

## **GCOS - Update**

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**New ECV:** 

- Lightning,
- Land Surface Temperature,
- Marine habitat properties,
- Oceanic nitrous oxide,
- Anthropogenic greenhouse gas fluxes

Vision	a world where users have access to the climate-related information they need	
Aim	to ensure the availability and quality of observations necessary to monitor, understand and predict the global climate system so that communities and nations can live successfully with climate variability and change	
Principles	Free and Open Transparent Accurate	Useful Timely Best available science
Strategic Goals	climate observations are enhanced and continued	<b>Review Essential Climate Variables</b> Monitoring the performance of the observational systems against these needs.
	Support integrated observations, including the Earth's water and carbon cycles and energy balance	Prepare plans and guidance. Assist with improving the observational infrastructure in countries with limited
	Build on the climate-related components of the established observing systems	resources (the GCOS Cooperation Mechanism, GCM Conport   Advocate for, and facilitate of data repositories with open access to all climate data. Conport
	to meet identified user needs	access to all climate data.
	adaptation and mitigation to climate change, support sustainable development, & the UNFCCC	Coordinate with the disparate observing systems.
	free and open access to relevant data	Communicate with users, policy makers, funding agencies and the media

Adaptation & Mitigation

Going beyond the traditional science base to support adaptation, mitigation, sustainable development, disasters and emergency response, and in responding overall to the Paris Agreement. Including the Earth's water and carbon cycles and energy balance in their entirety will improve understanding & prediction of the climate. This will guide mitigation and adaptation measures; assess risks and enable attribution of climatic events to underlying causes; and underpin climate services.

**Monitoring Earth's** 

climate cycles

**New Technology** 

Urban Areas

What's new?

Observation technology is evolving and improving: e.g. ocean buoys and drifters, crowd sourced data Over 50% of the world's population now living in urban areas. observations are needed where people live, especially in the new urban megacities

## **Global Climate Indicators**



- The Indicators are meant be used to tell stories about climate change in a way that can be understood by non-experts
- The Indicators are not limited to specific datasets or certain storylines

## **Subsidiary Indicators**







Vision	a world where users have access to the climate-related information they need		
Aim	to ensure the availability and quality of observations necessary to monitor, understand and predict the global climate system so that communities and nations can live successfully with climate variability and change		
Principles	Free and Open, data is openly available to all users Transparent, methods and assumptions are clear, with standardised metadata, where possible Accurate, climate needs high accurate distinguish small the from larger annual variability	cy to Useful, there should be a clear demand from a clear demand from bublication to monitor based on best available science.	
Strategic Goals	Ensure that <b>climate observations are enhanced and continued</b> into the future to provide the empirical evidence needed to understand and predict the evolution of the climate, to guide mitigation and adaptation measures, to assess risks and enable attribution of climatic events to underlying causes, and to underpin climate	<b>Review</b> and where needed update the definitions of <b>Essential Climate Variables</b> considering the expanded observational needs for adaptation and mitigation to climate change. Monitoring the performance of the observational systems against these needs.	
	Support integrated observations of the physical, chemical and biological properties and processes across the atmospheric, oceanic and terrestrial domains, including the Earth's water and carbon cycles and energy balance	Prepare plans and guidance for the maintenance and improvement of the global climate observation system. Assist with improving the observational infrastructure in countries with limited resources (the GCOS Cooperation Mechanism, GCM). Assist the integration of national and regional networks into	
	Plan an observing system that is built, as far as possible, on the climate-related components of the established observing systems	the global observing systems. Advocate for, and facilitate, the establishment and maintenance of data repositories with open access to all climate data. The aims and objectives of GCOS will only be met if the data is accessible by users.	
	Focus on obtaining the observations required to meet identified user needs	GCOS will only be met if the data is accessible by users.	
	Identify observations that more fully meet the needs of adaptation and mitigation to climate change, support sustainable development, the requirements of the UNFCCC and other multilateral environmental agreements	<b>Coordinate</b> with the <b>disparate observing systems</b> . Encourage the adoption of GCOS ECV in their plans and ensure the definition and requirements of ECV do not lead to unnecessary duplication.	
	Advocate for free and open access to relevant data	<b>Communicate</b> with <b>users, policy makers, funding agencies and the media</b> to explain the benefits of, and needs for, improved climate observations. Promote examples of the strong impact that GCOS can make in developing countries with direct societal impacts.	