
FIRST MEETING
OF THE WORLD CLIMATE CONFERENCE--3
INTERNATIONAL ORGANIZING COMMITTEE (WIOC)

ITEM 2.1

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**REVIEW OF PAST ACTIVITIES AND ACTIONS LEADING TO APPROVAL
TO IMPLEMENT A WORLD CLIMATE CONFERENCE-3**

**Review of the Decisions/Direction of the
15th WMO Congress and the 59th Executive Council**

(Submitted by the WMO Secretariat)

1. Brief Background on Actions leading to the Decisions of Cg-15 and EC-59

First & Second World Climate Conferences were organised by WMO, in cooperation with UNEP, FAO, UNESCO and its IOC, and ICSU organized the First World Climate Conference in 1979 and the Second World Climate Conference in 1990. The Conferences were important milestones in the development of climate as a 21st century issue of international importance.

- The First World Climate Conference influenced the establishment of a number of international scientific activities such as the Intergovernmental Panel on Climate Change (IPCC), the World Climate Programme (WCP) and the World Climate Research Programme (WCRP).
- The Second World Climate Conference (SWCC) called for the establishment of a climate convention, adding momentum to international efforts that resulted in the development of the UN Framework Convention on Climate Change (UNFCCC) in 1992. The SWCC also led to the establishment of the Global Climate Observing System (GCOS) and to recommendations on future WCP activities.

WMO Congress at its 14th session (Cg-14) in 2003 expressed an interest in WMO organizing a third international conference on climate.

- Subsequently the WMO Executive Council in 2004 at its 56th session (EC-56) requested the Secretary-General to establish an **Ad Hoc Exploratory Committee on World Climate Conference-3** to study such an international conference.
- The Ad Hoc Exploratory Committee concluded in its 2005 report to the WMO Executive Council at its 57th session (EC-57) that there were sufficient scientific issues to justify the holding of a WCC-3. Further it noted that “scientific advances in seasonal to interannual and possibly decadal forecasting offered a great opportunity for the development of new services to a wide user community” and that to date it has not been the “subject of high-level focus by the world community”.

In 2005, the WMO Executive Council (EC-57), noting the positive conclusions of the Exploratory Committee, approved the establishment of a **Provisional Organising Committee (POC)** to develop a costed meeting plan for a WCC-3 and submit it for consideration at its next meeting (EC-58 in 2006). Based on its consideration of the costed meeting plan, EC-58 requested the POC to refine the meeting plan, in particular, by refining the costs of the WCC-3 and the outcomes to be expected from the High-level Segment and to provide the 15th WMO Congress with a report for consideration and decision. In addition, the POC developed a Discussion Paper on the programmatic rationale and issues relevant to the WCC-3. This paper, given in Attachment 1, was provided to the Congress as additional support for organising a WCC-3.

2. Decisions of the Cg-15 and EC-59 – establishment of the WIOC

15th WMO Congress requested the “Secretary-General to establish a WCC-3/International Organizing Committee (WCC-3/IOC) for the purpose of organizing and executing by late October 2009 a World Climate Conference 3 (WCC-3) on the basis on the theme of climate prediction for decision-making focusing on seasonal-to-interannual timescales taking into account multi-decadal prediction”.

The WMO Executive Council (EC-59), following up on the approval of the 15th WMO Congress, specified that the WCC-3/International Organizing Committee (WIOC):

- Be composed of 18 to 24 experts from among the following groups:
 - (a) WMO Members;
 - (b) WMO Secretariat;
 - (c) Relevant scientific organizations;
 - (d) Relevant international organizations and conventions;
 - (e) International financial institutions;
 - (f) Relevant private sector organizations;
 - (g) Relevant non-governmental organizations;
 - (h) Major financial contributors;
- Have at least one third of its members from WMO Members.
- Have extensive scientific representation among its members.

3. Decisions of the Cg-15 and EC-59 – Terms of Reference for WIOC

The Executive Council, using guidance from the 15th WMO Congress, prepared specific terms of reference for the WIOC to:

- organize WCC-3 on the basis of the theme agreed by Cg-XV (i.e. climate prediction for decision-making focusing on seasonal-to-interannual timescales, taking into account multi-decadal prediction);
- endeavour to organize WCC-3 so that it produces significant concrete outcomes of both near-term and long-term economic and social benefit to WMO Members, the private sector, and the general public;
- assist in resource mobilization for WCC-3, which is to be financed entirely by voluntary contributions provided to WMO, including the costs associated with WIOC itself;

- consult and coordinate with WMO Members and relevant organizations whose experts are not members of WIOC on a regular basis;
- report on its work to the President and Secretary-General at least quarterly;
- submit annual written reports on its activities and on plans and preparations for WCC-3, especially contributing to WMO expected results to EC for review, guidance, and approval. These reports shall also be provided to WMO Members through their Permanent Representatives and their Missions in Geneva.

The mandate of WIOC shall expire two months after WCC-3 is held or at the time of the sixty-second session of the Executive Council, whichever comes first.

WORLD CLIMATE CONFERENCE THREE
(Geneva, Switzerland, October 2009)
WMO Discussion Paper

**Moving Forward on Applications of Seasonal to Inter-annual Climate Predictions:
A Strengthened Role for the World Meteorological Organization (WMO)
and National Meteorological and Hydrological Services (NMHSs)**

Background:

The World Meteorological Organization (WMO), in cooperation with UNEP, FAO, UNESCO and its IOC, and ICSU organized the First World Climate Conference in 1979 and the Second World Climate Conference in 1990. The Conferences were important milestones in the development of climate as a 21st century issue of international importance.

- The First World Climate Conference influenced the establishment of a number of international scientific activities such as the Intergovernmental Panel on Climate Change (IPCC), the World Climate Programme (WCP) and the World Climate Research Programme (WCRP).
- The Second World Climate Conference (SWCC) called for the establishment of a climate convention, adding momentum to international efforts that resulted in the development of the UN Framework Convention on Climate Change (UNFCCC) in 1992. The SWCC also led to the establishment of the Global Climate Observing System (GCOS) and to recommendations on future WCP activities.

Over the last decade major advances have occurred in understanding and in predicting climate variability for time periods from a month to a season to a year in advance (and sometimes even longer). These scientific advances have been motivated by the ever-increasing demand for climate predictions in decision making and have led to increasing application of climate information to the needs of the world's nations for improving public health and safety, sustained economic development and stable societal infrastructures. Examples of sectors that have benefited from the application of climate knowledge and prediction include aviation and marine transport, agriculture and food security, health, water resource development, use and conservation, energy supply and allocation, and the management and conservation of biodiversity. Climate knowledge and applications have also been used in international, national, and local planning and response to the impacts of natural disasters associated with climate extremes. This includes reducing the impacts of floods, droughts, tropical and extratropical cyclones, and human, animal and plant disease outbreaks.

- For example, improved observations and increased understanding of the El Niño-Southern Oscillation (ENSO) phenomena have led to useful predictions up to several months ahead¹. These climate forecasts have improved (1) national and local emergency preparedness for natural disasters; (2) planning and managing water resources, especially in regions subject to drought; (3) actions to mitigate the impact on

¹ The application of this knowledge was particularly accelerated in many parts of the world by the large El Niño – La Niña event of 1997-98 which had truly global impacts.

agricultural production and on losses from wild fires in drought-stricken regions. Developing useful products requires extensive interaction among scientists and users.

Adapting to climate variability and its potential impacts poses challenges and offers opportunities for the management of resources and for national and local infrastructures and economies. The pressures of high population densities and intensified land use, such as the extension of human settlements and activities into high risk zones accelerate the demand for effective early warning systems and for effective management of climate-sensitive resources. For example, information on short-term climate variability (i.e., weekly, monthly and seasonal forecasts) is relevant for the development of national, regional, and local plans to mitigate the impacts of drought and other climate related stresses, to manage agricultural operations and water resources, and to prevent or ameliorate climate-sensitive health effects. Strengthening response capabilities for climate variability will also benefit efforts to adapt to climate change. The World Bank in 2004 stated '*response to current climate variability and extremes is a necessary, if not sufficient, part of an effective adaptation strategy*'.

Many developing countries are highly susceptible to setbacks from climate extremes and thus are dependent, among other options, on improving their use of climate information for achieving their economic and societal goals. Rural food production and water resource development and management are highly dependent on good information on climate variability; yet the availability of and capacity to utilize climate information is limited in many countries, particularly the least developed countries. Human mortality rates from diseases such as malaria are also influenced by climate variability. In many regions, there is limited use of climate information for sustaining economic development. It is important to find ways for all countries to cope with climate variability through improved access to climate information and prediction products and the use of risk management techniques.

The time is ripe to apply these recent advances in climate understanding, observations, forecasts, data and products, and model results to extend and develop useful climate services and other societal applications. Attention will be paid to long-term climate changes over a 25 to 50 year period as a way to analyze the evolution of seasonal to inter-annual climate phenomena and impacts, e.g., how extreme events are affected by the evolution of climate over decades and by climate change. In addition, improvements in climate and earth observations from satellite, ground-based, and *in situ* platforms can be synthesized into useful data products and indicators for decision makers. Examples include integrated data products on precipitation, snow pack, stream flow, and potential for drought conditions and global and regional maps with high resolution that can be used to improve the management of crops and water resources and to assist in urban planning.

As a result of these developments and the recommendations from several bodies of Experts², the **World Meteorological Organisation (WMO) is proposing to organize a third in a series of World Climate Conferences**, in cooperation with other UN Agencies and relevant international scientific organizations as well as national entities, including governments, private sector and NGOs. The theme of a World Climate Conference three (WCC-3) will be on advances in seasonal to inter-annual prediction and on the application of these predictions to societal needs and issues, such as crop and animal production, forestry, fisheries, water availability and quality, and health.

² An Ad Hoc Exploratory Committee on World Climate Conference-3, established by WMO concluded that there are sufficient scientific issues to justify the holding of a WCC-3. The Committee considered that "scientific advances in seasonal to interannual and possibly decadal forecasting offered a great opportunity for the development of new services to a wide user community" and that to date it has not been the "subject of high-level focus by the world community".

The benefits from a World Climate Conference-3 focused on seasonal to inter-annual prediction would be of direct interest and relevance to policy makers, the media and the public. They:

- Have the potential to contribute to significant and immediate socio-economic benefits, including the prevention and mitigation of the impacts of natural disasters;
- Have the potential to link very strongly into internationally agreed development goals, such as the UN Millennium Development Goals, poverty reduction strategies, and the Hyogo Framework of Action for Disaster Risk Reduction;
- Would provide the opportunity to share available experience and products and extend existing capacity, especially to developing countries;
- Could provide valuable input to the growing number of activities and programs focused on adapting to the risks posed by climate variability and change,
- Could identify priorities for coordinated action at local, national, regional and global levels to meet user needs;
- Could enhance support to climate related monitoring required for improved seasonal to inter-annual prediction in the global environmental observing systems (GCOS, GOOS, GTOS);
- Could link observational requirements for seasonal to inter-annual prediction to the GEO process and into the Global Earth Observing System of Systems (GEOSS);
- Could enhance attention to specific research needs on seasonal and inter-annual climate prediction in the context of climate change, as well as support to international scientific cooperation in this field, notably the WCRP;
- Could provide an assessment of the scientific developments required to further develop seasonal, inter-annual and longer forecasts;
- Could provide renewed support for developing effective capacity building activities among producers of climate information and users of information, especially those in least developed countries;
- Could assist in communicating the benefits of the advances in the climate knowledge and prediction to developing and least developed countries, which are highly vulnerable to natural disasters and other climate related social and economic dislocations;
- Could provide an opportunity for mainstreaming climate information and products into international, national and local decision-making in relevant sectors;
- Allow for enhanced co-ordination across WMO programmes and those in other UN and international scientific organizations in a way that would strengthen these activities;
- Could enhance WMO's stature and world leadership by illustrating the essential services that it and its members provide; and
- Would provide further benefits to WMO and its Members by:
 - Helping to articulate the role of Regional Climate Centres;
 - Strengthening the links between WMO, its members and the private sector;
 - Enhancing the role and visibility of National Hydrometeorological Services (NMHSs) and the climate services they deliver.

Moving Forward toward a World Climate Conference - 3

WMO has established a Provisional Organizing Committee (POC) of climate experts to provide advice to its Executive Council on the direction and content of a WCC – 3. The Committee has recommended that the overarching theme for the Conference be **Climate Prediction for Decision Making: Focusing on Seasonal to Inter-annual Timescales**, with 4 scientific sub-

themes:

1. Advancing climate information and prediction science,
2. Embedding climate into Hazard Early Warning Systems,
3. Applications and socio-economic benefits of climate information and prediction,
4. Mainstreaming Climate Information for Development.

The Committee also recommended that in light of the ever-increasing interest in the application of climate prediction to many societal issues, WMO should plan for a large conference with a 1000 or more participants but one that is completed within a 5-day workweek. The recommended structure for the conference is an:

- **Opening session**, including keynote addresses, on Monday AM,
- **Science segment** with sessions from Monday PM to Thursday AM, and
- **High-level segment** from Thursday PM to Friday PM.

The **Science Segment** would consist of parallel sessions organized around the 4 sub-themes.

1. **Advancing climate information and prediction science**, ranging from scientific research to observations to scientific assessments, which are three interdependent elements. The sessions would include discussions of observing systems (i.e., in situ networks and satellites), observational requirements for prediction; seasonal to inter-annual predictions (current and future); longer range climate predictions; predicting extreme events and regional climate variability and change; and seamless prediction from short range (e.g., extreme events) to seasonal to inter-annual to decadal or longer time scales.
2. **Embedding climate into hazard early warning systems**, including information needs for hazard early warning systems for climate; developing hazard early warning systems for climate; hazard early warning systems and emergency response systems for climate: The roles of International, regional, and national climate centers and response agencies; hazard early warning systems for specific climate modes of variability (El Nino, monsoons, droughts, etc); economic and social impacts of hazard early warning systems for climate.
3. **Application and socio-economic benefits of climate information and prediction**, including major application areas of energy and the built environment; agriculture and food security (including aquaculture); water resources, health; and vulnerable ecosystems, especially for small island developing states.
4. **Mainstreaming climate information for development** (including the Millennium Development Goals). This will involve sharing experiences in how users act on climate information and prediction in decisions, planning, and policy and assessing the methodologies of translating climate information into social and economic benefits. There also would be discussions on evaluating climate coordination mechanisms, including the governance of the climate enterprise and in assessing future directions for providers of climate information and predictions and adapting (and optimizing) institutions to future needs for using climate information and predictions.

Conference Ministerial Declaration

The Provisional Organizing Committee for a WCC-3 has developed a set of expectations from the High Level (Ministerial Level) Segment for each of the sub-themes. These are:

1. **Advancing climate information and prediction science**
 - a. Promoting the development of seasonal to inter-annual climate information and prediction science;
 - b. Facilitating a global infrastructure for strengthening regional and national capacity for a seasonal to inter-annual prediction system.

2. **Embedding climate into hazard early warning systems**
 - a. Establishing the mechanisms and opportunities for sharing climate information and prediction products;
 - b. Developing an effective hazard early warning system for climate, e.g., by recommending a menu of practical response actions to near-term climate risks, including the use of indigenous practices of early warning.

3. **Applications socio-economic benefits of climate prediction**
 - a. Developing seasonal to inter-annual climate information and prediction goals for WMO, its Members, and public and private sector entities;
 - b. Defining strategies for the enhancement of application of climate information and prediction products for climate risk management.

4. **Mainstreaming Climate Information for Development**
 - a. Strengthening the regional and national response systems to climate variability, especially in the developing and least developed countries frequently affected by natural disasters caused by climate extremes;
 - b. Extending available climate products to include annual prognostic analyses at the regional / global levels as well as to enhance the use of existing products by decision makers in key sectors throughout society;
 - c. Optimising the global, regional national institutional mechanisms for using climate predictions in decision making.

At the **High Level Segment**, the Ministers will consider a brief (1-2 page), pre-negotiated Declaration providing for basic recommendations to bolster the Plan of Action from the science conference. This Declaration would include specific actionable items that would improve performance of an end-to-end climate services system and that the parties to the Declaration would commit to furthering to the extent possible. The outcomes from the conference should call generally for better implementation and coordination of the delivery of services, not for major new programmes.

- These action items should represent coordinated and possibly cooperative actions by countries, national and international organizations and where feasible, private and NGO groups,

- The nature of these actions would relate to specific objectives that would further the aims of the WMO Member States, the science and practice of climate prediction, especially on the seasonal to inter-annual time scales, and the application of seasonal

to inter-annual climate predictions to socio-economic problems and issues at the international, regional, and national levels.

- One major focus for these action items will be to accelerate activities to integrate climate into hazard early warning systems and improve the scope and responsiveness of these systems that are currently part of the forecast, warning and dissemination activities of the NMHSs.