

## The Terrestrial Observation Panel for Climate (TOPC) Terms of Reference

The Terrestrial Observation Panel for Climate (TOPC) is co-sponsored by the World Climate Research Programme (WCRP). It was established to develop a balanced and integrated system of in situ, air- and space borne observations of the terrestrial ecosystems for long-term monitoring of land (biosphere, cryosphere, hydrosphere and anthroposphere) properties and attributes which: i) control the physical, biological and chemical processes affecting climate; ii) are themselves affected by climate change, are indicators of climate change and provide information on impacts of climate change; and iii) can support policy relevant decisions and actions about, among others, climate adaptation and mitigation, global stocktake and national GHG inventories.

The Panel focuses on the identification of terrestrial observation requirements, assisting the establishment of observing networks (in-situ, air borne and satellite-based), providing guidance on observation standards and norms, facilitating access to climate data and information and its assimilation, encouraging the use of best practices and promoting climate studies and assessments.

Panel members meet regularly to review progresses and plan activities.

### **Its specific Terms of Reference are as follows:**

1. To maintain and periodically review the list of GCOS terrestrial Essential Climate Variables (ECVs) and define their requirements;
2. To assess and monitor the adequacy of terrestrial observing networks, identify gaps, promote enhancements, and design plans for long-term sustainable systematic observations that meets users' needs;
3. To advocate for the establishment, re-establishment and maintenance of international data centres that provide long-term, high-quality and consistent data, including the rehabilitation of relevant historical data sets, that meet those requirements according GCOS monitoring principles;
4. To promote and review institutional arrangements, involving both data suppliers and user communities, to ensure that climate data and observations are:
  - Of the highest quality based on agreed metrics;
  - Collected and archived in accordance with the highest standards of practice;
  - Freely accessible.
5. To publish and update GCOS studies and planning documents, such as the implementation plan and satellite supplement;

6. To instigate the establishment of working groups and other initiatives for pursuing TOPC goals;
  7. To collaborate with relevant research and operational communities, as well as data users and other stakeholders, in order to address all the above points;
  8. To coordinate activities with other GCOS panels and to liaise with WCRP and other relevant global entities and programmes, such as WMO Commissions, WIGOS, GFCS, CEOS and space agencies, Future Earth, UNFCCC and IPCC, on terrestrial climate observing system issues, in order to ensure overall consistency;
  9. To respond to assignments from the GCOS Steering Committee;
  10. To regularly report to the GCOS Steering Committee and the Joint Scientific Committee for WCRP.
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