

CGMS-52 PLENARY SESSION

June 4–6, 2024
United States



Key Recommendations from the Joint CEOS-CGMS Working Group on Climate

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Presented to CGMS-52 Plenary, Day 2, Session 4

Executive summary of the WP

In 2024, the Joint CEOS-CGMS Working Group on Climate (WGClimate) is updating three of its key business documents:

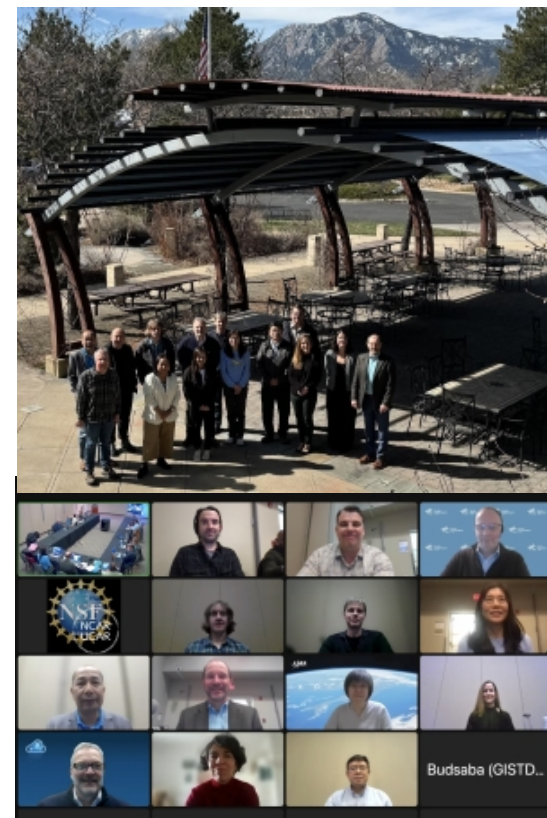
- 1) Space Agency Response to the GCOS Implementation Plan (2022),
- 2) Essential Climate Variable (ECV) Inventory Gap Analysis Report, and
- 3) Coordinated Action Plan.

WGClimate is also updating and restructuring its ECV Inventory database and processes. WGClimate seeks Plenary endorsement of its new Vice-Chair nominee: Dr. Vincent-Henri Peuch of ECMWF.

Pursuant to the Greenhouse Gas Roadmap, WGClimate and its GHG Task Team began coordination meetings with the CGMS Working Groups on 3 June 2024 to identify CGMS capabilities that could support development of an operational space-observation backbone (space and ground) that meets the GHG data and information needs of defined users, including the UNEP's International Methane Emissions Observatory, WMO's Global Greenhouse Gas Watch, and UNEP's recurring Global Stocktake processes.

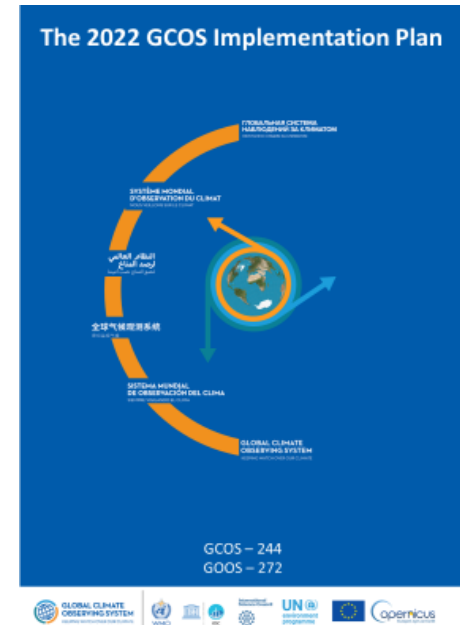
Recent Major Events and Activities

- Delivered CEOS-CGMS Statement for SBSTA at COP-28 to CSA
- WGClimat-20 hosted by NOAA-Boulder (March)
- Top 2024 Priorities
 1. Conduct remaining work on Space Agency Response to GCOS Implementation Plan (IP)
 2. Complete Gap Analysis Report (v3/4.1)
 3. Update Coordinated Action Plan
 4. Update and restructure ECV Inventory
 5. Submit journal manuscript on CDR definitions
 6. Nominate Vice-Chair: Vincent-Henri Peuch (ECMWF)
 7. Update Greenhouse Gas Roadmap (prior presentation)

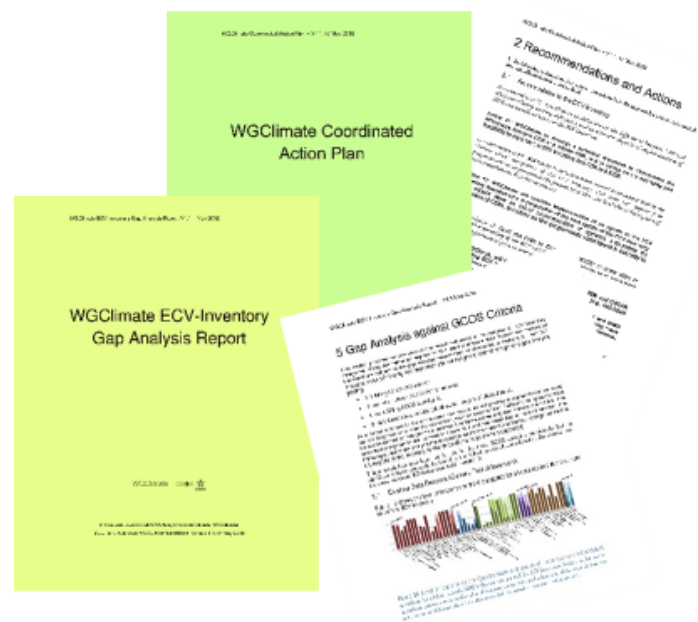
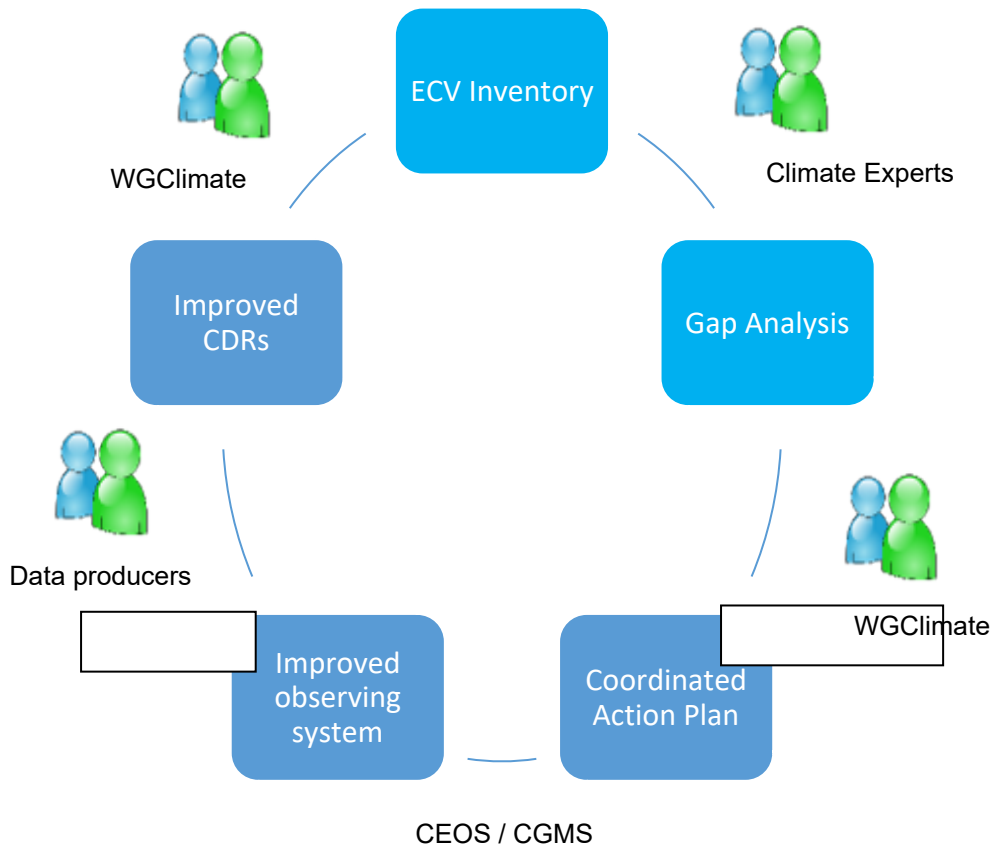


1. Agency Response to GCOS IP (2022)

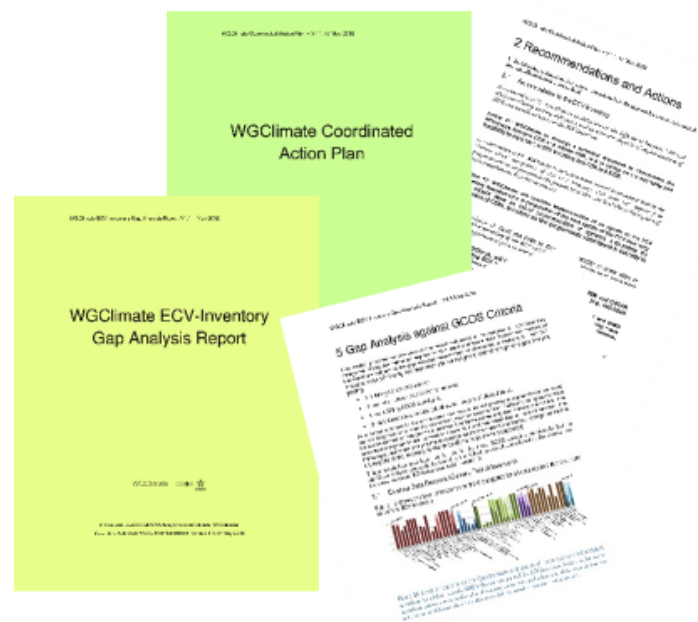
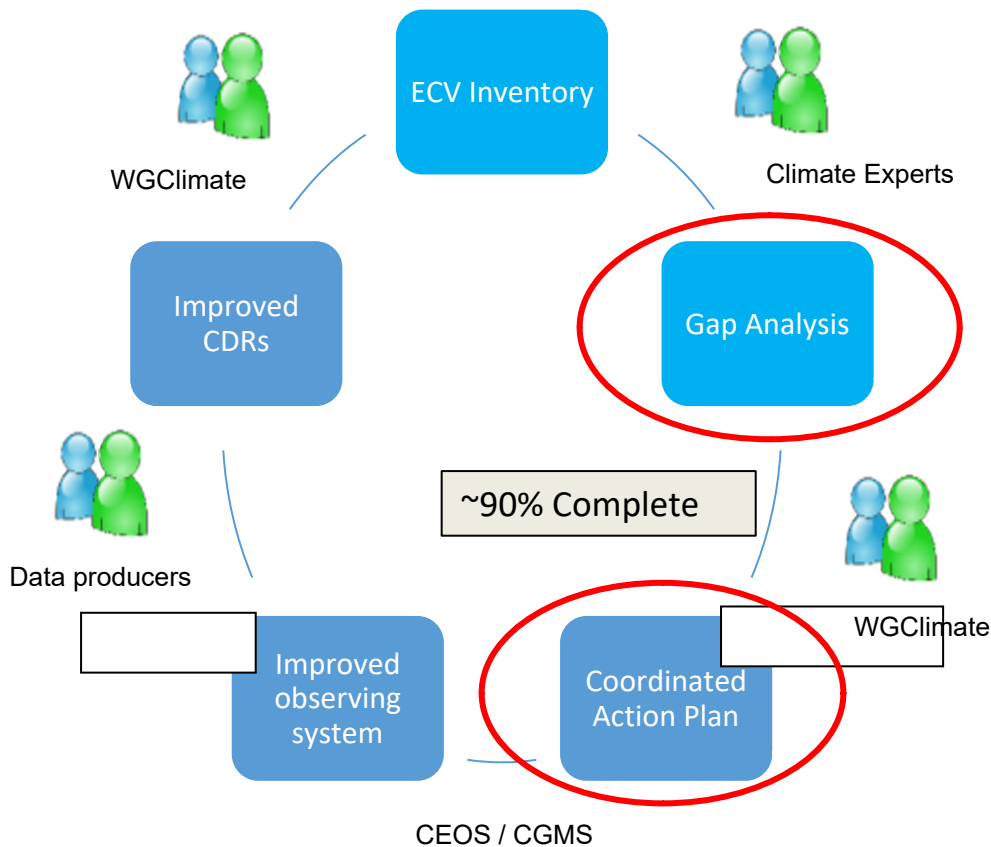
- Purpose
 - Describes needs/gaps in Global Climate Observing System
 - Produced every 5-6 years
 - 2022: GCOS provided 16 Actions, each with multiple Activities
- WGClimat addressing with a two-phase response
 - Completed 21 Activities in 2023 (more straightforward)
 - Addressing similar number in 2024 (more complex)
 - Submission to CEOS and CGMS Principals: mid-2025



2-3. Core Documents Update: Context



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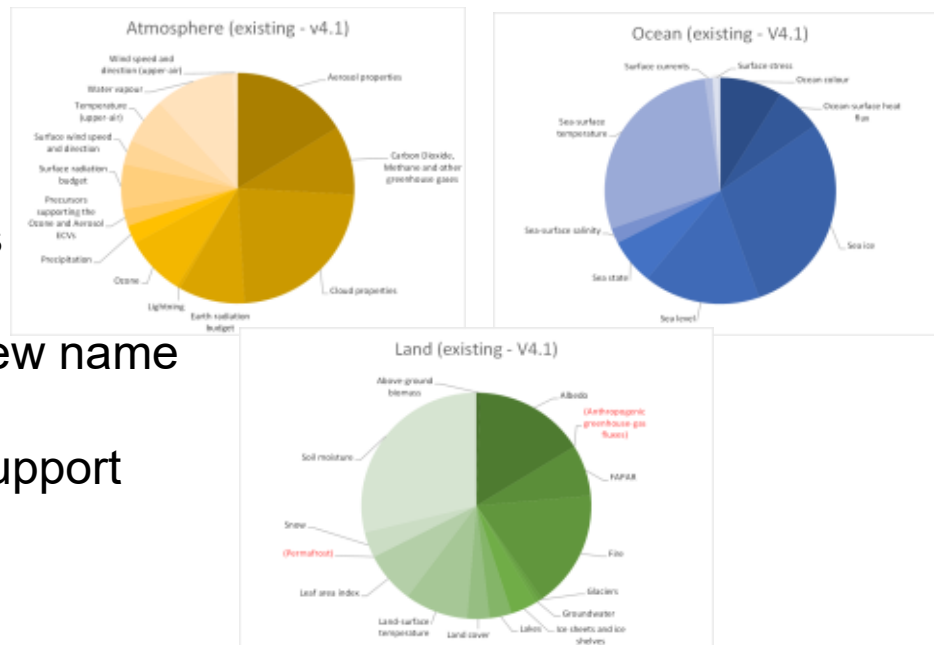
4. ECV Inventory Status

Purpose

- International compendium of metadata for known CDRs
- Used to assess adequacy of future space architecture for CDR generation
- Comprehensive CDR library for end-users, researchers, developers

Status and Plans

- Current: V4.1: November 2022
- V5.0: ~December 2024
 - 45 previously-submitted records
- V6.0: ~December 2025
 - Simpler structure, processes, new name
- EUMETSAT initiated new 5-year support contract



5. Climate Data Record Definitions

- Goal: General, robust, anticipatory of evolving technologies
 - e.g., indices, reanalysis-derived CDRs, GPSRO, gravimetry, ML/AI, *in situ*
- Manuscript in development for peer-reviewed journal article in late 2024

6. Vice-Chair Nomination: Vincent-Henri Peuch (ECMWF)

- Joined ECMWF in 2011. Led initiation and implementation of Copernicus Services at ECMWF. Founding Director of the Copernicus Atmosphere Monitoring Service for 10 years.
- Current member of ECMWF Directorate as Director for engagement with the European Union and Head of ECMWF Bonn (190 staff) -- the centre of gravity for ECMWF EU activities including Copernicus and Destination Earth.
- 30-years experience in atmospheric composition modelling, composition-climate interactions and data assimilation of observations of atmospheric constituents (>105 publications, h-index: 48).
- Active in international scientific and steering bodies including WMO's Global Atmospheric Watch and Global Greenhouse Gas Watch Study Group (co-chair) and ESA's Advisory Committee for Earth Observation and Climate Science Advisory Board.
- **ECMWF representative to Joint CEOS-CGMS Working Group on Climate and ECMWF's CEOS contact since 2022.** Contributes to Greenhouse Gas aspects, Space Agencies response to GCOS IP and provides liaison with relevant ECMWF/C3S/CAMS/DestinE activities: reanalyses, link to policy stakeholders, data stores, use cases...
- Dr. Wenying Su (NASA; current Vice-Chair) rotates to Chair position at CEOS Plenary.



Key issues of relevance to CGMS:

(See prior presentation: WGClimate response to G3W)

- WGClimate recently engaged CGMS WGs to begin working collaboratively toward a sustained operational backbone capability (space and ground) to meet needs of select stakeholder programs, including G3W, IMEO and Global Stocktakes.
- WGClimate and its GHG TT are updating and restructuring the Roadmap for GHG Monitoring.

To be considered by CGMS:

- WGClimate recommends approval of Dr. Vincent-Henri Peuch (ECMWF) as incoming WGClimate Vice-Chair.

Thank you

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