

The World Climate Research Programme views on themes for the fourteenth meeting of the research dialogue, to be held in conjunction with SBSTA 56

The World Climate Research Programme (WCRP) is co-sponsored by the World Meteorological Organization (WMO), the International Science Council (ISC), and the Intergovernmental Oceanographic Commission (IOC) of the United National Educational, Scientific, and Cultural Organization (UNESCO). It supports the UNFCCC process, including the SBSTA sessions.

WCRP coordinates and facilitates international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being. It focuses on research needs, the identification of gaps and future science directions, based on its Strategic Plan 2019-2028¹. The WCRP Strategic Plan outlines four key scientific objectives that we believe form a strong basis for potential overarching themes for the SBSTA session. These support the broad aims of all our co-sponsors and the specific submissions of WMO and IOC, with regards to the importance of observations of the climate system, access to climate science information, as well as the ocean/climate nexus and the importance of the Ocean Decade.

Potential Themes:

1. Enhance our fundamental understanding of the climate system:

Support and facilitate the advancement of sciences enabling an integrated and fundamental understanding of the climate, its variations, and its changes, as part of a coupled physical, biogeochemical, and socio-economic system.

- For example, in WCRP such advances are made across our activities and communities, including our Core Projects² and new Lighthouse Activities³.

2. Improve predictions of the near-term evolution of the climate system

Push the frontiers of climate predictions and quantify the associated uncertainties for sub-seasonal to decadal time scales across all climate system components.

- Including our joint (with WMO's World Weather Research Programme) S2S⁴ (Subseasonal to Seasonal) project at shorter timescales, through to e.g., our Explaining and Predicting Earth System Change⁵ Lighthouse activities at annual and longer timescales.

3. Increase understanding of the long-term response of the climate system:

Quantify the responses, feedbacks, and associated uncertainties intrinsic to the changing climate system on decadal to centennial timescales.

- For example, WCRP's Coupled Model Intercomparison Project⁶ (which includes the scenario runs for IPCC) as well as our new Safe Landing Climates⁷ Lighthouse activity.

¹ <https://www.wcrp-climate.org/wcrp-sp>

² <https://www.wcrp-climate.org/core-projects>

³ <https://www.wcrp-climate.org/lha-overview>

⁴ <http://www.s2sprediction.net/>

⁵ <https://www.wcrp-climate.org/epesc>

⁶ <https://www.wcrp-climate.org/wgcm-cmip>

⁷ <https://www.wcrp-climate.org/safe-landing-climates>

4. Bridge climate science and society:

Support innovation in the generation of decision-relevant information and knowledge about the evolving Earth system

- For WCRP this would include our new Core Project Regional Information for Society⁸ and the Coordinated Regional Downscaling Experiment⁹ (CORDEX), as well as the My Climate Risk¹⁰ and WCRP Academy¹¹ Lighthouses. This would include connection to users such as the climate information platform¹².

A number of bodies, including WCRP, would be able to present under these four themes e.g. this would also provide an opportunity to link science more closely to observations via GCOS and others.

⁸ <https://www.wcrp-climate.org/rifs-overview>

⁹ <https://cordex.org/>

¹⁰ <https://www.wcrp-climate.org/my-climate-risk>

¹¹ <https://www.wcrp-climate.org/academy>

¹² www.climateinformation.org