WCRP REPORT
World Climate Research Programme

Report

WCRP Task Force on Regional Climate Downscaling (TFRCD) Meeting

16 June 2010, Lille, France

October 2010

WCRP Informal Report No. 10/2010

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Action Items

The status of some action items is given in italics, where progress has been made since the meeting.

TFRCM and CORDEX Support

1. Request WCRP scientific staff support from D/WCRP (C. Jones)
   - *Present offer is more extensive support from C. Michaut WCRP Office Paris*

Membership

2. Discuss proposed membership changes with D/WCRP and JSC (C. Jones, F. Giorgi)

3. Send letters of invitation to new members (Staff)
   - *Done, all 4 nominees (Solomon, Jones, Benestad and Lamptey have all agreed to serve and nomination forms have gone via D/WCRP to the JSC Chair.*

TFRCM Mandate

4. Recommend to WGCM and JSC that the TF mandate be renewed as an official WCRP panel or working group, with the terms or reference to be formulated in the coming months (C. Jones, F. Giorgi)

5. Seek to have RCM representation at the upcoming Fall WCRP modeling meeting in Paris (C. Jones to S. Bony): Done C. Jone and F.Giorgi have both received invitations.

CORDEX Archive

6. Plan the archival of the ESD component of CORDEX (B. Hewitson)

CORDEX Output

7. Render more visible on the CORDEX website the experimental protocol, list of variables to save and archive details (Staff)
   - *Action already started, ongoing discussion now between B. Gutowski, R. Jones, O-B Christensen and C. Jones*

8. Confirm that accumulated ppt and instantaneous 2m temperature should be 3hrly or hourly and that these are ‘tier 1’ variables for archival (C. Jones)
   - *Change is in process to introduce these 2 variables into as Tier 1 variables along with a range of other updates to the diagnostics list. Bill Gutowski presently leading this.*

Metrics and Diagnostics

9. Send metrics and diagnostics lists from RegCM workshop, S. America, Asia, and the last S. Africa TF meeting to R. Jones and B. Gutowski (W. Kwon, K. Kumar, B. Hewitson, R. Menendez)

10. Assess metrics and diagnostics lists and make a selection for a TF-CORDEX list by the end of July, interact with the WGCM metrics panel and distribute to the full TF to have a response by the end of August (B. Gutowski and R. Jones)

11. Present TF-CORDEX list of metrics and diagnostics to WGCM in October (F. Giorgi)

12. Initiate an activity to collect diagnostics scripts on a repository for CORDEX (B. Hewitson)

Access to CMIP5 GCM boundary conditions

13. Encourage the Hadley Center, EC-Earth, ECHAM, Météo-France, GFDL and the Japanese groups to fast track key data – 6hrly model level data for the Africa domain or, preferably, the whole global domain – onto the ESG (C. Jones, B. Gutowski to contact I. Held, D. Jacob has already agreed, contact M. Déqué, W. Kwon, R. Jones)

- *Named Responsibles: R. Jones (Hadley Centre), W. Kwon (MIROC, Japan), B. Gutowski (GFDL), F. Giorgi (NCAR, Météo-France), C. Jones (EC-Earth, ECHAM, CCCma)*

14. Approach BADC to see if it will sub-set the data (C. Jones to contact M. Jukes)

15. Improve the visibility of the CORDEX website, including a list of which models will be used and a contact person for each group (Staff)

- *Requires assistance from WCRP support*

Regional participation in CORDEX

16. Foster the growth of Regional Analysis and Evaluation Teams and identify team leads. P. Ruti has expressed interest in working on this (All TF to be active in their respective regions supported by Staff)

- *Action has started for Africa: B. Hewiston has drafted a proposal to bring together an Africa analysis team for training, analysis and paper writing over the coming ~12 month period. Funding has been secured from WCRP, START and SMHI to support this. The ICTP spring workshop in 2011 will also be used to support this activity.*

Empirical Statistical Downscaling (ESD)

17. Follow up plans to hold an ESD workshop (C. Jones, B. Hewitson, R. Benestad)

- *Discussions should ideally also include C. Goodess, J. Palutikof, L. Terray and C. Page and lead to a definite plan to coordinate and compare CORDEX Statistical and Dynamical Downscaling efforts based on 'early-delivery' CMIP5 simulations.*

Links to WGII

18. Communicate with TGICA on what experiments will be run as part of CORDEX and what data will be available for the climate impact assessment and adaptation communities to utilize for their research (C. Jones, F. Giorgi, Staff)

- B. Hewitson attended the TGCIA meeting in Boulder: Hopefully he brought this to their attention!

Summary of Regional TF Activities

19. Collect information on regional activities on the CORDEX website (Staff)

TFRCM and CORDEX Support

CORDEX is progressing well, but the Task Force (TF) is struggling with respect to communication between the different regions and between different disciplines (e.g. dynamical modeling and statistical downscaling also a general link and communication with the IAV community). The TF would draw enormous benefit from having access to a WCRP support person with relevant science background to help with this in the coming 12-24 months, in particular in relation to communication within the CORDEX effort, but also with respect to communicating CORDEX activities outwards around the regions.

Action: Request WCRP scientific staff support from D/WCRP (C. Jones)

Present offer is more extensive support from C. Michaut WCRP Office Paris

Membership

Some possible changes to the Task Force membership were discussed. Those present at the meeting plus F. Giorgi by phone supported all of the following suggestions.

C. Menendez has indicated that due to too many other commitments he will have to leave the TF, therefore a suitable replacement for South America needs to be identified. C. Menendez and C. Vera recommended Silvina Solomon (CIMA, UBA, Argentina), who would be willing to take on the role, and the TF unanimously agreed with her nomination.

Richard Jones (UK Met. Office) has been nominated to replace J. Murphy since the TF is not focusing on the decadal prediction problem yet and R. Jones' responsibilities lie closer to the TF remit. All TF members also supported this.
The need for a second representative on the TF from Africa was discussed (since the previous representative from Senegal never materialized). The consensus view of the TF was that Benjamin Lamptey (Ghana) would be a very good candidate.

R. Laprise stepped down from the TF earlier this year. An additional Empirical Statistical Downscaling (ESD) voice on the TF (in addition to B. Hewitson) is requested to make ESD activities a more active component of CORDEX. Rasmus Benestad (Met Service, Norway) would be willing to join the TF and would make a very good contribution. The suggestion was agreed unanimously by the TF.

Action: Discuss proposed membership changes with D/WCRP and JSC (C. Jones, F. Giorgi)

Action: Send letters of invitation to new members (Staff)

Done, all 4 nominees (Solomon, Jones, Benestad and Lamptey have all agreed to serve and nomination forms have gone via D/WCRP to the JSC Chair.

TFRCM Mandate

The current one-year mandate will officially end in October 2010, coinciding with the 14th Session of WGCM. The TF wishes its mandate to be renewed as a full WCRP panel or working group and will make a recommendation in due course, also based on the outcomes of the WCRP Regional Climate Workshop. The formation of a full panel will be key in maintaining the CORDEX initiative and to act as a key information provider for international regional climate downscaling activities.

Action: Recommend to WGCM and JSC that the TF mandate be renewed as an official WCRP panel or working group, with the terms or reference to be formulated in the coming months (C. Jones, F. Giorgi)

Action: Seek to have RCM representation at the upcoming Fall WCRP modeling meeting in Paris (C. Jones to S. Bony): Done C. Jones and F. Giorgi have both received invitations.

CORDEX Archive

DMI has agreed to host the CORDEX dataset and the archive should be ready by the end of the summer. The archival of the ESD part of CORDEX has not been defined as of yet.

Action: Plan the archival of the ESD component of CORDEX (B. Hewitson)

CORDEX Output

Feedback from the recent RegCM workshop held in June 2010 in Trieste indicates that there is widespread enthusiasm and interest in participating in CORDEX but that there is some confusion as to the experimental protocol, what variables should be saved, where data should be archived and which metrics should be used. This is despite most of these issues having already been discussed and finalized by the TF.

Action: Render more visible on the CORDEX website the experimental protocol, list of variables to save and archive details (Staff)
Action already started, ongoing discussion now between B. Gutowski, R. Jones, O-B Christensen and C. Jones

Some participants have requested that there be a minimum or 'core' list of variables to save. This is in contrast to requests at the last TF meeting in South Africa, where people requested the list to be extended. F. Giorgi said that it could be useful to have a short list of core variables for impact studies; otherwise some people will be put off from participating. There was some disagreement on the idea of reducing the variable list, which is essentially what was used in the ENSEMBLES project.

Action: Confirm that accumulated ppt and instantaneous 2m temperature should be 3hrly or hourly and that these are 'tier 1' variables for archival (C. Jones)

Change is in process to introduce these 2 variables into as Tier 1 variables along with a range of other updates to the diagnostics list. Bill Gutowski presently leading this.

Metrics and Diagnostics

F. Giorgi requests that the TF prepares a list of recommended metrics as soon as possible to present at the October WGCM meeting. This should include quick look metrics, common metrics and domain-specific metrics, such as monsoon indicators. This has already been done at the Hadley Center, with a series of regional and global metrics, including a focus on Africa. Diagnostics would also be useful to see where there is added value, for example in the seasonal mean statistics. Metrics and diagnostics lists have also been developed as part of the ICTP RegCM workshop, at the previous TF meeting in S. Africa and by the Asian and South American groups. R. Jones and B. Gutowski have agreed to collect all these lists and produce a first draft of a universal list for the TF and CORDEX.

Action: Send metrics and diagnostics lists from RegCM workshop, S. America, Asia, and the last S. Africa TF meeting to R. Jones and B. Gutowski (W. Kwon, K. Kumar, B. Hewitson, R. Menendez)

Action: Assess metrics and diagnostics lists and make a selection for a TF-CORDEX list by the end of July, interact with the WGCM metrics panel and distribute to the full TF to have a response by the end of August (B. Gutowski and R. Jones)

Action: Present TF-CORDEX list of metrics and diagnostics to WGCM in October (F. Giorgi)

The TF should encourage the distribution of scripts that are available to calculate metrics and diagnostics. B. Hewitson said that one of his post-docs is willing to write r-scripts that can be shared via a repository accessed from the CORDEX webpage and this will probably encourage others to share their scripts with the rest of the community.

Action: Initiate an activity to collect diagnostics scripts on a repository for CORDEX (B. Hewitson)

While the TF recognized that it would be useful to create a list of impact relevant diagnostics, there will not be enough time to do so within the rest of its current one-year mandate. This is something that the group would like to include as part of any new, future mandate.

Access to CMIP5 GCM boundary conditions

RCM groups are anxious to build the interfaces for their domains to apply the boundary conditions from GCM CMIP5 simulations in time to run their CORDEX simulations within the AR5 schedule.
A possibility would be to request early releases of data directly from some GCM modeling centers ahead of its upload on the Earth System Grid (ESG). Another option that would avoid modeling groups having to ship data to the ESG nodes as well as individual RCM groups, which the Hadley Center for example wishes to avoid, is to request that GCM groups prioritize the submission of RCM relevant data to the ESG. The Hadley Center's data is ready and is waiting for the BADC node to become active this summer. There is concern amongst the TF that this timeline will not be met and this will cause problems for RCM groups that need to start their simulations by the beginning of 2011. The CORDEX simulations over the African domain are being prioritized ahead of AR5. R. Jones recommends that the TF approaches some modeling centers to fast track this data to the archive. Data from two or three models would be enough for the RCM groups to start with.

Action: Encourage the Hadley Center, EC-Earth, ECHAM, Météo-France, GFDL and the Japanese groups to fast track key data – 6hrly model level data for the Africa domain or, preferably, the whole global domain – onto the ESG (C. Jones, B. Gutowski to contact I. Held, D. Jacob has already agreed, contact M. Déqué, W. Kwon, R. Jones)

Named Responsibles: R. Jones (Hadley Centre), W. Kwon (MIROC, Japan), B. Gutowski (GFDL), F. Giorgi (NCAR, Météo-France), C. Jones (EC-Earth, ECHAM, CCCma)

Action: Approach BADC to see if it will sub-set the data (C. Jones to contact M. Jukes)

Action: Improve the visibility of the CORDEX website, including a list of which models will be used and a contact person for each group (Staff) *Requires assistance from WCRP support*

Regional participation in CORDEX

One of the objectives of the TF is to foster the active participation of regional scientists in the analysis of the CODEX simulations. Regional Analysis and Evaluation Teams with a lead scientist should facilitate access to the CORDEX dataset and its analysis. B. Hewitson's group will be producing a starter pack to entrain regional scientists. The interactions with regional scientists should go beyond the provision of data, with partnerships developing between the RCM groups and local scientists. Different networks already exist (START for Africa, Météo-France and the Met Office already have some good contacts in different regions) and these need to be leveraged instead of creating new networks.

Action: Foster the growth of Regional Analysis and Evaluation Teams and identify team leads. P. Ruti has expressed interest in working on this (All TF to be active in their respective regions supported by Staff)

Action has started for Africa: B. Hewiston has drafted a proposal to bring together an Africa analysis team for training, analysis and paper writing over the coming ~12 month period. Funding has been secured from WCRP, START and SMHI to support this. The ICTP spring workshop in 2011 will also be used to support this activity.

Empirical Statistical Downscaling (ESD)

The TF will be expanding its activities to coordinate the ESD participation in CORDEX with an additional member requested to represent this community. An ESD workshop is being planned.

Action: Follow up plans to hold an ESD workshop (C. Jones, B. Hewitson, R. Benestad) *Discussions should ideally also include C. Goodess, J. Palutikof, L. Terray and C. Page and lead to a definite plan to coordinate and compare CORDEX Statistical and Dynamical Downscaling efforts based on 'early-delivery' CMIP5 simulations.*

Links to WGII

CORDEX is providing an opportunity for the downscaling community to form an accepted link between GCM simulations (CMIP5) and the impact-adaptation communities. The TF needs to enhance the involvement and communication with the impact-adaptation communities, for example by informing WGII lead authors about its activities and the future availability of CORDEX data. Since the WGII author list has not been selected yet, the TF should communicate its activities with TGICA who will be meeting in August with the WCII co-Chairs.

Action: Communicate with TGICA on what experiments will be run as part of CORDEX and what data will be available for the climate impact assessment and adaptation communities to utilize for their research (C. Jones, F. Giorgi, Staff)

B. Hewitson attended the TGCIA meeting in Boulder: Hopefully he brought this to their attention!

Summary of Regional TF Activities

CORDEX simulations forced by ERA-Interim are being run by RCM groups around the world and TF members from different regions will encourage the groups in their regions to synthesize their results, for example by soliciting input for review articles on initial CORDEX results in their regions.

East Asia (W. Kwon)
About 10 groups are participating in CORDEX including groups in Korea, China, Japan, Vietnam and the Philippines. The ERA-Interim simulations will be finished this fall and Korea plans to host a CORDEX-Asia workshop to assess the initial results, possibly collaborating with K. Kumar to make the workshop pan-Asian in scope. KMA is willing to support a CORDEX data center in Korea and web-based computational resources for analysis on the archive will be developed. Korea is also leading some capacity building activities with developing country scientists.

S. Asia (K. Kumar)
A workshop is being planned to encourage the widespread analysis of the CORDEX dataset.

S. America (R. Menendez)
Seven simulations are being run with ERA-Interim, also as part of the CLARIS project with some European partners.

C. America and Caribbean (R. Jones)
A meeting is being held in September in Oxford to initiate a CORDEX activity in this region.

Action: Collect information on regional activities on the CORDEX website (Staff)

List of Participants:

Anna PIRANI
CLIVAR - WCRP
hosted at ICTP
Strada Costiera 11
Trieste, 34151 - Italy
anna.pirani@noc.soton.ac.uk

William GUTOWSKI
Iowa State University
Geological & Atmospheric Sciences
3021 Agronomy
Ames, IA 50011-1010 - USA
gutowski@iastate.edu

Bruce HEWITSON
Climate System Analysis Group, University of Cape
Private Bag X3
Rondebosch, 7708 - South Africa
Bruce.Hewitson@uct.ac.za

Claudio Guillermo MENENDEZ
Centro de Investigaciones del Mar y la Atmosfera
Ciudad Universitaria, Pabellon 2, Piso 2
Buenos Aires, 1428 - Argentina
menendez@cima.fcen.uba.ar

Colin JONES
Swedish Meteorological and Hydrological Institute
Norrköping, S60176 - Sweden
colin.jones@smhi.se

Filippo GIORGI
International Centre for Theoretical Physics
Strada Costiera 11
Trieste, 34151 - Italy
giorgi@ictp.it

James MURPHY
Met Office
Hadley Centre
FitsRoy Road
Exeter, EX13PB - UK
james.murphy@metoffice.gov.uk

Krishna Kumar KANIKICHARLA
Climatology and Hydrometeorology
Dr. Homi Bhabha road
Pune, Maharashtra 411008 - India
Krishnakumar.kanikicharla@gmail.com

Philip DUFFY
Climate Central, Inc.
895 Emerson St.
Palo Alto, CA 94301 - USA
pduffy@climatecentral.org

Richard JONES
Met Office Hadley Centre
Rossby Centre, Climate Research
Fitzroy Road
Exeter, EX1 3PB - UK
richard.jones@metoffice.gov.uk

Won-Tae KWON
National Institute of Meteorological Research
Climate Research Laboratory
45 Gisangcheong-gil, Dongjak-gu
Seoul, 156-720 - Republic of Korea
wontk@korea.kr

Gregory M. FLATO[1]
Canadian Centre for Climate Modelling and Analysis
SCI A209
Telephone: 250-363-8233
Fax: 250-363-8247
Greg.Flato@ec.gc.ca

Jens Hesselbjerg CHRISTENSEN[2]
Danish Meteorological Institute
Lyngbyvej 100
DK-2100 Copenhagen Ø - Denmark
jhc@dmi.dk

[1] Not present
[2] Not present

WCRP TFRCD Meeting
Wednesday 16 June
16:00-18:00 p.m.
Espace Inkermann

List of discussed items:

1. The future of the TFRCD past the second year mandate (granted in Antalya or shortly thereafter?)

2. How to foster a greater involvement of developing country scientists?

3. How to enhance the involvement/communication with the impact/adaptation community?

4. How to involve statistical downscaling in CORDEX?

5. How to promote CORDEX at the international level, in particular IPCC AR5:

    - How to perform downscaling of CMIP5 GCMs in time to be of use to IPCC AR5?
    - Securing a CORDEX archiving centre as soon as possible to house and support access to the data

6. Improve greater participation by all members of the TFRCD, consideration of changes/additions?

7. How do we build on CORDEX to address some of the basic modeling issues raised by groups such as WGNE, in terms of targeted experiments to investigate RCM added value, boundary condition treatment, needs for large-scale constraint, consistency of physics across model resolutions etc.