



Our ref.: 12594/2022/I/ESM/Snow

30 May 2022

Dear Sir/Madam,

I wish to refer to the decisions of the Extraordinary Congress (Cg-Ext) 2021, specifically: [Resolution 1](#) - *WMO Unified Policy for the International Exchange of Earth System Data*, [Resolution 2](#) - *Amendments to the Technical Regulations related to the establishment of the Global Basic Observing Network (GBON)*, and [Resolution 4](#) - *WMO Vision and Strategy for Hydrology and its associated Plan of Action*. Each of these key Congress decisions has recognized the importance of cryosphere information to the understanding of the Earth system and towards meeting the evolving needs of WMO Members.

The cryosphere has a well-documented role in influencing weather, water, and climate. As an example, data on snow cover and sea ice are highly important to numerical weather prediction (NWP), including operational forecasts, seasonal forecasts, and climate reanalyses. Operational, seasonal, and decadal-scale models of mountain and polar hydrology have needs for cryosphere knowledge and challenges that are similar to those of NWP.

Because of its strong sensitivity to temperature, the global cryosphere is an exceptional indicator of climate change, and changes in the cryosphere have global impacts. Furthermore, half of the world's population rely on mountain sources of fresh water for drinking, domestic use, irrigation, industry and hydropower, and most of these water resources originate from snow and ice.

Globally, snow is the cryosphere component most widely observed and, while it is observed by about a half of the WMO Members, significant gaps still exist. In recognition of the utility of snow observations for multiple applications, the Cg-Ext included snow as one of the required variables in the implementation of GBON.

To meet the growing needs for sustained access to snow observations and to enable the further understanding of snow processes which are relevant to weather, climate, and water, WMO, jointly with the International Association of Cryosphere Sciences ([IACS](#)) and with the Mountain Research Initiative ([MRI](#)), has established a 4-year (2022-2025) Joint Body on the Status of Mountain Snow Cover (JB-SMSC). The project is described under [GCW Current Activities](#), and on the [IACS dedicated website](#).

This project aims at providing a sound understanding of the current status and gaps in observations of snow cover in mountain regions of the world and enabling the sustained provision of quality data sets on mountain snow cover, together with an in-depth analysis and evaluation of snow changes and the underlying processes as they relate to specific user-driven applications. The project results will be documented in the form of high-quality data sets, publications, manuals/protocols for international standardization and analysis tools, and will be disseminated through a range of channels.

The project is divided into four work packages, as follows:

- WP1: Mountain snow data quality control and homogenization for use in climatology and hydrology;

To: Permanent Representatives of Members with WMO

cc: Hydrological Advisers

- WP2: Status of snow cover: multi-decadal changes in mountain regions of the world;
- WP3: Snow accumulation processes in mountain regions; and
- WP4: Snow ablation processes - research gaps in mountain snow modelling.

As part of JB-SMSC, a WMO priority is to ensure that the available and operational snow observations are well reflected in the WMO Observing System Capability Analysis and Review database ([OSCAR/Surface](#)), as a step towards the effective implementation of GBON and the international exchange of their data. Furthermore, the co-leadership through Global Cryosphere Watch Advisory Group of the Infrastructure Commission will ensure a sustained focus on meeting the goals of other WMO priorities.

I should be grateful if you could kindly refer the JB-SMSC initiative to your experts from the operational as well as scientific communities and encourage their contribution to the activities of interest. Contribution to the initiative is envisioned to be in-kind, and to address specific activities of one or more work packages, for example by undertaking specific activities or providing technical and scientific information as requested by the project co-leads. The interested participants can register their interest directly onto the on-line forms [Form 1](#) or [Form 2](#) or by submitting expressions of interest to cryosphere@wmo.int before **24 June 2022**.

For questions and additional clarification, please contact the WMO Secretariat, Ms Rodica Nitu, Project Manager, Global Cryosphere Watch (rnitu@wmo.int).

I wish to take this opportunity to thank you for your continued support to the WMO activities.

Yours faithfully,



Dr Wenjian Zhang
for the Secretary-General