Information on the special event of the SBSTA and the IPCC: unpacking the new scientific knowledge and key findings in the Working Group I contribution to the Sixth Assessment report: The Physical Science Basis

Note by the Chair of the SBSTA and the Chair of the IPCC

21 October 2021

This note provides information on the planned special event of the SBSTA and the IPCC taking place on Thursday 4 November 2021 from 10:30 to 13:30 (GMT), in Plenary.

The event is organized by the chairs of the SBSTA and IPCC to enhance understanding on the new scientific knowledge and key findings in the Working Group I contribution to the Sixth Assessment report: The Physical Science Basis. The event will aim to provide an opportunity for participants to have a direct exchange with IPCC experts on the new knowledge and key findings contained in the report.

Further information relating to the special event is available on the UNFCCC's website: https://unfccc.int/event/ar6wgi-special-event.

I. Background

1. The IPCC adopted and accepted the Working Group I (WGI) contribution to the Sixth Assessment report (AR6) at the 14th session of the WGI and the 54th Session of the IPCC held on 26 July to 6 August 2021.

2. The report builds upon the 2013 WGI contribution to the IPCC's Fifth Assessment Report and the 2018–2019 IPCC Special Reports[1] of the AR6 cycle and incorporates subsequent new evidence from climate science.

3. The WGI contribution benefited from 234 authors from 65 countries and 517 contributing authors, with over 14,000 scientific publications assessed and over 78,000 expert and government review comments provided and addressed.

4. The WGI contribution's Summary for Policymakers (SPM) was approved by the IPCC plenary on 9 August 2021.[2]

5. The WGI contribution represents the most up-to-date physical understanding of the climate system and climate change, bringing together the latest advances in climate science, and combining multiple lines of evidence from paleoclimate, observations, process understanding, global and regional climate simulations. It shows how and why climate has changed to date, and the improved understanding of human influence on a wider range of climate characteristics, including extreme events. There is a greater focus on regional information that can be used for climate risk assessments.

6. The WGI contribution also includes an interactive atlas, which enhances the accessibility and transparency of the assessed regional datasets and allows for a flexible presentation of spatial and temporal analysis of data-driven climate change information and findings of the assessment.

7. The SPM presents the key findings of the WGI under four themes:

   (a) The current state of the climate;

   (b) Possible climate futures;

   (c) Climate information for risk assessment and regional adaptation;

   (d) Limiting future climate change.

[1] Global warming of 1.5: https://www.ipcc.ch/sr15/; Climate Change and Land: https://www.ipcc.ch/srccl/; and Ocean and Cryosphere in a Changing Climate: https://www.ipcc.ch/srocc/.

[2] See https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/.

8. The IPCC continues to work on the Sixth Assessment cycle. The contributions of WGII (Change climate impacts, adaptation and vulnerability) and WGIII (Mitigation of climate change) are well underway and expected to be released in the first half of 2022 and the cycle will culminate with the preparation of the Synthesis Report of the AR6 to be approved in the second half of 2022.

II. Special event of the SBSTA and the IPCC

9. The special event of the SBSTA and the IPCC on the WGI contribution to AR6 will take place under the SBSTA in Glasgow, UK, on Thursday 4 November 2021 from 10:30 to 13:30 GMT. Further information on this special event is available on the UNFCCC website.[3] The special event will be open to all participants of COP 26, including Parties, observers and media, and will be webcasted.

10. The event will aim to, in an interactive manner, bring together participants and IPCC experts to enable a direct exchange to enhance understanding on new knowledge and key findings contained in the WGI report.

11. The event will follow the storyline of the SPM as outlined in paragraph 7 above with short presentations by the IPCC (WGI Co-Chairs and Experts), followed by question and answer sessions.

12. Below is a proposed agenda for the special event:

Proposed agenda of the SBSTA-IPCC special event: Unpacking the new scientific knowledge and key findings in the IPCC's WGI contribution to AR6

Opening and welcome		
15:00–15:15	Opening remarks, including objective of the event by the SBSTA and the IPCC Chairs	Tosi Mpanu-Mpanu (SBSTA Chair) and Hoesung Lee (IPCC Chair)
Unpacking the new scientific knowledge and key findings		
15:15–15:50	The current state of the climate - Presentation (15 mins) - Q&A discussion (20 mins)	Valérie Masson-Delmotte and Panmao Zhai (IPCC WG I Co-Chairs), with WGI Vice Chairs and relevant experts available for Q&A
15:50–16:25	Possible climate futures - Presentation (15 mins) - Q&A discussion (20 mins)	
16:25–17:00	Climate information for risk assessment and regional adaptation - Presentation (15 mins) - Q&A discussion (20 mins)	
17:00–17:35	Limiting future climate change - Presentation (15 mins) - Q&A discussion (20 mins)	
Closing		
17:35–18:00	Closing remarks by the Chairs of the SBSTA and the IPCC	Tosi Mpanu-Mpanu and Hoesung Lee

13. The special event will be co-chaired by Mr. Tosi Mpanu-Mpanu, Chair of the SBSTA, and Mr. Hoesung Lee, Chair of the IPCC, who will provide opening remarks to commence the special event.

14. The IPCC WG I co-chairs will lead presentations to share new knowledge and findings on:

(a) **The current state of the climate**: This session will address information on improvements in observationally based estimates and information from paleoclimate archives and provide a comprehensive view of each component of the climate system and its changes to date. It will touch on new climate model simulations, new analyses, the improved understanding of each driver, and of the climate response that have resulted in improved understanding of the role of human influence on each component of the climate system, and on global and regional trends, as well as on extreme events.

[3] See https://unfccc.int/event/ar6wgi-special-event.

(b) **Possible climate futures**: This presentation will brief participants on five illustrative scenarios considered consistently across the WGI report to explore the climate response to a broader range of greenhouse gas (GHG), land use and air pollutant futures. It will also cover the use of multiple lines of evidence to constrain the climate response in a consistent manner for global surface temperature and sea level. It will explain how the pathways drive changes in the climate system. It will provide near-term (2021–2040), mid-term (2041–2060) and long-term (2081–2100) results relative to 1850–1900. The presentation will also address irreversibility and changes expected over multiple centuries to millennia, e.g. for sea level rise.

(c) **Climate information for risk assessment and regional adaptation**: This presentation will brief participants on the physical climate information and how it addresses how the climate system responds to the interplay between human influence, natural drivers and internal variability. Knowledge of the climate response and the range of possible outcomes, including low-likelihood, high impact outcomes, informs climate services – the assessment of climate-related risks and adaptation planning. The presentation will provide the assessment of multiple climate impact-drivers projected to change in all regions of the world. It will explain the distillation of regional climate information from multiple lines of evidence including observational products, climate model outputs and tailored diagnostics. The novel Interactive Atlas tool will be introduced, where users can explore datasets assessed in the report and a regional synthesis of assessed information.

(d) **Limiting Future Climate Change:** This session will focus on the physical science perspective on limiting to a specific level human-induced warming, which requires limiting cumulative CO_2 emissions, reaching at least net zero CO_2 emissions, along with strong reductions in other greenhouse gas emissions. The session will report on the updated assessment of remaining carbon budgets by using a new methodology first presented in SR1.5. The presentation will brief the participants on the outcomes of the assessment regarding the role of short-lived climate forcers which affect both climate and air quality. A novel development is the ability to ascertain when climate responses to emissions reductions would become discernible above natural climate variability, including internal variability and responses to natural drivers.

15. Each presentation will be followed by a question and answer session. In that regard, participants may wish to study the WGI report and come prepared with questions relating to the report for the experts.

16. Parties and other participants are encouraged to start reflecting on how the findings in the report could inform work under the UNFCCC process, including the first global stocktake and the second periodic review of the long-term global goal under the Convention and of overall progress towards achieving it. Participants are also encouraged to consider the new knowledge and findings in the report with a view to enhancing the implementation of nationally determined contributions and long-term low emission strategies, national adaptation plans and other climate actions and support thereof.

17. We will wrap up the event by sharing some closing remarks and will prepare an informal summary report of the special event, under our authority, and make it available on the UNFCCC website in the first half of 2022.