

World Climate Research Programme 35nd Session Joint Scientific Committee

Heidelberg, Germany , 30 June – 4 July, 2014

Antonio J. Busalacchi
Chairman, Joint Scientific Committee, WCRP

World Climate Research Programme

Climate Research in Service to Society


- WCRP Mission and Objectives
- Introduction of New Members
- Summary of JSC 34
- WMO Executive Council-66
- WCRP Interactions with Future Earth
- Status of Grand Challenges
- Joint Session with WMO Commission for Climatology
- Post AR5 Workshop, Climate Symposium, Pan-GEWEX/CLIVAR
- Election of new JSC Chair
- Agenda
- Expectations for the week

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Mission & Objectives

 **World Climate Research Programme** supports **climate-related decision making** and planning **adaptation to climate change** by coordinating research required to improve

- (1) climate predictions and
- (2) our understanding of human influence on climate

“for use in an increasing range of practical applications of direct relevance, benefit and value to society”
(WCRP Strategic Framework 2005-2015).

Mission & Objectives

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Future Directions: Actionable Science

Defined as: data, analysis, and forecasts that are sufficiently predictive, accepted and understandable to support decision-making, including capital investment decision-making.



World Climate Conference-3, OceanObs '09, ICSU Review and Visioning, acknowledge WCRP past contributions and identify future challenges and opportunities.



Need for more flexibility/agility to respond to expanding users needs, that includes information:

- At regional scale
- For key sectors of global economy
- For adaptation, mitigation and risk management

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Welcome New WCRP Chairs and Directors

- **David Carlson, Director, WCRP**
- **Gerhard Krinner, Co-Chair CliC**
LGGE, France
- **Detlef Stammer, Co-Chair CLIVAR**
Universitat Hamburg, Germany
- **Valery Detemmerman, Director, ICPO(s)**
- **Sonia Seneviratne, Co-Chair GEWEX**
Institute for Atmospheric and Climate Science, Switzerland
- **Graeme Stephens, Co-Chair GEWEX**
Colorado State University, USA
- **Ted Shepherd, Interim Vice-Chair SPARC**
University of Reading
- **Cath Senior, Co-Chair WGCM**
UK Met Office

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Overall Highlights of JSC 34, Brasilia, Brasil May 27-31, 2013

- Excellent and gracious hosts
- Impressive science being done in Brasil
- Thanks to all, especially new JSC members
- Very good meeting, much accomplished!
- Considerable progress on all fronts since last year
- Progress with ACC and LAC conferences
- JPS fund raising
- Mapping of Core Project and WG activities against GCs
- Collective appreciation of GC implementation approaches, e.g., Climate sensitivity GC
- WMAC actions
- GEWEX going forward, and Joint Pan GEWEX and CLIVAR meetings
- No real show stoppers
- Gap wrt tropospheric dynamics?

Overall Highlights of JSC 34, Brasilia, Brasil May 27-31, 2013

- Mixed response to request for info on GC “impediments, implementation schedules”
- All projects to develop and articulate strategy for implementation of the GC they host/lead for the year ahead
- Response to the request to specifically address action items was also mixed
- PLEASE monitor JSC34 action items throughout the year and report explicitly at JSC35, if no action then say so and why
- WCRP will initiate an Early Career Scientist Model Developer Prize
- WMAC has hit the ground running
- WDAC on more of a learning curve
- Refine new approach to membership

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WMO-EC 66 Partnerships Report: Future Earth

4.7(1).25 The Council noted the progress made in the development of the Future Earth initiative, led by the Science and Technology Alliance for Global Sustainability, with ICSU and ISSC acting as lead agencies. The Council appreciated the efforts of the WMO to contribute to the development of the Future Earth including in its governance structures, and **welcomed the continued direct involvement of the JSC of the WCRP and of the WCRP as a strategic partner in the Future Earth development process.**

4.7(1).26 Reaffirming the important and unique role that WCRP plays in the work of the WMO, including the ever increasing importance of its transdisciplinary work with the World Weather Research Programme and with the Commission for Climatology (CCI) among others, **the Council encouraged the WCRP to strengthen its strategic contribution to the Future Earth initiative, working in concert with the WWRP and CCI in ensuring WMO's contribution to the advancing knowledge and understanding of the Dynamic Planet thematic area of the Future Earth.** The Council noted the importance of connecting the knowledge of climate variability and change with the science supporting sustainable development especially in the face of the projected extremes in both weather and climate.

4.7(1).27 **The Council invited ICSU and the UNESCO, as co-sponsors of WCRP, to help find and support efficient modalities of engagement to ensure that Future Earth is open to the participation of the full range activities of the WCRP, taking full advantage of the unique WCRP structure that involves core projects, working groups, advisory councils and sponsored activities.** It also invited Future Earth to work closely with the WMO and the WMO-led Global Framework for Climate Services, to ensure that advancements in research on sustainable development are efficiently transitioned into reliable and timely services for society.

WCRP Interactions with Future Earth

- Over the past year the D/WCRP and JSC Chair have had several interactions with our FE counterparts; now there is need for a sponsor conversation regarding WCRP engagement
- WCRP to remain as an independent research programme which nonetheless strongly contributes to the Future Earth as critical strategic partner
- WCRP consists of much more than the four core Projects and that the WCRP strategy relies heavily on integration across its projects and full complement of working groups
- Messaging on FE website wrt WCRP engagement is very confusing, i.e., “A formal process for the accession of these projects into Future Earth is currently underway”. In May we received assurances this wording would be changed
- As stated on numerous occasions WCRP as a WHOLE is very supportive of FE which includes, in part, our core projects but the confusion that is rapidly becoming apparent is not helpful.
- WCRP has requested that until the terms of engagement have been resolved, future interactions between FE and WCRP be at the programme level, not initially with the individual core projects.
- WCRP projects and WGs engaged in joint activities with IGBP (such as IGAC, iLEAPS, AIMES, IMBER, PAGES, SOLAS) are encouraged to monitor their status and continuity.

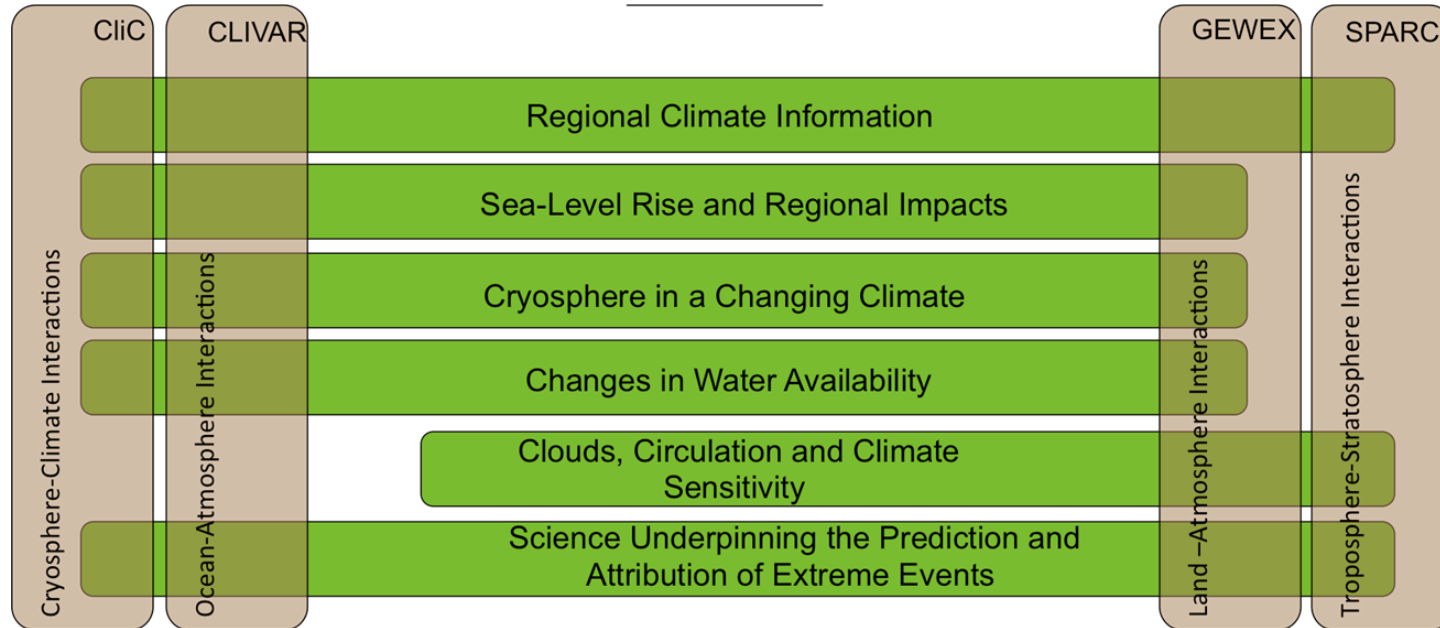
Joint Scientific Committee

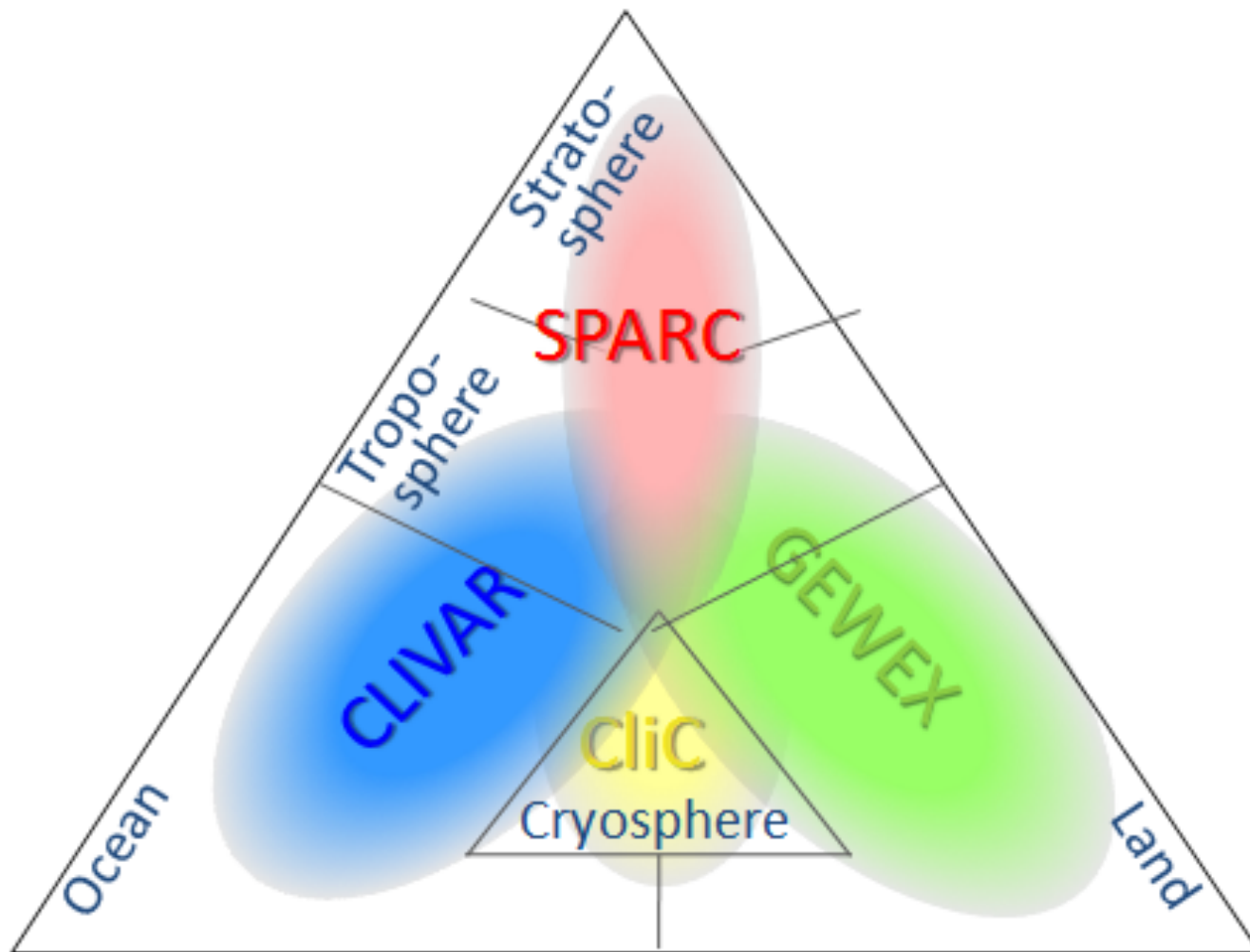
Joint Planning Staff

Modelling Advisory Council

Data Advisory Council

Working Groups on: Coupled Modelling (WGCM), Regional Climate (WGRC), Seasonal to Interannual Prediction (WGSIP), Numerical Experimentation (WGNE)





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WCRP Grand Challenges

- A Grand Challenge is both **highly specific and highly focused** identifying a specific barrier preventing progress in a critical area of climate science.
- This focus enables the development of **targeted research efforts** with the likelihood of significant progress over 5-10 years, even if its ultimate success is uncertain.
- It should thus enable the implementation of effective and **measurable performance metrics**.
- By being transformative, a Grand Challenge should bring the **best minds** to the table (voluntarily), **building and strengthening communities of innovators that are collaborative**, perhaps also extending beyond “in-house expertise”.
- It can **capture the public’s imagination**: teams of world-leading scientists working to solve pressing challenges can offer compelling storylines to capture the interest of media and the public.

WCRP Grand Challenges

- **Regional Climate Information**
- **Sea-Level Rise and Regional Impacts**
- **Cryosphere in a Changing Climate**
- **Clouds, Circulation, and Climate Sensitivity**
- **Changes in Water Availability**
- **Prediction and Attribution of Extreme Events**

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Joint Session with WMO Commission for Climatology

New Climate Research and Operational Challenges and Perspectives

Session themes:

Session 8: Research to support operational climate service providers

Session 9: Inter-annual predictions & beyond - decade to centuries

Session 10: Regional Climate – science and operational

Session 11: Using uncertain information in decision making

Joint Statement with WMO Commission for Climatology

- To support the successful implementation of climate services at all levels, WCRP and CCI agree to closely collaborate to address the following topical issues of direct relevance to climate risk management and adaptation, in general, and in particular to the GFCS:
- Strengthen and mainstream research observations to serve as prototypes for future climate observing systems, in cooperation with Global Climate Observation System (GCOS) and benefiting from the ongoing WMO Integrated Global Observing System (WIGOS) standardization efforts and WMO Information System (WIS) infrastructure;
- Implement systems to channel recent research efforts to enhance the use of predictions at sub-seasonal and seasonal to interannual and decadal scales through operational systems put in place at global, regional and national levels for providing high quality climate services to stakeholders;
- Ensure availability and access to reliable high-resolution regional climate change information (such as the output generated under the WCRP Coordinated Regional Downscaling Experiment (CORDEX)) needed for climate adaptation and risk management, accompanied with adequate guidance on their appropriate interpretation and evaluation and understanding of uncertainties;

Joint Statement with WMO Commission for Climatology

- Facilitate understanding and prediction of extreme events, to enable better preparedness to extremes and reduce societal vulnerability, particularly at the national and local scales;
- Utilize opportunities for joint participation in regional activities with strong involvement of operational agencies and NMHSs, such as the WMO Regional Climate Centers (RCCs) and the Regional Climate Outlook Forums (RCOFs); the relevant CCI bodies to interact with the WCRP Working Group on Regional Climate in facilitating the integration of user and decision-maker perspectives into the design and development of regional climate services through two-way communication and co-production activities;
- Promote interdisciplinary research to develop sector applications, tools and tailored information;
- Make joint effort to improve the training and availability of highly-skilled talent to undertake climate research, operational systems, and communication, particularly in the developing countries;

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WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Monday, 30 June Opening Session

08:00 Pick-up badges at Registration Desk

08:30 Call to order and welcome remarks by Host – *Dr Paul Becker DWD Vice President*

08:45 Introduction of new attendees - *A. Busalacchi*

09:00 Report on JPS developments, program, personnel, budget – *D/WCRP*

09:30 Report on WCRP developments, expectation for JSC 35, summary of JSC34 actions - *A. Busalacchi*

10:00 Coffee Break

Sponsors / GFCS : Evolving Role of WCRP and charges to WCRP JSC-35 (15 minute presentation+15 minute discussion)

10:30 WMO – J. Lengoasa, *DSG*

11:00 IOC - *Albert Fischer (remotely)*

11:30 GFCS - *Filipe Lucio*

12:00 Lunch Break

WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Monday, 30 June Afternoon

Implementation of Grand Challenges

Highlights and progress to date, milestones, deliverables, impediments, interdependencies and coordination, response to JSC34 actions, (30 minute presentation + 15 minute discussion)

- 13:15 Grand Challenge on Regional Sea Level Rise - *D. Stammer (CLIVAR lead)*
- 14:00 Grand Challenge on Water Availability - *G. Stephens (GEWEX lead)*
- 14:45 Grand Challenge on Cryosphere in a Changing Climate - *G. Flato and T. Shepherd (CliC/SPARC co-lead)*
- 15:30 **Coffee Break**
- 16:00 Grand Challenge on Regional Climate Information - *C. Goodess (WGRC lead with CLIVAR)*
- 16:45 Grand Challenge on Climate Extremes - *S. Seneviratne (GEWEX lead)*
- 17:30 Grand Challenge on Clouds, Circulation, and Climate Sensitivity - *S. Bony (WGCM lead)*
- 18:30 **Icebreaker offered by the German Climate Consortium (DKK)**

WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Tuesday Morning, 1 July

Core Projects

Project response to JSC34 actions items, implementation plans/timeline for new directions, internal structural changes, contributions to GCs, and cross project interdependencies, (45 minute presentation + 15 minute discussion)

08:30 CliC - *G. Flato*

09:30 GEWEX - *S. Seneviratne and G. Stephens*

10:30 **Coffee Break**

11:00 SPARC - *J. Alexander*

12:00 CLIVAR - *D. Stammer*

13:00 **Lunch**

WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Tuesday Afternoon, 1 July

WCRP Councils and Working Groups and WWRP

Response to JSC34 actions items, implementation plans/timeline for new directions, internal structural changes, contributions to GCs as appropriate, and cross programme interdependencies, (20 minute presentation + 10 minute discussion)

- 14:00 WDAC - *O. Brown*
- 14:30 WGRC inclusive of CORDEX - *C. Goodess*
- 15:00 WGCM + CMIP6 - *C. Senior and S. Bony*
- 15:30 **Coffee Break**
- 16:00 WGSIP inclusive of S2S and Decadal Predictions - *F. Doblas-Reyes*
- 16:30 WGNE - *J-N. Thepaut*
- 17:00 WWRP including PPP, OSC, and S2S - *Sarah Jones*
- 17:30 Summary of day's discussion



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WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Wednesday, 2 July - Joint CCI/WCRP Session - TeCO on Climate Services - Building on CLIPS Legacy

New Climate Research and Operational Challenges and Perspectives

Session themes:

Session 8: Research to support operational climate service providers

Session 9: Inter-annual predictions & beyond - decade to centuries

Session 10: Regional Climate – science and operational

Session 11: Using uncertain information in decision making

WMAC Parallel Meeting

WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Thursday Morning, 3 July

08:30 Revisit Grand Challenges, Project Contributions, and joint day with CCI

09:00 WMAC - *C. Jakob*

WCRP Partnerships, Sponsor and Joint Initiatives (20 minute presentation + 10 minute discussions)

09:30 GCOS - *Stephen Briggs / Caroline Richter*

10:00 PROVIA - *Hartwig Kremer*

10:30 **Coffee Break**

11:00 ICSU – *Steven Wilson*

11:30 Science presentation: "Developing the Scientific Basis for Climate Service" - *Lydia Gates (DWD)*

12.00 Science presentation: "Climate Change with an iris-effect" - *Thorsten Mauritsen (MPI)*

12:30 **Lunch Break (JSC Executive Session in parallel with Directors and JPS meeting)**

WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Thursday Afternoon, July 3

- 14:00 Future Earth - *Frans Berkhout*
- 14:45 IGBP and joint activities such as SOLAS and PAGES - *S. Seitzinger*
- 15:30 Joint workshop with IPCC on AR5 lessons learned - *A. Cazenave*
- 15:45 ACC2013 and LACC2014 - *F. Semazzi / C. Goodess*
- 16:00 **Coffee Break**
- 16:30 Climate Symposium 2014 - *R. Boscolo*
- 16:45 Capacity development, outreach, ECS - *R. Boscolo*
- 17:00 Discussion: Emerging issues (e.g., climate engineering) and challenges ahead for the WCRP
- 18:00 **Social Event: boat trip on the river Neckar and dinner offered by DWD**

WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Friday, 4 July

09:00 Discussion on way forward

09:30 Review of Recommendations/Actions

10:45 **Coffee Break**

11:15 Review of Recommendations/Actions (cont'd)

12:00 Close of Open session

Lunch Break

JSC Executive Session

13:30 Implementation Issues with respect to Grand Challenges

Research activities and GFCS

Engagement with Future Earth

Membership

Action Items

Next meeting

17:00 Meeting ends

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WCRP JSC 35, Heidelberg, Germany, June 30- July 4, 2014

Expectations for the Week

- Enhanced support by WCRP for the GFCS
- Implementation of WCRP Grand Challenges
- Terms of engagement with Future Earth
- Support/co-sponsorship of key partners in IGBP
- WCRP regional strategy
- Continue to strengthen partnership with WMO CCI
- New chapter for JPS, e.g., reporting, liaisons
- All JSC 35 presenters should specifically address issues raised at JSC 34 and actions items documented in the JSC 34 report.

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2/20/13 Guidance to Chairs and Directors

- WRT to the Grand Challenge presentations, I ask the designated leads, as stated, to address progress to date, impediments, implementation schedules, cross project interdependencies and coordination. In addition, I ask that the presenters should specifically address issues raised at JSC 33 and as documented in the JSC 33 report (the same holds as always for the individual project reports as appropriate). When a lead is designated for the GC presentation it should be interpreted that this is to include and engage the other relevant projects for this particular GC.

Grand Challenges: 1. Prediction of the Earth System

GOALS:

- Deliver knowledge to respond to global change
- Engage a new generation of researchers across physical climate and biogeochemistry
- Transition to the full range of sciences and humanities

