

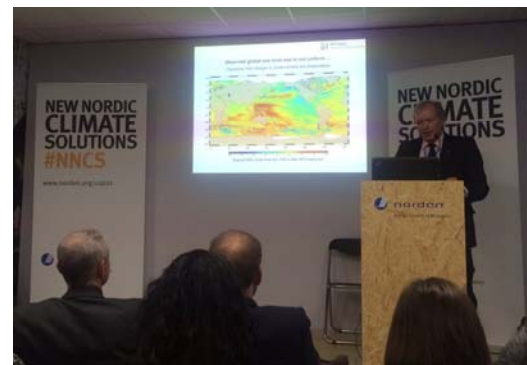
First Review of COP-21 and Potential impacts on Space Agencies

Pascal Lecomte - WGClimate Chair

March 4th, 2016

Joint CEOS/CGMS Working Group on Climate

- Space Agencies were present and visible in the negotiation areas (Blue Zone) and public events.







COP 21 Side Event

OPEN EARTH OBSERVATION DATA, KNOWLEDGE AND SERVICES FOR A CLIMATE RESILIENT SOCIETY - A CASE FOR AFRICA

Thursday 03 December 2015, 18:30 – 20:00
EU Pavilion, Room: Brussels

COP21 side event

Disaster Risk Management and Climate Change Adaptation:
Two Sides of the Same Coin

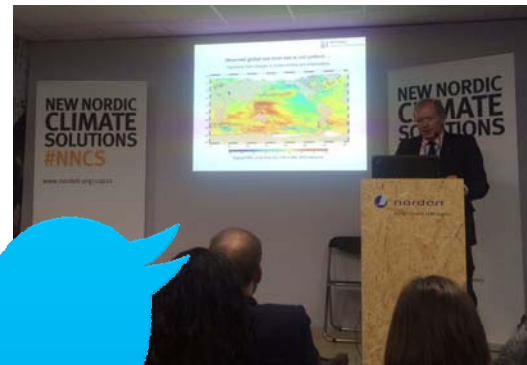
How Disaster Risk Management can complement and reinforce **Climate Change Adaptation**

EU Pavilion

Luxembourg Room
02 December 2015
14:30 - 16:00



- Space Agencies were present and visible in the negotiation areas (Blue Zone) and public events.



COP21 • CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE




COP 21 Side Event

OPEN EARTH OBSERVATION DATA, KNOWLEDGE AND SERVICES FOR A CLIMATE RESILIENT SOCIETY
A CASE FOR AFRICA

Thursday 03 December 2015, 18:30 – 20:00
EU Pavilion, Room: Brussels

COP21 side event

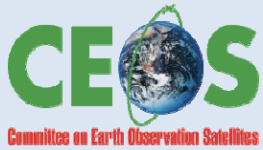
Disaster Risk Management and Climate Change Adaptation:
Two Sides of the Same Coin

How Disaster Risk Management can complement and reinforce **Climate Change Adaptation**

EU Pavilion

Luxembourg Room
02 December 2015
14:30 - 16:00





COP-21 – Key results



The Paris agreement aims to hold the increase in global average temperatures to:

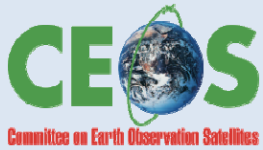
“well below 2°C above pre-industrial levels” and to “pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels”.

In addition to the Agreement itself, there are ‘Decisions’ which are practical documents to help implement the Agreement.

Crucial areas identified as essential for a land mark conclusion

- Mitigation
- Transparency system and global stock-take
- Adaptation
- Loss and Damage
- Support

Joint CEOS/CGMS Working Group on Climate



Input from space agencies: SBSTA Report



- Very positive feed back on statements delivered by GCOS, IPCC, WMO CEOS and CGMS,
- SBSTA noted the GCOS report, the CEOS/CGMS joint report and the WMO report,
- Noted the progress made and invited GCOS to consider the outcome of the COP when preparing the GCOS IP,
- Invited GCOS to collaborate with partners to support Decision making on Adaptation and Mitigation.
- Urged parties to address priorities and gaps identified by GCOS and contribute to the review of GCOS IP 2016.
- Encouraged parties to enhance systematic observations in relation to Extreme Events
- Overall, there is a strong acknowledgement of the contributions made by GCOS but also more generally by the climate efforts done by the space agencies – supporting the underlying science and providing the base measurements.
- SBSTA urges the parties to continue in order to make the Paris agreement happen.
- It should be noted that the SBSTA didn't invite explicitly CEOS to support the implementation of GCOS IP 2016 and to report on progress at SBSTA 45.

Joint CEOS/CGMS Working Group on Climate



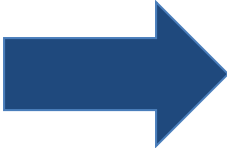
The role for space agencies in the Paris Agreement



- Mitigation
 - Implementation of REDD+ : has increased support from the Paris Agreement (Article 5)
 - Further guidance on INDCs
 - INDCs non constraining
- Adaptation
 - Plan for Adaptation, current INDC pledges are not enough (2.7 ° to 3.7 ° instead of less than 2 °)
 - Earth Observation Systems (also have a wider context)
 - Scientific Knowledge
- Loss and Damages
 - More natural disasters: risk assessments, emergency preparedness and early warning systems.
- Support
- Global Stock-take
 - Frequency of Reporting

Joint CEOS/CGMS Working Group on Climate

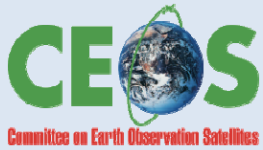
The role for space agencies in the Paris Agreement

- Mitigation
 - Implementation of REDD+ :
 - Further guidance on INDCs
 - Adaptation
 - Plan for Adaptation
 - Earth Observation Systems
 - Scientific Knowledge
 - Loss and Damages
 - More natural disasters
 - Support
 - ?
 - Global Stock-take
 - Frequency of Reporting
- 
- Mitigation
 - GFOI, BIOMASS mission
 - Harmonisation, metrics?
 - Adaptation
 - GCOS and IPCC
 - Copernicus Space Segment
 - CCI, H2020 and many others
 - Loss and Damages
 - International Disasters Charter
 - Support
 - ?
 - Global Stock-take
 - Carbon mission/harmonisation?

WGClimate across all?

Underpinning science on climate change is fundamental

Joint CEOS/CGMS Working Group on Climate



WGClimate



The over-arching goal of the Joint CEOS/CGMS Working Group on Climate (WGClimate) will be to improve the systematic availability of Climate Data Records through the coordinated implementation, and further development of the architecture for climate monitoring from space.

More specifically, the coordination shall be designed to achieve three main objectives:

- 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 targeting 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.

Joint CEOS/CGMS Working Group on Climate

WGClimate and the Climate Architecture

Climate Architecture

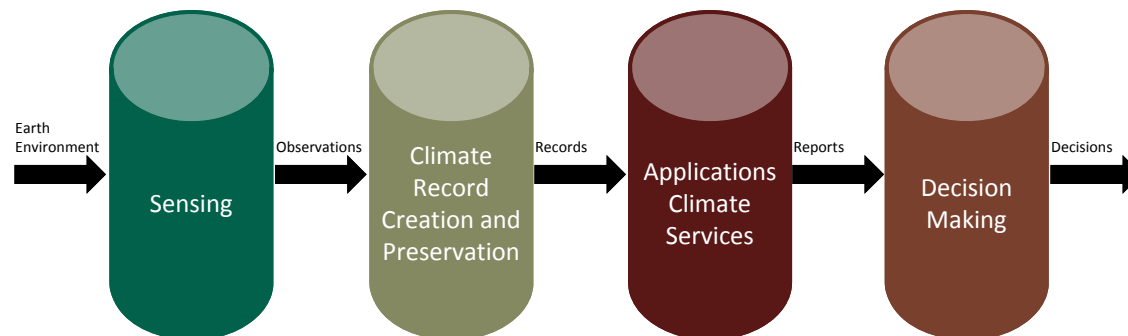
- The document outlines a strategy for an international architecture that ensures delivery of satellite observations for climate monitoring from space over the time frames required for analysis of the Earth’s climate system.
- The implementation starts with an ECV Inventory, including balance of past/current and future datasets. An approach for analysis of the data is being prepared.
- Other activities to be started include Case Studies and Macroscale space system requirements.

Strategy Towards an Architecture for Climate Monitoring from Space



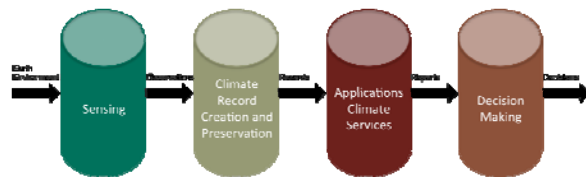
Why an Architecture for Climate Monitoring from Space ?

- Two main needs/usage scenarios for an architecture have emerged.
 - To promote a common understanding, amongst the various stakeholders, of the implementation implications of meeting the various climate monitoring requirements.
 - To support an assessment of the degree to which the current and planned systems meet the requirements, and the generation of an action plan to address any identified shortfalls/gaps. It is anticipated that such an action plan would help promote the fulfilment of user needs through the coordinated implementation of activities across agencies.

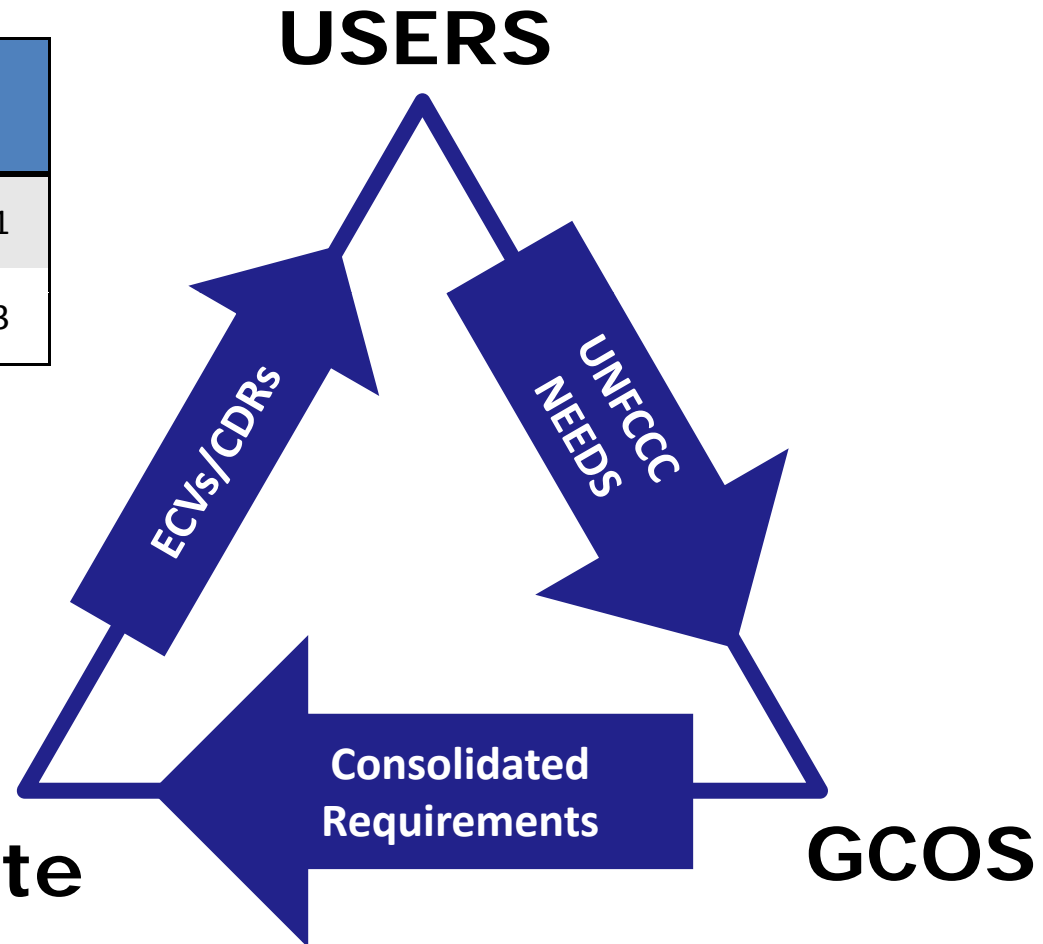


Flow of Requirements to Products

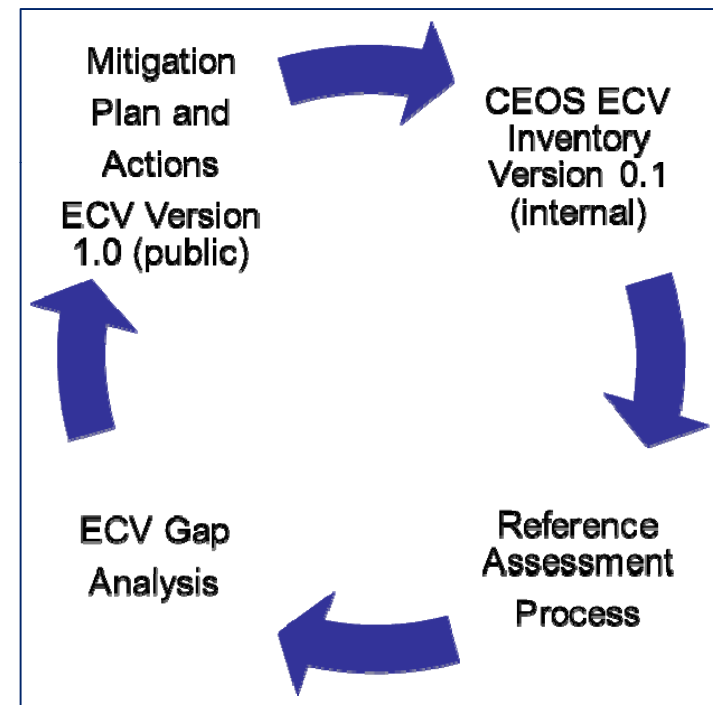
ECV	Carbon Cycle	Water Cycle
Precipitation	Priority 2	Priority 1
CO2	Priority 1	Priority 3



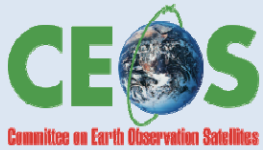
WGClimate



- **ECV Inventory** is the principle activity of WGClimate to capture the physical architecture of climate observing systems
- Each step was an opportunity to develop further **Best Practices**.
- ECV Inventory **data call** was interpreted differently by different agencies and participation varied.
- **Reference Assessment** scored ECV inventory answers against GCOS data set guidelines.
- High-Definition **Gap Analysis** considered gaps spanning 41 conditions.
- **Mitigation Plan** and actions are very difficult to develop and needs harmonization with GCOS responsibilities.



- Reporting to CEOS
 - Update of the ECV Inventory
 - Analysis report on new Climate Change Treaty (COP-21)
- Reporting To CGMS (#44 Biot-France June 2016)
 - FCDR Inventory
 - Interoperability Standards
- Reporting to SBSTA
 - WGClimate Chair will be present at SBAST-44 as part of the ESA delegation.
- Interface with GCOS
 - Supporting the Definition of the New GCOS IP (planned end 2016)
 - Prepare the CEOS response to the new GCOS IP (planned end 2017)



Timeline for the GCOS Implementation Plan



Preparatory work in 2013 – 2015 (GCOS panel meetings and three workshops with GFCS/UNFCCC/IPCC; Publication of Status Report)

15 November 2015
2-4 February 2016

Draft Table of Contents submitted to COP21
First Writing Team meeting, JRC, Italy

2-4 March 2016

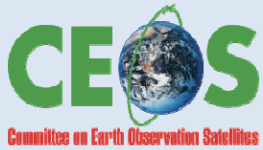
Open GCOS Conference

April 2016
24-26 May 2016
July 2016
September 2016

September 2016
October 2016

Bring work in progress to GCOS panel meetings
Second Writing Team meeting, JRC, Italy
Public review (6 weeks)
Final version prepared in light of comments on the draft
Final Version submitted to GCOS SC-24
Final plan submitted to COP22

Joint CEOS/CGMS Working Group on Climate



WGClimate response to GCOS Implementation Plan



2-4 March 2016

7-9 March 2016

24-26 May 2016

July 2016

September 2016

February 2017 – WGClimate #7

July 2017 – WGClimate #8

November 2017

Open GCOS Conference

WGClimate #6

2nd Writing Team meeting

IP Public review (6 weeks)

Preparation for the Space
Agency response

IP Final Version

1st meeting of the Writing Team

2nd meeting of the Writing Team

Space Agency Response

Joint CEOS/CGMS Working Group on Climate