

## **World Climate Conference-3 (WCC-3)**

### **Overall Summary**

*(Submitted by Stefan Rösner)*

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#### **Summary and Purpose of Document**

This document summarizes the overall preparation and outcome of the World Climate Conference-3 (WCC-3).

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#### **ACTION PROPOSED**

For consideration.

## **1 Introduction**

WMO Congress in its 15th session agreed to hold the World Climate Conference-3 (WCC-3) from 31 August to 4 September 2009 in Geneva, Switzerland. It was decided to have the conference under the overall theme of climate prediction for decision-making focusing on seasonal to inter-annual timescales taking into account multi-decadal prediction. It was also decided that WCC-3 will be comprised of two segments: a science conference and a high-level segment, as well as that WCC-3 must be funded from extrabudgetary resources.

## **2 Preparation and organisation of WCC-3**

A WCC-3 International Organizing Committee (WIOC) was established to prepare for the conference. Through the WMO Secretariat, its technical commissions, particularly the Commission for Climatology (CCI), international organizations carrying out the climate-related programmes or activities, especially the United Nations Environment Programme (UNEP), Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), Food and Agriculture Organization (FAO) of the United Nations, International Council for Science (ICSU), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention to Combat Desertification (UNCCD), United Nations Convention on Biological Diversity (UNCBD), United Nations Development Programme (UNDP) and International Strategy for Disaster Reduction (UN-ISDR) in cooperation with the European Commission (EC), World Bank (WB), Intergovernmental Panel on Climate Change (IPCC), Global Climate Observing System (GCOS), World Climate Research Programme (WCRP), World Health Organization (WHO), Group on Earth Observations (GEO), United Nations World Tourism Organization (UNWTO), the private sector, non-governmental organizations, and the International Geosphere-Biosphere Programme (IGBP) have been invited to contribute to the preparations and organization of the WCC-3.

Based on a decision at GCOS SC-XIV Mr. Stefan Rösner represented GCOS in the WIOC. This committee had representatives of individual countries as well as from intergovernmental and international organisations. Through this a broad representation of different users of climate information was involved into the planning of the WCC-3.

The WIOC has held four meetings on 4-6 February, 3-5 September 2008, 16-18 March 2009 and a final meeting on 30 August 2009 in Geneva to fix last issues. The first two sessions of the WIOC have been chaired by Dr Don MacIver, Director Adaptation and Impacts Division Environment Canada (AIRD), who was followed by Prof. John Zillman, Australia.

As requested by WMO Cg XV, the WCC-3 was developed along two main blocks: an expert and a high-level meeting. The expert meeting started on 31 August 2009 and saw, after a high-level opening ceremony, up to 2 September a series of plenary and parallel working sessions. In addition forums, sessions on implementing climate services and round-table discussions had been arranged. On 3 and 4 September the high-level meeting saw the attendance of many heads of states and international organizations. When preparing the sessions attention was given to regional balance and, as far as possible also to gender balance.

The outcome of the expert meeting was an expert statement forming the basis and underpinning the conference declaration. The outcome of the High-level Meeting was the WCC-3 High-level Declaration.

The WCC-3 brought together more than 2.000 climate scientists, sectoral experts and decision-makers from more than 150 countries, including Heads of State/ Government of Ethiopia, Monaco, Mozambique, Slovenia, Tajikistan, the Vice-Presidents of Comores and the United Republic of Tanzania, the Premier of Niue, the Prime Ministers of Bangladesh,

Cook Islands, the Vice-Premier of China, more than 80 Ministers and other Senior Government Officials. The adoption stood under the chairmanship of H.E. Mr Armando Emílio Guebuza, President of Mozambique, and H.E. Mr Moritz Leuenberger, Federal Councillor of the Swiss Confederation, host country of the Conference.

All plenary sessions and the High-level Meeting have been webcast. Webcasts, together with the presentations of the plenary sessions as well as documents prepared for the parallel working sessions, are available on the WCC-3 home page at <http://www.wmo.in/wcc3>.

### **3 WCC-3 Sessions**

During the process of developing the programme of the WCC-3 it became clear, at a rather early stage, that observations are forming an essential basis for the development of climate services and modelling. Thus, within the concept of the WCC-3, a separate working session was established titled "Climate Observations" (WS-6), details given below.

The following gives an overview of the different formats of the conference sessions together with the goals and objectives of the sessions. The conference, in five plenary sessions, discussed:

- PS-1: The shared challenge--meeting user needs  
The session introduced the overall challenge in the delivery and application of climate prediction and information services. It set the stage for the entire Conference.
- PS-2: Economic and social benefits of climate information  
Presentations highlighted sector-specific instances of advantages gained from using climate information. The need to create user-oriented interfaces for maximizing socio-economic benefits has been emphasized.
- PS-3: Advancing climate prediction science  
The advances in climate prediction and the associated challenges will be demonstrated. The full range of timescales from seasonal to centennial will be covered including how synergy between the different timescales can achieve seamless prediction.
- PS-4: Climate extremes, warning systems and disaster risk reduction  
The challenges of climate extremes on society, the warning systems to reduce the impacts, and practical approaches for disaster risk reduction and management have been presented. The presentations are expected to reveal the existing differences in capacities and needs of various regions and institutions.
- PS-5: Mainstreaming climate information  
The presentations focussed on the status and challenges of mainstreaming climate information in the policies for adaptation. Successes and deficiencies were highlighted.

The twelve parallel working sessions addressed the following topics:

- WS-1: Climate and human health  
Climate impacts human health in many ways, including through air pollution, extreme events and the spread of vector- and water-borne illnesses. This session demonstrated the best practices and challenges in the use of climate prediction and information services in the health sector. It identified the best approaches to integrate climate prediction and information services into the policies and practices in the sector.
- WS-2: Climate and sustainable energy  
Energy development and management require timely climate information. This session reviewed the available climate information for the energy sector and how it is and can be used to meet the rising demands of the sector, especially in the light of climate change.

- **WS-3: Seasonal-to-interannual climate variability**  
Seasonal-to-interannual climate predictions provide information for months to years out for planning in all sectors. This session reviewed current levels of understanding and predictive skill and will identify requirements and necessary advances for such predictions to be reliable enough to meet the needs of the user community.
- **WS-4: Climate and water**  
Water resources management benefits greatly from accurate climate information and predictions. In this session, hydrological and climate modelling experts and water resources managers from user communities presented the latest advances in the use of climate information for water resources applications.
- **WS-5: Climate, transportation and tourism**  
Climate influences activities in both the transport and tourism sectors, thus significantly impacting national economies. This session evaluated the extent to which climate information is available and used by decision-makers in these sectors, highlighting examples of good practices and identifying gaps.
- **WS-6: Climate observations**  
All climate services to society require robust observations of the climate. This session took stock of progress with the planning and implementation of the Global Climate Observing System since the Second World Climate Conference and addressed issue to guide its further development in support of climate prediction and information for decision-making.
- **WS-7: Climate and biodiversity and natural resource management**  
Patterns of weather and climate can threaten the capacity of ecosystems to survive, exacerbating stresses from human activities and pushing species outside their normal coping range. This session examined the state of knowledge on climate and biodiversity and actions that can be taken to enhance land and ecological management and services.
- **WS-8: Climate and more sustainable cities**  
Cities impact, and are impacted by, climate variability and change in a number of ways. This session addressed the use of climate prediction and information services in the development and management of facilities and resources in urban settlements. It also addressed current capabilities to observe and predict environmental processes for urban areas, from individual buildings to megacities.
- **WS-9: Decadal climate variability**  
All regions and sectors are influenced by climate variability over the course of decades. This session presented the opportunities and challenges associated with improved understanding and prediction of decadal climate variability in the context of various user needs.
- **WS-10: Climate and food security**  
Climate variability and change are altering the landscape for food production and availability. The session addressed ways to improve climate services for use in sustainable land management and to reduce the vulnerability of the food supply. It reviewed advances in the provision of climate information for food production, distribution and storage and the uses of, and needs for, improved climate services to enhance agricultural production and combat land degradation.
- **WS-11: Climate of oceans and coasts**  
The oceans are not only a major driver of climate variability; they are also impacted greatly by climate variability and change. Climate affects all marine resources, including fisheries and aquaculture. The session examined how climate information and seasonal and longer-term predictions can be used for sustainable management of oceanic and coastal environments and their resources.

- **WS-12: Regional climate information for risk management**  
Increasingly, regions and individual nations require tailored climate assessments, seasonal forecasts and climate prediction to manage climate risks. This session examined those needs and the current and future capabilities of National Meteorological and Hydrological Services (NMHSs) to respond to these needs. Speakers stressed the importance of regional cooperation, such as Regional Climate Centres, to support NMHSs and Regional Climate Outlook Forums, in which many climate information users and providers participate.

In four forums, which took place in parallel to the twelve working sessions, the following topics have been discussed:

- **F-1: Gender and climate**  
The strong gender specific dimensions of adapting to climate change only recently became part of climate related research. There are very few policy responses which take into account women's and men's distinct roles and responsibilities (such as gendered division of labour, access and control of natural resources, knowledge and skills and participation in decision and policy-making) that expose them to different risks and opportunities. In order to be effective and meaningful, a new framework for climate services needs to be closely linked to the needs and expectations of the communities and societies at every level. In that context, this framework and the research agenda of the future have to take gender dimensions of climate change into account. This Forum explored linkages between gender and climate issues and identified them clearly in order to inform the discussions of the Conference in general. Ultimately, this session intended to lead to the adoption of a "gendered approach" to the expected results/outputs of the Conference.
- **F-2: Climate and communities**  
The "Climate and Communities" Forum introduced the challenges and opportunities for utilizing climate predictions and information at community level, and provided recommendations to the conference at large.
- **F-3: Business and industry**  
The Business and Industry Forum, co organised by the International Chamber of Commerce (ICC) in partnership with the World Business Council for Sustainable Development (WBCSD) and the World Energy Council (WEC) brought together global business representatives, intergovernmental leaders and government representatives to discuss how the Global Framework for Climate Services resulting from WCC-3 can help companies to benefit from enhanced climate services and better accessibility to climate information. In addition, participants also discussed and assessed the status of the UNFCCC climate change negotiations three months before COP 15 in Copenhagen and explored partnership approaches to deal with the climate change challenge. The Forum featured a roundtable discussion to exchange experiences and needs for climate information services which help companies better understand and adapt to climate change impacts. Companies shared their strategies for coping with the changing climate and climate variability and the resulting risks and opportunities.
- **F-4: Capacity-building, education and training**  
This Forum elucidated the scope of the proposed Climate Services Information System, by reviewing lessons learned from efforts at developing capacity in meteorology, climate science, policy-makers and end users. Effective capacity-building and training requires a long-term commitment to address capacity gaps in knowledge generation and dissemination, as well as in the processes that catalyze efforts to move from knowledge to action. Developing nations often experience attrition of newly trained staff, thus leaving the institution no better off. Stemming this requires building the capacity not only of human resources, but of institutions themselves. It addressed not only the content of capacity-building needed to adapt to climate change, but the process of imparting the required capacity. Adaptation is particularly dependent on climate information. Rapid and

sustained action to build capacity for planning and implementing adaptation measures are needed to effectively respond to the challenges posed by climate change.

Three plenary round-table discussions focussed on the processes and issues in the application and communication of climate information and services between providers of climate predictions and information and users needing climate information and services. Each round-table involved four to eight experts with a balance of background, experience and expertise:

- R-1: Climate risk management.
- R-2: Climate adaptation and the Copenhagen process
- R-3: Communicating climate information

In four sessions issues related to implementing climate services have been addressed:

- I-1: Communicating climate information  
The session illustrated the value chain leading from Earth observations via modelling and analysis to climate information services for end users. It addressed climate adaptation through a case study on predicting local and regional sea-level rise, and it will address climate mitigation by describing the development of a new forest carbon monitoring system.
- I-2: Research engagement  
The consortium of the major global and national research programs is well-placed to conduct frontier research on the understanding, modelling and prediction of the climate system from seasons to decades for major regions and the entire world. We are poised to deliver the resulting climate information that will enable services in a timely and effective manner. Our success in overcoming scientific challenges to ensure accurate predictions and transferring this knowledge in the form of reliable services to decision makers depends on: sustained, high-quality observations and monitoring of the whole Earth system, powerful and high-performance supercomputers that are at least 1000 times faster than the current generation together with high-bandwidth connectivity of centres/experts around the world, and education and training of a highly-skilled work force to guide the development and use of climate information for decision making.
- I-3+4: Nations and regions  
These two sessions provided the opportunity for representatives from countries and regions to briefly present examples for existing and planned climate services.

Another means to present activities, related to the aims of the WCC-3, was through three poster sessions held on 31 August to 2 September. Posters have been introduced in short, three slides long, presentations in separate sessions.

#### **4 Summary**

The WCC-3 has seen a broad attendance – much more than anticipated, initiated the implementation of the Global Framework for Climate Services (GFCS) and will influence the ongoing negotiations under the UNFCCC before and beyond COP 15 in Copenhagen. The many statements supporting the need for enhanced and improved observing systems for climate underpin the findings summarized in the Conference Statement as outcome of the experts segment.