

FORTY-FIFTH SESSION OF THE IPCC Guadalajara, Mexico, 28 - 31 March 2017

IPCC-XLV/INF.5 (7.III.2017) Agenda Item: 5.3 ENGLISH ONLY

REPORTS

Future of the Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA)

(Prepared by the Ad Hoc Task Force (ATF-TGICA) on the Future of the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA))

(Submitted by the Secretary of the IPCC)

REPORTS

Future of the Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA)

Background

The current mandate of the Task Group on data and Scenario Support for Impact and Climate Analysis (TGICA) was adopted by the 21st Session of the Intergovernmental Panel on Climate Change (IPCC) in 2003. The current mandate of the TGICA is included as ANNEX 6 in the report of the 21st Session of the IPCC (http://www.ipcc.ch/meetings/session21/final-report.pdf) and represents a revision of a previous mandate.

At the 44th Session of the IPCC in Bangkok, Thailand, 17-20 October 2016, the Panel continued its discussions on the future of TGICA. The Panel decided (<u>Decision IPCC/XLIV-8</u>, paragraph 1) to establish an Ad Hoc Task Force to design a strategic plan and revised mandate and terms of reference for the transformation of TGICA functions to serve the needs of the IPCC during and beyond the Sixth Assessment. The membership and Terms of Reference (TORs) of the Ad Hoc Task Force (ATF-TGICA) are contained in Annex 1 to Decision IPCC/XLIV-8 and have also been included as Annex 1 to this document, for ease of reference.

The current document is the progress report, that the ATF-TGICA has been requested to provide to the 45th Session of the IPCC, in accordance with its terms of reference.

Roles and responsibilities of the ATF-TGICA

According to the terms of reference adopted by the IPCC at its 44th Session as included in Annex 1 to the present report, the ATF-TGICA is responsible for:

- i. Reviewing options and identifying priority objectives for the future of TGICA, including those presented to the Panel at the 43rd Session of the IPCC and to the Bureau at its 52nd Session;
- ii. Reviewing options and identifying priority objectives for the Data Distribution Centre (DDC) including those presented to the Panel at the 43rd Session and to the Bureau at its 52nd Session:
- iii. Scoping, implementing and overseeing a mapping exercise of activities undertaken by external organizations that are similar or related to TGICA or the DDC, including but not limited to what is presented in the documents listed in (i) and (ii) above. The objective of this exercise is to evaluate the potential overlap, sustainability, and relevance of other products and services compared to TGICA and DDC functions, so as to identify remaining gaps and help refine priorities, and to explore potential partnerships;
- iv. Developing, based upon the information and findings from the above activities, a proposal for a longer-term vision, and a short-term strategy, which will enable the transformation of existing TGICA functionalities and to identify priority objectives of the DDC. This strategy should ensure continuity, transparency, accessibility, and integration across Working Groups of existing and emerging support needs for data and scenarios by the IPCC; mindful of human and financial resource constraints;
- v. Proposing a new mandate and terms of reference for the transformed TGICA functionality and for the core functions of the DDC;
- vi. Proposing options for sustainable resourcing to support the needs of the transformed functions, including possible ways to expand country contributions; and
- vii. Providing a progress report about its activities to the IPCC at its 45th Session.

Membership

In order to determine the membership of the ATF-TGICA, its Co-Chairs sent out an invitation to all government representatives, IPCC Bureau members, and Co-Chairs of TGICA who attended the side meetings on TGICA during 44th Session of the IPCC to confirm their availability to serve in the ATF-TGICA.

Potential members were invited to indicate whether they were available to actively participate in, and actively contribute to the work of the task force or whether they would opt for a role whereby they would be informed about all activities of ATF-TGICA on a regular basis. The former category constitutes the main ATF-TGICA, while the latter form part of the "Friends of ATF-TGICA". The membership of the ATF-TGICA is included in Annex 2 to the present report.

An invitation was extended to current TGICA members, including Ex-Officio members, to join the Friends. The complete list of Friends is shown in Annex 3 to the present report.

Undertaking the mapping exercise

In assessing the workload ahead, the ATF-TGICA viewed the third task in its mandate, i.e. the mapping exercise, as providing a necessary basis for fulfilling the other tasks and as requiring a substantive amount of work, and therefore gave it highest priority;

As a first step, the Co-Chairs of ATF-TGICA solicited ideas and suggestions from the ATF-TGICA members and friends on feasible approaches to accomplishing this task, and more specifically, requested:

- 1. Suggestions on the most efficient and transparent way to undertake the mapping exercise; and
- 2. Information on relevant knowledge, i.e. which external organizations have similar functions as TGICA or the DDC or which would be such websites or services that offer information similar to the map that the ATF-TGICA is tasked to produce.

In response to the request for suggestions on the most efficient and transparent way to undertake the mapping exercise, respondents suggested a range of possibilities differing in the scope of the mapping exercise, the approach, and in the extent of resource requirements. The suggestions included a web-based questionnaire being publicly available and inviting a wide range of institutions and individuals, i.e. IPCC Observer Organizations, IPCC Bureau members, IPCC AR5¹ authors, the AR5 Bureau members, the research community and other users or beneficiaries of TGICA. Other suggestions recommended to form a small 'fact finding team' from ATF-TGICA members to conduct interviews with experienced IPCC Bureau members and authors, while others raised concerns that such an approach could possibly introduce biases into the deliberations. It was also suggested to make good use of existing material such as the Institutional Analysis of TGICA, which was carried out in 2016 (IPCC-XLIII/INF. 16) and the IPCC Expert Meeting on the Future of TGICA², which could all be considered as a relevant reference and starting point for the task at hand. The ATF-TGICA Co-Chairs summarized these ideas in ATF-TGICA Note 1³ as sent to all ATF-TGICA members and friends.

After discussing and evaluating these proposals during the ATF-TGICA Teleconference 1 as held on 10 January 2017 from 15:00-16:30 CET, the Co-Chairs prepared a questionnaire (see Annex 4 to this report) and recommended that the interviews be conducted with AR5 and AR6 Co-Chairs, AR5 and AR6 TSU⁴ Heads, selected AR5 authors and otherwise particularly involved researchers

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¹ Fifth Assessment Report

² Expert Meeting Report available from http://www.ipcc.ch/pdf/supporting-material/EMR_TGICA_Future.pdf and for Bureau members: BUR-LI/INF. 4, Rev. 1 available from http://www.ipcc.ch/apps/bureau/

³ Available from the IPCC Secretariat upon request

⁴ Technical Support Unit

and experts as pointed out by ATF-TGICA members and friends. The ATF-TGICA Note 2⁵ contained the questionnaire and invited all ATF-TGICA members and friends to provide feedback on next steps and notably the questionnaire. Based on recommendations from the ATF-TGICA members, an updated questionnaire was sent to the selected interviewees by the ATF-TGICA Co-Chairs as well as to IPCC focal points by the IPCC secretariat together with an invitation to disseminate the questionnaire further to any relevant experts known to the focal points. Finally a second teleconference was held on the 23rd of February 2017 from 14:00-15:30 to discuss the mapping exercise further and this progress report.

Right from the start of the mapping exercise relevant information portals, and, conceivably authoritative sources of scenario data, which provide products and services comparable to TGICA and DDC functions, were collected and are provided in Annex 5 to this report.

By 28 February 2017, a total of 53 responses to the questionnaire have been received, of which 36 were solicited through focal points and 17 were solicited via personal invitation to interviewees such as WG Co-Chairs and TSU's from AR5 and AR6. Some interviews have been conducted and more are to follow. The analysis of the responses is under way and first results from this analysis are planned to be provided as an addendum to this report.

Teleconferences

As was approved by the Panel, all ATF-TGICA meetings will be held through teleconferencing and/or in combination with existing IPCC meetings where ATF-TGICA members will be present.

The first WebEx teleconference was held on 10 January 2017 from 15:00-16:30 CET⁶. The second teleconference was held on the 23rd of February 2017 from 14:00-15:30.

Way forward

The ATF-TGICA aims to complete the mapping exercise by March 2017. Subsequently, the remaining tasks in the mandate will be undertaken with the aim of completing the preparatory work and developing, based upon the information and findings, a proposal for a longer-term vision and a short-term strategy, which will enable the transformation of existing TGICA functions and identification of priority objectives of the DDC, before the 46th Session of the IPCC to be held in September 2017.

⁵ Available from the IPCC Secretariat upon request

⁶ Central European Time

Terms of Reference for the Ad Hoc Task Force on the Future of the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA)

1. PURPOSE

The purpose of the Ad Hoc Task Force (Task Force) on the future of the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA) is to design a strategic plan as well as a mandate and terms of reference for the transformation of TGICA functions to serve the needs of IPCC during and beyond the sixth assessment cycle, to be considered by the IPCC at its 46th session. This plan and the related ToRs and mandate should take into consideration identified priority objectives of the Task Group and the IPCC Data Distribution Centre (DDC) it oversees, including emerging needs in relation to regional data and scenarios and results from a mapping exercise of other organizations and stakeholders, paying due attention to constraints on both human and financial resources.

2. TERM

The Task Force will initiate its work immediately after the 44th Session of the IPCC and continue its activities until the revised mandate and terms of reference are approved by the Panel, but no later than the time of the 46th Session of the IPCC, which is provisionally scheduled for September 2017.

3. MEMBERSHIP

The Task Force will comprise of at least:

- Two Vice-Chairs from each of the three Working Groups, one from a developed country and the other from a developing or economy in transition (EIT) country;
- Current TGICA Co-Chairs:
- Six Government representatives, three each from developed and developing/EIT countries. DDC host countries will be given priority if they are willing to participate;
- One representative from each of the Working Group technical support units; and
- A representative of the IPCC Secretariat.

The Task Force will be Co-Chaired by two Working Group Vice-Chairs from different Working Groups, one from a developed country and another from a developing country/EIT. At least one of the Co-Chairs should preferably be female. The Task Force may consider inviting DDC managers and relevant TSU staff from the AR5 cycle to share their views and experiences. This Task Force will be open to government representatives and Bureau members who may be co-opted for supporting specific tasks, as required.

4. ROLES AND RESPONSIBILITIES

The Task Force will be responsible for:

- i. Reviewing options and identifying priority objectives for the future of TGICA, including those presented to the Panel at the 43rd Session and to the Bureau at its 52nd Session;
- ii. Reviewing options and identifying priority objectives for the DDC including those presented to the Panel at the 43rd Session and to the Bureau at its 52nd Session;
- iii. Scoping, implementing and overseeing a mapping exercise of activities undertaken by external organizations that are similar or related to TGICA or the DDC, including but not limited to what is presented in the documents listed in (i) and (ii) above. The objective of this exercise is to evaluate the potential overlap, sustainability, and relevance of other products and services compared to TGICA and DDC functions, so as to identify remaining gaps and help refine priorities, and to explore potential partnerships;
- iv. Developing, based upon the information and findings from the above activities, a proposal for a longer-term vision, and a short-term strategy, which will enable the transformation of existing TGICA

functionalities and to identify priority objectives of the DDC. This strategy should ensure continuity, transparency, accessibility, and integration across Working Groups of existing and emerging support needs for data and scenarios by the IPCC; mindful of human and financial resource constraints:

- v. Proposing a new mandate and ToRs for the transformed TGICA functionality and for the core functions of the DDC;
- vi. Proposing options for sustainable resourcing to support the needs of the transformed functions, including possible ways to expand country contributions; and
- vii. Providing a progress report about its activities to the IPCC at its 45th Session.

5. MEETINGS

All meetings will be held through teleconferencing and/or in combination with existing IPCC meetings where Task Force members will be present. They will be chaired by the Ad Hoc Task Force Co-Chairs who will be responsible for preparing meeting agendas. Teleconferencing arrangements and meeting minutes will be prepared by the Secretariat.

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Questionnaire for gathering information for the mapping exercise

The following questionnaire is being circulated to IPCC focal points to gather information on past and future activities of the IPCC Data Distribution Center (DDC) and the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA). The inquiry is conducted by the Ad Hoc Task Force (ATF-TGICA) entrusted by the IPCC panel to conduct a mapping exercise according to following task:

"Scope, implement and oversee a mapping exercise of activities undertaken by external organizations that are similar or related to TGICA or the DDC. The objective of this exercise is to evaluate the potential overlap, sustainability, and relevance of other products and services compared to TGICA and DDC functions, so as to identify remaining gaps and help refine priorities, and to explore potential partnerships;"

As background, TGICA is described here: https://www.ipcc.ch/activities/tgica.shtml, and the DDC is described here: https://www.ipcc-data.org/.

This mapping exercise and this questionnaire focuses on the needs of the IPCC during and after the preparation of a report. In accordance with the limited scope of the task given to the ATF-TGICA, it does not focus on the needs of external users such as the broader research community in developed or developing countries, nor any capacity building needs such as those of decision makers, e.g. in the context of adaptation.

The Ad Hoc Task Group on the TGICA has identified three key thematic areas that require climate information and data that are of relevance in this context:

- CMIP⁷ model output (as assessed by WGI but also used by all WG)
- Risk analysis data base (WGII)
- Integrated Assessment Model (IAM) data base (WGIII)

When considering the questions below, please focus on the above themes.

Please note that the IPCC is operating under a very limited budget, see the flyer IPCC RESOURCE MOBILIZATION.8 Therefore, it is important that you help with your answers to assess priorities for the services or activities you mention, and that you provide estimates of associated resource needs whenever possible.

⁷ Coupled Model Intercomparison Project, URL for phases 5 (CMIP5) and 6 (CMIP6): http://cmip-pcmdi.llnl.gov/cmip5/ and http://www.ipcc.ch/pdf/brochure resouce mobilization en.pdf

Questions for respondents who have been involved in the preparation of IPCC products (AR, SR, TP) 9

Q1a: What data¹⁰ did you need during the preparation of the IPCC product?

Q1b: From where did you obtain those data? If not from DDC¹¹, why not?

Q1c: Were there *data*, which you would like to have obtained, but encountered difficulties in obtaining, where the DDC has helped or might potentially help?

Q2a: What data¹² you worked with do you consider worth-archiving/retaining?

Q2b: If you listed some under Q2a, to what extent is a proper long-term curation already taken care of?

Q2c: If you responded positively to Q2b, by whom is this curation done?

Q2d: If you responded positively to Q2b, are the arrangements satisfactory?

Q2e: If you listed some under Q2a and if curation is missing or current arrangements are not satisfactory, could the DDC potentially help (if not involved) or help more (if already involved)?

Q3a: Did any of the following help you in your work for the IPCC (multiple answers possible)?

- (i) Guidance material on issues related to the use of the data available at the DDC
- (ii) Guidance material providing more general information on data (available or not available from the DDC)¹³ in support of the work of the IPCC
- (iii) Information on the scenario building process
- (iv) Remote data analysis tools (making large downloads or shipments obsolete)
- (v) Data visualization tools

Q3b: If so, which support/help did you get from the DDC, which from elsewhere?

Q4: Should TGICA provide guidance material for authors? What kind of guidance (if any, please assign priorities)? Are there alternatives?

Q5: Should TGICA provide recommendations to enhance cooperation and coordination among working groups (if any, please assign priorities)? How should TGICA make such recommendations? Are there alternatives?

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⁹ AR - Assessment Report; SR - Special Report; TP - Technical Paper

¹⁰ In the following *data* (italic) is a generic term for any data listed under the three aforementioned thematic areas

¹¹ Please list your source by name and home page URL

¹² In the following data is a generic term for any data including *data* (with meaning as defined above)

¹³ Please indicate if data are available from DDC

Questions for all respondents who are aware of the existence of TGICA and DDC

- Q6a: Of what significant activities or data services are you aware that are conducted/provided by TGICA?
- Q6b: Of what significant activities or data services are you aware that are conducted/provided by DDC?
- Q7: Please classify the items you listed under Q6a/b as serving to any of the following purposes mentioned in the mandate of the TGICA or the DDC (for each item multiple answers possible):
 - (i) IPCC internal or
 - (ii) IPCC external use,
 - (iii) cooperation/coordination among working groups,
 - (iv) curation,
 - (v) transparency of the assessment,
 - (vi) capacity building,
 - (vii) decision making and planning
- Q8: What priority do you assign to the items you listed under Q6a/b? Could you clearly single out some items that could be abandoned without significant loss?
- Q9: If you have been involved in any of the items you listed under Q6a/b, what fraction of a FTE¹⁴ does in your experience each of those items require?¹⁵
- Q10a: Do you see an urgent need for additional activities or data services by TGICA than the ones you listed under any of the questions above?
- Q10b: Do you see an urgent need for additional activities or data services by DDC than the ones you listed under any of the questions above?
- Q11: If you listed any items under Q10a/b, what fraction of a FTE do you expect would each of these items require?
- Q12a: Do you see a need for specific activities or data services by TGICA after the completion of a particular IPCC product to support transparency and tracability of IPCC assessments?
- Q12b: Do you see a need for specific activities or data services by DDC after the completion of a particular IPCC product to support transparency and tracability of IPCC assessments?
- Q13a: Given the limited resources available, do you see an urgent need for additional new activities or data services after the completion of an assessment cycle to be provided by TGICA, perhaps in partnerships with other organizations¹⁶, or elsewhere (if any, please assign priorities, list potential partners)?

¹⁴ Full Time Equivalent

¹⁵ please include in your assessment all items that you possibly listed under Q4, in particular also those that could possibly be abandoned ¹⁶ Please list the institution by title and home page URL

Q13b: Given the limited resources available, do you see an urgent need for additional new activities or data services after the completion of an assessment cycle to be provided by DDC, perhaps in partnerships with other organizations⁹, or elsewhere (if any, please assign priorities, list potential partners)?

Questions to all respondents:

- Q14: Should TGICA disseminate information in support of IPCC work? What kind of information? Do you see possibilities for alternative institutions to disseminate such information? Please assign priorities for each you mention and give your preference as to which institution best disseminates such information.
- Q15: Should TGICA support the transparency and traceability of the IPCC assessments? How should this support be done? Are there alternatives? If you mention specific activities, please assign priorities.
- Q16: Should TGICA facilitate research on climate impacts, adaptation, and mitigation in support of the IPCC? Which research and how should TGICA facilitate such research (if any, please assign priorities for each you mention)? Are there alternatives?
- Q17: Should TGICA contribute to building capacity, notably to developing country authors in the use of data and scenarios for climate-related research in cooperation with organizations and activities that have training as their core mandate? Which teaching/instructional role do you see for TGICA and how should TGICA contribute to capacity building (if any, please assign priorities for each you mention)? Are there alternatives?
- Q18: Can you offer any views on what kind of guidance, monitoring, coordination, and governance TGICA should provide to the DDC (if any, please assign priorities for each you mention)? Are there alternatives?
- Q19: If possible please estimate the technical needs (e.g. hardware, software, perhaps even costs) for any of the activities and data services you have emphasized previously during this interview and you consider to be indispensable?
- Q20: Can you offer any ideas on how to possibly improve the resource situation and the sustainability of the DDC that is currently based on voluntary in-kind funding by only three countries?
- Q21: Are you aware of an organization or entity in your country or region that performs similar activities as TGICA and/or DDC and that you have not already mentioned above?¹⁷ If yes, which institution¹⁸, what are these activities and how are they performed, are there opportunities for partnerships between TGICA and/or DDC?

¹⁷ e.g. in your response to Q13a/b

¹⁸ Please list the institution by title and home page URL

Elements of the map as resulting from the mapping exercise conducted by ATF-TGICA

#	Elements of the map as resulting from the mapping exercise conducted by ATF-TGICA Title URL Hosting meta Comments					
#	Title	URL	Hosting region	meta site	Comments	
1	CMIP5 home page	http://cmip- pcmdi.llnl.gov/cmip5/	2,4,5,6 (WCRP)	No	Description of CMIP5 experimental design and links to model output archive.	
2	CMIP6 home page	https://www.wcrp- climate.org/wgcm- cmip/wgcm-cmip6	2,4,5,6 (WCRP)	No	Description of CMIP6 experimental design and links to related datasets	
3	ESGF projects page	https://pcmdi.llnl.gov/projec ts/esgf-llnl/	4 (Lawrence Livermore National Laboratory)	Yes and No	Provides access to CMIP3 and CMIP5 model output archive, and will be home to CMIP6 archive once available	
4	ENES (European Network for Earth System modelling)	https://verc.enes.org	6 (European network)	Yes	Is closely related to ESGF	
5	Obs4MIPS	https://www.earthsystemco g.org/projects/obs4mips/	4 (Univ. Colorado)	Yes	Provides access to a growing archive of observational data, in the same format as CMIP model output, to facilitate model evaluation.	
6	Shared Socioeconomic pathways (SSPs)	https://tntcat.iiasa.ac.at/Ss pDb/dsd?Action=htmlpage &page=about	6 (IIASA)	No	Provides access to greenhouse gas, aerosols, land-use and other forcings used as input to CMIP6 models.	
7	NOAA ocean observations	http://www.ospo.noaa.gov/ Products/ocean/sst.html	4 (NOAA)	No	A range of sea-surface temperature products	
8	Surface temperature observations	http://www.esrl.noaa.gov/p sd/data/gridded/tables/tem perature.html	4 (NOAA)	No	A large collection of different surface temperature data sets	
9	National Snow and Ice Data Centre	https://nsidc.org/	4 (Univ. Colorado)	No	Home page for a large archive of cryosphere data (snow, sea-ice, glaciers, ice sheets, permafrost)	
10	UK Met Office obs	http://www.metoffice.gov.uk/hadobs/hadisst/	6 (Met Office Hadley Centre)	No	Near surface air temperature, sea-surface temperature, and sea-ice concentration data set compiled by Hadley Centre	
11	CCDS	http://ccds-dscc.ec.gc.ca	4 (Canada)	No	Canadian Climate Data and Scenarios site, providing historical climate data for Canada, along with CMIP3 and CMIP5-derived future climate scenarios	
12	KNMI climate explorer	https://climexp.knmi.nl/start .cgi?id=someone@somew here	6 (Netherlands)	No	Netherlands site hosting a range of observation and model-based climate information, along with user-oriented tools for analysis	
13	UKCIP	http://www.ukcip.org.uk/	6 (UK, Univ. Oxford)	No	UK-based site providing climate data and tools to support adaptation planning	
14	Country Level Impacts of Climate Change (CLICC)	http://www.unep.org/provia/ CLICCPROJECT/tabid/106 0147/Default.aspx	1 (UNEP)	Yes and No	UNEP Provia site for country- level impact studies	

15	Provia Guidance document	http://www.unep.org/provia/ RESOURCES/Publications	1 (UNEP)	Yes	Guidance document on assessing vulnerability,
		/PROVIAGuidancereport/ta bid/130752/Default.aspx			impacts and adaptation to climate change.

Hosting regions are:

1-Africa ; 2-Asia-Pacific; 3-South America; 4-North America, Central America and the Caribbean; 5-South-West Pacific; and 6-Europe