

WCRP Statement to SBSTA50, 17 June 2019

The World Climate Research Programme (WCRP), on behalf of thousands of dedicated climate scientists worldwide, welcomes this opportunity to address and contribute to SBSTA 50.

For 40 years the WCRP has played a unique role in addressing frontier scientific questions, to determine to what extent climate can be predicted and the extent of human influence on climate. In the last decades, climate science has evolved substantially, through advances in fundamental science, innovation in observations and simulations and a more interdisciplinary and integrated Earth system approach.

I am pleased to share with you that the WCRP is presenting the vision and pathway for the world's climate research for the coming decade (2019-2028), bringing together the scientific research community, partner programmes, research funders, and governments. We strengthen our effort to advocate fundamental climate science; to maintain a vibrant research portfolio to enthuse the next generation of science leaders; and to ensure that society has access to the best possible science that underpin the implementation of the Paris Agreement and multilateral environmental conventions.

Allow me to take this opportunity to highlight some of the key progress and outstanding issues in pursuing global coordination of climate research:

- The WCRP and its Coupled Model Intercomparison Project (CMIP) continues to provide valuable multi-model climate simulations and projections that serve as the foundation for the Intergovernmental Panel on Climate Change (IPCC) assessments, the policy deliberations by the distinguished delegations of all Parties, and climate services and products disseminated world-wide. For example, the Carbon Dioxide Removal Model Intercomparison Project (CDR-MIP) brings together models of the Earth system in a common framework to explore the potential impacts, and challenges of CO₂ removal, addressing the very question of “Climate Reversibility”. The growing dependency on CMIP is a demonstrated success of science-to-decision channel, yet requires substantial and continuous support of the Parties.
- The Earth Energy Imbalance (EEI) is the recognized core subject of the climate research; it is the unique quantities defining the status of global climate change and expectations for continued global warming. The WCRP is proud to advise on the significant progress in converged approach for an EEI uncertainty assessment, to improve and quantify the absolute value of the EEI; and furthermore, to perform an inventory of the Earth's energy budget; and, 3)

to further increase knowledge on the implications of EEI particularly in regions and for the benefit of societies. We respectfully call for the attention of Parties to support this important initiative, that will provide the firm foundation to setting and improving various climate indicators.

- There has been notable advance in understanding human influence on individual extreme events that have resulted in significant loss and damage in the recent past. Yet numerous challenges lie ahead to understand the causes of the changes and possible future, and to meet the society's adaptation needs: Science shows that we need to enhance the current monitoring capabilities for extremes, and to improve prediction of extremes in different spatial and temporal scales. There is an urgent need to develop innovative communication solutions between climate research and its user communities, toward the decision-relevant, actionable information and knowledge.
- WCRP looks forward to the proactive support of the presenting Parties to improve observational technologies and sophisticated computing infrastructure, and in connecting global scales to the scales where people live. By tackling the scale barriers and develop fine scale climate projection and prediction, climate research can empower and refine risk management, emergency planning and preparedness, adaptation and mitigation strategies.

Strengthening **the link between research and action** is the critical element in successful measures to thrive in changing climate. To this end, **continuous support for fundamental climate science** is essential to better understand and bridge scientific gaps, and furthermore, to ensure the sound decisions for our future. I wish to re-emphasize the compelling need for open access and interoperability of climate information, capacity development in climate science and allied fields, and collaboration across institutions and programmes.

Thank you for your attention.