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FUTURE OF THE TASK GROUP ON DATA AND SCENARIO SUPPORT FOR IMPACT AND CLIMATE ANALYSIS (TGICA)

Priority objectives for TGICA and the Data Distribution Centre (DDC)

(Submitted by the Acting Secretary of the IPCC)

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(Prepared by the Co-chairs of TGICA)

Summary

The IPCC Expert Meeting on the Future of TGICA of 26-27 January 2016 recommended that a prioritization of activities be conducted, based on a mapping of the needs of various functions and tasks in relation to the resources they would entail. Using input from the Expert Meeting, experts, Governments and Observer Organizations, this document presents a classification of activities currently or potentially undertaken by TGICA and the DDC. Forty-five activities are grouped and coded under four headings: Data, cross-Working Group collaboration, Guidance, and Capacity Building, with attention given to co-dependencies between activities as well as a judgement concerning their resource implications.

Activities have been prioritized both according to need as well as to resource requirements, based on expert input concerning the relative importance attached to different TGICA/DDC activities and taking account of whether activities are internal or external to IPCC. Using this analysis, seven priority objectives for TGICA and five priority objectives for the DDC are proposed (codes in parentheses are explained later in the text):

Objectives for TGICA

1. To provide oversight of DDC activities, in close liaison with IPCC Working Groups (G03, W01).
2. To facilitate cross-Working Group access to and exchange and analysis of relevant data sets through documentation, guidance, expert meetings, workshops and training (**W02**, **W06**, G08, W04, W05, D02).
3. To undertake mapping exercises to identify significant external sources of data and scenario information and guidance in support of IPCC activities as well as key users of and target audiences for such information (**G09**, **W07**, C01, G05, W03, C03).
4. To develop and update good practice guidance materials in support of IPCC assessments (G01, G02, G06, G04, G10, G11).
5. To prepare and update protocols for linking to external data and preparing guidance on their use (**G07**).
6. To contribute to capacity development activities by the IPCC and other relevant organizations (C02, C08, C04, C05).
7. To build partnerships with external organizations for supporting specialist, good practice guidance on data and scenario selection, application and interpretation (C06, C07).

Objectives for the DDC

1. To archive and curate IPCC-assessed datasets, including data still outstanding from the Fifth Assessment Report (D03, D04).
2. To curate new data sets, in close co-operation with Working Groups, for author analysis, exchange, incorporation in new assessments reports and development of derivative data products (D14, W08, W09, D08, D15).
3. To improve accessibility to Data Distribution Centre materials for supporting IPCC authors as well as external users, especially in developing countries (D01, D09, D10, D11, D12, D13).
4. To catalogue and link reference data for key figures and tables in assessments (W10).

5. To link to external data sets of relevance for upcoming assessments, such as the Coupled Model Intercomparison Project Phase 6 and Shared Socioeconomic Pathways (D05, D06, D07, D16).

Each of these objectives is backed up by at least one high priority activity and all twelve objectives fall within the scope of the current TGICA mandate. The suggestion is that these 12 objectives form the basis for decisions concerning the future development and resourcing of TGICA and the DDC.

1. Mapping and Classifying Activities

Activities currently or potentially undertaken by TGICA and the IPCC DDC that is overseen by TGICA have been compiled in Table 1. This compilation is based on different versions of the Vision Paper developed by TGICA members, comments on the Vision Paper by governments and international observer organizations, an institutional analysis of TGICA¹ and discussions at the IPCC Expert Meeting on the Future of TGICA (26-27 January 2016).

For convenience, and loosely based on discussion themes at the Expert Meeting, activities have been placed in categories under four headings: Data, cross-Working Group collaboration, Guidance and Capacity Building. Given the many co-dependencies and linkages between activities (e.g. certain types of data may be required by different IPCC Working Groups for which documentation and good practice guidance is also needed as well as capacity provision for access by developing country researchers), these linkages between categories have been indicated as well. Activities judged to be primarily directed towards internal IPCC needs, compared to those serving the needs of organizations and users external to the IPCC, have been labelled (with asterisks in Table 1) although these distinctions can sometimes be blurred.

2. Prioritizing activities according to need²

Based on discussions and key recommendations of the Expert Meeting concerning the relative importance attached to different TGICA/DDC activities, these have been ranked and colour-coded by the TGICA Co-Chairs in Table 2, from 1 (highest priority) to 4 (lowest priority), with supplementary ranking according to the number of co-dependencies (shown under "Links"). For many of these priorities, and following the Expert Meeting recommendations, account has been taken of whether activities are internal (asterisked in Table 2) or external to IPCC (see discussion in section 3.1, below).

3. Specifying resource requirements for each activity

All activities undertaken or planned by TGICA and the DDC have resource implications. Based on previous experience of the personnel, infrastructure and time resources required to carry out different activities, in Table 2, one of three levels of anticipated resource requirement to each activity shown in Table 1 have also been assigned. The three levels are: A indicates that current levels of resources are sufficient (status quo); B indicates that increased resources are required by up to 100% compared to current levels; C indicates that substantially increased resources are required to more than double current levels. In addition, the status of a proposed activity is indicated relative to ongoing activities. Extend indicates that current activity needs to be extended; New indicates a new activity not currently undertaken; Partner indicates new activity that can probably only be undertaken in partnership with an external institution. Finally, the responsibility for each activity is also denoted as TGICA (T), DDC (D) or both of these (T/D).

¹ Vaughan, C. 2016. An Institutional Analysis of the IPCC Task Group on Data and Scenario Support for Impacts and Climate Analysis (TGICA), International Research Institute for Climate & Society, Columbia University, 34 pp.

² Tables 2 and 3 can also be found in an EXCEL file: TGICA_priority_ranking.xlsm. By adjusting values, and using macros to re-sort the tables, alternative viewpoints on priority activities and resource requirements can be explored.

Table 1. Ongoing and proposed activities of TGICA and the DDC matched against capacity with current resources and extensions required to achieve desired outcomes. Activities are coded alpha-numerically and sub-divided into four categories: Data (D); cross-WG collaboration (W); Guidance (G) and Capacity Building (C). They are ordered according to links between categories for a given activity, which are shown as a number (of linked categories) followed by codes for the primary and linked categories. * indicates activities directed primarily to internal IPCC needs.

Activities	Current activity	Desired extension	Links
Data			
D01. Making accessible assessed data to IPCC Developing Country users* (developing capabilities to run analyses remotely on DDC servers and/or to deliver large datasets on DVDs or other media for IPCC Developing Country users; special support for WG authors from Developing Countries)	DVDs of regional climate data	Server-side tools; author support	4DWGC
D02. Co-ordinating regional training workshops. TGICA could work together with organizations such as PROVIA to hold regional training workshops on the use of RCPs and SSPs in impacts, adaptation, vulnerability and mitigation research. These workshops could provide scientists in developing country with hands-on experience accessing and using scenarios, exposing scientists to good practice and improving the ability of such scientists to contribute relevant research to the next assessment cycle.	No	New: partner with regional bodies	4DWGC
D03. Curating assessed data* (quality control; documentation; meta-data, website maintenance)	Climate projections, emissions, concentrations	Obs/Proj impacts, Soc-econ variables	3DWG
D04. Archiving of assessed data* (versioning; maintenance of web links; the DDC is still the official source of information included in IPCC reports; even if some of the same information is available elsewhere, typically it is not curated and archived as rigorously as in the DDC)	Climate projections, emissions, concentrations	Obs/Proj impacts, Soc-econ variables	3DWG
D05. Linking to assessed data* (following TGICA linking criteria; periodic review)	TGICA judgement (DDC + sub group)	Co-ordinate with WGs	3DWG
D06. Hosting of (or linking to) CMIP6 data* (appropriate climate and related reference and projection data from the Coupled Model Intercomparison Project Phase 6)	Basic archiving of requested variables	Improve user-friendly access	3DWG
D07. Linking to (or hosting) SSP- and SPA-derived data* (appropriate socioeconomic, demographic, emissions, technology and land use baseline and projection narratives and data based on the Shared Socioeconomic Pathways and Shared Policy Assumptions)	Datasets and narratives linked to	Explore hosting/documenting datasets	3DWG

Activities	Current activity	Desired extension	Links
D08. Preparing derived climate variables* (compiling and broadening access to well documented data sets of derived climate variables needed for impacts and adaptation analysis, such as time series of regional averages/extremes, variables related to fire risk, heat stress, flooding, changes in disease vectors).	No	New: sub group to survey/implement	3DWG
D09. Offering new data services* (more services around data are desirable, e.g. server side processing, both automated and individual, to bring the calculations to the data, to reduce download volume and for format conversions)	No	New: server-side processing	3DWC
D10. Enhancing services for data storage* , such as individual assistance of data managers in data delivery or support in data processing and replication; linking to additional data-related information and archival of additional data, e.g. IPCC AR6 Atlas data.	No	New: additional storage infrastructure	3DWC
D11. Making accessible assessed data to users external to IPCC. Facilitating access to IPCC data and scenarios to “external” users such as National Meteorological and Hydrological Services, other government agencies and consultants from the global to the regional/national levels. This would be a co-benefit of work done to ease access for IPCC “internal” users from developing countries;	No	New: partner (inter)national bodies	3DGC
D12. Delivering authoritative data and information to climate services providers. Facilitating delivery of the best available science and research outputs needed to support climate services without having to advise policy-makers or deliver operational climate services, which is not TGICA’s mandate but is rather the role of organizations such as the GFCS	No	New: establish MoU with GFCS	3DGC
D13. Providing regional and sectoral (derived) data, services and tools (TGICA involvement needs to be investigated with partners, e.g. the regional climate centres in the GFCS, including joint funding possibilities).	No	New: partner with specialist agencies	3DGC
D14. Ensuring openness, traceability and transparency of data* . Given its role in making data available, and in providing guidance regarding its use, the TGICA clearly has an important role to play in fostering transparency. Moreover, TGICA and the DDC recognize recent efforts by the scientific data management community to improve the openness, traceability, and transparency of scientific data through mechanisms including digital object identifiers, data citation practices, and improved data documentation and metadata standards.	DOI for some data; documentation; metadata	Extended use of data standards	2DW

Activities	Current activity	Desired extension	Links
D15. Hosting or linking to CORDEX data* (high resolution climate data and projections data from the Coordinated Regional Downscaling Experiment - CORDEX)	No	New DDC node; data/guidance support	2DG
D16. Establishing partnerships with other portals and data sources. These could be valuable for producing decision support information or for linking to emerging data sources, such as the data infrastructure under development around the sustainable development goals (SDGs).	Apply existing linking criteria	Sub-group to identify new sources	2DG
Cross-WG collaboration			
W01. TGICA/DDC co-ordination and WG liaison*. TGICA/DDC administration; liaison with WGs; scheduling, organisation and recording of TGICA meetings/telecons; agenda preparation; reporting to IPCC	Uneven WG TSU support; 2-3 mtgs/yr	Enhanced WG liaison; full-time admin. support	4WDGC
W02. Mapping of internal IPCC requirements*. Includes improved integration of TGICA/DDC with IPCC Bureau, WGs and TSUs both organizationally and at the working level.	No	New: to be conducted with WGs	4WDGC
W03. Mapping of significant non-IPCC user requirements. TGICA can follow up on DDC User Survey	DDC User Survey	Follow up to User Survey	4WDGC
W04. Organising IPCC/TGICA Expert Meetings and Workshops*. TGICA can liaise with WGs to organise meetings. These are effective means for addressing cross-WG issues; identifying and bringing together experts, including from DCs and EITs using the Trust Fund; identifying potential authors of guidance; generating ideas, suggestions and recommendations; producing IPCC supporting material (meeting reports).	Occasional (one meeting per few years)	At least one meeting per year	4WDGC
W05. Organising data support for WGs*, their authors and researchers contributing to WG reports through transparent documentation and accessibility to newly curated data such as CMIP6 or SSPs, and through dissemination, such as presentations during Lead Author Meetings to sensitise the author teams about the roles and activities of TGICA and the DDC.	Informal author exchange; TSU-DDC liaison	WG-TGICA/DDC arranged + LA support	3WDG
W06. Facilitating exchange between IPCC WGs and core community research activities*. Improve TGICA's role in facilitating exchanges between IPCC WGs and core community research activities (e.g., WCRP CMIP, ICONICS, AgMIP/ISI-MIP and IAMC).	TGICA selects core research reported at DDC	WGs and TGICA/DDC joint initiative	3WDG
W07. Mapping of other significant providers of climate-related data and scenarios	No	New: TGICA sub-group	2WD

Activities	Current activity	Desired extension	Links
W08. Reviewing data used in assessments* . The critical review of data among the WGs and TGICA/DDC could be co-ordinated with development of the proposed dataset index.	TSU works with DDC following AR approval	During assessment (dataset index)	2WD
W09. Designing and implementing a dataset index* . A cross-Working Group dataset index could be developed by TGICA and the DDC in co-operation with the three IPCC WGs. This would gather information from authors as they prepare an assessment. The information would be no more than that authors would ordinarily be expected to record for their own use: where the data came from, an appropriate citation and possibly some keywords. The precise formulation of the questions to be answered would have to be agreed across TSUs, but should be of the order of 3 or 4 questions. The objective would be to reach an agreement on a level of information which is consistent with good practice and which can be recorded without disrupting the review process. The added value of the index would come not from any additional assessment but from being able to share information in a searchable form across Working Groups during report preparation and externally after publication.	No	New: with WGs; design; implement	2WD
W10. Cataloguing data for figures* . Producing, with WG TSUs and authors, a transparent catalogue of the data used to produce figures in at least the IPCC Working Group and Synthesis Report Summaries for Policy Makers, and perhaps also for further figures in the Working Group reports	Ex post; TGICA sub-groups for selected figures	During AR; implement with WG LAs	2WD
Guidance			
G01. Preparing general methods-based guidance documents* offering non-prescriptive, good practice suggestions on methods of interpretation, selection and application of data and scenarios held at or linked to from the DDC. Includes issues such as: downscaling; attribution of extremes; scenario selection; reference/baseline data; interpreting scenario narratives; combining climate and non-climate scenarios. General guidance is not directed to specific sectors, regions or issues, and is intended mainly for impacts, adaptation, vulnerability and mitigation analysts undertaking research that may feed into IPCC assessments. Guidance is commonly multi-disciplinary and cross-WG in scope. TGICA/IPCC also has a unique level of authority and objectivity and these values make it ideally suited to offering high quality guidance material.	1 completed/yr (4-5 TGICA + other co-authors)	2-3 completed/yr + technical support	4GDWC

Activities	Current activity	Desired extension	Links
G02. Updating and revision of guidance documents* . As new data and scenarios appear, and new application methods are adopted to analyse them, it is important to reflect these advances in existing guidance documents. Better integration with AR cycle may provide the opportunity for AR author involvement in updating (i.e. more resources).	1 updated/yr (4-5 TGICA + other co-authors)	2-3 updated/year + technical support	4GDWC
G03. Raising awareness and profile of TGICA and its products* . Regular reporting, publicity material, presence at relevant international meetings and conferences, DDC and IPCC/TGICA web pages	Reporting to Bureau + Plenary; Poster, IPCC+DDC websites	Presentations at: UNFCCC, IPCC + other mtgs; publicity material	4GDWC
G04. Preparing specific methods-based guidance documents , which are similar to general guidance documents, but focus on the application of data and scenarios for sectors (e.g. agriculture, water resources, health, biodiversity), regions (e.g. small islands, cities, semi-arid regions; river basins, mountain regions, coastlines; oceans) or issues (e.g. meeting policy targets, assessing costs, prioritizing decisions).	No	New: partner with relevant agencies	4GDWC
G05. Scoping IPCC guidance documentation* . During the AR scoping, it would be helpful to begin planning good practice guidance on data and scenarios that will be assessed and released at the end of the cycle. This could include mobilizing cross-WG authors who can contribute to guidance.	TGICA selects titles and builds author teams	Work with WGs to optimise LA input	3GDW
G06. Preparing descriptive guidance documents* (describing the IPCC assessed data and scenarios held at or linked to from the DDC)	Prepared after assessed data archived	Release with data + technical support	3GDC
G07. Developing and updating protocols for preparing guidance* . Protocols for the preparation and review of Technical Guidelines, Fact Sheets and Frequently Asked Questions (FAQs) have been developed by TGICA and are subject to periodic review or updating. The protocols should be applicable across disciplines represented in different WGs	Current protocols under periodic review	Protocols for new types of guidance	2GW

Activities	Current activity	Desired extension	Links
<p>G08. Assessing the value of decision-support methods and tools*. With its position at the intersection of the research communities represented by the three WGs, TGICA is uniquely suited to beginning a process to assess the value of alternative tools for decision-making. The goals of such an activity would be to: (1) improve understanding of the effectiveness of current decision-support methods; (2) coordinate collection of data and methods for evaluation and research; (3) advance understanding of the needs of information users and the sources that are useful for informing different types of decisions; and (4) enhance recognition of the importance of evaluating and assessing the information content as well as interfaces and communication of decision-support systems. Such an activity would move the IPCC closer to assessing the costs and benefits of various impacts and response strategies.</p>	No	New: TGICA to support WG assessment	2GW
<p>G09. Mapping available guidance material*. A review of existing guidance materials could be performed, pointing researchers to existing resources that have already been produced by the range of organizations engaged in building capacity of developing country scientists and decision makers to access, analyse and interpret climate change information. In addition to providing perspective on existing resources, and avoiding the duplication of efforts, this kind of effort would identify a clear list of priorities for future guidance efforts of the TGICA itself.</p>	No	New: TGICA sub-group	2GC
<p>G10. Preparing guidance for assessments leading to decisions. TGICA can provide relevant guidance on generating climate change related information leading to decisions (e.g. for national assessments or adaptation plans</p>	No	New: partner nat. assessments/NAPs	2GC
<p>G11. Preparing climate information for decision makers. A range of organizations – including government offices, humanitarian organizations, and the private sector – have focused attention on climate information as a way to improve climate risk management and increase resilience.</p>	No	New: partner specialist organisations	2GC

Activities	Current activity	Desired extension	Links
Capacity Building			
C01. Mapping of partnerships (distinguishing between providers and users of data/information, guidance and capacity building and identification of the overlaps and intersection of all three TGICA areas). Account for partnerships with organizations having existing links to IPCC. These provide or stimulate products used in IPCC assessments, such as climate projections, socioeconomic scenarios or impact model inter-comparisons. Example organizations include WCRP (overseeing CMIP and CORDEX), PROVIA, IAMC, IPBES, ICONICS, Future Earth and UNFCCC bodies. Account also for partnerships with organizations delivering climate change data and information. These include UN Agencies, regional governmental organizations, and non-governmental organizations. In particular, the Expert Meeting suggested that the IPCC should develop a Memorandum of Understanding with the GFCS.	No	New: TGICA sub-group	4CDWG
C02. Supporting capacity building for "first-level" users. Focus of support on the first-level users who access and use IPCC data and outputs in a multi-disciplinary context. Internally in IPCC, these are authors of assessments on topics that are cross-disciplinary or cross-WG. External to IPCC, they are representatives of government departments and university researchers. Support is also desirable in the frontier area of climate and socio-economic data integration to define regional impact assessments for the development of tailored climate services in the regions	No	New: to be coordinated with WGs	4CDWG
C03. Mapping target audience for capacity building outside IPCC. For external users priority targets should distinguish between "next level users", who make immediate use of IPCC products and DDC data in support of their further activities, and the extensive diversity of what may typically be termed "end-users". This will be reliant on resource-appropriate, opportunistic engagement or partnerships with other organizations already active in the sphere of climate services, and climate change outreach.	No	New: TGICA sub-group	4CDWG
C04. Providing information for cross-WG regional-based work* (e.g. projections and impacts).	No	New: liaise with WGs and relevant LAs	4CDWG
C05. Providing information for problem-oriented assessments (e.g. highly vulnerable areas).	No	New: liaise with WGs and relevant LAs	4CDWG

Activities	Current activity	Desired extension	Links
C06. Establishing partnerships with sectoral organizations (e.g. AgMIP).	No	New: TGICA sub-group to be tasked	2CG
C07. Establishing partnerships to tap into additional resources. Example organizations with resources include World Bank, European Commission.	No	New: TGICA sub-group + Secretariat	2CG
C08. Engaging the UNFCCC process. TGICA could serve as a resource to the Least Developed Countries Expert Group (LEG), the Consultative Group for National Communications from NAI Parties (CGE), and/or the Group Support Programme for National Adaptation Plans. For example, by holding TGICA meetings in conjunction with some of these activities, the Task Group might be better able to understand specific needs of these communities and/or address specific capacity building gaps.	Ex officio UNFCCC member of TGICA	Liaise; organise joint meetings	1C

Table 2. Priority list of TGICA/DDC activities (cf. Table 1) organised and colour coded according to need (column A) and then co-dependency (Links) based on consultation with the TGICA membership, experts, governments and observer organisations. Needs are ranked from 1 (highest) to 4 (lowest). Links indicate co-dependencies between categories of activities: D = Data; W = cross-WG collaboration; G = Guidance; C = Capacity Building (number of categories is listed before primary category). Resource requirements (column B): A = status quo; B = increase by up to 100%; C = increase by more than 100%. Status of resource requirement: Extend = extend current activity; New = new activity; Partner = new activity probably requiring partnership. Responsibilities (column C): TGICA = T; DDC = D. * indicates activities directed primarily to internal IPCC needs

Activity	A	Links	B	Status	C
W01. TGICA/DDC co-ordination and WG liaison*	1	4WDGC	B	Extend	T/D
W02. Mapping of internal IPCC requirements*	1	4WDGC	A	New	T/D
W03. Mapping of significant non-IPCC user requirements	1	4WDGC	B	New	T
W04. Organising IPCC/TGICA Expert Meetings and Workshops*	1	4WDGC	B	Extend	T
G01. Preparing general methods-based guidance documents*	1	4GDWC	B	Extend	T
G02. Updating and revision of guidance documents*	1	4GDWC	B	Extend	T
G03. Raising awareness and profile of TGICA and its products*	1	4GDWC	B	Extend	T/D
D01. Making accessible assessed data to IPCC Developing Country users*	1	4DWGC	B	Extend	T/D
C01. Mapping of partnerships	1	4CDWG	B	New	T
W05. Organising data support for WGs*	1	3WDG	B	Extend	T/D
W06. Facilitating exchange between IPCC WGs and core community research activities*	1	3WDG	A	Extend	T/D
G05. Scoping IPCC guidance documentation*	1	3GDW	B	New	T
G06. Preparing descriptive guidance documents*	1	3GDC	B	Extend	T/D
D03. Curating assessed data*	1	3DWG	B	Extend	D
D04. Archiving of assessed data*	1	3DWG	B	Extend	D
D05. Linking to assessed data*	1	3DWG	A	Extend	T/D
D06. Hosting of (or linking to) CMIP6 data*	1	3DWG	B	Extend	D
D07. Linking to (or hosting) SSP- and SPA-derived data*	1	3DWG	B	Extend	D
W07. Mapping of other significant providers of climate-related data and scenarios	1	2WD	A	New	T/D
W08. Reviewing data used in assessments*	1	2WD	B	Extend	T/D
G07. Developing and updating protocols for preparing guidance*	1	2GW	A	Extend	T
G09. Mapping available guidance material*	1	2GC	A	New	T
C02. Supporting capacity building for "first-level" users	2	4CDWG	B	New	T
D09. Offering new data services*	2	3DWC	B	New	D
D10. Enhancing services for data storage*	2	3DWC	B	New	D
W09. Designing and implementing a dataset index*	2	2WD	B	New	T/D
W10. Cataloguing data for figures*	2	2WD	B	Extend	T/D
D14. Ensuring openness, traceability and transparency of data*	2	2DW	B	Extend	D
D15. Hosting or linking to CORDEX data*	2	2DG	C	New	D
C06. Establishing partnerships with sectoral organizations	2	2CG	B	New	T
C07. Establishing partnerships to tap into additional resources	2	2CG	B	New	T
C08. Engaging the UNFCCC process	2	1C	B	Extend	T
G04. Preparing specific methods-based guidance documents	3	4GDWC	C	Partner	T
D02. Co-ordinating regional training workshops	3	4DWGC	C	Partner	T/D
C03. Mapping target audience for capacity building outside IPCC	3	4CDWG	B	New	T
C04. Providing information for cross-WG regional-based work*	3	4CDWG	C	New	T
C05. Providing information for problem-oriented assessments	3	4CDWG	C	New	T
D08. Preparing derived climate variables*	3	3DWG	B	New	T/D
D11. Making accessible assessed data to users external to IPCC	3	3DGC	C	Partner	D
D12. Delivering authoritative data and information to climate services providers	3	3DGC	C	Partner	T/D
D16. Establishing partnerships with other portals and data sources	3	2DG	B	Extend	T/D

D13. Providing regional and sectoral (derived) data, services and tools	4	3DGC	C	Partner	T
G08. Assessing the value of decision-support methods and tools*	4	2GW	C	New	T
G10. Preparing guidance for assessments leading to decisions	4	2GC	C	Partner	T
G11. Preparing climate information for decision makers	4	2GC	C	Partner	T

4. Prioritising Activities According to Resource Requirements²

Table 3 re-orders the activities first according to their resource requirement (from least demanding at the top), and second according to need (highest priority at the top, as in Table 2). Thick horizontal lines delimit the three resource categories. Additional sub-divisions for combinations of resource requirement and priority need are indicated in Table 3 using colour coding. As an aid to interpretation, the following bullet points describe the rationale for prioritising activities in each colour band shown in Table 3, from top to bottom:

- A/1 (orange): rows 1-6 show activities that are of highest priority (rank 1) and could be carried out to achieve desired outcomes using current resources (level A). This includes three mapping exercises not undertaken previously (W02, W07 and G09).
- B/1 (yellow): rows 7-22 list activities that are of the highest priority (rank 1) but require additional resourcing (level B) to achieve desired outcomes. Aspects of all but one of these activities (C01, which is new) are already treated by the Task Group, but would require enhancement.
- B/2 (beige): activities listed in rows 23-31 are of high priority but require additional specification, clarification or agreement within TGICA/DDC and with IPCC Working Groups (rank 2). All would require additional resourcing (level B); six of the nine activities would be new to the Task Group.
- B/3 (pink): rows 32-34 list activities that were suggested in the Expert Meeting but which are regarded as less urgent (rank 3) for internal IPCC purposes. They would require level B resourcing.
- C/2 (violet): row 35 lists an activity to provide access to high resolution regional climate projections, which is regarded as high priority to IPCC (rank 2) but involves a very large dataset (CORDEX) and would imply adding at least one new, well-funded node to the DDC (hence the level C resource requirement)
- C/3 (light grey): activities in rows 36-41 would all be new to the Task Group, and while of some relevance to IPCC needs, are mainly targeted at specialist users with fairly heavy resource implications (level C). As such, four of the activities (G04, D02, D11, D12) might only be feasible in partnership with external institutions.
- C/4 (dark grey): rows 42-45 list specific activities that are of lowest priority in relation to IPCC needs (rank 4), either because of the large intellectual investment needed from TGICA members in co-operation with Working Groups (G08), or because of the specialised nature of tasks and end-users external to IPCC (D13, G10, G11). High levels of resourcing and/or partnering would be required (level C).

5. Priority Objectives for TGICA and the DDC

Table 3 offers an approximate guide both to the relative importance of potential future activities of TGICA and DDC as well as to their resource implications. The classification gives insight into the breadth and diversity of need, activity and resource requirement for a TGICA that would operate within the fullness of its existing mandate. Using our analysis, we suggest that broad priority objectives be established, all falling within the terms of the current mandate, and that these define the scope of effort, while the specifics of activities and tasks are left for TGICA to determine in conjunction with WG Co-Chairs and within the constraints of resource availability.

Table 3. Priority list of TGICA/DDC activities (cf. Table 1) organised and colour coded according to resource requirement (column A) and then need (column B). Resource requirements: A = status quo; B = increase by up to 100%; C = increase by more than 100% (also delimited by thick horizontal lines). Need ranked from 1 (highest) to 4 (lowest) based on consultation with the TGICA membership, experts, governments and observer organisations. Status of resource requirement (column C): Extend = extend current activity; New = new activity; Partner = new activity probably requiring partnership. Links (column D) indicate co-dependencies between categories of activities: D = Data; W = cross-WG collaboration; G = Guidance; C = Capacity Building (number of categories is listed before primary category). Responsibilities (column E): TGICA = T; DDC = D. * indicates activities directed primarily to internal IPCC needs.

Activity	A	B	C	D	E
W02. Mapping of internal IPCC requirements*	A	1	Extend	4WDGC	T/D
W06. Facilitating exchange between IPCC WGs and core community research activities*	A	1	Extend	3WDG	T/D
D05. Linking to assessed data*	A	1	Extend	3DWG	T/D
W07. Mapping of other significant providers of climate-related data and scenarios	A	1	New	2WD	T/D
G07. Developing and updating protocols for preparing guidance*	A	1	Extend	2GW	T
G09. Mapping available guidance material*	A	1	New	2GC	T
W01. TGICA/DDC co-ordination and WG liaison*	B	1	Extend	4WDGC	T/D
W03. Mapping of significant non-IPCC user requirements	B	1	New	4WDGC	T
W04. Organising IPCC/TGICA Expert Meetings and Workshops*	B	1	Extend	4WDGC	T
G01. Preparing general methods-based guidance documents*	B	1	Extend	4GDWC	T
G02. Updating and revision of guidance documents*	B	1	Extend	4GDWC	T
G03. Raising awareness and profile of TGICA and its products*.	B	1	Extend	4GDWC	T/D
D01. Making accessible assessed data to IPCC Developing Country users*	B	1	Extend	4DWGC	T/D
C01. Mapping of partnerships	B	1	New	4CDWG	T
W05. Organising data support for WGs*	B	1	Extend	3WDG	T/D
G05. Scoping IPCC guidance documentation*	B	1	Extend	3GDW	T
G06. Preparing descriptive guidance documents*	B	1	Extend	3GDC	T/D
D03. Curating assessed data*	B	1	Extend	3DWG	D
D04. Archiving of assessed data*	B	1	Extend	3DWG	D
D06. Hosting of (or linking to) CMIP6 data*	B	1	Extend	3DWG	D
D07. Linking to (or hosting) SSP- and SPA-derived data*	B	1	Extend	3DWG	D
W08. Reviewing data used in assessments*	B	1	Extend	2WD	T/D
C02. Supporting capacity building for "first-level" users	B	2	New	4CDWG	T
D09. Offering new data services*	B	2	New	3DWC	D
D10. Enhancing services for data storage*	B	2	New	3DWC	D
W09. Designing and implementing a dataset index*	B	2	New	2WD	T/D
W10. Cataloguing data for figures*	B	2	Extend	2WD	T/D
D14. Ensuring openness, traceability and transparency of data*	B	2	Extend	2DW	D
C06. Establishing partnerships with sectoral organizations	B	2	New	2CG	T
C07. Establishing partnerships to tap into additional resources	B	2	New	2CG	T
C08. Engaging the UNFCCC process	B	2	Extend	1C	T
C03. Mapping target audience for capacity building outside IPCC	B	3	New	4CDWG	T
D08. Preparing derived climate variables*	B	3	New	3DWG	T/D
D16. Establishing partnerships with other portals and data sources	B	3	Extend	2DG	T/D
D15. Hosting or linking to CORDEX data*	C	2	New	2DG	D
G04. Preparing specific methods-based guidance documents	C	3	Partner	4GDWC	T
D02. Co-ordinating regional training workshops	C	3	Partner	4DWGC	T/D
C04. Providing information for cross-WG regional-based work*	C	3	New	4CDWG	T
C05. Providing information for problem-oriented assessments	C	3	New	4CDWG	T
D11. Making accessible assessed data to users external to IPCC	C	3	Partner	3DGC	D
D12. Delivering authoritative data and information to climate services providers	C	3	Partner	3DGC	T/D

D13. Providing regional and sectoral (derived) data, services and tools	C	4	Partner	3DGC	T
G08. Assessing the value of decision-support methods and tools*	C	4	New	2GW	T
G10. Preparing guidance for assessments leading to decisions	C	4	Partner	2GC	T
G11. Preparing climate information for decision makers	C	4	Partner	2GC	T

Based on the detailed classification of activities set out in this document, seven priority objectives for TGICA and five priority objectives for the DDC are proposed:

Objectives for TGICA

1. To provide oversight of DDC activities, in close liaison with IPCC Working Groups (G03, W01)
2. To facilitate cross-Working Group access to and exchange and analysis of relevant data sets through documentation, guidance, expert meetings, workshops and training (**W02, W06**, G08, W04, W05, *D02*)
3. To undertake mapping exercises to identify significant external sources of data and scenario information and guidance in support of IPCC activities as well as key users of and target audiences for such information (**G09, W07**, C01, G05, W03, *C03*)
4. To develop and update good practice guidance materials in support of IPCC assessments (G01, G02, G06, *G04, G10, G11*)
5. To prepare and update protocols for linking to external data and preparing guidance (**G07**)
6. To contribute to capacity development activities by the IPCC and other relevant organisations (C02, C08, *C04, C05*)
7. To build partnerships with external organizations for supporting specialist, good practice guidance on data and scenario selection, application and interpretation (C06, C07)

Objectives for the DDC

1. To archive and curate IPCC-assessed datasets, including data still outstanding from the Fifth Assessment Report (D03, D04)
2. To curate new data sets, in close co-operation with Working Groups, for author analysis, exchange, incorporation in new assessments reports and development of derivative data products (D14, W08, W09, *D08, D15*)
3. To improve accessibility to Data Distribution Centre materials for supporting IPCC authors as well as external users, especially in developing countries (D01, D09, D10, *D11, D12, D13*)
4. To catalogue and link reference data for key figures and tables in assessments (W10)
5. To link to external data sets of relevance for upcoming assessments, such as the Coupled Model Intercomparison Project Phase 6 and Shared Socioeconomic Pathways (**D05**, D06, D07, *D16*)

For each objective, alpha-numeric codes in parentheses relate to activities that are prioritised in Table 3. Activities in bold type are judged both of high priority and feasible assuming current TGICA/DDC resourcing (orange colour in Table 3). Those in normal type are of high priority, but would require a modest increase in resources relative to current levels (yellow, beige and pink in Table 3). Those in small italic type are of lower priority, with most requiring substantial new resourcing or partnership arrangements (violet and grey in Table 3). For each objective there is at least one priority activity that would be feasible with unchanged or modestly increased resourcing.

We suggest that these 12 objectives, backed up by the prioritised activities shown in Table 3, form the basis for decisions concerning the future development and resourcing of TGICA and the DDC. We further suggest that all twelve objectives fall within the scope of the current TGICA mandate, and that the prioritisation serves to sharpen that mandate.