# 52<sup>nd</sup> SESSION OF THE IPCC

24 - 28 February 2020, Paris, France

# **Decisions adopted by the Panel**

# **Decision IPCC-LII-1.** Adoption of the Provisional Agenda

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

The Intergovernmental Panel on Climate Change at its 52<sup>nd</sup> Session adopts the provisional agenda as contained in document IPCC-LII/Doc.1, Rev.1 with the deletion of Agenda Item 15 from the agenda. The Panel agreed that clarifications on this agenda item should be provided at the Financial Task Team meeting where it should be discussed.

# <u>Decision IPCC-LII-2.</u> Approval of the draft report of the 51<sup>st</sup> Session of the IPCC

Document: IPCC-LII/Doc.3

The Intergovernmental Panel on Climate Change at its 52<sup>nd</sup> Session approves the report of the 51<sup>st</sup> Session of the IPCC.

# <u>Decision IPCC-LII-3.</u> Replacement of a Member of the Task Force Bureau

Document: IPCC-LII/Doc.6

The Intergovernmental Panel on Climate Change at its 52<sup>nd</sup> Session, taking note that Mr Sabin Guendehou (Benin) stepped down as a member of the Bureau of the Task Force on National Greenhouse Gas Inventories and that Mr Hamid Abakar Souleymane (Chad) is the only candidate nominated by Region I Africa, decides to elect by acclamation Mr Hamid Abakar Souleymane as a member of the Task Force Bureau for the Sixth Assessment cycle.

# **Decision IPCC-LII- 4.** Admission of Observer Organizations

Document: IPCC-LII/Doc. 4

The Intergovernmental Panel on Climate Change at its 52<sup>nd</sup> Session decides to grant the following organizations IPCC observer status, in accordance with the IPCC Policy and Process for Admitting Observer Organizations:

- (1) Sasakawa Peace Foundation (SPF)
- (2) Dalit Welfare Association (Nepal)
- (3) Royal Meteorological Society (UK)
- (4) Institute for Environment and Development Sustainability (IEDS)
- (5) the Regional Environmental Centre for Central Asia (CAREC).

# <u>Decision IPCC-LII-5.</u> Task Group on Data Support for Climate Change Assessments (TG-Data)

Document: IPCC-LII/Doc.8, Rev. 1

The Intergovernmental Panel on Climate Change at its 52<sup>nd</sup> Session:

- 1. Approves the TG-Data workplan for the period 2019-2023 as attached in Annex 1.
- 2. Takes note of the recommendations presented by the Task Group on Data Support for Climate Change Assessments as attached in Annex 2.

#### **TG-Data recommendations**

#### 1. Curation of datasets

For all AR6 Working Groups, expectations are that the data underlying all key material (figures, tables and key results) from the AR6 Summary for Policy Makers (SPM), the Technical Summaries (TS) and the Synthesis Report (SR) follow FAIR practices as outlined in FAIR guidelines and are curated by DDCs or other trusted digital repositories. This implies that authors or TSU staff submit data files and a description of the methods used to generate those data and figures. This provenance3 information should be sufficiently complete to allow for reproducibility by external reviewers and eventually the application of the IPCC's Error Protocol.

The reproducibility of IPCC results also requires that source datasets are curated. The traceability and reuse of the IPCC results / data thus depends on the long-term archiving by DDCs and other trusted digital repositories that provide sustainable data preservation and data services.

WGs are very supportive of the work done by TG-Data and all three TSUs are investing time and resources putting in place the infrastructure to make IPCC data FAIR. . It is important to be mindful of the high workload already expected of authors and of the heterogeneous chapter contexts they evolve in. For example, while some chapters use a common framework to produce all their figures, other chapters rely on individual authors and contributing authors, each one using independent programming environments. It is likely that the implementation of these best practices will require dedicated support from TSUs.

WGI has started preparing to implement these objectives, providing guidance for chapters to develop community software, including provenance information, defining key information on visuals for archival. The development of the Interactive Atlas fulfills the implementation of FAIR data principles. We recommend that specific training workshops be held during (or at beginning or end of) WG LAM meetings. These workshops are not needed for WGI meetings considering the work already underway by WGI TSU and authors in this regard and the timeline for their SPM and TS production. These workshops are very much recommended to be included in the planning of WGIII LAM3 and WGII LAM4 meetings.

#### 2. Public code access

It is desirable that code used to produce figures from the SPM, TS and SR be archived, and eventually made publicly available and citable. However, if AR6 code is made public, bugs will inevitably be found. In a typical software development environment, bugs reports simply trigger a review process, corrections and a bug-fix release. In the IPCC context, there is a concern that bad faith actors could identify bugs and disclose them at inopportune moments or blow them out of proportion in order to inflict reputational damage. This risk of bugs creeping into the code can be mitigated by a review process, but not removed entirely. In any case, TG-Data would recommend against publicly releasing code that has not been reviewed by other authors within each chapter.

#### 3. DDC resourcing

The implementation of the FAIR guidelines rely heavily on DDC resources, and there is a need for more countries and organizations to play a role in the technical support to IPCC activities. TG-Data is already discussing potential partnerships and will continue to do so during this cycle to strengthen the data curation and dissemination capability of DDCs. Countries and institutions interested in contributing to the curation, dissemination and reusability of IPCC products are invited to contact TG-Data Co-Chairs.

In terms of DDC support and long-term stability of DDC activities we recommend to initiate a process to update DDC webpages and moving old TGICA web page into the main new IPCC web site.

#### 4. Outreach

We recommend that outreach activities be carried out later in the AR6 cycle, including expert meetings and guidance documentation on the use of data and scenarios in climate research. These activities will be able to leverage material curated by DDCs and improve access to the data assessed by IPCC authors.

# <u>Decision IPCC-LII-6.</u> IPCC Gender Policy and IPCC Gender Policy and Implementation Plan

Document: IPCC-LII/Doc. 9, Rev.1

The Intergovernmental Panel on Climate Change at its 52<sup>nd</sup> Session adopts the IPCC Gender Policy and Implementation Plan as contained in Annex 1 to this decision.

#### IPCC GENDER POLICY AND IMPLEMENTATION PLAN

#### 1. INTRODUCTION

The IPCC, at its 47<sup>th</sup> Session, established a task group to develop a framework of goals and actions to improve gender balance and address gender-related issues within the IPCC. This Task Group, called the Task Group on Gender, presented its report at the 49<sup>th</sup> Session of the IPCC.

At its 49<sup>th</sup> Session, the Panel decided to establish a second Task Group, called the Task Group on Gender Policy and Gender Implementation Plan (TG-Gender). This Task Group was assigned with developing a draft Gender Policy and Implementation Plan to improve gender balance and address gender-related issues within the IPCC, for consideration by the Panel at its 52<sup>nd</sup> Session (decision IPCC-XLIX-5). This document represents the outcome of the work of TG-Gender, as mandated by the Panel.

#### 1.1. Relevant IPCC Documents

As previously mentioned, the first IPCC Task Group on Gender prepared the Report on gender balance and gender related issues within the IPCC. This report was informed by a literature review, a survey of member countries and observer organizations, and a survey of IPCC authors and participants. This report documents those results and provides recommendations related to: national IPCC Focal Points; governance and management of the IPCC; and the production of reports. One recommendation was that a Gender Policy and Implementation Plan be developed, which was accepted by the Panel at its 49<sup>th</sup> Session (Decision IPCC-XLIX-5), and led to the creation of the second Gender Task Group and this document was generated.

#### 1.2. The Mandate, Decision IPCC-XLIX-5:

The decision of the panel which establishes the mandate of the Task Group on Gender Policy and Gender Implementation Plan follows:

The Intergovernmental Panel on Climate Change at its 49th Session decides to:

- Welcome the report of the IPCC Task Group on Gender and Gender-related issues within the IPCC and note the recommendations of the group as consideration for future work.
- Express its gratitude for the work of the members, the co-chairs and the rapporteur
  of the IPCC Task Group on Gender as well as for the support of the IPCC
  secretariat.
- Establish a Task Group on Gender Policy and Gender Implementation Plan (TG-Gender) with the aim of developing a draft Gender Policy and a Gender Implementation plan to improve gender balance and address gender-related issues within the IPCC, for consideration by the Panel at its 52nd Session.
- Adopt the terms of reference of the Task Group on Gender Policy and Gender Implementation Plan as contained in Annex 1 to this document.

Annex 1

- The Task Group is open to IPCC members, Bureau members and Technical Support Unit staff and will be chaired by Ko Barrett, IPCC Vice-Chair.
- The work of the Task Group is supported by the Secretariat.

- The Task Group can call upon external experts, as appropriate.
- The purpose of the Task Group is to develop a draft IPCC Gender Policy and Gender Implementation Plan considering the Report of the IPCC Task Group on Gender and Gender- related issues. The implementation plan will identify specific actions, tasks, roles and responsibilities, as well as modalities for monitoring, reporting progress on the execution, review, and possible future updates of the implementation plan, including budgetary implications.
- The Task Group's mode of working will be through various electronic means and face to face meetings during IPCC plenaries. Teleconferencing arrangements will be provided from the IPCC Secretariat.
- The Task Group will present the draft Gender Policy and Gender Implementation Plan for consideration by the 52<sup>nd</sup> Session of the IPCC.

### 1.3. Vision and purpose

The value of IPCC assessments comes from the voluntary participation of the world's best experts, the open and transparent assessment process, and the interface between the international scientific community and policymakers. To continue to produce leading scientific assessments, the IPCC harnesses the best minds, but also utilize the problem-solving power of diverse perspectives. The IPCC is dedicated to pursuing a future state where gender is mainstreamed into its processes in an inclusive and respectful manner and where there is gender balance in participation and where all have equal opportunity irrespective of gender. In so doing, the IPCC will raise awareness of the benefits of gender equality. While the focus of this policy is on gender, it is important to recognise that gender often intersects with other factors that influence participation including race, ethnicity, language, disability, age, diversity of expertise, or nationality. This Policy and Implementation Plan establishes goals and implementation actions that lead the IPCC towards achieving this vision.

#### 1.4. Conformity with national gender policy

The IPCC Gender Policy and Implementation Plan is applicable for all IPCC participants and it sets gender-related objectives for the IPCC's overall governance and execution. IPCC recognizes the sovereignty of individual member countries. Therefore, this Policy and Implementation Plan does not intend to supersede national legislation, policies, or structures. It sets standards and expectations for the work of the IPCC.

# 1.5. Mapping the Landscape

This Policy and Implementation Plan was informed by other relevant gender policies and guidance documents, such as those from the United Nations). These resources, and others identified as relevant by the first IPCC Task Group on Gender, are included below. Other resources within the UN system, as well as national policies and initiatives, research studies, and more, provide relevant knowledge. Gender policies and plans are context specific, and the IPCC Gender Policy is tailored to the unique mandate, modes of work, and governance structure of this organization. Additional resources listed below are provided solely for the information of IPCC members:

- WMO Gender Equality Information
- United Nations Environment Programme Gender Equality Information
- <u>UNFCCC Gender and Climate Change Information</u> and <u>Gender Action Plan</u>
- UN Women Sustainable Development Goal 5
- UN Women

#### 2. IPCC GENDER POLICY

# 2.1. Goal 1: Enhancing Gender Equality in IPCC processes

- 2.1.1. Promote equal opportunities for all, regardless of gender, within the governance and execution of the IPCC's activities.
- 2.1.2. Pursue gender equality among leadership positions in the IPCC: Bureau (including Executive Committee, Vice Chairs, Co-Chairs), author teams, and other IPCC bodies.
- 2.1.3. Pursue gender equality and inclusion during IPCC meetings, including, inter alia, during Plenary meetings, Bureau meetings, Lead Author meetings, scoping meetings, and expert meetings.
- 2.1.4. Encourage gender equality among National Focal points and national delegations to IPCC meetings, as appropriate.

# 2.2. Goal 2: A Gender-inclusive Environment

- 2.2.1. Provide a gender-inclusive organizational environment that promotes gender equality, facilitates active and equal engagement of all individuals, and supports the success of IPCC participants and products.
- 2.2.2. Strive to facilitate participation of people with child or elderly care responsibilities.

### 2.3. Goal 3: Training and Guidance

- 2.3.1. Raise awareness about gender-related issues and gender equality within the IPCC.
- 2.3.2. Enhance skills to respond to gender-related issues within the IPCC.
- 2.3.3. Consider gender-related issues in all outreach activities.

<sup>&</sup>lt;sup>1</sup> Gender equality is defined as gender balance and equal opportunity regardless of gender.

#### 3. IPCC GENDER IMPLEMENTATION PLAN

## 3.1. Establish the Gender Action Team (GAT)

- 3.1.1. The GAT is comprised of elected members of the Executive Committee, a representative from the IPCC Secretariat, and two additional members with appropriate expertise appointed by UNEP and WMO.
- 3.1.2. The GAT will elect its Chair and Vice-Chair at its first meeting.
- 3.1.3. The GAT can call upon external experts, as needed.
- 3.1.4. The members of the GAT act as designated contact points for the Gender Policy and Implementation Plan.
- 3.1.5. The GAT operates by consensus.
- 3.1.6. The GAT operates as a practical working arrangement and is responsible for the Gender Implementation Plan. It will oversee and monitor the implementation of the actions outlined in the Gender Implementation Plan and will propose potential future refinements of the Gender Policy and the Implementation Plan to the Panel as needed and at least at the beginning of each assessment cycle.
- 3.1.7. GAT meetings will be held primarily through teleconferencing and/or in combination with existing IPCC meetings. Teleconferencing arrangements will be provided from the IPCC Secretariat
- 3.1.8. The GAT serves as the point of contact for gender-related issues and will develop and implement a protocol and process for addressing informal and formal complaints made in the context of the IPCC Gender Policy and Implementation Plan.
- 3.1.9. The GAT is accountable to the Panel through the ExCom and the Bureau. It will provide reports to the Bureau and Panel.
- 3.1.10. The GAT will be supported by the IPCC Secretariat, with involvement of the Working Group Technical Support Units as appropriate.

#### 3.2. Enhancing Gender Equality in IPCC Processes

- 3.2.1. Regularly monitor activities and report to Plenary on gender equality in IPCC's processes.
- 3.2.2. Take into account gender balance and gender-related aspects in the Panel's decisions, when relevant.
- 3.2.3. Recommend and invite IPCC member countries to nominate more women for key IPCC positions.
- 3.2.4. Strive for gender-balanced compositions of meeting chairpersons and panels.

#### 3.3. A Gender-inclusive Environment

- 3.3.1. Take into account a gender perspective in the Panel's decisions, when relevant and as appropriate.
- 3.3.2. Consider the ability to provide a gender- friendly and inclusive environment when selecting meeting venues.
- 3.3.3. Provide information to IPCC meeting participants who are unable to attend meetings due to family considerations, and facilitate their remote participation as appropriate.

# 3.4. Training and Guidance

- 3.4.1. Organise training, guidance, or internal workshops for IPCC staff, leadership, and to wider groups, as appropriate, on gender balance and gender-related issues, including, inter alia, consideration of intersectionality of gender issues with other diversity goals, addressing implicit biases, and implementing inclusive practices.
- 3.4.2. Set up an informal process to share best practices on gender issues among Focal Points, including through a web forum.
- 3.4.3. Organise regular opportunities for gender diversity training for meeting chairs and facilitators.
- 3.4.4. Cooperate with other organizations as relevant to enhance gender equality within the IPCC.

#### 4. MONITORING PROGRESS AND REPORTING ON ACHIEVEMENTS

- 4.1. Data relevant to the achievement of the Implementation Plan and Gender Policy goals will be collected. This could include data on gender balance in IPCC bodies, author teams, national nominations, and overall participation in IPCC activities, as appropriate. The GAT will evaluate this data.
- 4.2. Participant's experiences at IPCC meetings, including at the end of each assessment cycle and during the overall assessment process, will be surveyed.

#### 5. RESOURCE IMPLICATIONS

- 5.1. Support for activities to implement the Gender Implementation Plan is contingent on the availability of funds.
- 5.2. The GAT is invited to assess and consider funding needs and present these to the Panel as appropriate. Where appropriate, the GAT will endeavor to engage partner organizations.

# <u>Decision IPCC-LII-7.</u> Review of the Principles Governing IPCC Work

Document: IPCC-LII/Doc.7

The Intergovernmental Panel on Climate Change at its Fifty-Second Session, decides to request:

- (a) The Secretariat to prepare a summary of the views of Member States based on the discussions on the Review of the Principles Governing IPCC Work during the Fifty-Second Session and the informal consultation that took place in the margins of the Session.
- (b) The Bureau to consider the summary prepared by the Secretariat at its next sessions to take place prior to the Fifty-Third Session of the IPCC; and
- (c) The Bureau to make recommendations regarding the review of the Principles Governing IPCC Work, as appropriate, for consideration of the Panel at the Fifty-Third Session.

# <u>Decision IPCC-LII-8.</u> Organization of the Future Work of the IPCC in Light of the Global Stocktake

Document: IPCC-LII/Doc. 5

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

That the mandate of the TG-FWLGST is fully completed, and the Panel would like to thank the co-chairs, rapporteur and the members of the TG-FWLGST for their excellent work.

Further the Intergovernmental Panel on Climate Change notes:

That the final report from the TG-FWLGST, as contained in document <a href="IPCC-LII/Doc. 5">IPCC-LII/Doc. 5</a>, presents the viable options and their pros and cons, reflecting contributions from Panel members.

# <u>Decision IPCC-LII-9.</u> IPCC Trust Fund Programme and Budget for the years 2020, 2021, 2022 and 2023

Document: IPCC-LII/Doc. 2, Rev.1, Corr.1

Based on the recommendations of the Financial Task Team (FiTT), the 52<sup>nd</sup> Session of the Intergovernmental Panel on Climate Change:

- 1. Appreciates the support that the Secretariat of the IPCC provides to the IPCC process;
- 2. Approves the revised budget for 2020, as contained in Annex 1;
- 3. Approves the proposed budget for 2021, as contained in Annex 2;
- 4. Notes the forecast budget for 2022, as contained in Annex 3;
- 5. Notes the indicative budget for 2023, as contained in Annex 4;
- **6.** Welcomes with gratitude all contributions and pledges from members, especially from developing countries, UN bodies and intergovernmental organizations and encourages all members 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;
- **7.** Encourages members to make first-time contributions to the IPCC Trust Fund in order to broaden the donor base;
- **8.** Expresses its gratitude to members that support the Technical Support Units (TSUs) and a number of IPCC activities, including data centres, meetings and outreach activities;
- **9.** Encourages members 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;
- **10.** Expresses its gratitude to the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) for financing one Secretariat position each, and to WMO for hosting the Secretariat and for its continuing support for the IPCC;
- **11.** Expresses its gratitude to the United Nations Framework Convention on Climate Change (UNFCCC) for its contribution to the IPCC Trust Fund;
- **12.** 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;
- **13.** Requests that the Secretariat presents, in addition to statements according to 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;

- **14.** Requests the Secretariat to provide the panel with interim statements of expenditure covering the first six months of the year, as well as the projection of expenditure for the rest of the year;
- **15.** Requests the Secretariat to maintain a funding reserve to cover long-term employee benefits:
- **16.** Requests the Secretariat to provide detailed information in the budget document presented to the Panel:
- 17. Requests the TG-Data Co-chairs to seek guidance from the Secretariat in mobilizing resources, including in-kind contributions, for their activities and for the Data Distribution Centre (DDC), and to provide the Secretariat with cost estimates for the activities outlined in their workplan;
- **18.** Invites member countries and observer organizations to consider supporting the activities of the DDC;
- **19.** Requests the Secretariat in consultation with the Technical Support Units and ExCom to prepare Terms of Reference for the position of Programme Officer (P4) relating to IT and logistics and an IT Associate Support Officer (P1) for the consideration by the Bureau at its next meeting;
- **20.** Subject to the acceptance of the Terms of Reference by the Bureau, approves:
  - the upgrade of the IT Officer position in the IPCC Secretariat to the position of Programme Officer (IT and logistics) at the level P4 from P3 based on the Terms of Reference;
  - ii. the establishment of an IT Associate Support Officer position at P1 level based on the Terms of Reference;
  - iii. the allocation of CHF 31,000 per annum to cover the additional costs of the upgrade from P3 to P4 position in the 2020/2021/2022 budgets;
  - iv. the allocation of CHF 94,000 per annum in the 2020/2021/2022 budgets to fund the P1 position.
- **21.** Requests the Secretariat to prepare a report to Bureau-58 on staffing, roles and requirements as well as options to enhance the efficiency of support for travel, procurement and continuity within and between cycles, including considerations of support from the World Meteorological Organization to the IPCC, and any relevant implications;
- **22.** Requests the Bureau at its next session to prepare proposals for consideration of the Panel at IPCC-53 in the areas mentioned in paragraph 21, in light of the Secretariat's analysis;
- **23.** Invites the Gender Action Team to assess and consider future funding needs for the work foreseen in the Gender Policy and Implementation Plan and to work with the Secretariat to include an appropriate budget line for consideration in forthcoming budget deliberations.

# **Decision IPCC-LII-10.** Sixth Assessment Report Synthesis Report Outline

Document: IPCC-LII/Doc.10

The Intergovernmental Panel on Climate Change at its 52<sup>nd</sup> Session decides:

- (1) to agree to the outline of Sixth Assessment Report Synthesis Report as contained in Annex 1 to this document.
- (2) that the bulleted text in Annex I to this Decision, that resulted from the scoping process and refined through comments by the Plenary, be considered by the authors as indicative.

The notes contained in CRP. 2 will be forwarded to the authors for their additional consideration of the outline.

- (3) to take note that the provisional timetable for the production of the Sixth Assessment Report Synthesis Report, is as follows:
  - Selection of Authors 2 March 03 May 2020
  - Bureau Meeting 4 -5 May 2020 (TBC)
  - CWT 1 7 -13 December 2020
  - CWT 2 8 -14 March 2021
  - Gov and Expert Review 12 July 5 September 2021
  - CWT 3 29 Nov 5 December 2021
  - FGD Period 14 Feb 17 April 2022
  - CWT 4 and Approval 16 2 2 May 2022
- (4) take note that the budget for the production of the Sixth Assessment Report Synthesis Report is as contained in Decision IPCC-LII-9 on the IPCC Trust Fund Programme and Budget.

#### Content

The following structure for the AR6 SYR is proposed. It contains agreed topic headings and a list of bullets. This outline contains indicative bullets to help guide the authors in their consideration of information they will synthesize from the underlying reports in the sixth assessment cycle. The order of bullets does not carry any significance.

## **Proposed outline of the Sixth Assessment Report Synthesis Report**

Title: AR6 Synthesis Report: Climate Change 2022

#### **List of Contents**

Front matter (2 pages)

Summary for Policy Makers (~10 pages)

Section 1: Introduction (~1/2 page)

Section 2: Current Status and Trends (~10 pages)

Section 3: Long term Climate and Development Futures (~10 pages) Section 4: Near Term Responses in a Changing Climate (~10 pages)

#### Section 1: Introduction (~1/2 page)

- Context
- Setting the stage for the report
- · Definition of time frames

#### Section 2: Current Status and Trends (~10 pages)

- Socio-economic development, climate change, and climate action across regions.
- Current and historic CO<sub>2</sub> emissions by sources, removals and sinks, from both an annual and cumulative perspective, non-CO<sub>2</sub> forcers, including short-lived climate forcers.
- Socio-economic and technological drivers that increase or decrease emissions.
- Regional/global changes in the climate system and their causes.
- Unavoidable climate change due to past emissions and from inertia in geophysical and socio-economic systems.
- Current impacts on human and natural systems; vulnerability, sectoral and regional impacts and risks, including residual risk.
- Current status of adaptation and mitigation efforts, finance, capacity building and technology, and implications for sustainable development.

### Section 3: Long term Climate and Development Futures (~10 pages)

- Scenarios and projections, regional and global climate change, rate of change, and dependency on forcing characteristics.
- Global and regional impacts, costs and benefits, and risks for natural and human systems, dependence on warming levels, and implications for socio-economic development.
- Adaptation: options, opportunities, limits and residual risks, implications for socio-economic development and dependence on warming levels.

- Mitigation pathways, global balance between anthropogenic greenhouse gas emissions, removals and sinks, total and remaining carbon budgets and the link to past cumulative emissions, equity and implications for socio-economic development.
- Adaptation, mitigation and sustainable development, and interactions, including direct and indirect costs, benefits, co-benefits, risks, economics, and equity.
- Deep uncertainty, tipping points, irreversibility, compound events, high-impact events, and implications for society.
- Overshoot pathways, CDR, SRM and their implications.
- · Near-term and long-term interactions.

# Section 4: Near Term Responses in a Changing Climate (~10 pages)

- Near-term climate change and variability, vulnerability, exposure, impacts, costs and risks for natural and human systems.
- Near-term socio-economic trajectories consistent with limiting warming to different levels and development pathways consistent with sustainable development and enhancing adaptation,
- Potential for benefits and costs of and barriers to early action, implications of delayed action, including lock-in, residual risks, spill over and irreversible changes in a changing climate.
- Diverse response options across and within sectors and geographic scales, benefits, cobenefits/synergies and direct and indirect costs, and trade-offs (adaptation, risk management, mitigation).
- Strengthening and initiating just system transitions, including for adaptation and mitigation, in the context of sustainable development, poverty eradication, food security and equity.
- Supportive conditions and means, including finance and investment, capacity, institutional arrangements, international cooperation, technological innovation and technology transfer, and behavioural aspects across a range of actors.