



WMO

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PROGRESS REPORT

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

(Submitted by Dr Jose Marengo and Dr Richard Moss, Co-Chairs
On behalf of the Task Group)

Progress Report

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1. Background

1.1 The Task Group on Scenarios for Climate and Impact Assessment (TGICIA) was established following a recommendation made at the IPCC Workshop on Regional Climate Change Projections for Impact Assessment (London, 24-26 September 1996), and further considered by the IPCC Bureau at its Eleventh Session (7-8 November 1996). Prof. Martin Parry (UK) was asked to assemble and chair the Group, which he did until his appointment as Co-Chair of Working Group II in April 2002. At that time, the Bureau asked Dr. Richard Moss (USA) to assume acting chairmanship of the Group and report to the next Plenary.

1.2 Dr. Moss reported to IPCC XX (Paris, 19-21 February 2003), providing an overview of TGICIA actions to date including: development of a Data Distribution Centre (DDC); solicitation and attainment of the cooperation of major climate modeling centers with the DDC; development of inventories of GCMs, regional climate models, and impact assessment studies; development of technical guidelines; dissemination of socio-economic data from IPCC approved scenarios (IS92 and SRES); and organization of an expert meeting to examine the SRES scenarios and their potential use in research. IPCC XX confirmed Dr. Moss as a co-chair of the Task Group. The Panel agreed that the group's membership should be refreshed through a process analogous to the IPCC lead author selection process and that there should be a developing/transition economy co-chair appointed. The IPCC Secretary initiated this process by requesting that governments nominate experts. IPCC XXI (Vienna, 5-7 November 2003) agreed on a new name and mandate for the group and provided advice on members. The Bureau, at its XXXIst session (Geneva, 28-30 April 2004), appointed Dr. Jose Marengo as co-chair of the Task Group and approved a slate of members developed in consultation with the co-chairs of the Working Groups.

2. First meeting of TGICA with refreshed membership

2.1 The first meeting of the Task Group with its finalized mandate and refreshed membership (the IXth meeting of the group since its inception) was held on 24-25 September 2004, at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg Austria, at the invitation of IIASA and the Austrian government. The session reviewed ongoing activities and reached several decisions regarding its work. The list of participants is included at the end of this report. The remainder of this report describes several of the major items addressed during the meeting.

3. Revisions to the DDC

3.1 A major topic of discussion was the revised DDC website. The current site is found at <<http://ipcc-ddc.cru.uea.ac.uk/>>, and the revised site is nearing completion but currently under review by the Task Force members. A brief overview of the data holdings of the three components of the site (global mean climate data at the Climatic Research Unit in East Anglia, a large GCM archive at the Max Plank Institute in Hamburg, and socio-economic/environmental data at the Center for International Earth Science Information Network (CIESIN, in New York) was provided by the three site managers. Members agreed that the basic approach to revising the site was suitable, and a timetable was agreed for completing the new site and getting it online. Revisions to the DDC will be coordinated with the IPCC Secretariat to ensure compatibility with other IPCC websites.

3.2 The TGICA also discussed a related issue of DDC “mirror sites” which present information in languages other than English and support climate and impacts research in areas where English is not the primary language. Currently, one mirror site, supported by the Centro de Previsão de Tempo e Estudos Climáticos (CPTEC) in Brazil <<http://ipcc-ddc.cptec.inpe.br/ipccddcbr/html/index.html>>, provides information in both Portuguese and Spanish. Additional mirror sites have been suggested by China and Canada. Operating a mirror site presents challenges in terms of translation costs, verifying the accuracy of the translation, and keeping mirror sites synchronized with revisions to the DDC. Currently, costs are borne by the hosting institution, but if strict consistency with the DDC were required, additional support from the IPCC could be required. These issues will require further discussion and coordination with the IPCC Secretariat and the IPCC Outreach group.

4. Facilitating access of impacts researchers to a new GCM model archive

4.1 Another major topic of discussion was facilitating access of impacts researchers to relevant data from a large GCM archive being prepared by the Program for Climate Model Diagnostics and Intercomparison (PCMDI) at the request of WG I and the JSC/CLIVAR Working Group on Coupled Modeling. Dr. Karl Taylor from PCMDI participated in the meeting and gave an overview of the data being archived. Data from several different scenario runs are being incorporated, encompassing a wide variety of fields (both atmospheric and oceanic), sampled at monthly, daily and 3-hourly intervals. The TGICA decided to set as a priority objective working with PCMDI and the participating modeling centers to facilitate access of impacts researchers to a relevant subset of the archive for use in impacts research.

5. Facilitating climate and impacts research in developing and transition economy countries

5.1 The Task Group explored additional data and model products that could be developed and provided to facilitate research. It was noted that current data dissemination and products do not support developing nations very well because of two fundamental issues: 1) access to and the character of the data that are currently available; and 2) requirements for scientific capacity building.

5.2 Data. There is a need to improve access to existing data for users whose internet links are poor. This could be achieved, for example, by dissemination via CDs. Users would also benefit from a variety of improved products appropriate to the principle issues of the regions, including: access to daily records of meteorological variables spanning multi-decade periods; baseline climate statistics for validation and development purposes; and data on attributes of climate change at daily resolution. This latter objective cannot be accomplished simply by providing daily data, which would overwhelm the computational and other resources of many researchers, but providing data derivatives in easy-to-use formats, such as statistics of key climate variables derived from the daily data, or by allowing researchers to download a subset of the data relevant to their region.

5.3 Capacity. Experience indicates that approaches to building capacity are more successful if they include hands-on experience in preparing analyses rather than just theoretically-based training in the classroom. Key needs include regional capacity in developing and using regional-scale climate change and socio-economic scenarios.

5.4 The Task Group agreed to take several actions that will explore development of additional types of climate data or data delivery systems:

1. Prepare a report to the IPCC that highlights data and capacity building needs, especially in developing country regions
2. Develop options for a new “low speed data delivery system” through which users can select data and burn it to a CD for postal delivery

3. Develop options for data products in simpler formats for limited domains, including derivative products of appropriate climate statistics related to, for example, extremes, dry spell duration, threshold exceedences, etc.
4. Develop a proposal for providing centralized access to data analysis tools

5.5 In addition, the Group also agreed to place on its agenda other issues for future discussion and possible action, including: analysis of uncertainty in model results; daily data; and extremes indices.

6. Socio-economic data

6.1 In addition to providing climate data, the DDC provides a small amount of socio-economic data, both current baselines and scenario-based (i.e., projected). These are primarily data from approved IPCC scenarios (IS92 and SRES) and reports (e.g., the data appendices from The Special Report on the Regional Impacts of Climate Change). Unfortunately, the existing IPCC projections provide data only at aggregate regional levels that are not detailed enough for impacts research. Thus, at TGCIA V (Barbados, 26-29 November 2001), the Task Group commissioned the preparation of “downscaled” country –level and gridded population and GDP projections to 2100 that are consistent with the assumptions of the SRES scenarios. At TGCIA VI (Helsinki, 5-7 June 2002), the Task Group agreed to post the resulting data on the DDC once an article describing the method was accepted for publication. This article was completed in 2003 and the data were subsequently made available on the DDC (see Gaffin, S.R., C.R. Rosenzweig, X. Xing, and G. Yetman. 2004. Downscaling and Geo-spatial Gridding of Socio-Economic Projections from the IPCC Special Report on Emissions Scenarios (SRES). *Global Environmental Change* 14: 105-123). Following additional reviews initiated at TGICA IX (Laxenburg, 24-25 September 2004) and a subsequent email conference of Task Group members, the TGICA decided to remove the data from the DDC because the algorithms used resulted in anomalies and inconsistencies with the SRES storylines. Instead, the DDC will provide a link to CIESIN, which is maintaining the data and the article on its own website. Recognizing the continued need for this type of information, the TGICA will develop technical guidelines on approaches for developing socio-economic data and applying them in impacts and adaptation assessments.

6.2 Other types of socio-economic data being developed by governments and independent research groups were discussed. The TGICA decided to set as priorities for future work: a) updating socio-economic baseline data currently on site; b) providing links to information from “official” sources (e.g., U.N. agencies); and c) providing links to scenarios beyond those prepared by the IPCC.

7. Other topics

7.1 Other topics were explored and acted on at the meeting including environmental data (e.g., land use and land cover change; sea-level rise; atmospheric constituents); data and support for research/assessment of observed impacts; development of a proposal for an expert meeting to explore data needs for future research that integrates climate, socio-economic, and environmental information at a regional scale (links to the ongoing regional cross-cutting activities of the panel are being maintained carefully); and preparation of technical guidelines in additional areas (e.g., adaptation assessment).

7.2 The TGICA tentatively agreed that its next meeting would most likely be held during the week of 18th April, 2005, possibly in Brazil. The WGII TSU was asked to support the meeting and subsequently agreed to do so.

7.3 The Working Group I TSU supports TGICA including assisting in organizing meetings, preparing minutes and monitoring tasks, distributing related documentation, and assisting with reporting requirements to the IPCC.

TGICA 9 Participants

Members

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Nigel Arnell
Timothy Carter
Seita Emori
Xuejie Gao
Bruce Hewitson
Jason Lowe (for John Mitchell)
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Ileana Mares
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Anthony Nyong
Hugh Pitcher
Bernard Seguin
Serguei Semenov
Francis Zwiers (for Elaine Barrow)

Ex-Officio

Robert Chen (DDC CIESIN)
Renate Christ (IPCC Secretariat)
Monique Hoogwijk (WG III TSU)
Tahl Kestin (WG I TSU)
Michael Lautenschlager (DDC MPI)
Jean Palutikof (WG II TSU)
David Viner (DDC CRU)

Invited Guests

Nebojsa Nakicenovic (IIASA)
Brian O'Neill (IIASA)
Keywan Riahi (IIASA)
Cynthia Rosenzweig (NASA GISS)
Karl Taylor (LLNL)