

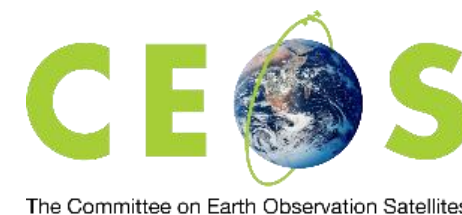
# Status of Joint CEOS/CGMS WGClimate

Jörg Schulz, EUMETSAT

Chair Joint CEOS/CGMS Working Group on Climate

John Dwyer, USGS

Vice Chair Joint CEOS/CGMS Working Group on Climate





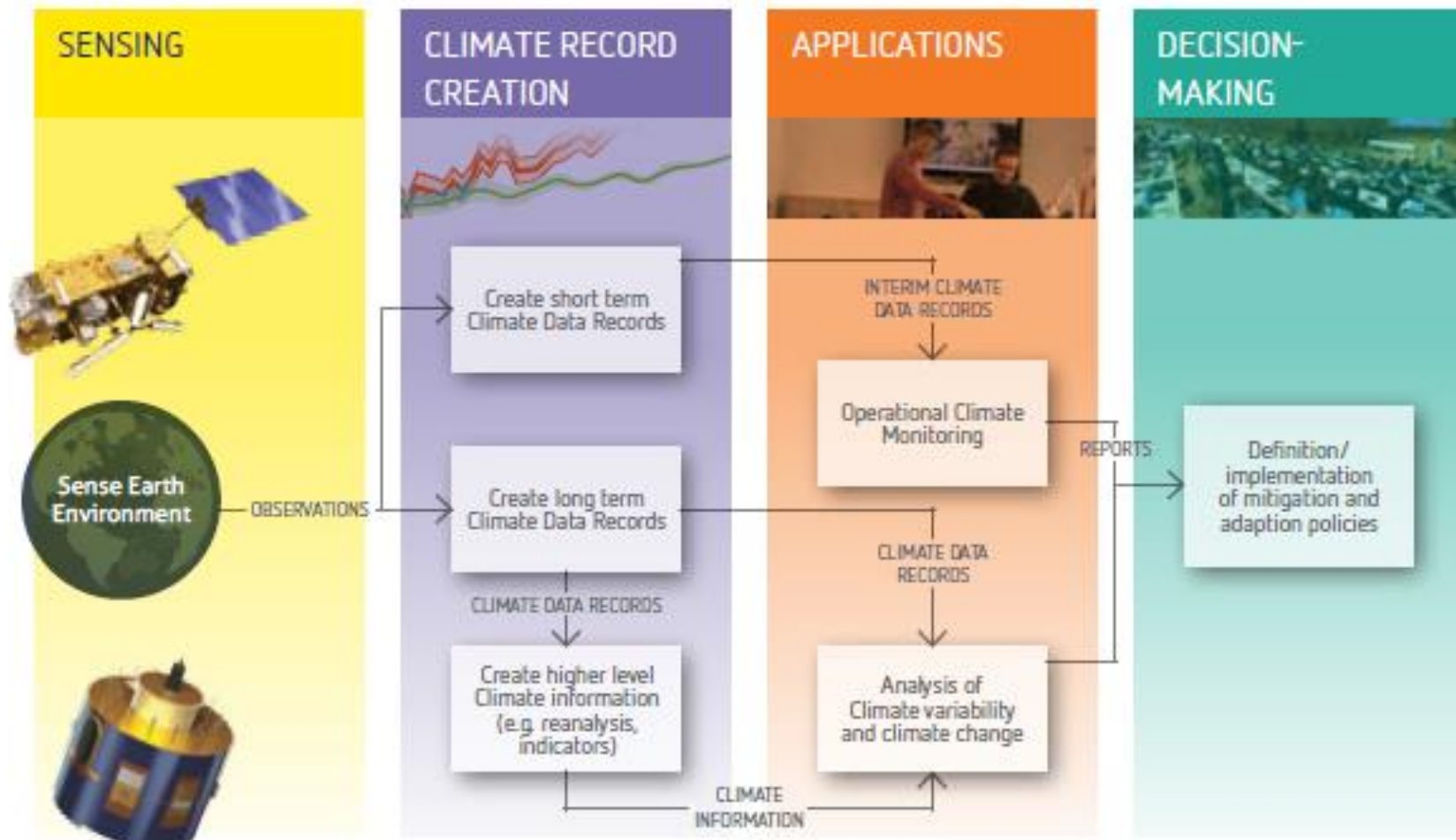
- The joint development of the high-level architecture for climate monitoring from space led to the formation of the CEOS WGClimate in 2010 and then of the Joint CEOS/CGMS WGClimate in 2013.

Chair: Jörg Schulz (EUMETSAT) until 2020

Vice Chair: John Dwyer (USGS) until 2019

# The Architecture for Climate Monitoring from Space

# 2013



[http://ceos.org/document\\_management/Working\\_Groups/WGClimate/WGClimate\\_Strategy-Towards-An-%20Architecture-For-Climate-Monitoring-From-Space\\_2013.pdf](http://ceos.org/document_management/Working_Groups/WGClimate/WGClimate_Strategy-Towards-An-%20Architecture-For-Climate-Monitoring-From-Space_2013.pdf)

# Major objectives of WGClimate

- Provision of a structured, comprehensive and accessible view as to what Climate Data Records are currently available from satellite missions of CEOS and CGMS members or their combination;
- Creation of the conditions for delivering further Climate Data Records, including multi-mission Climate Data Records, through best use of available data to fulfil GCOS requirements (e.g. by identifying and targetting cross-calibration or re-processing gaps/shortfalls );
- Optimisation of the planning of future satellite missions and constellations to expand existing and planned Climate Data Records, both in terms of coverage and record length, and to address possible gaps with respect to GCOS requirements.

# Addition to the Mandate 2018

Considering the specific importance of greenhouse gas monitoring as stated in the Conference of the Parties (COP) 21 Paris Agreement, it will:

- Coordinate activities of CEOS and CGMS defining and implementing an integrated global carbon observing system including a targeted observing system for monitoring the column concentrations of CO<sub>2</sub>, CH<sub>4</sub> and other greenhouse gases from space as well as insuring that these activities are integrated into a broader approach on greenhouse gas monitoring, i.e., WMO IG<sup>3</sup>IS, GCOS, and GEO-C;
- Oversee the implementation of the CEOS Carbon strategy.



United Nations  
Climate Change  
**2015**

**COP-21 Paris Agreement: Adaptation (Article 7(c)):**  
Strengthening scientific knowledge on climate, including research, **systematic observation of the climate system** and early warning systems, in a manner that informs climate services and supports decision-making.



Reports on Progress  
@ SBSTA/COP



WGClimate  
The Joint CEOS/CGMS  
Working Group on Climate



Needs and Requirements

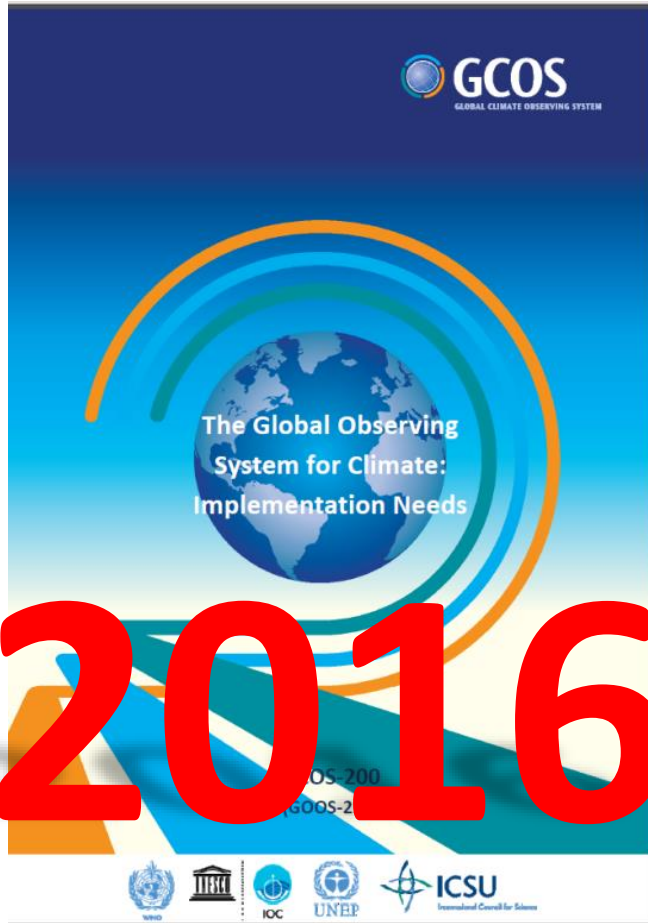


Coordinated Response



**GCOS**  
GLOBAL CLIMATE OBSERVING SYSTEM

# GCOS Implementation Plan & The Comprehensive Answer



## Action G11: Review of availability of climate data records

Action Provide a structured, comprehensive and accessible view as to what CDRs are currently available, and what are planned to exist, together with an assessment of the degree of compliance of such records with the GCOS requirements for the ECV products indicated in Annex A

## Action G12: Gap-analysis of climate data records

Action Establish a gap analysis process and associated actions, to: (a) address gaps/deficiencies in the current available set of CDRs; and (b) ensure continuity of records, and address gaps through the appropriate planning of future satellite missions for the ECV products indicated in Annex A

- Answer contains status and plans for all actions in GCOS IP relevant for space agencies.
- Allows reporting of progress on GCOS needs to UNFCCC.



# Space Agency contribution to the Paris Agreement



- Consulted GCOS and GEO that performed similar analysis in their areas;
- Applied categorisation of Paris Agreement articles as depicted by GCOS (see next slide);
- Document provides an assessment in support of individual articles of the Agreement;
- Addressed in particular CEOS cross cutting Working Groups contributions;
- Will become available on [climatemonitoring.info](http://climatemonitoring.info) soon.

Statement of Space Agency Contributions  
in Support of the Paris Agreement

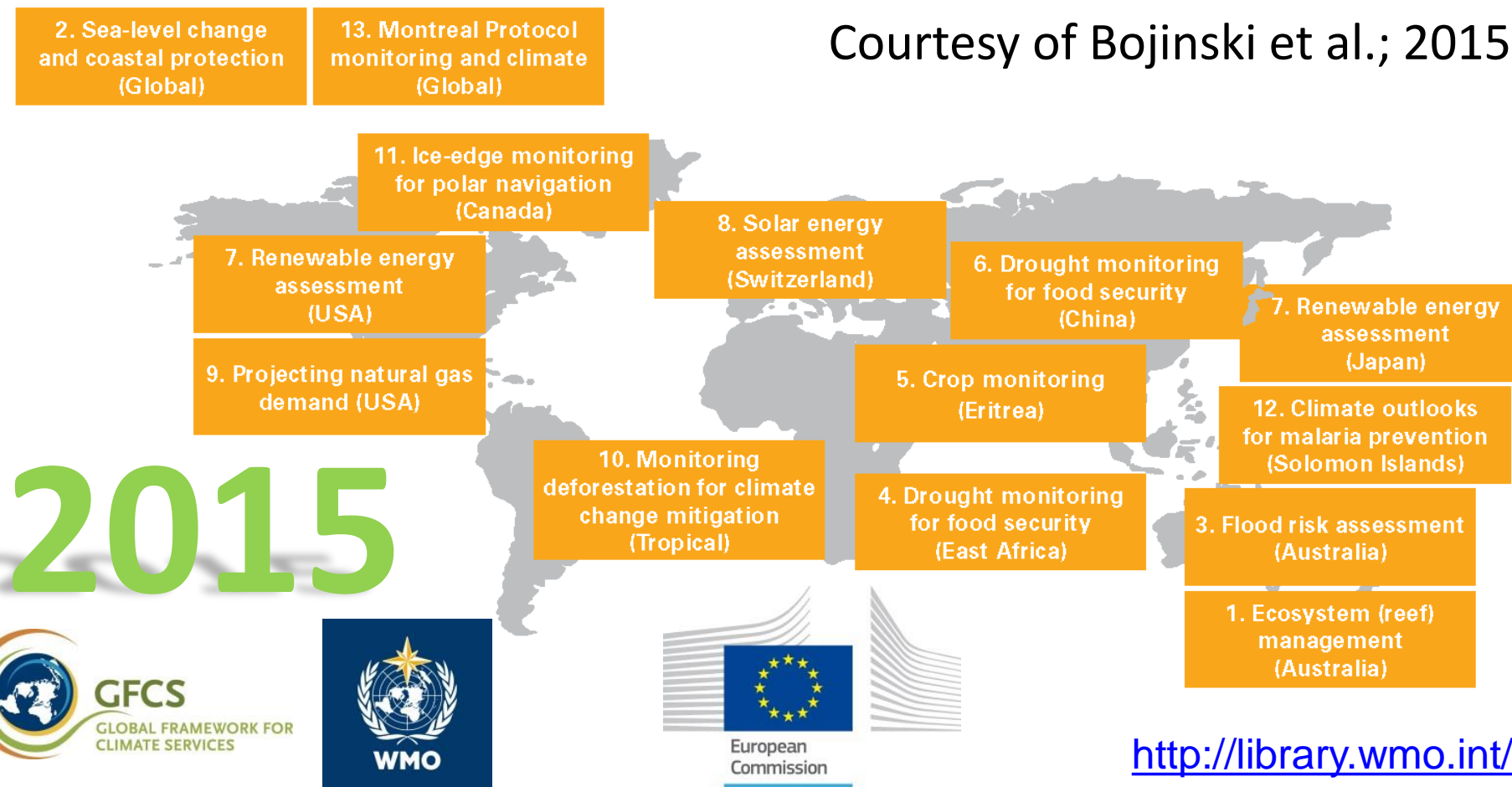
Prepared by the Joint CEOS/CGMS Working Group Climate

Authors: Schulz, J. (EUMETSAT), M. Dowell (European Commission), and S. Pinnock (ESA)

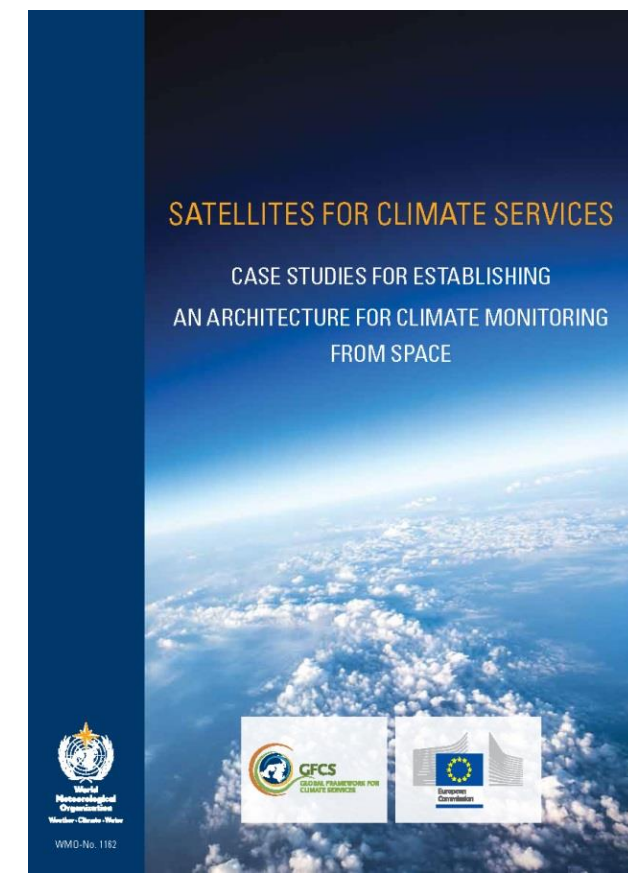
Version 1.0 – 16 November 2018



Courtesy of Bojinski et al.; 2015



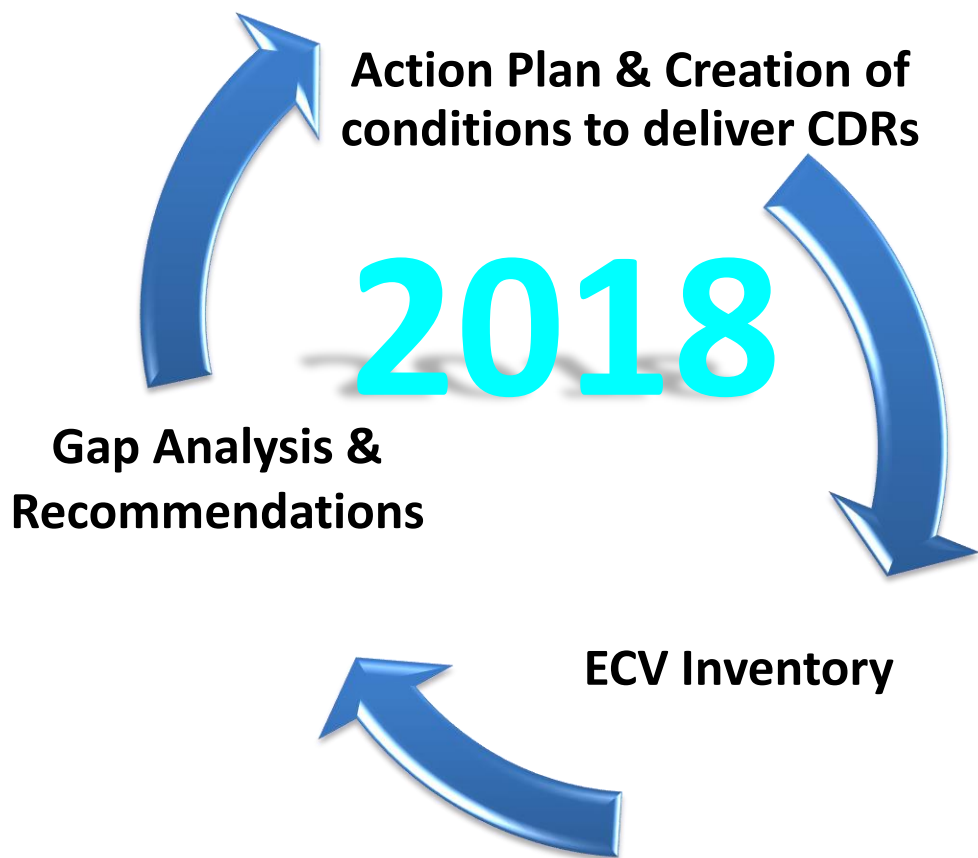
2015



[http://library.wmo.int/pmb\\_ged/wmo\\_1162\\_en.pdf](http://library.wmo.int/pmb_ged/wmo_1162_en.pdf)



# ECV Inventory - Resource for Coordinated Response



- ECV Inventory fully describes current and planned implementation arrangements (ECV-by-ECV) within the Architecture;
- Updated continuously with versions of Inventory, gap analysis, action plan created annually with approval from CEOS and CGMS;
- Recommendations and Coordinated Actions inform space agency planning, improve availability and interoperability of climate data;
- Feeds material for all future responses to the GCOS IP.

- Joint CEOS/CGMS WGClimate is the focal point of space agencies to address GCOS requirements and is the single coordinated voice towards UNFCCC;
- The ECV Inventory provides a resource for the whole community that wants to use and create climate data records – Use it to find data for applications, examples provided!
- WGClimate has developed the tools for effective analysis of space agency data holdings and plans, to optimise utilisation of existing measurements and planning of new measurements for climate monitoring;
- The implementation of the architecture for space-based climate monitoring requires an ongoing analysis of every pillar of the architecture and their interactions.