# INTERGOVERNMENTAL PANEL ON Climate change

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# PLANNING FOR THE SEVENTH ASSESSMENT CYCLE

# Options for the Programme of Work in the seventh assessment cycle

(Prepared by the Informal Group on the Programme of Work for the seventh assessment cycle)

(Submitted by the Secretary of the IPCC)

<sup>&</sup>lt;sup>1</sup> This revised version is being submitted to accurately reflect the correct reference to the CMA5 decision on "Matters relating to the global stocktake under the Paris Agreement"



# PLANNING FOR THE SEVENTH ASSESSMENT CYCLE

#### Options for the Programme of Work in the seventh assessment cycle

#### Executive summary

At the 66<sup>th</sup> Session of the IPCC Bureau (BUR-66), an Informal Group on the Programme of Work for the seventh assessment cycle (IG-PoW) (Decision BUR-LXVI-2) was established to examine options for the Programme of Work of the seventh assessment cycle. Options are formulated that are consistent with the ambition to have more integrated, concise and policy relevant reports while ensuring the workload to within acceptable limits. For each option, we evaluate the availability of input for the United Nations Framework Convention on Climate Change (UNFCCC) Global Stocktakes.

Three options are therefore considered:

- a **light** option with fewer products and shorter timeline than the Sixth Assessment Report (AR6);
- a **classical** option with up to two Special Reports and two Task Force on National Greenhouse Gas Inventories (TFI) Methodology Reports;
- a **Special Report gallery** option that delivers no Working Group assessment reports but a larger collection of topic-specific Special Reports.

Feasibility of the options to meet specific deadlines is presented, and an overall assessment of compliance with specific goals and ambitions is given.

If a full set of Assessment Reports (ARs) is decided, a maximum of two Special Reports can be produced including the Special Report on Climate Change and Cities, and two Methodology Reports including the report on Short-lived Climate Forcers. A larger collection of Special or Methodology Reports is feasible when no Working Group reports are included in the cycle.

Next, an analysis of requests for topics for Special Reports and Methodology Reports from Member countries and UNFCCC documents is provided. We analyzed the topics propositions and identified several potential groupings that could form the basis of the additional Special Report.

Finally, this document reflects on a number of options for the management of ambitions in the cycle to respond to lessons learned.

#### 1. Purpose and status of this document

At the 66<sup>th</sup> Session of the IPCC Bureau (BUR-66), an Informal Group on the Programme of Work for the seventh assessment cycle (IG-PoW) (Decision BUR-LXVI-2) was established with the mandate to prepare a written document with options for the Programme of Work of the seventh assessment cycle (including type and topics of products, evaluated against criteria, and time scale). This document describes an analysis of those options, including specific topics that could be covered in any additional report(s) beyond the Special Report on Climate Change and Cities (hereafter "SR Cities") and the TFI Methodology Report on Short-lived Climate Forcers (SCLF), and identifies ways to address the lessons learned from the AR6 relevant for the development of the Programme of Work. The goal of the paper is to lay out a small number of options, assess the pros and cons of each option, and suggest ways of clustering topics to enhance the scope of any additional report (if such a report is included in the seventh assessment cycle). The document does not recommend a specific option, but rather provides input to the discussions and decisions on the Programme of Work that will take place at the 60<sup>th</sup> Session of the IPCC (IPCC-60). Section 2 summarizes the lessons learned from the AR6 and the other sources used as input to this document. Section 3 identifies three main options for the number of products in the seventh cycle. Section 4 focuses on the timeline of the cycle. Section 5 assesses the options against a number of criteria. Section 6 presents the analysis of potential topics for additional products (Special Report and Methodology Report). Section 7 discusses additional product types (e.g., Expert Meetings). Finally, section 8 formulates the expected outcome of the discussion on the products and timeline of the seventh assessment cycle.

# 2. Synthesis of resources of the analysis

In undertaking its work, the IG-PoW was instructed to consider a range of inputs, including the AR6 Lessons Learned (IPCC-LVII/INF. 12), Synthesis of IPCC Member Countries' Views on the Products for the seventh assessment cycle (IPCC-LX/INF. 6), relevant UNFCCC decisions with implications for the seventh assessment cycle planning, and discussions at BUR-66.

Several of the AR6 Lessons Learned have implications for the Programme of Work. In particular, the document noted:

- The challenges faced in the AR6 due to the unprecedented number of reports, the rapidly increasing literature, and a significant increase of review comments on the Final Government Draft, which led to a very high workload.
- The need for "shorter and more concise, focused on new science and provide policy relevant information", calling for a selection of the report topics towards direct relevance for policy implementation.
- The need to "further enhance collaboration between Working Groups, the Task Force on National Greenhouse Gas Inventories (TFI), and the Task Group on Data Support for Climate Change Assessments (TG-Data) as a pre-condition for more successful, interactive, and comprehensive results."
- The suggestion to increasingly deploy the instrument of Expert Meetings on dedicated topics.
- The suggestion to "consider the adoption of a sustainability and climate-related institutional strategy", in order to reduce the carbon footprint of the assessment.

Regarding the options for the types of products and the potential topics for Special Reports and Methodology Reports, the IPCC Secretariat surveyed Panel members in October 2023. In their response, nearly all Member countries expressed support for the AR7 consisting of three Working Group (WG) contributions and a Synthesis Report (SYR). A few Member countries proposed changes to the present structure, by either re-scoping the WG Report structure to have fewer reports, by replacing the WG Reports by a series of targeted topical (Special) Reports, or questioning the need or feasibility of a Synthesis Report. General comments were received to broaden the approach by adopting Expert Meetings or Technical Papers addressing specific topics.

Many Member countries recommended ensuring adequate input from the IPCC is available for the Second Global Stocktake (GST2) to be concluded in 2028, either as a contribution from the Assessment Reports, topical SRs, or as a specific dedicated product. Thirteen out of 65 respondents indicated they would not consider the idea of any additional products beyond the Assessment Reports, the SR Cities and the SCLF Methodology Report that were already agreed in the previous cycle. However, about 50 respondents generated a total of approximately 100 (partly overlapping) suggestions for additional Special Reports. About half of the responding Member countries recommended the inclusion of another TFI Methodology Report or Expert Meeting, while the other half did not request additional TFI products.

Several UNFCCC documents, including the first Global Stocktake under the Paris Agreement, have included knowledge gaps and/or invitations for the IPCC. This information is discussed further in Section 6.2.

# 3. Options for the cycle products

Following the synthesis of Section 2, we consider and analyze three options.

The first Option (labeled "**light**") starts from the fact that nearly all<sup>2</sup> Member countries supported including Assessment Reports of the three Working Groups, a Synthesis Report, at least one Special Report (on Climate Change and Cities) and the SCLF Methodology Report in the AR7. This can be considered to be the lightest implementation of the AR7, and enables prioritizing cross-WG coordination, a focus on policy relevant information and a reduced workload compared to the AR6.

The second option (labeled "**classical**") reflects the views of a vast majority of Member countries respondents that additional reports are desirable. It extends the **light** cycle by adding a second Special Report and an extra TFI Methodology Report. The topics addressed in these additional reports have yet to be decided, and a discussion on options and views is included in Section 6.

Finally, a third option (labeled "**Special Report gallery**") replaces the line-up of three Working Group reports in the **light** option with a series of Special Reports and an extra TFI Methodology Report. The exact number of special reports and their topics still have to be decided, but we present here the analysis for four Special Reports.

Each of these options can be complemented with IPCC Expert Meeting Reports, with a more targeted scope than Special or Methodology Reports. Examples of Expert Meetings and other options for additional IPCC products are discussed in Section 7.

#### 4. Time constraints for the options

**End point**: For each option, all products need to be released before the end of 2029 to allow for the election of the new bureau to take place by July 2030<sup>3</sup>. However, depending on the option selected, the cycle can also finish earlier.

**Length of reports production**: Earlier cycles have shown that the time between the call for experts for scoping meeting and final release of a single Working Group report requires 4 full years, while this time range is somewhat shorter for Special Reports, the Synthesis Report and Methodology Reports (3 to 3.5 years). A complete set of ARs and SYR cycle is not considered possible in less than about 4.5 years from scoping call to approvals, if conceived as in the Fifth Assessment Report (AR5) and AR6, ensuring governmental reviews have sufficient time to process and do not overlap. Timelines presented here are indicative, but comply with constraints on time windows between reviews of the Second Order Draft (SOD) and Final Governmental Draft (FGD), and avoid overlaps between governmental reviews. Timelines also account for the necessary steps before the start of the reports work (call for scoping expert nomination, scoping meeting, approval of outline, call for nomination and selection of authors).

**Phasing with the GST2**: Paragraph 184 of the <u>CMA.5 Decision on Matters relating to the global</u> <u>stocktake under the Paris Agreement</u><sup>4</sup>, on the Outcome of the first Global Stocktake "Invites the Intergovernmental Panel on Climate Change to consider how best to align its work with the second and subsequent global stocktakes and also invites the Intergovernmental Panel on Climate Change

<sup>&</sup>lt;sup>2</sup> To process the survey results effectively, the secretariat has established specific definitions based on the percentages of countries sharing similar views on a given issue. These definitions employ the following terminology: A few countries: 0% - 20%; Some countries: 21% - 40%; Many countries: 41% - 60%; Most countries: 61% - 80%; Nearly all countries: 81% - 99%; All countries: 100%.

<sup>&</sup>lt;sup>3</sup> A decision was adopted at IPCC-57 to constrain the length of the seventh assessment cycle to 5-7 years (Decision IPCC-LVII-6).

<sup>&</sup>lt;sup>4</sup> https://unfccc.int/documents/636584

to provide relevant and timely information for the next global stocktake". The availability of IPCC output for GST2 depends on the selection of reports. For one or more WG Assessment Reports to be available as inputs to GST2, calls for nominations for participation in the scoping meeting for these reports would have to take place early in 2024, and reports would not be delivered before early 2028 (based on past practice). Inputs to GST2 provided by one or more Special and Methodology Reports requires their scoping by early 2025 and will be available in 2027 based on past practice.

**Inclusion of underrepresented communities**: Time is necessary to address barriers for inclusion, identify individuals, networks and institutions that can or should be engaged, and the definition of an appropriate working mode to make this engagement effective. These processes are not expected to be feasible when time pressure is high and/or the assessment cycle is short. For a better preparation, this requires pre-scoping activities such as surveys or regional/sectoral meetings or webinars attended by scientists and practitioners. This can inspire the scope of the upcoming reports towards maximizing uptake in policy processes and minimize regional imbalances.

**Enhanced cross-WG integration**: Time is also needed for enhanced cross-Working Group integration of WG Assessment Reports, which requires, eg. an enhanced preparation for an integrated scoping meeting, the selection of appropriate report structures and author teams, and possibly the implementation of adequate approval procedures for sections that have been compiled by multiple Working Group author teams. For instance, joint scoping of the Working Group reports, with a common narrative to be considered for the Synthesis Report, needs to be prepared.

Finally, early report deliveries limit the literature and new scientific resources (eg. Scenario ensembles such as CMIP7) that can be included in the assessment, and therefore a trade-off between sufficient new material since the previous cycle and timeliness of product release applies.

These considerations enable an assessment of feasible timelines of the options presented in Section 3, based on past practice. Figure 4.1 shows an overview of the products (reports) included in the proposed options and the feasibility of their completion at indicated times.

| Option     | Product   | S1 2027 | S2 2027 | S1 2028 | S2 2028 | S1 2029 | S2 2029 | S1 2030 |
|------------|-----------|---------|---------|---------|---------|---------|---------|---------|
| light      | SR Cities |         |         |         |         |         |         |         |
| light      | MR SLCF   |         |         |         |         |         |         |         |
| light      | WGARs     |         |         |         |         |         |         |         |
| light      | SYR       |         |         |         |         |         |         |         |
| classical  | SR Cities |         |         |         |         |         |         |         |
| classical  | MR SLCF   |         |         |         |         |         |         |         |
| classical  | 2nd SR    |         |         |         |         |         |         |         |
| classical  | 2nd MR    |         |         |         |         |         |         |         |
| classical  | WGARs     |         |         |         |         |         |         |         |
| classical  | SYR       |         |         |         |         |         |         |         |
|            |           |         |         |         |         |         |         |         |
| SR Gallery | SR Cities |         |         |         |         |         |         |         |
| SR Gallery | MR SLCF   |         |         |         |         |         |         |         |
| SR Gallery | 2nd MR    |         |         |         |         |         |         |         |
| SR Gallery | 2nd SR    |         |         |         |         |         |         |         |
| SR Gallery | 3rd SR    |         |         |         |         |         |         |         |
| SR Gallery | 4th SR    |         |         |         |         |         |         |         |
| SR Gallery | SYR       |         |         |         |         |         |         |         |

Figure 4.1: Feasibility of release of the products listed in the AR7 structure options at indicated periods in time (semesters per year), based on past practice. SR = Special Report, MR = Methodology Report, WG ARs = Working Group Assessment Reports, SYR = Synthesis Report. GREY = not feasible based on past practice; YELLOW = risk of delay; GREEN = feasible.

# 5. Analysis of options

Each of the options identified above has been assessed against a set of criteria, which address topics such as the feasibility to integrate between Working Group Reports, the provision of inputs to the GST2, the time window for literature being assessed, and various other topics. We first present a summary score card for each of the options in Figure 5.1, and elaborate on these per option. We conclude with an analysis of the potential set-up of the SYR.

Figure 5.1: Compliance of options and their variants with articulated ambitions for the AR7 cycle.

| Criterion  | Light                | Classical             | Gallery               |
|--|----------------------|-----------------------|-----------------------|
| Allows strong integration across WG domains                                    | somewhat constrained | yes                   | yes                   |
| Input available to GST2  | SR Cities only       | SR Cities plus 2nd SR | SR Cities plus 2nd SR |
| Time window allows significant new literature                                  | somewhat constrained | yes                   | yes                   |
| Time window long enough to allow engagement<br>of underrepresented communities | no                   | yes                   | yes                   |
| Level of undue stress to authors and TSUs                                      | medium               | low                   | low                   |
| Number of topics to be covered   | somewhat constrained | large                 | somewhat constrained  |
| Comprehensive literature assessment  | somewhat constrained | yes                   | highly constrained    |
| Time distance to GST3  | long                 | medium                | medium                |

# **Option "light"**

For option **light**, time constraints make it impossible that all AR and SYR reports would be delivered by the end of 2027, and even early 2028 has risks for delays (based on past practice), and so will not be available as GST2 Technical Dialogue input. The full set of ARs could only be released by mid-2028 at earliest. To be available by the end of 2027, the timeline of ARs would need to be reduced by at least 6 months, which would require significant changes to past practice.

Impacts on the engagement of underrepresented communities, amount of literature included and extent of the overall topical scope are related to the constrained cycle time line, as elaborated in Section 4. Some topics may be covered in Expert Meeting Reports.

The cycle will conclude too early to provide a meaningful contribution to the 3<sup>rd</sup> GST.

#### **Option classical**

The option **classical** provides more information than option **light**. It has the potential to provide additional inputs to GST2 through a second Special Report, which can be produced by 2027. The WG ARs and SYR will be released after 2028. However, providing information at the end of the cycle, they can provide effective input to the 3<sup>rd</sup> GST and other global agreements around 2030 (e.g. on Sustainable Development Goals (SDGs) and the Sendai Framework).

The option gives sufficient time for including a large volume of literature and allows for one or more Expert Meetings. It also allows for the time needed to promote and implement inclusion of underrepresented groups and expertise domains.

# **Option Special Report Gallery**

The final option allows for coverage of a limited, but dedicated set of policy relevant topics. A smart combination of selected Special Report and Methodology Report topics would allow coverage of a substantial range of issues that are prominent in both scientific literature and policy definition and implementation. However, the focus on a limited set of concise subjects does restrict the extent of the scientific literature whose assessment will be taken up or updated.

Special Reports are an opportunity to generate a strong cross-Working Group collaboration and integration. It also may act as a pilot for a further adjustment of the structure of future IPCC assessments. It challenges the development of a high-level narrative for the entire cycle. It does put a strong claim on Technical Support Unit (TSU) efforts for cross-Working Group collaboration. Mutual adjustment of process, communication and content activities of the TSUs will be mandatory.

#### Seventh Cycle Synthesis Report

Nearly all Member countries responding to the survey preferred that a Synthesis Report be produced following three Working Group reports. Member countries may wish to take note of the willingness of the Chair and WG Co-Chairs to make an earlier start on any Synthesis Report and give consideration to an overall narrative that both reflects and guides individual Working Group reports. There is a firm collective intention to go beyond "cut and paste" and achieve a genuine synthesis with added value.

Past practice has been to scope the Synthesis Report once the Working Group reports are well progressed, typically once the First Order Drafts are available. An alternative proposition has been made that the Synthesis Report could be scoped prior to the scoping of the Working Group reports. The advantage would be the provision of a strong overall narrative for the AR7 with guidance for the individual Working Group reports so that relevant evidence is available for a more coherent Synthesis Report. The disadvantage is that the opportunity to take account of new science and policy developments that emerge during the Working Group assessments may be lost.

Delivering a provisional outline at the Working Group scoping meeting, and then following up with a scoping meeting for the Synthesis Report consistent with past practice, has been aspired to in previous cycles and could combine the best features of both options. Table 5.2 summarizes the options.

| Ор | otion                        | Advantages   | Disadvantages  | Comments   |
|----|------------------------------|--|--|--|
| 1) | Follows<br>Working<br>Groups | The scope can take<br>account of new science<br>and policy<br>developments assessed<br>in WG reports | Loses opportunity for an overall AR7 narrative   | Familiar model<br>used in<br>AR5/AR6                           |
| 2) | Provisional outline          | Combines the<br>advantages of options<br>1) and 3)   | If rigidly adhered to,risks lock-in through inertia.   | Was aspired to<br>in AR6 but not<br>followed through<br>fully. |
| 3) | Early<br>scoping             | Potential for strong AR7<br>narrative  | Early lock-in may miss opportunities<br>to take account of new science and<br>policy developments. Would delay<br>scoping of WG reports by<br>introducing an earlier scoping<br>meeting. | Untried  |

# 6. Options for an additional Special Report beyond the SR Cities and/or an additional Methodology Report

From the Synthesis of IPCC Member countries' views on the Products in the seventh assessment cycle, nearly all indicated they would consider the idea of any additional products [...] beyond the SR Cities<sup>5</sup>. Suggestions for additional products include proposals for Special Reports, Expert Meetings or Workshops, Methodology Reports, and Technical Papers. This section focuses on Special Report and Methodology Report topics.

## 6.1 Special Report topics

Table 6.1 shows the diversity of topics that have been proposed by the Member countries. Topics from the Synthesis of IPCC Member countries' Views are clustered, grouping similar topics, within 12 main clusters.

Table 6.1: Topics proposed by Member countries in response to the question: "Would you consider the idea of any additional products...." Count indicates the number of countries that suggested a particular topic.<sup>6</sup>

| Cluster                                   | Topic, as suggested by Member countries  | Count | Notes  |
|---|--|-------|--|
| Tipping points,<br>extremes (18<br>total) | Tipping points   | 12    | The 18 tipping point<br>proposals identified in<br>the synthesis of IPCC   |
|   | Tipping points, including mitigation strategies, responses, or risk management                       | 3     | Member countries' views<br>have been subdivided<br>into three categories<br>here.  |
|   | Tipping points, extremes, including adaptation, loss<br>and damage, or climate resilient development | 3     |  |
| Adaptation (11<br>total)                  | Adaptation, adaptation metrics   | 7     |  |
|   | Global Goal on Adaptation  | 6     | Two Member countries<br>proposed GGA and<br>adaptation metrics.<br>Those are counted in<br>both rows, but only once<br>in the total.                                 |
| Loss and<br>damage (10<br>total)          | Loss and damage  | 10    | One country proposed<br>"climate change and<br>Tipping Points aspect<br>and the associated loss<br>and damage". This<br>proposal is counted<br>under tipping points. |

<sup>&</sup>lt;sup>5</sup> One country's explanation highlights the importance of the SR on climate change and cities, but does not suggest a further report. Another country suggests a topic, but states: "[t]his should be delivered through the Working Group contributions as far as possible, rather than overloading the cycle with additional products."

<sup>&</sup>lt;sup>6</sup> In some cases, additional detail is provided in this table as compared to the Synthesis of IPCC Member countries' Views to facilitate clustering. These details are indicated in the Notes column of the table.

| Global<br>Stocktake,                  | Cross-WG SR focused on information needs of the global stocktake  | 5 |  |
|---------------------------------------|---|---|--|
| Paris<br>Agreement (11<br>total)      | Input to the global stocktake   | 4 | Note that this row was<br>not included in the<br>Synthesis of Member<br>Countries' Views |
|                                       | Updates with key information from the sixth<br>assessment cycle including on state of the<br>atmosphere, mitigation, adaptation with focus on<br>information relevant for the UNFCCC Long term<br>Global Goal and Temperature Goal and the Paris<br>Agreement temperature goal            | 1 |  |
|                                       | Achieving a step change in climate action to meet the Paris agreement   | 1 |  |
| Food, land,                           | Global food and water crisis, water cycle   | 3 |  |
| water and                             | Sustainable food supply   | 1 |  |
| biodiversity (10                      | Biodiversity  | 2 |  |
| total)                                | Nature-based solutions  | 2 |  |
|                                       | Dust, desertification   | 2 |  |
| Sustainable development,              | Sustainable development and climate change,<br>SDGs solutions, equity, fairness   | 6 |  |
| including equity<br>(7 total)         | Technical and socio-economic climate solutions<br>and achievement of related sustainable<br>development goals   | 1 |  |
| Health (4 total)                      | Non-communicable diseases / one health nexus  | 4 |  |
| Abatement and<br>removal (3<br>total) | Abatement and removal practices and technologies, including CDR   | 3 |  |
| Overshoot (2<br>total)                | Overshoot   | 2 |  |
| Geoengineering (2 total)              | Geoengineering  | 2 |  |
| Migration (2<br>total)                | Migration   | 2 |  |
| Other (10 total)                      | Africa; aviation; acceptability and human<br>behaviour; climate security; coastal zones;<br>achieving net zero; GHG emissions and<br>environmental impacts in the life cycle of energy<br>types; Political, ethical and cultural aspects of<br>climate action; scenarios; view from space |   |  |

# 6.2 Input from UNFCCC Documents

Given the invitation from the CMA.5 Decision on <u>Matters relating to the global stocktake under the</u> <u>Paris Agreement<sup>4</sup></u>, we showed the evaluation of the availability of information for GST2 in Section 4.

In addition, several recent UNFCCC decisions have called for information from the IPCC and/or the scientific community. Specifically, in decisions, the UNFCCC:

 "Encourages the scientific community to continue enhancing knowledge on and addressing knowledge gaps in adaptation and availability of information on climate change impacts, including for monitoring and progress, and to provide relevant and timely inputs to the second and subsequent global stocktakes,"

- "Invites the Intergovernmental Panel on Climate Change to consider how best to align its work with the second and subsequent global stocktakes and also invites the Intergovernmental Panel on Climate Change to provide relevant and timely information for the next global stocktake"<sup>4</sup> and
- "Invites the Intergovernmental Panel on Climate Change to consider updating its 1994 technical guidelines for assessing climate change impacts and adaptation as part of its seventh assessment cycle, as appropriate."<sup>7</sup>

## 6.3 Criteria for assessing Special Report proposals

The AR6 WG Co-Chairs identified criteria to assess Special Report topic proposals. These criteria are formulated slightly differently here:

- Does the topic require cross-WG integration to adequately reflect it?
- Were there gaps in the AR6 or substantial updates since AR6 on these topics?
- Are there sufficient new scientific findings that motivate a specific focus on these topics?
- Is the topic relevant for decision-making and generative of solutions?

#### 6.4 Grouping of proposed topics into Special Reports

The diversity of topics requires some grouping into "umbrella, cross-cutting topics" that would encompass many of them in a logical grouping. Some of the topics could also be included in single WG Ars. There are many ways to combine the proposed topics into Special Reports. The table below identifies four groupings.

Each of the listed groupings can "provide relevant and timely information for the next global stocktake", by adopting a cross-Working Group assessment of relevant topics from different perspectives. The first grouping addresses the major concerns of consequences of global warming, the second grouping takes the evolution of the global temperature as a perspective, and the third grouping puts consistent societal developments central. The fourth grouping considers the combined requests for updates on the technical guidance for adaptation and the Global Goal on Adaptation. Table 6.3 lists the included topics and a description of the linkages between the topics. Table 6.4 summarizes the compliance of the groupings with the criteria listed in Section 6.3.

<sup>&</sup>lt;sup>7</sup> Paragraph 21 of the <u>Decision 3/CMA.4 Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation</u> referred to in decision 7/CMA.3

Table 6.3: Potential groupings, the identified clusters of topics from Table 6.1, and a description of the links between the keywords

| Grouping  | Clusters from Table<br>6.1 that could be<br>incorporated (but not<br>exclusively)  | Links between keywords   | Notes  |
|---|--|--|--|
| Reversible and<br>irreversible<br>climate change<br>impacts and how<br>to avoid and<br>respond to tipping<br>points | Tipping points,<br>extremes; Loss and<br>Damage; (Global Goal<br>on) Adaptation; Risk<br>management,<br>Abatement and<br>Removal                   | Identifying irreversible<br>changes in physical,<br>biological and social<br>systems could include<br>extremes and physical<br>changes leading to tipping<br>points, associated risks,<br>loss and damages, climate<br>financing and potential<br>responses (including<br>adaptation and mitigation<br>technologies) | One country says:<br>"natural continuation/<br>extension and<br>update/follow-up to the<br>IPCC 1.5°C Report, and<br>the IPCC Special Report<br>on Managing the Risks<br>of Extreme Events and<br>Disasters to Advance<br>Climate Change<br>Adaptation (SREX)" |
| Exceeding a<br>Warming Level<br>and Returning   | Overshoot; Tipping<br>points,<br>extremes; Abatement<br>and Removal; (Global<br>Goal on) Adaptation;<br>Loss and Damage                            | Description could involve<br>detailing mitigation needed<br>and the role of different<br>technologies; the impacts,<br>loss and damage,<br>adaptation needed; and<br>risks from tipping points<br>depending on the level of<br>overshoot   | Depending on scoping<br>could also include<br>Adaptation; Loss and<br>Damage; Sustainable<br>development, including<br>equity; Migration, Health   |
| Climate Change<br>and SDGs  | Sustainable<br>development, including<br>equity; Food, land,<br>water, and biodiversity;<br>Health; Migration,<br>Climate Resilient<br>Development | The Sustainable<br>Development Goals include<br>goals related to climate<br>(SDG13), food (SDG2),<br>land and biodiversity<br>(SDG15), water (SDG6),<br>health (SDG3), and<br>reduced inequalities<br>(SDG10).   | Depending on scoping<br>could also include<br>additional topics from<br>Table 6.1. Addresses<br>integrated mitigation and<br>adaptation policy<br>pathways   |
| Adaptation  | Global Goal on<br>Adaptation; metrics and<br>indicators; Guidelines on<br>Adaptation; Extremes;<br>Loss and Damage; Risk<br>management             | Current trends in extremes<br>and risks do call for<br>effective adaptation, guided<br>by appropriate metrics and<br>indicators. Inputs to the<br>framework for the Global<br>Goal on Adaptation to<br>support its implementation <sup>8</sup>   | For options <b>light</b> and<br><b>classical</b> this theme is<br>covered within the WG2<br>domain; its coverage<br>can be complemented<br>by Expert Meeting<br>(section 7)  |

<sup>8</sup> CMA 5 Decision on Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation referred to in decision <u>7/CMA.3</u>, paragraph 38: "Requests the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice to initiate the consideration of matters relating to the global goal on adaptation at its sixtieth session (June 2024) taking into account ongoing processes under relevant agenda items and workstreams and drawing, at their discretion, on inputs from Parties, observers, the secretariat and relevant constituted bodies, with a view to providing recommendations for consideration and adoption by the CMA at the latest at its seventh session (November 2025), focusing on, inter alia:... (d) The opportunities for building on the best available science, including collaboration with the Intergovernmental Panel on Climate Change and other organizations, to provide information relevant to facilitating implementation of the framework for the global goal on adaptation, including in relation to the targets referred to in paragraphs 9–10 above; to developing indicators, metrics and methodologies; and to identifying adaptation capacity gaps, challenges and the needs of developing countries". The targets referred to in paragraphs 9 -10 are associated with the UAE Framework for the Global Climate Resilience developed to guide the Global Goal on Adaptation, which should be achieved by 2030.

| Grouping   | Requires cross-<br>WG  | Gaps or updates  | Sufficient<br>new<br>literature   | Relevance for<br>Decision making   |
|--|--|--|---|--|
| Reversible<br>and<br>irreversible<br>climate<br>change<br>impacts and<br>how to avoid<br>and respond<br>to tipping<br>points | Requires all three<br>WGs: "avoid"<br>relevant for WGIII,<br>"respond" relevant<br>for WGII & WGIII,<br>changes and<br>tipping points<br>relevant for WGI1<br>and WGII                                     | Tipping points remained<br>with large uncertainties<br>and assessed<br>separately by each WG;<br>climatic impact-drivers<br>(incl. extremes) of<br>ecosystems or social<br>tipping point not<br>identified. More detailed<br>information needed for<br>adaptation pathways,<br>financing and equity in<br>changes in risks.<br>Identified as gap in GST<br>TD synthesis. | Literature<br>growing, but<br>lack of<br>observational<br>evidence for<br>tipping<br>points;<br>substantial<br>(grey)<br>literature on<br>climate risk<br>management<br>and financing<br>is available | "how to avoid and<br>respond" will call<br>for solutions and<br>policy pathways  |
| Exceeding a<br>Warming<br>Level and<br>Returning   | Requires all three<br>WGs: emission<br>and temperature<br>scenarios,<br>description of<br>physical changes<br>and impacts,<br>vulnerability and<br>adaptation.   | Some information in<br>AR6, but each WG<br>approached differently.<br>Identified as gap in GST<br>TD synthesis.  | WGI: not yet,<br>but literature<br>growing;<br>depends also<br>on<br>ScenarioMIP;<br>WGII: yes;<br>WGIII: yes   | time-dependent<br>risk management;<br>economic<br>pathways;<br>financing   |
| Climate<br>Change and<br>SDGs  | Requires all three<br>WGs: Climate<br>Resilient<br>Development<br>pathways;<br>integration with<br>other<br>environmental<br>assessments;  | Several reports in the<br>AR6 cycle included<br>information on SDGs<br>and it was considered<br>as a cross-cutting<br>theme. More detailed<br>information needed for<br>assessment at regional<br>scale and contexts   | Both<br>academic<br>and grey<br>literature  | Particularly<br>development<br>pathways and<br>assessment of<br>trade-offs and<br>dilemmas   |
| Adaptation   | Can largely be<br>covered in WGII,<br>but contains links<br>to WGI for<br>description of<br>physical changes<br>and impacts, and<br>WGIII for links to<br>mitigation policies<br>and emissions<br>pathways | Responds to call to<br>SBSTA and SBI to<br>consider collaboration<br>with the IPCC in<br>updating metrics and<br>indicators for adaptation<br>and support the<br>implementation of a<br>framework for the Global<br>Goal on Adaptation   | Both<br>academic<br>and (context-<br>specific) grey<br>literature   | May support<br>UNFCCC and the<br>Global Goal on<br>Adaptation, as<br>well as<br>national/regional<br>adaptation plans<br>and their<br>implementation |

Table 6.4: Evaluation of the groupings using criteria listed in Section 6.3.

# 6.5 Additional TFI Products

Approximately half of all Member countries indicated that they would want an additional product from the TFI (see Table 6.5). Suggestions include both products and expert meetings. Of those Member countries proposing expert meetings, several indicated that these would be the first step towards guidelines.

# Table 6.5: Proposed topics for an additional TFI product

| - ·              |   |       |   |
|------------------|---|-------|---|
| Topic            | Details   | Count | Note  |
| CDR,<br>CCS/CCUS | Carbon Dioxide removal (CDR), Carbon capture and<br>Storage (CCS), Direct Air Carbon Capture and Storage<br>(DACCS), Bioenergy with Carbon Capture and Storage<br>(BECCS), Carbon Capture and Utilization (CCU),<br>Greenhouse gas removal (GGR) technologies, Blue carbon,<br>ocean emissions and captures | 19    | There were an<br>additional 7<br>requests for an<br>expert meeting<br>on this topic.                    |
| Land             | Land use and agriculture / peat used in horticulture  | 4     | There was an<br>additional<br>request for an<br>expert meeting<br>on land use.                          |
| Hydrogen         | Hydrogen as an indirect greenhouse gas; Guidance for<br>reporting of storage, transfer, use, import and export of<br>hydrogen   | 2     | There was an<br>additional<br>request for an<br>expert meeting<br>on fugitive<br>hydrogen<br>emissions. |
| Other            | Atmospheric observations and greenhouse gas flux<br>measurements; consolidation of the guidelines; coastal<br>wetlands; refinement to the 2006 and 2019 guidelines  | 6     |   |

# 7. Expert meetings and other IPCC reports

# 7.1 Options for Expert meetings

One of the insights from the AR6 lessons learned document (IPCC-LVII/INF. 12), was that the intensity of the cycle had reduced the number of Expert Meetings convened by Working Groups compared to previous cycles. The lessons learned document proposed that "The greater use of Expert Meetings and Workshops to open up emerging topics could be considered. Expert Meetings and Workshops planned from the start of the cycle could prepare guidance for authors and help coordinate the assessment process."

There has been no formal discussion of possible Expert Meetings or Workshops by the Bureau. The following have been agreed earlier by the Panel. As long as the number of major products in the Seventh Cycle is not excessive, it will be possible to take forward a number of these options.

#### Expert Meetings Agreed by the Panel

- *Gender, inclusivity and diversity.* At the 57<sup>th</sup> Session of the IPCC (IPCC-57), the Panel agreed an Expert Meeting on this topic with a budget for 20 Trust Fund journeys, i.e. a 40-person meeting. This would be taken forward by the Gender Action Team.
- Science of communicating science. This was originally budgeted to take place in the year 2018 at the 43<sup>rd</sup> Session if the IPCC (IPCC-43) in April 2016. It has never been taken forward but continues to be budgeted for. The Chair would prefer to orientate this towards communication with policymakers and address, for example, the challenge of shorter reports and SPMs consistently raised by Member countries.
- TFI Expert Meetings. The most recent budget (IPCC-57) contained contingencies for TFI Expert Meetings in 2023 and 2024. This could address the issue of reconciling the definition of anthropogenic emissions and removals applied in the NGHGIs<sup>9</sup> and by modelers used in WGI and WGIII assessments, while Expert Meetings in 2025/2026 could open up issues

<sup>&</sup>lt;sup>9</sup> NGHGNI = National Greenhouse Gas Inventory

suggested by the recent survey of Member countries on possible products in the AR7, to determine for which issues there is sufficient information available to produce a Methodology Report.

**Other Expert Meetings can be organized**, in particular to address specific topics suggested by Member countries that can well be addressed in an Expert Meeting Report and/or could not be addressed in Special Reports due to workload constraints. Some ideas could be, for instance, on the needs of information exchange between WGs and/or cross-WG topics, on reconciling land use estimates, on the enhanced use of Digital Products, and on Adaptation Indicators, Metrics and Methodologies for the Global Goals on Adaptation.

# 7.2 Additional IPCC outputs

Additional products could also allow to provide more information while keeping the workload for authors, TSUs and reviewers reasonable. Digital products, Technical Papers, and newly developed products, such as for instance briefing notes focusing on a specific policy relevant issue, can provide meaningful intermediate output supporting outreach activities or decision making processes.

Procedures to compile Technical Papers can be modified in order to enhance their authoritative character (for instance by allowing to draw on more and newer material than earlier assessed in IPCC reports). Briefing notes, consisting of a concise report of 10-20 pages, with authors drawn from author teams and Bureau members, may be produced without a formal Panel approval (similar to Expert Meetings) and target a very specific policy relevant issue.

However, for modifying existing procedures or introducing new ones a formal procedure needs to be followed involving Governance consultation and Panel approval. This cannot be accomplished prior to deciding on the outline of the AR7 cycle, so can only be considered for cycles of the Eighth Assessment Report (AR8) and later, when included in the agenda of Panel Sessions planned during the AR7 cycle.

#### 8. Expected outcome

The IPCC Panel is expected to take decisions on:

- The structure and timeline of the seventh assessment cycle: a preference for one of the options displayed in Section 4 of this document, or a feasible combination of elements of these options.
- If another Special Report in addition to the SR Cities is requested: a mandate to scope an additional Special Report which can address multiple topics proposed by Member countries.
- If another Methodology Report in addition to the SCLF is requested: a mandate to scope this additional Methodology Report.