REPORT OF
THE MEETING OF THE MANAGEMENT GROUP OF
THE COMMISSION FOR CLIMATOLOGY
(18 November 2010 Version)

Geneva, 18-21 May 2010
1. OPENING OF THE MEETING

1.1 Opening and welcoming remarks

1.1.1 The meeting of the Management Group (MG) of the Commission for Climatology (CCI) was opened by Dr Tom Peterson, president of the Commission for Climatology at the WMO Headquarters, Geneva, at 9:10 a.m. on Tuesday 18 May 2010. He welcomed the members of the Group. In his opening remarks, the president of the Commission noted that since CCI-XV, the members of the MG of CCI have been quite active in contacting the members of OPACEs of CCI and in discussing the planned activities for OPACEs in teleconferences with the Secretariat staff.

1.1.2 As regards to the future activities of four OPACEs and relevant Expert Teams within the Commission, Dr Peterson hoped that the meeting would identify the way forward for the Commission. He then asked every participant in the meeting to introduce himself/herself (List of Participants is given in Annex 1).

1.1.3 Mr Jerry Lengoasa, Deputy Secretary-General of WMO welcomed the president of the Commission and members of the Group to the WMO Secretariat and he congratulated Dr Tom Peterson and Mr Serhat Sensoy for their unanimous election as the president and vice-president of the Commission and wished them both all the success in their important assignments. Mr Lengoasa mentioned that the current intersessional period is particularly important because it is building upon the active participation of this Commission in organizational and technical components of the World Climate Conference - 3 (WCC-3) and the very useful contributions of the Commission in the development of the concept of Global Framework for Climate Services (GFCS). He pointed out that post-WCC-3 follow up issues bring new challenges and opportunities, most of which fall upon this Commission and emphasized that the GFCS, as an outcome of the WCC-3, is definitely a major element in shaping the CCI activities. In view of this, the CCI MG meeting this week bears great significance, because the discussion and advice will shape the future of the Commission to make it more responsive to the rapid developments in climate and climate related areas.

1.1.4 Mr Lengoasa informed the group that since the last intersessional period, the work and products of the Commission have been appreciated by other climate-related organizations and bodies within the UN system. As an example, he referred to the UNFCCC Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change. Through the contribution of CCI and other co-sponsored bodies such as GCOS and WCRP, WMO provided sound and unbiased scientific advice to the implementation of the Nairobi Work Programme. Mr Lengoasa further recalled that UN Delivering as One has now grown to a major area of activity in the UN System. Within this initiative, climate knowledge is recognized the foundation for development of an effective response to the climate change challenge and WMO, along with UNESCO, as joint conveners, is leading the cross cutting area of Science, Assessment, Monitoring and Early Warning. Positioning climate information and services as effective tools for managing climate risks and adaptation provides a unique position for us to serve the whole UN system in the climate knowledge base area. Mr Lengoasa noted that this is an area where the Commission can play an explicit and constructive role.

2. ADOPTION OF THE AGENDA AND ORGANIZATION OF THE MEETING

2.1 The provisional agenda of the meeting (Annex 2) was reviewed by the MG. The President proposed the addition of an item on "Mandatory Publications of CCI, including the Guide for Climatological Practices" to be discussed after the Agenda Item 6. Mr A. Tyagi, D/CLW, proposed that agenda item 10 on Quality Management Framework be discussed before agenda item 9. The MG agreed with these proposals.

2.2 The Group set the working hours of the meeting as 09h00-13h00 hours and 14h00-17h30 hours.
3. REVIEW OF THE OUTCOMES OF TECHNICAL CONFERENCE HELD IN CONJUNCTION WITH CCI-XV SESSION WITH A FOCUS ON IMPLICATIONS FOR CCI’s WORK DURING THE NEXT FOUR YEARS

3.1 The meeting reviewed the outcomes of the Technical Conference on Changing Climate and Demands for Climate Services for Sustainable Development held in conjunction with CCI-XV session from 16-18 February 2010 in Antalya, Turkey. The conference made a number of recommendations, some of which were already covered by respective CCI-XV resolutions.

3.2 Following the discussion of the remaining set of recommendations, the MG concluded, that most of these recommendations -- even if rather broad in context and challenging to be achieved -- are supportive to CCI’s activities in the current intersessional period. To this end, the MG decided to take up any specific aspect of these recommendations in the discussions under agenda item 6 on the CCI work programme.

4. REVIEW OF ACTIONS ARISING FROM CCI-XV SESSION AND THE ROLE OF THE MANAGEMENT GROUP

4.1 Dr Mannava Sivakumar, D/CLPA, made presented the review of actions arising from the CCI-XV session. He mentioned that in all, 55 actions were identified. Twenty five actions are addressed the MG for it’s review and decision and thirty actions will be addressed by the Secretariat. As examples, Dr Sivakumar presented a few actions addressed to the MG where a decision is required. Regarding the process to deal with the actions, Dr Sivakumar suggested that these be further discussed by the different OPACES under agenda item 6 and also under agenda item 9 on Priorities and Working Arrangements for each OPACE. The MG agreed with this suggestion.

5. ROLE OF CCI IN THE IMPLEMENTATION OF THE GLOBAL FRAMEWORK FOR CLIMATE SERVICES

5.1 Update on the High-Level Taskforce on GFCS

5.1.1 Mr Avinash Tyagi, D/CLW, briefed the MG on the setting up of a High-Level Taskforce (HLT) on GFCS through an intergovernmental process, its membership and terms of reference. The HLT held its first meeting from 25 to 26 February 2010. The HLT used the Brief Note on GFCS attached to the WCC-3 Declaration as the base document to initiate its work. The HLT was briefed on the status of climate services, and the associated role of WMO.

5.1.2 The WMO Position Paper on the GFCS was also presented to the HLT. The Taskforce discussed the brief outline of its proposed report. The HLT decided to have the report in three sections: i) The present status of the climate services, ii) The needs and gaps to meet the objective of the GFCS, and iii) The mechanism to achieve the objective. It is proposed that the Section 1 and the elements of Section 2 will be prepared on the basis of consultations with all the stakeholders, the inputs from the Members for which Ministries of Foreign Affairs have already been addressed, and the inputs received in the preparation of the Expert segment of WCC-3 and its outcome.

5.1.3 A questionnaire was also developed and sent to all stakeholders to get additional information (also available on WMO web site). First draft of the Section 1 and elements of Section 2 would be made available to the HLT for its second meeting scheduled around 25-26 May 2010. The draft of Section 2 and elements of Section 3 will be made available to the HLT at its third meeting planned for 2-4 August 2010. The HLT Secretariat will set up the network of experts for all further consultations starting with those involved in WCC-3 and extending it with the help of other partners such as UN System organizations. The final report is proposed to be
made available before the Sixteenth Session of the World Meteorological Congress scheduled to be held in May 2011.

5.1.4 The MG recognized that the Climate Services Information System (CSIS) component of the GFCS will constitute the core of CCI contributions to the implementation of GFCS. The MG noted that the current structure of CSIS is primarily composed of the structures/mechanisms already being pursued by CCI which may continue to retain their strong emphasis in the implementation of the GFCS. However, the Climate User Interface Programme (CUIP) is still in its formative stages, and there is as yet no clarity on how it will shape.

5.1.5 The MG noted the expressed need of the HLT on relevant information concerning the mechanism through which climate services can be established at the national level, including salient features of the various existing models. The MG noted that WMO has commissioned a Position Paper (PP) on National Climate Services (NCSs) based on a recent WMO Inter-Regional Workshop on Policy Aspects of Climate Change (Petaling Jaya, Malaysia, 19-21 April 2010), which can provide a good basis to meet the information needs of the HLT on NCSs. The MG recognized the urgent need to address this task, and agreed that CCI has a responsibility to provide guidance to the HLT on the various technical aspects of NCSs.

5.1.6 After some discussion, it has been agreed that the MG will review the current draft of the PP on NCSs and provide its feedback to the Secretariat. The Secretariat will then prepare a revised draft for further communication to the HLT. The MG noted that the development of NCS concept is also on the work programme of OPACE-3, but agreed that the topic is relevant to all the OPACEs. The MG requested Mr Sensoy, vice-president, CCI, to coordinate the review of the PP on NCSs by the MG members.

### Action 1
MG to review the current draft of the Position Paper on National Climate Services and provide its feedback to the Secretariat by 28 May 2010. Mr Sensoy, Vice-President of CCI, will coordinate this review by the MG.

### Action 2
Secretariat to prepare a revised draft of the Position Paper on National Climate Services for communication to the High Level Task Force on GFCS.

5.2 CCI input into the development of GFCS up to Cg-XV

5.2.1 The MG recalled the high priority given to the Global Framework for Climate Services (GFCS) by the Fifteenth Session of the Commission for Climatology (CCI-XV), particularly the expressed need to fully utilize the skills and knowledge of the members of all the four Open Panels of CCI Experts (OPACES) in this regard. The MG further recalled that CCI-XV agreed that the Terms of Reference of the Management Group shall include appropriate support to meet the requirements of the High Level Taskforce (HLT) on GFCS, and updating/revising the priorities of the activities in its work plan. The MG noted that its Terms of Reference as approved by CCI-XV include support to fulfill WMO’s role in the operational implementation of the GFCS, with the advice on the role of CCI in GFCS implementation as a deliverable. The MG agreed that this needs to be further elaborated in its work plan. The MG urged the Secretary-General to facilitate greater involvement of the Commission in all relevant aspects of GFCS.

5.2.2 The MG recalled the decision of CCI-XV to align the work of the Commission to the structure of the GFCS as follows (noting the interrelationships between all 5 pillars of the GFCS
and the subsequent required interrelationships between the CCI OPACEs: (a) OPACE 1 will support the GFCS Observations component, and the GFCS Climate Services Information System; (b) OPACE 2 will support the GFCS Climate Services Information System, and (to some extent) both the GFCS Climate Research, Modeling and Prediction component and the GFCS Climate User Interface Programme; (c) OPACE 3 will support the GFCS Climate Services Information System and (to some extent) the GFCS Climate Research, Modeling and Prediction component; (d) OPACE 4 will support the GFCS Climate User Interface Programme; and (e) OPACEs 1 to 4 and relevant components of the CCI Management Group will support GFCS capacity building. The Management Group urged all the OPACEs to formulate their work plans by explicitly following this approach.

5.2.3 The MG noted the ongoing progress in the work of HLT-GFCS, and agreed on the need to focus urgent attention on the technical matters relevant to CCI. The MG noted that WMO’s Position Paper on GFCS indicates a strong role for CCI in supporting the various components of the GFCS, particularly in guiding Members’ activities related to climate observations, climate data archival and management systems, development, operation and coordination of the various elements of the Climate Services Information System (CSIS), operationalizing research advances, development of user-oriented climate information products in support of climate risk management and adaptation, and development of a comprehensive strategy for capacity building for climate services.

5.2.4 The MG noted the need to determine the future evolution of the Climate Information and Prediction Services (CLIPS) project, consolidating its achievements and establishing its legacy. The MG recalled the recommendation of CCI-XV that the implementation plan for future evolution of CLIPS should be aimed at transitioning into GFCS, and requested OPACE-3 to lead this task in close collaboration with the other OPACEs.

**Action 3**

Secretariat to further elaborate the role of CCI in GFCS implementation.

**Action 4**

Co-chairs of OPACE-3 to lead the task of transitioning the implementation plan for future evolution of CLIPS into GFCS, in close collaboration with other OPACEs.

5.3 Coordination of activities among various WMO Programmes and Technical Commissions

5.3.1 The MG noted that most of the existing WMO Programmes will contribute to the implementation of GFCS to various degrees, but that, order to implement the GFCS, WMO may have to make certain readjustments to its Programmes, structures of its Technical Commissions etc, the reorganization of World Climate Programme (WCP) being at the forefront of such a restructure.

5.3.2 The MG noted the proposal to establish a mechanism for oversight on and response to the establishment and implementation of the GFCS, keeping in mind WMO’s commitments to its Members and their priorities as identified in the Strategic Plan. The proposed mechanism is expected to be reviewed, once the decisions of Cg-XVI on the report of the High-level Taskforce on GFCS are available. The MG noted that the ECWG-CWE is proposed to be charged with the functions of oversight, coordination, monitoring and review of and provision of strategic advice on all matters related to establishment and implementation of the GFCS. The MG further noted that the Meetings of Presidents of Technical Commissions (PTC), is also proposed to be
charged with the additional responsibility to contribute to the establishment and implementation of GFCS. The MG urged the president of CCI, being a member of both these high-level bodies, to use the opportunity to appropriately highlight the role of CCI in the implementation of GFCS.

5.3.3 The MG recognized the need for a range of cross-cutting activities between the various WMO programmes in contributing to the GFCS in a complementary manner, and that there will be ongoing requirements for well-focused joint expert/task teams between the WMO Technical Commissions and co-sponsored bodies, to deal with the major issues of common interest. The MG noted that several such joint efforts have already been taken up, including those initiated by the CCI, and agreed to accord special attention to such efforts to ensure the success of GFCS.

**Action 5**
President of CCI to highlight the role of CCI in future implementation of GFCS at the meetings of EC Working Group on Climate, Water and Environment and at the Meetings of the Presidents of Technical Commissions

**Action 6**
President of CCI to request GCOS to use its lead centres to encourage all RBSNs to transmit CLIMAT messages.

**Action 7**
Special attention to be paid by the MG to cross-cutting activities with various other WMO programmes contributing to the GFCS.

5.4 CCI-relevant Aspects of WMO Integrated Observing and Information System (WIGOS-WIS)

5.4.1 Dr Wenjian Zhang, D/OBS, described the CCI-relevant aspects of WIGOS and WIS and their benefits for climate including standardization of climate observations to achieve high quality climate data sets, the use of satellite Data and the role of WIS in data exchange. MG noted that it is desirable that the RCCs become WIS DCPCs.

**Action 8**
MG decided to continue to contribute to the ICG-WIS and appoint a CCI representative. Further discussions on this item were presented under Agenda items 6.1 and 6.2

6. CCI WORK PROGRAMME

6.0 The meeting reviewed the proposals made on CCI Work Plan and Structure at the CCI-XV session for the four Open Panels of CCI Experts (OPACEs) for the four major thematic areas on Climate Data Management, Climate Monitoring and Assessment, Climate Products and Services and Climate Information for Adaptation and Risk Management. The meeting will review the terms of reference for the Expert Teams and Rapporteurs under the four OPACEs (given below) and the proposed deliverables for each of the elements of the Commission structure.

6.1 OPACE I - Climate Data Management

6.1.0 MG reviewed priorities and deliverables as agreed by CCI-XV on climate data management as well as the pending tasks from the past intersession periods with respect to climate observations, data management and climate metadata. It decided to build on the past achievements and accomplish the pending tasks as well as undertake new tasks relevant to Data
inter-operability and WIS in addition to provide guidance on planning for the International Climate Data Management System.

Action 9
Appoint a CCI representative from OPACE-1 to the CBS Expert Team on Metadata and Data Inter-operability (ET-MDI), a CCI representative to ICG-WIS and Dr William Wright as CCI representative with Dr Manola Brunet as alternate to the GCOS-AOPC

6.1.1 Expert Team on Climate Database Management Systems

6.1.1.1 MG discussed the TORs of the Expert Team on Climate Data Base Management Systems (ET-CDBMS) and agreed on them. As regards to the ET composition, MG noted the importance of having the regional balance of this ET and to build on the achievements of the past intersession period. The TORs and team composition are shown in Annex 3.

6.1.1.2 MG recognized as well the importance of completing a collection of other tasks pending from the previous intersessional period as decided by CCI-XV. These tasks will be undertaken by a group of experts acting as an Ad hoc Task Team without requiring physical meetings. These tasks include:

(i) Completion of the work on QA/QC for climate observation with the reassignment of a group of Experts from OPACE-1 list of volunteers including the involvement of a QMS Expert Member.

(ii) Completion of the guidelines on AWS and provision of CCI requirements to CBS ET-AWS and CIMO ET on surface technology and measurement techniques.

(iii) Completion of the guidelines for climate observational standards in developing countries

Action 10
Establish a Task Team to complete AWS, QA/QC and observational aspects for developing countries

6.1.2 Task Team on Data Rescue

6.1.2.1 MG agreed on the TORs of the Task Team on Data Rescue (TT-DARE) with slight modification of TOR (d) as follows: (d) to set up an International Data Rescue web portal (I-DARE). The revised TORs and the team composition are shown in Annex 4.

6.1.2.2 MG recommended to have a good regional balance in the nomination of TT-DARE members in order to adequately monitor DARE activities in the regions and get the regional requirements on DARE.

Action 11
Confirm the nomination of the leader for TT-DARE.

6.1.3 Preparations for the International Conference on Climate Data

6.1.3.1 MG considered the CCI-XV recommendation for organizing an International Conference on Climate Data (ICDD) and the proposed outcome: High Quality Global Climate Data Management System (HQ-GCDMS) as the way forward to ensure the resilience and best practices in the management of climate data and related observational practices.
6.1.3.2 MG reviewed the secretariat proposal on the planning steps for the Conference and agreed on the overall objective of the conference and expressed its wish to have this conference well prepared with the support of MG members. The outcome should be considered as a concrete action to support GFCS requirements in high quality and accessible climate data. Data exchange policy will be addressed not to revisit the existing WMO policy but rather to encourage Members to make further efforts in extending the scope and the type of critical data required to support the up-coming GFCS operational activities.

6.1.3.3 Dr William Westermeyer from GCOS secretariat reported on GCOS interest in the initiative.

6.1.3.4 MG requested that the correspondence to the PRs on this Conference should put up front the expected decisions required by the PRs during the conference. The Secretariat will prepare a scoping statement for EC-LXII as it would help better synthesize the goals and the planning process.

**Action 12**
OPACE-1 Co-chairs will help in guiding the preparation of the ICCD and the expected HQ-GCDMS and assist the secretariat in producing a short statement on the conference and its outcome for the EC-LXII

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6.1.4 UK Proposal for International Workshop on Datasets

6.1.4.1 Dr Lianchun Song, OPACE-1 Co-chair, presented the details on the UK proposal for organizing an International Workshop on Land Surface Air Temperature Datasets which will be convened at the Met Office from 7-9 September 2010 in collaboration with WMO, GCOS and WCRP.

6.1.4.2 Dr Mannava Sivakumar, D/CLPA, informed the meeting about the letter sent by the PR of UK requesting WMO Co-sponsorship of the workshop. Dr Vladimir Ryabinin from the WCRP informed the meeting that WCRP would provide support to this workshop.

6.1.4.3 CCI is already involved in the organization committee of the conference and represented by Dr Lianchun Song the OPACE-1 co-chair.

**Action 13**
President of CCI, OPACE-1 and OPACE-2 co-chairs will be involved in the workshop

**Action 14**
WMO secretariat will follow-up on WMO co-sponsorship of the workshop

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6.2 OPACE II - Climate Monitoring and Assessment

6.2.0 MG discussed the priorities and deliverables relevant to the OPACE.2 on climate monitoring and assessment

6.2.1 Joint CCI/Clivar/JCOMM Expert Team on Climate Change Detection and Indices

6.2.1.1 MG noted that the Joint CCI/Clivar/JCOMM Expert Team on Climate Change Detection and Indices (ETCCDI) has played an important role in coordinating the international efforts in developing indices suitable for climate change detection and assessment. The
achieved results contributed in advancing worldwide knowledge about climate extremes and their changing frequency and intensity. The ET developed useful and friendly tools including simple methodologies and software for computing the indices and maintained a very informative website on the topic. It also played a lead role in organizing and conducting workshops on climate indices in WMO regions.

6.2.1.2 MG decided to continue the work of this group with a linkage with OPACE-4 ET on Sector Climate Indices and add a reference to the GFCS in its TORs. The TORs and the composition of the team are shown in Annex 5.

6.2.2 Joint Rapporteurs on World Records of Weather and Climate Extremes

6.2.2.1 MG noted the importance of the work undertaken in the previous intersessional period and the positive results in raising the visibility of CCl. It decided to continue the work on the basis of CCI-XV decision on this activity including the agreed TORs and deliverables and to appoint two joint rapporteurs to take up this activity. The TORs and the joint rapporteurs are shown in Annex 6.

6.2.3 Task Team on National Climate Monitoring Products

6.2.3.1 MG noted the need for establishing an Ad-hoc Task team to define an internationally agreed set of national climate monitoring products that would serve WCDMP climate monitoring activities. The TORs and composition of this task team are shown in Annex 7.

6.2.4 Task Team on Definition of Extreme Climate Events

6.2.4.1 MG discussed the scope of this activity and the proposed deliverables and agreed on the TORs and the team composition which are shown in Annex 8.

6.2.4.2 MG welcomed the project proposal by China on monitoring and Assessment of Extreme Weather and Climate Events and looks forward to establishing a linkage with this project with the aim of benefiting other Members from the outcome of the project and develop similar initiatives in other regions.

6.3 OPACE III - Climate Products and Services and their Delivery Mechanisms

6.3.1 The Management Group reviewed the thematic thrusts, deliverables and work programme of OPACE-3, and recognized that this OPACE will provide key inputs to WMO’s contributions to the implementation of the Global Framework for Climate Services (GFCS),
particularly in the establishment and operation of the Climate Services Information System (CSIS) component of the GFCS. The Management Group also recognized that OPACE-3 has a unique responsibility of steering the Climate Information and Prediction Services (CLIPS) project evolution and its eventual transition into GFCS.

6.3.2 The Management Group noted the recommendations of CCI-XV on the implementation plan for future evolution of the CLIPS project, and agreed to work towards the determination of CLIPS legacy and consolidating its achievements through the development of guidance on standard approaches, tools, methods, with special attention to national needs. Acting on the CCI-XV Resolution 9.3/1 in this regard, the Management Group decided to set up a task team for the development of an implementation plan for CLIPS evolution (see Annex 9), including the development of the concept of National Climate Centres (NCCs) and National Climate Services (NCSs).

6.3.3 The Management Group recognized that the CLIPS Focal Point network is an effective way of engaging the national-level stakeholders of climate services, but that their roles and responsibilities as well as needs and requirements will have to be clearly defined. The Management Group agreed that the development of the Terms of Reference of CLIPS Focal Points may also be taken up by the OPACE-3 Task Team on CLIPS Evolution.

6.3.4 The Management Group recognized the growing need for the establishment of Regional Climate Centres (RCCs) and to establish standardized processes for the generation and dissemination of RCC products. Noting that RCC establishment is a major priority for OPACE-3 for the entire inter-sessional period, and as per the working structure adopted by CCI-XV, the Management Group established an Expert Team on RCCs (see Annex 10). The Management Group also noted that the RCC concept evolved out of a close collaborative effort between CCI and CBS, and urged the president to pursue with CBS of making this team a Joint CCI/CBS Expert Team, which is also being put up for approval by the forthcoming EC-LXII. The Management Group agreed that CBS may be requested to nominate two experts to this team.

6.3.5 The Management Group noted the wide support for the development of Global Seasonal Climate Updates (GSCU), and agreed that it is a major priority for OPACE-3. The Management Group agreed that GSCU needs to be very carefully scoped out through wide consultations with all the stakeholders, and the initial implementation needs to be taken up through a pilot phase. The Management Group decided to establish a Task team for the development of GSCU and steer its pilot phase (see Annex 11).

6.3.6 The Management Group recognized the critical need to sustain CCI-JSC/WCRP-CAS linkages to accelerate operationalization of research advances, particularly in the development of reliable and actionable climate prediction products. The Management Group urged OPACE-3 Chairs to pursue the development of appropriate mechanisms to facilitate these linkages, such as a Joint Working Group on Seasonal to Interannual Prediction.

6.3.7 The Management Group considered the deliverables of OPACE-3 as agreed within the working structure of CCI-XV (see Annex 12), and agreed that several of these would be assigned to the Expert Teams/Task Teams formed above. The Management Group requested the OPACE-3 Co-Chairs to consider possible approaches to the remaining deliverables, and make proposals during the course of prioritization of the inter-sessional work.

6.3.8 The Management Group reviewed the draft document developed by the Secretariat describing the concepts and stepwise procedures involved in the designation of RCCs, and endorsed it for publication. The Management Group urged the Secretariat to widely disseminate the document to facilitate the implementation of RCCs in all regions.
Action 18
The President of CCI to write to President of CBS to make the CCI Expert Team on Regional Climate Centres into a Joint CCI/CBS Expert Team with the nomination of two experts from CBS to this team.

6.4 OPACE IV - Climate Information for Adaptation and Risk Management

6.4.0.1 The MG agreed that the activities to be undertaken under OPACE-4 should primarily focus on development of tailored climate information, products and services for user application in adaptation and risk management, and on interface with user groups. It was noted that these activities provide key contributions to the Climate User Interface Programme (CUIP) component of the Global Framework for Climate Services (GFCS).

6.4.0.2 The MG highlighted that the work of OPACE 4 would be multidisciplinary, and would require close collaboration with experts from various socio-economic sectors. The group recalled that at CCI-XV, the Commission agreed that the priority sectors for consideration by the OPACE would be Agriculture/food security and water, requiring close collaboration with the WMO Technical Commissions for Agricultural Meteorology (CAgM) and for Hydrology (CHy). The Group further agreed that supporting development of the climate contribution to efforts for disaster risk reduction should also be a high priority. In this regard, the Management Group welcomed the participation of Dr Maryam Golnaraghi, who noted the importance of climate data and information in risk assessment, hazard analyses, and in risk reduction planning.

6.4.2 Expert Team on Climate Risk and Sector-Specific Indices

6.4.2.1 The MG noted the urgent need for a set of standardized climate indices of particular relevance to sectoral applications. Acting upon the decision of CCI-XV, the MG established an Expert Team on Climate Risk and Sector-specific Climate Indices (ET-CRSCI), under OPACE-4. The MG urged close coordination of efforts between the ET-CCDI established under OPACE-2 and the ET-CRSCI, considering that the overall approach and philosophy are quite similar. The MG urged the ET-CRSCI to work towards development of regional hands-on workshops to cooperatively develop the indices developed by the team.

6.4.2.2 It was agreed that OPACE 4 would collaborate closely with the WMO Programme on Disaster Risk Reduction and CBS Working Groups and Expert Teams relevant to risk assessment and risk management. The MG recommended that the OPACE 4 consider, in addition to the mathematical descriptors of extremes, the user concepts of extremes, which would likely be linked to human and economic impacts and to their vulnerability.

6.4.2.3 The MG noted that as OPACE 4 develops its understanding of the climate information requirements of users, it would likely also be able to specify data requirements with which to meet those needs. The Group recommended that OPACE 4 pass onto OPACE 1 any such information.

6.4.2.4 The terms of reference and membership for the ET-CRSCI are presented in Annex 13.

6.4.3 OPACE 4 Task Teams

6.4.3.1 The MG recognized the need for regional user-specific outlook forums, particularly in climate-sensitive sectors and regions, to facilitate efficient intake of the outlooks generated by Regional Climate Outlook Forums (RCOFs). Noting that this concept would be developed and initially demonstrated for water and agriculture sectors in collaboration with CHy and CAgM, the MG established a Task Team on User Participation in Climate Outlook Forums. The terms of reference and membership of this task team are presented in Annex 14.
6.4.3.2 The MG noted the critical need to coordinate climate and water activities, noting that climate and water have a bearing upon several other user sectors including Agriculture and food security. The MG recalled that such coordination had formerly been provided under the auspices of the WCP-Water Programme (discontinued as of CHy-2008) and agreed with the recommendation of CHy that a new formal mechanism should be established under the guidance of CCl and CHy, noting that CAgM should also be invited to contribute to this team. The MG therefore proposed the establishment of a Joint (CCl, CAgM, CHy) Working Group on Climate, Food and Water to make proposals in this regard. Suggestions with respect to the terms of reference and membership of this joint working group are presented in Annex 15. The three technical commissions will provide inputs to the draft terms of reference and membership and will also propose draft set of deliverables, all of which will be finalized by the joint Working Group, once established.

6.4.3.3 In consideration of the implementation of the Global Framework for Climate Services (GFCS), and the support that will be required from OPACE 4 for the Climate User Interface Programme (CUIP) of the GFCS, the MG highlighted the importance of initiation by OPACE 4 of specific efforts for climate interface that would promote and guide on the use of climate information in decisions related to climate risk management and adaptation. The Group agreed on the benefits of systematic approaches to climate risk and vulnerability assessments, and on the benefits of improving user confidence in climate information and products, through examples and demonstrations. In all user interface activities, the MG requested OPACE 4 to collect and pass on to OPACE 1 any known or emerging data requirements. The Management Group therefore established a Task Team on User Interface. The terms of reference and membership of this task team are presented in Annex 16.

6.4.4 OPACE 4 Deliverables

6.4.4.1 The MG considered the deliverables of OPACE-4 as agreed within the working structure of CCI-XV, and agreed that a number of these deliverables would be assigned to ET-CRSCI and to the Task Teams. The Group further agreed on slight modifications to some deliverables, and to add several to clarify the ToRs of the Task Team on User Interface. The revised deliverables, as agreed by the MG, are presented in Annex 17.

6.4.4.2 The MG requested the OPACE-4 Co-Chairs to consider, over the intersessional period, possible approaches to the remaining deliverables proposed by CCI-XV, but also to retain some measure of flexibility for undertaking new priorities, particularly those that could arise in implementation of the CUIP/GFCS.

6.4.4.3 The MG made a number of recommendations for candidates for the ET-CRSCI and the Task teams, but agreed that finalization of these decisions would be the responsibility of the OPACE 4 co-chairs, following consultation with various partners and individuals.

**Action 19**
OPACE-4 co-chairs to finalize the membership of the Expert Team (ET-CRSCI) and inform the President of CCI by end of May 2010.

**Action 20**
OPACE-4 co-chairs to finalize the membership of the various Task Teams, and inform the President of CCI by end of June 2010

7. MANDATORY PUBLICATIONS OF CCI, INCLUDING THE GUIDE FOR CLIMATOLOGICAL PRACTICES

7.0 Dr Mannava Sivakumar informed the meeting that there are three mandatory publications of CCI: (i) Guide for Climatological Practices, (ii) Standard Climatological Normals,
and (iii) Reports of the Sessions of CCI. MG was informed that the Reports of the Sessions of CCI are routinely produced in all languages. For example, the Report of the CCI-XV session held in Antalya, Turkey was brought within 2.5 months after the session and members of the MG had already received this Report and the English language version of the report is already available on the WMO webpage. The guidance of the MG is required for the other two publications.

7.1 Guide for Climatological Practices

7.1.1 MG discussed the current status of publication of the Guide for Climatological Practices. MG was informed that the editing of the Guide and its finalization by the Language and Publications Unit of WMO Secretariat is likely to take some more time. MG discussed how revisions to the Guide, once it is published, should be undertaken. In order to minimize the time delays and the large expense that would be involved in undertaking a complete revision of the Guide, MG decided that it would be more efficient if in future, the revisions of relevant sections could be undertaken in a timely manner and the revised sections be posted on the CCI website for use by the members.

Action 21
Once the Guide for Climatological Practices is published, in future revisions of relevant sections should be undertaken and revised sections should be published on the CCI website. The President to appoint Aryan van Engelen as a rapporteur for reviewing the Guide and propose revisions to Guide + other duties.

7.2 Standard Climatological Normals

7.2.1 The MG noted that the available publication on Standard Climatological Normals covers the period 1961-1990 and that the next issue would cover the period 1991-2020 and would probably be published in 2021.

7.2.2 The MG noted the user communities of the climatological normals are often not aware of the distinctions between “Standard” and “Operational” climatological normals. Some countries have produced Operational Climatological Normals for the period 1971-2000 and UK has been published normals over different averaging periods for different purposes.

7.2.3 The MG discussed at length the need to make a comprehensive review of the issue of Climatological Normals and make recommendations. Accordingly, MG decided to establish a Task Team to address this issue. The TORs and membership of this task team are shown in Annex 18 (Dr William Wright is requested to complete this Annex).

7.2.4 It was suggested that in order to elicit the comments from the user community on the use of the climatological normals, a questionnaire be prepared and circulated to the members of CAgM at the ensuing CAgM-XV session in Brazil (15-21 July 2010). It was suggested that the Chair of the Task Team arranges for the preparation of this questionnaire by 1 July 2010 and sends it to the WMO Secretariat.

Action 23
Dr William Wright, Leader of the Task Team on Climatological Normals to arrange for the preparation of a questionnaire to solicit user feedback on their use be prepared and circulated at the CAgM-XV session in July 2010. All the OPACE co-chairs are members and the invited experts include Blair Trewin (Australia) and Anthony Arguiz (USA).
8. PRIORITIES AND WORKING ARRANGEMENTS FOR EACH OPACE

*Co-Chairs of each of the OPACEs requested to provide a paragraph each with the completed templates.*

8.1 Four efforts are foreseen to carry out during the 15th intersession period under the OPACE 2 areas of activity, which are described in the WP shown in the table below:
# Workplan: OPACE-2: Climate Monitoring and Assessments

**Leader of activities:**
Manola Brunet + Fatima Driouech

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<thead>
<tr>
<th>Activities</th>
<th>Actions</th>
<th>Outputs</th>
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<td>Setting up the ETCCDI</td>
<td>1. Complete the membership from CCI side and explore through CCI President membership from CLIVAR side 2. Coordinate the establishment of the WP</td>
<td>Draft Report on the membership and WP</td>
<td>no</td>
<td>CCI CLIVAR JCOMM</td>
<td>Draft Report September 2010</td>
<td>To start</td>
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<td>Refining ETCCDI’s WP (meeting)</td>
<td>Reviewing ETCCDI last report and assess priorities</td>
<td>Draft Report of list of immediate priorities and tasks assignment</td>
<td>CCI/CLIVAR/JCOMM</td>
<td>CCI/OPACE 4</td>
<td>Draft List and assignment</td>
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<td>Monitoring Progress/inspiring work</td>
<td>Teleconferences</td>
<td>Interim progress reports</td>
<td>WMO &amp; ETCCDI website</td>
<td>CCI CLIVAR JCOMM</td>
<td>3 Draft Reports</td>
<td>On yearly basis</td>
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<td>Wrapping-up (meeting)</td>
<td>Meeting for assessing work done and defining new work to be undertaken</td>
<td>Draft Final report</td>
<td>CCI/CLIVAR/JCOMM</td>
<td>CCI CLIVAR JCOMM</td>
<td>Draft Report to CCI-XVI</td>
<td>2014</td>
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<td>Dec 2010</td>
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<td>Climate Events</td>
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<td>Report on the validated records Guidance</td>
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<td>Ad-Hoc reports</td>
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<td>Report 2014</td>
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<td>Draft Report September 2010</td>
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<td>OPACE 3 and OPACE 4</td>
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9. STRATEGY FOR CAPACITY BUILDING

9.1 The meeting recalled Resolution 11/ (CCI-XV) Capacity Building for Climate Services and reviewed the progress made in capacity building through climate training activities including the regional/thematic training workshops under the Climate Information and Prediction Services (CLIPS) project, training component of Regional Climate Outlook Forums (RCOFs), implementation of Climate Data Management Systems, development of knowledge on climate extremes and indices, homogenization of climate time series, data rescue, regional workshops on climate monitoring and Climate Watch systems, user awareness activities, etc.

9.2 MG noted that with the new challenge posed by increasing climate variability and climate change and its likely impacts on the safety and well being of the human and ecosystems, the time is now ripe to consolidate the gains of these early initiatives, address the gaps and build a WMO-wide comprehensive strategy with the overarching goal of mainstreaming, standardizing and strengthening capacity building at various levels within the Global Framework for Climate Services.

9.3 MG decided to establish an Expert Team on Strategy for Capacity Building for Climate Services (ET-SCB). The TORs and composition of the ET-SCB are given in Annex 19.

10. COMMUNICATION STRATEGY, PARTICULARLY WITH OPACE MEMBERS AND AGREEMENT ON THE WORKING ARRANGEMENTS

10.1 MG discussed the communication strategy of the Commission under three aspects: a) Communication within the Commission (among OPACE members), b) Communication with Regional Associations (RAs) and Working Groups on Climate Matters of RAs, and c) Communication with other relevant commissions and bodies.

10.2 MG noted that communication in two approaches i.e., top down (from President to the OPACEs) and bottom up (from Expert teams and Paces to the President) bear importance and information should flow in a regular and smooth manner within the whole Commission. To that end, the Group agreed to make unified template for reporting from OPACE co-chairs to ensure consistency and comparability of their work.

10.3 MG noted that close linkages should be established between the Commission and Working Groups on Climate Matters (WG-CRM) or other similar bodies in RAs. As regards to the communication of the Commission with outside bodies, MG noted that the Circular Letters of the President are the normal means of communication, however, it identified that more dynamic use of the CCI webpage and Ad hoc Newsletters from the Commission could also fill the gap, whenever priority arises. It suggested that the Circular Letters of the President are issued at least twice in a year, mainly after the EC and the PTC meeting. Furthermore, following the proposal of CCI-XV, OPACE co-chairs were also encouraged to involve knowledgeable experts mainly from academic community on crosscutting and special thematic areas that they need assistance from outside the Commission.

Action 24
MG to promote communication strategies within and outside CCI through more dynamic and more active use of CCI webpage and Ad hoc Newsletters.

Action 25
Secretariat in consultation with co-chairs of four OPACEs to prepare a template to ensure regular, standardized and unified reporting mechanism to facilitate evaluation and performance of the work allocated to the OPACEs.
11. QUALITY MANAGEMENT FRAMEWORK

11.1 MG was informed on the ongoing WMO activities in QM and the rational behind it with reference to CG, EC decisions and the ICTT work. Information was also given on WMO/ISO working arrangement including the related procedures for proposing common standards. Dr Serhat Sensoy made a presentation on traceability of climate data and products emphasizing on the founding work in climate observations, Data Rescue, Data Management, Homogenization and Metadata. He provided several examples of climate products where traceability is required for ensuring users requirements and transparency.

11.2 MG considered the main CCl-XV decisions on QM with respect in particular to:

(i) CCL-XV decision that CCI subsidiary bodies, including CCI MG, OPACEs, Expert teams and Rapporteurs shall incorporate Terms of Reference on promoting QM and advising Members on the use of QM in their respective domain of expertise,

(ii) CCI-XV decision that some CCI publications such as guidelines and the Guide to Climatological Practices, at least partially, should be considered as candidate subjects for developing new common ISO/WMO technical standards.

(iii) Resolution 8/1 (CCI-XV) on Quality Management in climatology

11.3 MG further stressed the importance and urgency to start developing a strategy for QM in climatology and decided to establish an Expert Group on QM for climatology (EG-QMC). Terms of reference and composition of this expert group are shown in Annex 20.

11.5 MG considered that while the development of a QM strategy for climatology would take some time, nevertheless EG-QMC should undertake some immediate tasks with respect to CCI-reference documents and practices to be considered as candidate subjects for developing new common ISO/WMO technical standards. In this aspect the EG-QMC is requested to propose within 6 months in collaboration with other MG members and the secretariat those parts of CCI publications that merit immediate consideration for ISO/WMO recognized standards.

12. PROGRAM EVALUATION AND MONITORING

12.1 Key Outcomes of CCI-XV on Strategic Planning

12.1.1 The MG recalled that WMO had adopted a results-based management (RBM) approach and that Strategic Planning, of which the WMO Operating Plan as well as Monitoring and Evaluation were an integral part, and that Executive Council, at its sixty-first session (EC-LXI), had endorsed the use of a "results chain", i.e., Strategic Thrusts (ST); Expected Results (ER); Key Outcomes (KO); Deliverables; and Activities, as the structure for the strategic planning process. The MG further recalled that the fifteenth session of the CCI would be governed for its first two years under the Strategic Plan 2008-2011 (see Annex 21), and for its second two years under the Strategic Plan 2012-2015.

12.1.2 For the period 2010-2011, CCI-XV had noted that WMO climate activities would be covered with respect to Expected Results 2, 5, 6, 7, 8 and 9 (see Annex 21). For the period 2012-2013, CCI-XV had noted that the framework for the 2012-2015 Strategic Plan would consist of five STs and eight ERs, that the new Plan recognized the high value of climate information in sectors that significantly benefit from weather, climate, and hydrological information and services such as agriculture, energy, transport, environment, human settlements, and water resources, and that most of the Expected Results in the new Plan were in line with the objectives of the Commission and drew upon availability of climate information. To that end, CCI-XV proposed that the
Commission align its future workplan to WMO’s overall strategy to complement climate-related components of the Strategic Plan.

12.1.3 The MG agreed that the outcomes of the World Climate Conference-3 (WCC-3) and the relevant elements of the Global Framework for Climate Services (GFCS) would significantly contribute to setting priorities and work planning for the fifteenth intersessional period. CCI-XV identified particular priority areas of work to guide its planning (see Annex 22). Also highly relevant to the planning for the fifteenth intersessional period would be quality management, capacity building, interagency coordination; fulfillment of WMO’s commitments to UNFCCC, UNCBD and UNCCD; development and sharing of manuals, guidelines, and information that would improve understanding on the role of climate knowledge in science-based decision-making processes; provision and authentication of scientific material for a joint WMO-UNESCO Web Portal in support of climate change adaptation in various sectors; and promotion of the use of climate information in shaping public policy.

12.1.4 The MG recalled that CCI-XV had adopted new vision and mission statements (see Annex 23 for Resolution 1 (CCI-XV) – Vision and mission of the Commission for Climatology) and recommended new terms of reference and recommended new terms of reference (see Annex 24 for Recommendation 1 (CCI-XV) – Terms of reference of the Commission for Climatology).

12.1.5 The MG agreed with the recommendation of CCI-XV that it would make concerted efforts to clearly define the various elements within the results chain of WMO Strategic Plan relevant to the Commission’s priorities, and that it would work with the Secretariat to contribute to all aspects of the RBM process as an explicit component of its terms of reference.

12.1.6 An overview of decisions of Congress, Executive Council and of technical commissions on strategic planning is provided in Annex 25.

12.2 Programme Evaluation and Monitoring for the CCI-XV Intersessional Period

12.2.1 The MG recalled that the fifteenth WMO Congress (Geneva, May 2007) established result-based management (RBM) as the fundamental concept for managing the planning, implementation and performance assessment of WMO’s programme activities. Important components of the RBM process are the WMO Strategic Plan (SP) outlining the priorities and goals of the organization; WMO/Secretariat/regional association/technical commission Operating Plans, which convert these strategic directions into specific, measurable outcomes; the budget which aligns resources to activities (and their outcomes), and a system for Monitoring and Evaluation, which allows tracking of progress and promotes remedial actions as needed, in order to achieve the Expected Results. The RBM process should help in identification of priorities that may be under-resourced, which may, in turn, affect Member’s priorities and decisions related to resources, should identify cross-cutting initiatives and shared responsibilities, and should foster a more clear and transparent demonstration to Members and partners of how the Organization on the whole is performing. The MG noted that Cg-XV had requested the technical commissions to adhere to the direction and priorities set forth in the Strategic Plan and to organize their programme structures and activities so as to pursue the top-level objectives and to achieve the expected results.

12.2.2 The MG recalled that at its fifteenth session, the Commission recognized the need to appropriately align its activities to meet the corresponding monitoring and evaluation requirements based on the Strategic Plan. It further recalled that EC-LXI had requested the Commission to assist in development of ‘a manageable number’ of related performance measurement parameters and to ensure that those are based on Members’ needs and adequately reflect the programme areas of the Organization; and that the commission develop Key Performance Indicators (KPIs) which should remain stable and be measurable over the longer term enabling the monitoring and performance evaluation process. The Management Group noted that for every
Expected Result, there are a number of Key Outcomes, together with Indicators, Baselines and Targets, against which the Secretariat develops deliverables, activities and budget proposals.

12.2.3 The MG was informed of the current status of programme evaluation and monitoring in WMO (see Annex 26). It was noted that a pilot project is currently underway to develop and refine the methodology for programme evaluation and monitoring. From the beginning of the next financial period (2012), all programmes/departments, regional associations and technical commissions will be expected to report on their progress on a regular basis.

12.2.4 The MG noted that in order to comply with this exercise, the Commission is requested to:

- identify its priorities, consistent with the WMO Strategic Plan (reflecting the wishes of the Members) taking into account major WMO initiatives (e.g. GFCS, WIS, etc.)
- establish workplans based on the selected priorities, along with identification of responsible persons and deadlines, noting that the capabilities and availability of the CCI experts and the availability of support through the Secretariat must be factored in for practical purposes
- establish baselines and targets for performance improvement, and KPIs
- align appropriate experts and budgets to support the workplans, ensuring that human and financial resources are aligned to realize the more significant priorities
- pursue and apply extrabudgetary funds if required for high priorities
- periodically review progress and report to the relevant bodies (e.g. CCI MG, Secretariat, PTC, Executive Council, etc)
- Assess problems, identify and apply remedial measures where needed
- Assess success, and close activities once completed
- Where feasible, be flexible in undertaking new priorities (e.g. based on recommendations of the High-level Task Force for the GFCS), or when first priorities have been accomplished.

12.2.5 The MG noted the importance of identification of synergies across programmes, regional associations and commissions in order to reduce duplication and promote efficient use of Member’s resources, and proposed that CCI workplans should be identified widely to all potential partners. The Group further noted that it is not the activities, per se, that are important. The key is the outcome of each activity. A suitable activity will be well planned, supported by experts in the field, underpinned by the Secretariat, and important to the Members’ interests. The activity will provide a result that (inter alia) has the potential to advance the Member’s capability to improve an aspect of its contribution to its public (a guideline, a training curriculum module or delivery of targeted training, a manual, a piece of software, etc), or has direct utility to users. It is important that the outcome be capable of being used, is used, and is effective in its use. Therefore the activities of the Commission and the Secretariat are the beginning of a process that involves the Members and users, for full realization of the Expected Results and the achievement of WMO’s goals.

12.2.6 In discussion it was noted that the Commission is peopled with volunteers. For this reason, noting that the ‘O’ in OPACE is for ‘open’, it is proposed that to address issues, the OPACEs bring in new people, and revise plans as appropriate. The OPACE co-chairs have a responsibility in this regard. It was noted that the Secretariat also can assist and advise on remedial measures. On a case-to-case basis, a contract or consultancy can help complete a priority activity. The Management Group expressed appreciation for the offered support.

13. PROPOSED REORGANIZATION OF THE WORLD CLIMATE PROGRAMME

13.1 The MG was briefed by Mr Tyagi on the reorganization of the WCP, prepared by the Secretariat based on wide-ranging discussions among the various experts and the ECWG-CWE.
In view of the expanded scope necessitated by the emerging new priorities associated with the GFCS, the new World Climate Programme is proposed to consist of following components:

(i) World Climate Research Programme (WCRP)
(ii) Global Climate Observing system (GCOS)
(iii) Climate Data and Analysis Programme (CDAP)
(iv) Climate Watch and Prediction Programme (CWPP)
(v) Climate Operation and Infrastructure Programme (CSOP)
(vi) Climate Adaptation and Risk Management Programme (CARP)

13.2 Mr Tyagi brought the attention of the MG to the proposed inclusion of GCOS within the WCP, which may be subject to further consultations. He highlighted that the GFCS brings in a new paradigm for climate activities of WMO, and that WCP needs to reshape into a more operations-intensive programme. The MG was informed that the reorganization of WCP will be further discussed at the forthcoming EC-LXII, possibly in a side meeting. The MG noted that the proposed restructuring will need to be further fine-tuned, and that the CCI has a special role in advising WMO on the issue, though it recognized that the final decision is taken by the EC or Congress after considering all the related aspects. The MG agreed to provide its inputs, taking into account the further developments in the deliberations of the HLT-GFCS. The MG noted that, when finalized, the proposal for restructuring will be considered by the ECWG on Strategic Planning for further action as part of the overall WMO programme strategy.

13.3 At the request of the MG, Mr Tyagi also provided a brief description of the Secretariat restructuring, and explained how the CCI is being supported by the Secretariat. The MG noted that the Climate Prediction and Adaptation Branch of the Climate and Water Department assumes the overall responsibility for supporting CCI, and also supports the activities of the OPACEs 3 and 4. The Observations Department supports the activities of OPACEs 1 and 2. The MG also noted that there are several cross-cutting aspects necessitating collaborative work with other departments/programmes. The MG was also briefed on the overall WMO mechanisms and how they deal with the various programmes.

13.4 The MG noted that, after achieving internal consensus on the reorganization of the WCP, WMO will approach the partners supporting co-sponsored programmes to seek their feedback and work towards agreement on a final revised structure. The MG agreed to provide the Secretariat its considered view on the topic in due course, recognizing that the final recommendations of HLT-GFCS will have to be incorporated as and when they become available.

14. COOPERATION WITH OTHER INTERNATIONAL ORGANIZATIONS AND LIAISON WITH CAgM-XV SESSION AND THE INTERNATIONAL WORKSHOP

14.1 The MG noted the cooperation with other international organizations, including the collaboration with the UNFCCC on the Nairobi Work Programme (NWP) on Impacts, Vulnerability and Adaptation to Climate Change; the leading role of WMO-UNESCO on ‘Climate Knowledge-base’, under the UN Delivering as One initiative; and the UNEP Global Adaptation Network.

14.2 The MG noted that WMO was a major contributor to a new UNFCCC synthesis publication on NWP entitled ‘Action Pledges: Making a difference on the ground. A synthesis of outcomes, good practices, lessons learned and future challenges and opportunities’. In the NWP, WMO plays a leading role in five areas: methods and tools; data and observations; climate modeling, scenarios and downscaling; climate related risks and extreme events. Noting that these areas are in direct relevance to four OPACEs of the Commission, the MG encouraged WMO to continue to contribute actively to the NWP.

14.3 MG noted that in the climate-related activities undertaken throughout the United Nations system, WMO, along with UNESCO, was given the lead role in the cross cutting area of
Climate Knowledge: science, assessment, monitoring and early warning. MG noted with appreciation the proposal of WMO and UNESCO to establish the UN Climate Knowledge Portal which aims to go beyond Climate Change issues and provide easy access to information or data which is clear, comprehensible and useful to the end user.

14.4 MG was informed that the Fifteenth Session of the Commission for Agricultural Meteorology (CAgM-XV) of WMO will be held from 15 to 21 July 2010 in Belo Horizonte, Brazil. In conjunction with this session, an “International Workshop on Addressing the Livelihood Crisis of Farmers: Weather and Climate Services” will be held at the same venue from 12 to 14 July 2010.

14.5 Noting that the programme for the International Workshop includes sessions on climate risk management, a farmer’s forum and a panel discussion on the Global Framework for Climate Services (GFCS), MG recommended that participation of a CCI expert in the workshop could help promote linkages between CCI and CAgM in taking appropriate follow-up action on the recommendations of the workshop.

15. ANY OTHER BUSINESS

15.1 Dr Vladimir Ryabinin informed the meeting about the plans for the organization of the “WCRP Open Science Conference (OSC) - Climate Research in Service to Society” in Boulder, Colorado from 24 to 28 October 2011. Through an unique synthesis of presented research findings, the OSC will assess the current state of knowledge on climate variability and change, identify the most urgent scientific issues and research challenges, and ascertain how the WCRP can best facilitate research and develop partnerships critical for progress.

15.2 Noting that the OSC will identify key opportunities and challenges in observations, modeling, analysis and process research required to understand and predict responses of the Earth as a system, the MG recommended that CCI experts should be encouraged to actively participate in the Conference and requested the Secretariat to work with the WCRP office in ensuring CCI representation at this Conference.

* * * * *
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ANNEX 2

MEETING OF THE COMMISSION FOR CLIMATOLOGY MANAGEMENT GROUP

PROVISIONAL ANNOTATED AGENDA

1. OPENING OF THE MEETING

   The meeting of CCI Management Group will open at the WMO Headquarters, Geneva, at 9:30 a.m., on Tuesday 18 May 2010.

2. ADOPTION OF THE AGENDA AND ORGANIZATION OF THE MEETING

   The provisional agenda will be submitted to the meeting for approval at the opening of the session with the understanding that it can be amended at any time in the course of the session.

   The meeting will run from 9:30 hrs to 13:00 hrs in the morning and 14:30 hrs to 17:30 hrs in the afternoon. The meeting will be conducted in English.

3. REVIEW OF THE OUTCOMES OF TECHNICAL CONFERENCE HELD IN CONJUNCTION WITH CCI-XV SESSION WITH A FOCUS ON IMPLICATIONS FOR CCI's WORK DURING THE NEXT FOUR YEARS

   The meeting will review the outcomes of the Technical Conference held in conjunction with the CCI-XV session in Antalya, Turkey, with particular reference to the recommendations emerging from the Joint Session with WCRP.

4. REVIEW OF ACTIONS ARISING FROM CCI-XV SESSION AND THE ROLE OF THE MANAGEMENT GROUP

   The meeting will review status of actions arising from the CCI-XV session. The meeting will discuss the terms of reference of the Management Group and the follow up activities for the Commission during the next intersessional period.

5. ROLE OF CCI IN THE IMPLEMENTATION OF THE GLOBAL FRAMEWORK FOR CLIMATE SERVICES

   The Heads of States and Governments, Ministers and Heads of Delegations present at the World Climate Conference-3 (WCC-3), held from 31 August to 4 September 2009 in Geneva, through the High Level Declaration, called for the establishment of a Global Framework for Climate Services (GFCS). The meeting will discuss the role of CCI in the implementation of GFCS.

5.1 Update on the High Level Task Force on GFCS

   The Secretariat will provide an update on the High-level Task Force (HLTF) on GFCS which was established pursuant the decision of WCC-3 and on the first session of HLTF which was held in Geneva on 25 and 26 February 2010.

5.2 CCI input into the development of GFCS up to Cg-XV

   The meeting will discuss the aspect of how CCI input could be factored into the development of GFCS leading up to Congress-XV.
5.3 Coordination of activities among various WMO Programmes and Technical Commissions

The meeting will discuss the proposal from the Secretariat regarding the coordination of activities among the various WMO Programmes and Technical Commissions and will provide guidance from the CCI perspective.

5.4 CCI-relevant Aspects of WMO Integrated Observing and Information System (WIGOS-WIS)

The WMO Integrated Global Observing System (WIGOS) is a concept for a comprehensive, coordinated and sustainable system of observing systems and the WMO Information system (WIS) is the single coordinated global infrastructure responsible for the telecommunications and data management functions. The meeting will discuss the CCI-relevant aspects of WIGOS and WIS.

6. CCI WORK PROGRAMME

The meeting will review the proposals made on CCI Work Plan and Structure at the CCI-XV session for the four Open Panels of CCI Experts (OPACEs) for the four major thematic areas on Climate Data Management, Climate Monitoring and Assessment, Climate Products and Services and Climate Information for Adaptation and Risk Management. The meeting will review the terms of reference for the Expert Teams and Rapporteurs under the four OPACEs (given below) and the proposed deliverables for each of the elements of the Commission structure.

6.1 OPACE I - Climate Data Management

Expert Team on Climate Database Management Systems

Task Team on Data Rescue

Preparations for the International Conference on Climate Data

UK Workshop on Datasets

6.2 OPACE II - Climate Monitoring And Assessment

Joint CCI/Clivar/JCOMM Expert Team On Climate Change Detection And Indices

Joint Rapporteurs On World Records Of Weather And Climate Extremes

Task Team on Climate Monitoring Products

Task Team on the Definition of Extreme Climate Events

6.3 OPACE III - Climate Products And Services and their Delivery Mechanisms

Expert Team On Regional Climate Centres

Potential Task Teams
6.4 OPACE IV - Climate Information for Adaptation And Risk Management

Expert Team On Climate Risk And Sector-Specific Climate Indices

Development of Information and Knowledge

Potential Task Teams

The meeting will review the need for establishment of additional teams, groups of rapporteurs to undertake the tasks identified for the components of the CCI work programme for the next intersessional period.

The meeting will also review the Regional activities and other work started in the last intersessional period not already covered.

7. STRATEGY FOR CAPACITY BUILDING

As per Resolution 11/1 (CCI-XV) on Capacity Building for Climate Services, the meeting will review and will discuss the aspect of developing an action plan for the Capacity Building for Climate Services and how to oversee its implementation in working towards enhanced capacities of NMHSs to efficiently produce and deliver climate products and services in close collaboration with other technical commissions and the EC Working Group on Capacity Building.

8. COMMUNICATION STRATEGY, PARTICULARLY WITH OPACE MEMBERS AND AGREEMENT ON THE WORKING ARRANGEMENTS

The meeting will discuss how effective communication can be established with OPACE members and the Working Groups on Climate Related Matters of Regional Associations to ensure that the terms of reference for different expert teams and rapporteurs are addressed in a timely and efficient manner and will discuss and agree on the working arrangements in this regard. As per the CCI-XV decision, the vice-president of the Commission, is responsible to ensure effective communication between the CCI MG and any working groups as well as rapporteurs on their climate activities. He will also liaise with the OPACE co-chairs in the implementation of their work plans.

9. PRIORITIES AND WORKING ARRANGEMENTS FOR EACH OPACE

The co-chairs of different OPACEs will meet and develop the work plans for their OPACEs and identify the priorities for the next intersessional period.

10. QUALITY MANAGEMENT FRAMEWORK

CCI-XV decided that CCI subsidiary bodies, including CCI MG, ICT, OPACEs, expert teams, working groups and rapporteurs, shall incorporate Terms of Reference on promoting quality Management (QM) and advising Members on the use of QM in their respective domain of expertise.

The meeting will discuss how QM could be promoted in the CCI work itself and will discuss the following issues:

The importance of Traceability for Climatology
Expert Group on Quality Management for Climatology
11. PROGRAM EVALUATION AND MONITORING

The meeting will review different aspects of CCI strategic plan as discussed during the CCI-XV session and will provide guidance on programme evaluation and monitoring in the next intersessional period.

12. PROPOSED REORGANIZATION OF THE WORLD CLIMATE PROGRAMME

The meeting will review the Secretariat Discussion Paper on the reorganization of the World Climate Programme and will provide its guidance.

13. COOPERATION WITH OTHER INTERNATIONAL ORGANIZATIONS AND LIAISON WITH CAgM-XV SESSION AND THE INTERNATIONAL WORKSHOP

The meeting will review current collaboration with other international organizations and will provide guidance on future cooperation. The Fifteenth Session of the Commission for Agricultural Meteorology (CAgM-XV) will be held from 15-21 July 2010 in Belo Horizonte, Brazil and an International Workshop on "Addressing the Livelihood Crisis of Farmers: Weather and Climate Services" will be held from 12-14 July 2010 at the same venue. The meeting will discuss aspects of effective liaison with CAgM.

14. ANY OTHER BUSINESS

The meeting will discuss other items of interest not covered by the agenda items under 1-12.

15. REVIEW OF ALL ACTION ITEMS AND ADOPTION OF THE MEETING REPORT

The meeting will review all action items agreed during the meeting and will adopt the draft report of the meeting prepared by the Secretariat.

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ANNEX 3

CCL-XV OPACE-1 Expert Team on Climate Data Base Management Systems

**Terms of Reference:**

1. Assess the current WMO Climate Database Management Systems (CDMS) since their first evaluation in 2001 and the development of new systems;

2. Work in collaboration with the WMO WIS project office on using inter-operable systems to integrate and exchange NMHSs climate data and data from other sources such as remote sensing data, Geographic Information Systems, and data from applications sectors;

3. Keep technology watch on software and the capability of data transfer through various means including mobile phones; and develop guidance and advice to the Members on the most practical, secure, reliable and affordable technologies in this domain;

4. Develop and implement a monitoring mechanism for a continued updating of the CDMSs;

5. Liaise with CBS, CHy, JCOMM and CAgM and the space programme on the any relevant issues related to climate data management and related systems;

6. Assess the success of past and current capacity building activities in implementing new CDMSs operationally in replacement of CLICOM, and revise them as necessary; and

7. Submit reports in accordance with timetables established by the OPACE co-chairs.

**Members**

1. Steve Palmer (UK) – Team Leader
2. Dennis Stuber – Deputy Team Leader
3. Alpha Barry Guinea
4. Anyuan Xiong
5. Bruce Bannerman
6. Radim Tolasz
7. Gilkes Lloyd
8. Rachid Sebbari

**Associate Experts**

9. Ersin Simsek
10. Frank Kaspar
11. Jeff Arnfield
12. Johannes Behrendt

1. Steve Palmer (UK) – Team Leader
2. Dennis Stuber – Deputy Team Leader
3. Alpha Barry Guinea
4. Anyuan Xiong
5. Bruce Bannerman (CCl rep to ET-MDI)
6. Radim Tolasz
7. Gilkes Lloyd
8. Rachid Sebbari
9. Ersin Simsek
10. Frank Kaspar
11. Jeff Arnfield
12. Johannes Behrendt
CCL-XV OPACE-1 Task Team on Data Rescue

Terms of Reference:

1. To establish and record, through contact with interested parties including data users and data centres, general and specific needs for the rescue of historic observational data and metadata records;

2. To assess regional needs for data rescue projects and to investigate associated synergies across different regions, WMO programmes and commissions and other international Climate Data Recovery initiatives such as the Atmospheric Circulation Reconstructions over the Earth (ACRE) Project, the Mediterranean Data Rescue Initiative (MEDARE), and similar initiatives in other regions;

3. To explore, document and make recommendations for addressing the needs for workshops, conferences and training events pertinent to this topic;

4. To set up an International Data Rescue web portal (I-DARE);

5. To submit reports to the OPACE-1 Co-chairs; and

6. Task team lead to inform the OPACE co-chairs that the task is finished and that the team can be dissolved.

Members

1. Aryan Van Englen – Team Leader Netherlands RA VI
2. Joseph Kimani - Co Leader Kenya RA I
3. Rod Hutchinson Australia RA V
4. Tom Ross USA RA IV
5. Umesh Joshi India RA II
6. Alaor Dall’Antonia Jr. - Brazil RA III
7. Yusuf Ulupinar Turkey RA VI
8. Jose Antonio Guijarro Spain RA VI
CCL-XV OPACE-2 Joint CCI/Clivar/JCOMM Expert Team
On Climate Change Detection And Indices

Terms of Reference:

1. Provide international coordination and help organize collaboration on climate change detection and indices;

2. Further develop and publicize indices and indicators of climate variability and change and related methodologies, from the surface and subsurface ocean to the stratosphere, with international consensus;

3. Encourage the comparison of modeled data and observations, perhaps via the development of indices appropriate for both sources of information;

4. Coordinate these and other relevant activities the ET chooses to engage in with other appropriate working bodies including of those affiliated under OPACE-4, WCRP and JCOMM as well as others such as GCOS, CBS, CIMO, CAgM, CHy, IPCC and START; and regional associations;

5. Explore, document and make recommendations for addressing the needs for capacity-building in each region, pertinent to this topic with consideration of the GFCS requirements; and

6. Submit reports in accordance with timetables established by the OPACE 2 co-chairs with the main deliverables being the provision of a review report on the existing indices, a peer-reviewed guidelines on new climate indices; and the development of new strategy for ETCCDI workshops considering the requirements of the GFCS and the contribution to the IPCC 5AR.

Members

1. Albert Klein-Tank (The Netherlands)-(Co-Lead)
2. Xuebin Zhang (Canada)-(Co-Lead)
3. Blair Trewin (Australia)
4. Matilde Rusticucci (Argentina)
5. Zhai PanMao (China)
CCL-XV OPACE-2 Rapporteurs on World Records of Weather and Climate Extremes

Terms of Reference

1. Work with the OPACE 2 to create guidelines and appropriate mechanism (e.g. ad-hoc Assessment Committee) on verification of national, regional and global extremes;

2. Work on the creation, verification and documentation of a database of national, regional and global extremes;

3. Take the lead in creating and maintaining a database of extreme records, and in documenting such events, e.g. in peer-reviewed scientific papers;

4. Develop guidelines and recommendations for continuing this record of extremes beyond the fourteenth intersession CCI period;

5. Promote quality management system in the work of the rapporteur including the provision of the guidelines and reports;

6. Submit reports in accordance with timetables established by the OPACE 2 co-chairs;

Joint Rapporteurs

1. Randall Cerveny (USA) RA_IV
2. José Luis Stella (Argentina) RA_III
CCL-XV OPACE-2 Task Team on National Climate Monitoring Products

Terms of Reference

1. Consider the existing national climate monitoring products and determine which of these products are most important from a scientific perspective as well as which products generate the most interest among the general public within those countries;

2. Consider the existing capabilities within developing countries to potentially produce the climate monitoring products documented in (1) above;

3. Develop a list of from two to six national climate monitoring products that the team recommends Members produce;

4. Precisely document the construction of this priority list of national climate monitoring products in a publication intended to be an addition to the WCDMP publications;

5. Determine if it would be helpful to develop software to calculate these products and, if so, what language would be appropriate for the software;

6. Should software be deemed appropriate, either create the software or recommend that such software be created;

7. Report to OPACE-2 co-chairs; and

8. Task team lead to inform the OPACE co-chairs that the task is finished and that the team can be dissolved.

Members

1. John Kennedy (UK) (Chair) RA VI
2. Ladislaus B. Chang’a (Tanzania) (Co-chair) RA I
3. Andrew Watkins (Australia) RA V
4. Dereck Arndt (USA) RA IV
5. Olga Bulygina (Russia) RA VI
6. Mesut Demircan (Turkey) RA VI
7. Raj Booneeday (Mauritius) RA I
8. Mohamed Semawi (Jordan) RA VI
CCL-XV OPACE-2 Task Team on Definitions of Extreme Weather and Climate Events

Terms of Reference:

1. Considering the existing work and studies, including by WMO communities and others which relate to climate extreme events, their definitions, geographical distribution, space and time scales, intensity, etc;

2. Taking into account the gaps in and the need for developing common definition related to climate extreme events with particular focus on cold waves, heat waves and severe precipitation and storms events (not including those related to tropical cyclones);

3. Provide guidance to the Members on methodologies and standards for defining extreme weather and climate events and assessing their attribution and return periods, and advise on adequate computational tool for the assessment;

4. Provide an advise on developing an inter-operable data base for climate extreme events with focus on regional and national levels;

5. Liaise with other commissions, programs, co-sponsored programs and regional and international projects and agencies to develop linkages and partnership on this subject;

6. Report to OPACE-2 co-chairs; and

7. Task team lead to inform the OPACE co-chairs that the task is finished and that the team can be dissolved.

Members

1. Ren Fumen (China) (Lead) RA-II
2. Pattanaik Dushmenda (India) (Co-Lead) RA-II
3. Randall Cerveny (USA) RA-IV
4. Blair Trewin (Australia) RA-V
5. Boris Sherstyukov (Russia) RA-VI
6. Jurq Rapp (Germany) RA-VI
7. Diallo Aissatou (Guinea) RA-I
ANNEX 9

CCL-XV OPACE-3 TASK TEAM ON CLIPS EVOLUTION

Terms of Reference:

Develop and provide to the CCI Management Group for further action, within a period of 9 months from the date of formation of the Task Team, the following:

1. A set of overall functions of National Climate Centres (NCCs) to coordinate national-level technical activities for basic climate data, diagnostics, climate system monitoring, and in many cases long-range forecasts (LRF), to help alignment with the core products and services of Global Producing Centres of Long Range Forecasts (GPCs) and Regional Climate Centres (RCCs)/RCC Networks;

2. A concept note on National Climate Services (NCSs), including proposals for a range of possible structures and coordination mechanisms and clear definitions of climate services, from the perspectives of national programmes, and services to users, ensuring due flexibility around the proposed roles and responsibilities of NCSs and NCCs according to national capabilities and priorities;

3. An outline for a climate information and prediction services toolbox;

4. Review of the past experiences with the CLIPS Focal Point network, and development of a new Climate Services Information System (CSIS) Focal Point network along with their Terms of Reference;

5. A draft action plan for the transition of CLIPS into the upcoming GFCS; and

6. Task team lead to inform the OPACE co-chairs that the task is finished and that the team can be dissolved.

Members:

1. Simon Mason, USA (Lead)
2. David Walland, Australia
3. Buruhani Nyenzi, Tanzania
4. Christopher Hewitt, UK
5. Atul Kumar Sahai, India
6. Sai-ming Lee, Hong Kong, China
7. Barbara Tapia, Chile
CCL-XV OPACE-3 EXPERT TEAM ON REGIONAL CLIMATE CENTRES

Terms of Reference:

Develop and provide to the CCI Management Group for further consideration, technical guidance as well as the oversight approaches for the establishment and operation of Regional Climate Centres (RCCs) and RCC Networks, and to closely liaise with the concerned experts of CBS, regional associations and RCCs/RCC Networks on this matter, with the following specific activities:

1. Steer the implementation, designation and effective operation of RCCs, including to keep RCCs up to date on evolving or new research or operational developments; to promote inclusion of highly recommended functions in the RCCs and RCC-networks; to identify and promote training in development and delivery of RCC products and services; and to monitor performance of RCCs and propose improvements as required;

2. Establish global standards for mandatory RCC products and services and their delivery, as well as verification of forecasts and reporting of results;

3. Promote the use of GPC and RCC forecast products at regional and national levels and development of consensus-based forecasts, especially through mechanisms such as RCOFs;

4. Liaise with other relevant CCI OPACEs, regional associations, WCRP/CLIVAR regional panels, CBS/DPFS, and CAS and other relevant entities as required;

5. Develop project concepts for resource mobilization, and guide project implementation in support of RCC implementation in vulnerable regions;

6. Submit reports in accordance with timetables established by the OPACE 3 co-chairs.

Members:

1. Michael Coughlan, Australia (Lead)
2. Stefan Roesner, Germany (Co-Lead)
3. Wassila Thiaw, USA
4. Ryuji Yamada, Japan
5. Epiphane Ahlonsou, Benin

Note: Considering the amount of work to be done by this team, two additional members are proposed to be co-opted in due course. Further, it is also proposed that this team be converted into a joint CCI/CBS Expert Team, by inviting CBS to nominate two experts representing CBS.
ANNEX 11

CCL-XV OPACE-3 TASK TEAM ON GLOBAL SEASONAL CLIMATE UPDATE

Terms of Reference:

1. Develop, including through a scoping workshop, a mechanism to generate regular
global consensus statements on the seasonal climate, termed Global Seasonal
Climate Update (GSCU), through expert assessments of global climate monitoring
products of the current season and the outlooks for the ensuing season in terms of
the broad patterns of precipitation and temperature, along with the indication of the
situation and expected evolution of the major general circulation features of both
atmosphere and ocean;

2. Develop practical approaches to facilitate enhanced use of GPC and related Lead
Centres’ long-range forecast products by RCCs and other regional entities, RCOFs,
and NMHSs, including through the GSCU concept;

3. Develop an outline for a consensus statement with a comprehensive assessment of
current and coming seasonal global climate anomalies, including the uncertainty
aspects, to assist in risk management, adaptation policies and decision making by
global partners;

4. Develop an implementation plan to engage potential contributors to develop the
GSCU on a trial basis in near-real-time and for limited circulation and peer review;

5. Liaise with the CCI-XV OPACE-2 expert/task teams on aspects of climate monitoring
and assessment;

6. Identify lead coordinators for operational production of the GSCU;

7. Report to OPACE-3 co-chairs on the progress; and

8. Task team lead to inform the OPACE co-chairs that the task is finished and that the
team can be dissolved.

Members:

1. Won-Tae Yun, Korea (Lead)
2. Richard Graham, UK (Co-Lead)
3. Alex Cannon, Canada
4. Vladimir Kryjov, Russian Federation
5. Christopher Oludhe, Kenya
6. Janita Pahalad, Australia
7. Ahira Sanchez-Lugo, USA
ANNEX 12

CCI-XV OPACE-3 DELIVERABLES

1. Definition of the functions of National Climate Centres (NCCs) (this should be done in close consultation with CBS, for their integration into the GDPFS, specifically taking into account existing and emerging GPC and RCC products as well as the further RCOF evolution);

2. A concept paper on National Climate Services (NCSs) at the national level and how they would contribute to the GFCS;

3. An action plan to facilitate the transition of CLIPS into the GFCS, and to conclude CLIPS as a project by 2015 at the latest;

4. A toolbox for generating climate information and prediction products, including methods for tailoring and downscaling;

5. A conceptual framework to identify methods and communications strategies NCSs should use to provide sector-specific climate information, products and services (this should be done through a joint CCl-CAgM-CHy mechanism, in consideration of eventual services for the agriculture/food security and water resources sectors as a first priority);

6. Technical guidance including reference documents standardizing the mandatory RCC products and services in terms of methods, format, content, quality, dissemination, regular assessments, etc.;

7. Training modules for RCC core product development in order to assist potential RCC aspirants in developing countries and to promote a degree of consistency in mandatory RCC products;

8. Assessments of applications for RCC designation and evaluations of performance with respect to defined criteria;

9. Terminology for climate predictions, to clarify uses of terms such as LRF, SIP, seasonal forecasts, seasonal predictions, climate outlooks, etc. (to be developed in consultation with CBS);

10. Pilot project(s) to introduce RCOFs into new, vulnerable regions (e.g. Polar Climate Outlook Forum (PCOF), as an IPY legacy project);

11. Guide for users to help them access, interpret and understand climate prediction products and associated uncertainties;

12. Guidance on development of consensus-based climate outlook products (e.g. the El Niño and La Niña Updates, the Global Seasonal Climate Update, etc.);

CCL-XV OPACE-4 Expert Team on Climate Risk and Sector-specific Climate Indices

Terms of Reference

1. Develop methods and tools including standardized software for, and to generate, sector-specific climate indices, including their time series based on historical data, and methodologies to define simple and complex climate risks;

2. Promote the use of sector-specific climate indices to bring out variability and trends in climate of particular interest to socio-economic sectors (e.g., droughts), with global consistency and to help characterize the susceptibility of various sectors to climate;

3. Develop the training materials needed to raise capacity and promote uniform approaches around the world in applying these techniques;

4. Work with sector-based agencies and experts, including those of relevant WMO Technical Commissions, particularly CHy and CAgM, to facilitate the use of climate information in users’ decision-support systems for climate risk management and adaptation strategies;

5. Submit reports in accordance with timetables established by the OPACE 4 co-chairs.

Members

1. Lisa Alexander (Australia) (Team Lead)
2. Xuebin Zhang (Canada) (OPACE II cross-over)
3. Elena Akentyeva (Russian Federation)
4. Amelia Diaz (Peru)
5. Alexis Nimubona (Burundi)
6. Toshiyuki Nakaegawa (Japan)
7. Nominee from ILRI (TBD)
8. G. Srinivasan (India)
CCL-XV OPACE-4 Task Team on User Participation in Climate Outlook Forums

Terms of reference:

1. Review and assess the approaches in the existing and ongoing user outlook forums (e.g., MALOF, HYDROF);

2. Develop guidance and promotional material to enhance user participation in Regional Climate Outlook Forums (RCOFs) and in post-COF user interaction, particularly through implementation of user-driven outlook forums in conjunction with RCOFs;

3. Develop guidance for RCOFs to more efficiently communicate climate outlooks to the users, along with uncertainty aspects;

4. In collaboration with the concerned sectors, develop proposals to establish sector-driven user outlook forums with clear linkages to RCOFs to take climate outlooks into account;

5. Work with CHy and CAgM to develop the concepts of user outlook forums for water resources and agriculture/food security; and

6. Task team lead to inform the OPACE co-chairs that the task is finished (within a period of 12 months from the date of formation of the Task Team) and that the team can be dissolved.

Members

1. Brad Lyon (USA) (Team Lead)
2. Ertan Turgu (Turkey)
3. Andrew Challinor (UK)
4. Joaquin Da Silva (WHO-Africa)
5. Patrick Luganda (Uganda)
6. Patricia Ramirez (Costa Rica)
7. Mohammed Kadi (ACMAD, Niger)
8. Maria Skansi (Argentina)
Proposed Joint (CCI CAgM CHy) Working Group on Climate, Food and Water

Proposed Terms of Reference for consideration by the three Commissions and the joint WG

1. Review and assess the potential linkages that need to be promoted between CCI, CHy and CAgM keeping in view the activities of the former WCP-Water and the emerging needs of the Global Framework for Climate Services;

2. Outline a joint CCI-CHy-CAgM mechanism to coordinate climate, food and water interactions, along with the terms of reference for such a mechanism;

3. Make proposals for joint activities and projects of common interest to CCI, CHy and CAgM;

4. Inform the relevant Management Groups on completion of the tasks (within a period of 9 months from the date of formation of the Joint Working Group).

Members (to be nominated by the three Commissions):

1. Representative of CCI
2. Representative of CCI
3. Representative of CHy
4. Representative of CHy
5. Representative of CAgM
6. Representative of CAgM

Invited Experts as required
CCL-XV OPACE-4 Task Team on User Interface

Terms of reference:

1. Develop a guideline for users on integrating climate predictions and information into climate risk management, and adaptation strategies and planning, to include a user-friendly terminology;

2. Collect and assess existing case studies relevant to quantifying the social and economic benefits of using climate information, products and services;

3. Collect and develop information on the susceptibility of various sectors to climate variations and change and on the use of climate information in climate risk management and adaptation by specific sectors, and publish these in the form of an online catalog;

4. In collaboration with CBS-CCI-CHy ET on Meteorological, Hydrological and Climate Services for Improved Humanitarian Planning and Response, develop an implementation plan to facilitate the provision of meteorological, Hydrological and Climate Services to the international humanitarian agencies from National Meteorological and Hydrological Services (NMHSs), RSMCs, Global and Regional Climate Centres (RCCs);

5. Inform the CCI Management Group on completion of the tasks (within a period of three years from the date of formation of the Task Team) and that the team can be dissolved.

Members:

1. Roger Stone (Australia) (Team Lead)
2. Shuhei Maeda (Japan)
3. Tamara Houston (USA)
4. Abdullah Ceylan (Turkey)
5. Jean Marc Moisselin (France)
6. Samwel Marigi (Kenya)

NB: the work related to ToR 4 above is undertaken by Dr Rodney Martinez
ANNEX 17

CCI-XV OPACE- 4, Revised Deliverables

For ET-CRSCI:

- A collection and analysis of existing climate indices with particular specific sectoral (Agriculture, water and DRR) applications at national and regional scales
- Technical publication on climate indices for sectoral application in risk assessment and adaptation
- Methods and tools, standardized software (based on the above-noted publication) and associated training materials required to produce sector-specific climate indices for systematic assessment of the impact of climate variability and change and to facilitate climate risk management and adaptation (to be done in collaboration with WMO Technical Commissions, particularly CCI OPACE II and with relevant agencies and organizations if required)
- Pilot training workshop (one region) on development of the indices
- Workshop Report/Publication

For the Task Team on user participation in Climate Outlook Forums:

- Guidance and promotional material to enhance user participation in Regional Climate Outlook Forums (RCOFs) and in post-COF user interaction;
- Review and assessment of the approaches in the existing and ongoing user outlook forums (e.g., MALOF, HYDROF)
- Guidance and promotional materials, for the use of sectoral agencies, on the establishment and operation of sector-focused, sector-driven outlook forums in conjunction with Climate Outlook Forums (COFs), particularly the water resources management and agriculture/food security sectors (to be done in collaboration with relevant agencies, organizations and WMO Technical Commissions, particularly CHy and CAgM)
- Specific proposals to establish a number of sector-driven user outlook forums with clear linkages to RCOFs, to take climate outlooks into account
- Guidance for RCOFs to more efficiently communicate climate outlooks to the users, along with uncertainty aspects

For the Joint (CCI CAgM CHy) Working Group on Climate, Food and Water

NB: these will be developed by the joint WG, once established.

For the Task Team on User Interface:

- A guideline for users on integrating climate predictions and information into climate risk management, and adaptation strategies and planning, to include a user-friendly terminology
- A collection of existing case studies relevant to quantifying the social and economic benefits of using climate information, products and services
- Information on the susceptibility of various sectors to climate variations and change and the use of climate information in climate risk management and adaptation by specific sectors, in the form of an online catalog
- In collaboration with CBS ET on Meteorological, Hydrological and Climate Services for Improved Humanitarian Planning and Response, an implementation plan to facilitate the provision of meteorological, Hydrological and Climate Services to the international humanitarian agencies from National Meteorological and Hydrological
Services (NMHSs), RSMCs, Global and Regional Climate Centres (RCCs). – include specific reference to climate support to include data requirements
CCL-XV Task Team on Climatological Normals

Terms of Reference

*Dr William Wright to complete*

Members

*Dr William Wright to complete*
ANNEX 19

CCI-XV Expert Team on Strategy for Capacity Building for Climate Services

Terms of Reference:

1. To consider the guidance at the Annex to Resolution 7 (CCI-XV) and further develop and refine the various elements of the Capacity Building Strategy for Climate Services;

2. To review the existing WMO mechanisms/procedures for capacity building and propose revisions/guidelines to address the relevant needs of climate services;

3. To develop an implementation plan for Capacity Building Strategy keeping in view the ongoing developments towards the implementation of the Global Framework for Climate Services;

4. To coordinate and liaise on these matters with the relevant WMO Programmes and advisory bodies, particularly the WMO Education and Training Programme (ETRP) and the EC WG on Capacity Building and the EC Panel of Experts on Education and Training;

5. To report to the CCI Management Group.

Members

1. Serhat Sensoy (Leader)
2. Manola Brunet
3. Albert Martis
4. Rodney Martinez
5. One expert from OPACE 1 designated by William Wright)
6. One expert from RCC (designated by Dr Kiyoru Takano)
7. Others experts as needed
8. One RTC expert to be nominated by ETR
CCL-XV Expert Group on Quality Management for Climatology

Terms of Reference

1. Advise MG and CCl on priorities and approaches w.r.t to the development and implementation of a strategy on QM for climatology with consideration given to experience gained in other Commissions on WMO-QMF;

2. Report on best practices in QM in other disciplines and foster their adaptation to NMHSs and RCCs considering the wide spectrum of their level of competency and sophistication in climate activities;

3. Develop an integrated concept for implementation of QM in the areas of climatology;

4. Propose CCl-reference documents and practices as candidate subjects for developing new common ISO/WMO technical standards;

5. Liaise with the ICTT and other commissions; and

6. Report regularly to CCl president and CCl-MG.

Members

1. Serhat Sensoy (Leader)
2. Jean Pierre Ceron (Co-Lead)
3. Albert Martis
4. Manola Brunet
5. Fatima Driouech
6. Song Lianchun
7. External expert (to be nominated)

MG also decided that the Lead of the group will serve as the CCl representative to the ICTT on Quality Management Framework.
2008-2011 Strategic Plan (Ref.: WMO No. 1028)

Top Level Objectives:
- To produce more accurate, timely and reliable forecasts and warnings of weather, climate, water and related environmental elements;
- To improve the delivery of weather, climate, water and related environmental information and services to the public, governments and other users;
- To provide scientific and technical expertise and advice in support of policy and decision-making and implementation of the agreed international development goals and multilateral agreements.

Strategic Thrusts:
- Science and technology development and implementation to monitor and observe the environment, forecast and warn of significant weather, water and climate conditions, and understand the Earth system;
- Service delivery to ensure that society can derive the full benefit of the weather, water and climate information and services that WMO Members produce;
- Partnership to work with international agencies, other organizations, academia, the media and the private sector to improve the range and quality of critical environmental information and services;
- Capacity-building to sustain and improve the ability of all Members, with a particular focus on developing and least developed countries, to provide essential environmental information and services;
- Efficient management and good governance to ensure affordable environmental information and services.

Expected results (corresponding to the Strategic Thrusts):

ST 1
1. Enhanced capabilities of Members to produce better weather forecasts and warnings
2. Enhanced capabilities of Members to provide better climate predictions and assessments
3. Enhanced capabilities of Members to provide better hydrological forecasts and assessments
4. Integration of WMO observing systems
5. Development and implementation of the new WMO Information System

ST 2
6. Enhanced capabilities of Members in multihazard early warning and disaster prevention and preparedness
7. Enhanced capabilities of Members to provide and use weather, climate, water and environmental applications and services

ST 3
8. Broader use of weather-, climate- and water-related outputs for decision-making and implementation by Members and partner organizations

ST 4
9. Enhanced capabilities of National Meteorological and Hydrological Services in developing countries, particularly least developed countries, to fulfill their mandates

ST 5
10. Effective and efficient functioning of constituent bodies
11. Effective and efficient management performance and oversight of the Organization.
CCI-XV priorities relevant to implementation of GFCS

CCI-XV identified a number of areas of work that would specifically contribute to the implementation of the GFCS:

- Efforts relevant to the development of the Climate Services Information System (i.e. implementation of RCCs, RCOFs);
- Development of climate information for climate adaptation and risk management in key socioeconomic sectors (particularly agriculture/food security and water resources), and development of user-targeted climate products;
- Consolidation of the CLIPs project achievements as the CLIPS legacy to GFCS;
- Development of modern and inter-operable climate data management systems (CDMSs) and Data Rescue (DARE) projects;
- Development of climate system monitoring applications and related product generation; improved coordination mechanisms in data exchange and provision of guidelines to Members;
- Development of high quality datasets and the use of the WMO Information System (WIS) and related WMO and international standards for climate data and products discovery and exchange; development and implementation of the WMO Integrated Global Observing System (WIGOS);
- Enhanced interaction with GCOS and WCRP on observations and research; operationalization of research advances in climate prediction;
- The capacity building and training efforts that would be required for all these initiatives (see also Doc 7).
Resolution 1 (CCI-XV)

VISION AND MISSION OF THE COMMISSION FOR CLIMATOLOGY

THE COMMISSION FOR CLIMATOLOGY,

Noting:
(1) The Abridged Final Report with Resolutions and Recommendations of the Fourteenth Session of the Commission for Climatology (WMO-No. 996),
(2) The Abridged Final Report with Resolutions of the Fifteenth World Meteorological Congress (WMO-No. 1026), Resolution 13 (Cg-XV) – World Climate Applications and Services Programme, including the CLIPS project,
(3) The Abridged Final Report with Resolutions of the Sixty-first Session of the Executive Council (WMO-No. 1042),
(4) The final report of the 2009 Meeting of Presidents of Technical Commissions (Geneva, February 2009),
(5) The WMO Strategic Plan (WMO-No. 1028),
(6) The outcomes of the World Climate Conference-3 including its declaration on the establishment of a Global Framework for Climate Services (Geneva, 31 August–4 September 2009),
(7) The report of the CCI Management Group (March 2009),

Recognizing:
(1) The rapidly increasing demand for effective climate services and the need for the Commission to position itself to take a lead role in the relevant activities,
(2) The growing needs for improved climate assessment and prediction for risk management, adaptation to climate change and applications in socio-economic growth and sustainable development,
(3) The long-standing recognition of WMO as the United Nations system’s authoritative voice on weather, climate and water,

Considering:
(1) That the Commission brings together the normative, standard setting and knowledge sharing capacities of a network of climate scientists and other specialists and climate service providers at the global level,
(2) That the leadership role of WMO and the United Nations Educational, Scientific and Cultural Organization on climate knowledge base under the United Nations “Delivering as One” requires additional input from the Commission within the United Nations system,

Decides:
(1) To adopt the following as the vision of the Commission:
“To provide world leadership in expertise and international cooperation in climatology”;
(2) To adopt the following as the mission statement of the Commission:
“To stimulate, lead, implement, assess and coordinate international technical activities within WMO under the World Climate Programme and the Global Framework for Climate Services to obtain and apply climate information and knowledge in support of sustainable socio-economic development and environmental protection.”
Recommendation 1 (CCI-XV)

TERMS OF REFERENCE OF THE COMMISSION FOR CLIMATOLOGY

THE COMMISSION FOR CLIMATOLOGY

Noting:
(1) The Abridged Final Report with Resolutions of the Fourteenth Session of the Commission for Climatology (WMO-No. 996),
(2) The Abridged Final Report with Resolutions of the Fifteenth World Meteorological Congress (WMO-No. 1026), Resolution 13 (Cg-XV) – World Climate Applications and Services Programme, including the CLIPS project,
(3) The Abridged Final Report with Resolutions of the Sixty-first Session of the Executive Council (WMO-No. 1042),
(4) The final report of the 2009 Meeting of Presidents of Technical Commissions (Geneva, February 2009),
(5) The WMO Strategic Plan (WMO-No. 1028),
(6) The outcomes of the WMO Conference on Living with Climate Variability and Change: Understanding the Uncertainties and Managing the Risks (Espoo, Finland, 17–21 July 2006),
(7) The findings of the WMO Conference on Secure and Sustainable Living: Social and Economic Benefits of Weather, Climate and Water Services (Madrid, Spain, 19– 22 March 2007) (WMO-No. 1034),
(8) The outcomes of the World Climate Conference-3 including its declaration on the establishment of a Global Framework for Climate Services (Geneva, 31 August–4 September 2009),

Recognizing:
(1) The growing needs for improved climate products and services including climate monitoring, climate assessment and prediction for risk management, adaptation to climate change and applications in socio-economic growth and sustainable development,
(2) The long-standing recognition of WMO as the United Nations system’s authoritative voice on weather, climate and water,
(3) The unique role of the Commission in guiding WMO climate activities, especially the World Climate Programme,
(4) The rapidly increasing demand for effective climate services and the need for the Commission to position itself to take a lead role in the relevant activities,

Considering:
(1) That the terms of reference of all technical commissions of WMO should be linked to and in conformity with the WMO results-based management approach and overall Organization objectives and strategic thrusts,
(2) That the new preamble proposed at the 2010 Meeting of Presidents of Technical Commissions to be incorporated in the WMO General Regulations,

Recommends that the existing terms of reference for CCI should be amended as given in the annex to this recommendation;

Urges its president to work with the Executive Council and Congress to ensure that the CCI terms of reference are appropriately aligned with other technical commission terms of reference and to demonstrate their relevance to the overall WMO strategies through linkage with the approved Strategic Plan;
Authorizes the CCI Management Group to align the workplans of the four Open Panels of CCI Experts with the expected results given within the draft WMO Strategic Plan;

Requests the Secretary-General to bring this recommendation to the attention of the Executive Council at its sixty-second session for its consideration and approval.

Annex to Recommendation 1 (CCI-XV)

TERMS OF REFERENCE OF THE COMMISSION FOR CLIMATOLOGY

The terms of reference of the Commission for Climatology shall be:

(a) To advise and guide WMO climate activities relevant to the implementation of the Global Framework for Climate Services;

(b) To assist Members in the gathering, management and sharing of climate data;

(c) To promote the analysis, monitoring, assessment and reporting of the climate system;

(d) To promote the development of climate products and services and, in conjunction with the Commission for Basic Systems, their delivery mechanisms;

(e) To promote the development of climate products, services and information to inform adaptation and climate risk management, in collaboration with relevant institutions and demonstrate the social and environmental benefits of such services;

(f) To assist Members, especially those from developing and least developed countries, to build their climate-related capacity to meet the needs of their stakeholders;

(g) To play an active role in WMO interactions with other United Nations and international agencies on climate-related matters.
OVERVIEW OF DECISIONS OF Congress, EC AND TCs ON STRATEGIC PLANNING

1. The Fifteenth World Meteorological Congress (Cg-XV) approved a new framework for the Results-based Management (RBM) of the Organization. The approval of RBM approach included the implementation from 2008 of the Strategic Plan that defined three Top Level Objectives, five Strategic Thrusts and eleven Organization-wide Expected Results. The Operating Plan and the Results-based Budget for the period 2008-2011 direct the programmatic implementation activities of the Organization.

2. Cg-XV, through Resolution 27 (Cg-XV) on WMO Strategic Plan, requested the technical commissions to adhere to the direction and priorities set forth in the Strategic Plan and to organize their programme structures and activities so as to pursue the top-level objectives and to achieve the expected results.

3. The Sixtieth session of the Executive Council (EC-LX, June 2008) requested that within the WMO strategic planning process, each technical commission should prepare a note on lessons learned, experiences gained and prospective challenges in the course of the implementation of the current WMO Strategic Plan, which would be used in the preparation of the next Plan. It agreed that technical commissions should develop Operating Plans for 2012–2015 based on the experience gained through the development of the Operating Plan for the fifteenth financial period.

4. The Sixty first session of the Executive Council (EC-LXI, June 2009) noted that the presidents of technical commissions (PTC) had held extensive discussions on RBM and actions towards the improvement of the efficiency and effectiveness of the commissions and aligning activities to the WMO Strategic Plan during their meeting held in Geneva, Switzerland from 2 to 4 February 2009. It noted that the PTC recognizes the cross-cutting nature and the principal and important role of the WMO Programmes. It noted with satisfaction the suggestions given by PTC for consideration by the Executive Council Working Group on Strategic and Operational Planning (EC WG/SOP) indicating the need for further exploring the outlined concept, which suggested alternatives for conducting technical commission meetings.

5. The Presidents of Technical Commission at their meeting in January 2010 in Geneva made the following recommendations involving the PTCs and Secretariat:

- **PTC Actions**
  a. The SP document should be short and concise;
  b. The SP should provide the direction and focus for the activities of the Members and the Technical Commissions (TCs);
  c. WMO should advocate for one stable WMO SP and relevant groups should establish operating plans for implementation;
  d. The presidents of technical commissions and regional associations will develop their operating plans based on the draft WMO SP for 2012-2015; and
  e. The operating plans of TCs and RAs may include activities that do not need financial support from the Secretariat but contribute to the achievement of expected results.

- **Secretariat Actions**
a. The relationships and specific roles of TCs and RAs should be made clearer in the SP;
b. The contributions from partners to the achievement of ERs should be highlighted in the OPs; and
c. The Secretariat should provide presidents of TCs and RAs with a template to guide the development of their specific operating plans.
d. The CIMO Management Group, at the meeting held February 2010 in Geneva, was informed of the progress in the development of WMO Strategic Plan and Operating Plan for 2012-2015. The Management Group was provided with a template to guide the preparation of Operating Plans.

WMO STRATEGIC AND OPERATING PLANS (2012-2015)

WMO Strategic Plan 2012-2015

5. EC-LXI considered and agreed to endorse the following recommendations put forth by its Working Group concerning the WMO Strategic Plan for the period 2012-2015:

(a) To develop a Strategic Plan and Operating Plan that is concise and that can be easily understood by different audiences including decision-makers;

(b) To base the strategic direction of the Organization on Global Societal Needs (GSN) namely improved protection of life, and property (from impacts of hazardous weather, climate, water and other environmental events) and increased safety of transport on land, at sea and in the air); poverty alleviation, sustained livelihoods and economic growth (in connection with the Millennium Development Goals) including improved health and social well-being of citizens (related to weather, climate, water and environmental events and influence); and sustainable use of natural resources and improved environmental quality. In connection with these GSN, the strengths of WMO and its unique contribution should be portrayed with a view to distinguish WMO clearly from other international organizations that also deal with such, or similar, GSNs in their strategic planning and programme delivery. A brief description of WMO’s major achievements illustrated by informative statistics, tables and graphics, should be used to underpin the unique competencies and contribution of the Organization;

(c) To describe what stakeholders outside WMO expect from the Organization in the medium and longer term, as well as the strategic priority areas the Organization defines for its Programmes with a view to optimize the effectiveness of its performance in responding to the GSN with limited resources;

(d) To use the “results chain”, i.e. Strategic Thrusts (ST) -> Expected Results (ER) -> Key Outcomes (KO) -> Deliverables -> Activities, as the structure of the strategic planning process. STs and ERs (and corresponding performance metrics) would be the backbone structure of the SP, and the ERs further detailed by the corresponding programme-based KOs (with performance metrics) and Deliverables should form the substance of the OP;

(e) The framework of the next SP should consist of the five Strategic Thrusts (ST) and eight organization-wide Expected Results (ER) as indicated in the report of the EC-LXI;
(f) To develop a focused set of limited Key Performance Indicators highlighting the added value of the services rendered by the Organization to its Members. The Key Performance Indicators should remain stable and be measurable over the longer term enabling the monitoring and performance evaluation process;

(h) To involve the regional associations and the technical commissions in the development of Expected Results and Key Performance Indicators, Key Outcomes and a manageable number of related performance measurement parameters and to ensure that those are based on Members’ needs and adequately reflect the programme areas of the Organization. Such involvement would also facilitate the establishment of baselines and realistic target setting.

WMO Operating Plan 2012–2015

6. As concerns the WMO Operating Plan 2012–2015, the Council considered and agreed to endorse the following recommendations put forth by its Working Group:

(a) In view of the Cg and EC requests to develop the Operating Plan on an organization-wide basis, to invite the involvement of technical commissions and regional associations from the outset of the strategic planning process;

(b) To develop the KOs in an active coordination process involving EC, RAs, TCs and the Secretariat in a form that relates to the WMO Programmes and provides the basis for the necessary programme activities, the budget planning and the resulting budget proposal;

(c) In the course of that process to identify and benefit from cross-programme synergies between the technical commissions and regional associations so as to obtain effective and optimized programme implementation plans;

(d) To identify and describe in the WMO Operating Plan the roles and responsibilities of constituent bodies.

PROGRESS IN THE DEVELOPMENT OF WMO STRATEGIC AND OPERATING PLANS (2012-2015)

WMO Strategic Plan 2012-2015

7. The structure of WMO Strategic Plan (SP) 2012-2015 has been based on the recommendations of PTC and EC WG/SOP endorsed by the EC-LXI as listed above.

8. The Expected Results (ERs), Key Outcomes (KOs) and the associated Key Performance Indicators (KPI) for each result were developed through consultations with all Departments at the Secretariat with input from Regional Associations(RAs) and Technical Commissions(TCs).

9. The draft SP was shared with RAs, TCs and management groups to establish the adequacy of representation of their respective areas of interest and for them to make proposals for improvement.

10. Every effort is made to improve the description of KOs and KPIs to facilitate assessment of performance in the achievement of results.

11. The inputs received were integrated into the draft document.
12. The meeting is requested to provide any inputs and guidance to improve the SP.

WMO Operating Plan 2012-2015

13. The structure of the WMO Operating Plan (OP) 2012-2015 has been based on the recommendations of PTC and EC WG/SOP endorsed by the EC LXI as listed above.

14. The KOs, KPI, KPT, activities and deliverables form the key elements of the OP. Every effort is made to ensure that the KPT and deliverables are adequately defined to facilitate monitoring and evaluation.

15. The draft OP was shared with RAs, TCs and management groups to establish the adequacy of representation of their respective areas of interest and for them to make proposals for improvement.

16. The inputs received were integrated into the draft document.

17. The meeting is requested to provide any inputs and guidance to improve the OP.
Current status of programme evaluation and monitoring in WMO

- At EC-LXI (2009), the Secretary-General submitted a Mid-term Monitoring and Performance Evaluation Report to the Council. This report covered progress made by WMO in the year 2008 and the first quarter of 2009 towards achieving the Expected Results on the basis of those deliverables in the Secretariat Operating Plan 2008-2012, which were planned for the first biennium 2008-2009. The report referred to the contributions of the WMO constituent bodies where possible. The information was predominantly qualitative, pending development of data collection mechanisms for generating baselines, targets and performance data in the context of the WMO Monitoring and Evaluation System.

- An evaluation of performance will also be conducted at the end of the financial period with subsequent reporting to Sixteenth Congress. The Council (EC-LXI) noted that the Expected Results are to be achieved over the longer term and that, therefore, assessing their achievement will be the focus of the WMO Monitoring and Performance Evaluation Report for submission to Cg-XVI.

- The WMO Monitoring and Evaluation System (2010-2011) is being developed in a pilot project at present. To date, a detailed monitoring and evaluation framework has been prepared for Expected Result 5 (EC-LXI/INF. 7.2(e)). A similar framework has been prepared for Expected Result 8 and will be presented at EC-LX-II (2010). CLPA participated in development of the monitoring and evaluation of ER8, and DMA contributed to the monitoring and evaluation of ER 5.

In this pilot exercise (for the required report on the first quarter of 2010), the information used consisted of:

- The Expected Result in question
- The deliverables for this ER (with accompanying key performance targets and activities), as published in the WMO Secretariat Operating Plan (2008-2011), WMO/TD NO. 1417 (entered in column (1) of the example table)
- Activities with a budget component, as identified in the Programme and Budget tables relevant to the branch and financial period, or in special funds (e.g. trust funds or from projects with extrabudgetary funding) (Column 3)
- Other activities (e.g. those with no budget), identified by the relevant persons in the Secretariat, regional association or technical commission (Column 3)
- An estimate of the contribution of each deliverable to the expected result (e.g. if there are 5 deliverables supporting the Expected Result, these may be of equal 'weight', and each support achievement of the ER to the same extent (5x 20%), or they may have differing levels of contribution to the ER (e.g. one at 20%, three at 15% each, one at 25% and one at 10%) – these must total 100% (Column 2)
- An estimation of the contribution of each activity to the relevant deliverable as a percentage (these must total 100%) (Column 4)
- An estimation of the extent to which this activity has been completed during this period (Column 5)
- Target baseline, set performance targets and percentage of achievement of targets (Columns 8, 9 and 10). (NB: the information in Columns 6, 7 and 11 are based on formulas in the table.

Please note that to understand baselines may require fact gathering, perhaps in the form of surveys. In 2009, for example, the number of WMO designated RCCs was 2
(an easy one), but the number of policy-makers changing or developing public policy based on climate information would not likely be known. It is important to identify KPIs that are stable and measurable over time. An example table is given below:

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