DRAFT INFORMAL NOTE
on

SBSTA agenda item 4
Research and systematic observation

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1. The Subsidiary Body for Scientific and Technological Advice (SBSTA) recognized that the Paris Agreement was adopted 10 years ago, and that science and scientific outputs, including of the Intergovernmental Panel on Climate Change (IPCC), the World Meteorological Organization (WMO) and the wider scientific community, have informed the establishment of the Convention and the Paris Agreement and the work thereunder, and that systematic observations are fundamental to monitoring and understanding the global climate system as well as informing effective climate policies and actions.

2. The 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 their attribution to the impacts of global warming, mitigation and adaptation actions, and efforts to avert, minimize and address loss and damage, as well as for supporting early warning systems.

3. 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; the Global Climate Observing System (GCOS); the IPCC; the World Climate Research Programme; and WMO. It noted the need for enhancing efforts to promote and support open science, the integrity of climate change information and counter misinformation on climate change.

4. The SBSTA took note of the informal summary report[1] 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 the views expressed in submissions.[2] 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 in broadening 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.

5. 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 noted the update provided by the IPCC on its planned efforts to enhance inclusivity for the seventh cycle. It encouraged the IPCC to continue to provide timely and policy-relevant information.

6. 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 of essential climate variables. It welcomed the updates provided by GCOS on the status of the global climate observing system and its plans to produce the next GCOS status report and Implementation Plan in 2027.

7. 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. It invited Parties and relevant organizations to enhance their provision of support to advance systematic observations, including to GCOS, to ensure the continuity of its work.

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[1] Available at https://unfccc.int/documents/645882.

[2] 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").

8. The SBSTA took note of the 2024 WMO Greenhouse Gas Bulletin[3] and the WMO *State of the Global Climate 2025 Update*.[4] It noted with utmost concern the record increases in atmospheric carbon dioxide concentrations, that atmospheric greenhouse gas concentrations reached record levels in 2024, that 2025 is not the hottest year on record but is on track to being among the three warmest years on record and that the last 11 years are the warmest years on record. It noted that this is primarily the result of greenhouse gas emissions from pre-industrial times until now. It also noted that ocean heat content reached a record high in 2024, that sea- level rise rate declined in 2025 and the long-term rate of sea level rise has increased, although the levels of some inland water bodies are declining, and that more intense extreme climate events are occurring globally. It noted with concern the irreversible changes to the cryosphere, which have led to glacier mass and sea ice loss, including complete loss of glaciers in two countries, with related impacts including sea level rise. It further noted the need to enhance observation and address gaps in the monitoring of the ocean and cryosphere.

9. 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 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.

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

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

12. The SBSTA noted the advances made in attribution 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, which are largely provide by the global north, and encouraged voluntary collaboration between local and regional hubs with global observation systems in this regard, while respecting national data sovereignty. It noted the increasing contribution of local observation networks to global outputs.

14. The SBSTA welcomed the work of the scientific community, including World Weather Attribution as reflected in paragraph 12 above and the Indicators of Global Climate Change initiative, to provide a regularly updated analysis of climate indicators using IPCC assessment methodologies, and noted the information provided on the increasing global energy balance, the current rate of global warming and ocean heat uptake.

15. The SBSTA acknowledged the role of technological innovations such as artificial intelligence and machine learning, particularly in developing countries, in supporting,

[3] WMO. 2025. *WMO Greenhouse Gas Bulletin: 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.

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

forecasting, predicting extreme events and supporting early warning systems. It noted challenges associated with using such technologies.

16. 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[5] by 1 August 2026.

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

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

[5] https://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx.