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Bangkok, Thailand, 24 to 27 March 2026

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DRAFT REPORT OF THE SIXTY-SECOND SESSION OF THE IPCC¹

Hangzhou, China, 24 – 28 February 2025

(Submitted by the Secretary of the IPCC)

¹ Minor revisions were incorporated to address outstanding written comments submitted after IPCC-62.

IPCC Secretariat

c/o WMO • 7bis, Avenue de la Paix • C.P. 2300 • 1211 Geneva 2 • Switzerland
telephone : +41 (0) 22 730 8208 / 54 / 84 • email : IPCC-Sec@wmo.int • www.ipcc.ch



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1. OPENING OF THE SESSION

Mr Jim Skea, Chair of the Intergovernmental Panel on Climate Change (IPCC), called the 62nd Session of the IPCC (IPCC-62) to order.

Mr Abdalah Mokssit, Secretary of the IPCC, moderated the opening ceremony.

H.E. Mr Li Yanyi, Vice Governor of Zhejiang Province, China, welcomed the participants and emphasised the provincial authorities' commitment to climate action. He emphasised the province's ongoing energy transition and how the use of renewable energy was surpassing that of coal-generated energy for the first time. He highlighted the administration's efforts to strengthen the climate resilience of both urban and rural infrastructure. The provincial early warning system provided 60-day forecasts and real-time nowcasting updates every six minutes, which improved the ability to predict and manage climate risks. Initiatives that integrate weather data into key sectors, including urban planning, transportation, water management, agriculture, tourism, and emergency responses. Referencing the proverb "if you want to go fast, go alone, but if you want to go far, go together", he stressed that tackling climate change is a shared global endeavour that requires global cooperation and partnership.

H.E. Mr Liu Zhenmin, China's Special Envoy for Climate Change, congratulated IPCC on holding the 62nd Plenary in Hangzhou. He emphasised the importance of the IPCC's work in strengthening global climate governance processes. He highlighted the inclusion of important conclusions of the Sixth Assessment Synthesis Report (SYR) in the First Global Stocktake (GST-1) of the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC) in Dubai, United Arab Emirates. The UNFCCC (1992), its Kyoto Protocol (1997), and the Paris Agreement (2015) were three key legal instruments that provided a foundational legal framework for human efforts to address climate change. These instruments were based on scientific research and represented the political and legal consensus of the international community, serving as the cornerstone of global climate governance and the principles that countries need to uphold.

Progress towards implementing the Paris Agreement depended on parties' determination and pragmatic actions. He highlighted China's success in transitioning towards a green and low-carbon society and urged other countries to uphold their international commitments. In closing, he expressed hope that the IPCC, while adhering to the spirit of science, upholding the principle of multilateralism and the principle of common but differentiated responsibilities, could pay more attention to the sustainable development of developing countries, and provide more comprehensive and objective conclusions.

H.E. Mr Chen Zhenlin, Administrator of the China Meteorological Administration (CMA), welcomed the delegates and encouraged them to work together to identify the scientific facts with greater accuracy and to provide effective scientific assessments on climate change. He noted that over the past 37 years, China has been an active contributor to the IPCC scientific assessment reports. The CMA has continuously strengthened its efforts in climate change science assessment, policymaking and action planning. As the Chinese lead agency for cooperation with IPCC, it has nominated numerous outstanding Chinese scientists. He highlighted China's adherence to the UN's Early Warnings for All initiative and its willingness to collaborate with other countries in building global early warning networks.

The Chair welcomed the delegates and thanked China for hosting IPCC-62. He noted the critical and steady progress since the start of the cycle, including the agreement on the outlines of the Special Report on Climate Change and Cities, as well as the Methodology Report on Short-Lived Climate

Forcers and their respective processes for nominating and selecting authors. The first Lead Author Meetings for both reports were upcoming. The IPCC's work and impact, as well as its relevance for policymakers, were most recently reaffirmed and acknowledged in the key decisions of the 29th Conference of the Parties (COP29) in Baku, Azerbaijan.

The Chair reminded the delegates of the rich and demanding agenda of IPCC-62 and its importance for the cycle. Discussions would focus on reaching an agreement on the strong and well-structured draft outlines of the three Working Group contributions to the Seventh Assessment Report (AR7), as well as the draft outline of the Methodology Report on Carbon Dioxide Removal Technologies, and Carbon Capture Utilization and Storage scheduled for release in 2027. The IPCC Member Countries have demonstrated their support for sustaining the IPCC's work through their backing of the science that underpins the IPCC assessments, as well as their generous voluntary contributions. This ensures the scientific integrity and continuity of the IPCC as the most authoritative and policy-relevant voice on climate science globally.

Ms Ko Barrett, Deputy Secretary-General of the World Meteorological Organization (WMO), called upon all governments to take decisive action and to ensure the advancement of the IPCC process and delivery of a robust AR7 on schedule. She stressed that this report was critical for informing the Second Global Stocktake (GST-2) and shaping the world's collective climate response. The Government of China has demonstrated a strong commitment to international scientific cooperation and has been an important leader within the IPCC. The WMO has confirmed 2024 as the warmest year on record, with global temperatures reaching approximately 1.55°C above pre-industrial levels. The last decade has been the warmest in the historical record. She reiterated the urgency of action, while the Paris Agreement's target of limiting global warming to 1.5°C remained within reach and stressed that climate action must be grounded in scientific evidence. The cost of inaction far exceeds the cost of action.

Ms Inger Andersen, Executive Director of the United Nations Environment Programme (UNEP), via a video message, stressed the progress the Panel made in 2024 in deciding to deliver in this cycle three assessment reports alongside a Synthesis Report, as well as a Special Report on Climate Change and Cities and two Methodology Reports on Short-lived Climate Forcers and on Carbon Dioxide Removal. The three Working Groups Reports and the Methodology Reports on Carbon Dioxide Removal were scoped, and all four outlines were now under consideration at IPCC-62. She underscored that "every degree, every day, every week counts" and urged delegates to finalise "timelines, outlines and budgets." The IPCC's interdisciplinary approach was demonstrated through collaboration with UNEP's assessment Panels and support for the negotiations on the Science-Policy Panel for Chemicals, Waste, and Pollution Prevention. The goals of the Paris Agreement were in danger. The IPCC stands for the best science the world can deliver, and that science cannot be politicised.

Mr Simon Stiell, Executive Secretary of the UNFCCC, via a video message, stressed that 2025 marks the tenth anniversary of the Paris Agreement. In Sharm El-Sheikh, countries agreed to pool resources for the most vulnerable. In Dubai, they agreed on steps to achieve the global goal on adaptation. In Baku, they agreed on financial support to enable the transition in developing countries, amounting to at least USD 300 billion by 2035, with the aim of increasing this amount to USD 1.3 trillion. The energy transition was already in full swing, and over USD 2 trillion was invested in climate action in 2024. Countries' national climate plans were slowly bringing climate action in line with the needs outlined by scientists. He urged delegates to agree on the outlines and timelines of the IPCC's three Working Groups' contributions to AR7. This would be vital to the work of the UNCCC Parties as they plan and implement climate actions, collectively assess progress, and consider enhancing their ambition.

The IPCC Chair formally opened IPCC-62. Before moving to the first agenda item, the Chair clarified the running of the Session and stressed that the Plenary should prioritise substantive issues on the Panel's agenda and ensure inclusivity, also by avoiding an overrun of the meeting time, as this has a disproportionate impact on developing countries.

Ukraine took the floor and stated that it has been three years since the Russian Federation invaded Ukraine. Ukraine emphasised the impact of war on climate change and the depletion of the carbon budget due to military emissions.

The Chair then introduced the Provisional Agenda ([IPCC-LXII/Doc.1, Rev. 1](#)), noting the Annotated Agenda ([IPCC-LXII/Doc. 1, Rev.1, Add. 1](#)) and the Proposal for the Organization of Work ([IPCC-LXII/INF. 14](#)).

The Panel adopted the Provisional Agenda ([IPCC-LXII/Doc.1, Rev. 1](#)).

2. APPROVAL OF THE DRAFT REPORT OF THE SIXTY-FIRST SESSION OF THE IPCC

On 24 February, the Chair introduced the agenda item on the Draft Report of the 61st Session of the IPCC (IPCC-61) ([IPCC-LXII/Doc. 10](#)).

Belgium, Chile, France, Germany, Saudi Arabia, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland (UK), and Venezuela took the floor.

Views expressed included concern that the requested revisions to the draft report regarding quantifiers had not been implemented, and therefore, the draft could not be accepted. It was emphasised that reports should be accurate, provide clarity, and be transparent. It was noted that the Chair clarified at IPCC-61 that edits to the meeting report would not set a precedent for future reports.

Two amendments were suggested under Agenda Item 12 on Matters related to UNFCCC and other international bodies, including changing the phrase “general support ” to “support”. The second was about deleting a passage referring to “efforts to remove environmentally harmful fossil fuel and energy subsidies, in contrast with biodiversity subsidies in which specific commitment is measured and work on pricing”. It was stated that this passage reflected a one-off intervention and did not warrant inclusion in the report, as it could give a misleading impression.

Given the heavy agenda of IPCC-62, it was requested that the discussion and approval of the report be postponed to the 63rd Session of the IPCC (IPCC-63).

The IPCC at IPCC-62 decided to defer the approval of the draft IPCC-61 report to IPCC-63 ([Decision IPCC-LXII-2](#)).

3. IPCC TRUST FUND PROGRAMME AND BUDGET

3.1. Budget for the years 2024, 2025, 2026 and 2027

Ms Judith Ewa, Programme Officer of the IPCC Secretariat, presented the document on the IPCC Trust Fund Programme and Budget ([IPCC-LXII/Doc. 2, Rev. 1](#)), noting that a revised version was issued ahead of the meeting to reflect changes from the Working Groups and from government comments on the initial document posted in December 2024.

The 2024 opening balance of the IPCC Trust Fund was CHF 25,354,000. Total income for 2024 was CHF 5,207,437, and total expenditure was CHF 5,505,000, resulting in a saving of about CHF 1,300,000 attributed mainly to meetings and activities moving to 2025 and 2026. The Programme Officer also provided an overview of the summary of income and expenditure and a list of member countries and organisations that had contributed to the Trust Fund in 2024. The status of Income and Expenditure of the IPCC Trust Fund in 2024, and provided a summary of contributions since 1989, contributions under the International Public Sector Accounting Standard (IPSAS), the interim statement of comparison of budget and actual amounts and a list of in-kind contributions/activities (January-December 2024 and January-March 2025) were also presented. The Programme Officer introduced the IPCC Trust Fund budget (2023-2026), including the revised 2024 budget, the proposed budget for 2025, the forecast for 2026, and an indicative one for 2027. Gratitude was expressed to

the member countries that have made contributions so far, and other members were encouraged to send their contributions, as well as make pledges for 2025 and 2026.

The Panel was invited to consider the document and approve the revised 2024 budget, the proposed 2025 budget, and note the 2026 and 2027 indicative budgets.

India, Japan, South Africa, and the UK took the floor

Governments expressed their gratitude to the Government of China for hosting the meeting and to the Secretariat for its assistance with the documents and meeting preparations. Clarification was sought on the budget lines related to items that were still to be discussed, for example, the timelines for the Working Group's contributions to AR7 and the proposals for Expert Meetings.

The UK informed the Panel that it will be making contributions of approximately £ 115,000 in addition to the support it is providing to the Chair's office.

Following comments from the delegates, the Chair handed over to the Financial Task Team (FiTT) to continue discussions on matters with financial implications and report back to the Panel on 28 February 2025 while prioritising the 2025 budget. He reminded the Panel that the FiTT was open-ended with a core membership comprising the Bahamas, Norway, Saudi Arabia, and the United States of America (USA) and co-chaired by Ms Alannah Pentony (Australia) and Ms Patricia Nying'uro (Kenya).

The FiTT met four times during the week to deliberate on key issues relating to the IPCC programme and budget, including the revised budget for 2024, the proposed budget for 2025, the forecast budget for 2026 and the indicative budget for 2027.

Following the deliberations, the FiTT Co-Chairs submitted recommendations for consideration by the Panel in the form of a draft decision.

Saudi Arabia and India took the floor seeking clarification on the forecast budget for 2026. The FiTT Co-Chair, Ms Alannah Pentony, noted that the 2026 budget forecast would need to be approved by the Panel during the next Session.

The Panel adopted the Decision on the IPCC Trust Fund Programme and Budget ([IPCC-LXII-7](#)) as contained in Annex 1, which included, but was not limited to, approving the revised budget for 2024 and the proposed budget for 2025 and noting the forecast budget for 2026 and the indicative budget for 2027.

3.2. Audit of the 2023 financial statements

Ms Judith Ewa, IPCC Programme Officer of the IPCC Secretariat, introduced the document on the Audit of the 2023 Financial Statements ([IPCC-LX/INF. 1](#)).

According to the findings from the External Auditor on the 2023 financial statements, IPCC's financial statements as of 31 December 2023, present fairly the financial position, performance, its changes in asset/equity, its cash flows and comparison of budget and actual amounts for the year ended, in accordance with International Public Sector Accounting Standards (IPSAS) and the WMO Financial Regulations and Rules.

The Panel took note of the document on the Audit of the 2023 Financial Statements of the IPCC ([IPCC-LX/INF. 1](#)).

3.3. Any other matters

The Chair opened the Agenda Item, noting that as the Task Group on Data Support for Climate Change Assessment (TG-Data) Co-Chairs were not physically present at the Session, they prepared a video presentation. Ms Nana Ama Browne Klutse, Working Group I (WGI) Vice-Chair, and an outgoing TG-Data member, was available to respond to questions.

Mr David Huard, TG-Data Co-Chair, introduced the TG-Data document ([IPCC-LXII/Doc. 5](#)) via a pre-recorded video presentation. He recalled Paragraph 5 of [Decision IPCC-LX-10](#), which stipulates that the Data Distribution Centre (DDC) funding would be disbursed contingent on the Panel's approval of the TG-Data AR7 cycle work programme. Considering that TG-Data membership would be renewed in 2025, a transition document was developed to facilitate the handover process, incorporating lessons learnt from the Sixth Assessment Report (AR6) cycle and associated recommendations.

Ongoing TG-Data activities included an update of the data curation workflows that connect authors, Technical Support Units (TSUs) and DDC. Resource mobilisation aimed at identifying institutions with the necessary expertise, technology, and infrastructure required for archiving input and figure data used in IPCC reports continued. Other activities included maintaining the DDC catalogue and its helpdesk, as well as rescuing figure data used in the AR6 Synthesis Report (SYR). Sharing IPCC data curation practices with the wider scientific community was also undertaken to foster new collaborative partnerships.

The 2025/2026 workplan included the design and implementation of improved data curation workflows for AR7, as well as the preparation of guidelines and training material for IPCC authors. Other activities included archiving datasets used in the Special Report on Climate Change and Cities, as well as continuing to maintain the DDC catalogue and the AR6 Interactive Atlas in collaboration with TSUs. The cost associated with implementing the 2025/2026 work plan was approximately CHF 270,000, which is lower than the previous estimate due to generous in-kind contributions from DDC partners. The estimated budget did not include the curation of WGI data. Efforts were ongoing to identify institutions willing to play a leading role in archiving WGI figure data and the Coupled Model Intercomparison Project (CMIP) datasets, and to enhance access to data for AR7 authors.

The Panel was invited to take note of the TG-Data work undertaken in 2024 and the recommendations for the AR7 TG-Data membership. Furthermore, the Panel was invited to comment on the proposed 2025-2026 TG-Data workplan and approve it, as well as to exceptionally approve the 2025 DDC budget.

Japan and Saudi Arabia took the floor.

The work undertaken by TG-Data and the information shared were appreciated. Establishing partnerships with earth systems data providers was recommended. A procedural question was raised about the invitation to approve the TG-Data-related budget before it is discussed by the Financial Task Team (FiTT).

The Chair clarified that the Panel was invited to approve the workplan and then mandate the FiTT to further discuss the associated budget alongside the financial implications for other activities agreed by the Panel, and present the consolidated 2025 budget and forecast annual budget for 2026, and an indicative budget for 2027, for the Panel's consideration and approval towards the end of the Session.

The Chair thanked the AR6 TG-Data members and invited the Secretariat to continue the resource mobilisation for DDC activities.

The Panel adopted the Decision on the IPCC Trust Fund Programme and Budget – Any other matters – Task Group on Data Support for Climate Change Assessments ([IPCC-LXII-3.](#)), which included but was not limited to approving the AR7 TG-Data work plan for 2025 and requesting the FiTT to consider the budget for DDC activities for the year 2025.

4. ADMISSION OF OBSERVER ORGANIZATIONS

Ms Jennifer Lew Schneider, Legal Officer of the IPCC Secretariat, presented the document on Admission of Observer Organizations ([IPCC-LXII/Doc. 3, Rev.2](#)). There were currently 226 observers, with 17 new requests as below, forwarded to the Panel following review by the IPCC Bureau at its 68th Session.

1. African Development Bank (AfDB)
2. Assembly of First Nations (AFN)
3. Clean Air Fund (CAF)
4. Council on Energy, Environment and Water (CEEW)
5. E3G
6. Elizka Relief Foundation (ERF)
7. Gas Exporting Countries Forum (GECF)
8. Geomar Helmholtz Centre for Ocean Research Kiel (GEOMAR)
9. HelpAge International (HAI)
10. Huqooq-ul-Ebad Development Foundation (HEDF)
11. Inter-American Institute for Cooperation on Agriculture (IICA)
12. National University of Singapore (NUS)
13. Pakistan Community Peace Foundation (PCPF)
14. South Asian Forum for Environment (SAFE)
15. University of Exeter (Uni Exeter)
16. African Heritage and Global Peace Initiative (AHGPI)
17. Union Nationale des Travailleurs Démocrates (UNTD)

The Secretariat reported that the first 15 were already accredited to UNEP and/or the UNFCCC, and, in accordance with Rule I.5 of [the IPCC Policy and Process for Admitting Observer Organizations](#), they are considered observers upon request, subject to acceptance by the Panel, without submitting further documentation. The qualifications of the further two organisations for accreditation were confirmed.

The Secretariat presented the outcomes of the review of IPCC observer organisations, as requested by the Bureau at its 66th Session, including trends in admission, trends in participation and alignment with the Observer Policy, confirmed through both a survey circulated to observer focal points and further due diligence research. It was noted that most accredited observers confirmed engagement and competency in matters related to the IPCC, their affiliation and involvement in climate change activities, and participation in the IPCC sessions. Those organisations that have not yet replied to the request for review would be sent a final reminder for the status survey.

Algeria, Saudi Arabia, Switzerland, and the UK took the floor.

Views expressed concerned the neutrality of the document ([IPCC-LXII/Doc. 3, Rev.2](#)) under discussion, specifically the inclusion of statements expressing reservations about certain applications. It was noted that the document presented a one-sided view and omitted the support those applications had received. It was requested that such statements be removed to ensure the document remained factual and objective. Support was expressed to admit 16 organisations and defer one of the applications pending further information. However, it was highlighted that the applicant had an important role to play in climate action and had a research focus. The applicant met all the criteria, noting that [the IPCC Policy and Process for Admitting Observer Organizations](#) had been duly followed. It was emphasised that no single Panel member should have veto power and suggested the development of conflict of interest guidelines.

A view was expressed that no application approval could proceed without all applications being approved. It was noted that there were unresolved ways of screening Observer Organization alignment with IPCC interests. An agreement on all applications could be reached at IPCC-62, but only with a view to further discussion at IPCC-63, to have the Bureau undertake setting up safeguards

to ensure means of screening observer applicants towards clarity in protecting the neutrality and scientific integrity of IPCC work. Positive views were expressed on the flexibility and queried whether conflict issues could be addressed in the future.

The Panel adopted the Decision on Admission of Observer Organizations ([ICC-LXII-6](#)), taking note of the status of the review of current observer organisations to the IPCC, and granting observer status to the 17 organisations.

5. SCOPING OF THE IPCC SEVENTH ASSESSMENT REPORT (AR7)

The IPCC Chair introduced Item 5 and provided a general overview of the scoping process ([IPCC-LXI/INF. 7](#)) and the steps taken and further plans to improve inclusivity ([IPCC-LXII/INF. 5](#)). He informed the Panel that Ms Katherine Calvin, Working Group III (WGIII) Co-Chair, could not attend the meeting in person. Mr Jan Sigurd Fuglestad, WGIII Vice-Chair, would step in.

The Scoping Meeting, which featured plenary sessions and Breakout Group (BOG) meetings, and a short parallel session devoted to the Synthesis Report (SYR), lasted five days. During the first day, Working Group-specific themes that could feed into cross-Working Group discussions were identified. The second day was aimed at getting an initial chapter structure for the WG reports. The third day was about the final number of chapters and draft chapter titles. The fourth day focused on settling the chapter titles and drafting the indicative bullets. The last day was about finalising the outlines.

During the preparation phase of the Scoping Meeting, a call for nominations of experts was launched on 3 May 2024. More than 2,200 nominations were received for 240 places, including 120 participants that could be supported from the IPCC Trust Fund. Consistent with past practice, the 240 places were divided equally, with 60 each, between the three WGs and the SYR. The Chair donated 34 of the SYR places for IPCC Bureau members and another five places to WGII, given the fact that they had to work on updating the 1994 IPCC Technical Guidelines on Impacts and Adaptation. Ultimately, about 20 places were allocated to experts who would specifically focus on the SYR discussions.

Several BOG meetings were held during the Scoping Meeting to discuss cross-cutting themes. The output of these BOGs was reported in plenary sessions and considered by individual WGs. The basis for selecting cross-cutting themes included governments' suggestions for special reports, discussions during the 60th Session of the IPCC (IPCC-60) and IPCC-61, pre-scoping activities such as surveys, webinars, inputs from AR6 authors, particularly the identified knowledge gaps and IPCC Bureau discussions. Other topics emerged during the meeting, such as biodiversity, societal development, including climate resilient developments, and tipping points and large singular events. The treatment of cross-cutting topics and the detailed information contained in the WG outlines and [Document IPCC-LXI/INF. 7](#), would be considered by the authors when drafting the reports.

The Chair presented the document on the steps taken, and further plans to improve inclusivity in the Seventh Assessment Report ([IPCC-LXII/INF. 5](#)). The steps already taken included pre-scoping consultations with people who were nominated but not selected, active networking with other scientific, governmental and observer organisations, and the establishment of the code of conduct. There were firm plans for the Expert Meeting on Gender, Inclusivity and Diversity. Efforts were ongoing to grant access to peer-reviewed literature for people from developing countries. The University of Utrecht in the Netherlands offered access to all authors from developing countries for the Special Report on Climate Change and Cities. A proposal for a Workshop on New and Extended Methods of Assessment was developed. There were intentions to organise webinars for governments during review periods of IPCC reports to enhance the inclusivity of participants in reviews and approvals of the reports, and to make efforts to conclude meetings in a timely manner to ensure that all delegates were present until the end.

Egypt, Germany, India, Luxembourg, Norway, the Russian Federation and Saudi Arabia took the floor.

The overview presentation by the IPCC Chair, along with the extensive pre- and post-scoping efforts, was appreciated. Suggestions were made that cross-Working Group themes and topics merited further discussions and integration in the Working Group outlines. Concerns were raised that the scoping process of the SYR was premature, and it was suggested that discussions of the elements of this report should be halted and removed from the agenda. Other delegates reminded the Panel that the meeting agenda had already been adopted.

In his summary remarks, the Chair noted that more attention would need to be paid to cross-Working Group topics. Considering that the agenda had already been adopted by the Panel under Agenda Item 5.4, he would provide only the rationale for initiating discussions on the AR7 SYR.

5.1. Working Group I, AR7 Report outline

Mr Robert Vautard and Mr Xiaoye Zhang, WGI Co-Chairs, provided background information, highlighting the consultative processes that formed the basis of the Proposed Chapter outlines of the WGI contribution to the AR7 ([WG-I: 15th/ Doc. 2](#)). The inputs provided by governments and results from a survey conducted with AR6 authors and experts selected to participate in the Scoping Meeting were taken into account. Contributions made through webinars by experts who were nominated for the Scoping Meeting but not selected, as well as a range of informal consultations with the wider scientific community, were also taken into consideration. Nine cross-cutting topics were identified. During the Scoping Meeting, WGI experts began by identifying a working narrative. This was followed by a discussion of emerging topics that preceded the identification of chapter structures and titles. The next step was to develop the indicative bullets. The last step was to refine the bullets and discuss the cross-cutting topics that were incorporated in the outlines.

The proposed AR7 WGI Outline consisted of ten chapters and Annexes, including a Glossary and Technical Annexes. Chapter 1 would serve as an introduction, framing the report, providing context, and assessing the common methodology and knowledge sources to be used. Chapters 2 – 4 formed a block, that would assess, *inter alia*, new scientific knowledge and gaps, observations, recent climate anomalies and extremes. Among these chapters, the second focused on global large-scale changes across the earth system components, and the third assessed changes in regional climate and extremes, and their causes. Chapter 4 would assess advancements in process understanding of earth system changes. The next block of chapters (i.e. Chapters 5-8) would focus on projections for a new spectrum of emissions and land-use scenarios accounting for current and plausible future trends, as well as regional consequences, and the likelihood of abrupt changes and tipping points. Chapter 5 described the available emissions and land use scenarios and their implications for warming levels, and other global indices linked to temperature and energy balance. Chapter 6 would assess global and large-scale changes across the earth system components, and Chapter 7 would provide a description of projections of regional climate change and extremes. Chapters 9 – 10 form a block that would provide information for responses and climate services, aiming to assess the response of the earth system under temperature stabilisation scenarios and overshoot, and would be a link to the Digital Atlas. These would describe how climate science would inform responses for adaptation and mitigation, with Chapter 9 assessing the earth system responses under pathways towards temperature stabilisation, including overshoot pathways that require CO₂ removal, and the deployment of solar radiation modification (SRM) technologies. Chapter 10 was focused on how climate information, such as sectoral climate impact drivers, is used, considering the methods and disparities across regions.

The structure of the proposed WGI Outline was meant to ease the navigation for readers. There were four central chapters for operational use that would contain information on past and future changes and their attribution on global, regional and local scales. There were also three focused chapters on emerging topics identified by experts at the Scoping Meeting, with fast-growing literature on advancements in process understanding. Half of the chapters assessed cross-Working Group topics. Two parallel chapters focused on regional climate information. A large space would be allocated to an assessment of key advances in science, such as the improved understanding of recent climate anomalies, the integration of advances in main processes and feedbacks at the interface of earth

system components, new model developments at very high spatial resolutions, and artificial intelligence emulators. Cross-cutting topics that were discussed during the Scoping Meeting would be assessed in either one or several chapters.

Belgium, China, India, the Netherlands, the Russian Federation, Saudi Arabia, Saint Kitts and Nevis and Switzerland took the floor.

Delegates commended WGI for the successful Scoping Meeting and the WGI Outline. The rationale for including plain language summaries in every chapter of the outlines was questioned, noting that the Summary for Policymakers should address this aspect. The inclusion of plain language summaries was also supported by some delegates. A question was raised about critical thresholds mentioned in the outline, noting that the earth system does not have intrinsic physical temperature thresholds. A suggestion was made that the language used should be balanced and support the solution space, demonstrating the immediate benefits of near-term climate action. The report should specify global warming thresholds and provide a link between carbon budgets and mitigation pathways. The role of fossil fuels and energy transition pathways should be clearly addressed and aligned with the WGIII assessment. The assessment should encompass high-latitude and high-altitude environments. A proposal was made to include a chapter on monsoons. The tenth chapter, which would assess climate information and services that involve socio-economic, political and other considerations, was perceived to be outside the scope of WGI. The inclusion of the long-term effects of sea-level rise and associated irreversibility aspects was suggested.

The Chair remarked that the WGI Co-Chairs had taken note of the interventions that would be discussed further during the Fifteenth Session of the IPCC Working Group I (WGI-15).

After the conclusion of the WGI-15 Session, the Panel congratulated the WGI Co-Chairs, their Bureau and the TSU for their work, and agreed on the AR7 WGI Outline. Delegates started a discussion of the proposed WGI implementation plan.

Germany, India, Ireland, Nepal, Saudi Arabia and South Africa took the floor.

The work done by the WGI Co-Chairs, their Bureau and the TSU was appreciated. There were suggestions that the WGI Outline, the Implementation Plan and the associated budget should be agreed on as a package. Other delegates suggested that the WGI Implementation Plan should not be discussed in isolation, but instead viewed alongside the time schedules of the other Working Groups, the Special Report, and the Methodology Reports. The Chair reminded the Panel that a comprehensive AR7 strategic plan was prepared as [Document IPCC-LXI/Doc. 10](#).

The Panel adopted the Decision on the Scoping of the IPCC Seventh Assessment Report (AR7) (IPCC-LXII-8), which included, but was not limited to, agreeing on the outline of the WGI contribution to the AR7.

5.2. Working Group II, AR7 Report outline, including Guidelines for Adaptation

Mr Winston Chow and Mr Bart van den Hurk, WGII Co-Chairs, presented the scoping process, including participant selection, as well as an overview of the scoping meeting specific to the WGII AR7 ([WGII-13/INF. 1](#)) and the AR7 WGII Outline and the outline for the Update to the 1994 IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptation ([WGII-13/Doc. 2](#)).

The call for nominations of experts was launched on 3 May 2024. WGII received a total of 1340 nominations, and 65 experts were invited. During the iterative selection of participants, relevant expertise was examined for WGII and cross-Working Group issues. This was based on topics of interest identified through the analysis of AR6 content, considering the IPCC Chair and Co-Chairs' vision and engagement with relevant stakeholders. Efforts to foster inclusivity involved soliciting views from a diverse set of stakeholders through cross-Working Group pre-scoping webinars, which

attracted more than 670 participants from approximately 109 countries. About 721 responses were received from pre-scoping surveys that were sent to experts who previously contributed to the IPCC work, and the IPCC Focal Points and Observer Organizations were incorporated. An engagement call was conducted with approximately 50 former AR6 WGII authors and Bureau members. Seven videos recorded during the consultative process were provided to the participants at the Scoping Meeting. Post-scoping meeting surveys were undertaken to solicit feedback from the participants.

The AR7 WGII outline consisted of four distinct blocks of chapters. The report began with a framing chapter. The second block (i.e., Chapters 2–6) presented a global perspective and provided an inventory of current knowledge on topics such as observed and projected risks, climate change impacts and adaptation, potential response options to climate impacts, including those related to losses and damages, climate finance, and related financial risks. The third block (i.e., Chapters 7 – 13) has a regional focus. The chapters were similar to AR6 and had a common list of bullets. The fourth block (i.e., Chapters 14 – 20), which comprised thematic and sectoral assessment chapters, had a common list of bullets as well as chapter-specific bullets. Concerted efforts would be made to avoid duplication of material across the regional and thematic blocks of chapters while ensuring that the assessment process approaches the complex problem from different angles. An Atlas would be included as an Annex to the AR7 WGII report and should take the form of an extension of the WGI Interactive Atlas and focus on mapping representative information on hazards, vulnerability, exposure, impacts, risks, adaptation, and responses to losses and damages.

The Technical Guidelines for Assessing Climate Change Impacts and Adaptation Including Indicators, Metrics and Methodologies were structured in a manner that would support implementation. The overarching objective was to provide a practical guide that includes a scan of the landscape for its application and methodological guidelines that break the guidance for adaptation planning into five distinct steps. It would also have enablers that are meant to be a cluster of supporting material, toolkits and building blocks that provide a resource for users.

Antigua and Barbuda, Brazil, Egypt, India, Kenya, Republic of Korea, the Russian Federation, Saudi Arabia, Senegal and Switzerland took the floor.

The material presented by WGII Co-Chairs and the outcome of the scoping process were welcomed and appreciated. The importance of mental health, as well as physical health was mentioned. A question was raised about the methodologies that would form the basis for assessing the attribution procedures for impacts and risks, along with their associated uncertainties. The AR6 approach, which provided rewritten definitions, such as mitigation-centric climate-resilient development and maladaptation, and the theoretical reframing of concepts like incremental versus transformative adaptation, inadvertently resulted in considerable misconceptions and could be reconsidered in AR7. The treatment of adaptation should receive a comprehensive, balanced and inclusive approach, taking into account global, regional, national and local needs and priorities, as well as the diverse capabilities of nations and communities, particularly for developing countries. For the WGII report to be more solution-oriented, it should demonstrate the feasibility and costs assessment of adaptation actions, synergies and trade-offs with mitigation actions. In contrast to AR6, adaptation limits and maladaptation were not conspicuous in the AR7 outline. SRM was not included in the WGII outline despite its important role in relation to its impacts, risks, vulnerabilities and potential consequences for adaptation strategies. It would be crucial that the Technical Guidelines provide practical solutions and options that were applicable to the different national circumstances and local context of each region or country, as well as indicators, metrics and tools that help in the assessment of adaptation planning, implementation, monitoring, evaluation and learning. The title of the Guidelines should be consistent with the agreed language from IPCC-60 and mention adaptation indicators, metrics and methodologies that are critical in assessing progress in adaptation.

The Chair concluded that the WGII Co-Chairs had taken note of the comments and deferred further discussions to the Thirteenth Session of the IPCC Working Group II (WGII-13).

After the conclusion of the WGII-13 Session, the Panel congratulated WGII Co-Chairs, their Bureau and the TSU for their extensive work.

The Panel adopted the Decision on the Scoping of the IPCC Seventh Assessment Report (AR7) ([IPCC-LXII-8](#)), which included, but was not limited to, agreeing on the outline of the WGII contribution to the AR7 and the IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptation Including Indicators, Metrics and Methodologies.

5.3. Working Group III, AR7 Report outline

Ms Joy Jacqueline Pereira, WGIII Co-Chair, and Mr Jan Sigurd Fuglestad, WGIII Vice-Chair, summarised the background information, including the selection process for Scoping Meeting participants and presented an overview of the AR7 WGIII Outline ([WG-III: 15th/Doc. 2](#)).

The selection process followed the IPCC principles and procedures and was agreed upon by WGIII Bureau Members. From the 2210 nominations received, 1007 experts indicated that they had expertise relevant to WGIII. A total of 68 nominees were selected, including 60 for WGIII only and 8 for the SYR/WGIII. Of the selected participants, 41% were female and 59% were male. About 49% of invitees were from developed countries, and 51% were from developing countries or countries with economies in transition.

The WGIII Bureau organised some pre-scoping activities to broaden the inclusion of perspectives and inform the scoping dialogue. Three pre-scoping webinars were organised with IPCC Focal Points and experts who were nominated but not selected to participate in the scoping meeting. A total of 70 experts representing 34 countries by citizenship participated in the webinars. WGIII also had two consultations with AR6 WGIII Coordinating Lead Authors (CLAs) and solicited feedback on chapter structure and content in AR6, cross-chapter and cross-Working Group coordination, major guiding questions for specific chapters, and advice for the scoping meeting. The comments received from the consultative processes were compiled and provided to the scoping meeting participants. WGIII also participated in several side events at COP29 in Baku in November 2024, which focused on regionalisation and granularity of information in IPCC reports and the WGIII's contribution to AR6 along with its advancements. These also highlighted knowledge gaps identified in AR6 and explored ways to enhance policy and economic assessment in AR7.

During the scoping meeting, participants were invited to discuss all aspects of the scope, outline, and content of the report. A predefined structure of the report was not provided to the participants. Instead, a facilitated process was used that allowed an outline to emerge during the meeting through a series of structured discussions. The scoping meeting began with a brainstorming exercise that resulted in an initial list of clustered topics and themes, as well as the formulation of chapters, their titles, and indicative bullets. The [AR7 WGIII outline](#) was agreed upon by all the scoping meeting participants in a plenary session.

The AR7 WGIII Outline included 15 Chapters. Chapter 1 introduced the report and provided a framing of the overarching concepts and key policy relevance of the report. Chapter 2 focused on past and current emissions, trends and drivers. Chapter 3 took a broad view of national and global futures in the context of sustainable development, describing, assessing and evaluating both qualitative and quantitative scenarios and emission pathways with linkages to the sectoral chapters. Chapter 4 assessed development, mitigation, and sustainability to capture the interconnected character of national and global futures and sustainable development. This chapter reflected the importance of sustainable development as a framing concept throughout the WGIII report. Chapters 5-7 would focus on factors that facilitate and/or constrain mitigation. Chapters 8-13 consisted of a set of sectors and systems, and each of these chapters would include a set of common elements, including links to the second, third, fourth, sixth and seventh Chapters. Chapter 14 focused on cross-sectoral issues and integration across systems, including energy, transport, buildings and industry, with an emphasis on electrification. Chapter 15 assessed potentials, limits and risks of Carbon Dioxide Removal (CDR) and

was distinct from the sectoral and systems chapters. Given the emerging literature on CDR since AR6, and the fact that not all CDR approaches fit into the previous sectors and systems structure, such as marine CDR, it was decided that CDR is treated in a stand-alone chapter. The chapters could be clustered to facilitate discussions. The first cluster (i.e., Chapters 1-4, and Chapter 15) discusses introduction and framing, past, present and future information, and CDR because this is not a sector or system. The second cluster (i.e., Chapters 5 - 7) dealt with factors that facilitate or constrain mitigation. The third cluster (i.e., Chapters 8 – 14) included the assessment of sectors and systems, as well as common elements.

Ms Joy Jacqueline Pereira, WGIII Co-Chair, thanked Mr Jan Sigurd Fuglestad, WGIII Vice-Chair, for supporting her during the meeting.

Belgium, Belize, Egypt, France, Germany, India, Nepal, North Macedonia, the Russian Federation and Saudi Arabia took the floor.

The presentation done by WGIII and the outline were welcome and appreciated. A suggestion was made to edit the title of the second chapter to reflect that it would assess anthropogenic emissions. The need for cross-Working Group collaboration in dealing with cross-cutting issues such as finance, biodiversity, scenarios, SRM and CDR was reiterated. Concerns were raised that the report appeared to place disproportionate emphasis on ex-post assessment of policies, and this could potentially shift the focus away from the report's primary role as a scientific assessment of mitigation options. The inclusion of SRM as a mitigation strategy, without mentioning the associated limitations and risks, was queried. The outline should provide a framework to guide the assessment but not dictate the focus of findings or predefine acceptable solutions, which might risk omitting those that are still emerging.

The Chair concluded that the WGIII Co-Chair and Vice-Chair had taken note of the comments and deferred further discussions to the Fifteenth Session of the IPCC Working Group III (WGIII-15).

After the conclusion of the WGIII-15 Session, the Panel congratulated WGIII Co-Chairs and their Bureau.

The Panel adopted the Decision on the Scoping of the IPCC Seventh Assessment Report (AR7) ([IPCC-LXII-8](#)), which included, but was not limited to, agreeing on the outline of the WGIII contribution to the AR7.

The Chair noted that the IPCC Bureau and the Panel had spent an enormous amount of time developing the Working Group and Methodology Report outlines, based on the raw material produced by the experts during the respective Scoping Meetings. It would be a great shame if the IPCC could not build on these efforts to initiate the process of developing the AR7 products. Although several delegations requested to have an integrated view of the overall AR7 schedule, procedurally, for each Working Group, the Panel should take a decision covering three main points. The first one was an agreement on the outlines of the Working Group's contribution. The second one pertained to the timetables for producing the Working Group's contribution. The third one was the budget associated with the production of the reports. The three Working Groups worked closely together, with an integrated strategic planning schedule, which they were required to break down into timelines for each Working Group to comply with the IPCC Procedures, which require a decision on each Working Group to be made separately. It would be useful to hear about the effort required to produce a strategic planning schedule and to get an overview of the integrated schedule that was used to generate the individual Working Groups' implementation plans.

Ms Melinda Tignor, Head of the WGII TSU, informed the Panel that at the beginning of the AR7 cycle, the three Heads of the TSUs began meeting regularly, and one of the priorities was developing a strategic planning schedule for the Working Groups. The first to be produced was the Special Report on Climate Change and Cities, which was across all the Working Groups, and the schedules for producing the Assessment Reports were then added. The planning did not only consider the main

milestones (i.e., the formal drafts, reviews and the meetings), but also took account of internal milestones needed to plan and track across the three Working Groups, major holidays, Conference of the Parties to the UNFCCC and associated meetings of Subsidiary Bodies, and internal Working Group preferences and calendars. There were approximately ten draft versions of the strategic planning schedule, which were developed prior to the final version that was ultimately presented to the Panel ([IPCC-LXI/Doc. 10](#)). Developing a strategic planning schedule was a significant undertaking that required consideration of milestones as well as other vital factors.

The Chair concluded that developing the strategic planning schedule was a considerable effort. The result was a living document which may change throughout the assessment cycle and be updated.

Mr Robert Vautard, WGI Co-Chair, introduced the integrated schedule for AR7, noting that it was not a rushed timeline. The approach used to develop the timelines for producing the Working Group reports was the same as that applied to the Special Report on Climate Change and Cities, whose implementation plan was accepted by the Panel without question. The interval between the Scoping Meeting and the first Lead Authors Meeting (LAM1) for the Special Report was approximately eleven months, comparable to the interval between the AR7 WGI scoping and LAM1, which was about twelve months. Similarly, the intervals between the LAMs for the AR7 WGI and the Special Report were comparable, although the former was wider, justifiably so, as it has more chapters. A similar comparison could be made for the intervals between the Special Report and the other Working Group contributions.

The Chair informed the Panel that, given all the efforts made, the IPCC Bureau was eager to initiate the process of producing the reports, which involved nominating and selecting authors, preceding the LAM1, tentatively scheduled for the end of 2025. Negotiations with potential host countries for the LAM1 were already underway. Developing the timelines was complex, and there was no Plan B in place for the already developed detailed schedule. The Panel could either accept the proposed planning schedule or explore more creative approaches that would enable taking the first steps towards the AR7 production.

Algeria, Australia, Austria, Belgium, Canada, Chad, Chile, China, Denmark, France, Hungary, India, Ireland, Italy, Jamaica, Japan, Kenya, Luxembourg, Nepal, Netherlands, Norway, Saudi Arabia, South Africa, Sweden, Switzerland, Türkiye, UK, European Union and Friends World Committee for Consultation (FWCC) took the floor.

The views and comments on the proposed strategic planning schedule expressed by member countries were polarised. Delegates who advocated for the acceptance of the schedule as presented made the following supporting remarks. The schedule was thoroughly scrutinised by the Panel in previous Sessions and the IPCC Bureau and Working Group TSUs considered all concerns and suggestions to develop the timelines with rigor, coordination and consideration of the requirements placed on the people involved in the process, particularly the authors who have the herculean task of drafting the report, as well as expert reviewers, governments and other key role players. The timeline was not shortened, but it was realistic, achievable, and inclusive, and adhered to IPCC Procedures to ensure comprehensiveness, objectivity, openness and transparency as guiding principles. The IPCC Bureau and TSUs meticulously took all relevant factors into consideration to develop the schedule and were already committed to delivering the AR7 products within the proposed timelines that would enable a timely completion of the AR7 early in 2028 to align with the second Global Stocktake (GST2) under the Paris Agreement and inform the next round of Nationally Determined Contributions (NDCs). The GST2 should be informed by the best available science produced by all IPCC Working Groups. The current timeline would be in line with the GST2 needs and the IPCC reports could be taken up after the technical phase. The IPCC reports were critical in informing timely climate action and supporting countries' priorities such as adaptation, finance and mitigation actions. The Bureau had assured the Panel that the schedule would not compromise comprehensiveness, scientific robustness, balanced representation and inclusivity. The Panel at IPCC-62 should not derail the AR7 work. The success of the Session would be assessed based on its outcomes, including the

acceptance of the entire package associated with the AR7 outlines, including the work plans and budget. The decisions on the AR7 schedule were highly anticipated by stakeholders, including policymakers, the unprecedented number of experts mobilised to join the IPCC process, and the international climate change research community. Efforts were underway to support and create an enabling research environment in countries with less capacity. The bulk of the literature to be assessed in AR7 already existed, as it included a significant number of publications produced after the AR6 literature cut-off dates in 2021, and the available literature continues to grow exponentially over time. A direct comparison of the AR6 workplan with the AR7 was inappropriate, considering that the previous cycle produced three Special Reports, whereas only one Special Report would be produced in AR7. Concerns were raised that most delegates, particularly from developing countries, had already left the meeting.

Some of the remaining delegations objected to agreeing on the schedule and made the following supporting remarks. Their views included that the schedule did not reflect the time needed to deliver on the AR7. The urge to align the completion of the AR7 Working Group reports with GST2 raises questions about what the IPCC would do to align with GST3. The timing of completing the AR7 Working Group reports under the proposed work plan would not even meet the deadline for the technical phase of the GST2 process. The IPCC cycle would align to the Periodic Review. The total time allocated to the preparation of all three Working Group reports was severely curtailed compared to AR5 and the approved AR6 timeline, pre-COVID-19. The proposed timeline allocated approximately 3.5 years, 3.6 years and 3.9 years between the Scoping meeting and the approval sessions for WGI, WGII and WGIII, respectively. The proposed schedule did not provide sufficient time for the research community, particularly in developing countries, to produce sufficient literature that was required for a comprehensive assessment. The proposed back-to-back reviews were impractical or constraining, particularly for developing countries, which have limitations in human capital and rely on the same experts to review all three Working Group reports. It would be helpful to allow countries that have concerns about the proposed work plan to present alternative proposals that address their concerns. An alternative workplan could incorporate two months between every Working Group review period and a longer period comparable to AR6 between the Scoping meeting and LAM1. The approval of the AR7 could tentatively be around June 2028, December 2028, and the first quarter of 2029 for WGI, WGII and WGIII, respectively.

The Chair, in his summary remarks, noted that to move the process forward, an agreed timeline was indispensable. The Working Groups needed to start on the process of developing criteria for selecting authors that precedes issuing a call for nominations. If the Panel does not agree on a timeline at IPCC-62, the call for nomination of authors would not be issued. The Panel would need to decide on the 2025 budget, including the approval of funds required to hold the joint LAM1 of the Working Groups, which was planned to take place around December 2025. The negotiations with the potential host country were quite advanced. At the end of the IPCC-62, the Chair would need to address the world media and explain why the process to get started on delivering the Working Group contributions had not been developed despite the elaborate outlines for reports being successfully developed and agreed upon.

France took the floor, noting their offer to host the meeting in 2025.

The Chair suggested convening a huddle to be facilitated by Mr Ladislaus Chang'a, IPCC Vice-Chair.

After the huddle, Mr Ladislaus Chang'a, IPCC Vice-Chair, reported that two proposals were made as regards the timelines presented in Documents [IPCC-LXII/Doc. 14](#), [IPCC-LXII/Doc. 15](#), and [IPCC-LXII/Doc. 16](#). The first was to tweak the existing work plan slightly by shortening the presented WG I timeline by one month and to extend the presented WG III timeline by one month. The second was to extend the time schedule.

Mr Fredrick Ouma, Kenya, who facilitated the discussion, provided further information, reporting that one option proposed was to tweak the proposed schedule and the other was to approve the WGI

report around July/August 2028, the WGII report around December 2028, and WGIII around March 2029.

The Chair noted that there were two alternative timelines, which differed by about two months regarding the completion of the WGI report, and the differences extended to about six months in the case of the WGIII report approval. He highlighted that when the Working Groups designed the original timelines, they did not start from an end date and worked backwards. Instead, they started from the present and worked forward to decide what time was needed to produce the AR7. He then invited the Panel to provide comments on the two posited scenarios as well as consider providing guidance on how to move from the 2028/2029 time horizons to the immediate decisions that should be translated into decision documents for each Working Group, particularly in relation to the need for the Panel to approve the 2025 budget.

Australia, Austria, Chad, China, Denmark, India, Ireland, Italy, Japan, Luxembourg, Norway, Saudi Arabia, South Africa, Sweden, Switzerland, and the UK took the floor.

Concerns were raised that most delegates, particularly from developing countries, had already left the meeting. During the huddle discussions, it was discovered that some of the overlaps that other delegates were concerned about were designed to help the integration across Working Groups. There were still sentiments that the GST2 should receive the full value of the AR7. There were considerations on how to explore all the options to achieve this goal in an inclusive manner. The IPCC should manage risks associated with the unavailability of the science needed to inform action. All the IPCC Working Group reports were needed to address many policy-relevant information needs beyond the GST, including those related to the Global Goal on Adaptation (GGA), finance, adaptation metrics, losses and damages, and just transition, equity and justice. Following the huddle, delegates continued the consultation process, and suggestions were made, aiming to gain about a month at the beginning of the Working Group assessment work. The option that extends the original timeline by about a month was not accepted by some delegates who opined that this version still had overlaps. It was recommended that the Panel take decisions that enable the Working Groups to start their work immediately, even if the whole AR7 work plan was not agreed upon.

The Chair noted that what distinguished the two options was not minor tweaks but the design criteria around each of them. He expressed scepticism that consent would not be gained at IPCC-62. Considering that it was deeply challenging to reach consensus on the whole AR7 workplan and that the number of delegations still present had notably declined and the negotiations had become non-inclusive, one way forward would be to discuss the matter in a future meeting. A decision text that hedges the bets and defers some decisions would need to be drafted. The decision should serve as a trigger for initiating the process of nominating authors, ensuring they are selected in time for the LAM1, scheduled to take place towards the end of 2025.

The Panel adopted the Decision on the Scoping of the IPCC Seventh Assessment Report (AR7) ([IPCC-LXII-8](#)), which included, but was not limited to, agreeing to invite the Working Groups to start their work as indicated by the 2025 budget by initiating the call for nominations for the authors, and convening the LAM1 in 2025. The Panel also agreed to defer further consideration of the workplan, including the proposed Implementation Plan for the preparation of the Working Group contributions to the AR7 to IPCC-63.

5.4. AR7 Synthesis Report

The Chair provided brief information on how the SYRs were handled in previous cycles, noting that in the Fifth (AR5) and Sixth Assessment Reports (AR6), the SYR was addressed in the scoping meeting. In AR6, the sessions were collectively managed by the IPCC Vice-Chairs. In AR7, it was organised by the Chair, with full participation by the Vice-Chairs, who facilitated each of the sessions. The document [IPCC-LXII/INF. 7](#) was more detailed and transparent about the process during the scoping meeting. There were some very helpful discussions about lessons learnt from the AR6 SYR process,

which included topics such as feasibility, length and the approach to producing figures. There were no decisions to be made regarding the SYR, as a dedicated scoping meeting for this report would be held later in AR7, which may build upon the outcome of the Kuala Lumpur scoping meeting.

The Panel took note of the report by the Chair on the AR7 SYR process.

6. SCOPING OF THE METHODOLOGY REPORT ON CARBON DIOXIDE REMOVAL TECHNOLOGIES AND CARBON CAPTURE UTILIZATION AND STORAGE

6.1. Outline of the Methodology Report on the Carbon Dioxide Removal Technologies and Carbon Capture Utilization and Storage

Mr Takeshi Enoki, Co-Chair of the Task Group on National Greenhouse Gas Inventories (TFI), presented an overview of the Outline of the Methodology Report on Carbon Dioxide Removal Technologies, Carbon Capture Utilization and Storage ([IPCC-LXII/Doc. 6](#)). As part of background information, the Panel at IPCC-60 decided that the TFI should hold an Expert Meeting on Carbon Dioxide Removal Technologies, Carbon Capture Utilization and Storage and provide a Methodology Report on these by the end of 2027. The Expert Meeting (EM), attended by approximately 76 participants in hybrid mode, was held in July 2024. The EM considered gaps in existing IPCC Guidelines and identified where updates were needed. The list of Carbon Dioxide Removal methods provided in the AR6 WGIII table and other methods available in the literature were assessed. Criteria to assess these categories for inclusion in the new Methodology Report were recommended.

The Scoping meeting for the Methodology Report was held in October 2024. The meeting participants carried out an assessment of all the methods to produce a proposal for the [outline](#) document comprising the Title format, Table of Contents, Terms of Reference and Instructions for experts and authors. The proposed title of the Methodology Report was “2027 IPCC Methodology Report on Carbon Dioxide Removal Technologies, Carbon Capture, Utilization and Storage (2027 Supplement to the 2006 IPCC Guidelines)”. The aim of the report was to provide an update and sound scientific basis for supporting the preparation and improvement of National Greenhouse Gas Inventories in relation to on Carbon Dioxide Removal Technologies and Carbon Capture Utilization and Storage. The notation 2006 IPCC Guidelines included the three methodological reports (i.e., 2006 IPCC Guidelines for National Greenhouse Gas Inventories; 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands; and the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories). The format was consistent with the 2006 IPCC Guidelines, and started with an overview chapter, then a general guidance, followed by the sectors. Two new volumes were proposed for inclusion in the new Methodology Report. These were Volume 6 on Carbon Dioxide Capture, Transport, Utilization and Storage and Volume 7 on Direct Removal of CO₂ from Waterbodies. Alkalinity Enhancement of Waterbodies. In addition to drafting new Chapters for the Methodology Report, many other sections across Chapters and Volumes would either be revised or enhanced.

This report would be developed in parallel with the Methodology Report on Short-Lived Climate Forcers, and both should be completed by 2027. The plan was to synchronise the Lead Author Meetings (LAMs) and review periods.

Ecuador, India, Saudi Arabia and Switzerland took the floor.

Delegates thanked the TFI Co-Chair for the presentation. It was noted that the mandate from IPCC-60 was that the Methodology Report on Carbon Dioxide Removal Technologies, Carbon Capture Utilization and Storage should not be an update of the 2006 IPCC Guidelines, but would instead be a standalone product, similar to the Methodology Report on Short-Lived Climate Forcers. Although accounting for CO₂ removal, use or storage would impact inventories for CO₂ from the sectors included in the 2006 IPCC Guidelines, this did not imply that the new Methodology Report should be considered an update of the 2006 Guidelines. Instead, the new Methodology Report could be structured in a manner that considers that inventory compilations in some sectors might be impacted.

A concern was raised that including a chapter on CO₂ Removal from Water Bodies was premature, particularly given that the 2013 Supplement and 2019 Refinement on Wetlands already exist. The science on these approaches should develop in all respects, including the actual technological potential, impacts and governance issues, before developing methodologies for measuring CO₂ removals from water bodies. The deletion of all mentions of fossil CO₂ and the Global Stocktake was suggested. The inclusion of the plains of the Amazon in the Methodology Report was suggested.

The Chair delegated the chairing of Agenda Item 6 to the TFI Co-Chairs.

At the resumption of the session, Mr Mazhar Hayat, TFI Co-Chair, invited delegates to make oral and written comments on the outline.

Algeria, Azerbaijan, Bahamas, Belgium, Chile, China, Congo, Denmark, France, Germany, India, Italy, Japan, Netherlands, Nigeria, Norway, Republic of Korea, Saudi Arabia, Singapore, South Africa, Switzerland, Sweden, Togo, Türkiye, UK, Vanuatu, the Center for International Environmental Law (CIEL), the Environmental Defense Fund (EDF), Friends World Committee for Consultation (FWCC) and the Heinrich Boell Foundation took the floor.

The work done by the Task Force Bureau and the Scoping Meeting participants was appreciated. The title of the Methodology report requires clarification or modification. The scope of technologies, and some terminologies and definitions used, such as Carbon Dioxide Removal Technologies, Carbon Capture Utilization and Storage and negative emissions require further clarification. It should be acknowledged that Carbon Capture Utilization and Storage technologies were mature and readily available in many countries to implement them, whereas some of the proposed Carbon Dioxide Removal methods, if used alone, cannot help the world to reach the temperature goals due to their limitations in terms of scalability or technology readiness. The report could be viewed as validating some controversial Carbon Dioxide Removal technologies that were mentioned in the outline. When dealing with CO₂ capture from process gases, the potential issue of double counting should be considered. CO₂ utilization technologies should consider the impact of different carbon sequestration cycles and emission reduction effects. Suggestions were made that the report should clearly distinguish between sources of CO₂, such as fossil and biogenic origins, in relation to utilization and storage. On the other hand, and contrary, it was opined that differentiating CO₂ according to its sources would introduce unnecessary complexities and is neither scientifically necessary nor methodologically beneficial. The inclusion of short-term CO₂ storage could lead to unnecessary reporting burdens. Instead, a metric to measure the permanence of storage could be included. Inclusion of coastal wetland systems such as tidal flats, seaweeds were supported by delegates, to complement the previous guidance. The suggestion to add the Methodology Report as a supplement to the existing Guidelines to ensure consistency, provide updates and address existing knowledge gaps was supported by some delegates. However, others preferred that it should be a standalone product. It was important that the report comprehensively considers existing and emerging technologies, acknowledging some associated uncertainties and risks, which should ideally be assessed by WGIII. There were objections regarding the inclusion of CO₂ capture and removal from water bodies in Volume 7, primarily because the associated research and technologies were immature and thus, the prerequisite scientific and technical information to be included in the Guidelines was insufficient. It was not clear which types and sizes of water bodies would be considered and how certain fundamental issues would be dealt with, such as governance of the water bodies, exclusive economic zones, international water bodies and transboundary considerations. Also, the proposed contents of Volume 7 did not warrant treatment in the report, because some of the listed technologies might be harmful to ecosystems and biodiversity. There were suggestions to either completely delete Volume 7 or move some of its contents to Volume 6, whereas other delegates preferred that Volume 7 should be retained in the outline, insisting that the IPCC should be open to technological developments and provide the framework to support countries that want to use the new technologies. The discrepancies between accounting for anthropogenic activities in inventories versus in models need to be addressed in the report.

Mr Takeshi Enoki, TFI Co-Chair, thanked delegates for their comments and provided responses. The scope of the TFI was to develop practical guidance and methodologies for national GHG inventory compilers to use in estimating their national anthropogenic emissions and removals within their geographical boundaries and jurisdictions, for reporting to the UNFCCC in a comparable and transparent manner. The authors would have to assess whether the information about particular technologies was sufficient to develop the guidelines. Technologies that do not have sufficient information to support their inclusion in the report would be listed in the Appendix for future consideration. The report would include a glossary of definitions, building on previous Guidelines. Inventory principles were to be used to avoid systematic under- or over-estimation. The inventories were science-driven and provided objective data for policy decisions, without prescribing mitigation actions. Volume 6 included categories that were described according to processes. The experts spent a lot of time discussing Volume 7 and concluded that it met the criteria for inclusion in the report. The TFI Co-Chair concluded that the TFI took note of the comments made and questions posed and would address them appropriately. Delegates were requested to submit written comments by email for consideration by the TFI when preparing a revised outline, which would be discussed further in a Contact Group to be chaired by China and Spain.

After the Contact Group meetings, Mr Takeshi Enoki, TFI Co-Chair, reported that all the other volumes and sections were agreed upon during the Contact Group discussions, except for Volumes 6 and 7 and some paragraphs in Annex 3 Instructions to Experts and Authors. One of the proposed options was to move part of Volume 7 to Volume 6.

The TFI Co-Chair then invited delegates to submit general comments for Volume 6 and Volume 7.

Belgium, France, Germany, Saudi Arabia and FWCC took the floor.

The work by the Contact Group to refine the outline under the leadership of the two co-facilitators was appreciated. There were suggestions to delete Volume 7, citing that the proposed content, which deals with ocean- or water-based technologies, does not merit inclusion in the report. Also, AR6 WGIII stated that the technological maturity of ocean alkalization was low, whereas direct ocean capture was not assessed. The authors could be instructed that methods, emission and removal factors should be observationally validated with data for all elements of the process. Others advocated retaining Volume 7 in its entirety, noting that it would be inappropriate to drop a volume with three chapters and a range of technologies, processes and solutions identified by qualified experts. Water bodies and alkalinity have an essential role to play in Carbon Dioxide Removal approaches. Another suggestion was to move some contents of Volume 7 to Volume 6 and include a footnote that provides the relevant information. Another opinion expressed was that moving the contents would dilute the scopes of the two volumes, and including a footnote that introduces conditionality was not within the TFI mandate would be inappropriate.

Mr Takeshi Enoki, TFI Co-Chair, invited Ms María José Sanz Sanchez, Spain, to convene a huddle to enable the countries with divergent views to discuss further and possibly reach a consensus.

Following the huddle, Ms María José Sanz Sanchez, Spain, reported that there was still no agreed solution for the treatment of the proposed Volumes 6 and 7. However, her proposal was to agree on Volume 6. Chapter 3 of Volume 7 would become an Appendix, meaning that the technology associated with enhancing alkalization in water bodies would be treated by the authors as an Appendix.

Australia, Austria, China, France, Germany, the Netherlands and Saudi Arabia took the floor.

The efforts made to reach a compromise were appreciated. There were delegates who did not accept the proposal to treat Chapter 3 of Volume 7 as an Appendix. Other delegates pleaded that to save time, the Panel could accept the proposal as a compromise and leave the authors to decide how to treat the issue in the methodology report.

Ms María José Sanz Sanchez, Spain, suggested that the Panel could consider agreeing on the outline, including Volume 6, and continue working on the contents of Volume 7 to be finalised at IPCC-63.

Denmark and Sweden took the floor.

Delegates expressed their disappointment that, despite the work by the experts that produced the raw material for the Methodology Report's outline and all the efforts made to reach a compromise at IPCC-63, an agreement could not be reached by the Panel.

The Chair also expressed his disappointment that the enormous amount of work that went into it did not result in a decision to move forward with the report. He concluded by hoping that the efforts that were made would provide a foundation to advance the work and take a decision at IPCC-63.

7. PROPOSALS FOR EXPERT MEETINGS AND WORKSHOPS FOR THE SEVENTH ASSESSMENT CYCLE

The Chair presented a proposal for a Workshop on New and Extended Methods of Assessment in the AR7 (NEMA) (IPCC-LXII/Doc. 7), highlighting its complexity. The context was the exponential growth of peer-reviewed literature that IPCC relies on, which doubles with every assessment cycle. He recalled the calls for IPCC to extend the knowledge base on which its assessment relies to include Indigenous Knowledge systems, local knowledge, and practitioner knowledge. A single workshop could address concerns about narrowing or broadening the literature base and produce some useful recommendations and precautionary measures for the IPCC, the Bureau, the authors, the broader scientific community, and potential funding agencies. The proposed NEMA workshop would consider what systems of knowledge could be accessed and assessed by the IPCC within the existing framework of principles and procedures. It would also look at the means by which these could be assessed and the extent to which such assessments could be conducted by the IPCC or the relevant knowledge holders. This workshop would involve approximately 80 participants (40 Trust Fund-supported) and would be scheduled before the AR7 LAM1.

Mr Robert Vautard, WGI Co-Chair, presented a proposal for an Expert Meeting on High-Impact Events and Earth System Tipping Points ([IPCC-LXII/Doc. 8](#)) led by WGI, supported by the World Climate Research Program (WCRP) with contributions from WG II and III. The document was revised following feedback from IPCC-61 to narrow the scope. The goals of the Expert Meeting (EM) were to prepare WG-specific assessments related to high-impact events and Earth system tipping points, to discuss and agree on definitions, and to propose ways of assessing research that consider the broad range of existing views within the scientific community. It would also identify and engage with dedicated experts and communities with the view to recruit potential Contributing Authors on the subject. It would also facilitate effective and coherent communication across WGs on this topic. The meeting would be scheduled before AR7 LAM1 with 60 proposed participants, including 30 Trust Fund-supported journeys.

Mr Bart van den Hurk, WGII Co-Chair, presented a proposal for an EM on the Methodologies, Metrics and Indicators for Assessing Climate Change Impacts and Adaptation ([IPCC-LXII/Doc. 9](#)). The meeting objectives would include gathering relevant evidence on approaches, methodologies, metrics, and indicators for impact and adaptation assessment and decision-making, as well as tracking adaptation progress. It would assess existing guidelines and provide input to the work on the update of the IPCC Technical Guidelines, which support inclusive decision-making and implementation of effective adaptation. A Scientific Steering Committee (SSC) would be established to develop the EM programme, prepare a list of approximately 60 invited experts, and lead the compilation of the meeting outputs and report. It is tentatively scheduled for the first quarter of 2026.

Algeria, Australia, Belgium, Brazil, Canada, Chile, Denmark, Ecuador, Egypt, Finland, Germany, India, Italy, Japan, Kenya, Nepal, New Zealand, Norway, Panama, the Russian Federation, Saint Kitts and Nevis, Saudi Arabia, Sweden, Switzerland, Türkiye, Ukraine, UK, Vanuatu and the Inuit Circumpolar Council (ICC) took the floor.

Clarification was sought on the involvement of Focal Points in nominating experts to participate in the meetings, as well as the relationship between the proposed EM on adaptation metrics and the Global Goal on Adaptation. There were further inquiries on how the prioritisation of the topics for Expert Meetings and workshops presented here was made from the list submitted at IPCC-61.

Views expressed general support for the proposed NEMA workshop and the EM on the Methodologies, Metrics and Indicators for Assessing Climate Change Impacts and Adaptation. There was some divergence on the EM on High-Impact Events and Earth System Tipping Points. Preference was expressed for cross-cutting issues and themes for EMs held early in the cycle, as that adds value to all WGs and the TFI. Based on the outlines, it was appreciated that the NEMA workshop proposal on diverse knowledge was cross-cutting, while the proposals on the EMs adaptation metrics and on tipping points were specific to WGII and WGI, with a focus on WGII.

Concern was expressed about the broad nature of the topics and issues under the proposed NEMA workshop on diverse knowledge, with countries suggesting that it be separated into two separate workshops or outputs: one on Artificial Intelligence (AI) and another on Indigenous Knowledge. There was a further call to establish a Task Group on the subject for continuity.

On the proposal for an EM on adaptation metrics, countries supported it with some calling for it to be held earlier than indicated to align it with the process of the development of the IPCC Technical Guidance on Adaptation. There was a call for reframing the proposal to align its mandate with the updated Technical Guidance. Countries further stressed the need to ensure that the EM doesn't preempt the work of the authors.

Mr Bart van den Hurk, WGII Co-Chair, confirmed that the proposed EM on adaptation metrics will not prepare an assessment.

The IPCC Chair explained that workshops have a more elaborate process of seeking nominations from IPCC Member countries and Observer Organizations, while for Expert Meetings, the relevant Bureau is the one responsible for this. Regarding the reduced number of topics presented, he recalled the Panel's discussions at IPCC-61, in which the Bureau was asked to narrow down the topics for consideration at IPCC-62. The drafting team of the NEMA workshop proposal was aware of the need to balance the topics. Then the Chair suspended discussion on the agenda item.

When the Chair reopened the discussions on 27 February, there was continued general support and interest in the three proposals, including the one on tipping points, noting the need to clarify the uncertainties on the subject. There was appreciation of the in-kind contribution of the WCRP on the proposal on tipping points. Some suggested changing it into a workshop. Revision of the title was suggested in order to frame it in a way that does not pre-empt the meeting recommendations.

Countries called for the NEMA workshop to include and involve Indigenous Peoples and Indigenous Knowledge. Suggestion to consult the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO), which have more experience with discussions on Indigenous Knowledge.

The IPCC Chair assured the Panel that, given the complexity of the issues under the workshop proposal, a well-balanced and representative SSC would be established to design the workshop with distinct streams, producing separate recommendations.

Algeria, Egypt, India, Kenya, New Zealand and Saudi Arabia took the floor.

Some delegates still preferred to have two separate workshops even if they were held simultaneously in the same venue. Clarification was sought on whether the NEMA workshop will have Indigenous Knowledge and local knowledge.

Mr Robert Vautard, WGI Co-Chair, agreed with those who pointed out that the lack of strong consensus on the definitions and concepts of tipping points and critical thresholds while adding that this reason further stressed for the need to have an EM on the subject.

Following suggestions from governments, the IPCC Chair submitted a revised proposal (IPCC-LXII/Doc. 7 Rev. 1), which splits the proposed NEMA workshop into two separate but co-located workshops. The first would be on engaging diverse knowledge systems, including Indigenous Knowledge, local knowledge and practitioner knowledge, and the second would be on methods of assessments including coverage of AI and large language models. He highlighted the resulting increase in budget to cover two workshops instead of one.

India, Mongolia, the Maldives, Saudi Arabia, and ICC took the floor.

Delegates supported the revised proposal, noting the need to ensure that discussions were within IPCC's scope. The need to further align the workshops with the broader UN initiatives was also noted. The participation of Indigenous Peoples was emphasised, including in the SSC, as this is a distinct knowledge system that has offered its own review system over millennia.

A proposal to change the EM on tipping points into a workshop was briefly discussed. As there wasn't sufficient time for a detailed discussion it was deferred to the next session.

The Panel adopted the Decision on Proposals for Expert Meetings and Workshop for the AR7 cycle (IPCC-LXII-4), which included two co-located workshops on Engaging Diverse Knowledge Systems and on Methods of Assessment, as well as the proposal for an EM on the Methodologies, Metrics and Indicators for Assessing Climate Change. The Panel deferred the discussion on the proposal for an EM on High-Impact Events and Earth System Tipping Points as outlined in IPCC-LXII/Doc. 8, to a future session.

8. IPCC SCHOLARSHIP PROGRAMME

Mr Mxolisi Shongwe, Programme Officer of the IPCC Secretariat, introduced the document on the IPCC Scholarship Programme ([IPCC-LXII/Doc. 4](#)).

The Programme Officer reported financial contributions received and expressed gratitude to the Government of Germany for providing €30,000, which was disbursed to the University of Oxford in December 2024 to support Ms. Zoe Brown from the Bahamas. He also thanked the Government of Norway for contributing 1,090,000 Norwegian Krone (approximately CHF 86,000), which would be used for scholarships in the current year. He highlighted that as of 31 December 2024, the balance in the Scholarship Trust Fund was just over 1.7 million Swiss Francs, with a detailed statement provided as an annex to the document ([IPCC-LXII/Doc. 4](#)).

The Programme Officer also presented an amendment to the Trustee Deed, which had been requested by the Panel at IPCC-61. The main basis for the amendment was Rule 10 of Appendix C to [the Principles Governing IPCC Work](#), which stipulates that the IPCC Chair, Vice-Chairs, and Working Group and TFI Co-Chairs can serve only one term in the same office, whereas Working Group Vice-Chairs can serve two consecutive terms. When read in conjunction with paragraph 17 of the Scholarship Programme Trust Deed, which states that the term of the Board of Trustees is only four years, there was a need for amendment.

The proposed amendment would allow for continuity in the work of the Board of Trustees by having at least one member serving alongside those who are serving a second four-year term. In such a case, one of the members serving their second term could be elected as Chair of the Board of Trustees. The amendment was based on the Principles Governing IPCC work. The Programme Officer noted that, to the best of their knowledge, there had never been any attempt by previous or current officials to change the rule to extend their term beyond the one term stipulated in Rule 10.

The Programme Officer invited the Panel to appoint Mr. Edgardo Alvarez Chávez from Peru as a member of the Board of Trustees, replacing Mr. Alberto Graña from Uruguay, who was appointed by the Panel at IPCC-60 but stepped down around mid-2023. According to Paragraph 11 of the Trustee Deed, the Board of Trustees should have at most four members. Previous Boards of Trustees, including those whose terms ended in January 2023, had four members. During the four-year tenure

of the previous Board, the number of scholarships tripled in their second year despite the COVID-19 pandemic.

The Panel was invited to approve the amendment of the Trustee Deed as drafted in paragraph 11, to appoint Mr. Edgardo Alvarez Chavez as a member of the Board of Trustees, to thank the governments of Germany and Norway for their financial contributions, and to thank the Prince Albert II of Monaco Foundation and the Cuomo Foundation for their continuous support.

Mr Jean-Pascal van Ypersele, Chair of the Board of Trustees, on behalf of the Board of Trustees, reported that the main thrust of their mandate was to find additional resources for the Scholarship Programme, a task they were actively pursuing. Their work had been somewhat handicapped by having only three members on the Board, but there was hope that this would be resolved with the appointment of a replacement member. The Chair of the Board of Trustees expressed his hope that by the next plenary, the Board would be able to report on some success in finding additional resources. He thanked the Secretariat, particularly Mr. Mxolisi Shongwe, Programme Officer, for their efficient work supporting the Programme, and also acknowledged the Chair of the Science Board, and Vice-Chair, Mr. Ladislaus Chang'a, for their collaborative efforts in helping the Scholarship Programme.

Chile and South Africa took the floor.

Clarification was sought on the proposed amendment, stating that the exception for the Chair created an unusual situation. It would be more appropriate to have one rule for all members, as outlined in paragraph 17.

The Programme Officer clarified that the proposed amendment was consistent with Rule 10 of Appendix C, which limits the IPCC Chair and Working Group Co-Chairs to serve one term, while allowing other Bureau members to serve two consecutive terms. It was explained that this approach would promote continuity within the Board of Trustees by ensuring that at least one member would have prior experience, avoiding a scenario where all members might leave simultaneously.

Support was expressed for the amendment, noting that the explanation regarding continuity was reasonable and aligned with the Principles Governing the Work of the IPCC.

The Chair expressed his appreciation to Germany and Norway for their financial contributions, as well as to the Prince Albert II of Monaco Foundation and the Cuomo Foundation for their support towards the scholarship fund.

The Panel adopted the Decision on the IPCC Scholarship Programme ([IPCC-LXII-5](#)), which included, but was not limited to, agreeing to the amendment to paragraph 11 of the IPCC Scholarship Trust Deed, appointing Mr. Edgardo Alvarez Chávez as a member of the Board of Trustees and thanking the governments of Germany and Norway, the Prince Albert II of Monaco Foundation and the Cuomo Foundation.

9. REPORT OF THE IPCC CONFLICT OF INTEREST COMMITTEE

Mr Ladislaus Chang'a, IPCC Vice-Chair and Chair of the IPCC Conflict of Interest (COI) Committee, gave a verbal report on the COI Committee, informing the Panel of the 24th COI Committee meeting, which was opened on Monday, 24 February 2025, prior to the IPCC-62 opening ceremony. The COI Committee reviewed the annual reports of the three Working Group Bureaux and the Task Force Bureau in relation to their consideration of conflict-of-interest issues. The COI Chair noted with appreciation that no conflicts of interest were identified and thanked the Co-Chairs and their Bureaux for the completeness and transparency of their reports.

The Panel took note of the verbal report by the COI Committee Chair on the IPCC Conflict of Interest Committee.

10. PROGRESS REPORTS

The Chair introduced Agenda Item 10 on Progress Reports. The written reports had been available on the Paper Smart system. Due to the lateness of the hour, the verbal reports would not be requested for most items, and he would check whether there were any comments on each report.

10.1. Report by the IPCC Chair and Vice-Chairs

The Chair invited comments on the IPCC Chair and Vice-Chairs' Progress Report ([IPCC-LXII/INF. 3, Corr. 1](#)).

Belgium and Saudi Arabia took the floor.

It was requested that the initiative of sharing Bureau Reports on the website be resumed.

Concerns were also expressed regarding the involvement of a group of IPCC Bureau members, including the Chair and AR6 authors, in briefing members of the International Court of Justice (ICJ) on findings relevant to the advisory opinion on obligations of States in respect of climate change requested by the UN General Assembly. The lack of transparency for this engagement was highlighted, noting that governments were not informed about the nature of the involvement, and there was no openness or transparency in the selection of members who participated. It was emphasised that while the IPCC can respond to such matters, it must do so in a manner that is open, transparent, and inclusive of all Panel members. A request was made that these concerns be explicitly registered in the Report of the Session.

The Chair responded by providing background information on the ICJ engagement, explaining that the invitation had been received after the previous plenary session, IPCC-61. He noted that two steps were taken to ensure alignment with procedures, which included consulting the Legal Officer about the mode of engagement and presenting the matter to the Executive Committee (ExCom). The Chair stated that it was agreed with the Legal Officer and the ICJ that the ICJ could only refer to approved IPCC material and that they were interested in purely scientific information, specifically the physical science aspects, rather than policy or economic material. The Chair acknowledged the concerns about transparency with Panel members and assured that the Panel would be notified if such requests were to arise again. The Chair concluded by assuring that their remarks would be recorded in the minutes of the meeting.

The Panel took note of the IPCC Chair and Vice-Chairs' Progress Report ([IPCC-LXII/INF. 3, Corr. 1](#)).

10.2. Report by the Secretariat

The Chair invited comments on the Secretariat Progress Report ([IPCC-LXII/INF. 10](#)). No comments were received from the floor.

The Panel took note of the Secretariat Progress Report ([IPCC-LXII/INF. 10](#)).

10.3. Report by the Working Group I

The Chair invited comments on the Progress Report of Working Group I ([IPCC-LXII/INF. 6](#)). No comments were received from the floor.

The Panel took note of the Progress Report by Working Group I ([IPCC-LXII/INF. 6](#)).

10.4. Report by the Working Group II

The Chair invited comments on the Progress Report of Working Group II ([IPCC-LXII/INF. 8](#)).

Japan took the floor.

Appreciation was expressed to the Chair and the Vice-Chairs for their attendance at various important forums held in Japan. Gratification was also expressed in hosting the Lead Author Meeting (LAM 1) for the Special Report on Climate Change and Cities scheduled for 10-14 March 2025 in Osaka.

10.5. Report by the Working Group III

The Chair invited comments on the Progress Report of Working Group III ([IPCC-LXII/INF. 9](#)). No comments were received from the floor.

The Panel took note of the Progress Report by Working Group III ([IPCC-LXII/INF. 9](#)).

10.6. Report by the Task Force on National Greenhouse Gas Inventories

The Chair invited comments on the TFI Progress Report ([IPCC-LXII/INF. 4](#)). No comments were received from the floor.

The Panel took note of the TFI Progress Report ([IPCC-LXII/INF. 4](#)).

10.7. Gender Action Team

Ms Diana Ürge-Vorsatz, IPCC Vice-Chair and Chair of the Gender Task Team (GAT), presented the GAT Progress Report ([IPCC-LXII/INF. 11](#))

The four key items of the GAT activities since her last report at IPCC-61 included the process of dealing with complaints, training, preparations for the expert meeting on gender, diversity, equity, and inclusion, and participation at COP-29.

Regarding the process of dealing with complaints, the draft documents had received several rounds of review from members of the GAT who were working with the IPCC Legal Officer to integrate approaches for addressing both formal and informal complaints.

The first training against sexual harassment, as well as a briefing on UN ethics, took place on 26 July 2024 on the sidelines of IPCC-61, where 35 Bureau Members participated. A subsequent survey yielded largely positive results, with some lessons to be learned for future sessions. The procurement of inclusivity trainers was underway.

Regarding preparations for the EM, the Scientific Steering Committee (SSC) has met formally twice and informally twice since IPCC-61, with the most intensive work occurring in the subcommittees. The GAT Chair thanked the members working on the Programme, Participants and the Resources subcommittees. The EM was planned to be held in Geneva in the fourth quarter of 2025.

The GAT Chair drew the Panel's attention to the gender statistics (Annex II of [IPCC-LXII/INF. 11](#)) collected by the Secretariat in line with the [Gender Policy and Implementation Plan](#). The data showed more males than females at AR7 plenary sessions, with regional variations in gender balance. There was an improving trend from IPCC-61 to IPCC-62, though the balance was much less favourable among heads of delegations, where males were in the majority, albeit with an improving trend.

France, Hungary, and Saudi Arabia took the floor.

Member countries thanked the GAT and appreciated its work. They looked forward to the activities scheduled for 2025 and took note of the near gender balance at the AR7 scoping meeting, as reflected in the statistics. They looked forward to the outcomes of the upcoming Expert Meeting.

The Panel took note of the GAT Progress Report (IPCC-LXII/INF. 11).

10.8. Communication and outreach activities

Mr Andrej Mahecic, Programme Manager Communications and Media Relations of the IPCC Secretariat, presented the Progress Report on Communications and Outreach Activities ([IPCC-LXII/INF. 2](#)).

The activities in the areas of media relations, communications, outreach and social media were guided by the IPCC Communication Strategy and Implementation Plan.

Over 70 outreach events were recorded between July 2024 and January 2025, not including COP29. The IPCC had a strong presence at COP29, held in Baku, Azerbaijan, from 11 to 22 November 2024, with over 40 events either organised by the IPCC or featuring significant IPCC participation. These included high-profile engagements, mandated events, and sessions at the joint Climate Action Pavilion, run in collaboration with the World Meteorological Organization and the MERI Foundation. The statistics showed how coverage of the IPCC in the media varies according to the news context at the time of report releases. There were 1.42 million followers of the IPCC on social media, representing an increase across all platforms, and 2 million users of the IPCC website, underlining the importance of keeping it up to date.

India and Switzerland took the floor.

Clarifications were sought regarding the handling of outreach activities, particularly the substance and alignment of outreach products with the intentions of the Panel and the approved Summary for Policymakers. A concern previously raised at IPCC-60 was reiterated, noting the lack of follow-up on assurances that the Bureau and the IPCC Secretariat would work together to improve the accuracy and consistency of outreach materials. Delegations requested an update on progress made in this regard and sought the Chair's views on the status of this work.

In addition, reference was made to discussions held in WGI regarding the inclusion of a plain language summary or overview. While the Panel did not reach agreement on including such a summary in the final product, there was a shared interest in strengthening communication. A question was posed to on how this matter would be taken forward specifically, whether it would first be discussed in the Bureau or through another process.

The Chair noted a proposal for an Expert Meeting on the Science of Science Communication. Whilst it has not yet been prioritised as urgent, it remained the Chair's intention to bring a proposal forward to the Panel. He highlighted the importance of language in IPCC communications, particularly in relation to Summaries for Policymakers and the SYR. While acknowledging that media and social media engagement were being handled effectively, thanks to the efforts of the Secretariat, the Chair noted that further work was needed to improve the plain language communication of core IPCC products.

It was noted that discussions on these matters would continue within the Communications and Outreach Action Team (COAT), under the strategic guidance of the ExCom.

The Panel took note of the Progress Report on Communications and Outreach Activities ([IPCC-LXII/INF. 2](#)).

11. MATTERS RELATED TO UNFCCC AND OTHER INTERNATIONAL BODIES

The Chair highlighted that the UNFCCC Secretariat had to leave as the Plenary was running beyond the planned closure on Friday, 28 February and noted that, therefore, the UNFCCC Secretariat could not present the report.

The Panel took note of the UNFCCC progress report ([IPCC-LXII/INF. 12](#)).

The Chair also informed the Plenary that the IPBES Secretariat was absent for the same reason.

Australia, Belgium, Chad, Chile, France, Germany, India, Italy, Japan, the Netherlands, Norway, Saudi Arabia, Switzerland and Türkiye took the floor.

Comments called for stronger collaboration with IPBES and for setting aside enough time at the next Plenary session (IPCC-63) to discuss IPCC's collaboration with IPBES and how to respond to the invitation from the eleventh session of the Plenary of IPBES (IPBES-11). It was suggested to prepare a document for IPCC-63 on how engagement with IPBES could be facilitated. It was also emphasised that the IPCC has much to learn from the IPBES on the issue of Indigenous Knowledge.

Amongst the views expressed, there were also concerns about significant differences in the way the IPCC and IPBES reports and products are reviewed and approved, noting that collaboration would require careful consideration, as IPBES processes are not aligned with those of the IPCC.

The Panel took note of the IPBES progress report ([IPCC-LXII/INF. 13](#)).

12. ANY OTHER BUSINESS

Given the late hour, there were no calls for any other business.

13. PLACE AND DATE FOR THE SIXTY-THIRD PLENARY SESSION OF THE IPCC

The Secretary informed the Panel that the Government of Peru has offered to host the next IPCC Plenary (IPCC-63) during the last quarter of 2025. He invited the Ambassador of Peru in China to take the floor.

Peru took the floor and formally announced its offer to host IPCC-63, reaffirming that the meeting was expected to be held in the last quarter of 2025.

The Panel took note of the information provided.

14. CLOSING OF THE SESSION

The Chair thanked the Government of China for the welcome, hospitality and hosting of IPCC-62. This was met by a standing ovation from the delegates in the room.

Belgium took the floor and expressed satisfaction with the approval of the outlines of the three Working Groups' contributions to the AR7 but noted disappointment over the lack of decision on the respective timelines and stressed the uncertainty this creates for IPCC. Belgium also voiced concerns about limited participation from developing countries due to the overrun of the Plenary.

The Chair declared IPCC-62 closed.

SIXTY-SECOND SESSION OF THE IPCC
Hangzhou, China, 24 – 28 February 2025

Decisions adopted by the Panel

Decision IPCC-LXII- 1. Adoption of the Provisional Agenda

Documents: IPCC-LXII/Doc.1, Rev. 1 and IPCC-LXII/Doc.1, Rev.1, Add.1

The Intergovernmental Panel on Climate Change at its Sixty-second Session adopts the Provisional Agenda as contained in document IPCC-LXII/Doc.1, Rev.1.

Decision IPCC-LXII-2. Approval of the draft report of the Sixty-first Session of the IPCC

Document: IPCC-LXII/Doc. 10

The Intergovernmental Panel on Climate Change at its Sixty-second Session decides to defer the approval of the draft report of the Sixty-first Session of the IPCC to the Sixty-third Session of the IPCC.

Decision IPCC-LXII- 3. IPCC Trust Fund Programme and Budget – Any other matters – Task Group on Data Support for Climate Change Assessments

Document: IPCC-LXII/Doc. 5

The Intergovernmental Panel on Climate Change at its Sixty-second Session:

- Approves the AR7 TG-Data work plan for 2025 and requests the FiTT to consider the budget for DDC activities for the year 2025;
- Takes note of the recommendations and lessons learnt from the AR6;
- Invites the Secretariat to continue resource mobilization for the sustainability of DDC activities in AR7.

Decision IPCC-LXII- 4. Proposals for Expert Meetings and Workshop for the seventh assessment cycle

Documents: IPCC-LXII/Doc. 7, Rev.1; IPCC-LXII/Doc. 8 ; IPCC-LXII/Doc. 9

The Intergovernmental Panel on Climate Change at its Sixty-second Session decides:

to approve the proposals for:

- Two co-located workshops as outlined in IPCC-LXII/Doc. 7 Rev.1 and its respective budget (as agreed at the FiTT). The workshops are:
 1. Workshop on Engaging Diverse Knowledge Systems
 2. Workshop on Methods of Assessment
- An Expert Meeting on the Methodologies, Metrics and Indicators for Assessing Climate Change Impacts and Adaptation as outlined in IPCC-LXII/Doc. 9 and its respective budget (as agreed at the FiTT).

The Panel further decides:

- To convey views expressed during the discussion of the agenda item on the Workshop on Engaging Diverse Knowledge Systems and Workshop on Methods of Assessment to the Scientific Steering Committee and respective invited experts.
- To defer discussion on the proposal for an Expert meeting on High-Impact Events and Earth System Tipping Points as outlined in IPCC-LXII/Doc. 8 at a future session.

Decision IPCC-LXII-5. IPCC Scholarship Programme

Document: IPCC-LXII/Doc. 4

The Intergovernmental Panel on Climate Change at its Sixty-second Session:

- Approves the amendment of the IPCC Scholarship Trust Deed (set out in paragraph 11 of Annex I to this Decision);
- Appoints Mr Edgardo Alvarez-Chávez, from Peru, as a member of the Board of Trustees;
- Thanks the governments of Germany and Norway for their financial contributions in 2024 to the IPCC Scholarship Trust Fund;
- Thanks the Prince Albert II of Monaco Foundation and the Cuomo Foundation for their continued support of the IPCC Scholarship Programme.

TRUST DEED

Intergovernmental Panel on Climate Change (IPCC) Scholarship Programme

Aim and objectives of the Fund

1. The aim of the IPCC Scholarship Programme is to build capacity in the understanding and management of climate change in developing countries through providing opportunities for young scientists from developing countries to undertake studies that would not be possible without the intervention of the Fund
2. Income of the IPCC Scholarship Programme includes:
 - Funds received by IPCC from the Nobel Foundation for the 2007 Peace Prize;
 - Donations and contributions from individuals, organisations and governments supporting the aim and objectives of the Fund;
 - The interest and capital gains accrued from any investment of the principal of the Fund.
3. The IPCC Scholarship Programme will be used to:
 - Provide scholarships for young post-graduate or post-doctoral students from developing countries, especially least developed countries, for research that advances the understanding of the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation;
 - Support other capacity building activities in developing countries, in line with the general aim of the Fund and as agreed by the IPCC.

Administration of the Fund

4. The resources of the IPCC Scholarship Programme are deposited with WMO under a separate account (IPCC Nobel Peace Prize Fund). The Secretary-General of WMO administers the Fund in accordance with WMO Financial Regulations and Rules, Standing Instructions and established procedures of WMO, as supplemented by the provisions of the present terms of reference and guidance received from the Board of Trustees. The administration of the Fund is subject to no administrative or support costs.
5. Financial reports on the Fund will be made in Swiss Francs. The United Nations rate of exchange prevailing on the date of the transaction will apply for the conversion into Swiss Francs of income received and payments made or charges incurred in any other currency.
6. WMO shall prepare a financial report on the overall use of the Fund and make it available annually to IPCC. The statement of income and expenditure of the Fund will be incorporated in the overall audited financial statements submitted by the Secretary-General of WMO to the WMO Executive Council for approval. External audit will be conducted as provided for in the WMO Financial Regulations. The audit report will be submitted to the IPCC together with the annual report referred to in paragraph 11 below.

Governance and Management of the Fund

Overall Governance

7. The utilization of the Fund shall be consistent with the aim and objectives of the Fund and additional guidance provided IPCC in Plenary Session.

8. The Aims and Purpose of the Fund and the governance structure of the Fund may only be changed by the IPCC in Plenary Session

Science Board

9. A Science Board, composed of the IPCC Chair, or his representative, and the three IPCC Vice-Chairs will

- set priorities for funding based on an evaluation of gaps in scientific technical knowledge and capacity-building needs in countries/regions;
- set scientific technical criteria for selection of projects and scholars, as required;
- select the scholars.

10. The Term of the Science Board will be the same as the Term of the IPCC Bureau. If a member of the Science Board resigns or is unable to complete the term of office as IPCC Bureau member his/her successor will assume his/her responsibilities as member of the Science Board. If a member of the Science Board remains member of the IPCC Bureau but is unable to continue serving on the Science Board the IPCC Bureau will elect a replacement from among the members of the IPCC Bureau.

Board of Trustees

11. The IPCC shall appoint in Plenary Session a Board of Trustees of no more than four members, including a Chair of the Board with a term of office limited to one four-year term and who is elected by the Board of Trustees at their first meeting. The Board of Trustees will be responsible for

- deciding on the investment strategy of the assets of the Fund;
- developing and implementing a fund-raising strategy;
- liaising with WMO regarding the administration and management of the Fund
- establishing further criteria for granting scholarships and funding any other activity consistent with the aim and objectives of the Fund;
- deciding on the of amount and frequency of scholarships awarded;
- advising WMO as to the acceptance of donations, gifts and other contributions to the Fund;

The Board of Trustees will be collectively accountable to the IPCC and will report annually to the Panel on the affairs of the Fund.

12. The powers, authorities and discretion of the members of the Board of Trustees shall be subject to any direction by the IPCC. The members of the Board of Trustees

- may not do anything which prejudices the aim and objectives of the Fund
- may not do anything which prejudices the academic integrity of the scientists receiving support from the Fund, nor the integrity and independence of the IPCC

13. Any Trustees must bring clearly identified skills to the Fund. In appointing the members of the Board of Trustees the Panel shall also aim for a balanced representation of developed and developing countries.

14. The members of the Board of Trustees will not be remunerated for their activities for the Fund. They shall be defrayed of travel expenses incurred in connection with the discharge of responsibilities for the IPCC Nobel Peace Prize Fund in accordance with the general rules applied in the IPCC.

15. To avoid additional overhead expenses, the business of the Fund would be carried out by e-mail and at meetings held in conjunction with regular IPCC Bureau or Plenary meetings.

16. At the formation of the Fund the members of the Science Board would serve as the Trustees of the Fund. The appointment of the Board of Trustees should be carried out to the extent feasible at the IPCC Session following the establishment of the Fund or within one year the latest.

17. The members of the Board of Trustees shall be appointed for a four-year term, renewable once.

18. The IPCC Secretariat shall serve as the Secretariat of the Fund. It will assist the Board of Trustees and the Science Board in carrying out their duties.

19. Tasks will include

- the preparation and announcement of calls for proposals, based on guidance received from the Board of Trustees and the Science Board;
- management of the selection process, and disbursement of scholarship monies;
- compilation of submissions for consideration by the Science Board;
- assist in fundraising activities;
- monitoring of the reporting requirements of scholars and other beneficiaries;
- preparation of reports for consideration by the Board of Trustees and the IPCC;
- liaison with WMO regarding the administration and management of the fund.

Liquidation of the fund

20. Upon liquidation of the Fund, the Secretary-General of WMO shall make provision for the payment of any un-liquidated obligation and expenses necessary for the closure of the Fund.

21. Following the closure of the Fund any remaining surplus shall be transferred to IPCC General Trust Fund or to any entity determined by the IPCC.

Legal responsibilities

22. Under no circumstances will the Fund be made liable to pay and/or reimburse any taxes on emoluments or honorarium, or any customs and import duties, value added taxes or similar charges. If applicable, these will be payable by the beneficiaries of the support provided.

Review of the terms of reference

23. IPCC Plenary may review this Trust Deed in the light of experience gained and make any changes as appropriate.

Decision IPCC-LXII- 6. Admission of Observer Organizations

Document: IPCC-LXII/Doc. 3, Rev. 3

The Intergovernmental Panel on Climate Change at its Sixty-second Session decides:

- to take note of the status of the review of current observer organizations; and
- to grant the following organizations IPCC observer status, in accordance with the IPCC Policy and Process for Admitting Observer Organizations:
 1. African Development Bank (AfDB)
 2. Assembly of First Nations (AFN)
 3. Clean Air Fund (CAF)
 4. Council on Energy, Environment and Water (CEEW)
 5. E3G
 6. Elizka Relief Foundation (ERF)
 7. Gas Exporting Countries Forum (GECF)
 8. Geomar Helmholtz Centre for Ocean Research Kiel (GEOMAR)
 9. HelpAge International (HAI)
 10. Huqooq-ul-Ebad Development Foundation (HEDF)
 11. Inter-American Institute for Cooperation on Agriculture (IICA)
 12. National University of Singapore (NUS)
 13. Pakistan Community Peace Foundation (PCPF)
 14. South Asian Forum for Environment (SAFE)
 15. University of Exeter (Uni Exeter)
 16. African Heritage and Global Peace Initiative (AHGPI)
 17. Union Nationale des Travailleurs Démocrates (UNTD)

Decision IPCC-LXII-7. IPCC Trust Fund Programme and Budget for the years 2024, 2025, 2026 and 2027

Documents: IPCC-LX/Doc. 2; IPCC-LXII/Doc. 2, Rev. 1

Based on the recommendations of the Financial Task Team (FiTT), the 62nd Session of the Intergovernmental Panel on Climate Change:

1. Appreciates the support that the Secretariat of the IPCC provides to the IPCC process;
2. Notes the basis for the significant reduction in the revised 2024 budget is due to implications of some meetings/activities being postponed to 2025;
3. Approves the revised budget for 2024, as contained in **Annex 1**;
4. Approves the proposed budget for 2025, as contained in **Annex 2**;
5. Notes the forecast budget for 2026, as contained in **Annex 3**, noting that disbursement of funds for Data Distribution Centre (DDC) will be subject to Panel approval of the TG-Data AR7 work programme;
6. Notes the indicative budget for 2027, as contained in **Annex 4**, noting that disbursement of funds for DDC will be subject to Panel approval of the TG-Data AR7 work programme;
7. Welcomes with gratitude all contributions, pledges and in-kind contributions from member countries, especially from developing countries, UN bodies, intergovernmental organizations and the European Union, and encourages all member countries of the IPCC to maintain or increase their financial support, also through multi-year pledges, so as to ensure the financial stability of the IPCC. A list of 2024 voluntary contributions is presented in **Annex 5**. The in-kind contributions table for 2024 is contained in **Annex 6**;
8. Encourages member countries to make first-time contributions to the IPCC Trust Fund in order to broaden the donor base;
9. Expresses its gratitude to member countries that support the Technical Support Units (TSUs) and a number of IPCC activities, including data centres, travel support of IPCC experts, meetings and outreach activities;
10. Encourages member countries to transfer funds as soon as practical, while noting that contributions from IPCC members are due on 1 January of each calendar year, noting that when transferring funds to WMO, members should indicate that the contribution is “for the IPCC Trust Fund” to ensure proper identification of the recipient;
11. Recognizes the sound financial situation of the IPCC Trust Fund and appreciates the efforts of the Secretariat but notes with concern the decline in the level of annual voluntary contributions to the IPCC Trust Fund and invites member countries to make their annual voluntary contributions to the IPCC Trust Fund and, if possible, to increase their annual voluntary contributions;
12. Expresses its gratitude to the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) for their cash contribution to the Trust Fund, for financing one Secretariat position each, and to WMO for hosting the Secretariat and for its continuing support for the IPCC;
13. Expresses its gratitude to the United Nations Framework Convention on Climate Change (UNFCCC) for its contribution to the IPCC Trust Fund;

14. Decides to continue preparing the budget of the IPCC Trust Fund using the standard costs, bearing in mind that expenditures may be lower than the budget;
15. Requests the Secretariat to provide detailed information in the budget document presented to the Panel;
16. Requests that the Secretariat presents, in addition to statements according to the International Public Sector Accounting Standards (IPSAS), the statement of financial position and financial performance on a modified cash basis which categorizes expenditures per activity as well as by natural account;
17. Requests the Secretariat to provide the Panel with interim statements of expenditure covering the first six months of a given year, as well as the projection of expenditure for the rest of the given year;
18. Recalls decisions IPCC-LVII-4, para 28; IPCC-XLVII-9, para 5; IPCC-LIV (bis)-2, para 28; IPCC-LVII-4, para 29; IPCC-LX-10, para 20 regarding the Panel's recognition regarding the funding needs of the DDC;
19. Invites member countries and observer organizations to consider additional contributions to support the activities of the DDC;
20. Requests the Secretariat to provide information on major activities and related costs covered by the Communications budget;
21. Recalls decision IPCC-LX-10, para 26, requesting the Secretariat to create a temporary P3 level position, which could be converted to an established position (fixed term position) subject to Panel approval and approves its conversion to address the immediate staffing needs;
22. Recalls decision IPCC-LX-10, para 27, requesting the Secretariat to produce a strategic human resources plan, with support from an independent consultant, and notes the progress and approves the creation of a budget line for 2025 "Strategic Human Resource plan" to complete the work;
23. Requests the Financial Task Team (FiTT) to meet virtually inter-sessionally to conduct informal discussions regarding relevant FiTT decisions and matters, for consideration at the FiTT of the next plenary session;
24. Recalls decision IPCC-LX-10, para 25, noting document *IPCC-LX/Doc.12 "Financial implications and estimated associated travel-related GHG emissions"* and requests the Secretariat to update and provide the document with similar information for other travel-related activities, including but not limited to outreach events, to the Panel for consideration at the 63rd Session of the IPCC.
25. Recalls decision IPCC-LX-10, para 30, agreeing to explore the cost implications of extending additional Trust Fund support for developing country participation in Panel sessions, with the view to increasing their participation and requests the Secretariat to provide cost estimates to the Panel for consideration at the 63rd Session of the IPCC.

REVISED 2024 BUDGET FOR ADOPTION BY IPCC-LXII

	Activity	Purpose	DC/EIT support	Other Expenditure	Sub-total
A	Governing bodies				
1	IPCC-60 4 days (moved from 2023)	Future Work of IPCC Programme and Budget	480,000 120 journeys	280,000	760,000
2	IPCC-61 6 days + 1 day pre-session	Agreement of outlines	480,000 120 journeys	420,000	900,000
3	IPCC-62 4 days	(moved to 2025)	0 120 journeys	0	0
4	Bureau 4 days	2 sessions	248,000 62 journeys	120,000	368,000
5	TFB	2 sessions	80,000 20 journeys	13,600	93,600
6	UNFCCC and other UN meetings		80,000 20 journeys	0	80,000
	SUB-TOTAL				2,201,600
B	Lead Authors, scoping, expert meetings and workshops				
1	Scoping Meeting (AR7)	1 meeting	480,000 120 journeys	81,600	561,600
2	Scoping Meeting (SR Cities)	1 meeting (moved from 2023)	260,000 65 journeys	44,200	304,200
3	SR Cities LAM 1 and LAM 2	(moved to 2025)	0 100 journeys	0	0
4	TG-Data	1 meeting	48,000 12 journeys	8,160	56,160
5	Expert Meeting - Diversity, Equity and Inclusivity	1 meeting (moved to 2025)	0 20 journeys	0	0
6	Expert Meeting - Science of Communicating Science	1 meeting (moved to 2025)	0 20 journeys	0	0
7	EFDB Editorial Board	1 meeting (virtual)	0 21 journeys	0	0
8	EFDB Data meeting	1 meeting (virtual)	0 10 journeys	0	0
9	EFDB and Software Users Feedback	1 meeting	0 21 journeys	0	0
10	TFI Scoping Meeting on Short-lived Climate Forcers	1 meeting (moved from 2023)	176,000 44 journeys	29,920	205,920
11	TFI - Short-Lived Climate Forcers - LAM 1	CLA/LA Meeting (moved to 2025)	0 53 journeys	0	0
12	TFI - Short-Lived Climate Forcers - LAM 2	CLA/LA Meeting (moved to 2025)	0 53 journeys	0	0
13	Workshop on IPCC Inventory Software	1 meeting	552,000 138 journeys	93,840	645,840
14	TFI Expert Meeting - Methodology Report - CDR	1 meeting	160,000 40 journeys	27,200	187,200
15	TFI Scoping Meeting - Methodology Report - CDR	1 meeting	160,000 40 journeys	27,200	187,200
16	TFI Expert Meeting - Reconciling Land Use Emissions	1 meeting	160,000 40 journeys	27,200	187,200
	SUB-TOTAL				2,335,320
C	Other Expenditure				
1	2006 GL software	Maintenance/development			50,000
2	EFDB maintenance	Update/management			20,000
3	Publications/Translations	IPCC publications			100,000
4	Communication I	AR7 material/travel/events			175,000
5	Communication II*	AR7 outreach events			53,960
6	TG-Data	DDC activities			200,000
7	Gender Action Team	Training - Diversity, Equity & Inclusivity (moved to 2025)			0
8	Science Editors	Technical editing services (moved to 2025)			0
9	Distribution	IPCC publications			100,000
10	IT Infrastructure	Web hosting/cloudflare/upgrades			13,128
11	External Audit	Fee			20,000
12	Advisory Services	Conflict of Interest			15,000
13	Co-Chairs	Support			200,000
	SUB-TOTAL				947,088
D	Secretariat				
1	Secretariat	Staff costs/misc expenses			2,865,339
2	Resource Mobilization	Travel costs			15,800
	SUB-TOTAL				2,881,139
	TOTAL				8,365,147

All activities subject to Panel approval in IPCC-62

* Regional/local events

Note: Entries in 'red' reflect adjustments, movements to/from another year or new budget lines.

PROPOSED 2025 BUDGET FOR ADOPTION BY IPCC-LXII

	Activity	Purpose	DC/EIT support	Other Expenditure	Sub-total
A	Governing bodies				
1	IPCC-62 5 days	Agreement AR7 & MR CDR outlines Programme and budget	480,000 120 journeys	350,000	830,000
2	IPCC-63 4 days	Standard plenary business Programme and budget	480,000 120 journeys	280,000	760,000
3	Bureau 5 days	1 session 1 session (contingency)	248,000 62 journeys	150,000	398,000
4	TFB	1 session	40,000 10 journeys	6,800	46,800
5	UNFCCC and other UN meetings		80,000 20 journeys	0	80,000
	SUB-TOTAL				2,114,800
B	Lead Authors, scoping, expert meetings and workshops				
1	WG I AR7 LAM 1	1 meeting	420,000 105 journeys	71,400	491,400
2	WG II AR7 LAM 1	1 meeting	520,000 130 journeys	88,400	608,400
3	WG III AR7 LAM 1	1 meeting	420,000 105 journeys	71,400	491,400
4	SR Cities LAM 1 and LAM 2	2 meetings (moved from 2024)	400,000 100 journeys	68,000	468,000
6	Chair - Workshop - Engaging Diverse Knowledge Systems	1 meeting	100,000 25 journeys	17,000	117,000
	Chair - Workshop - Methods of Assessment	1 meeting	100,000 25 journeys	17,000	117,000
7	TG-Data	1 meeting	48,000 12 journeys	8,160	56,160
8	GAT - Expert Meeting - Diversity, Equity and Inclusivity	1 meeting (moved from 2024)	80,000 20 journeys	13,600	93,600
9	Chair - Expert Meeting - Science of Communicating Science	1 meeting (moved from 2024)	80,000 20 journeys	13,600	93,600
10	EFDB Editorial Board & Data Meeting	1 meeting	84,000 21 journeys	14,280	98,280
12	Software and EFDB Users Feedback	1 meeting	84,000 21 journeys	14,280	98,280
13	TFI - SLCF Methodology Report LAM 1	1 meeting (moved from 2024)	212,000 53 journeys	36,040	248,040
15	TFI - SLCF Methodology Report - LAM 2	1 CLA/LA Meeting (moved from 2024)	320,000 80 journeys	54,400	374,400
16	TFI - Science Meeting - CDR Methodology Report	1 meeting	60,000 15 journeys	10,200	70,200
17	TFI - Expert Meeting	1 meeting (contingency)	160,000 40 journeys	27,200	187,200
	SUB-TOTAL				3,612,960
C	Other Expenditure				
1	2006 GL software	Maintenance/development			50,000
2	EFDB maintenance	Update/management			66,800
3	Publications/Translations	IPCC publications			100,000
4	Communication I	AR7 material/travel/events			494,800
5	Communication II*	AR7 outreach events			53,960
6	TG-Data	DDC activities			270,236
7	Gender Action Team	Training - Diversity, Equity & Inclusivity (moved from 2024)			150,000
8	Science Editors	Technical editing services (moved from 2024)			95,194
	Strategic HR Plan	Consultancy			100,000
9	Distribution	IPCC publications			100,000
10	IT Infrastructure	Web hosting/cloudflare/upgrades			13,128
	TFI website	Redevelopment			60,000
11	External Audit	Fee			20,000
12	Advisory Services	Conflict of Interest			15,000
13	Co-Chairs	Support			200,000
	SUB-TOTAL				1,789,118
D	Secretariat				
1	Secretariat	Staff costs/misc expenses			2,865,339
2	Resource Mobilization	Travel costs			15,800
	SUB-TOTAL				2,881,139
	TOTAL				10,398,017

All activities subject to Panel approval in IPCC-62

* Regional/local events

Note: Entries in 'red' reflect adjustments, movements to/from another year or new budget lines.

FORECAST 2026 BUDGET TO BE NOTED BY IPCC-LXII

	Activity	Purpose	DC/EIT support	Other Expenditure	Sub-total
A	Governing bodies				
1	IPCC-64 4 days	Standard plenary business	480,000 120 journeys	280,000	760,000
2	IPCC-65 4 days	Standard plenary business Programme and budget	480,000 120 journeys	280,000	760,000
3	Bureau 4 days	2 sessions	248,000 62 journeys	120,000	368,000
4	TFB	1 session	40,000 10 journeys	6,800	46,800
5	UNFCCC and other UN meetings		80,000 20 journeys	0	80,000
	SUB-TOTAL				2,014,800
B	Lead Authors, scoping, expert meetings and workshops				
1	WG I AR7 LAM 2 and LAM 3	2 meetings (contingency)	840,000 210 journeys	142,800	982,800
2	WG II AR7 LAM 2	1 meeting (contingency)	520,000 130 journeys	88,400	608,400
3	WG III AR7 LAM 2	1 meeting (contingency)	420,000 105 journeys	71,400	491,400
4	SR Cities LAM 3 and LAM 4	2 meetings	440,000 110 journeys	74,800	514,800
5	WG I - Expert Meeting on Regional Climate Info & Atlas	1 meeting (contingency)	120,000 30 journeys	20,400	140,400
6	WG II - Expert Meeting on Adaptation Indices	1 meeting	120,000 30 journeys	20,400	140,400
7	TG-Data	1 meeting	48,000 12 journeys	8,160	56,160
8	EFDB Editorial Board & Data Meeting	1 meeting	84,000 21 journeys	14,280	98,280
	TFI - CDR Methodology Report LAM 1	1 meeting (contingency)	280,000 70 journeys	47,600	327,600
10	TFI - SLCF/CDR Methodology Reports - LAM 3	1 CLA/LA Meeting	648,000 162 journeys	110,160	758,160
11	TFI - Science Meeting - SLCF Methodology Report	1 meeting	608,000 15 journeys	103,360	711,360
12	Software and EFDB Users Feedback	1 meeting	84,000 21 journeys	14,280	98,280
13	TFI - Expert Meeting	1 meeting (contingency)	160,000 40 journeys	27,200	187,200
	SUB-TOTAL				5,115,240
c	Other Expenditure				
1	2006 GL software	Maintenance/development			50,000
2	EFDB maintenance	Update/management			66,800
3	Publications/Translations	IPCC publications			100,000
4	Communication I	AR7 material/travel/events			414,800
5	Communication II*	AR7 outreach events			53,960
6	TG-Data	DDC activities (contingency)			400,000
7	Science Editors	Technical editing services			50,808
8	Distribution	IPCC publications			100,000
9	IT Infrastructure	Web hosting/cloudflare/upgrades			13,128
10	External Audit	Fee			20,000
11	Advisory Services	Conflict of Interest			15,000
12	Co-Chairs	Support			200,000
	SUB-TOTAL				1,484,496
D	Secretariat				
1	Secretariat	Staff costs/misc expenses			2,865,339
2	Resource Mobilization	Travel costs			15,800
	SUB-TOTAL				2,881,139
	TOTAL				11,495,675

All activities subject to Panel approval in IPCC-63

* Regional/local events

Note: Entries in 'red' reflect adjustments, movements to/from another year or new budget lines.

INDICATIVE 2027 BUDGET TO BE NOTED BY IPCC-LXII

	Activity	Purpose	DC/EIT support	Other Expenditure	Sub-total
A	Governing bodies				
1	IPCC-66 5 days	Approval Session - SRCities	480,000 120 journeys	350,000	830,000
2	IPCC-67 5 days	Approval Session - SLCF/CDR Programme and budget	480,000 120 journeys	350,000	830,000
3	Bureau 4 days	2 sessions	248,000 62 journeys	120,000	368,000
4	TFB	1 session	40,000 10 journeys	6,800	46,800
5	UNFCCC and other UN meetings		80,000 20 journeys	0	80,000
	SUB-TOTAL				2,154,800
B	Lead Authors, scoping, expert meetings and workshops				
1	WG I AR7 LAM 4	1 meeting (contingency)	420,000 105 journeys	71,400	491,400
2	WG II AR7 LAM 3 and LAM 4	2 meetings (contingency)	1,040,000 260 journeys	176,800	1,216,800
3	WG III AR7 LAM 3 and LAM 4	2 meetings (contingency)	920,000 230 journeys	156,400	1,076,400
4	TG-Data	1 meeting	48,000 12 journeys	8,160	56,160
5	EFDB Editorial Board & Data Meeting	1 meeting	84,000 21 journeys	14,280	98,280
7	TFI - SLCF/CDR LAM 4	1 CLA/LA Meeting	648,000 162 journeys	110,160	758,160
8	Software and EFDB Users Feedback	1 meeting	84,000 21 journeys	14,280	98,280
9	TFI - Expert Meeting	1 meeting (contingency)	160,000 40 journeys	27,200	187,200
	SUB-TOTAL				3,982,680
C	Other Expenditure				
1	2006 GL software	maintenance/development			50,000
2	EFDB maintenance	update/management			66,800
3	Publications/Translations	IPCC publications (including TFI)			300,000
4	Communication I	AR7 material/travel/events			566,800
5	Communication II*	AR7 outreach events			53,960
6	TG-Data	DDC activities (contingency)			400,000
7	Science Editors	Technical editing services			0
8	Distribution	IPCC publications			100,000
9	IT Infrastructure	Web hosting/cloudflare/upgrades			13,128
10	External Audit	Fee			20,000
11	Advisory Services	Conflict of Interest			15,000
12	Co-Chairs	Support			200,000
	SUB-TOTAL				1,785,688
D	Secretariat				
1	Secretariat	Staff costs/misc expenses			2,865,339
2	Resource Mobilization	Travel costs			15,800
	SUB-TOTAL				2,881,139
	TOTAL				10,804,307

All activities subject to Panel approval in IPCC-63

* Regional/local events

Note: Entries in 'red' reflect adjustments, movements to/from another year or new budget lines.

ANNEX 5

Intergovernmental Panel on Climate Change List of Member Governments and Organizations that made a contribution in 2024 (31 December 2024)

Date Contribution Received	Contribution (government or other)	Amount of contribution (CHF)
11-Jan-24	Canada (2023)	69,945
26-Jan-24	Sweden	107,000
27-Feb-24	Australia (2023)	92,400
01-Mar-24	Germany	306,046
06-Mar-24	Trinidad and Tobago	8,800
15-Mar-24	Peru	5,920
20-Mar-24	UNFCCC	228,562
15-Apr-24	The Trottier Family Foundation (DDC)	23,644
21-May-24	Norway	251,016
21-May-24	Canada	126,668
27-May-24	Hungary	63,150
28-May-24	Spain	195,464
03-Jun-24	Korea, Repblic of	97,739
06-Jun-24	United Kingdom	131,449
12-Jun-24	Bulgaria	64,184
13-Jun-24	New Zealand	35,681
13-Jun-24	New Zealand (WG III TSU, Malaysia)	27,696
26-Jun-24	Norway (WG III TSU, Malaysia)	62,754
27-Jun-20	Pakistan	2,475
9-Jul-24	China	17,940
19-Jul-24	France	291,503
22-Jul-24	Norway (co-sponsoring AR7 Scoping Meeting, Malaysia)	84,881
6-Aug-24	Switzerland	117,345
9-Sep-24	Maldives	1,694
10-Sep-24	Japan	243,000
7-Oct-24	France	288,158
14-Oct-24	Austria	75,257
8-Nov-24	USA	1,445,000
15-Nov-24	Finland	39,919
19-Nov-24	Australia	98,174
9-Dec-24	UNEP	176,400
10-Dec-24	South Africa (2025)	9,000
18-Dec-24	Italy	231,899
20-Dec-24	Ireland	106,674
27-Dec-24	Belgium	80,000
Total Income		5,207,437

Note: CHF 210 received from Cambodia (2024) on 28 January 2025, will be recorded in 2025 table of contributions.

**List of In-kind Contributions/Activities
(January – December 2024)**

(In the following cases no financial support for hosting/meeting facilities was provided by the IPCC Trust Fund)

Government/Institution	Activity	Type
China	Technical Support Unit – WG I (AR7)	Hosting
France	Technical Support Unit – WG I (AR7)	Hosting
Singapore	Technical Support Unit – WG II (AR7)	Hosting
The Netherlands	Technical Support Unit – WG II (AR7)	Hosting
Malaysia	Technical Support Unit – WG III (AR7)	Hosting
United States of America	Technical Support Unit – WG III (AR7)	Hosting
Japan	Technical Support Unit – TFI (AR7)	Hosting
Pakistan	Technical Support Unit – TFI (AR7)	Hosting
New Zealand	Technical Support Unit – WG III Malaysia	Hosting
Norway	Technical Support Unit – WG III Malaysia	Hosting
United States of America	Technical Support Unit – WG III Malaysia	Hosting
Germany	IPCC Data Distribution Centre	Hosting
United Kingdom	IPCC Data Distribution Centre	Hosting
United States of America	IPCC Data Distribution Centre	Hosting
WMO	Post of Secretary of the IPCC	Salary
UNEP	Post of Deputy Secretary of the IPCC	Salary
Türkiye	60 th Session of the IPCC, Istanbul, Türkiye (16-19 January 2024)	Meeting facilities
Bulgaria	61 st Session of the IPCC, Sofia, Bulgaria (27 July - 2 August 2024)	Meeting facilities
Australia	36 th Session of the Task Force Bureau, Brisbane, Australia (26 February – 1 March 2024)	Meeting facilities
Australia	TFI – Scoping Meeting on SLCF Methodology Report, Brisbane, Australia (26-28 February 2024)	Meeting facilities
Austria	TFI – Expert Meeting – CDR Methodology Report, Vienna, Austria (1-3 July 2024)	Meeting facilities
Denmark	37 th Session of the Task Force Bureau, Copenhagen, Denmark (17-18 October 2024)	Meeting facilities
Denmark	TFI – Scoping Meeting – CDR Methodology Report, Copenhagen, Denmark (14-16 October 2024)	Meeting facilities
Italy	TFI Expert Meeting – Reconciling Land Use Emissions, Varese, Italy (9-11 July 2024)	Meeting facilities
Norway	AR7 Scoping Meeting, 9-13 December 2024, Malaysia	Co-sponsoring

Decision IPCC-LXII-8. Scoping of the IPCC Seventh Assessment Report (AR7)

Documents: IPCC-LXII/Doc. 11; IPCC-LXII/Doc. 12; IPCC-LXII/Doc. 13; IPCC-LXII/Doc. 14; IPCC-LXII/Doc. 15; IPCC-LXII/Doc. 16

The Intergovernmental Panel on Climate Change at its Sixty-second Session, recalling the Decision IPCC-LXI-9, decides:

- (1) To agree on the outlines of the contributions of Working Groups to the Seventh Assessment Report as contained in Annexes 1, 2 and 3 to this document.
- (2) To invite Working Groups to start their work as indicated by the 2025 budget as contained in the Decision IPCC-LXII-7 by initiating the call for nominations for the authors, and convene the LAM1 in 2025.
- (3) To defer further consideration of the workplan including the proposed Implementation Plan as contained in the documents IPCC-LXII/Doc. 14; IPCC-LXII/Doc. 15; IPCC-LXII/Doc. 16 for the preparation of the Working Group contributions to the Seventh Assessment Report to the 63rd session.

CHAPTER OUTLINES OF THE WORKING GROUP I CONTRIBUTION TO THE IPCC SEVENTH ASSESSMENT REPORT (AR7)

Version before final copyedit

Summary for Policymakers

Technical Summary

Chapter 1:

Framing, methods and knowledge sources

Executive Summary

Frequently Asked Questions

- Framing, narrative and context of the AR7
- Key findings and gaps in AR6 WGI
- Knowledge sources
- Assessment of knowledge sources, including fitness for purpose
- Methodologies to integrate lines of evidence
- Emerging topics, models, and tools

Chapter 2:

Large-scale changes in the climate system and their causes

Executive Summary

Frequently Asked Questions

- Natural and anthropogenic radiative forcing and Earth energy imbalance
- Indicators of climate change and related methodologies
- Observed changes across the Earth system and their recent and longer-term context
- Changes in modes of climate variability and monsoons
- Assessment of model-simulated changes
- Attribution of large-scale changes

Chapter 3:

Changes in regional climate and extremes, and their causes

Executive Summary

Frequently Asked Questions

- Regions and spatial scales of analysis, including land and oceanic regions and typological areas such as mountains, low lying coastal areas, and polar, tropical, desert, and semi-arid regions
- Disparities in regional information availability, accessibility and gaps, and integration of multiple information sources, including Indigenous Peoples' knowledge and local knowledge, and paleo archives
- Advances and limitations in the assessment of regional climate change and extremes including models and observations
- Emerging regional and local process understanding, including regional interconnections and long-range transport
- Rapid and slow changes in regional and local climate, including changes in seasonality and extremes
- Slow onset events including regional sea level rise and desertification
- Indicators of regional climate change and related methodologies
- Attribution of regional and local changes
- Attribution of extreme events, including tropical cyclones, and compound events

Chapter 4:

Advances in process understanding of Earth system changes

Executive Summary

Frequently Asked Questions

- Biogeochemical cycle processes and budgets, including effectiveness of sinks and sources of greenhouse gases
- Short-lived climate forcers, connection to air quality and climate interactions
- Earth system energy budget and fluxes, heat storage and redistribution
- Water cycle processes and budgets
- Cryosphere processes including in high mountain and polar regions
- Ocean processes including sea level rise and ocean acidification
- Atmospheric processes, including circulation, weather patterns, monsoons, clouds and their interactions with atmospheric composition
- Land-surface processes, including biosphere
- Land-atmosphere-ocean interactions including monsoons
- Earth system feedbacks on multiple time scales
- Model process evaluation, including paleoclimate constraints

Chapter 5:

Scenarios and projected future global temperatures

Executive Summary

Frequently Asked Questions

- Description of scenarios (emissions, removals, and concentrations of GHGs and short-lived climate forcers; land cover and land use change)
- Use and evaluation of models and tools for the assessment of scenarios
- Global Earth system and climate sensitivity metrics and properties, relationship between carbon cycle, energy balance and global temperature
- Effects of non-CO₂ forcers on temperature and carbon budgets across time scales
- Global temperature projections on different time scales
- Global warming levels and associated time frames in scenarios
- Total, historical, and remaining carbon budgets

Chapter 6:

Global projections of Earth system responses across time scales

Executive Summary

Frequently Asked Questions

- Projected changes across the Earth system, its components and their ecosystems including long-term changes in cryosphere and sea level rise
- Projected changes as a function of time and of global warming levels
- Forcing-dependent responses arising from GHGs, short-lived climate forcers, and land use and land cover change
- Projected changes in biogeochemical cycles, including carbon sinks and pools
- Projected changes in modes of climate variability and monsoons
- Near-term information from multiple sources
- Uncertainties arising from forcings, models, internal variability, and process understanding

Chapter 7:

Projections of regional climate and extremes

Executive Summary

Frequently Asked Questions

- Regions and spatial and temporal scales of analysis, including land and oceanic regions and typological areas
- Projected regional and local changes in means, variability and seasonality including regional circulation, as function of time and global warming levels
- Projected regional and local changes in extreme and compound events on land and oceans, including, but not limited to tropical cyclones, oceanic events, extreme sea levels, drought, heat waves, sand and dust storms.
- Natural and anthropogenic drivers of regional changes and their feedbacks
- Influence of regional interconnection processes and long-range transport on projected changes
- Assessment of cascading uncertainties
- Advances and limitations of existing approaches and methodologies for regional climate assessment, including disparities of information production, availability, and accessibility

Chapter 8:

Abrupt changes, low-likelihood high impact events and critical thresholds, including tipping points, in the Earth system

Executive Summary

Frequently Asked Questions

- Definitions, characterization, time and spatial scales, reversibility
- Abrupt changes, low-likelihood high impact events and tipping points² within the Earth system components and their ecosystems, their drivers and occurrence conditions
- Evidence from and limitations of observations, models, paleoclimate and Indigenous Peoples' knowledge and local knowledge
- Local, regional and global climatic consequences relevant for impacts and risks, their magnitude, spatial extent, timing, reversibility, teleconnections, cascading and compounding effects
- Critical system-specific thresholds, including in the context of global warming levels, and early warning indicators

Chapter 9:

Earth system responses under pathways towards temperature stabilization, including overshoot pathways

Executive Summary

Frequently Asked Questions

- Global and regional Earth system responses to pathways towards temperature stabilization, including to global net-zero, negative and net-negative emissions, and long-term implications
- Pathway dependency of responses including in the context of overshoot and irreversible aspects
- Bio-geophysical capacity and limits of carbon dioxide removal (CDR) methods
- Global and regional Earth system responses to removals of carbon dioxide, methane or nitrous oxide
- Global and regional Earth system responses to different global and regional solar radiation modification (SRM) methods, including consequences and uncertainties

Chapter 10:

Climate information and services

Executive Summary

Frequently Asked Questions

² A critical threshold beyond which a system reorganizes, often abruptly and/or irreversibly (IPCC AR6 Glossary definition).

- Usage of climate information from multiple lines of evidence and knowledge sources, including Indigenous Peoples' knowledge and local knowledge, for public awareness, impact and risk assessment, losses and damages, adaptation and mitigation
- Advances in climate information for climate services across timescales, including multi-hazard, early warning systems
- Methodologies to develop climate information, including co-design and co-production, to support impact and risk assessment, losses and damages, adaptation and mitigation
- Information on climatic impact-drivers and their changes to support impact and risk assessment, losses and damages, adaptation and mitigation, for systems and sectors across regions
- Physical effects of adaptation and mitigation measures on regional climate and extremes
- Gaps and disparities in available and accessible climate data, monitoring infrastructure, information and indicators for climate services, and their implications across spatial and temporal scales, across regions
- Climate information and services to reduce gaps and disparities in climate education and literacy, capacity, and training
- Case studies across regions

Annexes

Cross Working Group Glossary

Technical Annexes

WGI Interactive Atlas

List of Acronyms

List of Contributors

List of Reviewers

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CHAPTER OUTLINES OF THE WORKING GROUP II CONTRIBUTION TO THE IPCC SEVENTH ASSESSMENT REPORT (AR7)

Version before final copyedit

Title: Climate Change 202X: Impacts, Adaptation and Vulnerability

Summary for Policymakers

Technical Summary

Chapter 1: Point of departure, framing and key concepts

- Framing in the context of the IPCC Seventh Assessment Report providing key concepts related to impacts, losses and damages, adaptation, risk, vulnerability and sustainable development that are covered in subsequent chapters
- Facing accelerating climate change impacts and risks and adapting to complex, compounding and cascading challenges and opportunities
- Setting the stage: evolving climate policy and knowledge landscapes in a changing world
- Introducing Global, Regional and Thematic Assessments
- Introducing the 202X Technical Guidelines for Assessing Climate Change Impacts and Adaptation including Indicators, Metrics and Methodologies
- From assessment to effective implementation: overcoming barriers and enabling climate adaptation and responses to losses and damages

Global Assessment Chapters

Chapter 2: Vulnerabilities, impacts and risks

- Multiple dimensions of vulnerability across temporal and spatial scales
- Synthesis of observed and projected reversible and irreversible impacts, building on both slow to rapid onset events and climate extremes, including quantification, detection and attribution as appropriate
- Assessment of methodologies and synthesis of observed and projected economic and non-economic losses and damages, building on both slow to rapid onset events and climate extremes, including quantification, as appropriate
- Key risks including complex, compound, cascading, reversible, irreversible and residual risks under a range of climate scenarios, and different levels of global warming, development, adaptation and other responses
- Risks, risk management and ethics of Solar Radiation Modification

- Reasons for Concern
- Lessons from other approaches to risk assessment across scales

Chapter 3: Current adaptation progress, effectiveness and adequacy

- Adaptation progress, gaps, limits and barriers and capacity building
- Indicators and metrics to measure adaptation
- Adequacy and effectiveness of support for adaptation and risk management
- Adaptation costs, trade-offs, benefits and co-benefits
- Evidence of effectiveness and scope of state and non-state actions at various scales

Chapter 4: Adaptation options and conditions for accelerating action

- Effectiveness and feasibility of adaptation options considering current context, interdependencies, and a range of climate scenarios, and different levels of global warming, development, and adaptation
- Approaches for adaptive and continuous learning, monitoring and evaluation to design better policies, options and actions, and to enhance implementation including to avoid adverse outcomes
- Drivers, enablers and conditions for accelerated adaptation action, including means of implementation and using various technologies
- Ways of adaptation decision making and planning under uncertainty and enabling and constraining conditions
- Enhancing agency and capacity of stakeholders and empowering Indigenous Peoples and local communities
- Synergies, opportunities and trade-offs of adaptation such as with Disaster Risk Reduction, mitigation and sustainable development

Chapter 5: Responses to losses and damages

- Types of responses to economic and non-economic losses and damages by a diversity of actors at various scales and their interactions
- Policy contexts, institutional arrangements and other approaches for responding to losses and damages at various scales
- Drivers of decision-making including values, perceptions, differential power and influence, behaviour, incentives and capacities
- Approaches of categorizations and metrics to assess losses and damages

- Existing and potential responses to losses and damages including effectiveness and feasibility under a range of climate scenarios and different levels of global warming, development and adaptation
- Needs, gaps, barriers and enablers in responses to losses and damages

Chapter 6: Finance

- Background considerations, including broader macroeconomic context, other international commitments, barriers and enablers to finance
- Financial adequacy, access (equity and justice), inclusion, effectiveness, and outcomes considering finance at different scales (including national, regional, and global)
- Funding for adaptation – overview of financing needs, current climate finance flows, instruments and gaps, effectiveness and access, methodologies for tracking finance flows, and costs and benefits
- Funding for responses to losses and damages – overview of financing needs, current climate finance flows, instruments and gaps, effectiveness and access, methodologies for tracking finance flows
- Public and private finance for climate adaptation action and responses to losses and damages: finance flows at domestic and international levels
- Equitable financial systems and schemes including related approaches and policies
- Approaches to accelerate finance flows and investments, including the diversity of instruments and schemes for adaptation action
- Synergies between climate finance and climate resilience

Regional Assessment Chapters

Common Bullets to all Regional Assessment Chapters

- Consider regional setting, including intra-regional variabilities, areas of special concerns, such as hotspots and geographies, socio-political contexts and the thematic assessment chapters
- Multiple dimensions of vulnerability and adaptive capacity across temporal and spatial scales
- Observed and projected impacts, including economic and non-economic losses and damages, building on both slow onset and extreme Climatic-Impact Drivers
- Key risks including complex, compound, cascading, transboundary, residual risks, and risks under a range of climate scenarios and different levels of global warming, development and adaptation
- Adaptation progress, options, solutions, gaps, limits and barriers

- Range of adaptation options and responses to losses and damages, means of implementation, costs, benefits, effectiveness and feasibility of different options
- Barriers and enablers to climate action, including finance, capacity building, education, technology development and transfer
- Perception, beliefs, values, behavioural aspects and cultural practices of adaptation, including locally led adaptation and community-based responses
- Distributional nature of effects, including consideration of human rights, equity and justice, Indigenous Peoples, local communities, gender, disability, informality and intergenerational justice, and other vulnerable groups
- Institutional and governance frameworks critical to planning and implementation, including social, economic and political considerations
- Role of diverse knowledge systems including Indigenous Knowledge, local knowledge and experiential learning
- Linkages with sustainable development and climate resilient development, including co-benefits, synergies, trade-offs and opportunities for innovation and transformation
- Regional and local case studies
- Cross-chapter Papers: polar, dryland and deserts, high altitude and mountain regions, least developed countries, Mediterranean

Chapter 7: Africa

Chapter 8: Asia

Chapter 9: Australasia

Chapter 10: Central and South America

Chapter 11: Europe

Chapter 12: North America

Chapter 13: Small Islands

Thematic Assessment Chapters

Common bullets to all thematic assessment chapters

- Observed and projected impacts, including economic and non-economic losses and damages, building on both slow onset and extreme Climatic-Impact Drivers
- Multiple dimensions of vulnerability and adaptive capacity across temporal and spatial scales
- Key risks including complex, compound, cascading, transboundary, residual risks, and risks under a range of climate scenarios and different levels of global warming, development and adaptation
- Perceptions, beliefs, values, behavioural aspects and cultural practices of adaptation, including locally led adaptation and community-based responses
- Range of adaptation options and responses to losses and damages, means of implementation, costs, benefits, effectiveness and feasibility of different options
- Barriers and enablers to climate action, including finance, capacity building, education, technology development and transfer
- Distributional nature of effects including consideration of human rights, equity and justice, Indigenous Peoples, local communities, gender, disability, informality and intergenerational justice, and other vulnerable groups
- Institutional and governance frameworks critical to planning and implementation, including social, economic and political considerations
- Role of diverse knowledge systems including Indigenous Knowledge and local knowledge and experiential learning
- Linkages with sustainable development and climate resilient development, including co-benefits, synergies, trade-offs, and opportunities for innovation and transformation
- Case studies of implementation

Chapter 14: Terrestrial, freshwater and cryospheric biodiversity, ecosystems and their services

- Considering distinct geographies and biomes, including cryosphere, polar, forests, grasslands, mountains, wetlands, deserts and drylands
- Vulnerability, resilience and climate change feedbacks of biodiversity, ecosystem structure and functions, and the implication for their services under a range of projected scenarios including climate extremes and slow to rapid onset events such as drought, sand and dust storms, and emergence of novel biological communities

- Emerging threats, challenges and management of risk to critical biodiversity, ecosystems, critical species and related cultural heritage
- Enablers, limits and barriers to natural adaptation

Chapter 15: Ocean, coastal and cryospheric biodiversity, ecosystems and their services

- Considering distinct geographies and biomes, including cryosphere, polar, mangroves, sea grasses and sea weeds, coral reefs, estuaries, open ocean, intertidal zone, and salt marshes
- Vulnerability, resilience and climate change feedbacks of biodiversity, ecosystem structure and functions, and the implication for their services under a range of projected scenarios including climate extremes and slow to rapid onset events, emergence of novel biological communities
- Emerging threats, challenges and management of risk to critical biodiversity, ecosystems, critical species and related cultural heritage
- Enablers, limits and barriers to natural adaptation

Chapter 16: Water

- Water security addressing the issues of too little, too much, and polluted water in the context of climate change to meet the needs of people, food production and ecosystems
- Water scarcity in arid and semi-arid regions in context of climate change
- Water use and budgeting including virtual water, water footprints, water-related nexus
- Water management across scales including non-economic and cultural values of water as appropriate
- Risks from response options, including water cooperation and sharing

Chapter 17: Agriculture, food, forestry, fibre and fisheries

- Adaptation options for livelihoods, food supply chains, agricultural production and food and nutritional security, considering affordability, dietary diversity, accessibility, agency and sustainability
- Synergies and trade-offs concerning land and ocean use
- Livelihood security, risks to cultural heritage and adaptation options for key vulnerable groups such as smallholder farmers, women farmers, pastoralists, forestry, artisanal and traditional fishing dependent communities
- The role of international cooperation in addressing the adverse effect of climate change and enhancing adaptive capacity in global agriculture, livestock, fisheries and aquaculture
- Impacts of climate change on inter- and intra-regional trade for food security

Chapter 18: Adaptation of human settlements, infrastructure and industry systems

- Supply chain risk, business risk, cascading impacts, risks of failure of infrastructure systems and risks to cultural heritage
- Adapting infrastructure, industry, energy systems and human settlements to reduce risk, enhance opportunities and build response capacity at multiple levels
- Developing and utilizing climate resilient infrastructure to build adaptive capacity and support sustainable development at multiple levels
- Adaptation solutions including new technologies, methods of construction, materials and innovations, green and grey and natural infrastructure, social and behavioural change, increasing energy access in the context of sustainable development
- Relevant updates to Special Report on Climate Change and Cities

Chapter 19: Health and well-being

- Observed impacts and projected risks from factors such as extreme weather, emerging pathogens, and infectious diseases to physical and mental health and well-being due to multi-scale climate change, extremes, compound and cascading events
- Intersectionality of drivers of vulnerability and exposure to climate hazards within populations and communities
- Adapting health systems, and health prevention and promotion activities to reduce risk and build capacity at multiple levels
- Intersection between climate change, health and wellbeing, and non-climatic drivers of health, and other health determining factors
- Innovative and collaborative partnerships in the health sector involving different stakeholders

Chapter 20: Poverty, livelihoods, mobility and fragility

- Livelihood options, households with low-income and social deprivations in rural and urban contexts, Indigenous Peoples, local communities, informal settlements, contexts of fragility, displaced, mobile and immobile populations
- Interaction of climate change and development with poverty, vulnerability and livelihoods
- Human mobility, including transhumance in the context of climate change
- Risks and adaptation in fragile contexts, and in contexts of social unrest and conflict
- Integrating adaptation and resilience into efforts towards poverty eradication, livelihood enhancement, formal and informal social protection mechanisms
- Differentiated capabilities and responsibilities, and asymmetric access to information, knowledge, finance and decision-making fora

Annex I: Atlas

- Inter- and intra-regional mapping of hazards, vulnerability, exposure, impacts, risks, adaptation, and responses to losses and damages

Annex II: Linkage to TGIA: Overview of Technical Guidelines on Impacts and Adaptation

Annex III: Glossary

Annex IV: Acronyms

Annex V: List of Contributor

Annex VI: List of Reviewers

202X IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptation Including Indicators, Metrics and Methodologies:

Update to the 1994 IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations

Section 1: Introduction

- Rationale for updating the Technical Guidelines
- Framing, purpose and audience for the Technical Guidelines

Section 2: Adaptation in practice

- Key principles and concepts for the Technical Guidelines, such as effective and adequate adaptation; equity and justice; co-development, flexibility and adaptive planning; integrated thinking and consideration of planning as an integrated approach suitable for practical application; synergies and trade-offs
- Considering multiple levels of governance and levels of assessment and adaptation action
- Adaptation in relation to societal development needs and values, and adaptation as both a stand-alone, iterative and continuous, mainstreamed activity

Section 3: Technical Guidelines

- **Scoping and goal setting** (analysis of current risk management capacities; and analysis of impact of adaptation measures on equity and justice outcomes; identification of risk distribution and risk tolerance across communities, regions and time scales; assessment of sectoral and development policies, data and knowledge sources, resources, enablers and barriers; identifying and addressing information gaps)
- **Impact, vulnerability and risk assessment** (analysis of climate impacts, including economic and non-economic losses and damages; relationship between global temperature goals and adapting to their impacts; assessment of climate risks, considering climatic and non-climatic risk drivers; identification of new and emerging risks; analysis of tolerance of residual risk; demand for adaptation; assessing uncertainty)
- **Planning** (identifying entry points for adaptation; participatory and inclusive planning processes; mainstreaming adaptation in existing policies, regulations and practices; costs and benefits, and budgeting of adaptation; identifying, appraising and prioritising adaptation options using criteria such as effectiveness, adequacy, feasibility, equity, synergies and trade-offs; iterative planning)
- **Implementation** (identifying roles and responsibilities of relevant stakeholders; identifying and mobilizing resources; development of workflow and institutional collaboration mechanisms; development of communication channels)
- **Learning, monitoring and evaluation** (impact, thematic targets and adaptation metrics and indicators to monitor and track progress, uptake and performance; systematic tracking of lessons and feedback from implementation for continuous learning and adaptive management; ex-post evaluations including equity and justice outcomes)

Section 4: Tools, building blocks and enablers

- Systematic exploration of methodologies and tools for assessing impacts, risks, vulnerabilities and adaptation, including climate scenarios, metrics and indicators, adaptation options, prioritization and costing
- Co-development principles and practices (stakeholder engagement; locally-led approaches; gender-responsive approaches; mutual learning with marginalized communities, Indigenous Peoples, non-governmental organizations, and technical and scientific communities; communication and outreach)
- Services and data to support adaptation planning (climate information services; geophysical, environmental and socioeconomic information)
- Financing adaptation and mobilising resources for managing adaptation programs, and identification of funding mechanisms
- Survey of governance and regulatory enablers (frameworks to accelerate implementation of adaptation; identifying approaches for integrating adaptation into national and sectoral policies, laws and regulations; frameworks for adaptive management)

CHAPTER OUTLINES OF THE WORKING GROUP III CONTRIBUTION TO THE IPCC SEVENTH ASSESSMENT REPORT (AR7)

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Summary for Policymakers

Technical Summary

Chapter 1: Introduction and framing

- Introduction to WGIII report chapters and sections (and what is not going to be covered in the WGIII report)
- Framing, in the context of AR7, providing overarching concepts related to mitigation, including equity within and between countries, just transitions in its broader sense, differentiation considering stages of development, and circumstances, regionalization, and considerations of Indigenous knowledges and local knowledge
- Sustainable development (not limited to SDGs), national and regional priorities, and their synergies and trade-offs as a framing concept
- Framing, key concepts, and definitions of projected scenarios and pathways, including qualitative and quantitative scenarios
- Highlighting past performance and achievements in implementation of climate change mitigation and evolution of innovation (including social innovation), technology, capacity building, mitigation finance, governance, and climate policy
- Role of the ocean, land, ecosystems, and biodiversity in mitigation
- Social, economic, and environmental impacts of climate mitigation policy and action
- Adaptation interlinkages to mitigation
- Key concepts and dimensions of integration across Working Groups

Chapter 2: Past and current anthropogenic emissions and their drivers

- Historical anthropogenic emissions and emissions trends on an annual and cumulative basis (global, by region, sector, GHG, non-GHG, etc., using different indicators and definitions, at different scales), including estimates of uncertainty, and consistency with national inventories, and relationship to total and remaining carbon budgets
- Emissions, trends in drivers, including a broad set of drivers and activities at different scales
- Policy, actions, and governance at different scales, including impacts on emissions and drivers

Chapter 3: Projected futures in the context of sustainable development and climate change

- Assessment of methodologies, models, databases, development tools for scenarios and emissions pathways, methods for assessing emissions scenarios (including justice and equity assumptions and implications), and consistency of land-use emissions definitions with national inventories
- Implications of mitigation for development pathways, such as well-being, energy security, affordability and access, employment, poverty, and sustainability, including the Rio Conventions
- Assessment of how development pathways and sustainable development pathways consider and affect mitigation, including implications of Rio Conventions, meeting SDGs, and beyond
- Assessment of a broad range of projected futures for socioeconomic development, scenarios, and their underlying assumptions and outcomes, including assessments of feasibility (geophysical, environmental-ecological, technological, economic, socio-cultural, and institutional)

- Assessment of systems transitions under different projected futures
- Economics of global and national mitigation and development pathways, including mitigation costs and benefits, investment needs, employment effects, co-benefits, and spillover effects
- Climate change impacts on mitigation strategies; synergies and tradeoffs between mitigation and adaptation
- Projected emissions pathways considering current policy and projections, and relationships between national and global projected scenarios, in the context of the UNFCCC and the Paris Agreement
- Opportunities and challenges to enable climate action from current policies in the context of equity and justice
- Relationship between global temperature goals and mitigation action, including overshoot, relationship between gross emissions reductions, residual emissions, and negative emissions
- Relationship(s) between equity, justice, and mitigation across, between and within countries and generations
- Robustness of mitigation strategies and projected pathways under uncertainty

Chapter 4: Sustainable development and mitigation

- Sustainable development including and beyond SDGs as an integrative perspective for climate change responses (synergies and tradeoffs)
- Distributional consequences, within and across groups and countries
- Political economy of, co-benefits, adverse effects and livelihood and economic impacts of transitions related to mitigation
- Climate change mitigation response capacities and enabling conditions, including technology, finance, and cooperation for sustainable development
- Equity and justice (with a focus on just transitions and unpacking that at sectoral, national, regional, and global levels)
- Social and socioeconomic dimensions, including impacts of climate mitigation, and sufficiency and other strategies
- Climate change mitigation responses in the context of multi-objective policies across scales (economic development, diversification and prosperity, poverty eradication, improving living standards, etc.)
- Mitigation-adaptation interlinkages and other sustainable development objectives, including potential synergies and trade-offs
- Uncertainties and knowledge needs
- Implications of climate change mitigation responses on biodiversity and ecosystems, conservation, and restoration
- Ocean-based mitigation in the context of sustainable development and blue economy including synergies with global food and nutritional security
- Pathways in the context of sustainable development and the remaining carbon budgets, considering different stages of development, and circumstances, including links to Chapter 3

Chapter 5: Enablers and barriers

- Feasibility of mitigation in different contexts and under multiple barriers and enablers
- Development as enabler of mitigation
- Capacity for mitigation, including technological, institutional, economic, and human capacity
- Technology, including access, cost, infrastructure, innovation, scalability, replicability and speed of and disparity in adoption
- Finance, investment, policies and governance
- Distribution of benefits, costs, and impacts of mitigation
- Inequality and inequity within and across countries, including intergenerational aspects
- Social enablers, barriers, and impacts of mitigation, including public perception and support, lifestyles and behavior, production and consumption, communication, information, engagement, education, health and well-being

- Labor as enabler and barrier to mitigation, including supply, organization, wellbeing, skills
- Just transitions
- Environmental and natural resources enablers and barriers for mitigation at national, international, and subnational levels, including land, water, natural resources, minerals, and climate services
- Indigenous rights, governance, and knowledge systems
- Political economy of mitigation including public preferences, interest groups, and political institutions
- International cooperation and supply chains
- Peace, security, and conflict, including resource competition

Chapter 6: Policies and governance and international cooperation

- Policies and governance compatible with development pathways, equity, justice, distribution and integration with adaptation and sustainable development
- Various approaches to policy and institutional design
- International cooperation, taking into account political economy dimensions
- International climate and relevant non-climate agreements
- Multiple objectives, tradeoffs and co-benefits with climate and non-climate objectives
- Policy innovation, learning, and diffusion, and assessment of policy instruments
- Non-state actors' roles and efforts at different levels and contexts, including corporate and financial institutions, civil society, labor and informal economy, media, social, gender and youth movements, Indigenous Peoples and local communities
- Mitigation policies, action and cooperation at different levels
- Diverse climate regulatory and governance frameworks and other policy frameworks
- Long-term policy, governance and international cooperation for climate action and net zero emissions and beyond

Chapter 7: Finance

- Scaling finance to meet current and future finance needs
- Investment and finance for innovation and for mitigation and transitions in the context of sustainable development
- Innovation for financing
- Finance instruments, sources, channels and mechanisms
- Financial adequacy, access (equity and justice), inclusion, effectiveness, and outcomes considering finance at different scales (including national, regional, and global)
- Financial flows to support mitigation (including those to, from and between developed and developing countries), and tracking by sources, sectors and levels of governance, channels, regions, countries, and instruments
- Enablers and barriers for finance, including barriers to access
- Climate-related planning and management of finance
- Gender, Indigenous Peoples and local communities climate finance

Common elements across Chapters 8-13

- Key findings from the Sixth Assessment Report (AR6) and the Special Report on Climate Change and Cities
- Policies and implementation as appropriate
- Drivers and current trends in emissions and removals, as appropriate
- Mitigation measures and potentials and futures in the context of sustainable development, justice, equity, and global warming levels
- Feasibility and social acceptance
- Links to projected regional and global futures
- Links to sustainable development and adaptation, including risks, co-benefits, synergies,

- tradeoffs, and spill-over effects, as appropriate
- Links to Indigenous Peoples, local communities and gender
- Interactions between relevant UN Conventions and other relevant frameworks, as appropriate
- Assessment of costs and benefits of mitigation options
- Financial instruments (e.g., market and non-market)
- Innovation and knowledge gaps
- International cooperation and related aspects
- Case studies, as appropriate

Chapter 8: Services and demand

- Human needs, aspirations, inclusive well-being, and development
- Demand, equity, affordability and access to services across regions and social groups including the informal sector
- Demand-side mitigation potential of different service provisioning options including at system scale
- Demand-side options for comparison with other emission reductions options
- Social drivers of behavioral change, such as lifestyles, culture, value systems, psychology, communications, education, Indigenous knowledge systems, capacity building, social trust, and governance
- Other drivers of change
- Empirical evidence of the speed for diffusion of social innovations, including business model, behavioral, community based, and institutional innovations
- Policy, governance, and the roles of actors in the diffusion of demand-side solutions
- Synergies and co-benefits, including cross-sectoral implications for adaptation, health, energy security, inclusive development, and materials
- Feasibility dimensions of demand-side solutions, including synergies and tradeoffs with sectors and with sustainable development dimensions
- Services and demands related to oceans

Chapter 9: Energy systems

- Trends, historical, current and future
- Options and technologies for mitigation
- Abatement potentials and implications
- Energy access for household and productive use, including distributed approach potential
- Energy security, affordability, sustainability, resilience, and adequacy
- Energy system infrastructure changes, and timescales
- Energy transitions
- Energy governance and political economy (including energy markets and supply chains)
- Material and resource needs and constraints
- Capacity building and capacities (technology transfer and assimilation)
- Renewables, nuclear, carbon capture and storage, carbon capture and utilisation, and synthetic energy carriers (e.g., hydrogen)
- Equity, justice, just transitions, and distributional impacts
- Fugitive emissions and methane mitigation

Chapter 10: Industry

- Industry, society, well-being and inclusive development
- Current and future demand for industrial products to meet end-use services
- Past and current level of emissions by industries
- Material end-use demand, material efficiency, consumption patterns, circularity, waste; CCU and CCS; critical minerals
- Potential sector mitigation options (e.g., energy efficiency, clean fuel switching, feedstocks;

process changes, such as electrification and hydrogen; carbon management), and co-benefits

- Access to technology, infrastructure, and capacity
- Governance, institutions, laws, and barriers
- Impacts on and interactions with local communities and Indigenous Peoples
- Policies to drive mitigation and co-benefits in a context of sustainable development, equity, and justice
- International cooperation and related aspects

Chapter 11: Transport and mobility services and systems

- Socioeconomic, geographic-related context circumstances
- Mobility access, affordability, and equity
- Spatial planning, infrastructure, and supply chains for mobility and energy carriers (passenger and freight; public transport, road, rail, micromobility, aviation, maritime, water-based, and multimodal transport)
- Mitigation options and strategies for passenger and freight transport (including Avoid, Shift, Improve options and social and technological innovation) towards low or zero emissions transport
- Interaction with adaptation, disaster risk and resilience, synergies and tradeoffs with sustainable development, including environment and health
- Sector-specific policies and policy packages, laws, multi-level governance, financing, and enabling conditions

Chapter 12: Buildings and human settlements

- Framing the scope and new developments
- Emission trends and drivers
- Services (including comfort, nutrition, illumination, communication)
- Potential mitigation options and strategies for buildings and human settlements (e.g., spatial planning and land use, design, construction, retrofitting and renovation technologies, behavior)
- Direct and embodied emissions reduction, including alternative building materials and material efficiency
- Interaction with adaptation, disaster risk and resilience, synergies and tradeoffs with sustainable development
- Distribution impacts under different urban, rural, and regional specificities/informal settlements, social vulnerability, and land use
- Barriers and opportunities (technological, physical, financial, institutional, governance, cultural, etc.)
- Infrastructure, systemic interactions, cross-sectoral benefits, circular economy, insights from life cycle assessment and material flow analysis

Chapter 13: Agriculture, Forestry, and Other Land Uses (AFOLU)

- Mitigation measures (emissions and removals) and potentials in the context of sustainable development and global warming levels (including equity and justice, risks, food security, feasibility, regions, tradeoffs, and synergies)
- Use of consolidated national/regional data on emission factors, forest and soil parameters, and livestock production systems from under-represented regions, including recent data on fragile ecosystems
- Projected mitigation pathways, including alternative demand scenarios, that assess the scale of land mitigation measures, impacts on gross and net land-use change across different ecosystems, and social and environmental contexts
- Effects of climate impacts on socio-ecological systems, responses, and consequences for mitigation potentials and scenarios
- Consideration of the role of Indigenous Peoples and local communities in codesigning and

implementing mitigation measures

- Integration of economic, social, and technological responses and their efficacy and limits for delivering mitigation and multiple outcomes
- Comparing and reconciling land use emissions with national inventories (including the effects of increasing background fluxes on total and net GHG flux from AFOLU)
- Tradeoffs and synergies of measures with sustainable development (beyond SDGs) at regional and subregional levels
- Systems integration related to AFOLU, including linkages to Chapter 14

Chapter 14: Integration and interactions across sectors and systems

- System integration, including energy, transport, buildings, and industry
- Infrastructure used by multiple sectors for enabling low or net-zero emissions economies
- The role of urban systems in mitigation
- Materials, circularity, and waste across sectors
- Energy system integration (power-to-heat, power-to-transport, power-to-water, power-to-fuels, energy storage)
- Intersections between water, energy, food, ecosystems, and climate change; food systems; bioeconomy
- Costs and potentials, including the effects of integration
- Policies and enabling conditions for system integration and cross-sector synergies
- Digitalization and communication technologies for enabling system integration and interaction, and their implications

Chapter 15: Potentials, limits, and risks of Carbon Dioxide Removal (CDR)

- Effectiveness of CDR approaches at different warming levels and time scales
- The role of CDR strategies in net-zero and net-negative emissions futures, including levels of residual emissions achievable
- Technical and economic potential, sustainability aspects, scalability, equity implications and costs of different approaches, including storage potential, CDR approaches in other chapters and marine carbon dioxide removal
- Co-benefits, opportunities, synergies, tradeoffs and adverse effects of different CDR approaches on land, biodiversity and ecosystems, energy, materials, food, and waterbodies
- Feasibility assessment of CDR approaches (including geophysical, environmental-ecological, technological, economic, institutional and sociocultural) reflecting different regional and sub-regional contexts and scales
- Permanence, durability and reversibility of CDR approaches at different scales
- Assessment of current status and limits of MRV approaches
- Policies and governance, market, non-market and financing for research and development and implementation of CDR approaches
- Interactions with sustainable development, adaptation, and other mitigation options
- Technology transfer and capacity building for CDR approaches

Annex: Glossary

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

SIXTY-SECOND SESSION OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Hangzhou, China, 24 – 28 February 2025

LIST OF PARTICIPANTS

BUREAU MEMBERS

SKEA James Ferguson
Chairman of the IPCC

International Institute for Environment and
Development (IIED)

ALDRIAN Edvin
Vice-Chair, WG I

Agency for Meteorology, Climatology and
Geophysics (BMKG)

AL NORRY Malak
Vice Chair, WG III

Sustainability and Climate Change
Ministry of Energy

CALVO BUENDIA Eduardo Williams
Vice-Chair, WG III

Universidad Nacional Mayor de San
Marcos (UNMSM)

CAMILLONI Ines Angela
Vice-Chair WG I

Universidad de Buenos Aires / CONICET

CHANG'A Ladislaus
IPCC Vice-Chair

Tanzania Meteorological Authority (TMA)

CHOW Winston
Co-Chair, WG II

Singapore Management University

DIONGUE-NIANG Aïda
Vice-Chair, WG I

National Agency of Civil Aviation and Meteorology

ENOKI Takeshi
Co-Chair, TFI

IGES Fellow / TFI TSU scientific advisor

FUGLESTVEDT Jan
Vice-Chair, WG III

Centre for International Climate and Environmental
Research (CICERO)

GEDEN Oliver
Vice-Chair, WG III

German Institute for International and Security Affairs
(SWP)

HARPER Sherilee

Vice-Chair, WG I

University of Alberta

HAYAT Mazhar

Co-Chair, TFI

Ministry of Climate Change, Environmental
Coordination, Government of Pakistan

HOWDEN Mark

Vice-Chair, WG II

Australian National University

ITSOUA MADZOUS Gervais Ludovic

Vice-Chair, WG III

Economic Community of Central African
States (ECCAS)

KILKIŞ Şiir

Vice-Chair, WG III

The Scientific and Technological Research
Council of Turkey (TÜBİTAK)

KLUTSE Nana Ama Browne

Vice-Chair, WG I

Department of Physics University of Ghana
Legon

LUKORITO Cromwel

Vice-Chair, WG II

University of Nairobi

MENDEZ Carlos

Venezuelan Institute for Scientific Research,
Caracas (IVIC)

PEREIRA Joy

Co-Chair, WG III

Universiti Kebangsaan Malaysia

PICHS MADRUGA Ramon

Centro de Investigaciones de Economía
Mundial (CIEM)

RAMAN Sukumar

Vice-Chair, WGII

Indian Institute of Science

ÜRGE-VORSATZ Diana

IPCC Vice-Chair

Central European University

RUPAKHETI Maheswar
Vice-Chair, WG I
Research Institute for Sustainability (RIFS)

SENEVIRATNE Sonia
Vice-Chair, WG I
ETH Zurich (Swiss Federal Institute of
Technology Zurich)

THOMAS Adelle
Vice-Chair, WG II
Climate Analytics/ University of the Bahamas

VAN DEN HURK Bart
Co-Chair, WG II
Deltares

VAUTARD Robert
Co-Chair, WG I
Centre national de la recherche scientifique (CNRS)

YASSAA Nouredine
Vice Chair, WG III
Ministry of Energy, Mines and Renewable Energy

ZHANG Xiaoye
Co-Chair WG I
China Meteorological Administration (CMA)

ZOMMERE Zinta
Vice-Chair, WG II
United Nations Office for the Coordination of
Humanitarian Affairs (OCHA)

MEMBER COUNTRIES

ALGERIA

MERABET Hamza
Head of Delegation
Commissioner of Renewable Energy
and Energy Efficiency

ANGOLA

CONSTANTINO Luis
Head of Delegation
Ministry of Environment

ANTIGUA AND BARBUDA

BLAIR Adelle
Head of Delegation
Ministry of Tourism, Investment, Civil Aviation
and Transportation

SIMON Arry Aquille
Department of Environment

ARMENIA

BUDOYAN Nona
Head of Delegation
Ministry of Environment

AUSTRALIA

PENTONY Alannah
Head of Delegation
Department of Climate Change, Energy,
the Environment and Water

HARTE Sean
Department of Climate Change, Energy,
the Environment and Water

RYAN Mia
Department of Climate Change, Energy,
the Environment and Water

AUSTRIA

OGRIS Manfred
Head of Delegation
Austrian Federal Ministry of Climate Action,
Environment, Energy, Mobility, Innovation and
Technology

VERLY Federico
Austrian Federal Ministry of Climate Action,
Environment, Energy, Mobility, Innovation and
Technology

AZERBAIJAN

HUMBATOV Fuad
Head of Delegation
Ministry of Ecology and Natural Resources
of the Republic of Azerbaijan

BAHAMAS

BETHEL Brandon
Head of Delegation
University of The Bahamas

BANGLADESH

ALI Mirza Shawkat
Head of Delegation
Department of Environment

BARBADOS

GOODRIDGE Ron
Head of Delegation
Ministry of Environment and National
Beautification, Green and Blue Economy

BELARUS

MELEKH Dzmitry
Head of Delegation
Ministry of Natural Resources and Environmental
Protection

BELGIUM

RYMEN Bart
Head of Delegation
Belgian Science Policy Office (BELSPO)

ROGGEMAN Chantal
Alternate Head of Delegation
FPS Health, Food Chain Safety and Environment

HECK Anna
Belgian Biodiversity Platform

PATERNOSTRE Pauline (Marie C.)
Walloon platform for the IPCC

VAN YPERSELE DE STRIHOUE Jean- Pascal
Université catholique de Louvain (UCLouvain)

BELIZE

YOUNG Shanea
Head of Delegation
National Meteorological Service of Belize

BENIN

KAKPA Didier
Head of Delegation
National Meteorological Agency (METEO-
BENIN)

BHUTAN

KARMA Karma
Head of Delegation
National Centre for Hydrology and Meteorology

BOSNIA AND HERZEGOVINA

TRBIC Goran
Head of Delegation
University of Banja Luka Faculty of Science

BOTSWANA

KEOTSENE Odisitse George
Head of Delegation
Department of Meteorological Services

BRAZIL

FERRAZ DA SILVA Pedro Ivo
Head of Delegation
Ministry of Foreign Affairs

ROJAS DA CRUZ Marcio
Ministry of Science, Technology
and Innovation

BRUNEI DARUSSALAM

DATO PADUKA HAJI MAHADI Haji Abdul
Hanif

Head of Delegation
Universiti Brunei Darussalam

AZRI Mohammad Hazwan
Universiti Teknologi Brunei

JALIL MARSAL Cristalina
Universiti Islam Sultan Sharif Ali

BURKINA FASO

NAKOULMA Guillaume
Head of Delegation
Agence Nationale de la Météorologie (ANAM-BF)

BURUNDI

KAYOYA Ezéchiel
Head of Delegation
Geographical Institute of Burundi

CAMBODIA

LEANG Sophal
Head of Delegation
Ministry of Environment

CANADA

D'IORIO Marc
Head of Delegation
Environment and Climate Change Canada

MORIN Nathalie
Alternate Head of Delegation
Environment and Climate Change Canada

FARAHANI Ellie
Environment and Climate Change Canada

CHAD

ABAKAR SOULEYMANE Hamid
Head of Delegation
Ministry of Civil Aviation and of the National
Meteorology, National Meteorology Agency

CHILE

JADRIJEVIC Maritza
Head of Delegation
Climate Change Division
Ministry of the Environment

CORDANO Julio
Ministry of Foreign Affairs

LAMBERT Fabrice
Pontificia Universidad Catolica de Chile

CHINA

CHEN Zhenlin
Head of Delegation
China Meteorological Administration

XIONG Shaoyuan
Alternate Head of Delegation
China Meteorological Administration

CHAO Qingchen
China Meteorological Administration

CHEN Qizhen
The Administrative Center for China's Agenda
21

CHENG Huiqiang
Department of Resource Conservation and
Environment Protection, National
Development and Reform Commission

FAN Xing
National Center for Climate Change Strategy
and International Cooperation

GAO Yun
China Meteorological Administration

HAN Xiao
Climate Change Office, Department of Treaty
and Law, Ministry of Foreign Affairs

HAN Zhenyu
National Climate Center, China Meteorological
Administration

HUANG Lei
China Meteorological Administration

HUI Jingxuan
Center for Energy Environment and Climate
Research Energy Research Institute of NDRC

LAO Leng Wai
Macao Meteorological and Geophysical
Bureau

LI Yutong
China Meteorological Administration

LIU Lancui
Beijing Normal University

LIU Shuo
Chinese Academy of Agricultural Sciences

LIU Yingzhi
Ministry of Finance

LU Chunhui
China Meteorological Administration

LU Ouyang
China Clean Development Mechanism Fund

LU Riyu
Institute of Atmospheric Physics
Chinese Academy of Sciences

NIU Jingjing
Department of Resource Conservation and
Environment Protection
National Development and Reform Commission

PANG Bo
China Meteorological Administration

PEI Liang
Department of Climate Change
Ministry of Ecology and Environment

PENG Xueting
The Administrative Center for China's Agenda 21

QIU Shuang
China Meteorological Administration

SHANG Zhen
Ministry of Foreign Affairs

TSE Wai Po
Hong Kong Observatory

WANG Changke
China Meteorological Administration

WANG Yusong
Department of Climate Change
Ministry of Ecology and Environment

WU Tonghua
Northwest Institute of Eco-Environment
and Resources
Chinese Academy of Sciences

XU Lingyi
National Center for Climate Change
Strategy and International Cooperation

XU Xianghua
China Meteorological Administration

YANG Xiao
China Meteorological Administration

YU Biying
Beijing Institute of Technology

YU Jianrui
China Meteorological Administration

YUAN Jiashuang
China Meteorological Administration

YUAN Xiaohua
China Clean Development Mechanism Fund

YUE Siyu
China Meteorological Administration

ZANG Haijia
China Meteorological Administration

ZENG Qin
China Meteorological Administration

ZHANG Jiaolong
Department of Global Governance and
International Organizations
China Institute of International Studies

ZHANG Yongxiang
China Meteorological Administration

ZHENG Xunhua
Institute of Atmospheric Physics
Chinese Academy of Sciences

ZHONG Jing
Climate Change Office
Department of Treaty and Law
Ministry of Foreign Affairs

COLOMBIA

JIMÉNEZ SÁNCHEZ Jorge Giovanni
Head of Delegation
IDEAM

COMOROS

FAISSOIL Mhadji
Head of Delegation
Directorate General for the Environment
and Forests (DGEF)

CONGO, Republic of

IFO Suspense Averti
Head of Delegation
University of Marien Ngouabi
École Normale Supérieure

COSTA RICA

CARVAJAL-TOVAR Kattia
Head of Delegation
National Meteorological Institute

COTE D'IVOIRE

DJE Kouakou Bernard
Head of Delegation
Meteorology Office

CUBA

PAZOS ALBERDI Celso
Head of Delegation
Institute of Meteorology of Cuba

CZECH REPUBLIC

TOLASZ Radim
Head of Delegation
Czech Hydrometeorological Institute

DENMARK

LEMA Adrian
Head of Delegation
Danish Meteorological Institute

CHRISTENSEN Tina
Alternate Head of Delegation
Danish Meteorological Institute

ARNBJERG-NIELSEN Karsten
Danish Meteorological Institute

DISSING Anette Ester
Danish Meteorological Institute

HENRIKSEN Solveig Nisbeth
Ministry of Climate, Energy and Utilities

NIELSEN Ole-Kenneth
Aarhus University

DJIBOUTI

OMAR Dini Abdallah
Head of Delegation
Ministry of Environment and
Sustainable Development

DOMINICAN REPUBLIC

FRANCO BILLINI Carol
Head of Delegation
Virginia Tech

ECUADOR

MONTAÑO VIÑAN Karla Yadyra
Head of Delegation
Ministry of Environment, Water and
Ecological Transition

EGYPT

ELEWA Lydia
Head of Delegation
Ministry of Environment

EI SALVADOR

MOLINA MASFERRER Mario Giovanni
Head of Delegation
Ministry of Environment and Natural
Resources

EQUATORIAL GUINEA

MALAVO NSENE Pedro
Head of Delegation
Ministry of Agriculture, Livestock, Forest,
Fisheries and Environment

ESTONIA

KAI Rosin
Head of Delegation
Environment Agency

ETHIOPIA

BEYENE Kinfe Hailemariam
Head of Delegation
Ethiopian Meteorological Institute

FINLAND

KUPIAINEN Kaarle
Head of Delegation
Ministry of the Environment

FRANCE

MORONI Marc
Head of Delegation
MTECT/CGDD/SRI/SDR

SCHWOOB Marie-Hélène
Alternate Head of Delegation
Ministry of Ecological Transition

CHINCHIO Léna
Ministry for Europe and Foreign Affairs

DUVERNOY Jérôme
Ministry of Ecological Transition

SUDDATH-DEVILLE Wilfred
Ministry for Europe and Foreign Affairs

GEORGIA

CHITANAVA Ramaz
Head of Delegation
Hydrometeorological Department of Georgia

GERMANY

STADTHAUS Marcus
Head of Delegation
Federal Foreign Office

MUELLER Christian
Alternate Head of Delegation
Zukunft – Umwelt – Gesellschaft (ZUG)

TEXTOR Christian
Alternate Head of Delegation
German Aerospace Center
Project Management Agency
German IPCC Coordination Office

ALECKE Christian Alexander
Bundesministerium für Bildung und Forschung

CALL Friedemann
German Aerospace Center
Project Management Agency
German IPCC Coordination Office

LARUE Dominic
Bundesministerium für Bildung und Forschung
REINEKE Thomas
Project Management Agency
German Aerospace Center

ROMING Niklas
German Environment Agency

TAMBKE Jens
Federal Environment Agency

GRENADA

ST. LOUIS Aria
Head of Delegation
Environment Division

GUATEMALA

FION GÓNGORA Andrea
Head of Delegation
Ministry of Environment and Natural
Resources

GUINEA

KOIBA Goikwia
Head of Delegation
National Meteorology Agency

GUINEA BISSAU

SAMBÚ Fernando Baial
Head of Delegation
Instituto Nacional de la Meteorología (INM-GB)

HUNGARY

HANAK Panna
Head of Delegation
Ministry of Energy

INDIA

GANGWAR Naresh Pal
Head of Delegation
Ministry of Environment, Forest and
Climate Change

JAYARAMAN Thiagarajan
M.S. Swaminathan Research Foundation

KANITKAR Tejal
National Institute of Advanced Studies

MENGHANI Vijay
Ministry of Power

PALLERLA Sharath Kumar
Ministry of Environment, Forest and Climate
Change

PITHODE Tarun Kumar
Ministry of Environment Forest and Climate Change

RAGHAVA Ajay
Ministry of Environment Forest and Climate Change

RANGASHREE Thirumalai Kumara
Consulate General of the Republic of India
in Shanghai

SURENDRANNAIR Suresh Babu
Indian Space Research Organization (ISRO)

VIKRAM Vishal
Department of Earth Sciences Convener
National Centre of Excellence in CCUS
Associate Faculty, Centre for Climate Studies
Indian Institute of Technology (IIT) Bombay

INDONESIA

UMAR Real Sukmana Faesal
Head of Delegation
Ministry of Environment and Forestry
Indonesia

IRELAND

MCGOVERN Frank
Head of Delegation
Environmental Protection Agency

ITALY

PIRANI Anna
Head of Delegation
Euro-Mediterranean Centre for Climate
Change (CMCC)

CALLIARI Elisa
Euro-Mediterranean Centre for Climate
Change (CMCC)

ELLENA Marta
Euro-Mediterranean Centre for Climate
Change (CMCC)

SOHEIL Shayegh
Euro-Mediterranean Centre for Climate
Change (CMCC)

JAMAICA

SPENCE-HEMMINGS Jacqueline
Head of Delegation
Meteorological Service

JAPAN

HAISA Yukihiro
Head of Delegation
Ministry of the Environment

TAKATSUKI Aya
Ministry of Education, Culture, Sports, Science and
Technology (MEXT)

HATTORI Kosuke
Mitsubishi UFJ Research and Consulting

KIMURA Norihiro
Ministry of Economy, Trade and Industry

KOBAYASHI Yumi
Research Institute of Innovative
Technology for the Earth

MIYAGI (OHKUBO) Saki
Japan Meteorological Agency

MORI Nobuhito
Kyoto University

OSHIMA Naga
Japan Meteorological Agency

OSHIMA Ryudai
Ministry of Agriculture, Forestry and Fisheries

SATO Teppei
Remote Sensing Technology Center of Japan

SOWA Koki
Ministry of the Environment

TAKATANI Mariko
Ministry of Economy, Trade and
Industry

UEDA Hiroko
Planning and Research
Global Environmental Forum

WATANABE Masahiro
University of Tokyo

KAZAKHSTAN

TOKPAYEV Zufar
Head of Delegation
Greenhouse Gas Inventory Department
JSC "Zhasyl Damu"

KENYA

NYING'URO Patricia A.
Head of Delegation
Kenya Meteorological Department

KIMUTAI Joyce
Alternate Head of Delegation
Kenya Meteorological Department
African Climate Development Institute
University of Cape Town

DENJE Telvin
African Group of Negotiators
Experts Support (AGNES)

KHAEMBA Winnie
Climate Analytics

LUTTA Alphayo
Stockholm Environment Institute

NGETICH Chris
Kenya Meteorological Department

OKUMU Michael
Ministry of Environment, Climate
Change and Forestry

OUMA Fredrick
Climate Change Directorate

KIRIBATI

BITA Mika
Head of Delegation
Environment Conservation Division
Ministry of Environment, Lands and
Agricultural Development

LAO PDR

SAYTHONGVANH Bounthee
Head of Delegation
Ministry of Natural Resources and
Environment

LESOTHO

BOUTU Marealeboha
Head of Delegation
Lesotho Meteorological Services

LIBYA

EDDENJAL Ali
Head of Delegation
Libyan National Meteorological Center

LUXEMBOURG

FERRONE Andrew
Head of Delegation
Administration of Agricultural Technical Services

MADAGASCAR

RANAIVOSON Andriamihaja Andre
Head of Delegation
Direction Generale de la Meteorologie

MALAWI

MTILATILA Lucy
Head of Delegation
Department of Climate Change and
Meteorological Services

SAEED Fahad
Climate Analytics

MALAYSIA

MOHAMMED Ahmad Farid
Head of Delegation
Ministry of Natural Resources, Environment and
Climate Change

ZAINUDDIN Zainorfarah
Climate Change Division

MALDIVES

ABDULLA Amjad
Head of Delegation
Ministry of Climate Change,
Environment and Energy

FATHIMATH Nashwa
Ministry of Climate Change,
Environment and Energy

MALI

TOURE Moussa
Head of Delegation
Agence nationale de la Météorologie

MAURITANIA

CHAHE Mohamed Yahya
Head of Delegation
Ministry of Environment and Sustainable
Development

MONGOLIA

ZAMBA Batjargal
Head of Delegation
Information and Research Institute for
Meteorology, Hydrology and Environment
Ministry of Environment and Climate Change
Ministry of Environment and Tourism

MONTENEGRO

IVANOV Mirjana
Head of Delegation
Institute of Hydrometeorology and Seismology

MOROCCO

DKHISSI Mohammed
Head of Delegation
General Directorate of Meteorology

SEBBARI Rachid
Alternate Head of Delegation
General Directorate of Meteorology

MOZAMBIQUE

NHANTUMBO Bernardino
Head of Delegation
Instituto Nacional de Meteorologia

NAMIBIA

SOMSES Sieglinde
Head of Delegation
Namibia Meteorological Service

NEPAL

SHIVA Khanal
Head of Delegation
Ministry of Forest and Environment

DHAKAL Manjeet
Ministry of Forest and Environment

NEW ZEALAND

CHORLEY Hannah
Head of Delegation
Ministry for the Environment

NICARAGUA

CHAVARRIA GONZALEZ German De Jesus
Head of Delegation
Ministry of Environment and Natural Resources

NIGERIA

OKEBUGWU Chukwuemeka
Head of Delegation
National Council on Climate Change

GBADEGESIN John Ayobami
Nigeria Hydrological Services Agency

MOHAMMED Umar Ibrahim
Nigeria Hydrological Agency

MUHAMMAD Rukayya
National Council on Climate Change Secretariat

OYEGADE Adeleke John
Nigerian Meteorological Agency

UWAKWE Nma Grace
Federal Ministry of Justice

WELI Vincent Ezikonwor
Nigerian Meteorological Agency

NORTH MACEDOANIA

MARKOVSKA Natasa
Head of Delegation
Macedonian Academy of Sciences and Arts

NORWAY

KVISSEL Ole-Kristian
Head of Delegation
Norwegian Environment Agency

RANDALL Scott
Alternate Head of Delegation
Norwegian Environment Agency

BJØNNES Kathrine Loe
Norwegian Environment Agency

BRUSTAD Synne Christin Castberg
Norwegian Environment Agency

ØKSTAD Elin Merete
Embassy of Norway to China

PAKISTAN

GOHEER Muhammad Arif Rashid
Head of Delegation
Global Change Impact Studies Centre

PALAU

GOLBUU Yimnang
Head of Delegation
The Nature Conservancy

ROBERTSON Michai Winston Arthur
Permanent Mission of Palau to the United Nations

ROBINSON Stacy-ann Marie
Emory University

PANAMA

AGUILAR CANDANEDO Ana Luisa
Head of Delegation
Ministry of Environment

PERU

AZURIN ARAUJO Carmen Del Rocio
Head of Delegation
Ministry of Foreign Affairs

PHILIPPINES

VILLAFUERTE Marcelino II
Head of Delegation
DOST PAGASA

QATAR

AL-MARWANI Mohmoud Abdulaziz
Head of Delegation
Ministry of Municipality and Environment

AL-KORBI Istiqlal
Ministry of Environment and Climate Change

REPUBLIC OF KOREA

KIM Hyun-kyung
Head of Delegation
Climate Science Bureau
Korea Meteorological Administration

OH Yaewon
Alternate Head of Delegation
Korea Meteorological Administration

BOO Kyung On
National Institute of Meteorological Science

CHA Solji
Marine Policy Office, Marine Ecology Division Ministry
of Oceans and Fisheries

CHANG Pilhun
National Institute of Meteorological Science

HONG Je-woo
Korea Environment Institute

KIM Ha Na
Korea Institute of Science and Technology

KIM Hyunsung
Marine Policy Office, Marine Ecology Division Ministry
of Oceans and Fisheries

KIM Seungdo
Hallym University

KWON Bong-oh
Kunsan National University
Department of Marine Biology

LEE Minsun
Ministry of Environment

LEE Seo Yeon
Ministry of Environment

OH Yunyeong
National Adaptation Center for Climate Crisis

PARK Jin-han
Korea Environment Institute

YIM Nayoung
Korea Meteorological Administration

YOON Ho Sung
Department of Biology
Kyungpook National University

ROMANIA

BOJARIU Roxana
Head of Delegation
National Meteorological Administration

RUSSIAN FEDERATION

SEMENOV Sergei
Head of Delegation
Yu.A. Izrael Institute of Global Climate and
Ecology

DMITRIEVA Tatiana
Alternate Head of Delegation
Hydrometservice

MAGOMEDOV Shugaib
Ministry of Foreign Affairs

SAMOA

KERSLAKE Fotuitaua Yvette
Head of Delegation
Secretariat to the Pacific Regional
Environment Programme (SPREP)

SAO TOME AND PRINCIPE

XAVIER FERNANDES Anselmo
Head of Delegation
National Institute of Meteorology

SAUDI ARABIA

AL GWAIZ Abdelrahman
Head of Delegation
Ministry of Energy, Industry and Mineral Resources

ALJEFRI Leen Yahya
Ministry of Energy

ALMEGREN Ghada Faisal
Ministry of Energy

ALQARNI Ayael
Ministry of Energy

ALSALEH Hassan
Ministry of Energy

ALSINAN Ahmed
Ministry of Energy

ALSUDAIRY Nourah
National Committee for Clean Development
Mechanism Designated National Authority

ALTHOBAITI Daniyah A
Ministry of Energy

KHOJA Yasmeen Abdulaziz
Ministry of Energy

MAI Jarad Yosef
Ministry of Energy

OTHIMIN Tamim
Ministry of Energy

SENEGAL

KONTE Oumar
Head of Delegation
ANACIM

SANE Youssouph
ANACIM

SEYCHELLES

AGRICOLE Will Michel
Head of Delegation
Ministry of Agriculture, Climate Change
and Environment

SIERRA LEONE

KAMARA Ibrahim Sinneh
Head of Delegation
Sierra Leone Meteorological Department

SINGAPORE

ZHANG Weijie
Head of Delegation
Ministry of Sustainability and the Environment

CHUA Audrey
Ministry of Sustainability and the Environment

PUAN Pei Qi
Ministry of Sustainability and the Environment

SLOVENIA

KLEMEN Ana
Head of Delegation
Ministry of the Environment, Climate and
Energy

SOMALIA

ABDILAH I Hafsa Omar Abdilahi
Head of Delegation
Ministry of Environment and Climate Change

SOUTH AFRICA

GUINEY Itchell
Head of Delegation
Department of Forestry, Fisheries and
the Environment

MOTSHWANEDI Sandra
Department of Forestry, Fisheries and
the Environment

SPAIN

CARRILLO MARTÍ Eburne
Head of Delegation
Spanish Climate Change Office

SANZ SANCHEZ María José
Basque Centre for Climate Change (BC3)

SRI LANKA

WARNASOORIYA Anusha Rashanthie Patabadi
Head of Delegation
Department of Meteorology

ST KITTS AND NEVIS

JEFFERS Cheryl
Head of Delegation
Ministry of Environment, Climate Action
and Constituency Empowerment

KLONNE Uta Marie
Climate Analytics
NAUELS Alexander
Climate Analytics

SCHLEUSSNER Carl-Friedrich
Climate Analytics

SUDAN

HAMADALLA Hana
Head of Delegation
High Council for Environment and Natural Resources

SWEDEN

ANDERSSON Camilla
Head of Delegation
Swedish Meteorological and Hydrological
Institute

UNGER AnnaKarin
Alternate Head of Delegation
Swedish Meteorological and Hydrological
Institute

EKMAN Annica
Stockholm University

FRIDAHL Mathias
Linköping University

SJÖSTRÖM Åsa
Swedish Meteorological and
Hydrological Institute

SWITZERLAND

KÖNIG Sebastian
Head of Delegation
Federal Office for the Environment

PAROZ Lydie-Line
Federal Office for the Environment

PÉRUS Marine
Federal Office for the Environment

TANZANIA

MURUKE Wilbert Timiza
Head of Delegation
Tanzania Meteorological Authority

TAJIKISTAN

SAFAROV Munis
Head of Delegation
Agency for Hydrometeorology of the
Committee of the Environmental Protection

THAILAND

KAEWCHAROEN Sivach
Head of Delegation
Department of Climate Change and Environment
Ministry of Natural Resources and Environment

THE GAMBIA

TOURAY Lamin Mai
Head of Delegation
Department of Water Resources

THE NETHERLANDS

VAN DORLAND Rob
Head of Delegation
Royal Netherlands Meteorological Institute (KNMI)

BERK Marcel
Ministry of Economic Affairs and Climate Policy

OLGERS Vera
Ministry of Economic Affairs and Climate Policy

TIMOR-LESTE

BARBOSA Adao Soares
Head of Delegation
Ministry of Foreign Affairs and Cooperation

TOGO

SABI Kokou
Head of Delegation
Lomé University

TUNISIA

EL ELJ Raïda
Head of Delegation
Ministry of Environment

TÜRKİYE

KARACA Erdogan
Head of Delegation
Directorate of Climate Change
Ministry of Environment Urbanisation
and Climate Change

GÜREŞ Merve
Directorate of Climate Change
Ministry of Environment Urbanisation
and Climate Change

TURKMENISTAN

ALLABERDIYEV Nazar
Head of Delegation
Scientific Information Centre of Interstate
Commission of Sustainable Development

UGANDA

AYESIGA Godwin
Head of Delegation
Uganda National Meteorological Authority

UNITED KINGDOM

COOK Jolene
Head of Delegation
Department for Energy Security and Net Zero

REES-OWEN Rhian
Alternate Head of Delegation
Department for Energy Security and Net Zero

FEARNYOUGH Kate
Department for Energy Security and Net Zero

JONES Richard
Met Office

LIU Muge
Foreign, Commonwealth and Development
Office

MABBUTT James
Department for Energy Security and Net Zero

PRESCOTT Caroline
Department for Business, Energy and
Industrial Strategy

SCOTT Kate
Department for Energy Security and Net Zero

SMART Charlotte
Foreign, Commonwealth and Development
Office

WILSON Louise
Foreign, Commonwealth and Development Office
Met Office

UKRAINE

KRAKOVSKA Svitlana
Head of Delegation
Ukrainian Hydrometeorological Institute

URUGUAY

KASPRZYK Mariana
Head of Delegation
Ministry of Environment

VANUATU

SHARMA Sindra
Head of Delegation
Pacific Islands Climate Action Network (PICAN)

VENEZUELA

SALAS CASTILLO Ricardo
Head of Delegation
Ministry of Peoples Power for Foreign Relations

ZAMBIA

NKONDE Edson
Head of Delegation
Zambia Meteorological Department

ZIMBABWE

NDIDZANO Kudzai Faron
Head of Delegation
Ministry of Environment, Climate, and Wildlife

OBSERVER ORGANIZATIONS

CLIMATE ACTION NETWORK (CAN) INTERNATIONAL

SINGER Stephan
Observer - Head of Delegation
Climate Action Network International

VENKATESH Shreeshan
Observer - Alternate Head of Delegation
Climate Action Network International

CENTER FOR INTERNATIONAL ENVIRONMENTAL LAW (CIEL)

CHURCH Mary
Observer - Head of Delegation
Center for International Environmental Law

KENNERLEY Rachel
Center for International Environmental Law

CHINA BIODIVERSITY CONSERVATION AND GREEN DEVELOPMENT FOUNDATION (CBCGDF)

MENG Yixuan
Observer - Head of Delegation
China Biodiversity Conservation and Green
Development Foundation

ENVIRONMENTAL DEFENSE FUND (EDF)

ALPERT Alice
Observer - Head of Delegation
Environmental Defense Fund

EUROPEAN CLIMATE FOUNDATION (ECF)

MONIRAM Helena
Observer - Head of Delegation
European Climate Foundation

SIGNORELLI Alessia
Observer - Alternate Head of Delegation
Meliore Foundation

EUROPEAN UNION

TULKENS Philippe
Observer - Head of Delegation
European Commission

RAKONCZAY Zoltan
Observer - Alternate Head of Delegation
European Commission

GRASSI Giacomo
European Commission

MOUSSON Mathilde
European Commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

BERNOUX Martial
Observer - Head of Delegation
Food and Agriculture Organization of the United Nations

FRIENDS WORLD COMMITTEE FOR CONSULTATION (FWCC)

COOK Lindsey
Observer - Head of Delegation
Quaker United Nations Office (QUNO)

FUTURE EARTH

VALIYAVEETIL SHAMSUDHEEN Semeena
Observer - Head of Delegation
UK Centre for Ecology and Hydrology

LI Xiuzhen
Observer - Alternate Head of Delegation
State Key Laboratory of Estuarine and Coastal Research, East China Normal University

GREEN CLIMATE FUND (GCF)

HORSBURGH Kevin
Observer - Head of Delegation
Green Climate Fund

GREENPEACE

YAO Zhe
Observer - Head of Delegation
Greenpeace East Asia

HEINRICH BOELL FOUNDATION (HBF)

SCHNEIDER Linda
Observer - Head of Delegation
Heinrich Boell Foundation

INDIANA UNIVERSITY

O'REILLY Jessica
Observer - Head of Delegation
Indiana University

INTERNATIONAL BUREAU OF WEIGHTS AND MEASURES (BIPM)

WIELGOSZ Robert
Observer - Head of Delegation
BIPM - International Bureau of Weights and Measures

INTERNATIONAL CENTRE FOR INTEGRATED MOUNTAIN DEVELOPMENT (ICIMOD)

ADHIKARY Bhupesh
Observer - Head of Delegation
International Centre for Integrated Mountain Development

MISHRA Amlan
International Centre for Integrated Mountain Development

INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS (IIASA)

PATANGE Omkar Sharadrao
Observer - Head of Delegation
International Institute for Applied Systems Analysis

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ZHANG Xiaoxin
Observer - Head of Delegation
International Organization for Standardization

SUN Liang
Observer - Alternate Head of Delegation
International Organization for Standardization

**INTERNATIONAL PETROLEUM INDUSTRY
ENVIRONMENT CONSERVATION ASSOCIATION
(IPIECA)**

CLIFTON Olivia Elaine
Observer - Head of Delegation
ExxonMobil Technology and Engineering Company

TRAN Loan Kim
ExxonMobil Corporation Strategy

**INTERNATIONAL UNION OF GEODESY AND
GEOPHYSICS (IUGG)**

LI Jianping
Observer - Head of Delegation
Ocean University of China

INUIT CIRCUMPOLAR COUNCIL (ICC)

NAKIMAYAK Herbert
Observer - Head of Delegation
Inuit Circumpolar Council

KUHNERT Katarina Lindsay
Inuit Circumpolar Council

**KING ABDULLAH PETROLEUM STUDIES AND
RESEARCH CENTER (KAPSARC)**

ALDHUWAIHI Hind
Observer - Head of Delegation
King Abdullah Petroleum Studies and Research
Center

THIRD WORLD NETWORK (TWN)

BOMZAN Mingma
Observer - Head of Delegation
Third World Network

BOSE Indrajit
Third World Network

UNION OF CONCERNED SCIENTISTS (UCS)

MERNER Laura
Observer - Head of Delegation
Union of Concerned Scientists

**UNITED NATIONS ENVIRONMENT
PROGRAMME (UNEP)**

LIU Jian
United Nations Environment Programme

UNITED NATIONS FOUNDATION (UNF)

OSTANEK Kristyn
Observer - Head of Delegation
United Nations Foundation

**UNITED NATIONS FRAMEWORK
CONVENTION ON CLIMATE CHANGE
(UNFCCC)**

MOEHNER Annett
United Nations Framework Convention on
Climate Change

**WASHINGTON UNIVERSITY IN ST. LOUIS
(WUSL)**

MARTIN Frances
Observer - Head of Delegation
Washington University in St. Louis

HYMAN Ella
Washington University in St. Louis

REGAN Sydney
Washington University in St. Louis

WELLCOME TRUST

HONEY PAINE Olivia
Observer - Head of Delegation
The Wellcome Trust

TIEDT Sonia
Observer - Alternate Head of Delegation
The Wellcome Trust

**WORLD CLIMATE RESEARCH
PROGRAMME (WCRP)**

SÖRENSSON Anna
Observer - Head of Delegation
University of Buenos Aires

**WORLD METEOROLOGICAL ORGANIZATION
(WMO)**

BARRETT Ko
World Meteorological Organization

TRUP Daniel
World Meteorological Organization

JU Yun
WMO Regional Office for Asia and the South-West
Pacific

WORLD WILDLIFE FUND (WWF)

MATHESON Shirley
Observer - Head of Delegation
WWF European Policy Office

IPCC TECHNICAL SUPPORT UNITS (TSU)

WORKING GROUP I TSU

PEAN Clotilde
Head of TSU WGI
L'Université Paris-Saclay

ALBARUS Ivonne
L'Université Paris-Saclay

Gong Yongmei
L'Université Paris-Saclay

HANSEN Gerrit
L'Université Paris-Saclay
JIA Wenxing
China Meteorological Administration

LI Lei
China Meteorological Administration

LIU Liangke
China Meteorological Administration

ZHONG Juntong
China Meteorological Administration

WORKING GROUP II TSU

TIGNOR Melinda
Head of TSU WGII

ALIKADIC Azra
Deltares

ELWATTAR Sherine
Deltares

GUPTA Mukesh Kumar
Singapore Management University

LEPRINCE-RINGUET Noemie
Deltares

OKEM Andrew
Deltares

THIAN Samantha
Singapore Management University

WONG Theresa
Singapore Management University

WOO Qiyun
Singapore Management University

WORKING GROUP III TSU

BATMANATHAN Navakanesh
Universiti Kebangsaan Malaysia

WORKING GROUP TFI

STURGISS Rob
Head of TSU TFI

FEDERICI Sandro
Institute for Global Environmental Strategies

SHERMANAU Pavel
Institute for Global Environmental Strategies

IPCC CHAIR SCIENTIFIC ADVISOR

VANVYVE Emilie Anne A.
International Institute for Environment and
Development (IIED)

IPCC CHAIR EXECUTIVE ASSISTANT

GABAO LISBOA Geninha
International Institute for Environment and
Development (IIED)

IPCC SECRETARIAT

MOKSSIT Abdalah
Secretary of the IPCC
c/o World Meteorological Organization

FIDA Ermira
Deputy Secretary of the IPCC
United Nations Environment Programme (UNEP)
c/o World Meteorological Organization

ABDALLAH Mudathir
IPCC Secretariat
c/o World Meteorological Organization

ACHARYA Minang
IPCC Secretariat
c/o World Meteorological Organization

BAIDYA Jesbin
IPCC Secretariat
c/o World Meteorological Organization

BIAGIONI Laura
IPCC Secretariat
c/o World Meteorological Organization

EKZARKHO Oksana
IPCC Secretariat
c/o World Meteorological Organization

EWA Judith
IPCC Secretariat
c/o World Meteorological Organization

FERNANDEZ Joelle
IPCC Secretariat
c/o World Meteorological Organization

HUA Wenli
IPCC Secretariat
c/o World Meteorological Organization
LARRODÉ Emelie
IPCC Secretariat

c/o World Meteorological Organization

LEW SCHNEIDER Jennifer
IPCC Secretariat
c/o World Meteorological Organization

MAHECIC Andrej
IPCC Secretariat
c/o World Meteorological Organization

PEEVA Nina
IPCC Secretariat
c/o World Meteorological Organization

SHONGWE Mxolisi E
IPCC Secretariat
c/o World Meteorological Organization

WALSH Melissa
IPCC Secretariat
c/o World Meteorological Organization

ZABULA Werani
IPCC Secretariat
c/o World Meteorological Organizatio

**INTERNATIONAL INSTITUTE FOR
SUSTAINABLE DEVELOPMENT (IISD)
EARTH NEGOTIATIONS BULLETIN (ENB)**

BULLON Laura
IISD/ENB

GUTIERREZ Maria
IISD/ENB

PETERSMANN Moritz
IISD/ENB

RODOPOULOU Anastasia
IISD/ENB