



GCOS - Update for WCRP JSC-39

Nanjing, China, 16-20 April 2018
GCOS Secretariat, WMO



WMO

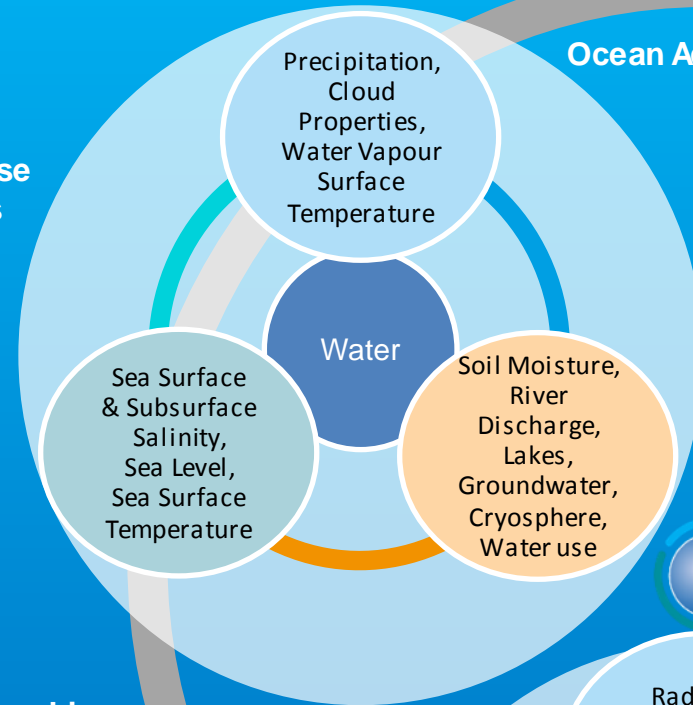


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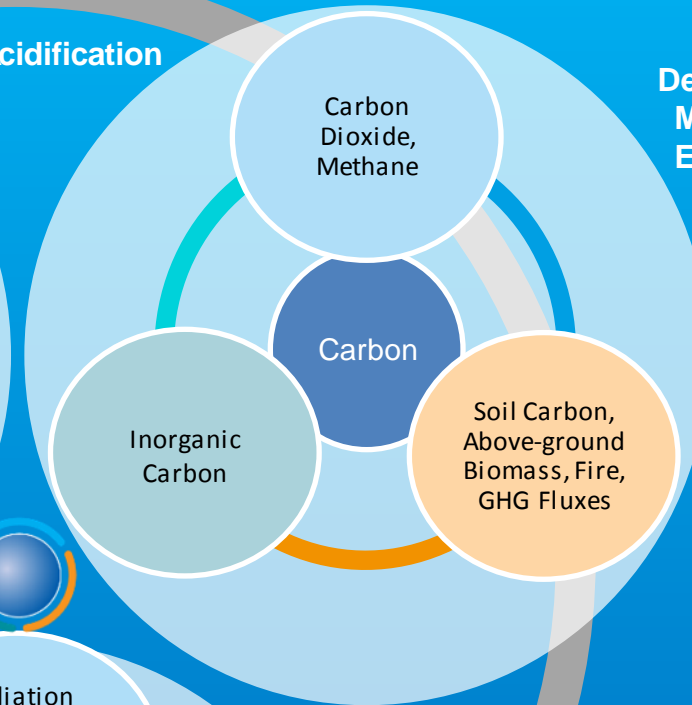


GCOS new Implementation Plan aims to improve monitoring of Global Climate Cycles

Sea Level Rise
Fisheries

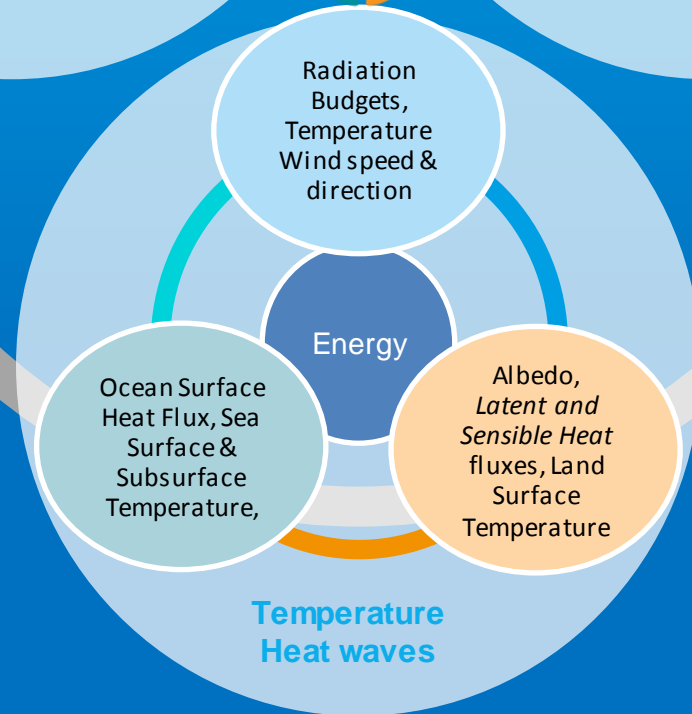


Ocean Acidification



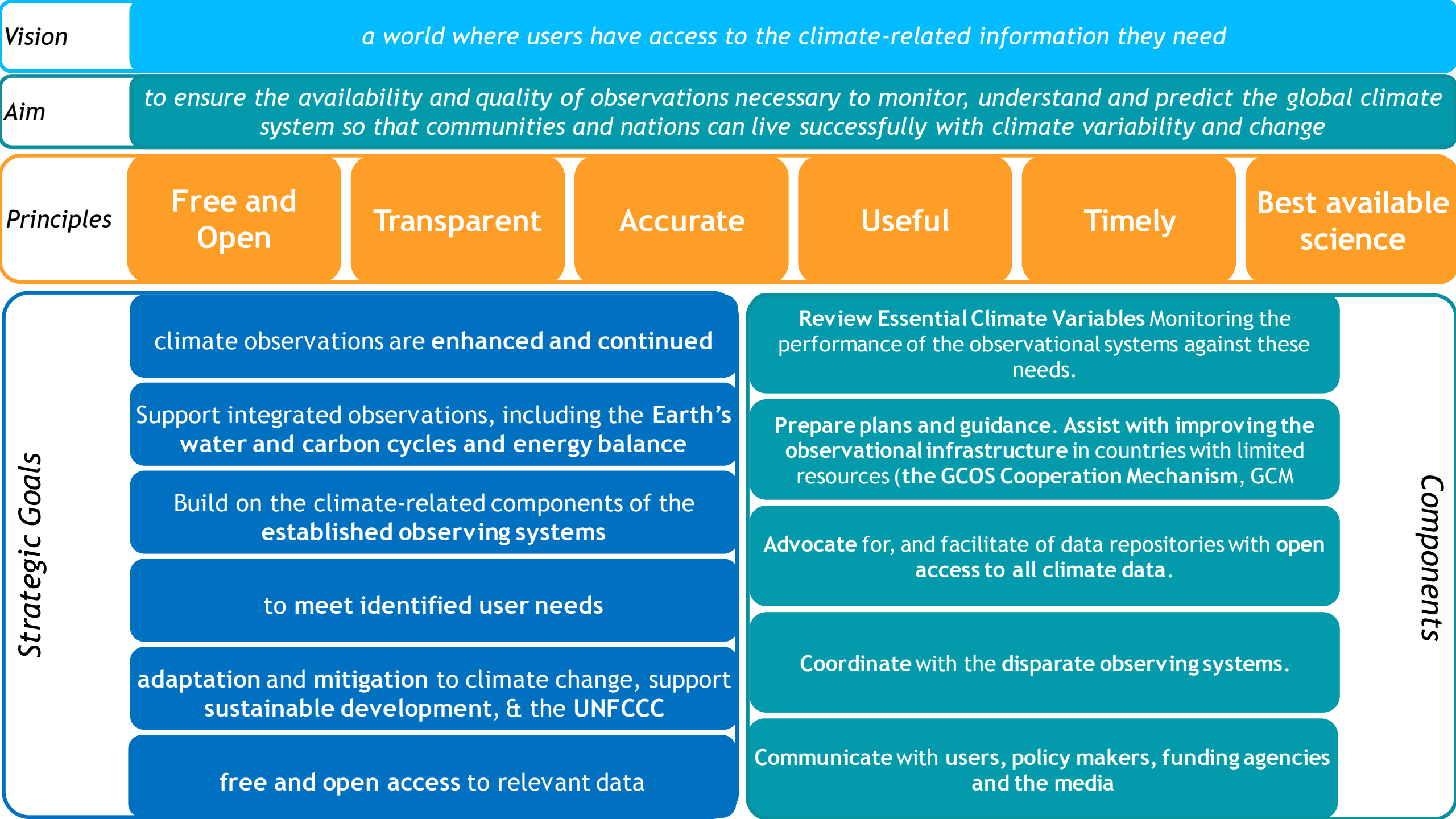
Deforestation
Mitigation
Ecosystem Loss

Coral Bleaching
Agriculture
Human Health
Floods
Droughts
Water Resources
Storms



Systemic Risks
Security
Slow Economic
Development

Temperature
Heat waves



What's new?

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.

Monitoring Earth's climate cycles

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.

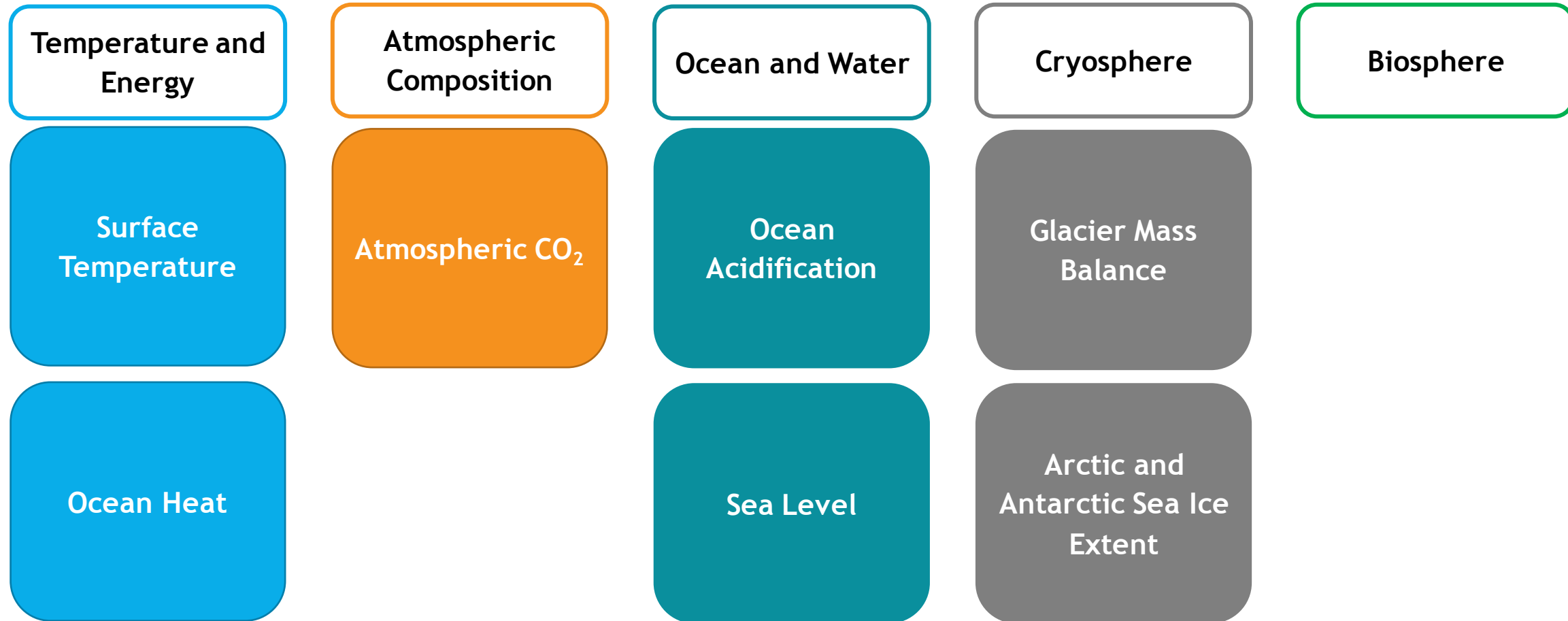
New Technology

Observation technology is evolving and improving: e.g. ocean buoys and drifters, crowd sourced data

Urban Areas

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 to 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

Temperature and
Energy

Atmospheric
Composition

Ocean and Water

Cryosphere

Top-of-Atmosphere
Energy Balance

Methane

Heavy Precipitation

Snow Extent

Heat Waves

N₂O

Droughts

Fluorinated GHG



COP21 • CMP11
PARIS 2015
 UN CLIMATE CHANGE CONFERENCE

Art 7
 (7c)

***Paris Agreement Article 7 (7c):
 Strengthening scientific knowledge on
 climate, including research, systematic
 observation of the climate system and
 early warning systems.**

ES

Systematic Climate Observations

Capacity Building

Monitoring for planning adaption to climate change: projections and risk estimation



Monitoring of implementation of adaption (urban change, infrastructure, agriculture, ...)



Monitoring of Land categories and forests: Mitigation, Adaptation, ...

Monitoring for Emergency Warning systems, projections and risk assessments



Monitoring anthropogenic fluxes of GHGs, natural sources and sinks, & carbon cycle



Monitoring global temperature



Overall impact of NDCs: state of the climate, global water cycle and energy fluxes

Monitoring to support renewable energy, winds, water etc.



Systematic Observations are fundamental to implementing the Paris Agreement and monitoring its progress.

Role of Science Panels

- Main Objectives:
 1. **Assessing the current state of the global observing system** for climate, and identifying its gaps and inadequacies and designs to ensure long-term monitoring;
 2. **Advocating and promoting** the establishment and enhancement of **the systems** required to provide long-term and consistent data; securing the implementation of designated GCOS networks;
 3. **Promoting** the transfer and accessibility of **data to the user community**.
 4. **Identifying measurable key variables** that control the physical, biological and chemical processes affecting climate, and are indicators of climate change;
 5. **Coordinating activities** with other global observing systems, panels and task groups to ensure the consistency of requirements with overall programmes.
- Responsible for overseeing “their” actions
- Panels have flexibility in how to do this BUT there should be consistency in the outputs and timeline





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environment

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GCOS Cooperation Mechanism

Network Manager: Tim Oakley

