

**PROGRESS/ACTIVITY REPORTS PRESENTED AT CCI-XIV  
(unedited)**

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## PROGRESS/ACTIVITY REPORTS PRESENTED AT CCI-XIV

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**AGENDA ITEM 2.2 - PROVISIONAL ANNOTATED AGENDA****CCI-XIV/Rep. 2.2****1. OPENING OF THE SESSION**

The fourteenth session of the Commission for Climatology will open in Beijing on 3 November 2005. Information on material arrangements for the session will be provided later.

**2. ORGANIZATION OF THE SESSION****2.1 Consideration of the report on credentials**

Regulations 20 to 23 of the General Regulations (2003 edition) relate to this item. The list of persons attending the session will be made available, in accordance with Regulation 22, as soon as possible after the opening ceremony. This list will be based on the credentials received by the Secretary-General before the session and those handed to the Secretariat representative at the session.

In order to enable the Secretariat to send the documentation relating to the session in advance, directly to the representatives of Members who will attend, it is desirable that the Secretariat of the Organization should be notified, as long before the opening of the session as possible, of the names of the persons who will constitute the delegations. This preliminary notification may be dispensed with if the credentials are sent to the Secretary-General sufficiently in advance of the session.

**2.2 Adoption of the agenda**

Regulation 190 of the General Regulations indicates the items which should normally be included in the provisional agenda. The version submitted to the session for approval will include the first provisional agenda (distributed herewith) and any other items submitted in accordance with sub-paragraph (7) of Regulation 190 by the President of the Organization, the Executive Council, other Commissions, Associations, the United Nations and Members.

In accordance with Regulation 189, additional items for the agenda may be forwarded to the Secretariat before the session, but preferably not later than one month in advance. Explanatory memoranda should accompany such proposals; documents on additional items proposed by Members should also be provided by the Members concerned.

By virtue of Regulation 192, in the course of the session, the agenda may be amended at any time.

**2.3 Establishment of committees**

Regulations 22 and 24 indicate that each technical commission may establish, for the duration of its session, a Credentials Committee, a Nomination Committee, a Drafting Committee, a Coordination Committee and such other committees, as it deems necessary. Regulations 22, 23 and 26 to 31 contain indications relating to the functions of such committees.

The Commission will decide when dealing with agenda item 2.1 whether or not a Credentials Committee should be established.

In order to facilitate the election of officers, it is normal practice to set up a Nomination Committee.

Though the regulations provide for the establishment of a Drafting Committee for drawing up the text of the decisions to be taken by the session, experience acquired during past sessions of technical commissions shows that the most expedient method is for each committee or sub-committee to establish its own arrangements for drafting the report to plenary. Particular attention is called in this connection to Regulation 27, which stipulates that the decisions of the constituent bodies shall be adopted in their final form during the session.

To ensure proper coordination of the activities of the session, it is usual practice to set up a Coordination Committee, the composition of which is specified in Regulation 28.

Experience at other sessions of technical commissions has shown that it is useful to establish a committee for selecting experts to serve as members of the working groups established by the session or as rapporteurs. Such a committee may be composed of several delegates and a representative of the WMO Secretariat.

The technical work of the session will be carried out by working committees. The number and terms of reference of these committees should be decided at the session, taking into consideration the final agenda and the number of participants. However, in accordance with the criteria established by Eleventh Congress for budgeting sessions of constituent bodies, provisions were made for the thirteenth session of CCI to set up two working committees but with only one committee at a time having simultaneous interpretation.

#### **2.4 Other organizational matters**

Under this item, the Commission may wish to examine details relating to the organization of the session not dealt with under items 2.1 to 2.3 above, such as the working hours of the meetings. Attention is also invited to the decision made by the Executive Council at its fiftieth session that no minutes of plenary meetings of sessions of technical commissions should be prepared unless otherwise decided for special items.

### **3. REPORT OF THE PRESIDENT OF THE COMMISSION**

This report will refer to the activities of the Commission since its thirteenth session (Geneva, November 2001) as well as to the new developments taking place in the fields of responsibility of CCI. Under the same item, the president will report on the activities of the CCI Management Group and other appropriate items. The Commission normally has a general discussion of the presidential report during a plenary meeting and refers any points requiring detailed study, or subsequent action by the Commission, to the appropriate committees.

### **4. CLIMATE DATA AND DATA MANAGEMENT (OPAG 1)**

The session will be informed of the implementation of the World Climate Data and Monitoring Programme (WCDMP) and will consider progress and development through actions taken by Expert Teams in OPAG 1 of the Commission. The consideration of this agenda item will be organized through discussions of the seven sub-items below, including the report of the Chair of OPAG 1. The session will be invited to identify priorities for the next period of the Commission.

#### **4.1 Report of the Chair of the OPAG 1**

#### **4.2 Observing requirements and standards for climate**

- 4.3 **Climate data management, monitoring and processing, including CLICOM and new Climate Database Management Systems (CDMSs)**
- 4.4 **Data Rescue Activities (DARE)**
- 4.5 **Regional aspects of Data and Metadata Management including recommended new initiatives**
- 4.6 **Interactions with other WMO Technical Commissions and Programmes**
- 4.7 **Framework for WMO Climate Information System**

**5. CLIMATE SYSTEM MONITORING AND ANALYSES OF CLIMATE VARIABILITY AND CHANGE (OPAG 2)**

The consideration of this agenda item will be organized through discussions of the six sub-items below, including the report of the chair of OPAG 2. Furthermore, the session will review activities on climate system monitoring and analyses taken by OPAG 2 of the Commission and prioritize actions on implementation of climate monitoring during the intersessional period.

- 5.1 **Report of the Chair of the OPAG 2**
  - 5.2 **Climate Change Detection including regional aspects of analysis of climate variability, change and climate system monitoring**
  - 5.3 **Interactions with other WMO Technical Commissions and Programmes**
  - 5.4 **Climate Watch/Alert System**
  - 5.5 **Future strategy for publication of Global Climate System Reviews**
  - 5.6 **Recommended new initiatives for climate system monitoring and analysis of climate variability and change**
- 6. CLIMATE APPLICATIONS, INFORMATION AND PREDICTION SERVICES(OPAG 3)**

The session will be informed of the implementation of projects within the World Climate Applications and Services Programme (WCAC) including the Climate Information and Prediction Services project (CLIPS). This item includes eleven sub-items that cover the wide range of activities undertaken in OPAG 3. Under this item the session is also invited to identify priorities for the next period of the Commission. Sub-item 6.11 will specifically review actions taken toward organizing a Multidisciplinary Conference of Climate Applications as confirmed by the Fourteenth Congress and fifty-sixth session of the Executive Council.

- 6.1 **Report of the Chair of the OPAG 3**
- 6.2 **Climate and Human Health, including Heat-health Warning Systems**
- 6.3 **Urban Climatology including training**
- 6.4 **Climate and Renewable Energy**
- 6.5 **Implementation of CLIPS Project and network of CLIPS Focal Points**

- 6.6 User requirements for integrated, tailored data and products**
- 6.7 Infrastructure and developments in operational seasonal to interannual climate prediction including progress in and sustainability of RCOFs**
- 6.8 Integrating CLIPS with climate applications and services including capacity building**
- 6.9 Interactions with other WMO Commissions and Programmes**
- 6.10 Recommended new initiatives for applications, prediction and services**
- 6.11 The WMO Conference (2006): Multidisciplinary Conference on Decision making Processes in Climate Applications**
- 7. OVERALL COORDINATION OF CLIMATE ISSUES AND INTERAGENCY COLLABORATION**

CCI-XIV will be invited to consider the range of WMO's climate coordination activities and interactions currently underway with other UN agencies. It will also be informed on the status of implementation of the United Nations Conventions on Climate Change and Desertification. The session will also be informed of major discussions which took place in the EC Advisory Group on Climate and Environment, as well as the latest developments on the GCOS Implementation Plan and IPCC AR 4. This item includes two sub-items as follows:

- 7.1 WMO/CCI coordination role in climate matters including EC Advisory Group on Climate and Environment (EC-AGCE)**
- 7.2 Cooperation with other UN Agencies including update on UNFCCC activities, GCOS and IPCC**

## **8. EMERGING ISSUES FOR CCI**

Since CCI-XIII a number of new activities have taken place pertinent to climate prediction, adaptation to climate variability and continued efforts to reach consensus on El Niño/ La Niña definitions. The session is invited to consider these emerging issues through three sub-items and propose efficient mechanisms for future continued interaction of CCI. The sub-items include:

- 8.1 Mainstreaming seasonal climate prediction and services into public awareness**
- 8.2 Development of climate guidance for adaptation and mitigation**
- 8.3 International initiatives to explore possible global consensus on definitions of and indices for El Niño and La Niña**

## **9. PRIORITIES FOR THE FUTURE WORK OF THE COMMISSION**

The session will be informed of a range of priorities that need to be followed up by the Commission during the next intersessional period. The session will also be invited to consider the outcome of the Technical Conference 'Climate as a Resource' and propose future directions based on recommendations made at the Conference. The meeting will also consider new interactions with the WMO Space Programme, the GEOSS Implementation Plan and with the cross-cutting

Disaster Prevention and Mitigation Programme. The consideration of this agenda item will be organized through discussions of the twelve sub-items below.

- 9.1 **Follow-up to the establishment of Regional Climate Centres (RCCs)**
- 9.2 **WMO's contribution to climate and sustainable development**
- 9.3 **The GEOSS climate societal benefit area and its relationship to the World Climate Programme and CCI**
- 9.4 **The WMO Space Programme meeting the needs of the climate space-based component for CCI**
- 9.5 **Capacity building and training activities**
- 9.6 **Implementation of recommendations from the Technical Conference "Climate as a Resource"**
- 9.7 **International Polar Year (IPY) (2007-2008)**
- 9.8 **Status of the third edition of the WMO Guide to Climatological Practices**
- 9.9 **Enhancement of the role of women and developing countries in the work of the Commission**
- 9.10 **Improving CCI involvement in WCP-Water**
- 9.11 **Update on development of CCI related Guidelines and revised Technical Notes**
- 9.12 **Actions pertinent to the cross-cutting Natural Disaster Prevention and Mitigation Programme**
- 9.13 **Cooperation with the World Climate Research Programme (WCRP)**
10. **ELECTION OF OFFICERS**

The Commission should elect a president and a vice-president to hold office until the end of the next ordinary session of the Commission. Details regarding eligibility and procedures for elections are given in Regulations 11, 26, 79 to 82, 84, 86, 89 and 184 of the General Regulations, as well as the relevant provisions of Resolution 37 (Cg-XI).

#### **11. REVIEW OF CCI TERMS OF REFERENCES (ToRs) AND STRUCTURE**

The session will be invited to review the current Terms of References (ToRs) of the Commission, including its structure, and propose updates or changes in the combination of Expert Teams under each OPAG. The session will also consider dividing OPAG 3 (Climate Applications, Information and Prediction Services) into two new OPAGs on Climate Applications, and on Climate Information and Prediction Services (CLIPS). This agenda item will include two sub-items as follows:

- 11.1 **Review and amendment of the ToRs of the Commission, based on new issues and priorities**

**11.2 Review of existing and establishment of new CCI OPAGs, Expert Teams and special rapporteurs, including ToRs for each**

**12. SCIENTIFIC LECTURES**

A programme of scientific lectures is being planned for the session. Details of this programme will be announced later.

**13. NOMINATIONS OF OPAG CHAIRS, MANAGEMENT GROUP MEMBERS, EXPERT TEAM LEADERS, MEMBERS AND RAPPOREURS**

For the study of certain important questions falling within its terms of reference, the Commission will no doubt wish to establish Expert Teams and to appoint members or independent rapporteurs to act until its next session. Regulations 32, 33, 35 and 37 of the General Regulations contain the procedure for the establishment of the Expert Teams, the selection of their chairmen, and the appointment of rapporteurs. Experience from past sessions of various constituent bodies has shown that a convenient and practical method of drawing up the decisions concerning Expert Teams and rapporteurs is first to formulate, during the discussion of the relevant technical items, the appropriate resolutions containing the terms of reference and leaving the selection of experts to one of the last plenary meetings. As suggested under paragraph 2.3 of this explanatory memorandum, a special committee may be established to make proposals for a coordinated selection of the experts.

**14. REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE COMMISSION AND OF RELEVANT EXECUTIVE COUNCIL RESOLUTIONS**

In accordance with Regulation 190 of the General Regulations, the Commission will be called upon to review its resolutions and recommendations adopted before its thirteenth session and still in force and the relevant resolutions of the Executive Council, with a special regard to their state of implementation, with a view to deciding which of them should be kept in force and which should be considered out of date. To facilitate the consideration of this item, the Secretary-General will submit a document which will contain a detailed explanation of the procedure to be followed in carrying out this examination and make suggestions concerning the action to be taken on each resolution and recommendation under review.

**15. ANY OTHER MATTERS**

The session will discuss any other business which may arise during the session.

**16. DATE AND PLACE OF THE FIFTEENTH SESSION**

Regulations 186 and 187 of the General Regulations are relevant to this item. It would be advantageous if the delegates of Members attending the session could present an invitation from their governments for the fifteenth session of the Commission for Climatology to be held in their countries. The Permanent Representatives of Members are recommended to consult their governments on this point and are kindly requested to give appropriate instructions to their national delegates. The Commission may wish to record any such invitations or suggestions in the report of the session.

**17. CLOSURE OF THE SESSION**

The fourteenth session of the Commission for Climatology is scheduled to close on 10 November 2005.



## AGENDA ITEM 3 - REPORT OF THE PRESIDENT OF THE COMMISSION

### CCI-XIV/Rep. 3

#### 1. Introduction

**1.1** This report covers the period from the close of the thirteenth session of the Commission for Climatology on 1 December 2001 until 15 July 2005. An addendum will be issued to cover the period up to CCI-XIV, if subsequent developments make it necessary to do so.

**1.2** The thirteenth session of the Commission for Climatology was held in Geneva from 21 to 30 November 2001. It reviewed the various projects and programmes of the Commission and established priorities for the activities during the intersessional period. It considered the completion of Part 2 of the *Guide to Climatological Practices*, along with the continuing work on climate change detection, variability and monitoring, as its high priorities. It stressed the need to keep the CLIPS activities in the forefront of applications, and stated the importance of satellite data and products in the future work of the Commission. Since CCI-XIII the president of the Commission has issued 6 circular letters and kept the CCI members informed of activities and events of interest.

#### 2. New structure of the CCI

**2.1** The Commission concluded that the most effective, flexible and responsive means of carrying out well-defined CCI tasks would be a system of small teams and rapporteurs, complemented by suitable ways of informing and involving all CCI members in the process. It was agreed that the activities and teams should be grouped together under three Open Programme Area Groups (OPAGs), as described later. The activities should be handled by OPAGs, whose members would be regularly consulted and informed by the respective chairperson by e-mail and/or other forms of correspondence. This would achieve a broad ownership through the involvement of experts from among members. In fact, the flexibility of the new structure did allow for changes in the heads of OPAGs and expert teams as well as in designation of new rapporteurs on an ad-hoc basis as and when the need arose.

**2.2** The following structural arrangements were put in place for the conduct of work during the intersessional period: a Management Group (MG), three OPAGs, three Implementation/Coordination Teams (ICT), 18 Expert Teams (ETs), 18 Rapporteurs, an Ad-hoc Expert Team on Phenological Data and an Ad-hoc Expert Team on Seventh Global Climate System Review. An additional expert team, reporting directly to the president of CCI, was established to coordinate and prepare Part 2 of the *Guide to Climatological Practices*. The Management Group comprised the president, vice-president, three OPAG chairs and representatives from six Regional Associations.

**2.3** The three OPAGs were:

OPAG (1) - Climate Data and Data Management

OPAG (2) - Monitoring and Analysis of Climate Variability and Change

OPAG (3) - Climate Applications, Information and Prediction Services

### **3. Participation in constituent body sessions**

**3.1** During the intersessional period, the Commission was represented by the president and other experts in four Executive Council sessions, one Congress session (Cg-XIV) and other WMO meetings.

#### **3.1.1 EC-LIV-2002**

**3.1.2** The Council commended CCI for the new structure and expressed confidence that the new structure would improve the delivery of climate services, especially in developing countries. Furthermore, the Council concurred with the CCI vision statement that "*CCI is to stimulate, understand and coordinate international technical activity to obtain and apply climate information and knowledge in support of sustainable socio-economic development and environmental protection.*" It also noted that the Technical Conference on Climate Services for the Twenty-first Century, which was held for two days prior to CCI-XIII, had added to the success of the CCI session.

#### **3.2 Fourteenth Congress and EC-LV-2003**

**3.2.1** Congress noted the report of CCI activities since Fourteenth Congress. It welcomed the contribution by CCI to identify priority areas for the implementation of WCDMP, WCASP (including the CLIPS project), and other WMO climate-related activities, and urged Members to continue attaching high priority to climate-related work and services in Member countries, in various socio-economic sectors.

**3.2.2** In assessing the overall priorities for WMO within WCP and under the framework of the Climate Agenda, Congress noted the increasing relevance and importance to Members of GCOS and CLIPS. Congress agreed that those two relatively new activities were critical to Members with respect to emerging obligations for them to respond to the environmentally-related conventions and to take advantage of recent progress in understanding and predicting climate variability on seasonal to interannual time-scales.

**3.2.3** Congress particularly appreciated the Commission's contributions and activities within the CLIPS project, such as the organization of expert meetings, special fact-finding missions to Member countries, capacity building and training events, demonstration and pilot projects, and liaison with the climate research and user communities.

**3.2.4** Congress shared the CCI concern on the shrinking of the meteorological networks noting in particular the decreasing number of Climate Reference Stations. Congress endorsed the CCI efforts to promote greater attention of Members to the maintenance of networks and the necessity of keeping a homogenized series of data when shifting to automated systems of data measurement.

**3.2.5** Congress noted the actions that had improved climate system monitoring. It commended CCI on the cost-saving steps it had initiated, and encouraged the Secretary-General to find ways to employ increasingly emerging technologies to provide greater opportunities for information exchange while limiting costs.

**3.2.6** Congress strongly urged CCI to work in consultation with Members to clearly define the requirements, objectives and responsibilities of regional and global centres envisioned in an operational framework to support national climate services.

**3.2.7** EC-LV, which was held for two days just after Cg-XIV, noted that the entire subject area of climate and the environment remained a major concern for the entire WMO community,

that WMO's leadership in climate was clearly important for the Organization and that the leadership must be carried on into the future. To that end, the Council requested the Secretary-General to work closely with the Executive Council Advisory Group on Climate and Environment for developing a discussion paper on that subject.

### **3.3 EC-LVI- 2004**

**3.3.1** The Executive Council noted the forward-looking plans of CCI on its activities since the fifty-fifth session. It welcomed WCDMP for its efforts in collaboration with CCI to develop Guidelines on Climate Observation Networks and Systems. The Guidelines, which were part of a series, provided information on how to organize and implement climate services, and presented solutions that addressed the situation and needs of smaller NMSs with limited resources. The Council requested that CCI complete Statements of Guidance for observations providers through the rolling requirements review as a matter of urgency, for the full suite of climate services, i.e., monitoring, climate change detection and climate applications. It noted the work of the CCI Expert Team to Develop Guidance on Climate Watches.

**3.3.2** The Council further commended the continued effort to develop the CLIPS Focal Point network and the progress being made to build their capacity through regional workshops in Regions I, V and VI and it welcomed continued development of the RCOFs and recognized the significant role they played in some regions. For example, in Africa, RCOFs provided important support to sectors such as health, water resources and food security.

**3.3.3** The Council reiterated its support for the establishment of RCCs, where appropriate, in order to assist NMHSs to interpret and apply seasonal to interannual forecasts and to carry out regional climate services.

### **3.4 EC-LVII- 2005**

**3.4.1** The Executive Council noted that CCI held the second meeting of its Core Management Group in Geneva, from 31 January to 2 February 2005, and that the fourteenth session of CCI would be held in Beijing, China (3-10 November 2005). The Council supported the organization of the Technical Conference "Climate as a Resource" to enhance the participation of delegates from least developed and developing countries.

**3.4.2** Furthermore, the Council noted that the visibility of the Commission has been greatly enhanced during this period mainly due to participation in international meetings and interaction with scientific and research institutions, universities and stakeholders, including the private sector and the WMO Regional Associations.

## **4. Meeting of the Presidents of Technical Commissions (PTCs)**

**4.1** The Commission has been represented in annual Meetings of Presidents of Technical Commissions (PTCs). The meetings reviewed structure of bodies of Technical Commissions, proposals for addressing the issues of intercommission cooperation, quality management, and developing guidance for WMO Members. CCI is involved in an ad-hoc expert team to consider phenological data use, collection and archiving, which was established with experts from CCI, CHy and CAgM. The Future WMO Information System is also addressed, as was the establishment of Regional Climate Centers (RCCs) including an integrated approach to data base management

## **5. CCI Management Group Meetings**

**5.1** The CCI Management Group held three meetings. The first meeting was organized in Berlin, 5-8 March 2002. It established priorities for the Commission's work and completed nominations for the various expert teams. In addition, during this meeting, the Management Group reviewed and drafted a vision statement for the Commission. The Statement was confirmed by EC and adopted by Fourteenth Congress.

**5.2** The second meeting of the CCI management Group took place in Toulouse in 9-11 September 2003. Following the emphasis given by Fourteenth Congress on the need for realistic future plans for WMO and its Technical Commissions, the Group decided to explore a result-oriented working programme. The main decisions of this Core Group meeting were to:

- Develop satellite & in situ requirements for climate;
- Publish pamphlets and brochures on various socio-economic sectors, e.g.: Human well-being; El Niño; Food Production;
- Prepare guidance for the establishment of Climate Watch Systems;
- Develop guidance material for Climate and Health;
- Define the CCI strategy for coordination with WCP-water;
- Provide CCI input to WMO's Satellite Office for climate requirements for satellites;
- Develop guidance material for best practices in phenological data management.

**5.3** Furthermore, the Core Group agreed that CCI should play a strong role, and position itself and that the WCP should play a stronger future leadership role in those climate activities where WMO has expertise.

**5.4** The last meeting of the Group was held in Geneva from 31 January to 2 February 2005 and reviewed activities as well as progress in the work of the Commission and resolved that the Commission continue to be closely involved with:

- The Future WMO Information System (FWIS) as the coordinated global communications infrastructure for the Organization in the years ahead;
- The lead role which WMO is called upon to play in international disaster reduction activities;
- The upcoming International Polar Year;
- The WMO Quality Management Framework;
- The Global Earth Observation System of Systems (GEOSS).

**5.5** The Management Group believed that the Commissions' vision statement should be developed into a clearer and more comprehensive declaration of the Commission's role and function within the Organization. It also took note of the Commission's participation at the twelfth session of the Global Climate Observing System Steering Committee (GCOS-SC) and its contribution to the GCOS Second Adequacy Report (GCOS-SAR) and to the completion of the GCOS Implementation Plan for the UN Framework Convention on Climate Change, Conference of the Parties (COP-10).

## **6. Other Important Meetings**

**6.1** Some of the important meetings attended by the president were:

- (a) International Conference on Science and Technology Capacity Building for Climate Change (Delhi, October 2002);
- (b) The International Symposium on Climate Change (Beijing, China 29 March-3 April 2003);

- (c) The World Climate Change Conference (Moscow 29 September-3 October 2003);
- (d) The First International Conference on Climate Change and Tourism (Djerba, Tunisia, April 2003).

Other meetings held under either the aegis, or in collaboration, with CCI are:

- (a) Ninth session of the Climate Outlook Forum of the greater Horn of Africa (Kenya, February 2002);
- (b) Inter-Commission Task Team on Regional Climate Centers (Geneva, March 2002);
- (c) Third Regional and First National Conference on Climate Change (Isfahan, Iran, October 2003);
- (d) Insight and tools for Adaptation: Learning from Climate Variability, (Washington, D.C. November 2003);
- (e) Meeting on Regional Climate Centers (Geneva, November, 2003);
- (f) Synthesis Workshop on Climate Variability and climate Change in Small Island States, (Bandos, Maldives, December 2003);
- (g) Joint CAgM-CCI meeting on climate prediction and food production in CIIFEN (Guayaquil, Ecuador, December 8-12, 2003);
- (h) Ad-hoc Exploratory Meeting on World Climate Conference-3 (April 2005).

## **7. Climate: Into the 21st Century**

**7.1** The book "Climate: Into the 21st Century" has been published. This is a fact-based and historical document on the past, present and future of climate and climate science. It describes many of the significant climate events of the past century across the world. It will be recalled that CCI initiated the preparation of this book in 1996. The dedicated hard work of the WMO staff, the Task Team and other CCI members, as well as WMO Members, has helped produce this book. Some countries are currently translating it into their national languages.

## **8. Brochure on CCI**

**8.1** The Commission agreed that in order to convey the work of the CCI, a brochure describing its past and future accomplishments, goals and projects including their benefits to society would be useful. Members decided to finalize, publish and distribute the draft brochure on the Commission and to incorporate the most recent Terms of Reference and Vision as will be adopted by CCI-XIV. The Commission will use the brochure as a crosscutting tool for liaison with other WMO Programmes and other Technical Commissions as well as relevant institutions. This brochure will describe the projects of CCI and their socio-economic value. The brochure briefs the reader on the Terms of Reference, achievements and current as well as future projects of the Commission.

## **9. Guide to Climatological Practices**

**9.1** Through tedious and systematic planning of OPAG 3, the *Guide to Climatological Practices* has finally been completed. It will be recalled that Part 1 of the new version was written

three years ago, after which the 2nd part has been accomplished. Credit goes to the spirit of volunteers, who have provided their support throughout this process.

## **10. SARS and Avian flu**

**10.1** Following the recommendation of EC-LVI a rapporteur was appointed with the Terms of Reference to investigate if the occurrence and propagation of SARs and Avian flu had any climatic link. Special thanks are due to the Director of the Hong Kong Observatory who immediately delegated a very dedicated team to work on this. The report was prepared in a very timely manner. The experts came to the conclusion that SARS and Avian Flu outbreaks are closely related to air temperature, its variation and airborne transmissions.

## **11. The future**

**11.1** The future of climate and climate applications will witness an increasing demand of climate products by various stakeholders. New emerging stakeholders such as medics, the insurance, tourism, the energy sector but most important of all decision and policy makers are expected to emerge. This may attain unexpected pressure because of climate change and its negative impacts on agriculture, human health and the economy of nations.

**11.2** The president urges the Commission to work harder to forge tighter links with international research organizations. On its side, WMO should establish closer links with other UN Agencies in an effort to reduce the impacts of climate variability and climate change.

## **12. Acknowledgments**

**12.1** The president wishes to place on record his sincere appreciation to all those who have contributed to the continued progress of the work of the Commission. He would particularly like to express his sincere thanks to all WMO Permanent Representatives who took a personal interest in the Commission's work and allowed their experts to devote a substantial part of their time to the service of CCI. He also requests the Members to continue accomplishing this valuable work despite hard and precious times in the National Meteorological and Hydrological Services.

**12.2** The president also wishes to extend his special thanks to the Secretary-General and the staff of the Secretariat, especially WCP, for their dedicated professional support and commitment to the Commission.

**AGENDA ITEM 4 – CLIMATE DATA AND DATA MANAGEMENT (OPAG 1)**

**CCI-XIV/Rep. 4**

**1. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – 2001-2005**

**Major Programme: 4– Climate Data and Data Management**

<b>Expected results</b>	<b>Performance indicators</b>	<b>Activity and Progress Report Related to the Expected Results November 2001 – November 2005</b>
<b>4.1 Report of the Chair of the OPAG 1</b>		
To report progress regularly to the president of the Commission, and to manage the activities of the Expert Teams and Rapporteurs assigned by CCI-XIII.		See OPAG Chair report given in Annex 1. Regulars reports were provided to the CCI president as well as OPAG 1 members see <a href="http://www.bom.au/wmo/climate/opag1.shtml">http://www.bom.au/wmo/climate/opag1.shtml</a> )
<b>4.2 Observing requirements and standards for climate</b>		
4.2.1 Increased cooperation with GCOS	Joint WCP-GCOS development of software to encode CLIMAT and CLIMAT TEMP.	The CLIREP software to encode and decode CLIMAT and CLIMAT TEMP message was tested by New Zealand, Guinea, Tanzania, and the University of Wisconsin which resulted in a revised version. The software was used at the RA II/RA VI Sub-Regional Training Seminar on CLIMAT & CLIMAT TEMP Reporting in Moscow, Russian Federation in November and at the RA V Data Management Workshop in Melbourne, November/December 2004. Members of CCI teams were active in contributing to, and reviewing, GCOS reports and plans.

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results November 2001 – November 2005
4.2.1 Development of Guidelines	<p>Two Guidelines were developed:</p> <ul style="list-style-type: none"> <li>- Guidelines on climate observation networks and systems (WCDMP-No 52 WMO-TD No. 1185)</li> <li>- Guidelines on Climate Metadata and Homogenization (WCDMP-No. 53 WMO-TD No. 1186)</li> </ul>	<p>The guidelines documents provide information and assistance on how to organize and implement climate services, and present processes and technological solutions to address special situations and needs of smaller NMHSs. Several guidelines were produced:</p> <ul style="list-style-type: none"> <li>• Guidelines on Phenological Observations</li> <li>• Guidelines on assessing the cost/benefits of AWSs versus manual observing systems</li> <li>• Guidelines on Quality Assurance/Quality Control of climate data (in progress)</li> <li>• Guidelines for managing comparison observation programs (in progress)</li> <li>• Update WCDMP Calculation of climate normals publications (in progress)</li> </ul> <p>Contributions were also provided to the Guide to Climatological Practices.</p>



<p><b>Expected results</b></p>	<p><b>Performance indicators</b></p>	<p><b>Activity and Progress Report Related to the Expected Results November 2001 – November 2005</b></p>
<p><b>4.3 Climate data management, monitoring and processing, including CLICOM and new Climate Database Management Systems (CDMSs)</b></p> <p>4.3.1 Development of modern Climate Database Management systems</p>	<p>More than 30 new Database Management systems requests through the WMO VCP in the pipeline</p>	<p>CDMS seminars were organized in RA I (Douala, Cameroon), RAs II and VI (Beirut, Lebanon and Vientiane, Laos), RA V (Melbourne, Australia), RAs III and IV (Guayaquil, Ecuador and San Salvador, El Salvador), RA V, (Kuala Lumpur, Malaysia), and RA VI (Bishkek, Kyrgyz Republic). Following the Climate Data Management (CDM) seminar for RA V in Kuala Lumpur, Malaysia in October 2003, a regional climate database training workshop was organized in December 2004 in Melbourne, Australia with the technical participation of Météo-France, the UK Met Office and New-Zealand. The Cook Islands, Niue, Papua New Guinea, Samoa, Tonga, Tuvalu, Solomon Islands, Vanuatu, and Kiribati attended a WMO/UK Met Office Climsoft Training Workshop for Small Island States in the Pacific Region in Nadi, Fiji, and each country received a laptop and the Climsoft software.</p> <p>More than 30 new CDMSs installed in nearly all Regions.</p>

<b>Expected results</b>	<b>Performance indicators</b>	<b>Activity and Progress Report Related to the Expected Results November 2001 – November 2005</b>
4.3.2 Development of Guidelines on Climate Database Management.	Several requests from Members to finalize the Guidelines on Climate Data Management in Regions I, III, IV and V.	<p>Guidelines on Climate Data Management</p> <p>Guidance on the use of XML for the CCI community was also finalized.</p> <p>The overall objective of the guidelines on Climate Database Management is to build knowledge and capacity in the phases and stages of managing computerised data, available database technologies and selecting an appropriate database technology, making the transition to a modern climate database system and sustaining data management operations.</p> <p>Contributions were also provided to the Guide to Climatological Practices</p>

<p><b>Expected results</b></p> <p><b>4.4 Data Rescue Activities (DARE)</b></p>	<p><b>Performance indicators</b></p>	<p><b>Activity and Progress Report Related to the Expected Results November 2001 – November 2005</b></p>
<p>4.4.1 Harmonize Data Rescue in all Regions and to develop a coherent strategy to create and enhance digital archives using new technology.</p>	<p>Guidelines on Data Rescue developed to standardize the development of digital climate archives. More than 20 countries equipped with digital cameras.</p>	<p>Guidelines were developed and a standardized method of naming digital image files were drafted.</p> <p>The following countries in RA I were equipped with data rescue systems in 2004 (funded by Belgium through VCP): Angola, Benin, Burkina Faso, Burundi, Cape Verde, Cameroon, Chad, Republic of Central Africa, Congo, Democratic Republic of Congo, Gabon, Guinea, Mali, Guinea Bissau, Liberia, Mali, Rwanda, Sao Tome &amp; Principe and Togo. Through the SIDS Caribbean project funded by the Finnish government in RA IV, the following countries were also equipped with modern systems: Barbados, St Kitts, Trinidad &amp; Tobago, Guyana, St. Kitts and Nevis, Montserrat, Dominica, St.Vincent &amp; Grenadines, Grenada, and St. Lucia. An Australian government funded data rescue project was initiated in the five Pacific Island countries.</p>
<p><b>4.5 Regional aspects of Data and Metadata Management including recommended new initiatives</b></p>		<p>Guidelines on Metadata and Homogeneity were developed</p> <p>CCI is represented on the CBS led Framework of the WMO Information System (FWIS), including the Inter-Programme Expert Team on Metadata for Climate Applications</p>
<p><b>4.6 Interaction with other WMO Technical Commissions</b></p>	<p>Collaboration established with CBS and GCOS</p>	<p>Mr A. Besprozvannykh and Mr J.D. Shortridge are active contributors to FWIS and related metadata issues.</p>

## ANNEX 1

### REPORT ON WMO COMMISSION FOR CLIMATOLOGY OPAG 1 CLIMATE DATA AND DATA MANAGEMENT: 2002 TO 2005

**Neil Plummer**  
**Chair OPAG 1**

#### Introduction

At the simplest level, OPAG 1 (Climate Data and Data Management) has responsibilities for providing guidance and support on:

- Implementation of Climate Database Management Systems (CDMSs);
- Data rescue activities;
- Metadata for climate applications; and
- Best practice operation of climate observing networks and systems.

In undertaking such activities, it is hoped that the capacity of National Meteorological and Hydrological Services (NMHSs) to manage and deliver climate observations for present and future generations is enhanced. Fundamentally OPAG 1 activities aim to improve the foundations on which climate analysis, monitoring, applications development and a range of services are provided, including seasonal to interannual predictions and climate change detection and attribution.

The structure and members of OPAG 1 are provided at:

<http://www.wmo.ch/web/wcp/ccl/opag/opag1.html> . Much of the work of the OPAG 1 during the intersessional period is provided on the OPAG 1 site at:

<http://www.bom.gov.au/wmo/climate/ccl/opag1.shtml> and this report provides a summary.

The Chair greatly appreciates the contributions and support provided from OPAG 1 members as well as from several non-members who contributed. Appreciation also extends to the ideas and support from the other OPAG Chairs, fellow Management Group members and the Chair's colleagues at the Australian Bureau of Meteorology. Sadly, the inaugural OPAG 1 Chair Richard Masika passed away during the intersessional period and his successor would like to acknowledge Mr Masika's contribution to African and international climate activities over many years.

Most of the documents described here are available either as published World Climate Data and Monitoring Programme (WCDMP) publications at:

<http://www.wmo.ch/web/wcp/wcdmp/html/wcdmpreplist.html> or on the OPAG 1 Web site.

#### **Supporting good quality, consistent and homogeneous observations**

Climatologists can no longer afford to passively accept data from observation networks and systems. Prior to data being collected within an NMHS database, climatologists need to communicate some clear standards and requirements to ensure these data, including metadata, meet the needs of services and research and that data can be compared across national borders. Also, without effective communication of standards and requirements these efforts may not attain their goals.

In order to equip climatologists in NMHSs with sufficient knowledge to interface with their observation networks and systems managers, some OPAG 1 members met in Malaga, Spain (February 2003) to develop *Guidelines on Climate Observation Networks and Systems*. While the focus of that document was primarily on traditional climate observations, the OPAG

later 'recruited' expertise to develop *Guidelines on Phenological Observations*, at the request of the CCI president.

The Expert Team on Observing Requirements and Standards for Climate (ET-ORS) dealt with two issues that had not been addressed by CCI in any great detail. Firstly, in recognizing that there was a dearth of information to assist NMHSs in decisions on whether to shift to automatic weather stations (AWSs), ET-ORS developed *Automated Versus Manual Surface Meteorological Observations – Decision Factors*. Secondly, while the need for comparison observations during manual-AWS transitions has been a priority for CCI for many years, specific strategies and procedures in dealing with the transition have not been developed. To address this, ET-ORS developed *Guidelines for managing changes in observation programs*.

There was debate over how best to calculate monthly mean temperatures in CLIMAT messages and also thirty-year Normals during the intersessional period. While acknowledging that global standardization of algorithms was impossible but that continuity of the same algorithm within a country was highly desirable, OPAG 1 collaborated with OPAG 2 in providing guidance and also developed an updated *Guide to the calculation of Climate Normals*.

The Expert Team on National Networks and Observations in Support of Climate Activities (ET-NNOSCA) led the OPAGs response to the development of Statements of Guidance (SoG) on the future global observing systems. The overall activity was led by the WMO Commission for Basic Systems (CBS) and future observation requirements for climate services and research were reviewed within the OPAG. ET-NNOSCA developed some brief guidelines on two important issues for the expert team and these are on the OPAG 1 Web site. The first deals with data accessibility and the second on maintaining national climate networks.

OPAG 1 provided several contributions to the updated *Guide to Climatological Practices ('the Guide')*, including sections on AWSs, satellite/remote sensing, marine, upper air and phenological observations, the GCOS Surface Network and calculation of climate variables.

Beyond CCI-XIV, the OPAG would benefit from more focus on remote sensing opportunities and stronger linkages with other groups (e.g. CBS and CIMO) on common interests.

### **Improving the capacity to manage climate data**

NMHSs have an obligation to their communities to provide a secure and robust climate database from which climate services can be delivered and climate research advanced. In offering a range of modern climate databases to NMHSs, the WCDMP CDMS project is helping countries meet their database needs. Some individuals within OPAG 1 (e.g. from France, Czech Republic and Russian Federation) were very active supporting this project through developing and implementing databases, especially in developing countries.

Four related guideline documents were developed. *Guidelines on Metadata and Homogeneity* followed the February 2003 Malaga meeting and was developed in collaboration with OPAG 2. *Guidelines on Climate Data Management* was drafted following a meeting of experts in Melbourne, Australia during December 2004. Following a May 2005 meeting in Asheville, USA, a team started work on *Guidelines on the Quality Control/Quality Assurance of climate data*, which is a much needed update to a 1986 document. *Extensible Markup Language (XML): Essential for Climatologists* was also developed in 2005. Sections on climate data management were also provided for the 'the Guide'.

The Expert Team on Metadata for Climate Applications was active in developing a format for global exchange of station metadata and the CCI's Rapporteur for the Future WMO

Information System (FWIS) provided a response to the *FWIS Questionnaire to Technical Commissions*.

As with the other two OPAGs, the OPAG 1 Implementation and Coordination Team did not operate as envisaged during the intersessional period although several of its members were active contributors. This will need to be addressed at CCI-XIV, including how the OPAG could better assist WCDMP in resource mobilization. International standards for metadata exchange will need to be progressed and so engagement with the FWIS agenda will be important.

### **Saving national heritage: climate data rescue**

There has been renewed interest in climate data rescue, not least because the GCOS Implementation Plan has given this high priority. In terms of answering questions on climate change, the rescue, preservation and digitisation of climate records is a relatively low cost but high return investment.

The development of *Guidelines on Climate Data Rescue* (jointly with OPAG 2) followed the Malaga meeting and filled an important gap for climatologists seeking better understanding of how to proceed with such activities. The Expert Team on Rescue, Preservation and Digitization of Climate Records followed this up with an image file naming convention.

Australia assisted the WCDMP in developing a brochure to build awareness on data rescue and, in 2005, was successful in a funding proposal to undertake data preservation work in five Pacific Island countries. This will be conducted within the Pacific Island – GCOS (PI-GCOS) framework and will complement US and New Zealand data rescue efforts in the region. As a follow up to a December 2002 APN (Asia-Pacific Network for Climate Change) workshop, a paper titled *Data Rescue in the Southeast Asia and South Pacific Region: Challenges and Opportunities* was published in the Bulletin of the American Meteorological Society.

Developing inventories of available climate records is a priority task of the expert team and this work must continue beyond CCI-XIV, as will the development of a strategy document to assist countries to acquire resources, develop a plan and implement data rescue projects.

### **Facilitating and supporting activities**

There were a number of activities, which, while being small-scale individually, were important in facilitating and supporting improvements in climate observations or data management.

The development of a Web site improved the ability to communicate the work of the OPAG. The involvement of OPAG members in several data management and data rescue seminars and training workshops contributed to their success (refer Agenda Item 4). Members were involved in contributing to, and/or reviewing, several documents of importance to CCI (e.g. Second Adequacy Report for GCOS and its Implementation Plan, GEO 10-Year Implementation Plan) and several members were also directly involved in other initiatives, e.g. through GCOS (regional initiatives, Panels, Steering Committee) and developing the WMO Regional Climate Centre concept.

Specific initiatives targeted at raising the profile of climate observations were undertaken, e.g. CCI presentations at international workshops, data rescue brochure, published papers, side events at UNFCCC COP meetings. Overall, more could have been done here. Demonstrating the value of observations is critical to gaining support for observational and data management infrastructure.

**Meeting the challenges 2006-2009**

Both the successes and 'misses' of OPAG 1 have been described above. Some of the important challenges for Climate and Data Management for the next intersessional period are:

- Making implementation and coordination work more effectively (e.g. better facilitating the mobilization of resources for priority activities, particularly the implementation and supporting infrastructures for data collection and exchange, climate databases and data rescue);
- Strengthening of links with groups with complementary goals, e.g. CBS, CIMO, JCOMM, GCOS, GEOSS;
- Assisting NMHSs to manage remotely sensed data and other data that tend to be managed outside a conventional climate database;
- More innovative education and training, such as on-line courses; and
- Further assisting developing countries in meeting the challenges of automation of observations.

## ANNEX 2

**List of meetings on OPAG 1 Expert Teams and related workshops and Conferences  
on Data Rescue and Climate data Management**

Dates and venue	Meeting / Workshop / Seminar
26–29 March 2002, Niamey Niger	Database Management Systems Seminar for the CILSS countries.
19-21 February 2003, Torremolinos, Spain	Third International Conference on Experiences with Automatic Weather Stations (AWS)
31 March–4 April 2003, Guayaquil, Ecuador	Seminar on Climate Data Rescue, Management, Applications and Prediction for Spanish-speaking Countries in Regional Associations III and IV
14-19 April 2003, Bishkek, Kyrgyz Republic.	Seminar on Climate Data and Data Management
1-5 September 2003, Niamey, Niger	Seminar on the New Climate Data Management Systems for West Africa
13-17 October 2003, Kuala Lumpur, Malaysia	Seminar on Climate Data Management (CDM)/Data Rescue (DARE) in RA V
7-10 October 2003, Kuala Lumpur, Malaysia	Meeting of the CCI Expert Team on the Rescue, Preservation and Digitization of Climate Records
24–28 November 2003, Vientiane, Laos	Seminar on Climate Database Management (CDM) and Data Rescue (dare) activities in RA II
19-23 July 2004, Douala, Cameroon	Climate Data Management and Data Rescue Seminar
13-17 September 2004, Beirut, Lebanon	Seminar On Climate Data Base Management (CDM) and Data Rescue (Dare) Activities for the Arab Countries
29 November-3 December 2004, Melbourne, Australia	RA V Data Management Training Workshop
19-23 July 2004 Yaoundé, Cameroon	Regional Seminar on the Rescue, Preservation and Digitization of Climate Records
23-25 May 2005, Asheville, US	Meeting to develop a Guideline document on Data Quality Assurance and Quality Control
19 September–7 October, Nadi, Fiji	Climsoft Training Seminar for the Small Islands Developing States in the Pacific



**AGENDA ITEM 5 - CLIMATE SYSTEM MONITORING AND ANALYSES OF CLIMATE VARIABILITY AND CHANGE**

**CCI-XIV/Rep. 5**

**2. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – OCTBER 2001 – NOVEMBER 2005**

**Major Programme: 5 – Climate System Monitoring and Analyses of Climate Variability and Change**

<b>Expected results</b>	<b>Performance indicators</b>	<b>Activity and Progress Report Related to the Expected Results October 2001 – November 2005</b>
<b>5.1 Report of the Chair of the OPAG 2</b>		
To report progress regularly to the president of the Commission, and to manage the activities of the Expert Teams and Rapporteurs assigned by CCI-XIII	Number of progress reports submitted to the president	See full report of the Report of Chair of OPAG 2 who submits regular progress reports to the president and the Secretariat
<b>5.2 Climate Change Detection including regional aspects of analysis of climate variability, change and climate system monitoring</b>		
5.2.1 To submit annual reports on regional issues and problems related to climate analysis in the context of a changing climate, climate system monitoring products, availability of datasets for regional analyses, homogenization of data especially in relation to climate variability and change detection, data catalogs and the creation of applications-related indices.	(a) Publication of the WMO Statement in English, French, Russian and Spanish.  (b) Workshops reports and peer-reviewed articles on climate change detection from each regional climate change workshop.  (c) Publication of Guide-lines on Metadata and Homogeneity, WCDMP-53.	<ul style="list-style-type: none"> <li>• Since 2000, the Hungarian Meteorological Service publishes the WMO Statement on the Status of the Global Climate in Hungarian.</li> <li>• Russian and Spanish versions of the Statement are well appreciated. International media are calling the Secretariat for interviews on the Press release.</li> <li>• Climate change detection workshops: Cape Town, South Africa, 31 May–4 June 2004 Maceio, Brazil, 9–14 August 2004 Alanya, Turkey 4–9 October 2004 Guatemala City, Guatemala 8–12 November 2004 Pune, India 14–19 February 2005</li> </ul>

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results October 2001 – November 2005
<b>5.3 Interactions with other WMO Technical Commissions and Programmes</b>		
<b>5.4 Climate Watch/Alert System</b>		
To develop Guidelines on Climate Watches and set up mechanisms for its establishment within NMSs.	Publication of the Guidelines on Climate Watches as WCDMP No. 58, WMO-TD No. 1269.	The Expert Team on Climate Watches met in Washington, USA, in January 2004 and in Brasilia, Brazil, in February 2004 to finalize the guidelines on Climate Watches.
<b>5.5 Future strategy for publication of Global Climate System Reviews</b>		<ul style="list-style-type: none"> <li>• Publication of the seventh edition of the Global Climate System Review (<i>The Global Climate System Review</i> (WMO-No. 950), 2003).</li> <li>• Publication of the "State of the Climate in 2003" in the Bulletin of American Meteorological Society (BAMS).</li> </ul>

## ANNEX 1

**Report on 2001-2005 Activities and Accomplishments of the  
WMO Commission for Climatology  
OPAG 2:  
Monitoring and Analysis of Climate Variability and Change**

by

**Thomas C. Peterson, Chair OPAG 2  
National Climatic Data Center/NOAA  
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**1<sup>st</sup> July 2005**

The flexibility of the OPAG structure enabled OPAG 2 to achieve some significant accomplishments during the past four years. We formally set up two new expert teams, one to develop Guidelines on Climate Watches and one to create a catalogue of El Niño definitions. We also set up ad hoc teams to create products like the Seventh Global Climate Systems Review and Guidance on Metadata and Homogeneity. But not all the teams originally set up were productive. Here is a brief outline of their activities and accomplishments or lack thereof.

*Implementation/Coordination Team on Datasets and Climate System Monitoring:* This team accomplished very little. The lack of activity was partly because no significant issue arose within OPAG 2 that needed coordinating across the WMO Regions and partly because to do their job well, each Region needs to be represented by an active, engaged individual. This team did not meet which makes it harder to engage the volunteers in the work of the team.

*Expert Team on Climate Change Detection, Monitoring and Indices:* This team was created jointly with CLIVAR and benefited from having a CLIVAR co-chair. The team's accomplishments include coordinating a suite of climate change indices that mainly examine how extremes are changing, conducting workshops on these indices in Central America, South America, Africa, the Middle East, and southern Asia, making the climate change indices calculated at these workshops available via a Web page (see <http://cccma.seos.uvic.ca/ETCCDMI> for more information on the indices), and publishing regional and global peer-reviewed papers on the results which contributed to the IPCC Fourth Assessment Report.

*Expert Team on Dataset Catalogs:* The one accomplishment this team has is the production of World Weather Records 1991:2000. But to be fair, it should be pointed out that this accomplishment is the result of one team member's work (along with non-team member contributors from around the world) and that he would have assembled World Weather Records whether the team existed or not. This team did not meet.

*Expert Team to Develop Guidelines on Climate Watches:* This team was assembled specifically for one purpose, which they succeeded in admirably. The Guidelines on Climate Watches is available from <http://www.wmo.ch/web/wcp/wcdmp/html/Guidelines%20on%20Climate%20Watches.pdf>.

*Expert Team on El Niño Definitions:* This team was put together earlier this year to address the confusion raised by different institutions using different definitions of el Niño without a clear understanding of who is using what definition. They are engaged in the first step towards reducing the confusion, namely cataloging the definitions used by major institutions.

*Rapporteurs on Regional Aspects of Analysis of Climate Variability and Change:* Despite having excellent individuals serving as the rapporteurs, we had very little in the way of regional issues for them to deal with. However, they did help out whenever called upon by, for example, by reviewing documents for OPAG 2.

*Ad hoc Team to create Guidelines on Metadata and Homogeneity:* This team did a great job creating guidelines, which are available from <http://www.wmo.ch/web/wcp/wcdmp/reports/WCDMP-53.pdf>.

*Ad hoc Team to Create the Seventh Global Climate System Review:* Again fully successful. (See: <http://www.wmo.ch/web/wcp/wcdmp/review/950auth.pdf>). However, it should be noted that this team was put together by WMO against the recommendations of OPAG 2's chair. In the opinion of the chair, we only ask volunteers to give their precious time and energy to important projects that produce valuable new information. This project had many volunteers doing a lot of work to create a document that provides very little information that isn't already available in the annual State of the Climate reports that are published every June or July in the *Bulletin of the American Meteorological Society*. Despite producing a nice document, in terms of energy spent by volunteers for useful gain, it rates very low. As the annual State of the Climate article is co-authored by dozens of individuals from 14 countries, we tried for one year to publish this article as a substitute for a Global Climate System Review via collaboration between WMO and the American Meteorological Society. However, WCP insisted on some changes that required assembling another team of experts, having them edit the already excellent article to make it more in keeping with WCP's vision, and then having WMO print it. All this caused further delays. As a result, the WMO State of the Climate report for 2003 was actually published by WMO after the State of the Climate 2004 was published by the American Meteorological Society.

*Ad hoc team to create Guidelines on Data Rescue:* Again this team was fully successful in producing a document in conjunction with OPAG 1 (<http://www.wmo.ch/web/wcp/wcdmp/reports/WCDMP-55.pdf>).

*Publicity:* Doing good work isn't enough if no one knows about it and takes advantage of the information provided. Therefore, OPAG 2 undertook several activities to publicize its work a little more fully. Toward that end, we created an OPAG 2 Web page (<http://www.ncdc.noaa.gov/oa/wmo/ccl>), published an article giving an overview of the Commission for Climatology in the *Bulletin of the American Meteorological Society*, an article on climate change detection in the *WMO Bulletin* and an article on the indices and workshops that we held, also published in the *WMO Bulletin*. It is also worth noting that we were co-sponsors of a workshop on homogeneity of climate data held in Hungary (<http://www.wmo.ch/web/wcp/wcdmp/reports/WCDMP-56.pdf>).

As you can see, OPAG 2 had considerable concrete accomplishments during the last four years. I regret that I don't have enough space here to list all the individuals responsible for this work. OPAG 2 has been the very fortunate recipient of a great deal of voluntary contributions from so many fine scientists. Indeed, volunteers have been the life blood of OPAG 2 without which OPAG 2 would have very little to show for itself. Encouraging and coordinating the work of these volunteers has been very interesting and rewarding experience.

**ANNEX 2**

**List of meetings on OPAG 2 Expert Teams and related workshops and Conferences  
on Climate System Monitoring and Analyses  
of Climate Variability and Change**

<b>Dates and venue</b>	<b>Meeting / Workshop / Seminar</b>
24-26 February 2003 – Malaga, Spain	CCI Experts Meeting to Prepare WCDMP Guidance on Metadata and Homogeneity
Norwich, UK, 24-26 November 2003	CCL/CLIVAR Expert Team on Climate Change Detection, Monitoring and Indices
26 to 29 January 2004, Silver Spring, Maryland, USA	CCI Expert Team to Develop Guidance on Climate Watches to initiate the preparation of guidelines on Climate Watches
29 March–1 April 2004, Sofia, Bulgaria	WMO RA VI Working Group on Climate -related Matters (WGCM)
(Miami, 1 May 2004)	Review of Activities to Implement a Regional Climate Center (RCC) for Regional Association Iv
1–3 May 2004, Miami, USA	Briefing on WMO participation in the Second World Conference on Disaster Reduction (WCDR II, Kobe, January 2004)
31 May–4 June 2004, Cape Town, South Africa	Regional climate change workshop
9–14 August 2004, Maceio, Brazil	Regional climate change workshop
4–9 October 2004, Alanya, Turkey	Regional climate change workshop
8-12 November 2004, Guatemala City, Guatemala	Regional climate change workshop
14–19 February 2005, Pune, India	Regional climate change workshop
14-18 February 2005, Brasilia, Brazil	Training Workshop on Climate Early Warning Systems for Region III
21-24 February 2005, Brasilia, Brazil	Meeting of the CCI Expert Team to develop Guidance on Climate Watches
18-22 April 2005, San Salvador, El Salvador	Workshop on the Use of Climate Data for Disasters Prevention and Mitigation

**AGENDA ITEM 6(1) - CLIMATE APPLICATIONS, INFORMATION AND PREDICTION SERVICES (OPAG 3)**

CCI-XIV/Rep. 6(1)

**3. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – 2001 -2005**

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results November 2001 – November 2005
<b>6.1 Report of the Chair of OPAG 3</b>		
The Chair of the OPAG was required to report progress regularly to the president of the Commission, and to manage the activities of the Expert Teams and Rapporteurs assigned by CCI-XIII.	Provision of regular updates to the president/CCI, including this final summary for CCI-XIV; and development of a critique of the structure and efficacy of the OPAG.	At CCI-XIII (Geneva, 2001), Dr Michael Harrison was appointed Chair of OPAG 3, however, he stepped down from this position in September 2003. He was succeeded as OPAG chair by Pierre Bessemoulin, with Mohamed Kadi and Sue Walker being co-opted as co-chairs. The Chair(s) of OPAG 3 successfully fulfilled the duties in reporting, and in supervising the work of the OPAG.  The full text of the report on OPAG 3 is provided as <b>Annex 1</b> to this table.
<b>6.2 Climate and Human Health, including Heat-Health Warning Systems</b>		
6.2.1 Identify national and international groups with active programmes in climate and health, gather information on their areas of interest and enhance collaboration with relevant groups.	Identification of key partnerships; undertaking of joint projects and publications; joint development of inter-disciplinary workshops for training and capacity building.	The Commission noted the ongoing activities related to global environmental change and human health in the Earth System Science Partnership (collaboration between the WCRP, IGBP, IHDP and DIVERSITAS); the research initiated through the GAW and GURME programmes on air quality and human health (including air pollution from forest and agricultural fires and fuel combustion, etc.); the work of the WCP-Water Programme to investigate the roles of climate and water in human health; and the importance of modelling and prediction of the atmospheric transport of pollutants and airborne diseases to reduction of health impacts. The Members further noted the effective partnership between WMO, WHO and UNEP on climate and health. Two books have

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results November 2001 – November 2005
		<p>been published through this partnership, namely: Climate Change and Human Health: Risks and Responses, and Methods of Assessing Human Health Vulnerability and Public Health Adaptation to Climate Change, and a number of workshops and training sessions have been held, including regional Workshops on Climate and Health in Small Island States (see table).</p>
<p>6.2.2 In collaboration with relevant partners, develop and apply a variety of approaches to Heat-Health Warning Systems (HHWS); the Universal Thermal Climate Index; and Guidelines for HHWS.</p>	<p>Guidelines on HHWS; Participation in meetings and workshops of EU COST Action 730 on UTCI; implementation of HHWS in new regions.</p>	<p>With respect specifically to thermal extremes and their effect on human health, the Commission noted the work of WMO, WHO, the International Society of Biometeorology and the EU COST Activity 730 in development of Universal Thermal Climate Indices, and noted the work of WMO, WHO, and the EU PHEWE experts on Heat-Health Warning Systems through the CCI Expert Teams on Operational Heat-Health Warning Systems (HHWS) (ET 3.7), and on Health-related Climate Indices and their use in Early Warnings (ET 3.8). These experts met in April 2004 to develop an outline and workplan for publication of WMO/WHO Guidelines on HHWS (see table). Through the activities of ET 3.7, two Showcase projects on HHWS had been successfully launched and have become operational in Rome and Shanghai. Through ET 3.7 and the EU PHEWE project, HHWS have been initiated in a number of cities in North America and Europe.</p>
<p>6.2.3 Build partnerships in the WMO regions between climate and health communities.</p>	<p>Health sector representatives participate in RCOFs and related interdisciplinary workshops.</p>	<p>Regional Climate Outlook Forums have regularly invited the participation of user groups including the health sector to build effective partnerships, foster greater understanding of the role of climate in health, and encourage more effective use of climate information and warnings. Furthermore, interdisciplinary health/climate workshops were held in various regions.</p>
<p><b>6.3 Urban Climatology including training</b></p>		
<p>Develop training materials for NMHS staff and local and regional planners on urban measurements, prediction, applications; develop guidance</p>	<p>Development of training modules; guidance materials; evaluation of published materials.</p>	<p>The Expert Team on Urban Climate including Training reviewed outdated Technical Notes (TNs) related to Urban and Building Climatology, and decided that updates to two TNs (149 and 150) were warranted. Professors Mills and Page have been tasked with the work. The ET has</p>

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results November 2001 – November 2005
material on building design for local climates; review outdated Technical Notes on urban and building climate.		also been working towards updating the bibliography on urban climate references, and Professors Grimmond, Oke and Mills are writing a book that will be a review of the field.
<b>6.4 Climate and Renewable Energy</b>		
6.4.1 Develop information on climate and energy, especially renewable energies; on weather derivatives; on applications and prediction products of practical interest to the sector; and on socio-economic benefits of these services.	Reports, information sheets, etc.	<p>ET 3.13 on Climate and Energy developed an information note on Weather Derivatives; developed recommendations for NMHSs to help identify the requirements for climate data and information for applications and products, and also provided suggestions on how NMHSs can develop and disseminate these products. The ET provided input on the energy sector to the ET 3.6 on end-user liaison, for the revision to the Technical Note 145, on Socio-economic benefits of climatological services. The ET prepared a status report on the use of meteorological satellite data for renewable energy systems in developing countries. This ET did not meet (2001-2005).</p> <p>This ET is reviewing Technical Notes 172 and 175 on the Meteorological Aspects of the Utilization of Solar Radiation as an Energy Source, and the Meteorological Aspects of the Utilization of Wind as an Energy Source, respectively, with the intent of deciding if they require updating. The Commission noted with appreciation that the ET developed a poster on 'Climate, water and weather information for sustainable energy', presented at the World Summit on Sustainable Development (Johannesburg, September 2002).</p>
6.4.2 Enhance partnerships in development of renewable energy as a sustainable resource (e.g. UNEP, CHy, etc)	Participate in multi-organization meetings, jointly organize multi-disciplinary workshops and training sessions.	The Commission noted that WMO needed to enhance partnerships with other organizations and disciplines that address issues related to renewable energy as a sustainable resource.



**ANNEX 1****REPORT OF THE CHAIR OF OPAG-3  
(Pierre Bessemoulin)**

At CCI-XIII (Geneva, 2001), Dr Michael Harrison was appointed Chair of OPAG 3, however, he stepped down from this position in September 2003. He was succeeded as OPAG chair by Pierre Bessemoulin. OPAG 3 co-chairs are Mr Mohamed Kadi and Prof. Sue Walker.

Although the ToRs for the Expert Teams (ETs) and rapporteurs had been discussed extensively prior to CCI -XIII, each ET reviewed and in most cases chose to revise them. This process helped identify the key priorities for the teams, and also clarified some of the tasks that had been assigned at CCI-XIII. This clarification often stimulated the ET to begin to work in earnest towards the key deliverables, but sometimes happened rather late in the intersessional period.

It took nearly a year to achieve the final composition of the ETs, particularly because of the approval procedure. For each candidate nominated for membership of an ET or as an individual rapporteur, WMO requires the approval of the Permanent Representative (PR) of the country in which the expert works. There were a number of reasons for the time this process took for OPAG 3. First, quite a few of the recommended experts were not employees in the National Meteorological and Hydrological Service (NMHS), and therefore were unknown to the PR. In some cases it took time to get the contact information for the candidate-elect (names were proposed, but sometimes with little or incorrect information on affiliation and contact details). In a few cases, the PR did not agree with the nomination and another candidate had to be found, and in a number of cases, candidates had multiple affiliations, and it took time to find out exactly who was the most relevant to provide the approval. It is hoped that by maintaining some of those members that performed well on ETs, this process will proceed more efficiently following CCI-XIV.

This OPAG was large with 1 ICT, 9 ETs, and 4 groups of rapporteurs and most of the ETs could not meet prior to 2004 (see above) or did not meet at all, which meant that few deliverables were made available by mid-2005.

Because OPAG 3 is twice the size of either OPAG 1 or 2, it is thus proposed to split it into two OPAGs, the first dealing with Climate Information and Prediction Services (CLIPS) and the second with all the other OPAG 3 issues, particularly Climate Applications and Services. As well, it is proposed to try to organize a more efficient communication about ongoing work using dedicated web sites for each of the new OPAGs.

However, even considering the slow start, good progress was achieved in most of the ETs, as evidenced from the following synthesis of their activities:

**ET 3.2 Research needs for intraseasonal, seasonal and interannual prediction, including the applications of these predictions:**

The ET has compiled a list of prediction systems available from international centres, their application areas and achievable capabilities, in order to assess the vision on what is to be achieved in application products years ahead; review of downscaling methods; contributions to the CLIPS Curriculum; organization of the International Conference on the Application of Meteorological Extremes (CAMEX), planned to be in South Africa on 9 and 10 May 2006.

**ET 3.3 CLIPS operations, including product generation, with emphasis on developing countries:**

A survey on Climate Outlook products; critical review of the status, preparation and presentation of monthly, seasonal to interannual predictions generated by climate outlook forums, NMHSs and various centres; research recommendations for consensus methodology, downscaling and multi-ensembles including their implications; and status of development of improved forecast methods to support applications; recommendations on preparation and provision of deterministic and probabilistic prediction information for various sectors; a 'Terminology' for operational prediction activities; guide to operational practices in the generation of climate information and prediction products for end-users (should be available by the end of 2005).

**ET 3.4 Verification:**

A report containing a detailed critique of the CBS LRFSVS (Long Range Forecast Standard Verification System) from the perspective of communicating forecast quality to end users, plus some tentative recommendations for alternative methods of communicating quality; a technical, complete and easy-to-understand glossary of verification terms; development of training materials on verification for the CLIPS Curriculum; extensive training of CLIPS Focal Points and other scientists in the WMO LRFSVS and verification questions in general, at WMO CLIPS Training Workshops, and at other workshops.

**ET 3.5 Capacity Building:**

The CLIPS Web page devoted to the curriculum has been reorganized for easier access; many PowerPoint presentations have been added and others translated (mainly from French to English); a strategy proposal for capacity building in climate information and prediction services has been sent to the CLIPS Office and the ET experts; contribution and participation in the RCOF process (Presao evaluation, Presao-6, -7, -8, CLIPS Training Workshop for Eastern and Southern African Countries, CLIPS Training Workshop for western part of RA II, RA I Expert Meeting on the Application of Climate Forecasts to Agriculture, RA VI CLIPS Workshop, Workshop of Global Producers of Seasonal to Inter-annual Forecasts (Geneva, 10-13 February 2003).

**ET 3.6 End-User Liaison:**

Updating of the Technical Note No. 145 "Economic Benefits of Climatological Services" written by R. Berggren (published in 1975) under the new title "Socio-Economic Benefits of Climatological Services" is currently under its way, with 22 received contributions; preparation for the WMO Conference on decision processes: "Living with Climate Variability and Change: Understanding the Uncertainties and Managing the Risks" (to be held in Espoo, Finland, 17-21 July 2006).

**ET 3.7 on Operational Heat-Health Warnings :**

New Heat/Health Warning Systems were established in ~20 cities; in collaboration with ET 3.8, an outline and workplan for Guidelines on HHWS were developed (a joint WMO/WHO initiative); several ET members participated in the European Union's PHEWE project (Assessment and Prevention of Acute Health Effects of Weather Conditions in Europe).

**ET 3.8 on Health-related climate indices and their use in early warnings :**

Joint activity with ET 3.7 on Guidelines on HHWS; UTCI development also within an EU project (COST Action 730); Guidelines on health-related climate indices for the thermal environment, Guidelines on Biometeorology and Air Quality Forecasts.

**ET 3.9 Urban Climatology, including Training:**

The ET reviewed the following outdated TNs: Numbers 134, 149, 150 and 187, with a view to determining if they should be revised and re-issued. The ET decided G. Mills, UC Dublin, will update TN 149 (published in 1976 as "Urban Climatology and its relevance to urban design" by T.J. Chandler); Prof J.K. Page will update TN 150 "Applications of building climatology to the problem of housing and building for human settlements" by J.K. Page (1976); Dr J. Salmond and the ET will work to update the existing bibliography on Urban climatology (originally part of TN 134, "Review of Urban Climatology 1968-1973" by T.R. Oke (1974); and T.R. Oke, S. Grimmond and G. Mills are preparing a book which will provide a review of the field. TN No. 187 will not be updated at this time.

This ET reviewed and revised its ToRs, initiated important liaisons with UN-Habitat, UNEP and WHO and secured their interest in helping develop the revisions to TNs 149 and 150; and developed a contribution to support the revision to TN 145 on the Socio-economic benefits of Climatological Services.

**ET 3.10 Rapporteurs on the Use of Climate Indices in Various Application Areas:**

Focused mainly on snowfall and drought monitoring. Contributed to the revision of TN No. 145. Report on the use of climate indices in various applications areas.

**ET 3.13 Climate services for energy:**

Information Note on weather derivatives; Report of recommendations for the National Meteorological and Hydrological Services (NMHSs) especially in developing countries, to help identify the climate information needs for the application of their renewable energy systems as well as the ways in which NMHSs may assist in the development and dissemination of this information; Contribution to the revision of TN No. 145; report on the use of meteorological satellite data for renewable energy systems in developing countries.

This ET is considering replacement of TN No. 172 "Meteorological Aspects of the Utilization of Solar Radiation as an Energy Source" and No. 175 "Meteorological Aspects of the Utilization of Wind as an Energy Source".

**ET 3.14 Rapporteur on regional aspects of climate services:**

Regional Aspects of Climate Services with special focus on RCCs and CLIPS; liaised as needed with the regional Working Groups on Climate-related Matters including CLIPS.

**ET 3.11 Climate and Agrometeorology and 3.12 Climate and Hydrology did not work.**

A more detailed description of the work of the ETs is available in the proceedings of their meetings, available through WCP, WCASP:

- Proceedings of the Workshop of Global Producers of Seasonal to Inter-annual Forecasts. Geneva, Switzerland, 10-13 February 2003;
- Proceedings of the Meeting on Organization and Implementation of Regional Climate Centers. Geneva, Switzerland, 27-28 November 2003, WCASP-No. 62 (WMO-TD No.1198);
- Proceedings of the Meeting of the Expert Team on Urban Climatology including Training. Geneva, Switzerland, 23-25 May 2005;
- Proceedings of the Meeting of the Expert Team on Verification. Tokyo, Japan, 2-4 February 2005;

- Proceedings of the Meeting of the Expert Team on CLIPS Operations, Including Product Generation, with Emphasis on Countries in Need. Arusha, United Republic of Tanzania, 12-15 October 2004;
- Proceedings of the Meeting of Experts on End-User Liaison. Geneva, Switzerland, 12-14 May 2004;
- Proceedings of the Meeting of Experts to Develop Guidelines on Heat-Health Warning Systems. Freiburg, Germany, 14-16 April 2004. WCASP-No. 63 (WMO-TD No. 1212).

A significant number of papers in refereed international journals were also produced, especially in the field of seasonal forecasts, and of Heat-Health Warning Systems.

**New ETs and their Terms of Reference will be discussed in a separate document, considering progress achieved.**

#### **About organization:**

- The official round of correspondence through WMO to get the approval of the Permanent Representatives following CCI-XIII took more than one year out of the intersessional period. To limit delays of this sort, some continuity in the composition of the ET's would be recommended. The leader of the ET should have ideally some experience from the former session and at least some of the active members of the former ET should take another turn. In this way the new ET could start its work immediately after the new CCI session and broaden its views as the new members come in;
- Working with Internet can never replace personal contacts. This is not to support unnecessary travelling, but any meeting of an ET that has been budgeted for **should take place as early in the intersessional period as possible**. When the members are familiar with one another, working via the Internet becomes far more efficient and meaningful.

#### **About the structure of the OPAG, an outline is suggested below:**

- To split OPAG 3 into two parts: on CLIPS and on Applications and Services;
- To review the role and functions of the ICT, in order to determine whether to eliminate it, or to make it more relevant and effective;
- To merge the two ET's 3.7 and 3.8 into a single one dealing with Climate and Health;
- To establish a new ET on Climate and Tourism, and to consider including in its membership, tourism professionals with an activity area in climate and climate change, at regional and global levels (i.e. through the World Tourism Organization (WTO));
- To adopt a new name for ET 3.9 consistent with its new proposed mandate: Expert Team on Urban and Building Climate;
- To end ET3.11 Climate and Agrometeorology under CCI as this is well covered by CAgM;
- To replace ET3.12 on Climate and Hydrology by an Intercommission ET (CCI/CHy) on Climate and Water;
- To establish two rapporteurs for OPAG communications, whose primary objective should be to design and maintain the Web sites for (new) OPAGs 3 and 4;
- To establish a group of reviewers, in order to review documents produced by the OPAG or, on request, by any other CCI activity (this kind of request comes quite often);

- To **either** incorporate climate projects and activities related to Natural Disaster Prevention and Mitigation in the terms of reference of all ETs including those for research needs, CLIPS operation including product generation, end-user liaison, and all application areas, **or** to create an ET on climate-related hazards, whose possible ToRs are tentatively described in the new ET3.6 ET on Climate-related hazards (and disaster risk reduction);
  - To reflect support to the International Polar Year (IPY) into ToRs of appropriate CLIPS and applications groups (note: this needs to be in OPAGs 1 (data and data management) and 2 (indices and indicators) as well);
  - To redistribute some of the responsibilities initially assigned to the ICT, e.g.:
    - o To ensure collaboration and coordination with other WMO Programmes and technical commissions and international entities including those of end-users;
    - o To keep under review and update the list of RCC functions as given in the General Summary of the Session of the Inter-commission Task Team on RCCs (WMO/TD-No. 1070, WCASP-52);
    - o To foster implementation of RCCs in all Regions, and to take charge of the CCI/CBS revisions to Volume 1 of the *Manual on the GDPS*, to ensure that by the end of 2008, it will be possible for any Region (e.g. RA II) to proceed with formal designation of RCCs if wished;
  - To identify a rapporteur for GEO if needed (not included for the moment).
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## ANNEX 2

**List of meetings on OPAG 3 Expert Teams and related Workshops and Conferences  
on Applications to Health, energy, urban and other sectors  
held from 2002 to 2005**

Dates and venue	Meeting / Workshop / Seminar
18-23 February, 2002 Eldoret, Kenya	Climate Outlook Forum for the Greater Horn of Africa
13-14 March, 2002 Montevideo, Uruguay  25-28 March 2002 Geneva, Switzerland	South American Climate Outlook Forum, Mercosur Countries  Intercommission Task Team on Regional Climate Centres
14-18 April, 2002 Algiers, Algeria	Seasonal Forecasting Forum PRESANOR 01
22-26 April, 2002 Montreal, Canada	Expert Team on Development of Verification Methods for Long Range Forecast
29 April -2 May, 2002 Palisades, New York	Preparing for El Niño: Advancing Regional Plans and Interregional Communication
6-17 May, 2002 Bangkok, Thailand	The Asian Climate Training (ACT) Workshop on Climate Information Applications
21-25 May, 2002 Barbados	Conference & Workshop on Climate Variability and Change and their Health Effects in the Caribbean
27 May-5 July, 2002 Oklahoma, USA	Fourth Training Workshop on Climate Prediction & Applications - Tropical Pacific Islands & Rim Nations
30 May-7 June, 2002 Niamey, Niger	Seasonal Outlook Forum PRESA-AO/05 for West Africa
30 June to 2 July 2002 London, United Kingdom	Workshop on Foods: Climate Change and Adaptation Strategies for Human Health
29 July-9 August, 2002 Nairobi, Kenya  28 October to 1 November, 2002 Kansas City	CLIPS Training Workshop for Eastern and Southern African Countries  Joint International Congress of Biometeorology /American Meteorological Society
10 - 13 February, 2003 Geneva, Switzerland	Workshop of Global Producers of Seasonal to Interannual Forecasts
3 - 5 March, 2003 Entebbe, Uganda	11th Climate Outlook Forum for the Greater Horn of Africa
6-7 March 2003 Buenos Aires, Argentina	XVIII Climate Outlook Forum for South Eastern South America

<b>Dates and venue</b>	<b>Meeting / Workshop / Seminar</b>
31 March-4 April 2003 Guayaquil, Ecuador	Workshop on Data Rescue, Data Management, Monitoring, Climate Applications and Predictions
7-9 April, 2003 San Pedro Sula, Honduras	9th Climate Outlook Forum for the Central American Countries
9-11 April, 2003 Djerba, Tunisia	International Conference on Climate Change and Tourism
14-16 April, 2003 Reading, United Kingdom	Proceedings of the RA VI Task Team on the Provision of Seasonal to Inter-annual Forecasts and Regional Climate Centre Services (RA VI-TT/SIRCC)
5-12 May, 2003 Niamey, Niger  27-30 May, 2003 Boston, USA	Seasonal Outlook Forum PRESA-AO/06 for West Africa  XIV Global Warming International Conference
12-18 June, 2003 Erfurt, Germany	CLIPS RA VI Workshop
16-17 June, 2003 Montevideo, Uruguay	XIX Climate Outlook Forum for the Southeaster of South America
14-18 July, 2003 Abuja, Nigeria	Workshop on Application of Climate Information on Health Sector
14-16 July, 2003 Sta. Lucia Cotzumalguapa, Guatemala	10th Climate Outlook Forum for the Central American Countries
11-15 August, 2003 Banjul, Gambia	Workshop on Climate Outlook Forum Update for West Africa (Presao-West)
25-28 August, 2003 Nairobi, Kenya	??th Climate Outlook Forum for the Greater Horn of Africa
1-5 September, 2003 Lodz, Poland	Fifth International Conference on Urban Climate
1-5 September, 2003 Lusaka, Zambia	7th Southern Africa Regional Climate Outlook Forum SARCOF-7
9-11 September, 2003 Toulouse, France  29 Sep. 3 Oct., 2003 Moscow, Russian Federation	CCI Management Core Group  World Climate Change Conference
6-11 October, 2003 Libreville, Gabon	2nd Climate Outlook Forum for Central Africa PRESAAC
7-10 October, 2003 Jeju Island, Republic of Korea	APEC Climate Network (APCN) International Symposium on Multimodel Ensemble for Climate Prediction

Dates and venue	Meeting / Workshop / Seminar
21–23 October, 2003 Ispahan, Islamic Republic of Iran	Third Regional Conference on Climate Change
18-21 November, 2003 Guayaquil, Ecuador	3rd Climate Outlook Forum for the Western Coast of South America
18-19 November, 2003 Washington D.C., USA	"Insights and tools for Adaptation: Learning from Climate"
November, 2003 San Salvador, El Salvador	11th Climate Outlook Forum for the Central American Countries
27-28 November, 2003 Geneva, Switzerland	Organization and Implementation of Regional Climate Centres
1-4 December, 2003 Bandos Island, Maldives	Synthesis Workshop on Climate Variability and Health and their Health Impacts in Small Island States (SIS)
8-12 December, 2003 Guayaquil, Ecuador	Regional Technical Meeting on CLIPS and Agrometeorological Applications for the Andean Countries
11 December, 2003 Curitiba, Brazil	XX Climate Outlook Forum for the Southeaster of South America
22-26 Nov., 2004 Brazzaville, Congo	7th Technical Conference for Regional Association I
9-10 Feb., 2004 Bratislava, Slovakia	Workshop on Extreme Weather Events and Public Health Responses
23-27 Feb. 2004 Nairobi, Kenya	13th Climate Outlook Forum for the Greater Horn of Africa
14 16 April, 2004 Freiburg, Germany	Meeting of Experts to Develop Guidelines on HeatHealth Warning Systems
12-14 May, 2004 Geneva, Switzerland	Meeting of Experts on End-user Liaison
1-27 May, 2004 Geneva, Switzerland	World Health Assembly and 114th Session of WHO Executive Board
3-4 June, 2004 Ruschlikon, Switzerland	Climate Changes Futures: Health, Ecological and Economic Dimensions
8-11 June, 2004 Banjul, Gambia	Seasonal Outlook Forum PRESA-AO/07 for West Africa
July, 2004 Antananarivo, Madagascar	Seasonal Outlook Forum PRESA-OIM/01
12-16 July, 2004 Vientiane, Lao People's Democratic Republic	Workshop on Production of National Climate Monitoring Bulletins in the Indochina Region



Dates and venue	Meeting / Workshop / Seminar
27-29 July, 2004 Geneva, Switzerland	African Climate Variations Workshop focussing on Eastern and Southern Africa
23-27 August, 2004 Nairobi, Kenya	14th Climate Outlook Forum for the Greater Horn of Africa
August 2004 Jeddah, Saudi Arabia	Seasonal Outlook Forum PRESA-NOR/02 for North Africa
30 Aug –2 Sept. 2004 Harare, Zimbabwe	8th South African Region Climate Outlook Forum SARCOF-8
13-17 Sept., 2004 Barcelona, Spain  14-15 Sept., 2004 Nadi, Fiji	World Urban Forum II  Climate and Health Workshop
26 Sep.–7 Oct. 2004 Doha, Qatar	CLIPS Focal Point Training Workshop for Western Regional Association II
12-15 Oct., 2004 Arusha, Tanzania	Meeting of Expert Team on CLIPS operations including Product Generation, with emphasis on countries in Need
25-27 Oct., 2004 Tokyo, Japan	RA II Working Group on Climate Matters
9-12 Nov., 2004 Guayaquil, Ecuador	Regional Association III Workshop on CLIPS and Its Application to the Health Sector
15-17 Nov., 2004 Guayaquil, Ecuador	4th Climate Outlook Forum for Western Coast of South America
2-4 February 2005 Tokyo, Japan	Meeting of Expert Team on Verification
2-4 March 2005 Mombasa, Kenya	15th Climate Outlook Forum for the Greater Horn of Africa
5-6 April 2005 Buenos Aires, Argentina	Regional Forum on Climatic Perspective for Southeastern South America
7-9 April 2005 Beijing, China	1st Session of the Forum on Regional Climate Monitoring - Assessment - Prediction for Asia (FOCRA II)
16-20 May 2005 Guayaquil, Ecuador  17 May - 3 June 2005 Niamey, Niger	1st Alexander von Humboldt International Conference on The El Niño phenomenon and its global impact  Seasonal Outlook Forum PRESA-AO/08 for West Africa
23-25 May 2005 Geneva, Switzerland	Meeting of the Expert Team on Urban Climatology including Training

<b>Dates and venue</b>	<b>Meeting / Workshop / Seminar</b>
13-16 July 2005 Sao Paulo, Brazil	Regional Technical Meeting on CLIPS and Agrometeorological Applications for the Mercosur Countries
8-19 August 2005 Lima, Peru	CLIPS Training Workshop for Regional Association III
5-9 September, 2005 Garmisch-Partenkirchen, Germany	17th International Congress of Biometeorology
16 Sep.-28 Oct., 2005 Oklahoma, USA	Fifth Training Workshop on Climate Prediction & Applications - Circum - Indian Ocean

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1. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – 2001-2005

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004 – April 2005
<b>6.5 Implementation of CLIPS Project and network of CLIPS Focal Points</b>		
Expansion of the CLIPS national Focal Point network in all Regions; training of Focal Points, strengthening of relationship between NMHSs, GPCs and research groups.	Nomination of national Focal Points; representation of WCRP, CLVAR, IRI and GPCs in training workshops; regular reporting by Focal Points; expansion and updates to the CLIPS training curriculum.	Since CCI-XIII, most members appointed Focal Points; many of these participate in the biennial reporting on their CLIPS activities. Regional CLIPS Focal Point training workshops had been held for RA 1 (Eastern and Southern Africa- Nairobi, Kenya 2002), RA VI (Erfurt, Germany 2003), RA II (Western part, Doha, Qatar 2004) and RA III (Lima, Peru 2005). The CLIPS curriculum was further developed and updated, however, most documents are in English only and Members have expressed a need for the materials to be translated into other UN languages.
<b>6.6 User requirements for integrated, tailored data and products</b>		
Improved understanding of the requirements for climate information by various user-groups.	Survey results; increased presence of user-groups at RCOFs; Guidelines on best practices for end-user liaison.	ET 3.6 on End-user liaison conducted a survey to assess the state of development and use of, or provision of, monthly-to-interannual climate prediction and related products; use of cost-benefit analyses; activities related to weather derivatives; level of assessment of the needs of user groups; and provision of decision-support consultation to users. Work on development of Guidelines was begun.
<b>6.7 Infrastructure and developments in operational seasonal to interannual climate prediction including progress in and sustainability of RCOFs</b>		
Effective interaction with research and monitoring and prediction research groups; expansion of RCOFs to more Regions	Collaboration on development of models, on verification and downscaling methods; regional RCOF support.	There is effective collaboration with WCRP and with CBS and CAgM on seasonal to interannual climate prediction, and cross-representation at meetings. The numbers of Regions and sub-regions holding RCOFs has increased, however in some Regions the funding for these sessions is not yet firm.

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## 1. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – 2001-2005

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004 – April 2005
<b>6.8 Integrating CLIPS with climate applications and services including capacity building</b>		
Wherever feasible, NMHSs and regional climate organizations would integrate climate information (data and monitoring products, analyses, predictions, etc.) in end-to-end services and would demonstrate the socio-economic benefits of the approach.	Strong relationships with user groups; identification of user requirements; participation of user groups in RCOFs; training workshops for climate and user sectors.	Workshops for application to health and agriculture sectors have been successfully held in a number of regions (see table). Media groups and other sectors are increasingly participating in RCOFs. ET 3.6 on End-user Liaison has developed a draft Technical Note on Socio-economic benefits of climatological services.
Sharing information on the OPAG, its members and achievements via the Internet and reports.	Development/maintenance of a CCI Web page on the OPAG and publication of reports of the work of its members.	The CCI Web site holds up-to-date information on the ETs and Rapporteurs for OPAG 3, and their Terms of Reference. The CLIPS Web site holds information on meetings of the ETs including reports of sessions, reports of CLIPS Focal Points. As additional products become available (Guidelines, survey results, etc.) these will also be posted.
Train CLIPS Focal Points.	Number of focal points that have benefited from training.	CLIPS Focal Point training workshops had been held for RA I (Eastern and Southern Africa, Nairobi, Kenya 2002), RA VI (Erfurt, Germany 2003), RA II (Western part, Doha, Qatar 2004) and RA III (Lima, Peru 2005).
<b>6.9 Interactions with other WMO Commissions and Programmes</b>		
Raise awareness of WCP and CCI activities to relevant Commissions and Programmes.	Post reports and information on WCP and CCI Web sites; share information via WMO Web pages and newsletters such as World Climate News; participate in joint meetings.	CCI and CLIPS Web sites are regularly used to present reports and information. Significant achievements are published in the bi-annual World Climate News. Significant progress has been made in enhancing linkages with CAgM and CHy on matters of climate and agriculture and water resources. There is effective collaboration with CBS on issues pertinent to implementation of regional Climate Centres. CBS participated in the WCP meeting on Organization and Implementation of RCCs (Geneva, November 2003, WCASP No. 62).

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004 – April 2005
<b>6.10 Recommended new initiatives for applications, predictions and services</b>		
New directions – no results expected in the thirteenth period.	New directions	
<b>6.11 The WMO Conference (2006): Multidisciplinary Conference on Decision-making Processes in Climate Applications</b>		
<p>At the Fourteenth WMO Congress (Geneva, May 2003), Members requested the Secretary-General to consider as a matter of priority the organization of a multidisciplinary conference on decision-making processes in climate applications. The participants were to include policy-makers, climate experts and users from various sectors. Members noted that the conference outcomes and recommendations would be applicable to the roles and functions of NMHSs.</p>	<p>Establishment of scientific and local organizing committees; selection of a venue and dates; mobilization of resources; conference science agenda; announcements; web site development.</p>	<p>The OPAG 3 Expert Team on End-User Liaison (ET 3.6) took on responsibility for organization of this conference. WMO prepared Terms of Reference for, and formally established a Scientific Organizing Committee (SOC) for the conference, and selected a title, the venue and dates for the session (namely, the WMO Conference on 'Living with Climate Variability and Change: Understanding the uncertainty and managing the risks', to be held in Espoo, Finland, 17-21 July 2006). The SOC is responsible for the science programme, including the format and structure of the conference, and WMO is working with co-sponsors, the Finnish Meteorological Institute (FMI) and the International Research Institute for Climate Prediction (IRI) on logistical arrangements including fundraising. The SOC has national and regional representatives, and representatives from organizations including FAO, WHO, UNDP, UNEP, UNESCO, and OECD.</p> <p>In April 2005, FMI hosted a meeting to investigate the site chosen for the conference venue, to finalize the science plan for the conference, and to review the anticipated resource requirements for the event.</p> <p>Efforts are underway to mobilize the required resources. The first announcement including objectives of the conference was issued in September 2005. The FMI established and maintains the conference Web page.</p>

**AGENDA ITEM 7 - OVERALL COORDINATION OF CLIMATE ISSUES AND INTERAGENCY COLLABORATION**

CCI-XIV/Rep. 7

**1. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – JUNE 2004 – APRIL 2005**

<b>Expected results</b>	<b>Performance indicators</b>	<b>Activity and Progress Report Related to the Expected Results June 2004– April 2005</b>
Finalization of the <i>Guide to Climatological Practices</i>	Completion and publishing of the <i>Guide</i>	The Expert Team on the Guide met in Toulouse, 19-23 September 2005 to discuss completion of the work ( <i>please also refer to annotated agenda item 9.7</i> ).
1. More effective and high level cooperation with international partners  2. Stronger multi-disciplinary cooperation with NGOs, World Bank and the Global Environment Facility	Number of joint climate related activities particularly with other UN Agencies and secretariats of UN climate conventions	The CCI president contributed to the development by EC-AGCE-V of:  (a) A discussion paper for WMO leadership in climate and environment;  (b) Forty recommendations concerning crosscutting interactions of WCP and CCI with other WMO Programmes and those of other international organizations such as ISDR, UNFCCC, WHO and UNEP.

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004– April 2005
<p>1. More effective work with international organizations</p> <p>2. Develop joint inter-agency programmes to address influence of climate</p> <p>3. Develop cooperation with NGOs active in the field of climatology</p>	<p>(1) Participation in the events and activities organized by UN climate related conventions</p> <p>(2) Availability of climate information for regular assessment of the environment</p> <p>(3) Results of joint activities carried out in collaboration with NGOs</p>	<p>(a) Participation of WCP in the COP session of climate related conventions, for example, Tenth Session of UNFCCC COP (COP-10) in Argentina, December 2004 and Seventh Session of the Conference of Parties (COP-7) of the United Nations Convention to Combat Desertification (UNCCD), Nairobi, Kenya from 17 to 28 October 2005.</p> <p>CCI to incorporate activities relating to the decision of the COP-6 of the United Nations Convention to Combat Desertification (UNCCD) that requested an integrated approach toward the issue of "Land Degradation, vulnerability and rehabilitation"</p> <p>(c) Noting the crosscutting nature of the subjects to be discussed at UNCCD COP-7, WMO organized a side event, exhibition booth and contacts of the Secretary General with the media and heads of delegations.</p>
<p>Develop joint inter-agency programmes to address influence of climate</p>	<p>(1) Participation in the events and activities organized by UN climate related conventions</p> <p>(2) Identification of priority areas relating to the dynamics of natural and managed ecosystems (item (h) of the CCI ToR)</p>	<p>The tenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-10) to the Convention on Biological Diversity (CBD), Bangkok, Thailand, 7 to 11 February 2005. It also adopted the terms of reference for an Ad Hoc Technical Expert Group (AHTEG) on synergies among activities related to biodiversity, desertification and climate change.</p>

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004– April 2005
Development of a plan to address the findings of the Second Report on the Adequacy of the Global Observing Systems for climate in support of the UNFCCC.	Completion of the Implementation Plan	The Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC was completed at the request of COP-9 under the leadership of GCOS, with broad input from the climate and related scientific communities, including CCI. The Plan addresses the requirements identified in the Second Report on the Adequacy of the Global Observing Systems for Climate in Support of the UNFCCC and, in particular, the Essential Climate Variables and the associated products defined therein. It takes into consideration existing global, regional and national plans, programmes and initiatives, including the plans of the recently established Group on Earth Observations (GEO), and includes implementation priorities and resource requirements as well as indicators for measuring progress. The full Plan and its Executive Summary are available through the GCOS Web site ( <a href="http://www.wmo.int/web/gcos">www.wmo.int/web/gcos</a> ). The Plan was endorsed through decision 5/CP.10. Implementation of many of actions will require the support of many of the WMO Technical Commissions, including CCI. In terms of Coordination and consolidation of general requirements for observations, data collection, supply and exchange CCI plays an important role for GCOS.



**AGENDA ITEM 8 - EMERGING ISSUES FOR CCL**

**CCI-XIV/Rep. 8**

**4. PROGRESS/ ACTIVITY R EPORT FOR THE PERIOD – 2001-2005**

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004 – April 2005
<p><b>8.3 International initiatives to explore possible global consensus on definitions of and indices of El Niño and La Niña</b></p>		
<p>New Item. No results expected in the thirteenth period.</p> <p>Cross reference with Agenda item 5 (work of OPAG 2) on the ET on El Niño Definitions and Indices set up in 2005 by CCI Management Group.</p>	<p>New Item.</p>	<p>NOAA, in collaboration with a number of US experts, developed official consensus definitions for El Niño and La Niña for application to US operations, and these have been in operational use in the USA since September 2003. At XIV-RA IV (April 2005), Members of RA IV agreed to adopt these operational NOAA definitions for the whole of the region.</p> <p>In February 2005, the CCI Management Group established an ET in CCI OPAG 2 to catalogue the definitions of El Niño and La Niña in use operationally around the world. The ET met by teleconference in May 2005, and WMO circulated a survey developed by the ET to the Member countries. The ET developed a final report based on the responses to the survey, thus completing their mandate.</p>

## AGENDA ITEM 9 - PRIORITIES FOR THE FUTURE WORK OF THE COMMISSION

CCI-XIV/Rep. 9

### 1. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – 2001-2005

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004 – April 2005
<b>9.1 Follow up to the establishment of Regional Climate Centres (RCCs)</b>		
To clarify the roles, functions and designation criteria for RCCs; to incorporate appropriate text on RCCs in the Sixth Long-term Plan; to consult with WCRP on research activities that could be conducted within RCCs. An implicit expectation was that regional associations would take steps to establish RCC(s).	Guidelines that clarify the role, functions and designation procedures on RCCs; reference in the LTP; establishment of RCCs in the Regions.	<p>(a) At the meeting of experts on the organization and implementation of RCCs (Geneva, November 2003), regional representatives reported on the status of their progress on RCCs, and on the capacity within their Regions to deliver RCC functions. At that time, RA I, RA II and RA III had not held formal discussions at the regional level, but in the other three Regions some regional discussion was in progress (e.g., RA IV, Miami, July 2003; RA V, Auckland, New Zealand, August 2002; RA VI, Geneva, May 2002). The meeting developed a set of Guidelines for use by Regional Associations to investigate requirements for and to implement RCCs. These Guidelines were provided in English, French, Spanish and Russian.</p> <p>(b) Since that time, RA II, RA IV and RA VI have taken steps to implement RCC networks on a pilot basis. RA IV is adopting a virtual network similar to that in place in RA V. RAs II and VI are establishing a network of multifunctional RCCs along with collaborating centres, and may eventually elect to have the RCCs formally designated within the terms of the Manual on the GDPS.</p>

<b>9.2 WMO's contribution to climate and sustainable development</b>		
<p>More effective and high level cooperation with International Organizations.</p>	<p>Number of joint activities, projects and initiatives</p>	<p>(a) WMO participated in COP-10 in Buenos Aires, Argentina, (6 to 17 December 2004) and SBSTA/SBI-22 in Bonn, Germany, (19-27 May 2005) of the UNFCCC. WMO held several media briefings on SIDS and provided information material. WMO held two side events, one on "Reducing Vulnerability to Climate Change and Sea-level Rise" in collaboration with the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) and the other on "Natural Disaster Reduction and Building of Resilience" which was co-sponsored by the International Federation of Red Cross and Red Crescent Societies (IFRC). The Secretary-General addressed the High-level segment and gave a press conference and media interviews on the role of WMO and National Meteorological and Hydrological Services in the sustainable development of SIDS and on WMO's monitoring and early warning system.</p>
		<p>(b) WCP facilitated contributions and participation of several experts to the ISDR Conference of WCDRII (Kobe, Japan, January 2005), on the topics of urban climates and risk management, El-Niño Southern Oscillation (ENSO) and food security, with a linkage to socio-economic development.</p>
		<p>(c) WMO is organizing a Technical Conference on 'Climate as a Resource' prior to CCI-XIV in Beijing, China, 1-2 November 2005. The outcome of the Conference will be reflected to CCI-XIV.</p>

<b>9.3 The GEOSS climate societal benefit area and its relationship to the World Climate Programme and CCI</b>		
Participation of CCI in the Implementation Plan of GEOSS to help achieve a comprehensive, coordinated and sustained observation system.	Involvement of relevant CCI Expert Teams to respond to GEOSS requirements.	(a) The group, co-chaired by the United States, the European Commission, Japan, and South Africa, and joined by more than 21 international and intergovernmental organizations, began its work by organizing five sub-groups, as well as a secretariat to support its activities.
		(b) The document describing the GEOSS framework (referred to as the Framework Document) for the 10-Year Implementation Plan was presented for adoption at the second Earth Observation Summit (EOS-II) attended at the ministerial-level, in Tokyo, Japan on 25 April 2004, and the 10-Year Implementation Plan itself was subsequently adopted at the third Earth Observation Summit (EOS-III) hosted by the European Commission and held on 16 February 2005 in Brussels.
		(c) GEO-2, which met in Baveno, Italy, 28-29 November 2003, had agreed that GEOSS should be a system of systems supplemented by new observing components as and where required. This architecture would allow existing individual observing systems, e.g., WMO's WWW GOS, to remain within their mandates as well as providing for new observing components. The architecture would require a new interface between individual observing components as well as a new component to exchange and disseminate observational data between those components.
		(d) The fifth session of GEO (GEO-5) held in Ottawa, Canada 29-30 November 2004, reviewed a proposal by WMO to host the GEOSS Secretariat and reached consensus in principle to consider an Agreement describing the WMO offer at GEO-6 in Brussels, 14-15 February 2005.

		<p>(e) At GEO-6 followed by the Third Earth Observation Summit (EOS-III), there were three significant events for WMO. First, the agreement by a GEO-6 Resolution to assent to a Standing Arrangement between WMO and GEO for hosting the GEO Secretariat in Geneva. Second, a Communiqué relating to support for tsunami and multi-hazard alert systems which was endorsed at EOS-III. Third, an EOS-III Resolution endorsing the 10-Year GEO Implementation Plan was signed at the ministerial level.</p>
<p><b>9.4 The WMO Space Programme meeting the needs of the Climate Space-Based Component for CCI</b></p>		
<p>To develop and provide guidelines on the use of satellite data and products in climate .</p>	<p>Number of guides, publications and training modules provided on satellite applications in climatology.</p>	<p>(a) Cg-XIV agreed that the main thrust of the WMO Space Programme Long-term Strategy should be:</p> <p>“To make an increasing contribution to the development of the WWW GOS, as well as to the other WMO-supported Programmes and associated observing systems (such as AREP’s GAW, GCOS, WCRP, HWR’s WHYCOS and JCOMM’s implementation of GOOS) through the provision of continuously improved data, products and services, from both operational and R&amp;D satellites, and to facilitate and promote their wider availability and meaningful utilization around the globe.”</p> <p>(b) A number of space missions were currently operational or under consideration (i.e., under study but not yet approved for full development) by several space agencies (NASA, NOAA, ESA, EUMETSAT, JAXA, CNES, ISRO...) for launch in the 2006-2010 timeframe.</p>

<b>9.5 Capacity building and training activities</b>		
Training workshops in other Regions (one had already been held for RA V at that point); nomination of CLIPS Focal Points in Member countries; sub-regional coordination of FP activities; development of the CLIPS curriculum.	Workshops; expansion of the FP network; coordination; new training modules for the CLIPS curriculum.	See table for Doc 6 for a list of all the training activities 2001 -2005. Focal points have been nominated in many countries, and all Regions but RA IV. The Focal Points are requested to send regular reports on their CLIPS activities, but this has met with only partial success. Not all countries have extensive climate activities, and for some training is badly needed before new activities can commence. Not all active countries report, and experience has taught that management of this reporting activity is a big task for which the Secretariat is under resourced. More of the responsibility should be taken on within the Regions in future for this initiative to be more successful. New materials were added to the CLIPS Curriculum, and these are posted on the CLIPS Web page. However, Members have indicated that they need these valuable resources in other languages than English.
<b>9.7 International Polar Year (IPY) (2007-2008)</b>		
New initiative, therefore there were no expected results.	None	Adequate background is written into the general summary text.
<b>9.8 Status of the third edition of the Guide to Climatological Practices</b>		
Final review and publication of Part I of the Guide; initiation of development of Part II; review the requirements for and associated costs of Part II.	Review and publication of Part I of the Guide; development of Part II; project plan including cost estimates for Part II.	Part I has not yet had the final review and editing; Part II is nearly complete, and was reviewed at the meeting of the ET in September 2005 (Toulouse). A work plan for finalizing the text was developed. The WMO publishing process was reviewed. CCI should likely establish an ET again to ensure that the required reviews and signing-off by a scientific authority are effectively completed, and to participate in finalization of the text, graphics and photos.

<b>9.9 Enhancement of the role of women and developing countries in the work of the Commission</b>		
<p>CCI to appoint a gender focal point, and to ensure the participation of women in the work of the Commission.</p>	<p>A Gender FP; and numbers of women active in the work of the Commission.</p>	<p>(a) The Second WMO Conference on Women in Meteorology and Hydrology was held at the Headquarters of the WMO Secretariat in Geneva from 24 to 27 March 2003. A key objective of this conference was to develop strategies to increase the participation of women in the activities of WMO and in the work of National Meteorological and Hydrological Services (NMHSs). The Conference also considered the gender sensitive aspects of the activities of NMHSs such as the application of climate information by rural women and the special roles women play in water management and disaster response. The Conference urged technical commissions and regional associations to appoint and support gender focal points from among women with appropriate expertise, and to report regularly on progress on gender issues to Congress/EC.</p> <p>(b) CCI did not appoint a gender focal point, but did encourage the participation of women in its activities. The text in the general summary on this matter lists the numbers.</p>

<b>9.10 Improving CCI involvement in WCP-Water</b>		
<p>CCI and WCP to collaborate closely with WCP-Water on issues of climate and hydrology.</p>	<p>Joint projects; workshops and training sessions; participation of hydrologists in CLIPS activities</p>	<p>(a) In the thirteenth intersessional period, WCP was represented in WCP-Water Steering Committee and related meetings. As a result of the increased focus on hydrology by WCP and CCI and the importance of climate in hydrometeorological disasters, CCI has been invited to nominate a representative to the SC as well. CCI will also be urged to support a number of important conferences in which WCP-Water has an interest.</p> <p>(b) The World Climate Programme-Water (WCP-Water), established in 1981 by the World Meteorological Organization (WMO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) promotes activities related to freshwater availability; water quality; climate, water and health; climate, water and food security; and climate-related natural disasters and hydrological extremes in vulnerable basins.</p> <p>(c) The Intergovernmental Panel on Climate Change (IPCC) Third Assessment Report revealed a general lack of consistency, globally, in approach and in methodologies for quantitative assessment of change in hydrologic regimes with changes and variations in climate, and in criteria used for the quality of the data used.</p>



		<p>(d) The Centre for Ecology and Hydrology (Wallingford, UK) hosted a meeting of experts for WCP-Water in December 2003. The meeting focused on streamflow sensitivity to precipitation, and initiated a systematic assessment of streamflow sensitivity in selected river basins around the world using uniform and unbiased approaches. Key results from this meeting include identification of basins with suitable data for monthly precipitation and streamflow; generation of the required time series; analyses of runoff sensitivity to precipitation; and hydrologic model runs using change factors. It is planned to publish and incorporate these results in the IPCC Fourth Assessment Report. CCI was represented at the December 2003 meeting at CEH-Wallingford by a number of experts from basin and river authorities in Africa, and by the Director of the Centro Internacional para la Investigación del Fenómeno de El Niño (CIIFEN).</p>
		<p>(e) Recent publications for WCP-Water are:</p> <ul style="list-style-type: none"> <li>• Detection of change in world-wide hydrological time series of maximum annual flow (June 2004) (WCASP-64);</li> <li>• Development, use and application of the hydrospect data analysis system for the detection of changes in hydrological time series for use in WCP-Water and National Hydrological Services (Poznan, June 2004) (WCASP- 65);</li> <li>• Trends in flood and low flow hydrological time series (July 2004) (WCASP-66); and</li> <li>• Expert meeting on hydrological sensitivity to climate conditions (Centre for Ecology and Hydrology (CEH), (Wallingford, UK, 2-4 December 2003) (WCASP-67).</li> </ul>

		<p>(f) WCP-Water is guided by CHy, and has a Steering Committee comprising representatives from CHy (H. Lins, Executive Secretary, WCP-Water); WMO HWR (C/WAT); WMO WCP (SO/WCP); UNESCO (M. Bonell, Global Coordinator of the UNESCO FRIEND and HELP Programmes); International Association of Hydrological Sciences (IAHS) (P. Hubert); UNESCO International Hydrology Programme (IHP) (S. Demuth, Director of the IHP Secretariat); Cooperative Programme on Climate and Water (CPWC) (H. Van Schaik, Director, CPWC); and observers and invited experts from collaborating programmes and partners, including the IPCC (Z.W. Kundzewicz), the Institut de Recherche pour le Développement (IRD) (G. Mahé) and the UNESCO-IHP FRIEND initiative (A. Gustard).</p>
		<p>(g) Note that activities related to data and data management issues (including data rescue), development and application of seasonal to longer predictions, participation in Regional Climate Outlook Forums focused on water resource management requirements, development of predictive skill, collaboration in climate alerts and advisories, etc. are activities for coordination with CHy-HWR, not WCP-Water.</p>

<p><b>9.12.5</b> DPM Programme has initiated three major fact-finding projects, including:</p>		<ul style="list-style-type: none"> <li>(a) “Regional level DPM Assessments” – With the goal to identify in a systematic manner key weather-, climate- and water-related hazards and to document capabilities (i.e., strengths and weaknesses), gaps and needs in WMO’s core areas of activities related to observing, monitoring, detecting, forecasting and early warnings in all six WMO Regions.</li> <li>(b) “Country level DPM Assessments” - The goal is to develop country profiles with respect to DPM related capabilities (i.e., strengths and weaknesses), gaps and needs on WMO’s core areas of activities and how effectively the products and services developed by NMHSs are integrated in the disaster risk management and emergency response process for relevant hazards in their respective country.</li> <li>(c) “Mapping of DPM activities of WMO Major Programmes” - Develop a comprehensive matrix of DPM related activities of all relevant WMO major programmes to determine scope, synergies, gaps, redundancies and related budgets.</li> </ul>
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<p><b>9.13.2</b> Enable the delivery of increasingly accurate and reliable climate predictions, detecting climate change and responding to research needs of IPCC and UNFCCC.</p>	<ul style="list-style-type: none"> <li>• Percentage of improvement in seasonal to longer-term predictions;</li> <li>• Development and implementation of climate modelling systems.</li> </ul>	<p>The Commission was informed and acknowledged with appreciation that since CCI-XIII:</p> <ul style="list-style-type: none"> <li>(a) WCRP had concluded the WOCE project that had been the biggest and most successful global ocean research programme to date and had published the first in a series of Ocean Atlases;</li> <li>(b) WCRP had concluded ACSYS that had brought major advances in understanding the role of the Arctic in the global climate system;</li> <li>(c) GEWEX Phase I had generated unprecedented global data sets on clouds, precipitation, water vapour, surface radiation, and aerosols, and made, through its continental-scale experiments, significant progress towards the closure of the regional water and energy budgets;</li> <li>(d) The CLIVAR project had provided crucial contributions to, and coordination of, research on climate variability, change, and predictability, with a particular focus on the global oceans and monsoons. Regional workshops sponsored by the joint CCI/CLIVAR Expert Team on Climate Change Detection and Indices had provided valuable input to the IPCC assessment reports;</li> <li>(e) The SPARC project had conducted assessments of trends in stratospheric temperature, vertical distribution of ozone, upper tropospheric and stratospheric water vapour, and aerosols;</li> <li>(f) The CliC project had been recording the dramatic changes in the global cryosphere and developing a strategy that would lead to improved observation, understanding, and modelling of the cryosphere as part of the climate system.</li> </ul>
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**AGENDA ITEM 11 - REVIEW OF CCI TERMS OF REFERENCE AND STRUCTURE**

CCI-XIV/Rep. 11

**5. PROGRESS/ ACTIVITY REPORT FOR THE PERIOD – 2001 -2005**

Expected results	Performance indicators	Activity and Progress Report Related to the Expected Results June 2004 – April 2005
<p><b>11.2</b> Review of existing and establishment of new CCI OPAGs, Expert Teams and special rapporteurs, including ToRs for each</p>		
<p>The CCI Management Group was tasked with keeping under review the internal structure and working methods of the Commission, and to assess and evaluate progress achieved in the work of the OPAGs. The OPAG chairs were to report on progress and assessments regularly to the CCI Management Group.</p>	<p>Regular reports of the OPAG chairs, assessment of the results by the CCI MG, and decisions regarding structure and priorities of the Commission for the next intersessional period.</p>	<p>At its thirteenth session, the Commission for Climatology (CCI-XIII, November, 2001) adopted a new working structure through Resolution 1 CCI-XIII; established a CCI Management Group (CCI MG) through Resolution 2 CCI-XIII; and established three Open Programme Area Groups (OPAGs) through Resolution 3 CCI-XIII, on Climate Data and Data Management; Monitoring and Analysis of Climate Variability and Change; and Climate Applications, Information and Prediction Services. The Annex to Resolution 1 described the role and functions of the CCI MG, the OPAGs, the Implementation/Coordination Teams (ICTs), the liaison between the CCI and the regional associations and the role of developing countries in the work of the Commission.</p> <p>As part of their assessment and reporting function, the Chairs of the CCI OPAGs evaluated the performance of the working structure of the Commission, and recommended amendments to improve it. This included structural changes, and changes to the Terms of Reference of the teams, to reflect priorities for the work, and practical matters including available resources to carry out the work in an efficient manner. In September 2005, the CCI Management group agreed on a revised structure for the Commission, and this is reflected in Doc 11, and in its three resolutions and Annexes.</p>