

WORLD METEOROLOGICAL ORGANIZATION

EXECUTIVE COUNCIL ADVISORY GROUP ON CLIMATE AND ENVIRONMENT

Fifth Session

Geneva, 4 – 6 February 2004

1. ORGANIZATION OF THE SESSION

1.1 Opening of the Session

1.1.1 The fifth session of the WMO Executive Council Advisory Committee on Climate and Environment was held from 4 - 6 February 2004 at the WMO Headquarters in Geneva. In his welcoming remarks the Secretary-General, Mr Michel Jarraud, noted that the Group had to consider and reach conclusion on a number of very important topics that are highly relevant to WMO and the NMHSs. The Secretary-General pointed out that Congress XIV expressed great interest in the WMO and Member activities in climate and the environment. The EC-LV, which followed Congress last May, also considered the subject of climate and the environment extremely important and they requested that a discussion paper be developed on the subject and that this paper be discussed at the upcoming EC in June 2004. The Secretary-General noted that he had reviewed a very early version of this paper and that with the guidance of the EC-Advisory Group it would develop into an excellent point of discussion at EC. He encouraged the Group during their deliberations to consider the future WMO role in climate, to be bold in the steps toward the future and to consider the needs of developing countries and especially those of the least developed countries.

1.1.2 Mr Jarraud reminded the Group that the primary reason EC had re-established this Advisory Group was because of the critical need to sustain the WMO leadership in climate and climate change. He stated his hope that the deliberations would begin the process of establishing future directions and enable WMO and our Members to move forward in a consensus-driven agenda for climate. The Secretary-General also noted the fact that for the fourth consecutive year EC had requested this group to discuss the requirements for holding a World Climate Conference #3. He noted that this is an important issue, which needs to be strategically developed on the merits and requirements for a conference and more importantly it should be decided as to how this will benefit WMO, its Members and the climate community.

1.1.3 The Secretary-General reminded the Group that a new cross-cutting programme on mitigation of natural disasters was approved by congress, He stated that he was very pleased to note the interest of this group in the development of this cross-cutting programme. Clearly, climate and weather extreme events would be a major component of the new programme and Mr Jarraud stated he would be pleased to hear the desires of this group concerning the development of this new programme. Mr Jarraud closed by stating that he was pleased to see the expanded membership of the Group, noting that this reflected the growing importance of climate.

1.1.4 In his opening remarks, the Chairman of the Group, Dr Ali Mohammad Noorian, observed that when decision-makers first began to establish and organise their efforts at international climate related and environmental matters, they could not have predicted the variety of issues that would arise by the end of the twentieth century and beginning of the twenty-first. There are a multitude of climate and environment organisations and agreements both on the inter-governmental and international agency level. WMO, as we have seen in our previous meetings reflects this by having climate activities in all of its technical departments and this situation continues to increase as the evolution and complexity of climate is better understood. Dr Noorian noted that this meeting and the discussion paper will very likely be the first step in the future direction for climate activities at WMO. Dr Noorian reviewed the results of the previous meetings and suggested that the group now needed to move forward in planning the future for climate activities in WMO.

1.1.5 Dr Noorian stated that he hoped the outcome of this short meeting could set the stage for a good discussion at EC-LVI. The Group should, therefore, consider what the next steps should be for WMO to maintain its leadership in climate and for the organization of climate activities within WMO. New strategies are needed especially now that climate change is both

scientifically and politically accepted and we must assist our members in adapting to these changes, to raising the level of climate and climate services within the countries. Dr Noorian noted that he was pleased to see the recent developments of the Regional Climate Centres and he felt these Centres would prove to be an important link in the provision of climate services. Dr Noorian pointed out that the climate issue needs to be elevated to gain support from governments. In extending his own welcome to the participants, the Chairman expressed a special welcome to Mr Boodhoo, the President of the Commission for Climatology who was participating as an invited expert. The full list of participants in the Session is listed in Annex 1.

1.2 Approval of the Agenda

1.2.1 The approved agenda is contained in Annex 2.

2. REVIEW OF TERMS OF REFERENCE OF THE EC-AGCE

2.1 The draft terms of reference that were approved at EC-LV were reviewed to ensure all participants were familiar with them and to ensure all items of concern were adequately covered. Mr Boodhoo pointed out that the group was now reviewing the discussion paper on climate and the environment and therefore the Terms of Reference (a) should be changed to reflect that the review had now been completed. Dr Zillman pointed out that the draft Terms of Reference covered both climate and environmental issues, but the Group had, so far, focussed most of its work on climate.. He suggested that all members of the group should remember that this Advisory Group was interested in both Climate and Environment. Following a discussion about several of the Terms of Reference, the Group concurred with them with the attached minor clarifications and that they could be submitted to EC LVI for endorsement as the Groups Final Terms of Reference. The Terms of Reference are contained in Annex 3

3. REVIEW OF ACTIONS ARISING FROM THE FOURTH SESSION OF THE EC-AGCE

3.0.1 At its Fourth Session in Geneva from 27 - 28 January 2003, the Group had identified the following actions that are discussed below.

The Role and Functions of Regional Climate Centres

3.0.2 The Group noted the Inter-Commission Task Team on Regional Climate Centres (ICTT-RCC) report to EC-LIV and agreed that this issue had now progressed to the point that implementation was the next phase. The implementation process would be based on recommendations from the Regional Associations. The Group was pleased to learn that a meeting co-sponsored by CBS and CCI was held from 10 - 13 February 2003 to establish an operational environment for long-term (climate) predictions. **The Group expressed its desire to keep abreast of the status and distribution of these predictions.** The Group was also pleased to note that a follow-up meeting on the implementation of the RCC's was held from 27 to 28 November 2003 in Geneva. Represented at this meeting were Regional Association representatives. The outcome of the meeting was a list of procedures for each region to follow as a guideline in the establishment of these Centers. **The Group recommended that it would be necessary for continued evaluation of the progress of implementation of the RCC's over the next several years.**

DISCUSSION The RCC issue was introduced by the Secretariat through a power point presentation (copy of presentation included as Annex 4 on the results of the meeting of experts held in Geneva 27 to 28 November 2003. The Advisory Group welcomed the report of the Meeting on the Organization and Implementation of Regional Climate Centers (RCCs), and generally endorsed the conclusions of the meeting, including the proposed Guidelines for

the Establishment of RCCs. Dr Zillman pointed out that this Advisory Group needed to provide advice to the EC on the status of RCC Implementation and to suggest how the RCC's fit into the overall WMO programme and how their operation will benefit the work of the NMHSs, at the national level, as well as their user communities.

3.0.3 In endorsing the preparation of specific proposals for EC-LVI, on the basis of the conclusions of the meeting, the Advisory Group wishes, however, to stress the importance of ensuring that:

- (a) The concept and *modus operandi* of the RCCs are fully integrated into the overall architecture of global environmental monitoring and service provision including, especially, their relationship with the various service provision functions of the World Weather Watch and the envisaged role of an eventual comprehensive, coordinated and sustained earth observation (and service) system;
- (b) The role of RCCs in supporting the national operational and service of NMHS's are built strongly into the proposed framework;
- (c) The various proposed functions of the RCCs in education and training, capacity building, research and service provision, are appropriately coordinated with the corresponding functions under other WMO sponsored or co-sponsored programmes;
- (d) Regional Associations become fully engaged in the decisions on establishing RCCs to ensure that the individual RCCs are designed to meet clearly articulated and recognized regional needs.

3.0.4 There was a rich discussion on exchange of climate data and on the need to rescue data within many countries. Dr Srivastav stated that his country was trying to establish a Regional Climate Change Centre and that he hoped India could be part of this process, so as to assist countries especially the LDC within RA-II. Dr Qin Dahe stated that it was recognized that climate and environment were extremely important for disaster mitigation and warnings. He stated the need for improved services perhaps through a RCC or a national centre. This RCC process was important because it is the obligation of all to assist nearby LDC's and less developed countries. He stated China was ready to assist these countries.

World Climate Conference-3

3.0.5 At the past four meetings, the Group has considered the requirement for a third World Climate Conference, with no final conclusion being reached at those meetings. It was recommended that this item would be taken-up as part of the overall discussion on the climate discussion paper as a part of the strategic look towards the future for climate activities.

DISCUSSION The group agreed that organizing and hosting this conference may be an important step for WMO to re-establish its leadership role. However, the group stated that it was critically important to establish goals and objectives for such a conference as well as determining Member interest. This type of conference must not be WMO talking to itself (Secretariat and Members). (see item 5 below for further discussion on World Climate Conference #3).

3.1 Review of actions from Cg-XIV and EC-LV.

3.1.1 Annex 5 contains the list of actions from Congress XIV and EC-LV. The members of the group thanked the Secretariat for preparing this table. Mr Boodhoo and Dr Noorian stated that they were very interested in assessing and understanding why IACCA had not lived up to its original optimistic goals.

4. REVIEW OF DRAFT DISCUSSION PAPER ON WMO'S LEADERSHIP ROLE IN THE AREA OF CLIMATE AND ENVIRONMENT

4.1 The draft discussion paper titled, **WMO Leadership in Climate and Environment: Background and Recommendations for Future Directions**, which was prepared by the Secretariat with the support of two consultants was presented to the Group by the authors. A copy of the Power point slides that were used for this presentation is contained in Annex 6. Specific comments were made concerning the title of the document, "should it be sustaining leadership or re-establishing leadership?"

4.2 Mr Boodhoo stated that the document needed to stress success, while Dr Srivastav stated that the document needed to discuss the weaknesses and failures of WMO in the area of climate and environment so that we could learn and develop the programmes for the future. Mr Kassahun stated that he was concerned with better understanding why IAACA had failed to achieve its objectives. Dr Qin Dahe stated that the satellite issues needed to be brought out more strongly, including the work of WMO with the GEO. The Group asked if WMO had a clear understanding as to its goals and objectives of GEO and whether these had been clearly exchanged with the Members and staff of the Secretariat. Several members of the group mentioned that the environment programme of WMO was not adequately addressed in the draft document. Several members expressed disappointment in the participation and visibility of WMO in the UNFCCC, UNCCD and CBD activities. Dr Qin Dahn stated that the climate system encompasses ecology and he was concerned about the limited input and activities of WMO in the Convention of Biodiversity. In discussing GCOS, it was mentioned that GCOS is much more than a planning process, it also provided requirements for stations and networks, facilitates awareness and improvements in the observations while relying on existing operational programmes, like the WMO World Weather Watch, to implement the improvements and to expand and monitor the networks.

4.3 It was decided by the group to discuss each of the recommendations in detail and to provide advice and specific actions for each recommendation that will be included in the completed discussion paper. The Advisory Group recognized that WMO needs to define and communicate its role, its strengths and weaknesses, and leadership concept for climate activities. Dr Zillman stated that it was very important for WMO to define where it should be **providing leadership** in climate activities and where it should stress its role in supporting other agencies in their climate-related activities. First, the Advisory Group considered the question "How is climate and environment interpreted within WMO?" Dr Zillman revised the interpretation provided within the draft discussion paper as follows:

"For WMO climate and environment involves all matters pertaining to the earth-atmosphere-oceans climate system and interactions with ecological and human systems, including especially those activities aimed at improved understanding of the interactions and the development of products and services based on them."

4.4 The group further stated that increasing WMO visibility was critical for the future of WMO in the climate area. The group requested that some initial groundwork be completed and a clear model (presented as a diagram) of "core" climate activities and relationship needs to be developed to help in conveying an overall view of the WMO role in climate. It was suggested that such a diagram would be very important in informing everyone of WMO's role and activity in climate, including work on climate change. This then could be used as an evaluation method to determine if WMO is properly organized to meet the challenges of the future. The group clearly identified that WMO needs to re-establish its provision of leadership rather than sustain it. Dr Zarate noted that some of the early WMO leadership in climate has eroded due to WMO's difficulty in rapidly identifying and adjusting programmes and projects to

new emerging climate issues. It was recognized by the group that the WMO secretariat is taking steps in this direction by utilizing Matrix Management to establish new structures that will clearly facilitate progress for the future.

4.4 Dr Srivastav stated that in most parts of the world the term climate is a scientific issue, while climate change is more political than science driven.

4.5 The Group suggested that specific actions should be reflected in the discussion paper under the recommendations as follows:

Recommendation 1: Establishment of clear organization-wide priorities in climate

4.6 The group recommended that the Secretariat in concert with the Members establish a strategy, including goals and objectives for climate activities and that these be communicated throughout the WMO. As the first step the Group requested that some initial groundwork be completed and a clear model (presented as a diagram) of "core" and climate activities and relationship needs to be developed. The group further suggested that circular letters be distributed prior to major international climate meetings (i.e. IPCC session) that highlight issues and identify benefits to the NMHS's and WMO as a whole from active participation in their fora. This would assist WMO in ensuring its visibility and will help the Members to better realize the strength of the whole.

Recommendation 2: Strengthening WMO's core climate capabilities

4.7 The Secretariat and other key representatives of WMO need to be more active in the deliberations of WCRP, GCOS, IPCC and other international climate activities. The WMO representative should play an active role to ensure WMO and the NMHS support and leadership is conveyed to the other bodies, as well as to ensure the WMO Members are kept abreast of the activities of these WMO co-sponsored programmes. Through this, WMO will strengthen its core capabilities in better understanding the emerging issues of these bodies, while providing an input for these bodies to better understand the capabilities of WMO and its Members.

Recommendation 3: Improvements to WMO's organizational structure and management dynamics

4.8 The group suggested that, through the Matrix Management approach, a new structure for climate activities, a thorough evaluation of WMO's strengths, weaknesses and opportunities could be completed. Enhanced communications can be accomplished through the issuance of circular letters identifying issues and positions to the Members for upcoming events and major conferences. It will be essential for WMO to facilitate informational meetings of WMO (NMHS) participants at various meetings and conferences. The question was asked if the current Commission for Climatology is the best mechanism for climate activities at WMO? It was stated that climate clearly is a cross-cutting issue, thus it was clear to the group that improved and more inter-commission actions will be required in the future.

Recommendation 4: Development of strong and on-going relations with "key" international agencies

4.9 The group recommended that WMO assess the benefits and support WMO can provide to other international agencies as a means of strategically targeting agencies that could benefit WMO, but could also benefit from WMO climate activities. Mr Zarate stated that what is often forgotten is that climate is a central and rapidly growing central function of the NMHS. Dr Zillman stated that IACCA may have not reached its potential because there were too many different interests, at too many levels (agencies, programmes etc) in the original committee. Dr Noorian stated that the key is in establishing partnerships. The group

recognizes that there is need for collaboration with other key international agencies, but that prioritization should occur based on proactive evaluation of other agencies climate related activities, identification of joint objectives, identification of potential partners, mechanisms for on-going formal collaborations. The group recognized that this could occur on a bilateral or a multilateral basis depending on the interest and situation. The group stated that WMO needs to clearly articulate its capabilities and potential contributions to the objectives of their partners.

Recommendation 5: Development of effective climate products and services to enhance capabilities and contributions of the Members.

4.10 The group emphasized the need to define products that would benefit members by improved understanding of users' needs (For example the needs of the health, water, desertification, and agriculture sectors). These users must be targeted strategically as to need and benefit.

Recommendation 6: Establishment of strong visibility in climate on national, regional and international levels.

4.11 Visibility in the climate arena is one of the most important issues facing WMO. Proactive representation and participation in the relevant UN conventions and high profile conferences is a must. The group noted that promotion at the ministerial level of linkages of climate to their national issues was critical. The group stated that strategic development of a World Climate Conference #3 could provide a basis for drawing the ministers into the WMO sphere of influence (see agenda item 5 below).

4.12 The group requested development of promotional materials, brochures etc that describe WMO's capabilities in targeted climate applications.

4.13 The group recommended that the revised version of this paper should be provided to the EC as part of the SG submission on this Advisory Group. It should include a summary which brought together the key thrusts of the proposed WMO leadership structure for endorsement by the EC. It was mentioned by Dr Noorian that he felt an ad hoc group should be formed at the EC following his presentation of the paper. This ad hoc group would come up with clear recommendations as to how to move forward. It was further suggested that a side event be prepared to elicit discussion and maximise EC member input.

5. WORLD CLIMATE CONFERENCE #3: IS IT NEEDED?

5.1 The Advisory Group noted that the discussion on holding a World Climate Conference #3 had continued over the past 4 years and that the issue was returned from EC to this Group again. The concern expressed at Congress and EC concerning the holding of the conference was discussed. However, the Advisory Group strongly and unanimously endorsed holding this conference. The Group recognized the concerns of some Members at EC about this conference, but the group agreed that it is strategically essential for WMO to be involved so as to begin re-establishing its leadership role in climate. Drs Qin Dahn, Srivastav, Zarate and Zillman all expressed their desire to support the conference and that it was important to follow-up on the various climate conferences that have been held, the outcomes of UNFCCC, GEO and most importantly the Fourth Assessment Report of the IPCC by holding the conference in 2008. Dr Srivastav stated that he felt the main theme of this conference should be on the science of climate and adaptation, with the major goal of uniting the science community behind WMO on the climate issues. Other themes mentioned were Working Together for Climate and the Climate for Future Generations. The EC-AGCE recognized that each member of the group needed to strongly support this conference at EC and needed to solicit support from other members of EC and from their governments. To this end the EC-AGCE requested the Secretariat to prepare a draft paper for distribution at EC-LVI that clearly

outlined the concept of the conference, determined the focus and timing and clearly stated that there should be no financial support from WMO. The support for this conference would be sought from the individual countries and through private and agency partnerships.

The Group strongly supported the comment of preparatory work on the concept, organisation, timing of a WCC-3 for consideration by EC LVI. It was considered that the organisation of WCC-3 around 2007-08 would be a critical step of the WMO strategy, to provide international leadership in the non-political aspects of climate that is aligned with its established charter.

6. DISASTER REDUCTION PROGRAMME

6.1 The group was provided an informational briefing on the new WMO cross-cutting programme on disaster reduction by Mr Tavarous. (A copy of these slides are included as Annex 7) The group expressed its opinion that the Disaster Reduction Programme is critically important to WMO's future and that it needs careful thought and development to produce desired results. It noted that guidelines for the use of the NMHS should be developed to provide insights to how best to communicate with the emergency response managers within their countries and to provide sample products that have proven beneficial in other countries. It will be important for the linkage between the natural disaster reduction and other climate and environment related activities of WMO to be clearly identified and understood by all concerns.

7. FUTURE MEETINGS AND ACTIVITIES

7.1 The Group recognised that for the Group to meet again, following EC-LVI deliberations on the climate discussion paper to begin the organization and review process for the steps towards the future.

8. OTHER BUSINESS

8.1 There was no other business to discuss.

9. CLOSURE OF THE SESSION

9.1 In drawing the Session to a close, the Chairman thanked the participants at the Session for their very valuable contributions to the discussions and also to the Secretary-General and his staff for the support. The Group expressed its strong approval to the Chairman for his firm personal commitment and leadership in bringing a more coordinated and strategic approach to the WMO role in climate and environment.

ANNEX I

EXECUTIVE COUNCIL ADVISORY GROUP ON CLIMATE AND ENVIRONMENT

FIFTH SESSION

Geneva, 4-6 February 2004

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ANNEX 2

EXPLANATORY MEMORANDUM RELATING TO THE PROVISIONAL AGENDA

1. ORGANIZATION OF THE SESSION

Opening of the Session

1.1 The fifth session of the EC Advisory Group on Climate and Environment (EC-AGCE) will open on Wednesday 4 February, 2004 at 09.30 a.m. at the WMO Headquarters, Geneva.

Approval of the Agenda

1.2 The provisional agenda will be submitted to the EC-AGCE for approval at the opening of the session and may be amended at any time in the course of the session.

2. REVIEW OF TERMS OF REFERENCE OF THE EC-AGCE

2.1 The EC-AGCE will review the Terms of Reference, discuss the issues involved with the Terms of Reference and determine if adjustments should be proposed to EC-LVI.

3. REVIEW OF ACTIONS ARISING FROM FOURTH SESSION OF THE EC-AGCE

The EC-AGCE will have the opportunity to review progress on the several actions that were proposed during its fourth session.

3.1 Review of Actions from Cg-XIV and EC-LV

The EC-AGCE will also have the opportunity to review the discussions and actions from Cg-XIV and EC-LV in respect to its Terms of Reference

4. REVIEW OF DRAFT DISCUSSION PAPER ON WMO'S LEADERSHIP ROLE IN THE AREA OF CLIMATE AND ENVIRONMENT

4.1 The first phase of analysis and development of the discussion paper has been completed. The EC-AGCE review of this draft will follow a detailed presentation of the paper by the consultants who are performing the work. The anticipated output will be revisions and/or approval of the paper for submission to EC-LVI.

5. WORLD CLIMATE CONFERENCE-3: is it needed?

5.1 The issue of holding a World Climate Conference-3 (WCC-3) was considered by all previous meetings of the EC-AGCE and by Cg-XIV. The issue again was referred to the EC-AGCE by Cg-XIV. This agenda item will involve a discussion on the requirements and benefits of holding such a conference.

6. DISASTER REDUCTION PROGRAMME

6.1 WMO, through Cg-XIV has approved the new cross-cutting programme of disaster reduction. The group will be informed of the activities, structure and coordination of this new

programme. The group will be asked to provide advice as to how climate and environmental activities should interact with this new programme.

7. **DATE AND PLACE OF THE SIXTH SESSION**

The Group will be invited to set a venue and tentative dates for its sixth session.

8. **OTHER BUSINESS**

8.1 Any other item(s) the members consider to be worthy of discussion will be taken up under this agenda item.

9. **CLOSURE OF THE SESSION**

The fifth session of the EC-AGCE is scheduled to close on Friday, 6 February 2004.

ANNEX 3

TERMS OF REFERENCE FOR THE EXECUTIVE COUNCIL ADVISORY GROUP ON CLIMATE AND ENVIRONMENT

The Executive Council Advisory Group on Climate and Environment will recommend an overall strategy through which NMHSs nationally and collectively, and WMO internationally, could enhance their participation in and contributions to national and international activities related to climate and environment. In developing this strategy the group will:

- (a) Coordinate the results and recommendations from the discussion paper that covered issues related to WMO's involvement and leadership in climate and environment matters. This paper included proposals for the way forward and provided advice and guidance on the implementation of actions resulting from the paper;
 - (b) Review present WMO activities in the field of climate and the environment, and make recommendations with respect to their effectiveness in supporting national and international activities related to sustainable development;
 - (c) Review and recommend strategies to increase the support from national funding agencies and from international development agencies, such as the GEF and UNDP, for NMHS activities relating to WMO programmes on climate and environmental matters;
 - (d) Review current agreements between WMO and other intergovernmental and non-governmental agencies on matters related to climate and the environment, and make recommendations for new or modified agreements as appropriate;
 - (e) Promote and strengthen the cooperation between and coordination of existing efforts of the WMO technical commissions, regional bodies, and of Members in general on climate and related environment issues;
 - (f) Provide advice on the policy implications for WMO of the decisions of other international organizations and conventions on climate and related environmental issues;
 - (g) Determine the need for more effective and, where possible, simpler mechanisms to facilitate the development and implementation of specific programmes and projects on climate and environment supported by the WMO;
 - (h) Continue to consider and provide advice to EC on matters related to the possibility of organizing a third World Climate Conference.
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Extract from

RCC IMPLEMENTATION MEETING, Geneva, 27 – 28 November 2003

8. GUIDELINES FOR THE ESTABLISHMENT OF REGIONAL CLIMATE CENTRES

8.1 Overview

On the second day of the meeting, the experts broke into groups to develop draft guidelines on the four key topics (requirements, structures, designation and workplan) discussed on the previous day, and taking into account the issues raised by the team, and decisions made. It was noted that the Guidelines would, once approved by the drafting team, be offered to the Regional Associations for comment and use, then they would be presented to EC-LVI (2004) as documentation.

The results of the breakout groups were discussed, and provided a strong consensus. A brief background and statement of the purpose of an RCC are given in section 8.2. The output and subsequent discussions and decisions on the key topics have been consolidated and are presented in sections 8.3 to 8.6. Additional background information used in development of these Guidelines is provided in several annexes to this report: the extracts on RCCs from EC-LII, EC-LIII, EC-LIV, Cg-XIII and Cg-XIV (**Annex 4**); and the list of RCC functions as described in WCASP No. 52 of May 2001 (**Annex 5**). A proposed questionnaire to determine the requirements for establishment of an RCC is presented in **Annex 6**.

8.2 Background and Statement of Purpose of the Regional Climate Centres

The Commission for Climatology's Ad Hoc Expert Team on Organization and Implementation of Regional Climate Centres met in Geneva in November 2003. Team members reviewed the concept of the RCCs as described in the reports of the Inter-Commission Task Team on Regional Climate Centres (the ICTT-RCC) (WCASP No. 52, May 2001 and WCASP No. 54, March 2002), and in the decisions of WMO Executive Council and Congress (See **Annex 4**). Considerable progress had been made in setting out the tasks of RCCs for operational activities, coordination functions, data services, training and capacity building and for research and development, including regional and hydrological issues. However, the Expert Team noted that the following clarification of the concept of such centres was necessary to ensure a clear understanding of the RCCs with respect to other institutions and the National Meteorological and Hydrological Services (NMHSs) within the Regions:

The RCCs are to be complementary (non-duplicating) and supportive of the NMHSs. The services and products from the RCCs shall be provided to the NMHSs for further definition and dissemination and are not to be distributed to end users without the permission of the NMHSs within the region. These products and services should be regional in nature and should be those the NMHSs are not able to produce themselves. It was re-affirmed that the issuing of warnings and watches was a responsibility of the NMHSs and not an RCC responsibility. The Expert Team further recommended that all RCCs should always adhere to the principles of WMO Resolution 40 concerning the exchange of data and products.

In the event that a Region wishes to consider, and possibly establish an RCC, then issues such as regional requirements, operational capacities, possible structures, potential designation as specialized centres under the WMO Technical Regulations and a work plan must be addressed. The Ad Hoc Task Team developed Guidelines on these issues to standardize the process across regions, and make it more straightforward to implement.

8.3 Determination of Requirements for a Regional Climate Centre

The statements of requirements for implementation of RCCs are the responsibility of the Regional Associations. In order to start this process, the President of each Regional Association should first inform the Permanent Representatives (PRs) of that Region's Member countries of the results of the work of the ICTT-RCC, and the decisions and resolutions of WMO Executive Council and Congress concerning the establishment of RCCs (**Annex 4**). Following the recommendations of the ICTT-RCC, the requirements of the Region should then be determined.

Potential RCC functions, as outlined in WCASP No. 52, Annex 2 (May 2001) (attached as **Annex 5**), could be used as the basis for a questionnaire for this purpose. An example of a questionnaire the Presidents of Regional Associations could use (developed by RA IV) is shown as **Annex 6**. Members should be asked to evaluate if the requirements, as listed, are adequate for their needs and, where necessary, to amend the list. For best results, the Expert Group suggests that CLIPS focal points and CCI members in each country could help the PRs complete this survey. It is also highly recommended that relevant regional institutions be included in this process from the beginning.

Once answers to the questionnaires are received and analysed, the President of the Regional Association will consolidate them into a regional statement of requirements for Regional Climate Centre(s), and then will seek confirmation by the PRs of the region. The easiest means of doing this may be through a regional circular letter from the President of the Regional Association, listing the requirements, and inviting volunteers to host related functionalities from that list. This letter should also explore issues such as the potential inclusion of relevant (non-NMHS) institutions, and data issues such as Resolution 40, and it is highly recommended that a deadline for response be given. Absence of responses from Members will indicate no interest in hosting RCCs related functionalities and acceptance of related requirements.

It is suggested that the president engage a relevant regional expert Working Group or Task Team (or establish an ad hoc group) to analyse the offered capabilities proposed by the responses from the PRs, to review the priority functions needed in the region and to evaluate any deficiency with respect to the requirements. The composition of this team should include experts familiar with RCC matters, preferably experts on climate matters, WWW activities (especially with respect to RSMCs) and/or relevant institutions. The Task Team should provide to the president a comprehensive report with recommendations including:

- the priority on establishment of the RCCs;
- remedial activities needed to solve any analysed deficiency;
- an appropriate structure to organise the region's RCC functionalities;
- necessary actions for the president to ensure the availability of products and services needed from GPCs (through WMO, to ensure provision of access); and
- an appropriate operational phase or pilot/demonstration project.

8.3.1 Gain Approval of the Requirements and Proposal to Establish an RCC

The President of the Regional Association will inform all Members in the Region of the outcome of the Task Team and invite final comments and suggestions. The next task will be the adoption of the final proposal. Review and adoption by the Region may take place at the next session of the Regional Association, or by correspondence initiated by the President during the intersessional period. When regional consensus is reached, the requirements and indications of commitment to serve the stated needs (i.e. the centre(s) that will form the basis of the RCC System for that Region) should be sent to the various Regional Members, the WMO Secretariat (WCP) and the relevant Commission Presidents. Included should be the recommendation from the Region as to whether official designation is being sought for any centre(s).

8.3.2 Assessment of Projected RCC Operational Capabilities

An assessment process that verifies the RCC's capability to produce the required products and services must be next established within the region. The outcome of this assessment process should be provided to CCI and CBS. These Technical Commissions will take the necessary actions (as requested or required) with other WMO bodies in consultation with the Regional Association.

Specifically, the assessment can be established either as pilot projects or as demonstrations, involving several NMHSs, for evaluation and/or verification that the RCC can produce the necessary products in a timely and accurate manner. (e.g. LRF verification within respective countries, evaluation of the quality of data rescue, training courses, etc.)

In some cases, the assessment can be based on existing capabilities. However, it should be recognized existing capabilities generally fulfil national requirements first. Mechanisms have to be established to verify that the needs of other NMHSs in the Region are also ensured. This can be made with an ad hoc questionnaire sent by the 'proposed' RCC to its 'users' (this approach is recommended within quality assurance techniques, in order to check the satisfaction of the "client"). Such questionnaires should be issued at regular intervals, and should allow identification of weaknesses as well as possible improvements. The RA itself should initiate this process prior to the designation of the RCC.

There are some activities for which the assessment is already well documented. This is the case, for example, of Long Range Forecasting where both the type of products, their quality and verification techniques were more or less already standardized by the CBS Expert Team on Infrastructure for Long Range Forecasting. In that case, the assessment will simply consist of checking that the RCC complies with those requirements.

The CLIPS focal points should play a key role in the assessment procedures, as national representatives in charge of collecting and summarizing all the relevant information of use for improving the RCC services. As well, the RCC itself should set up a mechanism and a structure in order to take into account requests for improvement. It should also document all of its production at the necessary level of detail, and provide a friendly access to it.

8.4 Structures

Each Regional Association will determine how best to meet the requirements of its Members for RCC services, based on a number of factors such as sub-regional needs and capacities. It is important that the RCC systems be cost-effective and inclusive, allow for

overlap and coordination between Regions as needed (such as between Regions II and V in the Asia-Pacific area), and include the role of the Global Producing Centres.

Options as described in WCASP No. 54 (March 2002), item 5.1 and in Annex 4 on Roles and responsibilities of Regional Associations, include the implementation of a single centre, a distributed function, or multiple or virtual centres. The six WMO Regions are large and diverse with a complexity of climatic, political and socio-economic issues to deal with, so the establishment of a single, multifunctional Regional Climate Centre to serve the needs of an entire Region was not seen by the Ad Hoc Expert Team as the most feasible option.

It is believed to be more feasible to have multiple climate centres in each WMO Region. These can be multifunctional or distributed functional centres or a combination of both. RCC functions such as training and capacity building; research and development; and data management might be potentially suitable for distributed functions. Such a system would be inclusive, allowing all Members in the Region to participate within their capacities. The Regional Association could distribute tasks to non-WMO climate institutions such as universities and specialized agencies, provided that they comply with WMO data policies. In a multiple-centre structure, it is unlikely that there would be much duplication of work. While some functions might be similar, they would apply to different sub-regional interests, with different results.

Coordination between the various centres on distributed functions and on consensus forecasting would be desirable, and can be done using physical or virtual systems. Virtual mechanisms such as Internet services and teleconferencing allow for wider participation for collection of information, building consensus guidance, production of tailored products and distribution, at minimal cost.

The Regional Association would need to identify Members with the capacity (commitment, interest and infrastructure) to maintain the virtual communications and coordination required. If necessary, a partnering country or agency outside the region could be called upon to fulfil this requirement, in collaboration with the Members of the region or sub-region.

8.5 Designation Procedure

The WMO regulations and procedures for the establishment of operational centres are in the WMO Manual on the Global Data-Processing Systems (GDPS) (WMO No. 485). This manual consists of two parts:

Part I covers formal designation of a centre through the Technical Commission CBS and is part of the WMO Technical Regulations. It contains, inter alia, discussion on organization and functions of the Data-Processing Systems, and definition of the structure of the GDPS which comprises WMCs, RSMCs and NMCs. It refers (since 1997) to establishment of centres with activity specialization for climate diagnostics, climate analysis and prediction products to assist in climate monitoring, all pertinent to an RCC. It was noted that in order to designate RSMCs with activity specialization as RCCs within the framework of the Global Data-Processing and Forecasting Systems (GDPFS) of the World Weather Watch (WWW), several sections of the Manual would need to be reviewed and adjusted to ensure that the RCC procedures are consistent throughout the Manual, and to ensure that all aspects related to RCCs are covered (for example, the concept of 'virtual' centres or coordination would need to be explicitly discussed). This process might need some time, and would require the joint efforts of the CCI and CBS. The key to setting the designation procedures for RCCs will be the statement(s) of requirements.

Part II of the manual covers Regional Aspects. Establishment of centres using Part II of the manual does not fall under the WMO Technical Regulations. A number of centres exist in this category, including the Drought Monitoring Centres and the African Centre of Meteorological Applications for Development (ACMAD) in Regional Association I (Africa). The Regional Associations have full responsibility for developing and approving the requirements for such centres.

The ICTT-RCC and WMO EC and Congress endorsed the official designation of Regional Climate Centres, but each Regional Association can decide whether or not it wishes – or needs -- to follow that process. If it does, it will need to proceed with the steps under Part I of the WMO Manual on the GDPS (WMO No. 485).

It is expected that WMO, once informed by a Regional Association on its desire to implement a Regional Climate Centre or Centres, will submit the proposal to CBS and CCI for recognition. Both Commissions should evaluate whether the proposal is in accordance with the Region's needs and the infrastructural framework (e.g. the Future WMO Information System (FWIS)), and might advise on the procedures necessary to incorporate the proposed RCC functionality into the GDPS. This can be done by incorporating the proposed functionality into Part II (Regional Aspects) of the Manual on the GDPS without any further designation procedure. However, if requested by the Region, and potentially feasible, the proposed centre(s) can be targeted for official designation as an "RSMC with activity specialisation in climatology", following the RSMC procedure as laid down in Part I of the Manual on GDPS. Although that would require revising the Manual, and would take considerable time, in the long-term, it is hoped this would eventually allow designation of RCCs to become more straightforward.

As part of the official designation procedure under Part I, the appropriate Technical Commission(s) require a demonstration that the proposed centre(s) can do the job. This is a rigorous process that not every proposed centre succeeds in meeting. If the requirements are met, however, a formal recommendation will be made to WMO Congress, who will approve the Centre along with its responsibilities and privileges. Pending final decisions by the appropriate WMO Constituent bodies, the Regional Association President may request the selected Members or candidates to start operating on a pilot basis under Part II of the manual.

The RA President should establish a procedure to periodically review the operational functions of the designated RCCs, so as to maintain standards and deal with evolving issues.

8.6 Workplan to Implement the Proposal to Establish an RCC

A workplan should be developed that covers the process to establish a Regional Climate Centre (RCC). At this stage, a proposal has been made that incorporates analyzed requirements and capabilities, recommends a structure, and addresses the issue of designation; and the Regional Members and President have approved it.

In the first step of this phase, the centres responsible for the RCC functions, and the other major centres with significant supporting roles, will complete Action Plans and make a formal commitment to their roles. The centres that are responsible for RCC functions should ensure that they have adequate commitments from any supporting centres or institutions (for example, global producing centres) that will provide the information needed in the preparation of the centre's RCC-related outputs or services.

The centres responsible for RCC functions might require a Steering Committee or other oversight mechanism to coordinate the process of making their formal commitments. Also,

a Steering Committee (composed of representatives with high authority from each of the participating agencies) might be needed to coordinate the activities of the centres and to look after evolving needs once the proposal has been implemented.

The next step will consist of the consolidation of the centres' Action Plans and commitments into an overall Implementation Plan. The Implementation Plan will be reviewed by the President, any needed modifications will be coordinated with the centres, and the President will formally approve the adoption of the Implementation Plan. The Steering Committee (if one has been formed) will coordinate the implementation of activities under the plan.

If a formal designation is to be pursued through Part I of the Manual on the GDPS, the President will coordinate the completion of the steps described in the guidelines for that type of designation.

ANNEX V

DISCUSSION PAPER ON CLIMATE ACTIVITIES

GOAL: SUSTAINING WMO LEADERSHIP IN CLIMATE ACTIVITIES IN THE WORLD

EXECUTIVE SUMMARY

Executive Summary

In response to the specific request made by EC-LV, this Discussion Paper has been prepared by the World Climate Programme Department, with guidance from the EC Advisory Group on Climate and the Environment (The Advisory Group)¹, to assist the Executive Council at its 56th session. This paper addresses matters concerning climate and environment affecting the WMO community², provides an analysis of why the Inter-Agency Committee for the Climate Agenda (IACCA) has not functioned adequately and presents a strategic framework and recommendations for ensuring WMO leadership in climate matters.

The analysis and recommendations are based on addressing four fundamental issues:

1. WMO's activities in the area of climate
2. The latest developments and future opportunities in the climate arena
3. How WMO's current activities correspond to these developments and opportunities
4. Opportunities for strengthening WMO's position in this area

Scientific and technical advancements in the area of climate, together with the growing global recognition of the linkages between climate and high priority economic and political issues (sustainable development, water resource management, natural disaster reduction, public health, etc.) are leading to unprecedented opportunities for managing the risks associated with natural climate variability and human-induced climate change. This is leading to increasing awareness of the importance of climate information for enhancing decisions related to climate sensitive issues of high priority (at national, regional and international levels.) Effective utilisation of the emerging scientific and technical climate information can shift the decisions from a reactive to a more proactive approach of managing climate related risks. However, this would require (i) building and strengthening channels for improved characterization and modeling of climate risk and development of improved decision support tools, based on improved climate input, (ii) utilisation of these new decision support capabilities to develop response strategies for proactive management of climate-related risks, and (iii) effective implementation of these strategies.

A review of WMO climate activities (Annexes I and II), indicates that historically WMO has provided technical leadership in the area of climate through initiatives that have been instrumental in, (i) advancing our understanding of the complex earth climate system, (ii) identifying and analysing critical environmental problems such as acid rain, destruction of the ozone layer, climate change, natural disasters, air and water pollution, and (iii) bringing to the world's attention the status and potential dangers posed by them. However, over the last two decades, there has been an influx of new players (outside of WMO Community) in the scientific and technical areas. While WMO's technical climate activities have expanded over the years, lack of clear organisation-wide priorities has compromised its strong presence in this area. However, clear priorities, improved coordination of core technical activities and new strategic partnerships will allow WMO to strengthen its presence and regain its leadership in this area.

WMO has also taken some initiatives for improved utilisation of climate information by decision-makers. In the area of climate change, establishment of the IPCC (with UNEP) has been critical in providing authoritative and unbiased information to enable development of international policy responses to address human-induced climate change. However, while the IPCC process has been effective and received attention and recognition, WMO has not consistently been promoting itself as the on-going principal provider of scientific and technical information that underpins the IPCC assessments. As a consequence, WMO has not received appropriate recognition for its critical scientific and technical contributions.

¹ The EC-AGCE reviewed the draft Discussion Paper during its fifth meeting in February 2004.

² In responding to the EC request, it is noted that WMO is an organisation of Member countries supported by the Secretariat. In a formal sense, its Members working through Congress, Technical Commissions, Regional Associations and the Secretariat carry out the work of WMO. It is noted that, especially within the UN system, the Secretary-General and officers of the Secretariat frequently represent WMO in dealings with other organisations. WMO's headquarters in Geneva also provides an organisational focus as well as a focus for public perception of WMO.

Finally, effective utilisation of climate information in sector-specific climate risk management on both policy and business decision-making fronts remains underdeveloped. In this context, if the Climate Agenda initiative had been fully implemented, it could have played an important role. But this initiative did not gain momentum due to IACCA's broad and unfocused multi-agency, multi-programme approach to coordinating WMO's climate activities with other agencies. Beyond the Climate Agenda, WMO has continued its sector-specific applications programmes and capacity building and educational activities, to enhance utilisation of climate information for sector-specific decisions. However, the effectiveness of these initiatives may have been limited by lack of clear priorities and inconsistency in the sector-specific activities. In light of this analysis and with considerations for latest developments and opportunities in the area of climate, a set of recommendations have been proposed to provide a comprehensive framework that would enable WMO to broaden and strengthen its leadership role in this area. The components of this framework address, developing clear organisation-wide strategic priorities, formulating an explicit implementation plan to insure that internal and external activities are coordinated and directed to reflect WMO's strategic goals, and ensuring appropriate organisational structure and communication mechanisms that would enable WMO to meet these challenges. A summary of the recommendations is provided here:

- **Recommendation 1: Establishment of clear organisation-wide vision and strategic priorities to guide WMO's climate related initiatives and activities**

It is critical that the Secretariat in concert with the Members (i) define clear organisation-wide strategic priorities including goals and objectives in core areas of climate activity (data, research and predictions, sector-specific applications), and (ii) communicate these effectively across WMO. To accomplish this, it is recommended that:

1. A detailed study be conducted to provide critical background information that would enable WMO to make "informed" decisions.
2. The long-term strategic planning process of WMO be objectively evaluated and revised to ensure that it reflects the strategic priorities of WMO.
3. The vision and strategic priorities be effectively communicated, understood and accepted across WMO.

- **Recommendation 2: Strengthening of WMO's core capabilities in areas that are strategic to its leadership role**

With clear strategic priorities for future, WMO (the Secretariat and the Members) could further strengthen its core capabilities by better harnessing the contributions of the activities of programmes and the NMHS. Climate activities of the Secretariat and the NMHS span four core areas: (i) observations, data exchange, data management, (ii) research and predictions, (iii) climate product and services, and (iv) capacity building, educational and training services. To strengthen these core capabilities, it is recommended that,

4. An evaluation be completed (in close collaboration with the programme Directors within the Secretariat and the Members through the Commissions) to determine WMO's strengths, weaknesses, and challenges in each of the core areas. This information is critical in developing an implementation plan that would build on WMO's strengths and would address the weaknesses such that the activities are relevant to the challenges of the future.
5. More active and consistent participation by the Secretariat (and other key representatives) in the deliberations of key affiliated programmes including WCRP, GCOS, IPCC to ensure that WMO's support and capabilities are conveyed to other bodies, and that WMO Members are kept abreast of the activities of these programmes.
6. Prioritize, coordinate and communicate activities in each of the core activities across the relevant programmes within the Secretariat and with the Members (NMHS) to ensure optimal contributions to WMO's strategic priorities.

7. The capacity building, training, educational and promotional programmes of the Secretariat are critical in strengthening WMO's core capabilities. These crosscutting activities should be coordinated and developed in concert with the activities of the programmes and in response to needs and requirements of the target users (e.g., NMHS).

• **Recommendation 3: Improvements to WMO's organisational structure and dynamics to ensure effective integration and communication of activities across WMO**

In light of WMO's strategic priorities in the area of climate, it is critical to ensure that WMO's organisational structure and dynamics enable it to meet the challenges of the future. It is recommended that

8. WMO implements a more formal coordination and communication of climate activities within the Secretariat (the programmes and the Commissions) via a Matrix Management approach. An organisational analysis should be completed to provide background information for the implementation of effective coordination and communication mechanisms that build on the currently effective structures and address existing organisational weaknesses.

9. Communication (and feedback) mechanisms are strengthened to ensure that WMO community (the Secretariat and the Members) are kept abreast of latest developments and activities (internal and external to WMO) and their implications for core areas of strategic priority. This could enhance WMO's capabilities to identify and implement cross programme initiatives.

• **Recommendation 4: Development of strong and on-going relations with international and regional agencies involved in areas of high priority to WMO**

WMO can strengthen its leadership and visibility in its core areas through "strategic partnerships" with "key" international (UN and others) and regional agencies with activities in sectors of "high priority" to WMO. Such collaborations could lead to (i) enhanced capabilities in developing sector-specific climate product and services, by leveraging off other agencies' activities, and (ii) increased visibility for WMO. It is recommended that:

1. The Secretariat proactively identifies and prioritises potential strategic partners based on evaluation of other agencies' climate related activities, identification of joint objectives and their mutual benefits, establishment of specific joint activities, identification of each organisation's roles in accomplishing these goals. WMO needs to clearly articulate its capabilities and potential contributions as relevant to the objectives of its potential partners.

2. Strategic partnerships should be developed on a bilateral or a multilateral basis depending on the interest and situation. This should be accomplished along with establishment of organisational mechanisms that would facilitate on-going effective collaborations with the target partners.

3. The outcomes of these joint activities as relevant to the Secretariat and NMHS should be evaluated on an on-going basis and the results should be effectively communicated across WMO.

4. These partnerships and collaborations should be effectively leveraged for developing capacity building, training, educational and promotional products and services of the Secretariat targeted at NMHS and other sector-specific users.

• **Recommendation 5: Development of effective sector-specific climate products and services**

While in some countries, the NMHS are broadening and enhancing their capabilities to address aspects of the national climate information needs, for many other NMHS their role in climate remains to be defined. To enhance the capabilities and contributions of the NMHS in providing climate products and services, it is recommended that:

1. With continued and consistent support from the Secretariat, the NMHS promote at the ministerial level the linkages between climate and their high priority national issues and the importance of climate information in enhancing climate sensitive policy and business decisions.
2. The sector-specific climate applications programmes of the Secretariat be prioritised, carefully designed and implemented to ensure continuity and consistency over time. Furthermore, sector-specific capabilities at this level should be strengthened through strategic partnerships with key international and regional agencies.
3. The Secretariat, by coordinating the activities of its sector-specific application programmes activities with the capacity building, educational and training services, continues to provide necessary support to NMHS to broaden and enhance their capabilities in provision of sector-specific climate products and services. The NMHS could also further strengthen their capabilities by establishing strategic partnerships with key organisations in their countries as well as with relevant regional agencies.

- **Recommendation 6: Establishment of strong visibility on international, regional and national levels in areas that are strategic to its leadership role**

Strong visibility in the climate arena is one of the most important issues facing WMO. WMO could benefit from a more proactive outreach programme to establish strong visibility with respect to its core capabilities at international, regional and national levels. It is recommended that:

1. Organising and hosting of Third World Climate Conference is strategically essential for strengthening WMO's visibility on national, regional and international levels. A draft paper addressing focus, concept, timing, and channels for fundraising should be developed for consideration at EC-LVI.
2. The Secretariat proactively and consistently participates in the relevant UN conventions (e.g., UNFCCC, UNFCCC, UN Convention for Biodiversity, etc.) and other "high-profile" conferences, with appropriate advance planning, with the goal to promote new scientific and technological climate developments and WMO's core activities as relevant to the forum. It is important that the outcomes of these meetings and their relevance are effectively communicated to WMO Community.
3. There should be a more active and consistent representation from the Secretariat and the Commissions in the deliberations of critical affiliated programmes, including WCRP, GCOS and IPCC, to ensure that WMO's climate activities are conveyed to these bodies and that WMO community is kept abreast of the activities of these programmes.
4. In the area of climate change, WMO could gain stronger international political recognition through a more proactive approach to promoting itself as the on-going principal provider of scientific and technical information that underpins the IPCC assessments.
5. On the national level, particularly in the developing and least developed countries, with continued and consistent support from the Secretariat and in working with the PRs, a promotional programme should be implemented through the PRs to raise awareness about climate, at the ministerial level.
6. On the regional level, opportunities for promoting WMO activities in regional high-level political and economic forums should be identified and realised.
7. More effective educational and promotional materials and brochures be developed to promote WMO's capabilities related to national issues of high priority.

ANNEX VI

NATURAL DISASTER PREVENTION AND MITIGATION PROGRAMME