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## Subsidiary Body for Scientific and Technological Advice

### Sixty-third session

Belém, 10–15 November 2025

Agenda item 4

### Research and systematic observation

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### Draft conclusions proposed by the Chair

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA) recognized the vital importance of robust Earth observation systems and related long-term data records for supporting enhanced understanding of the drivers of and changes in the global climate system, including the impacts of global warming, and for supporting mitigation and adaptation actions and efforts to avert, minimize and address loss and damage, as well as for supporting early warning systems.
2. The SBSTA noted with appreciation the statements delivered at the joint opening plenary of SB 63 by representatives of the Committee on Earth Observation Satellites and the Coordination Group for Meteorological Satellites Joint Working Group on Climate; the Global Climate Observing System (GCOS); the Intergovernmental Panel on Climate Change (IPCC); the World Climate Research Programme; and the World Meteorological Organization (WMO). It noted the need for enhancing efforts to promote and support open science and the integrity of climate change information as well as advance international cooperation on systematic observations.
3. The SBSTA took note of the informal summary report<sup>1</sup> on Earth Information Day 2024. It expressed appreciation to the Chair and Vice-Chair of the SBSTA and the secretariat for organizing Earth Information Day 2025, held on 10 November, whose scope, themes and organization were based on submissions.<sup>2</sup> The SBSTA thanked the experts and representatives of organizations who contributed to the event by providing relevant information and updates on systematic observations and engaging in the rich discussions. The SBSTA noted the efforts made to broaden the geographical representation of experts contributing to the event and called for the thematic scope of the event to be expanded to cover all geographical regions. It requested its Chair, with the assistance of the secretariat, to prepare an informal summary report on the event.
4. The SBSTA welcomed the update provided by the IPCC, during Earth Information Day 2025, on work in its seventh assessment cycle, including the launch of work on all six reports of the cycle. It encouraged the IPCC to continue to provide policy-relevant information.
5. The SBSTA noted the importance of and expressed appreciation for the work and contribution of the GCOS secretariat, including its role in strengthening global observation

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<sup>1</sup> Available at <https://unfccc.int/documents/645882>.

<sup>2</sup> The submissions are available at <https://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx> (in the search field, type “Earth information day”, and select “2025”).



of essential climate variables. It welcomed and noted with concern the updates provided by GCOS on the status of the global climate observing system.

6. The SBSTA noted the importance of consistent, continuous and sustained long-term observations of the Earth's climate system, and noted with concern the decline in support for sustained long-term observation networks, including for GCOS, as well as the threats to the continuity of existing in-situ networks and uncertainty about the future of satellite Earth observation missions.

7. The SBSTA took note of the WMO Greenhouse Gas Bulletin<sup>3</sup> and welcomed the WMO *State of the Global Climate*<sup>4</sup> update 2025 including the information therein. It noted with utmost concern the state of the global climate system.<sup>5</sup> It also noted the need to enhance observations and address gaps in the monitoring of the hydrosphere and the cryosphere, as well as regions with data gaps such as tropics and arid and mountain regions.

8. The SBSTA welcomed the updates provided on advances in systematic observation, including through initiatives such as Early Warnings for All, the Systematic Observations Financing Facility<sup>6</sup> and organizations supporting satellite and ground-based observations. It recognized the important role of the Systematic Observations Financing Facility in supporting Global Basic Observing Network compliance and early warning systems, and invited the Facility, which currently prioritizes support for systematic observation in the least developed countries and small island developing States, to consider extending its provision of support for systematic observation to more developing countries.

9. The SBSTA recognized the important role of systematic observation, both in situ and satellite, in supporting the planning and monitoring, including for analysis and reporting, of greenhouse gas (GHG) emissions and removals, noting that GHG inventory guidelines are as adopted under the Convention and the Paris Agreement.

10. The SBSTA also recognized the important role of systematic observation, both in situ and satellite, in understanding climate impacts, and in the planning and monitoring of climate adaptation actions, including under the United Arab Emirates Framework for Global Climate Resilience.

11. The SBSTA further recognized the important role of systematic observation, both in situ and satellite, in providing inputs for the assessment of loss and damage, and their role as well as the role of early warning systems in averting, minimizing and addressing loss and damage.

12. The SBSTA noted the advances made in attribution science, particularly of the occurrence, frequency and intensity of extreme events to climate change, as well as the gaps in attribution studies due to data unavailability, particularly in data-sparse regions. It invited relevant organizations to continue to address such data gaps and improve the scope of attribution studies, particularly in vulnerable regions.

13. The SBSTA noted the advances made in, and the need to further enhance, the availability of and access to, interoperable data sets, particularly satellite-based, and encouraged voluntary collaboration between local and regional hubs and global observation systems in this regard, while respecting national data sovereignty. It also noted the increasing contribution of local observation networks to global outputs.

14. The SBSTA acknowledged the role of technological innovations such as artificial intelligence and machine learning in supporting, forecasting, predicting extreme events, and

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<sup>3</sup> WMO. 2025. *WMO Greenhouse Gas Bulletin, No. 21: The State of Greenhouse Gases in the Atmosphere Based on Global Observations through 2024*. Geneva: WMO. Available at <https://wmo.int/files/greenhouse-gas-bulletin-no-21>.

<sup>4</sup> WMO. 2025. *State of the Global Climate 2025: Update for COP30*. Geneva: WMO. Available at <https://wmo.int/files/state-of-climate-update-cop30>.

<sup>5</sup> This included information on long-term trends in atmospheric GHG concentrations, global temperature, ocean heat content, glacier mass and sea ice loss, and sea level rise, as well as the decline in some inland water bodies.

<sup>6</sup> Noting the potential of new funding vehicles or mechanisms undertaken by the Systematic Observations Financing Facility for advancing its work.

supporting early warning systems. It noted challenges associated with using such technologies, particularly in developing countries.

15. The SBSTA invited Parties and relevant organizations to submit views on possible themes for and ways to organize Earth Information Day 2026, to be held in conjunction with SBSTA 65 (November 2026), via the submission portal<sup>7</sup> by 1 August 2026.

16. The SBSTA took note of the estimated budgetary implications of the activities to be undertaken by the secretariat referred to in paragraph 4 above.

17. It requested that the actions of the secretariat called for in these conclusions be undertaken subject to the availability of financial resources.

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<sup>7</sup> <https://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx>.