Statement by the Committee on Earth Observation Satellites (CEOS) and the Coordination Group for Meteorological Satellites (CGMS) on Progress in Supporting UNFCCC Needs for Global Observations

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The Kingdom of Norway, on behalf of the Committee on Earth Observation Satellites (CEOS) and the Coordination Group for Meteorological Satellites (CGMS), is pleased to provide this annual update to the 65th session of the Subsidiary Body for Scientific and Technological Advice (SBSTA). This Statement highlights the critical role of satellite observations in supporting the United Nations Framework Convention on Climate Change (UNFCCC).

CEOS and CGMS coordinate civilian satellite observations that advance knowledge of Earth's environment. They comprise 66 Member Agencies and Associates (CEOS) and 16 Member Agencies (CGMS), and acknowledge the Global Climate Observing System (GCOS) assessment of the state of global observations of the atmosphere, land and ocean. To progress discussions on space-based observations for the upcoming GCOS Status Report and its accompanying High-Priority Action Plan, GCOS met jointly with the CEOS-CGMS Working Group on Climate (WGClimate) in February 2026. As GCOS drafts these key documents, WGClimate continues to provide expert support directly as members of the writing team.

Systematic and sustained satellite observations are essential for tracking Earth system changes and informing science-based policy. To support these observations, CEOS and CGMS are committed to establishing a resilient, integrated, and trusted Earth observation framework. Initiatives such as CEOS Analysis Ready Data (CEOS-ARD) lower the barriers to the use of satellite data, while international calibration and validation networks coordinated through the CEOS Working Group on Calibration and Validation (WGCV) ensure that the data are well characterised, traceable, and trustworthy.

Below are four thematic areas in which satellite observations continue to significantly advance our knowledge.

1. **Adaptation and Resilience** have been key priorities for CEOS over the past year with several initiatives advancing these themes. The 2026 special edition of the Earth Observation Handbook[1] highlights the role of satellite Earth observation (EO) data in support of adaptation and resilience, reflecting the priorities of the Australian 2026 CEOS Chair. A variety of case studies from the EO community are featured in the Handbook, illustrating how EO data are used in the real world to support adaptation and resilience.

WGClimate is also mapping the Global Goal on Adaptation (GGA) indicators to Earth observation products, to identify where sustained space-based observations can support their implementation and monitoring. This work has identified 18 of the 59 indicators that EO can strongly support, while EO-based climate observations can provide important context for many others. A shortlist of 5 indicators (water, food and agriculture, health, ecosystem, and infrastructure) has been identified where immediate progress can be made to test the implementation of these indicators. This shortlist of indicators aligns with other global Agendas hence maximizing multi-framework impact.

2. **Greenhouse Gas Observations:** The Greenhouse Gas Task Team continues to implement the Greenhouse Gas (GHG) Roadmap Issue 2 (2024)[2] for a coordinated implementation of carbon dioxide and methane monitoring from space. This task includes monitoring the constellation of space-based greenhouse gas sensors and providing fit-for-purpose data to a multitude of stakeholders, including UNEP's International Methane Emissions Observatory (IMEO), and WMO's Global Greenhouse Gas Watch (G3W). The GHG constellation now

[1] eohandbook.com

[2] https://ceos.org/document_management/Publications/Publications-and-Key-Documents/Atmosphere/CEOS_CGMS_GHG_Roadmap_Issue_2_V1.0_FINAL.pdf

includes 10 wide area mappers and 12 facility scale plume mappers, whose key capabilities can be explored on the GHG Mission Portal[3].

Following the 2025 publication of the *Common Practices for Quantifying Methane Emissions from Plumes Detected by Remote Sensing*[4], CEOS is working with satellite providers to assess current practices against these specifications, and is developing a second version focused on advancing *good* practices for quantifying methane emissions from space.

3. **Economic Impact:** Climate-related investments increasingly rely on standard and harmonised Earth observation (EO) data to support evidence-based adaptation and resilience investments—from risk identification and management to monitoring, evaluation, and impact reporting. Through its priority initiatives, CEOS is strengthening the data-to-impact value chain by advancing interoperability, collaboration, and impact assessment, translating complex satellite data into actionable information.

The European Space Agency's Global Development Assistance (GDA) programme provides a practical example of this technical-to-economic link, integrating EO data pipelines into the workflows of International Financial Institutions, including the World Bank. Such approaches are increasingly valued by public and private climate finance stakeholders because they: (a) increase confidence that investments address climate risks and impacts; (b) strengthen the planning and design of investments; and (c) reduce investment risks and support more effective tracking of outcomes.

4. **Aquatic Observations:** In 2026, CEOS completed its Carbon Roadmap series with the publication of the CEOS Aquatic Carbon Roadmap[5]. Together with the CEOS Agriculture, Forestry and Other Land Use (AFOLU) Roadmap and CEOS/CGMS GHG Roadmap, published in 2023 and 2024 respectively, this achievement establishes a comprehensive, coordinated framework for satellite observations of the entire Carbon Cycle, advancing integration across terrestrial, atmospheric, and aquatic carbon domains.

Looking ahead, the Norwegian Space Agency (NOSA) will serve as Chair of CEOS in 2027, with *True Blue* as one of its key priorities. Through *True Blue*, CEOS can contribute to a more coordinated and accessible global ocean observing system, with particular attention to the polar oceans. As the international community prepares for the Fifth International Polar Year (IPY-5) in 2032-33, there is a unique opportunity to strengthen observations in some of the world's most rapidly changing and least monitored regions. Improved coordination of space-based and in-situ observations will support both the scientific ambitions of IPY-5 and the long-term understanding of the polar oceans and their global impacts.

The past decade has seen unprecedented advancements in satellite remote sensing capabilities, enabling scientific breakthroughs and informing global decision-makers about Earth system processes. As challenges facing our planet grow more complex, international collaboration and sustained investment in satellite Earth observation systems are essential to expanding and advancing knowledge, guiding adaptation, and enabling effective responses.

[3] http://ceos.org/ghg
[4] https://zenodo.org/records/17047789
[5] https://ceos.org/publications-key-documents/

Roster of CEOS and CGMS Participating Agencies

African Space Agency (AfSA)
Agence Gabonaise d'Études et d'Observations Spatiales (AGEOS), Gabon
Agencia Espacial Mexicana (AEM), Mexico
Agensi Angkasa Negara (ANGKASA), Malaysia
Agenzia Spaziale Italiana (ASI), Italy
Australian Bureau of Meteorology (BoM)
Belgian Federal Science Policy Office (BELSPO)
Canada Centre for Mapping and Earth Observation (CCMEO)
Canadian Space Agency (CSA)
Centre National d'Etudes Spatiales (CNES), France*
Centro para Desarrollo Tecnológico Industrial (CDTI), Spain
China Center for Resources Satellite Data and Applications (CRESDA)
China National Space Administration (CNSA)**
Chinese Academy of Space Technology (CAST)
Comisión Nacional de Actividades Espaciales (CONAE), Argentina
Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
Council for Scientific and Industrial Research (CSIR) South Africa
Crown Research Institute (CRI), New Zealand
Deutsches Zentrum für Luft-‑und Raumfahrt (DLR), Germany
Earth System Science Organisation (ESSO), India
Environment and Climate Change Canada (ECCC), Canada
European Centre for Medium-Range Weather Forecasts (ECMWF)
European Commission (EC)
European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)*
European Space Agency (ESA)*
Geo-‑Informatics and Space Technology Development Agency (GISTDA), Thailand
Geoscience Australia (GA)
Global Climate Observing System (GCOS)
Global Geodetic Observing System (GGOS)
Global Ocean Observing System (GOOS)
Global Terrestrial Observing System (GTOS)
Hellenic Space Centre (HSC), Greece
International Science Council (ISC)
International Geosphere-Biosphere Programme (IGBP)
India Meteorological Department (IMD)**
Indian Space Research Organisation (ISRO)*
Instituto Nacional de Pesquisas Espaciais (INPE), Brazil
Intergovernmental Oceanographic Commission (IOC)*
International Ocean Colour Coordinating Group (IOCCG)
International Society of Photogrammetry and Remote Sensing (ISPRS)
Japan Meteorological Agency (JMA)**
Korea Aerospace Research Institute (KARI)
Korea Meteorological Administration (KMA)*
Ministry of Education, Culture, Sports, Science and Technology (MEXT)/Japan Aerospace Exploration Agency (JAXA)*
National Aeronautics and Space Administration (NASA), USA*
National Institute of Environmental Research (NIER), Korea
National Oceanic and Atmospheric Administration (NOAA), USA*
National Remote Sensing Center of China (NRSCC)
National Satellite Meteorological Center (NSMC)/China Meteorological Administration (CMA)*
National Space Agency of Ukraine (NSAU)
National Space Research Agency of Nigeria (NASRDA)
Netherlands Space Office (NSO)
Norwegian Space Agency (NOSA)
Philippines Space Agency (PhilSA)
Polish Space Agency (Poland)
Portuguese Space Agency (Portugal Space), Portugal
Russian Federal Service for Hydrometeorology and Environmental Monitoring (ROSHYDROMET)*
Russian Federal Space Agency (ROSCOSMOS)*
Scientific and Technological Research Council of Turkey (TÜBITAK-‑Uzay)
South African National Space Agency (SANSA)
Swedish National Space Agency (SNSA)
United Arab Emirates Space Agency (UAESA)
United Kingdom Space Agency (UKSA)
United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Environment Programme (UNEP)
United Nations Food and Agriculture Organization (FAO)
United Nations Office for Outer Space Affairs (UNOOSA)
United States Geological Survey (USGS)
Vietnam Academy of Science and Technology (VAST)
World Climate Research Programme (WCRP)
World Meteorological Organization (WMO)

***Denotes Agencies being Member of both CEOS and CGMS. **Denotes only CGMS Agencies.**