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THE IPCC FIFTH ASSESSMENT REPORT (AR5)

**Scope, Content and Process for the Preparation of the Synthesis Report (SYR)
of the IPCC Fifth Assessment Report (AR5)**

(Submitted by the IPCC Secretariat)

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Background

At its 28th Session, Budapest, 9-11 April 2008 the Panel agreed to do a Synthesis Report and at its 30th Session, Antalya, 21-23 April 2009 agreed that the scoping of the AR5 SYR should start with the first scoping meeting. In line with that decision a broad outline for the AR5 Synthesis Report was developed at the AR5 Scoping Meeting held in Venice, 13-17 July 2009. A dedicated scoping meeting for the Synthesis Report was held in Liege, Belgium from 24-27 August 2010, from which the following scoping document was developed.

I. SCOPE

As defined in the IPCC procedures, the SYR would “synthesize and integrate material contained within IPCC Assessment Reports and Special Reports”. Its scope would include material contained in the three Working Group contributions to the AR5, and it would draw on information contained in other IPCC Reports as required. It would be written in a “non-technical style suitable for policymakers and address a broad range of policy-relevant, but policy-neutral questions”. The SYR should be largely self-contained, but guide readers to the underlying material if they wish to look further.

The primary audience for the SYR would be policymakers, in particular from governments, advisors to policymakers, and experts. However, it is recognized that others will also make use of the report.

The proposed SYR would consist of two parts:

1. Summary for Policymakers (SPM): up to 10 pages of text
2. Longer Report: up to 50 pages of text including maps and figures

The SYR publication would also contain annexes such as a glossary, list of authors, reviewers, Review Editors, and an index.

The AR5 SYR would be self contained and published as a stand-alone publication in the six official UN languages. It would be accompanied by a DVD, which contains the SYR (SPM and longer report), the contributions of the three IPCC Working Groups to the AR5 in English, and the summaries of these reports (SPM and Technical Summary) in all official UN languages. Automatic hyperlinks to references from the SYR (and its SPM) to the longer Working Group reports will be available on the DVD/off-line version and the web-based version of the reports. There will also be full traceability in the referencing for the AR5 in the hard copies of all the reports, including the SPM of the SYR.

II. CONTENT

The following structure for the AR5 SYR is proposed.

It contains agreed topic headings and a list of bullets that are intended as guidance to the authors. Cross Cutting Themes and Methodologies (CCT and CCM) need to be given careful attention throughout the report, and particular attention must be paid to specific issues requiring consistent treatment in the SYR.

FOREWORD

The Chairman's foreword will describe the history of the report, its structure, and the relationship to the other AR5 reports, how detailed information on topics and regions can be accessed and how it has been cross-referenced. It will describe who the intended users are. It will also state how the cross cutting themes and methodologies used in the AR5 are addressed in the SYR.

INTRODUCTION

- Rationale
- Framing the climate and human systems
- Major challenges
- Treatment of confidence, risk and uncertainty

TOPIC 1 – Observed Changes and their Causes

The emphasis in this topic is on empirical evidence, i.e., on documented events and developments that happened in the distant and, most importantly, in the recent past. In particular, the observations and inferences that help to quantify the already discernible human contribution to global warming and its impacts are summarized. Moreover, the topic integrates information and insights about how human drivers of climatic changes have developed over time, distinguishing between (i) direct interferences like greenhouse gas emissions; (ii) economic activities generating those perturbations; and (iii) society-wide developments and transformations that provided the underlying historical and systemic frameworks.

- Pre-instrumental environmental changes, their effects and their causes
- Recent observed changes in the climate system
- Observed effects and impacts
- Past and recent drivers of climate change
- Attribution of climate changes, impacts, effects and drivers
- Human activities affecting climate drivers
- Historical transformational dynamics of societies and lessons to be learned
- Observed vulnerability to shifts in extreme-events and other climatic changes

TOPIC 2 - Future Changes (in the Short and Long-term)

The purpose of this topic is to provide a “bird's eye” view of future climate change, adaptation and impacts, and mitigation, under various scenarios. The recommended approach to accomplishing this goal is to illustrate possible futures as described in the new scenarios, based on the “Representative Concentration Pathways” (RCPs) and other scenarios used in the Fifth Assessment Report (AR5). Each possible future would be characterized by climate, impacts, adaptation and mitigation, presented in physical, economic and other societally relevant terms.

Drivers of future climate change

- Description of RCPs and scenarios used in AR5 (including comparison with SRES and previous Assessment Reports)
- Anthropogenic (primarily) and physical factors that lead to a change in climate (e.g., emissions, land-use change, population, etc.)

Basis of projections

- Earth system, impacts, and economic models, and their validity
- Uncertainty and confidence
- Characterizing risk and reasons for concern

Range of future changes

- Characterizing climate futures
- Set of changes and impacts on systems, sectors, and regions
 - Mean, variability, extremes
 - Committed climate change, abrupt changes, irreversibility
 - High impact / low probability events
 - Direct and aggregate costs
 - Interaction of adaptation and mitigation measures with impacts, including avoided damages
 - Unintended and cumulative impacts of these measures

TOPIC 3 - Responses

This topic addresses adaptation and mitigation by presenting information on a wide range of specific response options, including their interactions. It addresses outcomes and consequences of these options over near-, medium-, and long-term time scales. It will also provide a discussion of approaches to evaluate and assess these different options including equity considerations.

Response options

- Observed responses
 - Drivers, outcomes and implications
- Adaptation and mitigation responses (including regional and sectoral perspectives):
 - Options, including technologies, and related policies and measures
 - Capacities and their determinants
 - Costs and benefits, including co-benefits and trade-offs
 - Obstacles, limits and limitations, including inertia
 - Cross-cutting issues and aggregate responses
- Interactions between adaptation, mitigation and development, including equity and ethics.

Enabling factors and addressing barriers, including regional considerations

- International and regional collaboration
- Governance and institutional arrangements
- Investment, finance and financial instruments
- Changes in lifestyles and behavioural patterns
- Innovation, and technology research, development, deployment, diffusion and transfer
- Information, monitoring and evaluation to support decision-making

TOPIC 4 - Transformations and Changes in Systems

This topic takes a systems perspective in addressing climate change response strategies and policies to be applied at local, national, regional, and global scales. Transformative changes are occurring in the world, but with various emphases towards sustainable development and/or climate stabilisation. Building on AR5 scenarios described in Topic 2 and mitigation and adaptation measures and options from Topic 3, the focus here is on response strategies and diverse portfolios of policies and options across different stabilisation pathways.

Overview of transformation pathways

- Interpreting scenarios and their pathways including regional and sectoral aspects across different stabilization levels (characteristics and timing)
- Mitigation and adaptation strategies - characteristics, risks and interactions
- Systems, costs, investment strategies, and trade flows
- Avoided damages under adaptation and mitigation
- Benefits and co-benefits, tradeoffs and spillovers (mitigation, adaptation and sustainable development)
- Societal changes

Strategic responses at all levels: common and specific systemic changes across the pathways

- Technology change (RD&D, technology transfer, role of private sector)
- Societal changes
- Policy, governance and institutional (including international) arrangements
- Investment and finance
- Capacity building : mechanisms and strategies
- Equity and ethical dimensions (including diversity of values and priorities)
- Co-benefits, tradeoffs, obstacles and barriers

TOPIC 5 - Science supporting Article 2 of the UNFCCC ¹

This topic deals with issues relating to Article 2 of the UNFCCC, drawing together the policy relevant science from each of the Working Group reports that support consideration of this issue. Relationships found between risks and key vulnerabilities for different levels of warming and CO₂ concentration, different levels, timing and pathways for stabilization of greenhouse gas concentrations, and different cumulative emissions and budgets will be described. Information relating to specific sectors cited in Article 2 (ecosystems, food production and sustainable economic development) and their relationship to different stabilization levels and the timing for achieving these will be outlined. Regional information relating to Article 2 will be described.

Risks and Key Vulnerabilities

- Risks and Key Vulnerabilities identified in AR5
- Relationship to levels of warming and CO₂ concentration
- Relationship to level, timing and pathways for stabilization of greenhouse gas concentrations
- Relationship to cumulative emissions and budgets

Level and timing of stabilization of greenhouse gas concentrations

- Timeframes and pathways for stabilization

Ecosystems, Food Production and Sustainable Economic Development

- Allowing ecosystems to adapt naturally
- Ensuring food production is not threatened
- Enabling economic development to proceed in a sustainable manner

Regional information relating to Article 2

ANNEXES

- User guide and access to more detailed information
- Glossary
- Acronyms, chemical symbols; scientific units; country groupings
- List of Authors
- List of Reviewers and Review Editors
- Index
- List of all publications of the IPCC

¹ The 31st Session of the Panel identified issues related to Article 2 of the UNFCCC as a Cross Cutting Theme.

III. PROCESS

Writing Team

The IPCC Chair would lead the Core Writing Team (CWT). In accordance with the IPCC Procedures the members of the CWT would be nominated by the IPCC Chair in consultation with the Co-Chairs of the Working Groups. The composition of the writing team would be agreed by the Bureau. The CWT should include the Co-Chairs of the three Working Groups, and 6-8 members of the author teams from each Working Group report. The members of the CWT should be chosen to ensure that the CWT has the scientific and technical expertise needed to carry out its task, noting the need to aim for a range of views and geographical representation.

As was the case during the writing of previous Synthesis Reports it is suggested that the Core Writing Team be assisted by an extended writing team (EWT). It should include 1-2 members of the author team from each chapter of the working group contributions to the AR5. The function of the EWT would be comparable to that of contributing authors. Review Editors would assist the writing team, carrying out tasks as described in IPCC procedures.

Time schedule

In an attempt to enhance integration and synthesis without interfering with the assessment of the Working Groups an early establishment of the SYR CWT is suggested along with an increased number of meetings of the CWT.

- The members of the core writing team (CWT) would be chosen in late 2011, after the 1st Lead Authors meetings of the Working Groups have been held and after the Zero-order drafts have been prepared.
- A first CWT meeting (CWT-1) would be held in early 2012 (March, tbc, after the second Lead Authors meetings of all three Working Groups) to agree on working arrangements, assignment of tasks (stock taking, input to expert review for WG reports, etc.) and identify the extended writing team (EWT).
- At CWT-2 in mid 2012 (when all 1st-order drafts of the WG Reports are available) the writing of the Zero-order draft SYR would start. A progress report for the next Session of the Panel (scheduled Sept/Oct 2012 tbd) will be prepared.
- Between January and March 2013 the Zero-order draft of the SYR will be reviewed by the authors of the AR5 Working Group Reports.
- CWT-3 would meet in mid 2013 to consider the comments on the Zero-order draft and start writing the draft SYR based on the 2nd-order drafts of the Working Group Reports, including development of integrated graphics, figures and tables.
- CWT-4 (scheduled for January 2014 after the final drafts of all Working Group contributions are available) will finalize the draft SYR for government/expert review.
- In February/March 2014 the first order draft of the SYR (SPM and longer report) will be sent for an 8 weeks simultaneous expert/government review. Contrary to earlier practice this has to happen before approval/acceptance of the Reports of the Working Groups due to time constraints between WG III and SYR approval.
- CWT-5 (scheduled in April/May 2014) would consider the review comments and prepare the final draft SYR.
- The final draft would be submitted to governments and participating organizations at least 8 weeks before the Session of the Panel that adopts/approves the AR5 SYR.
- Adoption and approval of the SYR and its SPM is foreseen in September 2014 to allow delivery of an unedited version of the AR5 SYR to the next UNFCCC COP which is scheduled to take place November – December 2014.
- Printing, Translation and Distribution of the AR5 by end of 2014/early 2015.

Management of the SYR

The IPCC Chair will chair the writing team and provide overall guidance to the development of the SYR. The organization of writing team meetings, the review and publication process will be managed and coordinated by the IPCC Secretariat.

The preparation of the AR5 SYR will require considerable technical support, including for management of the writing and review process, editing and layout of the report. Therefore it will be necessary to establish a TSU for the SYR. The SYR TSU would be co-located with the Office of the IPCC Chair and work in close collaboration with the IPCC Secretariat.

Working Group TSUs will however be asked to provide support to the development of the SYR in particular as far as their Working Group contributions are concerned, e.g. facilitating file and data transfer for adjusting graphics, ensuring consistency with final WG contributions and development of index, search facility and glossary.

Based on previous experience the following expertise and staff support would be required:

- 1 full-time professional staff member for four years with experience in climate change science (IPCC Trust Fund (TF))
- 1 junior professional officer for four years (in-kind contribution from the Chair's organisation)
- 1 administrative assistant with expertise in electronic publishing
- IT expertise for indexing, website and DVD development, including intelligent search facility (TF/ IPCC-Sec)
- Graphics work (TF)
- Layout, translation and printing in 6 UN languages (TF/ IPCC-Sec)

Staff of the IPCC Secretariat will arrange writing team meetings and the plenary Session for adopting/accepting the SYR and provide administrative support to the process. Hence, based on the assumption that staff support as indicated above can be mobilized from the IPCC Secretariat, TERI (Office of the IPCC Chair) or WMO/UNEP, the cost to the IPCC TF of Staff, IT inputs, graphics, layout, translation and printing of the SYR in 6 UN languages is estimated at SFR 1,4 Million.