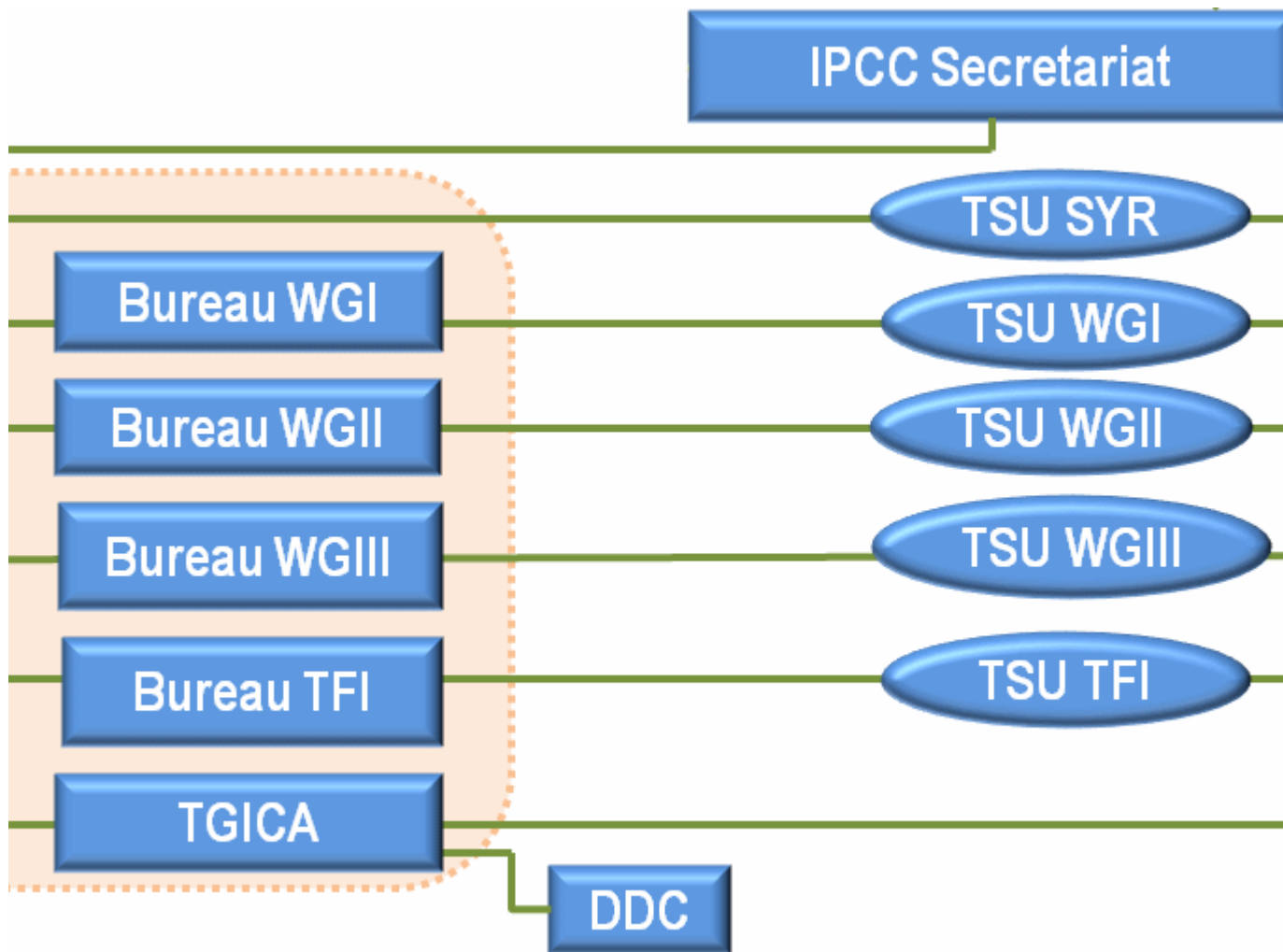


# Background to TGICA and the DDCs

M. Lautenschlager,  
T. Carter, B. Hewitson, M. Stockhause

# I. Introduction

# Position of the Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA) and IPCC Data Distribution Centre within the IPCC structure



(T. Carter, B. Hewitson)

# Information at IPCC-DDC Webpage under topic "About the DDC"

The screenshot shows a web browser window displaying the IPCC Data Distribution Centre website. The page title is "About the IPCC Data Distribution Centre". The main content area is divided into several sections:

- Creation of the IPCC Data Distribution Centre:** This section explains that the DDC was established to facilitate the timely distribution of a consistent set of up-to-date scenarios of changes in climate and related environmental and socio-economic factors. It mentions that the initiative grew out of a recommendation by the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA).
- TGICA Mandate and DDC Governance:** This section states that the conduct of TGICA is governed by its mandate, which can be downloaded as an Adobe PDF document. It also mentions that TGICA has established a set of procedures for managing content on the DDC as described in the DDC Governance document.
- TGICA Members:** This section lists the members of the Task Group on Impact and Climate Analysis (TGICA), categorized into Co-Chairs, Members, and Ex officio.

The Co-Chairs listed are Timothy R. Carter (Finland) and Bruce Hewitson (South Africa). The Members include Daniel Bouille (Argentina), Stewart J. Cohen (Canada), Suraje Dessai (UK), Mariane Diop-Kane (Senegal), Seita Emori (Japan), Gregory E. Insarov (Russia), Kejun Jiang (China), and Volker Krey (Austria). The Ex officio members include Martin Jukes (DDC, BADC), Martina Stockhause (DDC, DKRZ), Robert Chen (DDC, CIESIN), Gian-Kasper Plattner (IPCC, WG I TSU), Michael Mastrandrea (IPCC, WG2 TSU), Jan Minx (IPCC, WG3 TSU), Kari Taylor (PCMDI), and Xianfu Lu (UNFCCC).

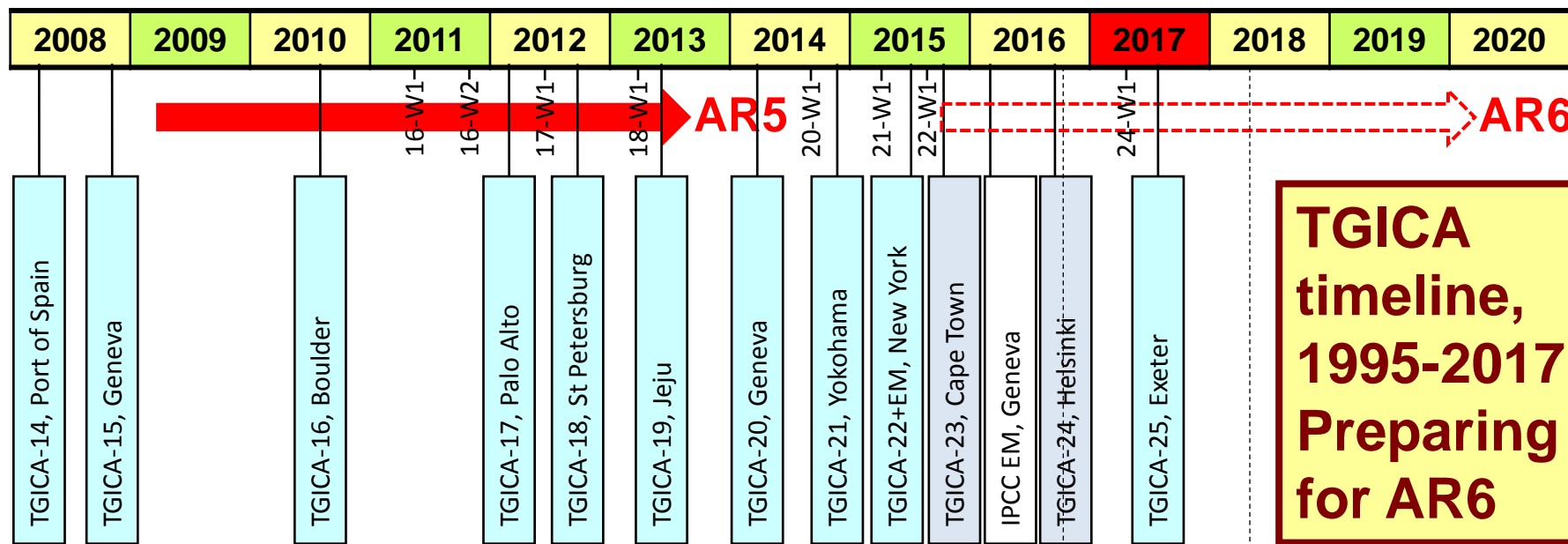
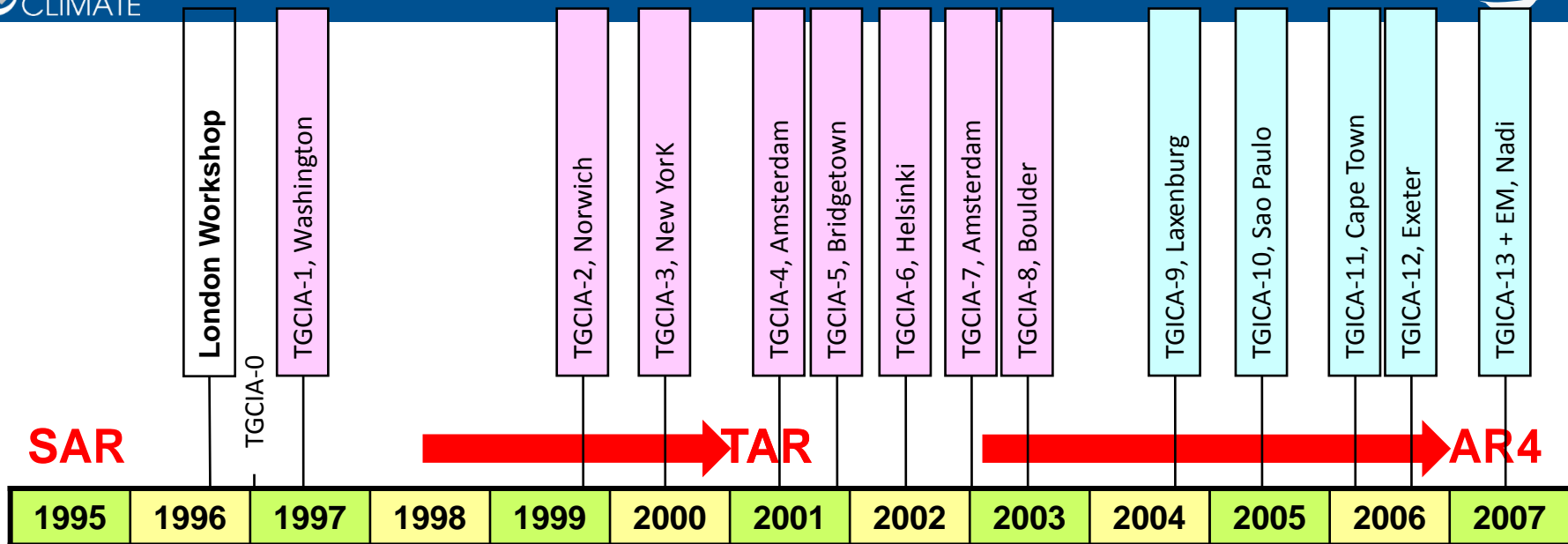
The page also features a navigation menu on the left with links such as "IPCC Site", "DDC Home", "About the DDC", "Why the DDC exists", "What the DDC provides", "Who runs the DDC?", "User Surveys and Reviews", "Site layout", "Guidance on the use of data", "Scenario process for AR5", "Data: Observations", "Data: Simulations", "Data: Synthesis", and "Visualisation". There are also "Quick links" for "IPCC Reports" and "Video tour of the DDC".

At the bottom of the page, there are logos for the British Atmospheric Data Centre, the Department of Energy & Climate Change, DKRZ (Deutsches Klimarechenzentrum), and WDC CLIMATE. The content was last modified on 27 July 2017.

[http://www.ipcc-data.org/ddc/ddc\\_about.html](http://www.ipcc-data.org/ddc/ddc_about.html)

(M. Lautenschlager)

## II. History



**TGICA  
timeline,  
1995-2017:  
Preparing  
for AR6**

ATF-TGICA

(T. Carter, B. Hewitson)

London Workshop

SAR

1995

1996

## 24-26 September 1996: IPCC Workshop on Regional Climate Change Projections for Impact Assessment, Imperial College, London, UK

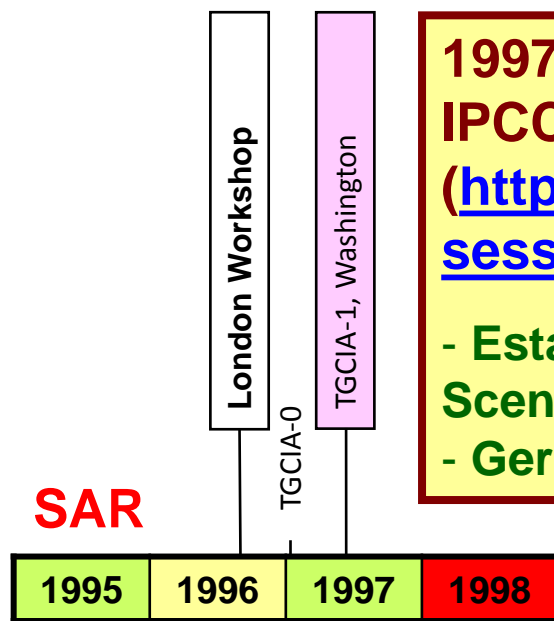
### Recommendation:

"..... that IPCC establish a Task Group to focus on the provision of the necessary data to the impacts community in time for the TAR and on capacity building for future IPCC assessments..."



**First TGICIA chair (Martin Parry, UK)**

(T. Carter, B. Hewitson)



## 1997: Approval of the DDC at the 13<sup>th</sup> Session of the IPCC

(<http://www.ipcc.ch/meetings/session13/thirteenth-session-report.pdf>):

- Establish a Data Distribution Centre for Climate Scenarios for Impact Assessment (DDC)
- Germany and the United Kingdom could act as DDC

### 8. OTHER BUSINESS

#### 8.1 Task Group on Climate Scenarios for Impact Assessment

8.1.1 The Bureau at its Fourteenth Session (Maldives, 21 September 1997) had examined the issue of the establishment of a Data Distribution Centre for Climate Scenarios for Impact Assessment (DDC). Governments had been invited, by letter dated 22 July 1997, to nominate institutions to act as DDC. Several responses had been received.

8.2.1 The Panel accepted the recommendation of the Ad-Hoc Committee on the Data Distribution Centre, which it had constituted earlier in the session, that both Germany and the United Kingdom could act as DDC. The specific institutions would be identified and made known later.

(M. Stockhause)



## ■ Initialisation

- IPCC Workshop on Regional Climate Change Projections for Impact Assessment (London, 24-26 September 1996)
  - IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA) was formed following a workshop recommendation.
- TGICA recommended to form the IPCC DDC which has been approved by
  - 13<sup>th</sup> IPCC Bureau Session (9 – 11 July 1997)
  - 13<sup>th</sup> IPCC Plenary (22 – 28 September 1997)
- Today IPCC DDC exists for 20 years.

## ■ Implementation

- At workshop end of 1997 at DKRZ with
  - Tim Carter (SYKE, FI) for documentation and guidance
  - Mike Hulme (CRU, UK) for web hosting
  - Michael Lautenschlager (DKRZ, DE) for GCM data archive

## ■ Extention 2003

- CIESIN (Center for International Earth Science Information Network, US) entered the DDC

## ■ Replacement 2007

- BADC (British Atmospheric Data Centre) replaced CRU as UK partner

## III. DDC in 2017

- Today's DDC Managers
  - Martin Juckes (BADC/CEDA)
  - Martina Stockhause (DKRZ)
  - Robert Chen (CIESIN)
- Mandate and governance
  - TGICA mandate: 1 Dec. 2003
  - IPCC DDC governance: 8 Feb. 2012
  - Both documents from web page under topic "About the DDC"
- Focus of DDC activities
  - Central: provision of data and metadata from GCMs that are analysed and evaluated in the IPCC Assessment Reports
  - And related information: downscaling, socio-economic data, observations, documentation and training, ....

# TGICA's mandate (from 2003)

[www.ipcc.ch/pdf/activity/tgica-mandate.pdf](http://www.ipcc.ch/pdf/activity/tgica-mandate.pdf)

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

### Mandate

#### 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). A draft mandate statement for the Task Group was developed in a contact group at IPCC XX. At TGICIA VIII (Boulder, CO, USA, 30 June – 2 July 2003), the TGICIA discussed the mandate, suggested several changes, and proposed a change in the group's name to "Task Group on Data and Scenario Support for Climate and Impact Assessment". At its XXXth session, the IPCC Bureau reviewed and further refined the mandate and recommended an additional change in the name of the group to "Task Group on Data and Scenario Support for Impacts and Climate Analysis" (TGICA).

#### 2. *Mandate*

2.1 The mandate of the TGICA is to facilitate wide availability of climate change related data and scenarios to enable research and sharing of information across the three IPCC working groups. The TGICA disseminates information in support of IPCC work, as well as IPCC "approved" "adopted," "accepted," and "supporting" material (as defined in Appendix A to the Principles Governing IPCC Work). This includes, for example, information on:

- anthropogenic influences on climate
- climatological baselines and observations
- projected future climate
- other environmental, technological, and socio-economic factors and data relevant to impacts, adaptation, vulnerability, and mitigation research

2.2 The TGICA does not develop emission, climate, or other types of scenarios for the IPCC, (T. Carter, B. Hewitson)

# Governance of the DDC (from 2012)

[http://www.ipcc-data.org/docs/TGICA\\_DDC\\_Governance\\_2012feb08.pdf](http://www.ipcc-data.org/docs/TGICA_DDC_Governance_2012feb08.pdf)

## **Governance of the IPCC Data Distribution Centre (DDC) by TGICA**

*February 8, 2012.*

### **1. Mission of the Data Distribution Centre**

The Intergovernmental Panel on Climate Change (IPCC) Data Distribution Centre (DDC) provides long-term access to data sets, climate and other scenarios, and other materials (e.g., technical guidelines on use of scenarios) in support of the broad IPCC community. The DDC operates under the oversight of the Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA), which was established by the IPCC to facilitate wide availability of climate change-related data and scenarios to enable research and sharing of information across the three IPCC working groups.

### **2. Focus of DDC activities**

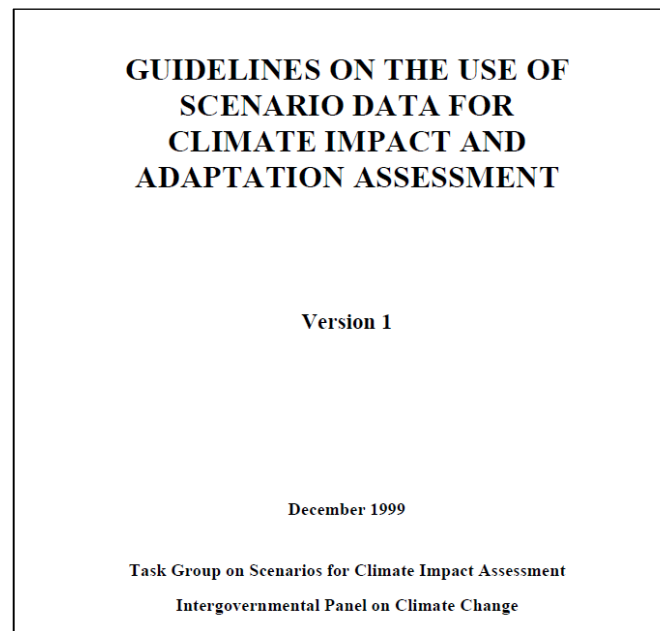
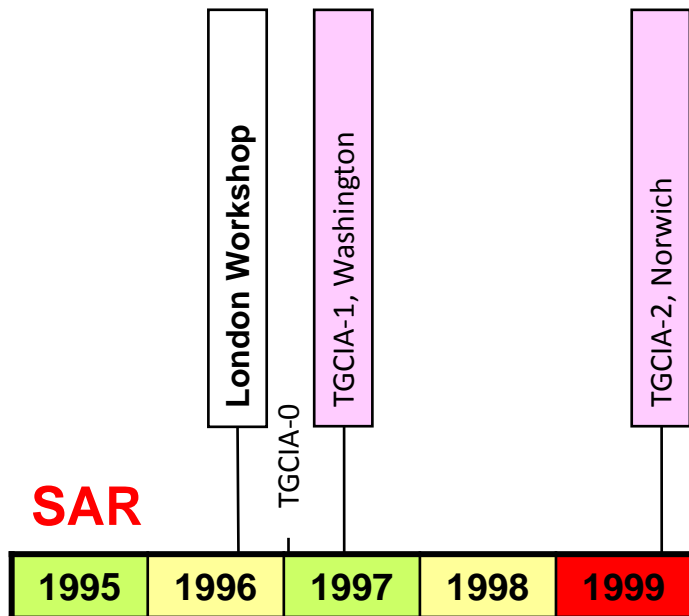
The DDC provides a repository for data from IPCC sources, quality controlled and carefully vetted, and operating within the IPCC's mandate. In addition, it provides pointers to other centres and groups for data beyond its current holdings that may be useful for impacts, adaptation, vulnerability and mitigation assessments. Specifically, the DDC currently focuses on:

1. Supporting research on climate change impacts, adaptation, vulnerability (IAV) and mitigation, promoting communication and exchange of information across the IPCC Working Groups, and facilitating studies that use consistent scenarios and baseline data for integration into IPCC assessments;
2. Ensuring the long-term accessibility and stewardship of DDC data holdings in accordance with best practices and standards, to support future IPCC assessments and climate-related research and assessment activities;

# Data Distribution Centre (DDC) in 2017

## Data Collection

1. Climate estimates from observations
2. Global climate model data – Reference Data Archive
3. Socio-economic data and scenarios
4. Data and scenarios for environmental changes
5. Linked data resources



## 20-22 October 1999, TGICIA-2, Norwich, UK

### Actions:

- Adopt criteria for SRES and stabilisation runs eligible to be archived
- General guidance document to be published
- CD-Roms distributed to developing and EIT countries

### Proposals

- Training package
- DDC mirror sites to be tested (first in Australia)

(T. Carter, B. Hewitson)



## IV. CMIP vs. IPCC DDC Data

The screenshot shows the IPCC Data Distribution Centre (DDC) website. The browser address bar displays <http://www.ipcc-data.org/sim/index.html>. The page features a navigation menu on the left with categories like 'IPCC Site', 'Data: Observations', and 'Data: Simulations'. The main content area is titled 'Data from computer simulations and projections' and lists various data sources, including emissions scenarios and global climate model outputs from different IPCC assessment reports.

**Data from computer simulations and projections**

Computational models play an increasingly central role in underpinning our understanding of the environment, society. The DDC contains data produced from Integrated Assessment Models (IAMs), Carbon-cycle Models, General Circulation Models, and Earth System Models.

- Emissions scenarios (from Integrated Assessment Models):
  - RCP Emissions and Land Use scenarios used in AR5
  - SRES Emissions scenarios used in TAR and AR4
  - IS92 Emissions scenarios user in SAR
- Carbon Dioxide: Projected emissions and concentrations
- Global climate model output
  - Results from GCM-Runs for the Fifth Assessment Report (AR5)
  - Results from GCM-Runs for the Fourth Assessment Report (AR4) based on the IPCC-SRES scenarios
  - Results from GCM-Runs for the Third Assessment Report (TAR) based on the IPCC-SRES scenarios
  - Results from GCM-Runs based on the IPCC-IS92a (or similar) emission scenarios
  - Results from GCM-Runs user in the First Assessment Report (FAR) (subset)
- Global climate model output: period-averages
  - Model output described in the 2007 IPCC Fourth Assessment Report (SRES scenarios)
  - Model output described in the 2001 IPCC Third Assessment Report (SRES scenarios)
  - Model output described in the 1995 IPCC Second Assessment Report (IS92 scenarios)
- Global climate model output: global-means (AR4)

Logos for British Atmospheric Data Centre, ARbeitsbereich ENERGIE & KLIMAWÄNDLUNG, and DKRZ are visible at the bottom of the page.

<http://www.ipcc-data.org/sim/index.html>

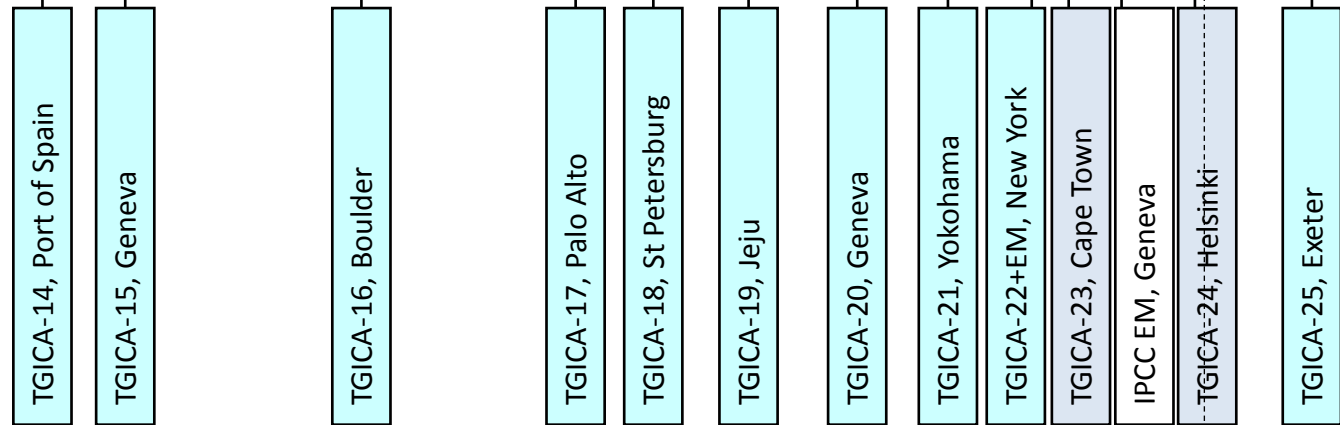
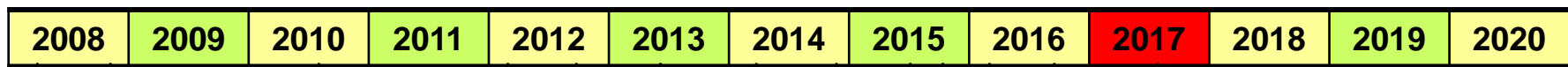
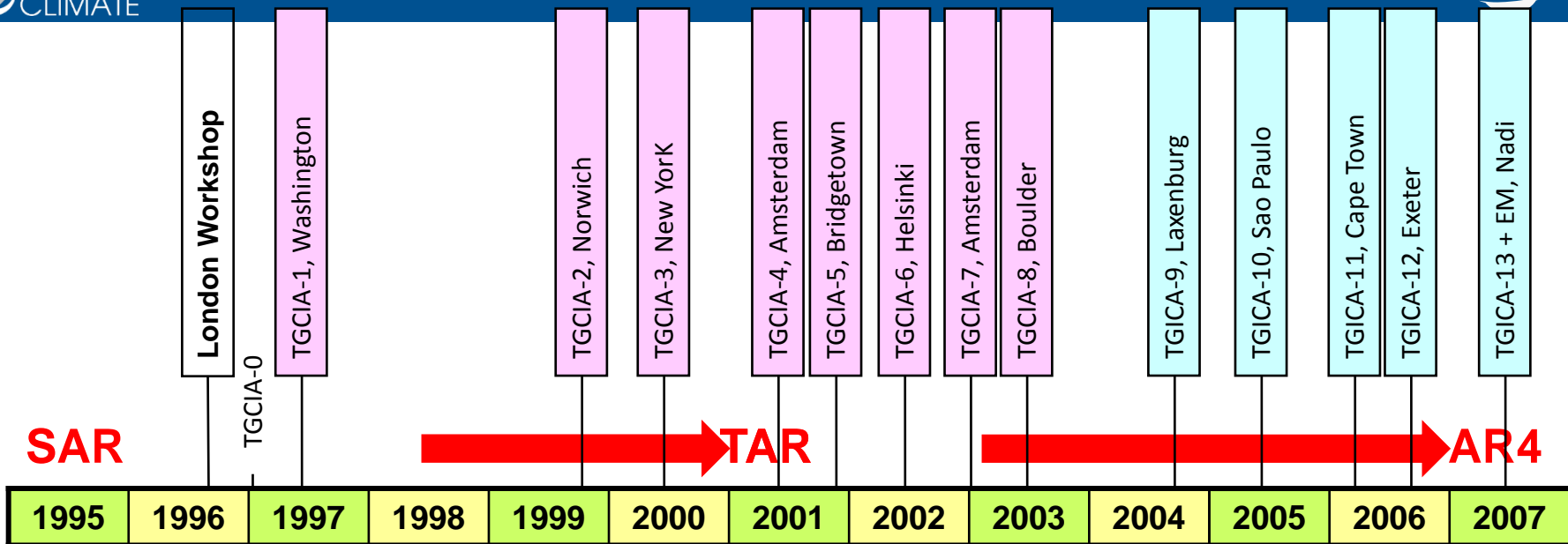
(M. Lautenschlager)

- GCM data are closely related to WCRP/WGCM CMIP activities
- FAR (1990)
  - Available GCM data are collected in IPCC-DDC
    - Data archaeology by DKRZ and NCAR
- CMIP1 - SAR (1995): IS-92 scenarios
  - Monthly means of selected atmospheric variables are merged in the DDC
- CMIP2 – TAR (2001): SRES scenarios
  - Same procedure as for SAR in the DDC

- **CMIP3 – AR4 (2007): SRES scenarios**
  - Central CMIP archive at PCMDI/LLNL
  - Requested variables mostly monthly means of atmospheric variables
  - IPCC-DDC replicated “snap shot” by 1 Sept. 2006 (closing date of WG I report) from PCMDI as IPCC AR4 reference data (volume a few TB)
- **CMIP5 – AR5 (2013): more complex definition along RCPs**
  - Distributed CMIP archive based on ESGF, requested variables more complex than before, complete mirrors at PCMDI and DKRZ
  - IPCC-DDC: “snap shot” 15 March 2013
    - IPCC WG I archive (ETH Zurich)
    - IPCC AR5 reference data from ESGF (volume 1.7 PB)
- **CMIP6 – AR6:**
  - Distributed CMIP archive on ESGF, but no complete mirror at one single data node because of CMIP6 data complexity
  - IPCC-DDC: projection of IPCC AR6 reference data from ESGF is about 20 PB

(M. Lautenschlager)

# V. Future



**TGICA timeline, 1995-2017: Preparing for AR6**

ATF-TGICA

(T. Carter, B. Hewitson)

## Expert Meeting on the Future of TGICA 26-27 January 2016, Geneva

### Recommendations:

- 1) Continue TGICA and the DDC (sense of meeting; no formal consensus)
- 2) Prioritize the internal needs of the IPCC
- 3) Recognize that meeting growing external information needs is contingent on resourcing and possible partnerships
- 4) Carefully examine current financing and support both for TGICA and the DDC
- 5) Consider balancing resources for TGICA/DDC in line with their tasks/functions
- 6) A mapping of TGICA's potential functions and tasks is needed

1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
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	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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ipcc  
INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

IPCC Expert Meeting on the Future of  
the Task Group on Data and Scenario  
Support for Impacts and Climate Analysis

World Meteorological Organization, Geneva, Switzerland  
26-27 January 2016

Meeting Report

IPCC EM, Geneva

AR6

(T. Carter, B. Hewitson)

19./20.09.2017

# Oct 2016: IPCC-44 forms Ad Hoc Task Force on the Future of TGICA Mandate (abridged):

- i. Review options and identify priority objectives for the future of TGICA
- ii. Review options and identify priority objectives for the DDC
- iii. Scope, implement and oversee a mapping exercise of activities undertaken by external organizations similar or related to TGICA or the DDC
- iv. Develop a proposal for a longer-term vision and short-term strategy for transforming TGICA functionalities and identify priority objectives of the DDC
- v. Propose a new mandate and ToRs for the transformed TGICA and DDC
- vi. Propose options for sustainable resourcing to support transformed functions
- vii. Provide a progress report to the IPCC-45 (later deferred to IPCC-46, 2018)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
------	------	------	------	------	------	------	------	------	------	------	------	------

	Name	Gender	IPCC Role/ Country	Email
<b>ATF-TGICA Co-Chairs</b>				
1	Edvin ALDRIAN	M	Working Group I Vice-Chair	<a href="mailto:e_aldrrian@yahoo.com">e_aldrrian@yahoo.com</a>
2	Andreas FISCHLIN	M	Working Group II Vice-Chair	<a href="mailto:andreas.fischlin@env.ethz.ch">andreas.fischlin@env.ethz.ch</a>
<b>TGICA Co-Chairs</b>				
3	Timothy CARTER	M	TGICA Co-Chair	<a href="mailto:tim.carter@ymparisto.fi">tim.carter@ymparisto.fi</a>
4	Bruce HEWITSON	M	TGICA Co-Chair	<a href="mailto:hewitson@csag.uct.ac.za">hewitson@csag.uct.ac.za</a>
<b>Bureau Members</b>				
5	Fatima DRIOUECH	F	Working Group I Vice-Chair	<a href="mailto:driouechfatima@yahoo.fr">driouechfatima@yahoo.fr</a>
6	Greg FLATO	M	Working Group I Vice-Chair	<a href="mailto:greg.flato@canada.ca">greg.flato@canada.ca</a>
7	Ramon PICHES	M	Working Group III Vice-Chair	<a href="mailto:rpichs@ciem.cu">rpichs@ciem.cu</a>
8	Diana ÜRGE-VORSATZ	F	Working Group III Vice-Chair	<a href="mailto:vorsatzd@ceu.edu">vorsatzd@ceu.edu</a>
9	Pius YANDA	M	Working Group II Vice-Chair	<a href="mailto:pyanda@gmail.com">pyanda@gmail.com</a>

	Name	Gender	IPCC Role/ Country	Email
<b>Working Group TSU Representatives</b>				
10	Wilfran MOUFUMA-OKIA	M	Working Group I TSU	<a href="mailto:wilfran.moufouma-okia@universite-paris-saclay.fr">wilfran.moufouma-okia@universite-paris-saclay.fr</a>
11	Elvira POLOCZANSKA	F	Working Group II TSU	<a href="mailto:elvira.poloczanska@ipcc-wg2.awi.de">elvira.poloczanska@ipcc-wg2.awi.de</a>
<b>DDC Host Countries</b>				
12	Farhan AKHTAR	M	USA (DDC Host Country)	<a href="mailto:AkhtarFH@state.gov">AkhtarFH@state.gov</a>
13	Cathy JOHNSON	F	UK (DDC Host Country)	<a href="mailto:Cathy.Johnson@beis.gov.uk">Cathy.Johnson@beis.gov.uk</a>
14	Christiane TEXTOR	F	Germany (DDC Host Country)	<a href="mailto:christiane.textor@dlr.de">christiane.textor@dlr.de</a>
<b>Government Representatives</b>				
15	Birama DIARRA	M	Mali	<a href="mailto:biramadia@yahoo.fr">biramadia@yahoo.fr</a>
16	Patricia NYING'URO	F	Kenya	<a href="mailto:pryinguro@gmail.com">pryinguro@gmail.com</a>
17	Kreso PANDZIC	M	Croatia	<a href="mailto:pandzic@cirus.dhz.hr">pandzic@cirus.dhz.hr</a>
18	Nirivololona RAHOLUJAO	F	Madagascar	<a href="mailto:niriraholijao@gmail.com">niriraholijao@gmail.com</a>
19	Eric SEYAMA	M	Swaziland	<a href="mailto:eseyama@gmail.com">eseyama@gmail.com</a>
20	Hamid Abakar SOULEYMANE	M	Chad	<a href="mailto:chogaran@yahoo.fr">chogaran@yahoo.fr</a>
21	Carlos Nicolás ZAMBRANO SÁNCHEZ	M	Ecuador	<a href="mailto:nicolas.zambrano.s@gmail.com">nicolas.zambrano.s@gmail.com</a>

AR6

ATF-TGICA

(T. Carter, B. Hewitson)



# TGICA membership (2017)

Co-Chairs	Members (pending refreshment)	Ex officio	
<b>Timothy Carter</b> <i>Finland</i> 	<b>Daniel Bouille</b> <i>Argentina</i> <b>Stewart J. Cohen</b> <i>Canada</i> <b>Suraje Dessai</b> <i>UK</i> <b>Mariane Diop-Kane</b> <i>Senegal</i> <b>Seita Emori</b> <i>Japan</i> <b>Gregory E. Insarov</b> <i>Russia</i> <b>Kejun Jiang</b> <i>China</i> <b>Volker Krey</b> <i>Austria</i> <b>Won-Tae Kwon</b> <i>South Korea</i>	<b>Jason Lowe</b> <i>UK</i> <b>Francisco Meza</b> <i>Chile</i> <b>Andy Reisinger</b> <i>New Zealand</i> <b>Fredrick Semazzi</b> <i>USA</i> <b>Allison Thomson</b> <i>USA</i> <b>Rachel Warren</b> <i>UK</i> <b>Arthur Webb</b> <i>Fiji</i> <b>Fernanda Zermoglio</b> <i>Sweden</i>	<b>Martin Juckes</b> <i>DDC, BADC</i> <b>Robert Chen</b> <i>DDC, CIESIN</i> <b>Martina Stockhause</b> <i>DDC, WDCC/DKRZ</i> <b>Wilfran Moufouma-Okia</b> <i>IPCC, WGI TSU</i> <b>Elvira Poloczanska</b> <i>IPCC, WGII TSU</i> <b>Raphael Slade</b> <i>IPCC, WGIII TSU</i> <b>Xianfu Lu</b> <i>UNFCCC</i> <b>Karl Taylor</b> <i>PCMDI</i>

19 full members; 8 *ex officio* members

*Ex officio* supporting members: Charlotte Pascoe (UK); Xiaoshi Xing (USA)

(T. Carter, B. Hewitson)