



## GLOBAL CLIMATE OBSERVING SYSTEM

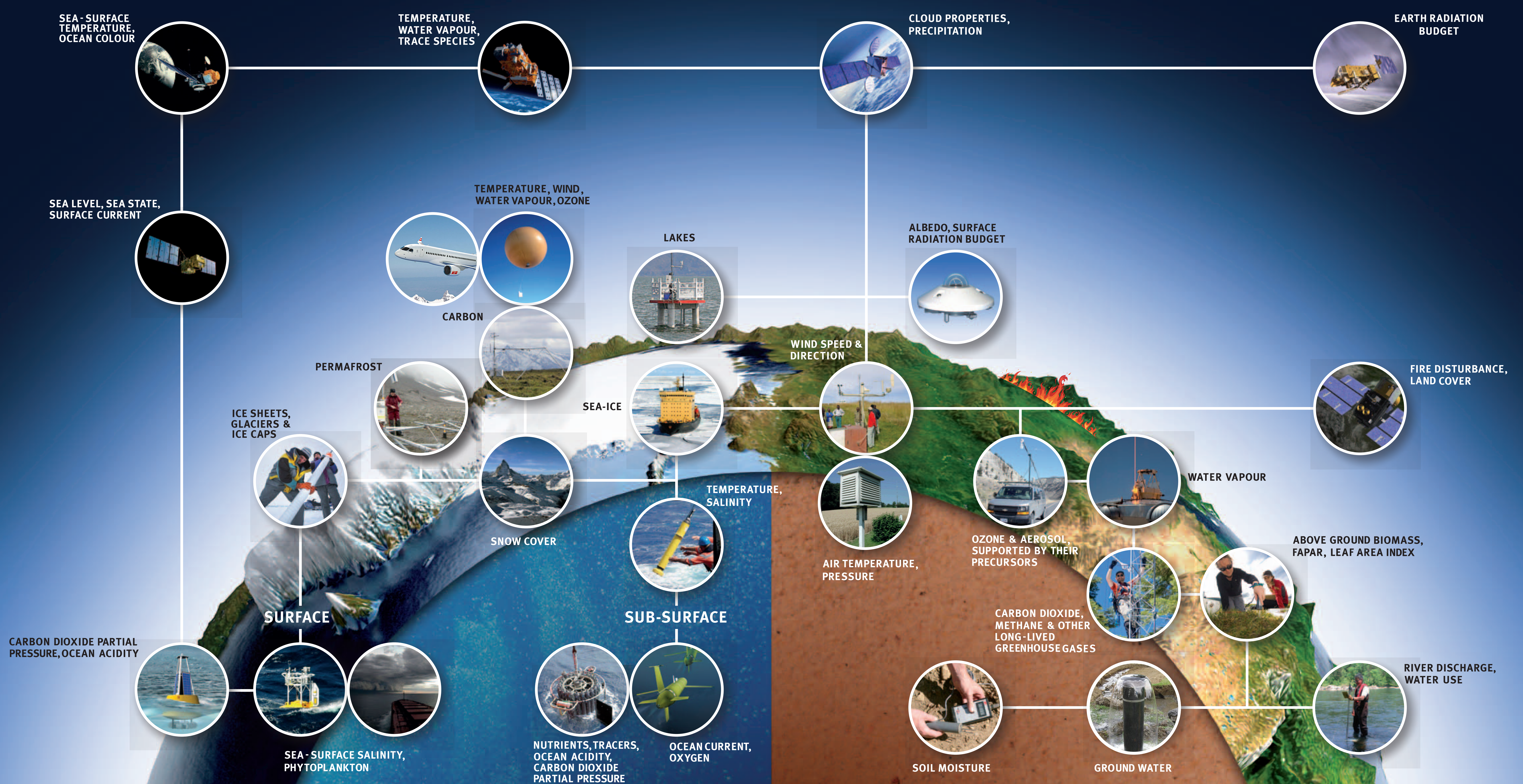
### CONTRIBUTING TO THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS

As an outcome of the Second World Climate Conference, the Global Climate Observing System (GCOS) was established in 1992 to ensure that the observations and information needed to address climate-related issues are obtained and made available to all potential users.

The goal of GCOS is to provide comprehensive information on the total climate system, involving a multidisciplinary range of physical, chemical, and biological properties and atmospheric, oceanic, hydrologic, cryospheric and terrestrial processes.

Climate observations must be enhanced and sustained in order to enable users to:

- Detect further climate change and determine its causes
- Model and predict the climate system
- Assess impacts of climate variability and change
- Monitor the effectiveness of policies for mitigating climate change
- Support adaptation to climate change
- Develop climate information services
- Promote sustainable national economic development
- Meet other requirements of the UNFCCC and other international conventions and agreements



#### Key mandates of AOPC:

- Assess the current state of the atmospheric component of the GCOS and identify gaps and inadequacies
- Secure the implementation of designated GCOS networks and promote the establishment and enhancement of new and current systems to provide consistent, long-term data and information for atmospheric Essential Climate Variables (ECVs)
- Liaise with relevant research, operational and end-user bodies in order to identify and maintain the requirements for data to monitor, understand and predict the dynamical, physical and chemical state of the atmosphere and its interfaces on seasonal to multi-decadal time scales



#### Key mandates of TOPC:

- Identify measurable terrestrial (biosphere, cryosphere, and hydrosphere) ECVs, which control the physical, biological and chemical processes affecting climate
- Coordinate activities with other global observing system panels and task groups to ensure the consistency of requirements with overall programmes
- Assess and monitor the adequacy of terrestrial observing networks such as the Global Terrestrial Networks (GTNs), and promoting their integration and development in order to measure and exchange climate data and information



#### Key mandates of OOPC:

- Provide scientific requirements to the Joint WMO-IOC Technical Commission on Oceanography and Marine Meteorology (JCOMM) Observations Coordination Group
- Review and prioritise requirements for sustained ocean observations of the and ocean Essential Climate Variables (ECVs) and physical Essential Ocean Variables (EOVs) in support of Global Ocean Observing System (GOOS), GCOS and WCRP
- Provide technical advice on the development of national coastal and ocean observing requirements and observing system implementation



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GCOS is strongly supported by the international science community, and thus the World Climate Research Programme (WCRP) co-sponsors three expert panels for atmospheric, oceanic and terrestrial observations. These panels gather experts from the climate research community and utilize their specific expertise to generate output benefitting the climate observation community.

