



University of
Leicester



Terrestrial Observation Panel for Climate
(TOPC)-Fire ECV update including CEOS LPV

Kevin Tansey & others



Implementation Activities

Carolyn Richter

Director, GCOS Secretariat

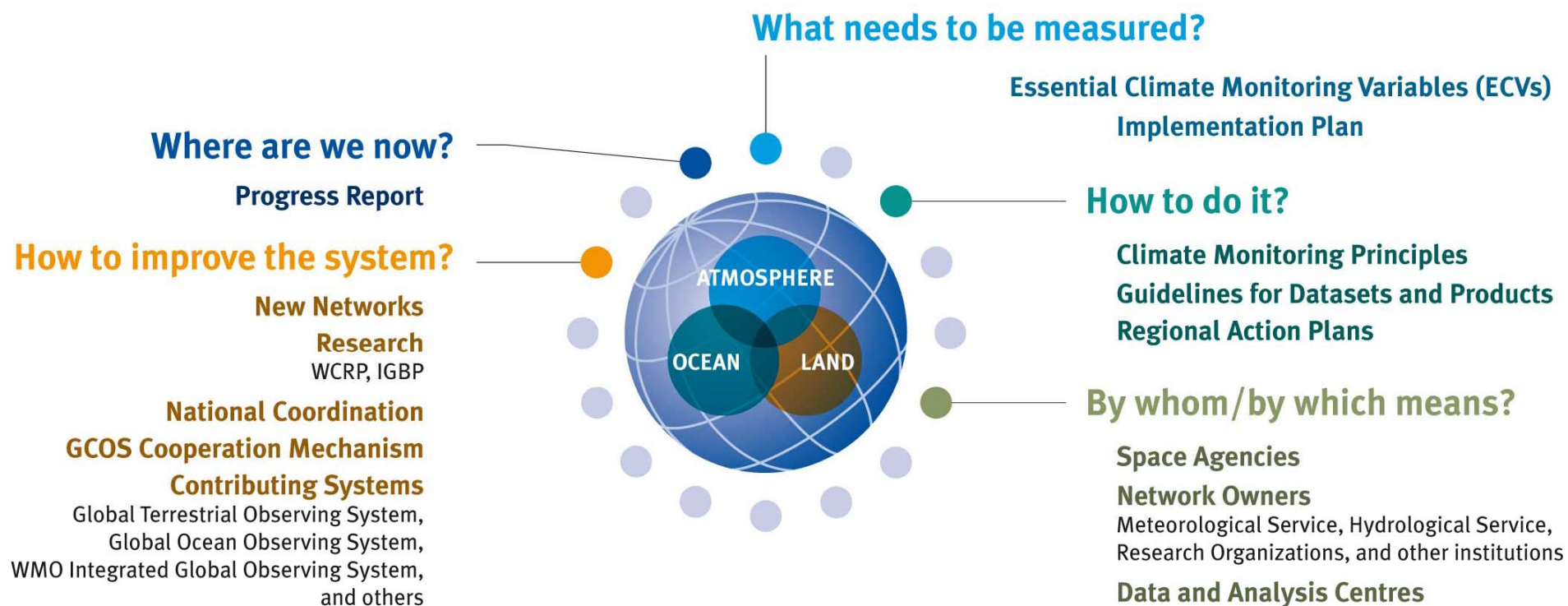
Credit to: Adrian Simmons, Chair Steering Committee

ESA CCI 2nd Collocation Meeting, 12-14 October, 2011



ICSU
International Council for Science

GCOS – an all domain system: Continuous Improvement and Assessment Cycle



The primary functions of the GCOS Steering Committee are:

- to formulate the concept and scope of the Global Climate Observing System (the GCOS)
- to provide scientific and technical guidance to the GCOS sponsors and other agencies providing atmospheric, oceanic and terrestrial observing systems, for planning, implementing and further developing the GCOS

The scope of GCOS covers:

- the observations
- the transmission of data
- the management of data
- the establishment of fundamental climate data records
- the formation of products from these data records

The GCOS comprises the climate components of contributing systems:

- the WMO observing systems and programmes (GOS, GAW, WHYCOS, ...)
- the IOC-led co-sponsored Global Ocean Observing System (GOOS)
- the FAO-led co-sponsored Global Terrestrial Observing System (GTOS)
- observational components of international research programmes (WCRP, IGBP, ...)
- any other systems providing climate observation, data management and products

and can be viewed as the climate-observing component of the GEOSS

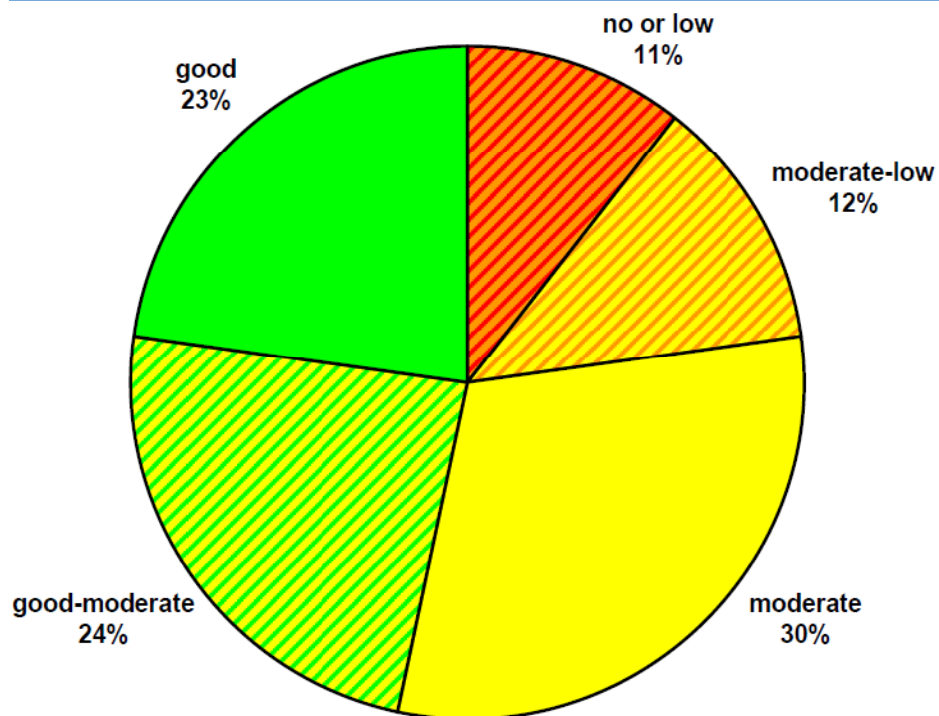
The GCOS supports :

- assessment (IPCC)
- policy (UNFCCC)
- research (WCRP, IGBP, ...)
- services (GFCS)



- GCOS Implementation Plan (2010 update)
 - List of actions concerning fire disturbance
- Systematic Observation Requirements for Satellite-based Products for Climate (2011 Update) – Supplement
 - Target requirements and activities
 - Active fire, FRP, burned area updated - thanks

Progress report on implementation 2004-2008



Assessment of progress on 131 Actions in
2004 Implementation Plan

Action Q27 Full implementation of Argo profiling float array

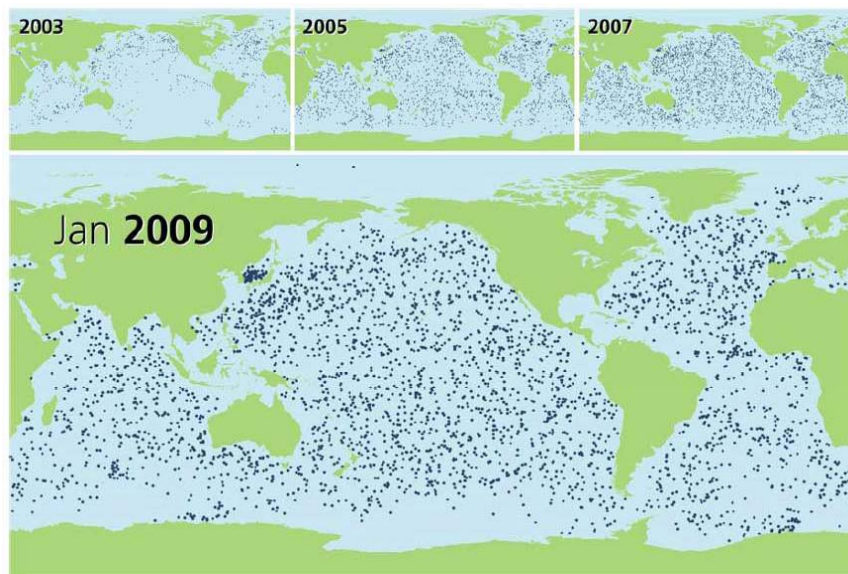
Good Progress

Action: Deploy the planned 3000 Argo float array, reseeding the array with replacement floats to fill gaps and maintain density (estimated 800 per year).

Who: Parties participating in the Argo Pilot Project and in cooperation with the Observations Coordination Group of JCOMM.

Time-Frame: Complete 3000 float array attained by 2007.

Performance Indicator: Number of reporting floats. Percentage of network deployed.



“Little progress in ensuring long-term continuity for several important observing systems”

“Capacity building support remains small in relation to needs ”



Requirements

http://www.wmo-sat.info/db/variables/view/60 | Space Programme | WMO | WMO Observing Requirem...

View Favorites Tools Help | Google | Search | More >>

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Details for *Fire fractional cover*

Definition	Fraction of a land area where fire is occurring		
Measuring Units	%	Uncertainty Units	%
Horizontal Res Units	km	Vertical Res Units	N/A

Comment:	
Last modified:	08-08-2011

Classification

Domain: [Terrestrial](#)
 Theme: [Land surface](#)
 Variable: Fire fractional cover
 Measured in Layers:
 Surf-land

Used in Application Areas:

[Agricultural Meteorology](#)

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REQUIREMENTS DEFINED FOR *FIRE FRACTIONAL COVER* (3)

Id	Layer	Application Area	Uncert. Goal	Uncert. Thresh	HR Goal	HR Thresh	VR Goal	VR Thresh	OC Goal	OC Thresh	Avail Goal	Avail Thresh	Val Date	Source
3	Surf-land	Agricultural Meteorology	0.05 %	0.2 %	0.01 km	10 km	N/A	N/A	6 h	24 h	59.9 min	6 h	20-10-2003	ET ODRRGOS
35	Surf-land	Nowcasting	5 %	20 %	5 km	250 km	N/A	N/A	6 h	12 d	24 h	4 d	20-10-2003	ET ODRRGOS
33	Surf-land	Climate-TOPC	5 %	10 %	0.25 km	10 km	N/A	N/A	24 h	3 d	360 d	2 y	19-07-2007	TOPC

GOFC-GOLD_WMO_ECV_Observational-requirements_web.xls



Action T35 [IP-04 T32]

- Reanalyse the historical fire disturbance satellite data (1982 to present)
 - Who: Space agencies, working with research groups coordinated by GOFC-GOLD.
 - Time-Frame: By 2012.
- Response: Search for data in progress
 - Contact Ivan Czizsar

GOOD Progress



Action T36 [IP-04 T33]

- Continue generation of consistent burnt area, active fire, and FRP products from low orbit satellites, including version intercomparisons to allow un-biased, long-term record development.
 - Who: Space agencies, in collaboration with GOFC-GOLD
 - Time-Frame: Continuous.
- Response: Progress has much improved (funding)
 - Burned Area: David, Emilio and Louis
 - Active fire and FRP: Ivan, Martin and Wilfred

GOOD Progress



Action T37 [IP-04 T34]

- Develop and apply validation protocol to fire disturbance data.
 - Who: Space agencies and research organizations
 - Time-Frame: By 2012
- Response: Progress on protocol is poor (resources) but work on generation of data sets is very good.
 - CCI to draft part III of protocol -> community
 - GOFC-GOLD to lobby CEOS WGCV/WGCI/GCOS for funds for R&D into part II. Action to cost this work.
 - Luigi to coordinate

MODERATE Progress



Action T38 [IP-04 T35]

- Make gridded burnt area, active fire, and FRP products available through links from a single International Data Portal.
 - Who: Coordinated through GOFC-GOLD.
 - Time-Frame: Continuous.
- Response: This action is some what dependent on Actions T35-37, so progress is perceived to be poor at this time. Soft links are easily put in place.

POOR Progress



- Develop set of active fire and FRP products from the global suite of operational geostationary sats.
 - Who: Through operators of geostationary systems, via CGMS, GSICS, and GOFC-GOLD.
 - Time-Frame: Continuous
- Response: NOAA/NESDIS & EUMETSAT/LSA SAF systems
 - Detailed write up of the actions undertaken and viewed of high quality by CEOS WGC
 - Research quality products
 - Funded validation project needed (in-situ networks)

GOOD Progress



University of Leicester

Guideline for the generation of datasets and products - Meeting GCOS requirements

1. Full description of all steps taken in the generation of FCDRs and ECV products, including algorithms used, specific FCDRs used, and characteristics and outcomes of validation activities
2. Application of appropriate calibration/validation activities
3. Statement of expected accuracy⁶, stability and resolution (time, space) of the product, including, where possible, a comparison with the GCOS requirements
4. Assessment of long-term stability and homogeneity of the product
5. Information on the scientific review process related to FCDR/product construction (including algorithm selection), FCDR/product quality and applications⁷
6. Global coverage of FCDRs and products where possible
7. Version management of FCDRs and products, particularly in connection with improved algorithms and reprocessing
8. Arrangements for access to the FCDRs, products and all documentation
9. Timeliness of data release to the user community to enable monitoring activities
10. Facility for user feedback
11. Application of a quantitative maturity index if possible
12. Publication of a summary (a webpage or a peer-reviewed article) documenting point-by-point the extent to which this guideline has been followed

(GCOS-143)

An update of the 2004 Implementation Plan in support of the UNFCCC, requested by the Parties to the Convention

- was prepared by expert meeting, SC and panel chairs, the GCOS, GOOS and GTOS secretariats, under editor Paul Mason, former SC Chair
- builds on the assessment of progress 2004-2008
- refines list of *Essential Climate Variables* (ECVs), and emphasizes need for associated observation of environmental variables
- identifies 138 Actions, with estimates of costs
- was published in August 2010 following open review

UNFCCC SBSTA in Cancun

- welcomed plan and called for support from Parties
- invited other Convention bodies to consider funding issues
- encouraged a regular cycle of evaluation, reporting and requirement-setting

Draft Supplement on Satellite Data Products, finalised Dec 2011.

- Presentation at SBSTA 36th Session in Bonn

- **Review of data needs for adaptation and service provision (2012-2013)**
- **Assessment of progress and adequacy (2014-2015)**
 - building on identification of needs for adaptation and other services
 - informed by identification of uncertainties by the IPCC Fifth Assessment process
- **New Implementation Plan (2015-2016)**



- GOFC-GOLD's role is central and key
- At TOPC, progress reports are provided and these are well received
- Feedback from WMO and their users needed on our recent comments
- More CEOS WGC and WGCV-LPV coordination needed
- Do we want to update the GTOS ECV-T13?
- Reach consensus over the MMU in the validation data