

Guidance on the key themes and expected outcomes

IPCC Expert Meeting on Short-Lived Climate Forcers
Geneva, Switzerland,
28 – 31 May 2018

Coverage of SLCF species

Following **species** will be covered in the discussion at Themes 1 and 2. Some of them may be prioritized for further discussion at Theme 3.

Aerosols

- Black Carbon
- Organic Carbon
- PM_{2.5}

Precursors (ozone precursors and aerosol precursors)

- NO_x
- CO
- NMVOC (including BVOC)
- SO₂
- NH₃

- **Theme 1: Assessment of existing methodological framework, observation of atmospheric concentrations and methods to estimate emissions of SLCF**
- **Theme 2: Assessment of climate impacts of SLCF emissions**
- **Theme 3: Suitability for IPCC to develop inventory methodology for SLCF**

Theme 1: Assessment of existing methodological framework, observation of atmospheric concentrations and methods to estimate emissions of SLCF

Key questions:

How accurately can we monitor SLCF sources and emission trends, and link them to atmospheric concentrations?

On what SLCF species do emission quantification methodologies already exist, and at what scale (regional, national, sub-national, etc)?

Are they accessible, comprehensive, globally applicable, up-to-date?

Are new emission measurements by sources and species available?

What are the most significant knowledge gaps and uncertainties?

Is it necessary to develop new/improved guidance?

Is the current knowledge on emissions mature enough to support the development of new/improved guidance?

What new knowledge is expected to emerge in the coming years?

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Theme 2: Assessment of climate impacts of SLCF emissions

Key questions:

What is the current scientific understanding of global radiative forcing (via direct and indirect effects)?

What is the current scientific understanding of the local/regional climate effects of SLCFs?

What emission metrics are available for SLCF?

What are the most significant knowledge gaps and uncertainties?

What new knowledge is expected to emerge in the coming years?

Theme 3: Suitability for IPCC to develop inventory methodology for SLCF

Key questions:

Which species of SLCF (and which sources) should be prioritised in the future work to develop inventory methodologies? [Building on findings from themes 1 and 2]

Is the IPCC the right organisation to develop the inventory methodologies?

How will these methodologies on SLCF relate to the existing inventory methodologies on GHG (What kind of elements in the existing GHG inventory methodology can or cannot be applied to SLCF?)

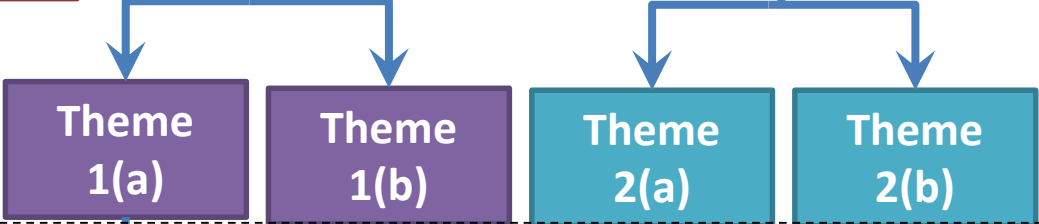
Scene-setting plenary

Day 1



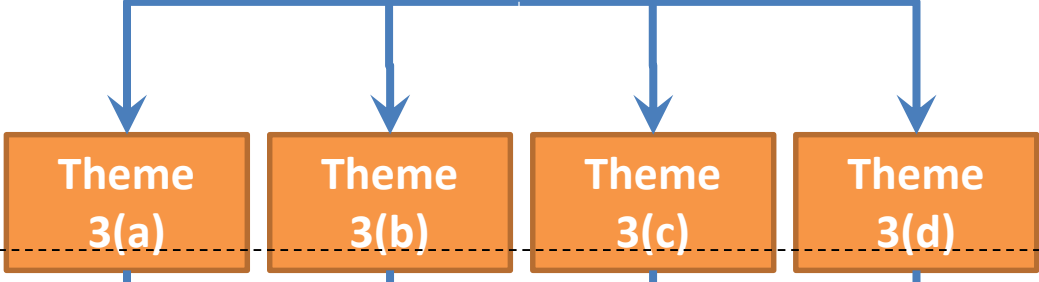
Plenary

Day 2



Plenary


Day 3



Day 4


Closing plenary

BOG participants will be shuffled so that both TFI experts and WGI experts are in each group.

	Theme 1	Theme 2	Theme 3
BOG Session 1 (Day 1) [160 minutes]	<ul style="list-style-type: none"> How accurately can we monitor SLCF sources and emission trends, and link them to atmospheric concentrations? On what SLCF species do emission quantification methodologies already exist, and at what scale? Are they accessible, comprehensive, globally applicable, up-to-date? Are new emission measurements by sources and species available? 	<ul style="list-style-type: none"> What is the current scientific understanding of global radiative forcing (via direct and indirect effects)? What emission metrics are available for SLCF? 	
BOG Session 2 (Day 2) [180 minutes]	<ul style="list-style-type: none"> What are the most significant knowledge gaps and uncertainties? Is it necessary to develop new/improved guidance? Is the current knowledge on emissions mature enough to support the development of new/improved guidance? What new knowledge is expected to emerge in the coming years? 	<ul style="list-style-type: none"> What is the current scientific understanding of the local/regional climate effects of SLCFs? What are the most significant knowledge gaps and uncertainties? What new knowledge is expected to emerge in the coming years? 	
Outcome of BOGs above	<p>Matrix (Sources x SLCF species) summarizing the conclusions on the key questions above.</p> <p>Provisional conclusions on the necessity or priority of development of inventory for each of SLCF species, based on the conclusions on the key questions above.</p>	<p>Matrix (by SLCF species) summarizing the conclusions on the key questions above.</p> <p>Provisional conclusions on the necessity or priority of development of inventory for each of SLCF species, based on the conclusions on the key questions above.</p>	
BOG Session 3 (Day 3) [230 minutes]			<ul style="list-style-type: none"> Which species of SLCF (and sources) should be prioritised in the future to develop inventory methodologies? Is the IPCC the right organisation to develop the inventory methodologies? How will these methodologies on SLCF relate to the existing inventory methodologies on GHG?

Expected outcome: A meeting report

- **Maximum 50 pages**
- **~2-3 pages for summary and recommendations,**
- **~15 pages for the main part,**
- **~30 pages for the programme, list of participants and the compilation of responses to questions.**



 INTERGOVERNMENTAL PANEL ON climate change

**IPCC Expert Meeting on
Mitigation, Sustainability and
Climate Stabilization Scenarios**

Addis Ababa, Ethiopia
 26-28 April 2017

Meeting Report

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This meeting was agreed as part of the Intergovernmental Panel on Climate Change (IPCC) workplan for the Sixth Assessment Cycle. This meeting report has been prepared for consideration by the IPCC. It has not been subjected to formal IPCC review processes. No Working Group of Panel endorsement or approval of these proceedings or any recommendations or conclusions contained herein is intended or should be implied.

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Summary and Recommendations

The Expert Meeting was convened to meet two needs. The first is the need to assess the linkages between high-level climate stabilization goals and scenarios, and the practical steps needed at the short- and medium-term to make the realization of these goals possible. The second is the need to anchor climate responses firmly in the context of development needs.

To address these challenges, the Expert Meeting had several objectives:

- To open the “black box” and explain what insights model-based scenarios can provide and their limitations,
- To unpack the “feasibility” of scenarios across different dimensions,
- To link modelling across scales and disciplines,
- To use the top-down and the bottom-up by developing indicators that are explicit or implied in model reporting,
- To identify approaches for managing scenario perspectives in the AR5 process, and
- To develop recommendations for communicating scenarios effectively to policymakers.

The Expert Meeting was convened primarily with the assessment of scenarios and models within the Working Group (WG) II contribution to the IPCC Sixth Assessment Report (AR6), and linkages with other strands of literature relevant to climate change mitigation. However, drawing guidance from the Panel, the Meeting also engaged representatives of WG I and II, covering respectively the physical science of climate change, and impacts, adaptation and vulnerability.

The Expert Meeting produced recommendations directed at three audiences. The first was the AR6 Scoping Meeting, which took place in Addis Ababa directly after the Expert Meeting from 1 May 2017 until 5 May 2017. To ensure that these recommendations were considered during the scoping process, the Co-Chairs of Working Group II (WG II) presented the recommendations to participants on the first day.

The second set of recommendations was directed at the IPCC scientific leadership and WG II authors. These recommendations focus on the assessment of scenarios, their communication, and their interface with other forms of scientific investigation.

The third and final set of recommendations was directed at the scenario/modelling community and other scientific communities. These recommendations include a wide range of research that could enhance the contribution to the assessment of climate mitigation options, in the context of sustainable development, and communicate effectively with policymakers.

The meeting used presentations, plenary debates and focused breakout group (BAG) discussions to test ideas and develop recommendations. The recommendations below start with a number of cross-cutting suggestions before describing the detailed recommendations that were developed and discussed in the BAGs.

Key Recommendations for the AR6 Scoping Meeting

- Establish a cross Working Group (WG) on scenarios within the AR6 scoping meeting.
- Suggest a separate forward-looking chapter on the medium-term (up to 2030-2040) and the long-term (2050).
- Propose a chapter structure that allows mitigation responses to be connected across different scales (e.g. international, national, cities).
- Do not feel bound by the AR5 structure, but build about identifying cross-cutting topics and possible chapter structures.

Key Recommendations for the IPCC

- Establish a cross Working Group contact group for scenarios during the AR6 cycle
 - o Consider establishing authority roles during the AR6 that cut across chapters and Working Groups.
 - o Consider writing a scenario chapter that is common to all three Working Groups.
- Document the treatment of scenarios across all three IPCC in a single location.
- Hold cross Working Group discussions on best practices for model intercomparison projects (MIP).
- Hold cross Working Group discussions on best practices for presentation and communication of scenario output.
- Invite authors with a wide range of expertise, and authors that can enhance integration across Working Groups.
- Start discussions of the Synthesis Report early to promote coherence across the WGs, and to identify the accompanying scenario requirements.
- Determine how the IPCC will use the Shared Socio-Economic Pathways (SSPs).
- Establish a clearer distinction between assessment and research, and communicate this distinction to the authors.
- Establish a cross-chapter contact group within WG II on scenarios and modelling.

Key Recommendations for research communities

- Enhance communication between different scenario modelling groups.
- Establish a scenario database that includes relevant scenarios from a variety of sources.
- Find a common language in which different scenario communities can understand each other.
- Enhance transparency by being more explicit about assumptions, trade-offs, and uncertainties in scenarios.
- Identify gaps in knowledge in integrated assessment models.
- Develop the concept of “feasibility”.
- Link WGs with more case studies that represent infrastructure more explicitly.
- Create different tools and models are used for the purpose they are most appropriate for.
- Broaden the range of people including social scientists, business and other stakeholders involved in the design of scenarios that feed into the scenarios.
- Build-up research communities could enhance efforts to self-organize, and build capacity on modelling to under-represented regions.

Expected outcome (continued)

Some outcome for **WGI** (in time for LAM1 end of June):

- comments on the outline of Chapter 6 and on other parts of the report relevant to SLCFs
 - Ch2. Changing states of climate system (Natural and anthropogenic forcing; radiative forcing)
 - Ch3. Human influence in climate system (attribution)
 - Ch4 Future global climate (projection)
 - **Ch6. Short lived climate forcers**
 - Ch8. Water cycle (cloud-aerosol process)
 - Ch10. Link global to regional climate change (regional drivers, urban climate changes)
- State of knowledge about the SLCF effects

Thank you!