

WCRP SBSTA statement

Longer version:

The World Climate Research Programme (WCRP) coordinates and facilitates international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being.

WCRP is finalizing an authoritative assessment that will systematically assess our understanding of threshold breaching, irreversibility, and tipping points in the Earth's climate system. The paper will also provide key recommendations for how Earth system models can be improved to better understand these processes and identify potential early warnings.

WCRP has also started a series of status briefs to translate the latest climate science into actionable insights for policymakers. Each brief summarizes cutting-edge research, highlights risks and opportunities, and supports evidence-based climate decision-making. The first of these briefs is focussed on "[Current understanding of global sea-level rise](#)".

The preparation of WCRP's Coupled Model Intercomparison Project (CMIP) next phase (CMIP7) is proceeding, with the CMIP7 Assessment Fast Track set of targeted experiments intended to support upcoming assessments including the Intergovernmental Panel on Climate Change Assessment Report 7 cycle, and downstream climate services applications. This includes near-term policy-relevant scenarios, characterisation, attribution, and process understanding experiments designed to isolate key feedbacks and uncertainties in historical and projected climate. The CORDEX framework will downscale the CMIP6 and 7 data to produce regional climate information at scales of critical use to countries. Additionally, a new generation of downscaled data based on Regional Climate Model AI/ML emulators is being planned to increase the availability of downscaled products for a better assessment of the range of uncertainties at the various continental domains.

Other highlights include WCRP's Lighthouse Activity on the Global Precipitation Experiment (GPEX), which addresses key science gaps in precipitation measurements, including extremes, critical for freshwater availability and associated risks across regions. WCRP/GPEX is preparing the "Years of Precipitation (2028–2030)" as a coordinated framework to align field campaigns, observations, data, and modelling activities, supporting improved understanding and representation of high-impact precipitation systems in models and climate information.

The Lighthouse Activity on Research on Climate Intervention (RCI) focuses on the potential benefits and risks of climate intervention activities (Solar Radiation Management, and Carbon Dioxide Removal) and provides independent scientific information on the current state of knowledge and knowledge-gaps.

WCRP's Lighthouse Activity "Digital Earths" is coordinating km-scale modelling efforts in combination with high-resolution observational results to enhance insight into climate dynamics on regional and local scale.

WCRP's Academy (wcrp-academy.org), with a support unit hosted by the Manila Observatory in the Philippines, is the research training advisory and coordination arm of WCRP's capacity building activities and includes a training catalogue of opportunities, which connects training providers and climate scientists who are seeking training. The Academy's activities promote and advance lifelong learning opportunities and global equity in climate science training

WCRP provides key input to high-level policy fora and coordination efforts such as the COPs, the Antarctic Treaty and Working Groups of the Arctic Council, the UN Ocean Decade (2021-2030) and the upcoming International Polar Year (2032-33) and UN Decade of Action for Cryospheric Sciences (2025-2034).

Short version:

The World Climate Research Programme (WCRP) coordinates and facilitates international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being.

WCRP is finalizing an authoritative assessment that will assesses our understanding of threshold breaching, irreversibility, and tipping points in the Earth's climate system. The paper will also provide key recommendations for how Earth system models can be improved to better understand these processes and identify potential early warnings.

WCRP has also started a series of status briefs to translate the latest climate science into actionable insights for policymakers. The first of these briefs is focussed on "[Current understanding of global sea-level rise](#)".

The preparation of WCRP's Coupled Model Intercomparison Project (CMIP) next phase (CMIP7) is proceeding, with the CMIP7 Assessment Fast Track set of targeted experiments intended to support upcoming assessments including the Intergovernmental Panel on Climate Change Assessment Report 7 cycle. The CORDEX framework will downscale the CMIP output to produce regional climate information at scales of critical use to countries.

Other highlights include WCRP's Lighthouse Activity on the Global Precipitation Experiment, which addresses key science gaps in precipitation measurements, including extremes, critical for freshwater availability and associated risks across regions.

The Lighthouse Activity on Research on Climate Intervention focuses on the potential benefits and risks of climate intervention activities (Solar Radiation Management, and Carbon Dioxide Removal) and provides independent scientific information on the current state of knowledge and knowledge-gaps.

WCRP's Lighthouse Activity Digital Earths is coordinating km-scale modelling efforts in combination with high-resolution observational results to enhance insight into climate dynamics on regional and local scale.

WCRP's Academy is the research training advisory and coordination arm of WCRP's capacity building activities and includes a training catalogue of opportunities, which connects training providers and climate scientists who are seeking training. The Academy's activities promote and advance lifelong learning opportunities and global equity in climate science training

WCRP provides key input to high-level policy fora and coordination efforts such as the COPs, the Antarctic Treaty and Working Groups of the Arctic Council, the UN Ocean Decade (2021-2030) and the upcoming International Polar Year (2032-33) and UN Decade of Action for Cryospheric Sciences (2025-2034).