

**THIRTY-SECOND SESSION OF THE IPCC  
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**OTHER PROGRESS REPORTS**

**Task Group on Data and Scenario Support for Impact  
and Climate Analysis (TGICA)**

(Submitted by Richard H. Moss and Jose Marengo-Orsini, Co-Chairs of the TGICA)

## PROGRESS REPORT

### Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA)

(Submitted by Richard H. Moss and Jose Marengo-Orsini, Co-Chairs of the TGICA)

The first meeting of the reappointed TGICA-AR5 was held at the National Center for Atmosphere Research in Boulder, Colorado, from 4-6 August 2010. The membership list of TGICA-AR5 is included as Appendix 1 of this report. Members able to participate in this meeting were: Daniel Bouille, Timothy Carter, Suraje Dessai, Seita Emori, Bruce Hewitson, Gregory Insarov, Kejun Jiang, Volker Krey, Won- Tae Kwon, Jose Marengo, Richard Moss, Andy Reisinger, Fredrick Semazzi, Claudia Tebaldi, Rachel Warren, Arthur Webb, Fernanda Zermoglio. **Ex-Officio** members able to participate were: Robert Chen (Data Distribution Center, Center for International Earth Science Information Network (DDC CIESIN)), Kristie Ebi (WG2 TSU), Michael Lautenschlager (DDC Deutsches Klimarechenzentrum (DKRZ)), Bryan Lawrence, for Martin Juckes (DDC British Atmospheric Data Centre (BADC)), Xianfu Lu (UNFCCC), Michael Mastrandrea (WG2 TSU), Patrick Matschoss (WG3 TSU), Pauline Midgley (WG1 TSU), and Karl Taylor (Program for Climate Model Diagnosis and Intercomparison (PCMDI)).

The agenda is included as Appendix 2. A major portion of the meeting was devoted to familiarizing new members with the Data Distribution Center (DDC) and TGICA, and addressing challenges, opportunities, and potential TGICA activities for the AR5 cycle.

This report highlights key conclusions of the group related to operation of DDC, review and preparation of guidelines, developments in the new scenario process, and initiatives to promote capacity building.

#### Data Distribution Center

Discussion of activities of the DDC to support the AR5 began with consideration of the status of the Coupled Model Intercomparison Project Phase 5 (CMIP5), which is established by modeling groups to facilitate evaluation of climate models. CMIP5 will include more experiments using new models with higher resolution and with representation of the carbon cycle, and providing a broader set of model output. Three categories of projections are included: long-term projections (century or longer); near-term projections (decadal predictions based on current ocean state, etc.); atmosphere-only projections. For model output, daily output will be extended to more variables for all simulations and all times. Three-hourly information also will be provided for core variables. Output will be used for dynamical downscaling through the Coordinated Regional Climate Downscaling Experiment (CORDEX) project, which covers the majority of land regions for 1950-2100 at 50km or finer resolution, with similar data structure and documentation to CMIP5. CORDEX output will be made available to the vulnerability, impacts, and adaptation (VIA) community, with initial focus on Africa/Middle East. CORDEX products will also be used for statistical downscaling. CMIP5 model runs will be assigned digital object identifiers (DOIs) that can be cited. The IPCC DDC has been involved in the effort to collect metadata describing the models and the experiments themselves (which will be available in searchable databases through Common Metadata for Climate Modelling Digital Repositories (METAFOR) and other projects), the DOI assignment procedure, and raising awareness of importance of a versioning system for data.

Discussion of the role of the DDC focused on the special attributes of data provided through the DDC, including the provision of guidance material, the provision of datasets used in IPCC reports, and the role of the DDC as institutional memory for IPCC (data persistence). TGICA formed a subgroup to review the DDC to identify updates needed to support the AR5 and consider other issues such as criteria for deciding what data should be hosted on the DDC versus held elsewhere but linked to the DDC. Other future activities will focus on deciding how to represent data from CORDEX, exploration of cooperation with other data centers to establish good practices for facilitation of data use, identification of data products and tools for use in low capacity settings, and exploration of links to data on climate extremes.

## **Guidelines**

TGICA reviewed activities related to the development of technical guidelines that are distributed through the DDC, including existing guidelines and their history, guidelines in process of development, and candidate themes for additional guidelines. General discussion covered whether the focus should be on new work or evaluating and updating existing guidance, methods for tracking the use of documents and feedback from users, and methods for review of guidelines. It was suggested that material assessed in IPCC reports can be a basis for revisions or development of guidelines. Members concluded that existing guidelines are extensive and that there is an opportunity to produce shorter guidelines or “fact sheets.” A subgroup on the process for preparing guidelines was established that will focus on review procedures, maintaining consistency with published IPCC reports, and development of more streamlined guidance material. TGICA also reviewed draft guidelines on sea level rise scenarios and research on observed impacts of climate change and identified next steps in preparing these materials for release.

## **Capacity building**

TGICA does not develop training programs but contributes to training and capacity building activities in developing and EIT countries by working with organizations that have training as their core mandate. TGICA may convene expert meetings on relevant topics and will apply its finite resources to facilitate community initiatives and activities. Building “interpretive capacity,” with a focus on regional integration and understanding, was identified as a key need. TGICA members discussed a series of workshops for Africa, organized out of CORDEX and focused on technical skill development, analysis of output for VIA, and writing skill development related to application of regional projections. TGICA decided to co-sponsor this activity, and to explore catalyzing similar activities in other regions. In addition, a subgroup was formed to identify opportunities for building capacity in application of scenarios and projections in examination of adaptation and other response options.

## **New scenarios**

Recognizing that the process for preparing and applying new scenarios is a research community-governed process and the IPCC’s role is limited by decision of the Panel to catalyzing scenario development, the TGICA reviewed development and plans in each of the three participating research communities: climate modeling, (CM), vulnerability, impacts, and adaptation (VIA), and integrated assessment modeling (IAM). TGICA members decided that a webpage should be created on the DDC that will link to information on ongoing activities in each community and provide an overview of the new process for interested parties. It was agreed to review the new page by email and release it in time to support the November 2010 IPCC scenario workshop.

| AR5 Cycle TGICA Membership |            |               |  |
|----------------------------|------------|---------------|--|
| Member                     |            | Citizenship   | Affiliation  |
| Bouille                    | Daniel     | Argentina     | Institute for Energy Economics/Bariloche Foundation                                      |
| Bustamante                 | Mercedes   | Brazil        | Departamento de Ecologia, Universidade de Brasília                                       |
| Carter                     | Timothy R. | Finland       | Finnish Environment Institute (SYKE)   |
| Cohen                      | Stewart J. | Canada        | Environment Canada, at University of British Columbia                                    |
| Dessai                     | Suraje     | Portugal      | Department of Geography, University of Exeter  |
| Diop-Kane                  | Mariane    | Senegal       | Agence Nationale de la Météorologie du Sénégal   |
| Emori                      | Seita      | Japan         | National Institute for Environmental Studies, Japan                                      |
| Hewitson                   | Bruce      | South Africa  | Environmental and Geographic Science Dept., University of Cape Town                      |
| Insarov                    | Gregory E. | Russia        | Institutue of Global Climate and Ecology   |
| Jiang                      | Kejun      | China         | Energy Research Institute  |
| Kram                       | Tom        | Netherlands   | Netherlands Environmental Assessment Agency  |
| Krey                       | Volker     | Germany       | International Institute for Applied Systems Analysis (IIASA)                             |
| Kwon                       | Won- Tae   | Korea         | National Institute of Meteorological Research, Korea Meteorological Association          |
| Lowe                       | Jason      | UK            | Met Office, University of Reading  |
| Marengo                    | Jose       | Peru          | Instituto Nacional de Pesquisas Espaciais (INPE)   |
| Meza                       | Francisco  | Chile         | Universidad Catolica de Chile  |
| Moss                       | Richard    | USA           | Joint Global Change Research Institute, PNNL   |
| Reisinger                  | Andy       | New Zealand   | University of Wellington   |
| Semazzi                    | Fredrick   | USA/Uganda    | Department of Marine, Earth and Atmospheric Sciences, North Carolina State University    |
| Tebaldi                    | Claudia    | USA           | University of British Colombia   |
| Thomson                    | Allison    | USA           | Pacific Northwest National Laboratory  |
| Warren                     | Rachel     | UK            | University of East Anglia  |
| Webb                       | Arthur     | Fiji          | South Pacific Applied Geophysics Commission  |
| Zermoglio                  | Fernanda   | Argentina/USA | Stockholm Environment Institute  |
| Juckes                     | Martin     | UK            | British Atmospheric Data Centre  |
| Lautenschlager             | Michael    | Germany       | Deutsches Klimarechenzentrum (DKRZ)  |
| Chen                       | Robert     | USA           | Center for International Earth Science Information Network (CIESIN), Columbia University |
| Midgley                    | Pauline    | UK            | WG1 TSU  |
| Ebi                        | Kristie    | USA           | WG2 TSU  |
| Matschoss                  | Patrick    | Germany       | WG3 TSU  |
| Taylor                     | Karl       | USA           | Program for Climate Model Diagnosis and Intercomparison (PCMDI), LLNL                    |
| Lu                         | Xianfu     | China         | UNFCCC   |

**Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA)**

Co-chairs: Richard Moss (USA) and Jose Marengo (Brazil)

**Doc. 1: Agenda**

Meeting Location: University Corporation of Atmospheric Research (UCAR), Building CG 1 (Center Green) Room 3131

Building address: 3080 Center Green Drive

<http://www2.ucar.edu/campus/map-near-ucar-building-locations>

**Wednesday 4 August**

|                    |   |
|--------------------|---|
| <b>9:00-9:45</b>   | <b>Welcome and Overview of Meeting Objectives</b> (Moss & Marengo)<br>Member Introductions ( <a href="#">Docs. 2, 13</a> )  |
| <b>9:45-10:45</b>  | <b>TGICA Mandate and Past Work</b> (Moss & Marengo)<br>( <a href="#">Docs. 3-5</a> )  |
| <b>10:45-11:00</b> | <b>Coffee Break</b>   |
| <b>11:00-12:00</b> | <b>Overview of AR5 Plans; Priorities of Working Groups for the TGICA and Data Distribution Centre (DDC)</b> (Midgley, Mastrandrea, Matschoss)<br>( <a href="#">Doc. 6</a> )   |
| <b>12:00-12:30</b> | <b>Overview of UNFCCC Needs and Prior Interactions</b> (Lu)   |
| <b>12:30-1:30</b>  | <b>Lunch</b>  |
| <b>1:30-2:30</b>   | <b>Update and Open Discussion of AR5 Climate Modeling and Downscaling</b><br>(Taylor)   |
| <b>2:30-3:30</b>   | <b>Data Distribution Centre Overview, Management, and New Directions</b><br>(Lawrence, Lautenschlager, Chen, Taylor)<br>Topics: Current holdings, AR5 needs, DDC-proposed initiatives ( <a href="#">Docs. 7-9</a> ) |
| <b>3:30-3:45</b>   | <b>Coffee Break</b>   |
| <b>3:45-4:45</b>   | <b>Data Distribution Centre Overview, Management, and New Directions Cont'd</b><br>(Lawrence, Lautenschlager, Chen, Taylor)   |
| <b>4:45-5:45</b>   | <b>Training and Capacity Building</b> (Hewitson, Zermoglio)   |
| <b>6:00</b>        | <b>Welcome Dinner (at meeting location)</b>   |

### Thursday 5 August

|                    |   |
|--------------------|---|
| <b>9:00-10:30</b>  | <b>Methods and Technical Guidelines</b> (Carter)<br>Topics: Overview of purpose, Status of current work, Priorities for new work<br>(Docs. 15-19)   |
| <b>10:30-10:45</b> | <b>Coffee Break</b>   |
| <b>10:45-12:30</b> | <b>Scenarios Update</b> (Moss, Mastrandrea, Carter, Krey, Thomson)<br>Topics: Integrated Assessment Modeling Consortium (IAMC) Update, downscaling, IAV update, Planning for research needs (e.g., scenario library, pattern scaling, uncertainty tools, researchers from developing/EIT countries) (Docs. 10-12, 14) |
| <b>12:30-1:30</b>  | <b>Lunch</b>  |
| <b>1:30-5:30</b>   | <b>Breakout Group Discussions</b><br>(Doc. 13)  |
| <b>As Desired</b>  | <b>Coffee Break</b>   |
| <b>Evening</b>     | <b>Further Breakout Group Discussions as needed</b>   |

### Friday 6 August

|                   |   |
|-------------------|---|
| <b>8:30-9:15</b>  | <b>Breakout Group Discussions</b>   |
| <b>9:15-10:15</b> | <b>Recommendations from Breakout Groups</b>                                   |
| <b>10:15-2:00</b> | <b>Formulation of Initial TGICA AR5 Workplan (Coffee and Lunch as agreed)</b> |
| <b>2:00</b>       | <b>Adjourn to accommodate travel</b>  |

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**Meeting Document List:**

Agenda (Doc. 1)

Compilation of short bios (members and relevant TSU staff) (Doc. 2)

TGICA Mandate (Doc. 3)

Report of TGICA-15 to the IPCC Bureau (Doc. 4)

IPCC P-31 TGICA Update (Doc. 5)

IPCC AR5 Plenary Approved Outlines (Doc. 6)

TGICA Data Distribution Centre Governance (Doc. 7)

DDC Variable List (Doc. 8)

Memorandum of Understanding between DKRZ, BADC and PMCDI (Doc. 9)

Moss et al., 2010: Next-generation scenarios (Doc. 10)

IIASA Representative Concentration Pathway Database Documentation (Doc. 11)

Zurek and Henrichs, 2007: Linking scenarios across scales (Doc. 12)

Breakout Group Strategy (Doc. 13)

IAV coordination presentation—Carter (Doc. 14)

Technical guidelines background (Doc. 15)

Sea level guidance (Doc. 16)

Sea level guidance Annex 1 – Full report (Doc. 17)

Sea level guidance Annex 2 – Second reviews (Doc. 18)

Sea level guidance Annex 3 – Summary of review process (Doc. 19)