



WCRP is planning for the future – Strategic Framework 2005-2015

Modelling for the Earth System

Modelling activities in the WCRP take an integrated approach whereby the roles of the atmosphere, ocean, land and cryosphere can be considered in comprehensive models of the climate system, which are also capable of assimilating weather and climate observations. WCRP is also increasingly considering quantitative modelling of the wider Earth system in close collaboration with IGBP. Major activities include:

- WCRP-CMIP3 (Coupled Model Intercomparison Project) archive at the Program for Climate Model Diagnosis and Intercomparison (PCMDI)
- Joint WCRP/WGCM and IGBP/AIMES Workshop, Aspen, USA, July 2006
http://wcrp.wmo.int/AP_Modelling.html

Sea-Level Rise

Sea level rise is now a certainty, and with about half of the Earth's mega-cities on the coast and coastal development continuing at a rapid pace, society is becoming increasingly vulnerable to sea-level rise.

Understanding and improving projections of sea-level rise and variability will be essential to save lives and property. WCRP is taking the lead in coordinating research aimed at reducing the uncertainties in projections of sea level rise. Major activities include:

- WCRP Workshop on Understanding Sea-Level Rise and Variability, Paris, June 2006
http://wcrp.wmo.int/AP_SeaLevel.html



Photo: C. Arndt

Monsoons

WCRP monsoon activities aim at improvements in monsoon observations, analysis and predictive systems. Monsoon Panels of WCRP core projects GEWEX and CLIVAR are active in South America (e.g. VAMOS), Africa (e.g. AMMA) and Asia/Australia. Major activities include:

- 1st Pan-WCRP Workshop on Monsoon Climate Systems: Toward Better Prediction of the Monsoons, Irvine, USA, June 2005
- International Science Plan of the first ESSP regional effort, the Monsoon Asia Integrated Regional study (MAIRS), November 2006

www.amma-international.org
www.clivar.org/organization/vamos/vamos.php

Seasonal Prediction

Recognizing the potential to improve seasonal prediction by tapping results and outputs from all WCRP elements, the WCRP aims at determining the extent to which seasonal prediction is possible and useful in all regions of the globe with currently available models and data. Major activities include:

- 2nd TFSP Implementation Workshop, Trieste, Italy, August 2005
- WCRP Workshop on Seasonal Prediction, Barcelona, Spain, June 2007
http://wcrp.wmo.int/AP_SeasonalPrediction.html

Anthropogenic Climate Change

Large uncertainties remain in the determination of the rate of climate change, impacts on regional scales where society and environment are most vulnerable, and the occurrence and intensity of extremes. WCRP coordinates and addresses research needs and gaps in observational and modelling issues to improve projections of climate change, both regionally and globally. Activities include:

- WCRP Side Event at SBSTA-24 and -26 sessions of the UNFCCC, Bonn, Germany, May 2006 and 2007
http://wcrp.wmo.int/Special_IPCC.html

Atmospheric Chemistry and Climate

The detailed representation of chemical constituents and processes in Earth system and climate models is led jointly by the WCRP and the IGBP via the SPARC project and the IGBP International Global Atmospheric Chemistry (IGAC) project. Other key contributors to the field of global carbon management are the Surface Ocean - Lower Atmosphere Study (SOLAS) and the Global Carbon Project (GCP) of the ESSP. Examples of activities include:

- 1st WCRP/IGBP Atmospheric Chemistry & Climate Initiative Workshop, Geneva, Switzerland, January 2007
<http://www.atmosph.physics.utoronto.ca/SPARC/initiatives/NEW2005Climate.html>

The WCRP Strategic Framework 2005-2015 capitalizes on past progress with the aim to facilitate analysis and prediction of Earth system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society.

WCRP activities are designed to provide valuable input for climate risk management in both the public and private sectors, contribute to planning for sustainable development and form a basis for natural hazard disaster reduction and mitigation.



Earth Simulator Center/JAMSTEC

Collaboration with other WMO-related Research Programmes

WCRP and THORPEX

The ability to simulate weather systems accurately and to produce predictions on time-scales of weeks are common interests of WCRP and the WMO THORPEX programme with a focus on coupled atmosphere-ocean-land models at extremely high, few-kilometre resolution. Collaborative research between THORPEX and WCRP is underway to advance our knowledge and predictive skill of organised convection, and the Madden-Julian-Oscillation. Major activities include:

- 2nd joint TFSP/WGSIP/THORPEX Workshop, Trieste, Italy, August 2005
www.wmo.ch/thorpe/

WCRP and WCP, GCOS and GEOSS

Strong collaboration also exists with other research programmes, and with development and applications programmes (especially the other principal components of the World Climate Programme, WCP), satellite agencies, numerical weather/climate prediction centres, and with a broad range of stakeholders and users of climate information, predictions and services. WCRP underpins the assessments of the IPCC and contributes to the development of GCOS and GEOSS. Major activities include:

- CLIVAR-VACS/START Southern and Eastern African Climate Predictability Workshop, Dar es Salaam, United Republic of Tanzania, July 2006
- WCRP/START/WMO Workshop on Africa Climate Research Networking for Young Scientists, Zanzibar, United Republic of Tanzania, March 2007
<http://www.wmo.int/web/wcp/wcp-home.html>
<http://www.wmo.int/web/gcos/gcoshome.html>
http://www.earthobservations.org/progress/geoss_progress.html

