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**GCOS STEERING COMMITTEE**

**TWENTY-NINTH SESSION**

GCOS SC-29, 7–9 December 2021

Virtual Session

**GCOS: Links to WMO**

A paper by the Secretariat

- (1) The 28<sup>th</sup> Session of the GCOS Steering Committee agreed action SC-28-5:

*Secretariat to prepare a note on improving the integration of GCOS ECV and climate needs into the WMO regulatory system and WIGOS for discussion by the SC.*

This note has been compiled in response to this request.

- (2) Over the last year the GCOS Secretariat has worked towards better including the work of GCOS and its ECVs into the WMO and its procedures. The main actions include:
- The list of GCOS ECVs has been included into the WIGOS manual for the first time (in APPENDIX 5.8. ATTRIBUTES SPECIFIC TO OBSERVATIONS OF ESSENTIAL CLIMATE VARIABLES). A section on climate monitoring now refers to the GCOS Implementation Plan 2016.
  - Climate Monitoring is explicitly included in the new WMO Unified Data Policy (resolution 1) advocating free exchange of data. Historic climate archives are included for the first time. This was approved by the 2021 Extraordinary World Meteorological Congress (11-22 October)
  - The 2021 Extraordinary World Meteorological Congress (11-22 October) also approved a new Global Basic Observation Network (GBON), which will be the backbone of weather, climate and hydrological services, and the Systematic Observations Financing Facility (SOFF), a new financing mechanism to support the establishment and maintenance of additional stations in less developed and small island developing states. GBON and SOFF will, if fully implemented, make significant improvement to some climate observations. The ideas for GBON and SOFF originated in a joint WMO/WIGOS workshop in Fiji.
  - The GCOS Regional Workshops have been held in association with WMO (WIGOS) and plans are being developed to continue this collaboration into 2022.

- The GCOS Secretariat has been working to make the specification of GCOS ECV requirements consistent with WMOP’s OSCAR database of requirements.
- WMO has agreed that GCOS should manage the Task Team on the GCOS Surface Reference Network (GSRN-TT) on the creation of the GCOS Surface Reference Network (GSRN). A task team has been established and is developing a pilot programme with a lead centre hosted by China.
- The GCOS concept of tiered networks (that was already included in WIGOS) is now being refined by a WMO task team supported by the GCOS Secretariat and chaired by Peter Thorne (co-chair of AOPC)
- The GCOS Secretariat attends meetings of the Standing Committee on Earth Observing Systems and Monitoring Networks (SC-ON), the Study Group on Ocean Observations and Infrastructure (SG-OOIS) and the Executive Committee of the Commission for Observation, Infrastructure and Information Systems (INFCOM) on behalf of GCOS;
- The GCOS Network Manager, Tim Oakley, is the GCOS representative on the board on WMO centennial stations which links to supporting and maintaining long-term stations, the importance of metadata and sustained funding.
- Monitoring data for the GSN and GUAN are now available on the WIGOS Data Quality Monitoring System (WDQMS), providing up-to-date information of the performance of the observing system (see <https://wdqms.wmo.int/>)
- The CBS-LC-GCOS (Commission on Basic Systems, Lead Centres, GCOS) are regional centres tasked with monitoring GSN and GUAN The CBS-LC-GCOS (Commission on Basic Systems, Lead Centres, GCOS) are regional centres tasked with monitoring GSN and GUAN and contacting countries in their area of responsibility to resolve issues. The governance of these Lead Centres has not been transferred (as yet) to the new structure of WMO and its commissions. The issue of how these Lead Centres engage with the WIGOS Regional Centres has not yet been resolved.
- The GCOS/GOOS OOPC works closely with the Observations Coordination Group (OCG), which strengthens the implementation of GOOS and WIGOS through identifying, coordinating and developing relevant initiatives across the OCG global ocean observing networks. OceanOPS is the OCG monitoring and support centre and provides an up-to-date dashboard of the status of the ocean observing systems (see <https://www.oceanops.org/board>)

(3) These activities demonstrate how the GCOS Secretariat has worked towards the better *integration of GCOS ECV and climate needs into the WMO regulatory system and WIGOS*. The Joint Study Group on GCOS is considering the formal relationship between the GCOS Programme and its sponsors and will report in due course.

DECISION	<p>The GCOS steering committee welcomes the work of the GCOS Secretariat to better integrate the GCOS ECV and climate needs into the WMO regulatory system and WIGOS.</p> <p>The GCOS Steering Committee also recognises that, if fully implemented, the GBON, SOFF and the new WMO Data Policy will significantly improve availability and coverage of climate observations.</p> <p>The GCOS Steering committee asks the GCOS Secretariat to continue to work with WMO on all the issues noted in this report and to assist in the implementation of the GBON, SOFF and the new WMO Data Policy.</p>
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