guidelines and the IPCC 2013 supplement on wetlands.

Such an independent approach would support improved reporting by countries to the UNFCCC by increasing the confidence and credibility in the emission estimates and in the impacts of mitigation efforts. This can be done with inverse modelling approaches based on atmospheric composition observations. Currently these approaches can only give rough order-of-magnitude estimates but should improve as observational networks, both ground-based and satellites, are improved and as modelling approaches are refined.

Climate Observations for Adaptation

As part of the new Implementation Plan GCOS is more explicitly including the needs of adaptation.

Adaptation often requires more detailed local information and projections and this will need to be driven by more detailed observations. An example is the need to plan for extreme rainfall events – flooding. An improved monitoring of rainfall with greater spatial resolution is needed in many vulnerable areas and a better exchange of information about rivers and lakes.

Observations are the foundations of any system planning to adapt to climate change and variability. GCOS has already held workshops to better understand planning needs and is building on this in the future and in the new Implementation Plan.



Observations
• GCOS

Science
• WCRP



Policy
• UNFCCC

Assessment
• IPCC

