

World Climate Research Programme 33nd Session Joint Scientific Committee

Beijing, China, 17-20, 2012

Antonio J. Busalacchi
Chairman, Joint Scientific Committee, WCRP

World Climate Research Programme

Climate Research in Service to Society

- WCRP Mission and Objectives
- Summary of WCRP OSC
- Summary of Extraordinary Session of the JSC (Post OSC)
- Grand Challenges Rollout and Implementation
- WG on Regional Climate
- Global Synthesis
- Other key activities 2012
- Approach to Membership
- Agenda
- Expectations for the week

WCRP JSC 32 UK Met, Exeter

April 4-8, 2011

- **WCRP Mission and Objectives**
- **Summary of JSC 31**
- **Global Framework for Climate Services**
- **ICSU Visioning Process**
- **Key Activities in 2010**
- **Agenda**
- **Expectations/Outcomes for this week**

WCRP JSC 32 Agenda

UK Met, Exeter, April 4-8, 2011

Expectations and Outcomes


- Define the transition/evolution of the core projects over the next 12 months
- Define the role of the OSC and subsequent JSC in finalizing the future directions and structure of the WCRP
 - Future Grand Challenges
 - Core projects substructure
 - Modelling Council
 - Observations Council
 - CORDEX
 - Regional climate information and support of GFCS

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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

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

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(WCRP Strategic Framework 2005-2015).

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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WCRP Open Science Conference

24-28 October 2011

Denver, Colorado, USA

<http://conference2011.wcrp-climate.org>

Climate Research in Service to Society

Registered Participants:

- 1907 from 86 countries
- 541 Early Career Scientists & Students
- 332 from Developing Countries



WCRP Open Science Conference

Daily Conference Themes:

Emphasizing the integrative aspects of WCRP

- Monday:** Climate Research in Service to Society
- Monday:** The Climate System Components and their Interactions
- Tuesday:** Observation and Analysis of the Climate System
- Wednesday:** Assessing and Improving Model and Predictive Capabilities
- Thursday:** Climate Assessments and Future Challenges
- Friday:** Strengthening Policy Relevance of Scientific Assessments
- Friday:** The Future of WCRP



Stakeholders and User Perspective

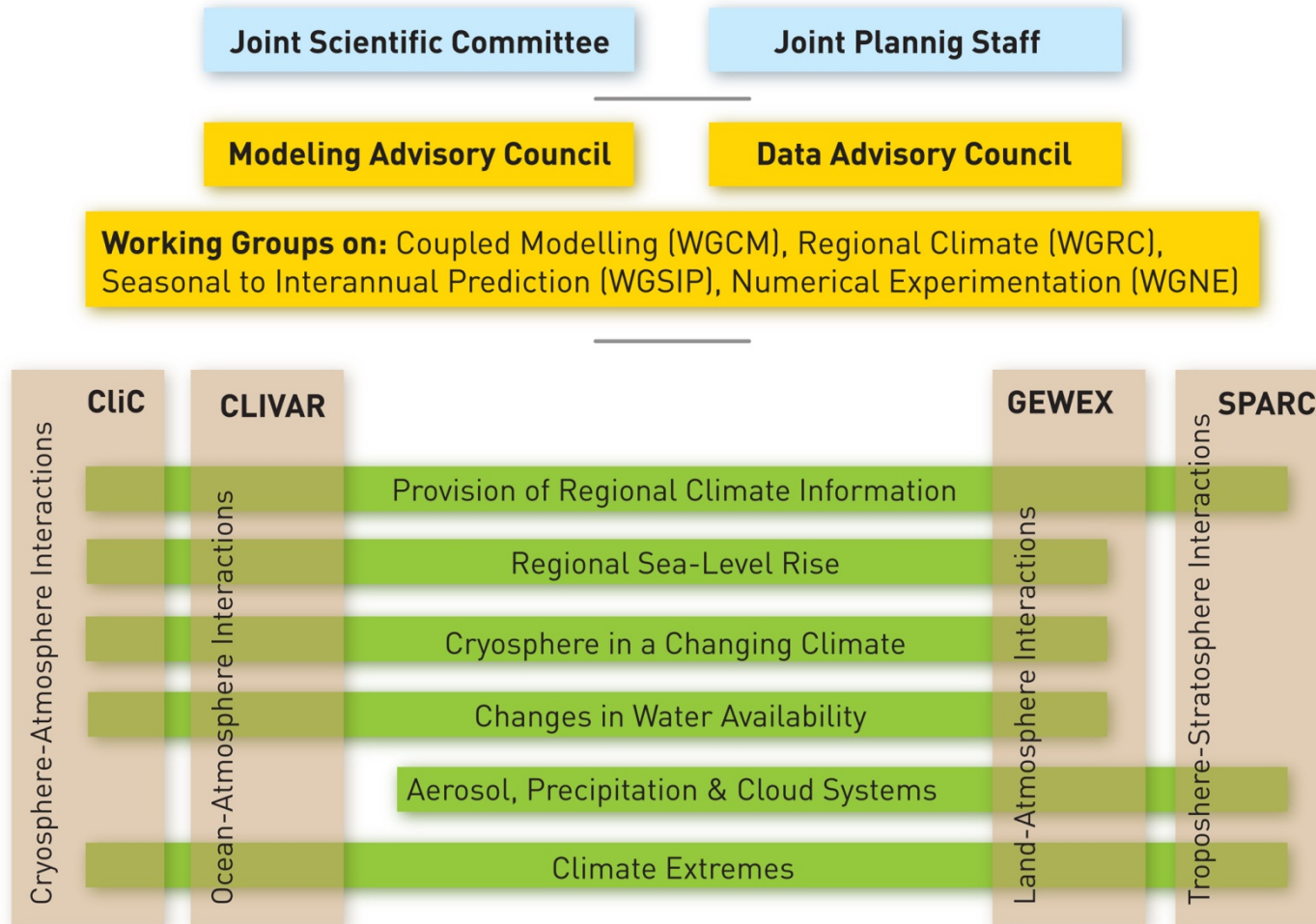
- Urgent need for **actionable climate information** based on sound science
- The need for “**symbiotic**” **relationship between providers and users of climate information** to ensure climate information is timely, accessible, easy to understand
- Urgent need for **training and development of next generation of scientists and decision makers** who pursue and promote the use of actionable climate/environmental information



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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

- **Provision of skillful future climate information on regional scales (includes decadal and polar predictability)** Filippo Giorgi, Carolina Vera, Fred Semazzi, CLIVAR, SPARC, WMAC
- **Regional Sea-Level Rise** Konrad Steffen, WCRP/IOC Task Force on Sea Level Variability and Change, CLIVAR, CliC
- **Cryosphere response to climate change (including ice sheets, water resources, permafrost and carbon)** Vladimir Kattsov, CliC, GEWEX, Greg Flato, Sarah Gille, WGCM, WGOMD
- **Improved understanding of the interactions of clouds, aerosols, precipitation, and radiation and their contributions to climate sensitivity** Terry Nakajima, Hong Liao, Graciela Binimelis de Raga, GEWEX, SPARC, WGCM, WGNE
- **Past and future changes in water availability (with connections to water security and hydrological cycle)** Kevin Trenberth, Pius Yanda, Hervé le Treut, GEWEX, CLIVAR, WGCM
- **Science underpinning the prediction and attribution of extreme events** David Karoly, CLIVAR, GEWEX, Modeling Council, ETCCDI, Fred Semazzi

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Working Group on Regional Climate (WGRC)

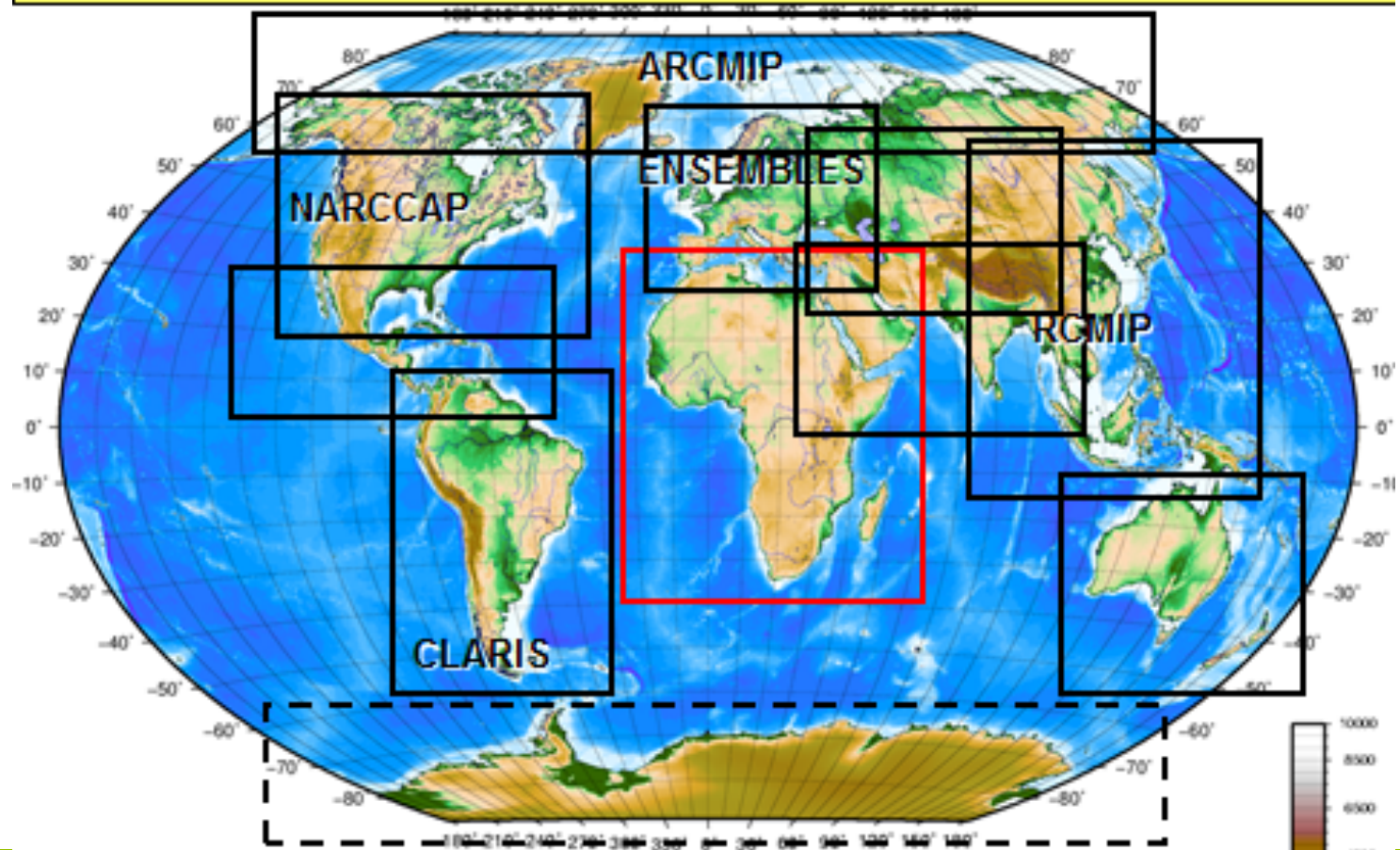
- Detailed regional climate information (both historical and future) is required to develop policies, to assess impacts and risks, and to plan adaptation measures (e.g. changes to building codes or infrastructure planning).
- Recent progress in climate prediction, on time scales from months to years, offers the possibility to implement better near-term decision making in climate-sensitive areas such as agriculture, transportation, tourism, energy production and water resource management.
- Coordinated regional modeling and observational studies can lead to an increased understanding of, and ability to simulate, processes that are important in determining regional climate variability and change, and in realizing the potential for improved regional-scale climate predictions.
- Within the context of the GFCS, the WCRP is taking steps to ensure that its research is informed by and responsive to the needs of climate service providers and the users they serve.
- Following from these deliberations, it was agreed that the WCRP should institute a working group dedicated to this topic.
- This would serve to prioritize and coordinate regional climate research within the WCRP and serve as the conduit for two-way information exchange between the WCRP, the rest of the GFCS, and the various institutions and coordinating bodies that provide climate services in various regions.

WCRP Working Group on Regional Climate (2-way Communication: Science-User)

- coordination of WCRP research on regional climate information & services
- communication between WCRP, GFCS and Future Earth, point of contact to regional climate information/service entities
- prioritization of WCRP regional climate research and prediction
- advice for impact assessment, decision making and climate services, especially on water, health, food and disaster risk reduction
- oversee regional climate research initiatives such as CORDEX
- visibility of WCRP regional science and communication of advances to climate service institutions (through web, reports, workshops, etc.)
- liaison with other programmes, communication of science priorities to funding agencies, NGOs and development agencies



CORDEX domains



Working Group on Regional Climate (WGRC)

Terms of Reference

- 1) To facilitate coordination of WCRP research activities relevant to the provision of regional climate information and related climate services.
- 2) To foster communication between the WCRP and the GFCS and ESSI, and to serve as the point of contact to regional climate information/service entities. Ensure that the research needs of end users are understood and that new developments in climate science are communicated to users. This is fundamentally a two-way communication and development activity.
- 3) To provide advice to the WCRP regarding prioritization of research activities directed at supporting and improving regional climate science and prediction
- 4) To provide advice regarding the provision of information for impact assessment, decision making and climate services, particularly as related to water, health, food and disaster risk reduction.
- 5) To oversee specific WCRP regional climate research initiatives such as the Coordinated Regional Downscaling Experiment (CORDEX), and other activities as may be established in the future, either independently or in collaboration among the WCRP Projects or with other sister research programmes (e.g. IGBP, IHDP, WWRP, etc.).
- 6) To ensure that regional climate science is a visible activity within the WCRP and that research results are communicated effectively to climate service institutions. This may involve preparation of web-based information, publication of reports, organization of targeted workshops, etc.
- 7) To liaise as appropriate with other relevant weather, oceanographic, climate and global change research programmes sponsored by the WMO, IOC, and ICSU, and communicate science priorities to funding agencies, NGOs and development agencies

Regional activities of WCRP Projects including research on monsoons

- VAMOS in South America is active, involves GEWEX, helps with capacity development, and makes progress in the research on monsoons.
- VAMOS funding under CLIVAR is available with the support of the InterAmerican Institute.
- GEWEX continues guiding the relatively well-supported La Plata Basin (LPB) initiative.
- The JSC initial guidance on regional activities was that management of pan-WCRP initiatives is to be provided by the Projects in coordination and partnership mode, including appropriate coordination with other related efforts, and with one Project taking the lead on each specific activity.
- For example, JSC envisions great opportunities for cooperation and partnership between CLIVAR and GEWEX for both the VACS and VAMOS, or any subsequent activity they may transition to in the future.
- In addition, there will be a need to coordinate with the other WCRP activities, e.g. CORDEX
- JSC agreed to request CLIVAR and GEWEX communities associated with VACS and VAMOS panels to work with their constituencies (researchers, institutions, funding agencies and other stakeholders), to develop a list of research priorities and activities for their respective regions for the post 2013 timeframe.
- JSC would like to encourage a fresh look, independent of prior panel names or structure, starting with anticipated stakeholder needs and developing a research agenda that addresses those needs within the region, the grand challenges and imperatives of CLIVAR and GEWEX, and the overall WCRP future plan and priorities.

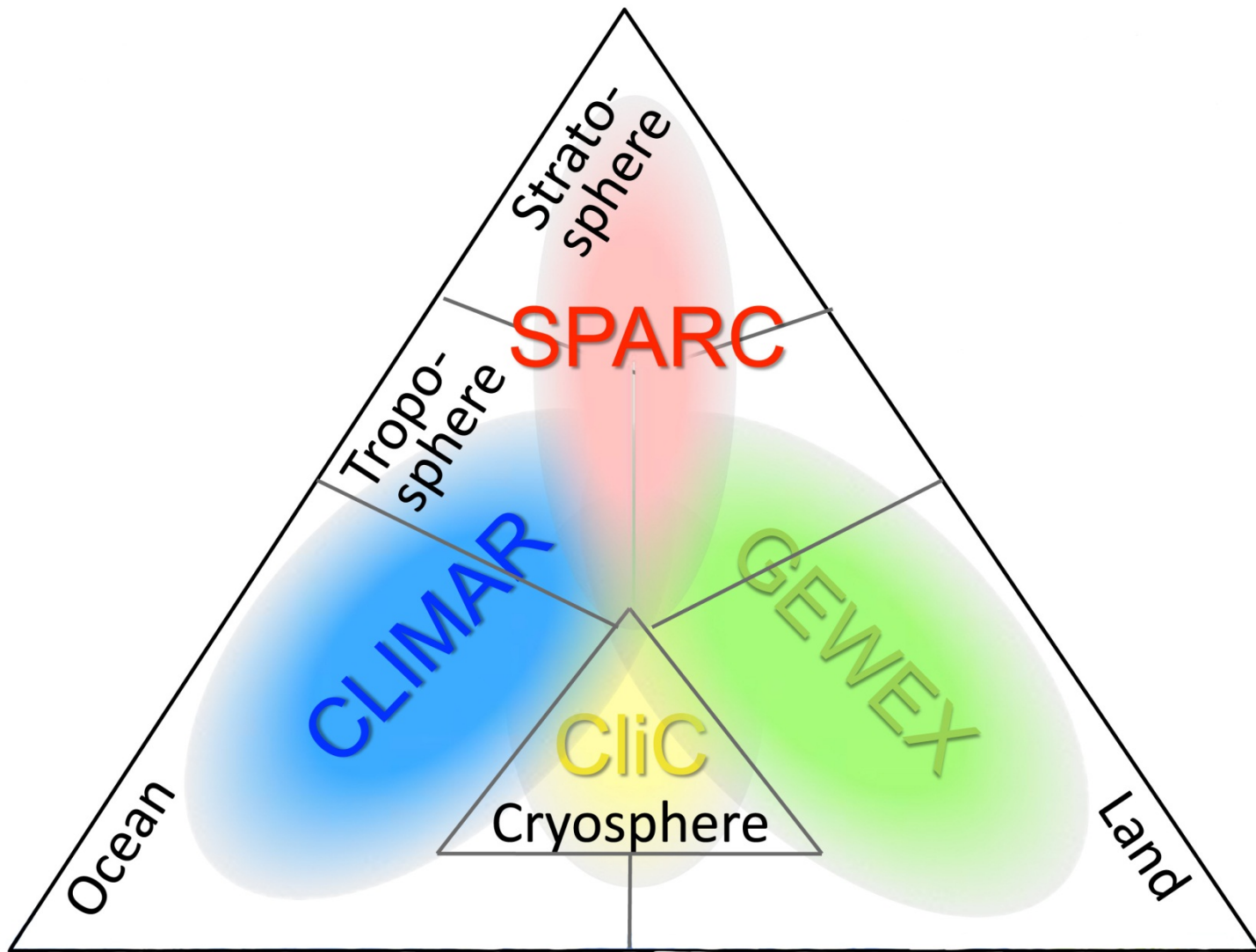
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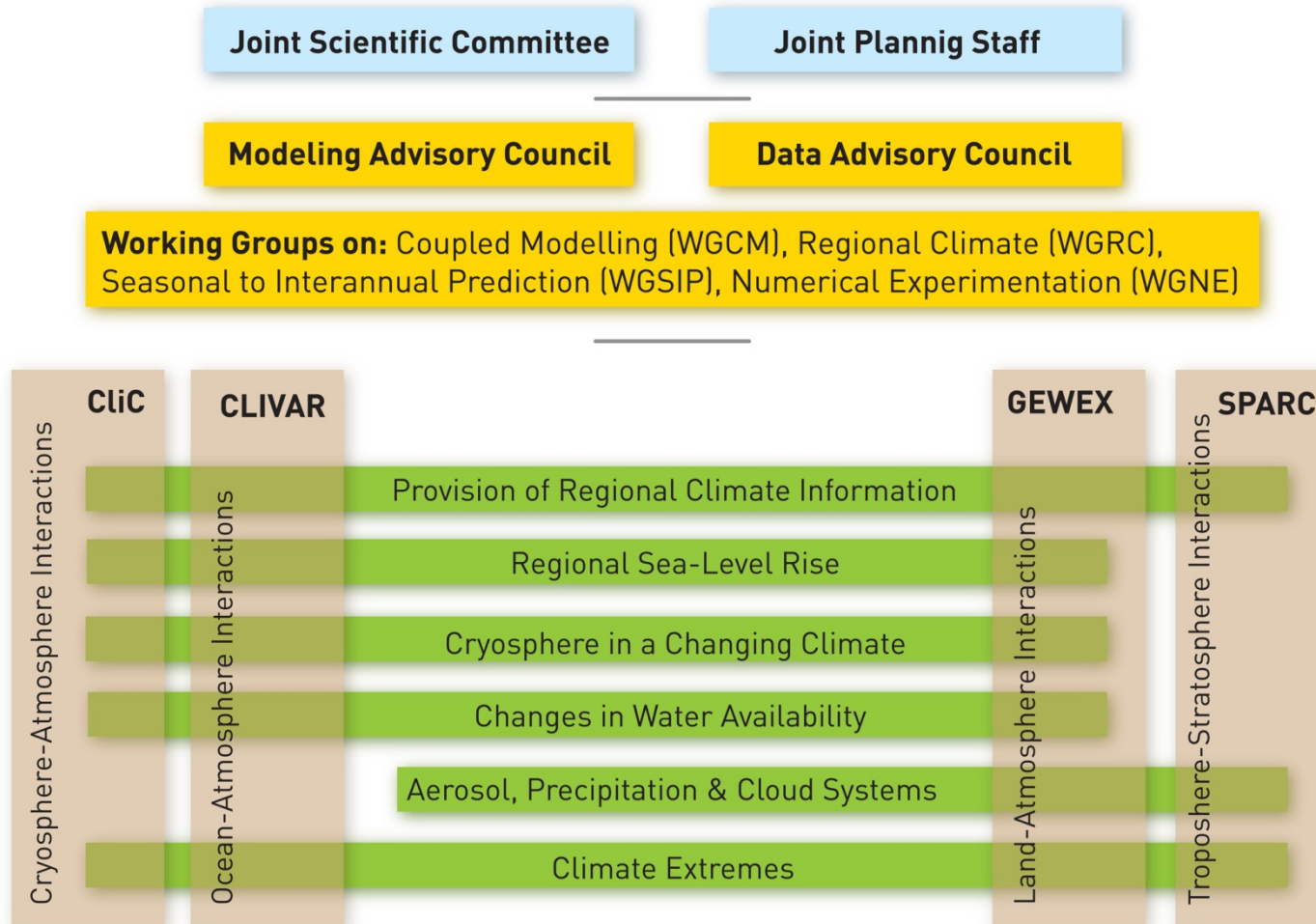
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GSOP is responsible for the definition and promotion of CLIVAR's overall global needs for sustained ocean observations, and the evaluation of model-based synthesis of ocean observations.

The CLIVAR Global Synthesis and Observations Panel is established to:

- 1. Develop, promote and seek to implement strategies for a synthesis of global ocean, atmosphere and coupled climate information through analysis and reanalysis efforts and through the use of other techniques where appropriate. Initial emphasis will be on global ocean synthesis efforts, building on previous experiences and developments.**
2. Be responsible for the definition and fulfilment of CLIVAR's global needs for sustained observations (in collaboration with relevant WMO and IOC bodies, including GCOS, GTOS, GOOS, AOPC and OOPC, and JCOMM), and for the development of a strategy for their evolution/optimization based on new science and reanalysis insights, and fostering the use of resulting data sets in global synthesis efforts.
3. Promote activities to develop the surface flux data sets required by CLIVAR in liaison with the WGNE, global atmospheric reanalysis efforts and the WCRP Working Group on Surface Fluxes.
4. Provide an overview of and directions to CLIVAR data management and information activities in collaboration with other WCRP projects and in liaison with CLIVAR-relevant data centres and DACS and the ICPO.
5. Liaise and collaborate with CLIVAR Panels and Working Groups in identifying the requirements for and coordinating the development of an observing system for CLIVAR.

The Panel will report to the CLIVAR SSG.

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Conference on Monsoon Prediction in a Changing Climate

21-25 February 2012
**Indian Institute of
Tropical Meteorology,
Pune INDIA**

IITM Golden Jubilee International Conference on
**Opportunities and Challenges in
Monsoon Prediction in a Changing Climate (OCHAMP)**

21-25 February 2012

Pune (INDIA)



Venue and Host

Indian Institute of Tropical Meteorology
Dr. Homi Bhabha Road, Pashan, Pune - 411008, INDIA
<http://www.tropmet.res.in>

Organised by



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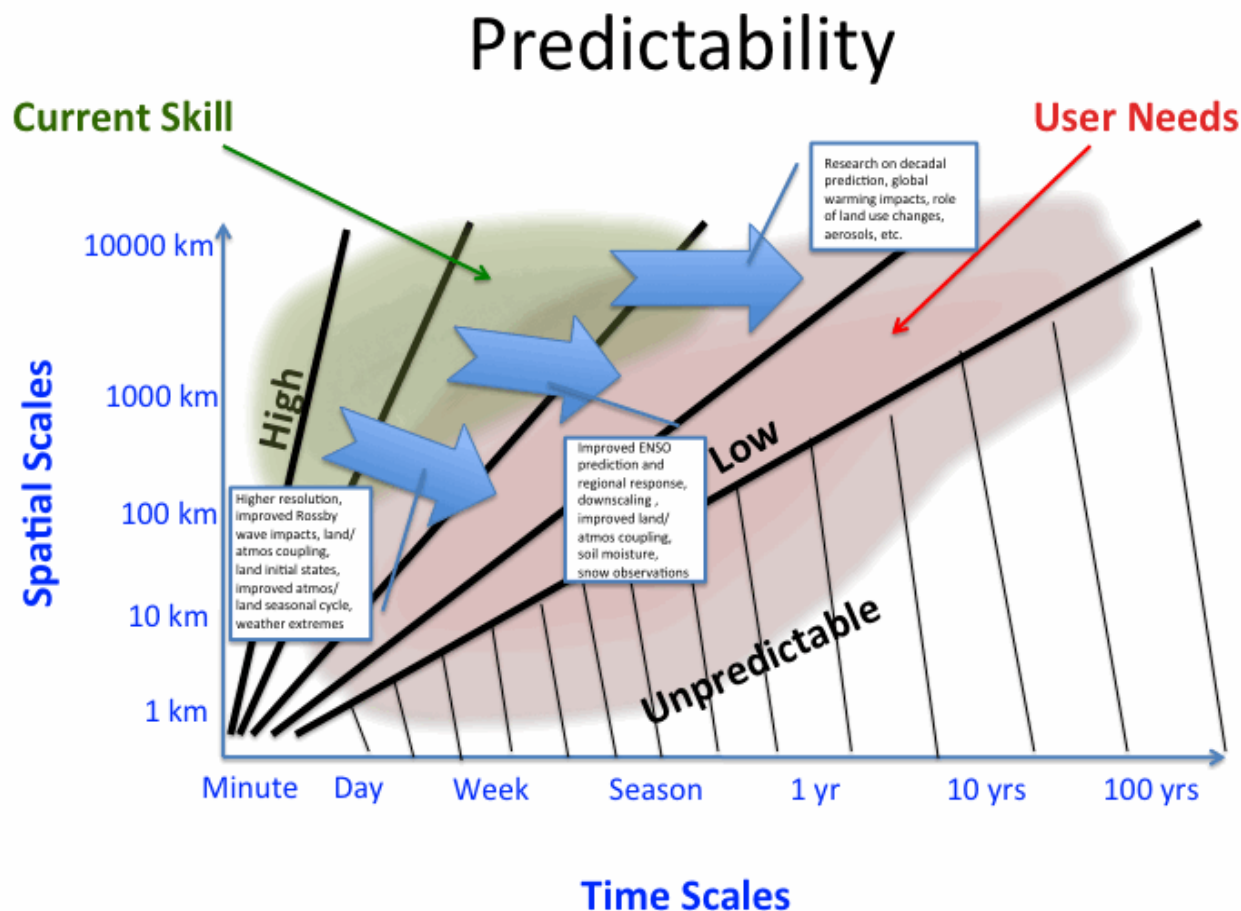
सत्यमेव जयते
Ministry of Earth Sciences
Government of India



WMO OMM

WCRP Global Drought Information System Workshop

11-13 April 2012
Frascati ITALY



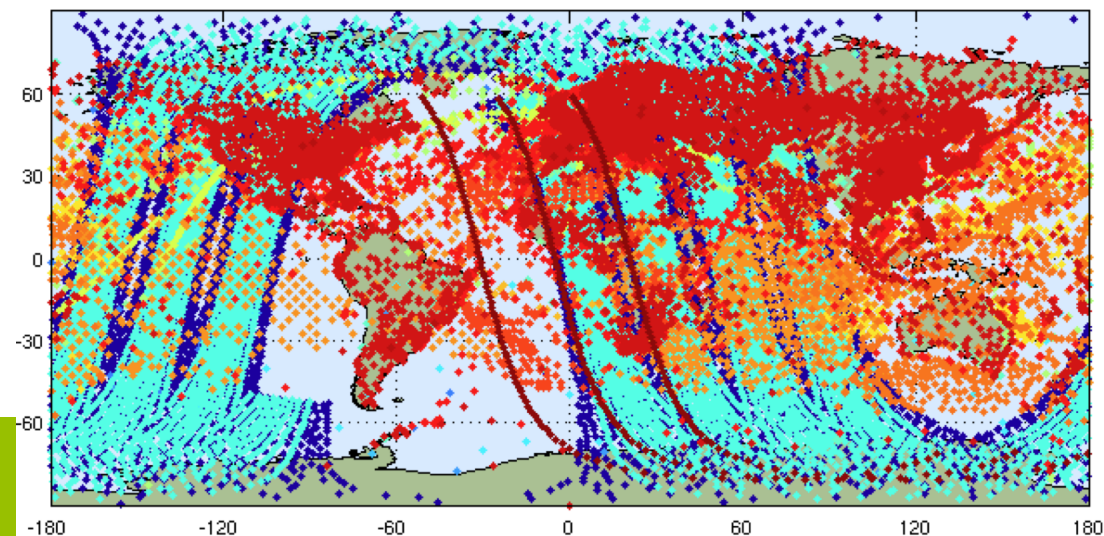
WCRP 4th International Reanalysis Conference

7-11 May 2012
Silver Spring,
Maryland USA



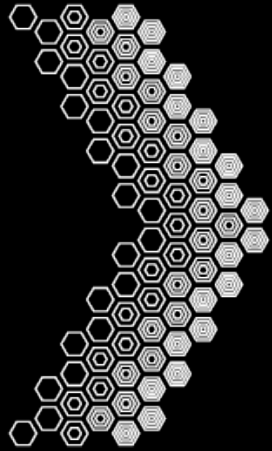
Agency Priorities: An Open Panel Discussion with Conference Participants

Observation Locations



As many as four million observations are analyzed during 6-hours windows in the 2000s. More than 50 billion observations can be analyzed over 30 years (Courtesy of M. Bosilovich)

www.planetunderpressure2012.net



PLANET UNDER PRESSURE

2012 MARCH 26-29
LONDON

NEW
KNOWLEDGE
TOWARDS
SOLUTIONS



GLOBAL
IGBP International
CHANGE Geosphere-Biosphere
Programme



And their Earth System Science Partnership

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WG and SSG Membership

- The JSC proposes to create a 'membership committee' within the JSC.
- This might be comprised of the Officers and chaired by the JSC Vice-Chair.
- Their task would be to work with each working group and steering group (on a suitable annual schedule) to fill a slate of candidates, one for each vacant position, but with serious attention to the issues we need addressed (gender, regional balance, etc.).
- This might take several iterations over the course of the year.
- This committee would basically be charged with exerting the JSC influence on the process and with ensuring that the process starts early and is completed in a timely manner.
- Then at the JSC meeting we would be presented with a well-considered slate of candidates, along with their bios and other pertinent information, and we could approve this, confident that it will be the best slate achievable and that it has our intentions well-considered.

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WCRP JSC 33, Beijing, China July 17-20, 2012

Tuesday Morning, 17 July

08h30 - 09h00 Welcome Remarks - CAS/IAP Host

09h00 - 09h30 Report on WCRP developments post OSC - A.
Busalacchi

09h30 - 10h00 Report on JPS developments, program, personnel,
budget - G. Asrar

10h00 - 10h30 Summary Joint China-WCRP Symposium - H. Liao

10h30 – 10h45 Coffee break

10h45 – 11h15 Summary first WMAC & WDAC meeting - Chairs

11h15 – 11h45 Summary Report on Planet Under Pressure
Conference - IGBP Chair J. Syvitski

11h45 – 12h45 Lunch

WCRP JSC 33, Beijing, China July 17-20, 2012

Tuesday Afternoon, 17 July

Presentation of WCRP Grand Challenge White Papers

(30 min each: 15 min presentation +15 min discussion)

- 12h45 – 13h15 Provision of skillful future climate information on regional scales (includes decadal and polar predictability) - F. Giorgi**
- 13h15 – 13h45 Regional Sea-Level Rise - K. Steffen**
- 13h45 – 14h15 Cryosphere response to climate change (including ice sheets, water resources, permafrost and carbon) - V. Kattsov**
- 14h15 – 14h45 Improved understanding of the interactions of clouds, aerosols, precipitation, and radiation and their contributions to climate sensitivity -T. Nakajima**
- 14h45 – 15h00 Coffee Break**
- 15h00 – 15h30 Past and future changes in water availability (with connections to water security and hydrological cycle) - K. Trenberth**
- 15h30 – 16h00 Science underpinning the prediction and attribution of extreme events - D. Karoly**
- 16h00 – 16h30 Discussion of Grand Challenges and Next Steps**
- 16h30 - 17h30 Agency Updates- NOAA, EUMETSAT, CEOS, ESA, NASA, ...**
- 19h00 Banquet hosted by CAST**

WCRP JSC 33, Beijing, China July 17-20, 2012

Wednesday Morning, 18 July

Project Reports

(Project response to OSC and actions as a result, evolution of the project and decision on new name, future directions, role in the Grand Challenges)

(60 min presentation, 30 min discussion)

08h30 - 10h00 SPARC (including Polar Predictability Initiative)

10h00 - 10h30 Coffee Break

10h30 - 12h00 CLIVAR

12h00 - 13h00 Lunch

WCRP JSC 33, Beijing, China July 17-20, 2012

Wednesday Afternoon, 18 July

Project Reports - (continued)

13h00 – 14h30 CliC

14h30 - 16h00 GEWEX

16h00 - 16h30 Coffee Break

Modelling WG Reports

16h30 - 17h00 WGCM

17h00 - 17h30 WGSIP

17h30 - 18h00 WGNE

WCRP JSC 33, Beijing, China July 17-20, 2012

Thursday Morning, 19 July

08h30 - 09h00 CORDEX Update - F. Giorgi/C. Jones

09h00 - 09h30 Status of Working Group on Regional Climate (WGRC)

09h30 - 10h30 START - Introduction - M. Manton

START East Asia Regional Center - Prof. Jia Gensuo

MAIRS IPO - Dr Ailikun

Discussion

10h30 - 11h00 Coffee break

11h00 - 11h30 Opportunities and Challenges in Monsoon Prediction in a Changing Climate (OCHAMP-2012) - B. Goswami

11h30 - 12h00 WCRP Capacity Development Plan and Communications Strategy
-G. Asrar

WCRP JSC 33, Beijing, China July 17-20, 2012

Thursday Afternoon, 19 July

12h00 - 13h00 Lunch (JSC Executive Session)

13h00 - 15h00 Partner Presentations (20 min presentation + 10 min discussion)

GCOS

IGBP

WWRP (+ report on joint subseasonal to seasonal prediction project)

Other (eg IRDR, SOLAS, CCI, etc.)

15h00 - 15h30 Coffee Break

15h30 – 17h30 Sponsor Initiatives - Present Status, Envisioned Role of WCRP and reaction to WCRP Future Directions (30 min presentation + 10 min discussion)

WMO Global Framework for Climate Services

ICSU Future Earth

IOC Integrated Framework for Sustained Ocean Observation

17h30 – 18h00 Summary Discussion of WCRP role in Sponsor Initiatives

WCRP JSC 33, Beijing, China July 17-20, 2012

Friday, 20 July

08h30 - 09h00 Nomination process for Project and WG Membership

09h00 - 09h30 Discussion Future of existing crosscuts:
Sea Level, Decadal, etc.

09h30 - 10h00 Summary of JSC-33 and Closing Comments - A. Busalacchi

10h00 - 10h30 Coffee Break

10h30 - 13h00 Executive Session

Implementation Issues with respect to new structure

How to better engage with sponsor initiatives

Membership

Action Items

Other items

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Expectations for the Week

- Communication and Messaging Plan for Future Directions of the WCRP
 - Rollout of Grand Challenges
 - WMAC
 - WDAC
- Core project buy in to final decision on future direction/naming
- Fill membership slate for WG on Regional Climate
- Refine our support of GFCS, sustained ocean obs, and FE
- Revise approach to SSG and WG nominations

WCRP



World Climate Research Programme



ICSU

International Council for Science

TED SHEPHERD

- ✓ Controlling water prices
- ✓ Keeping rates fair for our area
- ✓ Championing of small business
- ✓ Improving local public transport
- ✓ Supporting active youth lifestyle
- ✓ Keeping the hinterland green

Division 9

Authorised by Ted Shepherd, 15 Baileys Road, Tallai for Ted Shepherd (Candidate)

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