

ORGANISATION MÉTÉOROLOGIQUE MONDIALE

COMMISSION DE MÉTÉOROLOGIE
AGRICOLE



WORLD METEOROLOGICAL

ORGANIZATION

COMMISSION FOR AGRICULTURAL
METEOROLOGY
OFFICE OF THE PRESIDENT

United States Department of Agriculture
USDA/OCE/WAOB
1400 Independence Ave, SW
Room 5133
WASHINGTON DC 20250
United States of America
Tel: (1 202) 720 9807 / 720 5716
Fax: (1 202) 6901805
E-mail: rmotha@oce.usda.gov

BUREAU DU PRESIDENT

c/o World Climate Programme Department
WMO Secretariat
7 bis, avenue de la Paix
Case postale No. 2300
1211 Geneva 2, Switzerland
Tel: Int=+ 41 (0) 22 730 81 11
Fax: Int=+ 41 (0) 22 730 81 81
Telex: 41 41 99 OMM CH
Cables: METEOMOND GENEVE

**R. Motha
President**

Ref.: M/CAGM-XIII

GENEVA, 26 July 2000

Circular letter from the president of the Commission for Agricultural Meteorology on CAgM-related activities from November to June 2000

Circular letter CAgM No. 2 of the president of CAgM*

Dear Colleague,

This second letter is to keep you informed of activities that have been underway or are currently being planned for the upcoming year.

1. Publication of the Proceedings of the "International Workshop on Agrometeorology in the 21st Century - Needs and Perspectives"

I am pleased to call your attention to the *Agricultural and Forest Meteorology Journal*, Volume 103, Nos. 1-2, which published the papers presented at the CAgM Workshop in Ghana. Congratulations to all the authors and a very special thanks goes to the workshop organizers and WMO Agricultural Meteorology Division for the immense effort in planning the workshop, managing the deadlines, editing the papers, coordinating with the journal editors, and proof-reading the manuscript.

To: Members of the Commission for Agricultural Meteorology (CAgM-...)
Rapporteurs and members of working groups of the Commission for Agricultural Meteorology who are not members of the Commission

cc: Presidents of technical commissions)
Presidents of regional associations)
Chairmen of working groups and) (for information)
rapporteurs of regional associations)
dealing with CAgM-related topics)

* Distributed by the WMO Secretariat

Action required: A. We need to be proactive in promoting the good work that is being performed in our Commission and in the field of agricultural meteorology.

2. Summary of CAgM Report on the Agricultural Meteorology Programme to EC-LII

The Executive Council was pleased with the achievements of the past year and the progress of plans for the upcoming year. The Agricultural Meteorology programme was very active this past year with numerous publications, workshops, and training activities. These will be summarized below. In addition to the listed publications, I would like to call your attention to the three successful international workshops and the support for continued collaboration on the CLIMAG Project, African drought preparedness and mitigation efforts, and the application of automated weather station technology for agriculture and water resource management. Moreover, I can not overstate the importance of the roving seminars as an effective training tool to share knowledge and expertise on various topics at the regional level. A special thanks goes to Ghana, India, Iran, Malaysia, Morocco, Slovenia, and Uzbekistan for hosting these seminars, and, to the international, regional, and national organizations that participated in and helped sponsor these training activities. Cooperation between the RMTTC in Israel and the RMTTCs of Nigeria and Kenya led to successful courses in agrometeorology in Lagos and Nairobi.

2.1 Publications

2.1.1 *Proceedings*

- (i) Proceedings of the Regional Workshop on Data Management and Application in Agricultural Services, Bamako, Mali, 24-28 November 1997;
- (ii) Proceedings of the RA III/IV Expert Group Meeting on Extreme Events, Caracas, Venezuela, 12-14 July 1999.

2.1.2 *CAgM Reports*

- (i) No. 77 - Baier, W. UNCED follow-up;
- (ii) No. 78 - Lomas, J. Education and training in Agrometeorology;
- (iii) No. 79 - Dagvadorj, D. Weather and climate related to pasture and livestock production in arid and semi-arid regions;
- (iv) No. 80 - Samui, R.P. Irrigated soils and crops.

2.1.3 *Training Manual*

Training manual for the Roving Seminar on Geographical Information Systems and Agroecological Zoning.

2.1.4 *Brochure*

WMO (1999). Early Warning Systems for Drought and Desertification: Role of national Meteorological and Hydrological Services. WMO-No. 906 (in English, French and Spanish).

2.2 Workshops

2.2.1 The Commission collaborated closely with the System for Analysis, Research and Training (START) of IGBP, WCRP and the International Human Dimensions Programme (IHDP) in the CLIMAG (Climate Prediction and Agriculture) project and successfully organized the International Workshop on CLIMAG from 27 to 29 September 1999 in Geneva. The goal of CLIMAG is to apply predictions of climate variability, on the scale of months to a year, to crop management and decision making in order to increase agricultural productivity. Attended by sixty-four participants from Europe, Asia, Latin America, Australia, and the United States, the purpose of the workshop was to review the state of the art in climate prediction for agricultural/crop modeling and potential uses in developing strategies to improve crop yields. The Executive Council encouraged WMO's continued participation in the activities of the CLIMAG Steering Committee and requested the Secretary-General to ensure that there was close cooperation between CLIMAG and CLIPS.

2.2.2 UNSO/UNDP and WMO organized farmer-focussed surveys in six countries in Africa to appraise the types of climate products and services provided at the Institutional levels, their delivery systems, and the level of adoption and application in decision making. Following these surveys, an International Workshop on "Coping with Drought in sub-Saharan Africa: Best Use of Climate Information" was organized in Kadoma, Zimbabwe from 4-6 October 1999. Discussions during the workshop showed that several factors are hindering farmers accessing and using climate information. The quality of information and timeliness were identified as key factors. Several solutions were proposed to overcome the constraints, including training of both extension workers and farmers in interpreting and applying climate products. The Executive Council fully supported the continued collaboration with UNDP/UNSO in the implementation of pilot projects in Africa to promote the best use of climate information at the farm level.

2.2.3 An International Workshop on "Automated Weather Stations for Applications in Agriculture and Water Resources Management: Current use and future perspectives," co-sponsored by National Weather Service (USA), United States Department of Agriculture (USDA), University of Nebraska, and WMO, was held in March 2000 in Lincoln, Nebraska. Up-to-date information on data collection, management, quality control, calibration, maintenance, and applications of automated weather stations (AWS) data in agriculture and water resource management, crucial for improving the automated weather station networks, was presented by numerous speakers.

2.3 Training events

2.3.1 The WMO Agricultural Meteorology programme developed roving seminar series on five new topics including Data Management for Applications to Agriculture, Instrumentation and Operation of Automatic Weather Stations for Application in Agrometeorology, Crop-Weather Modelling, Application of Climatic Data for Drought Preparedness and Management of Sustainable Agriculture, and Geographical Information Systems and Agroecological Zoning. The Council was pleased to note the initiative taken by Ghana, India, Iran, Malaysia, Morocco, Slovenia, and Uzbekistan in hosting these roving seminars. The Council recorded its appreciation for the participation and collaboration of several international, regional, and national organizations in these training activities, in particular ACMAD, FAO, the Institute of Agrometeorology and Environmental Analysis for Agriculture (Italy), the Secretariat of the UNCCD, the United States Department of Agriculture (USDA), and UNEP.

2.3.2 The following Roving Seminars were organized by the Programme

- (i) Roving Seminars on Instrumentation and Operation of Automatic Weather Stations for Application in Agrometeorology:
28 June-9 July 1999, Casablanca, Morocco and
27 November-8 December 1999, Tehran, Islamic Republic of Iran
- (ii) Roving Seminars on Crop-Yield Weather Modelling:
19-30 July 1999, Pune, India and
6-17 September 1999, Ljubljana, Slovenia
- (iii) Roving Seminar on the Application of Climatic Data for Drought Preparedness and Management of Sustainable Agriculture:
1-12 November 1999, Accra, Ghana
- (iv) Roving Seminar on Data Management for Applications to Agriculture:
8-19 November 1999, Tashkent, Uzbekistan
- (v) Roving Seminar on Geographical Information Systems (GIS) and Agroecological Zoning:
8-19 May 2000, Kuala Lumpur, Malaysia

2.4 International collaboration

WMO was represented at the following meetings:

- (i) Third Conference on Desertification and Environmental Studies - Beyond the year 2000, Riyadh, Saudi Arabia, (30 November to 4 December 1999);
- (ii) Dissemination of Value-Added Information to Natural Resource Decision makers for Easing Conflicts in West Africa (Washington, DC, USA, 23 and 24 June 1999);
- (iii) FAO/Netherlands Conference on the Multifunctional Character of Agriculture and Land (MFCAL) (Maastricht, the Netherlands, 12 to 17 September 1999);

2.5 Expert Group Meetings

2.5.1 A RA III/IV Expert Group Meeting on Extreme Events was held in Caracas, Venezuela, from 12 to 14 July 1999. Recent extreme meteorological events affecting agriculture, cattle, forestry, and fisheries in the RA III and RA IV regions were reviewed. The Commission should continue to focus on improving our understanding of extreme events and the ways and means to cope with them.

2.5.2 In the preparation leading to the organization of an Inter-Regional Workshop on Improving Agrometeorological Bulletins to be held sometime in 2001, a Consultants Meeting was held in Geneva from 1-2 November 1999 to prepare a background document highlighting the major issues and proposing action that would lead to better agrometeorological bulletins. Timely provision of agrometeorological information in a user-friendly format is an essential component of agrometeorological services and the Council considered that this initiative of the Commission is crucial to the provision of improved agrometeorological services.

Action required: B. The Members should continue to encourage and promote this effective training activity and international collaboration, and the WMO will continue to seek co-sponsorship for the organization of training events in agricultural meteorology

2.6 Cooperation between the Commissions

The subject matter in the field of agricultural meteorology is extremely diverse, ranging from the highly specialized crop modelling to highly technical geographical information systems. However, there is much technology and science that is shared with other technical commissions. Close collaboration among the commissions on topics of mutual interest will greatly benefit all members. A number of activities are underway, due in large part by the initiative of the presidents of the technical commissions and at the recommendation of the Council, to strengthen this cooperation. Areas of collaboration currently include: climate database management systems (CCI); automated weather instrumentation (CIMO) and applications of automated weather station data (CBS) in agriculture; and, applications of climatic data for drought preparedness and management of sustainable agriculture and water resources (CHy). CAgM is also an active participant on the Inter-programme task team on future WMO information systems, established by CBS to gain maximum benefit from modern data-communication techniques and services. CAgM was also invited by the president of CCI to participate on a task group on a future WMO Climate Database Management System (CDMS). The Council decided to establish an Inter-Commission task team on regional climate centres to define the need for, and the roles of, the regional climate centres. I was invited to designate an expert to participate in the work of this task team.

Action required: C. The Members need to be aware of relevant issues affecting the commission and keep the president informed of matters that should be addressed through inter-commission collaboration.

2.7 Regional Working Groups and Rapporteurs

Two meetings of the Working Groups on Agricultural Meteorology, in RA IV and RA II, were organized in 1999. The Executive Council stressed the importance of continued and active participation of the regional working groups and rapporteurs in addressing the key issues of importance to regional agricultural meteorology. A meeting of the RA IV Working Group on Agricultural Meteorology was held in Caracas, Venezuela, from 15 to 17 July 1999, hosted by the Servicio de Meteorología (FAV). The Group discussed and agreed on the contents of the final report to be submitted to the Thirteenth session of RA IV. A meeting of the RA II Working Group on Agricultural Meteorology was held at the IRIMO Headquarters, Tehran, Islamic Republic of Iran from 4-6 September 1999. Members discussed the contents of the final technical report to be submitted to the forthcoming Twelfth session of RA II.

Action required: D. CAgM should study the way in which advise on agricultural matters can be provided, where needed, to the regional associations or to the WMO Members and recommend, if necessary, any proposed course of action for discussion at the Fourteenth Congress of WMO.

2.8 Norbert Gerber - MUMM International Award

The Norbert Gerber - MUMM International Award for 2001 was conferred on Messrs Lu Chun-Lian and Chen Shun-Hua for their paper entitled A Multiple Linear Interdependent Models (MLIM) Applied to Typhoon Data from China, published in the journal A Theoretical and Applied Climatology.

Action required: E. I strongly urge members to submit nominations from their country for the 2002 award on relevant research papers in the field of agricultural meteorology. I am firmly convinced that there is much outstanding work underway throughout the research community that is deserving of an opportunity to be evaluated, based on significance of the topic, novelty of ideas, and methods and value of results to WMO programmes, for this esteemed award.

3. Meetings held or planned for 2000 and 2001

3.1 Workshops, meetings, and training

- (a) A Roving Seminar on Agrometeorological Data Management and Applications for the SADC countries was held from 19-30 June 2000 in Pretoria, South Africa.
- (b) As of 1 July 2000, the following is a summary of activities planned for the next months:
 - (i) An Expert Group Meeting on Early Warning Systems for Drought Preparedness and Drought Management is scheduled for 5-7 September 2000 in Lisbon, Portugal.
 - (ii) An Expert Group Meeting on Software for Agricultural Weather Data Management is scheduled for 16-20 October 2000 in Washington, D.C.
 - (iii) An International Workshop on Agricultural Impacts of El Niño - Southern Oscillation (ENSO) is scheduled for March 2001 in the Philippines.
 - (iv) An Inter-Regional Workshop on Improving Agrometeorological Bulletins is scheduled for 2001.

3.2 CAgM Working Group meetings

- (a) Working Group on Impacts of Agrometeorological Applications for Sustainable Management of Farming Systems Forestry and Livestock, from 11 to 14 September 2000 in Geneva, Switzerland (chaired by Prof. Kleschenko)
- (b) Working Group on the Communication of Agrometeorological Information, from 13 to 16 November 2000, Geneva, Switzerland (chaired by Mrs Pérarnaud).

Action required: F. All CAgM Working Groups and Rapporteurs should be proceeding with their work plans to ensure that the final reports will be completed on schedule for the next commission meeting

4. WMO Commission for Agricultural Meteorology - Thirteenth Session

The Thirteenth session of CAgM will be held in Slovenia, tentatively in October 2002. This is only a little more than two years away. We must begin to formulate our thoughts on issues and the plans for this meeting as time will pass quickly. More details of the session will be provided in subsequent correspondence to commission members.

The next three items have been provided by the coordinators of special activities.

5. WMO/CAgM Experts for the Collection of Case Studies in Agrometeorology - Dr Wolfgang Baier

The Commission established at CAgM-XII (Accra, February 1999) a group of experts for collection of case studies of economically beneficial agrometeorological applications and services and on other success stories in agrometeorology for policy matters (Para.8.1.3 of Abridged Final Report WMO-No.900). Subsequently, 13 experts were appointed representing Canada, Ukraine, Ecuador, Kazakstan, Malawi, Viet Nam, France, China, Bénin, Russian Federation, Albania and Australia with Dr Baier (Canada) as co-ordinator. The work of the group - like that of all CAgM- XII working groups, rapporteurs and the steering committee for revision of the Guide - started later than usual after the session, but is now progressing well.

Proposals for such case studies have been submitted from France, Australia, and Benin, whereas others have indicated their intention to submit proposals. In the meantime, the original Australian submission entitled "Farmweather - a Case Study in Agrometeorology" was further developed into an example with respect to format, length, and style. This outline will be helpful when preparing submissions.

The experts were encouraged to look for case studies not only in their country but also in their Regional Association. In fact, all CAgM members are welcome to propose case studies regardless of country, region, or affiliation with their respective organization. For proper planning of the final report, it would be appreciated if the coordinator could be advised as soon as possible about potential submissions of case studies. His address is:

Dr W. Baier, AAFC, ECORC, Ottawa, Ont. K1A 0C6, Canada
 E-mail: wbaier@sympatico.ca
 Fax: 1 613 759 1924

6. Update on rewriting the WMO Guide to Agricultural Meteorological Practices (WMO-No. 134) - Prof. Kees Stigter

The aim of the WMO Guide to Agricultural Meteorological Practices is mainly to provide, in a convenient form for all concerned, information regarding the practices and procedures which are of the greatest importance in agricultural meteorology. It is by no means meant to be a textbook on agricultural meteorology. It should become an operational handbook and field guide that shows what is already in use and how we can (better) use what we already know and understand.

The CAgM Advisory Working Group, in its meeting in November 1997, indicated that the new Guide should be more operational in nature than before, because a large part of agroclimatological assessment is not in the Guide at present. Priority practices and procedures need to be described for others to understand their principles. References to good literature should give further guidance. Much knowledge is available but the actual application in services and advisories should make that knowledge operational.

The material for use in the Guide should therefore be requested from high level specialists but with an operational bias: the contents should be useful for those having advisory roles in agricultural production. This is particularly necessary in the developing countries.

A small group of experts "to assist the president in revising the Guide to Agricultural Meteorological Practices" has started to design a strategy for this very long term task. However, this Steering Committee of special CAgM Joint Rapporteurs will only be the guides in the process. We need much assistance and support from agricultural meteorologists all over the world. We have for example recently approached the group of U.S. State Climatologists. Proposals made in Annex C of the Circular Letter No. 9 of the president of CAgM, dated July 1998, could be used as a starting point but new ideas are also welcome.

Action required: G. We need to take advantage of this opportunity to update this Guide. How do we actually improve the suitability of the Guide for your field of work? Would you be in a position to assist us in modifications you see as necessary? Do you have proposals for people that we can ask to participate in the rewriting of sections or chapters? We would be very thankful of your reactions, which you can send to the e-mail address Kees.Stigter@user.metair.wau.nl or Kees Stigter's fax: 31 317 482811 in the Netherlands. In July/August/September 2000, you can also use his fax in Indonesia: 62 332 427093 (please hold for Prof. Stigter).

7. The Intergovernmental Panel on Climate Change (IPCC) Third Assessment Reports - Dr Jim Salinger

Currently the IPCC is in the midst of producing the Third Assessment Reports (TAR), due out during 2001. All IPCC Working Group contributions for the TAR and Special Reports are on schedule. Reviewers are making increasing use of Internet for downloading draft material and submitting comments.

The Special Report on Emission Scenarios will be revised as a result of the recent review process. The main changes will be in the way that the different story lines for future global development are told. Less emphasis will be placed on the 4 marker scenarios, which are now seen to give emissions below the mid-range for their respective story lines. The Special Report on Land-use, Land-use Change, and Forestry Procedures has undergone final Government and expert review and went to a plenary session for acceptance in May. It was suggested that the Technical Summary is such a critical document for implementation of the Kyoto Protocol that it deserved scrutiny and "adoption" by the IPCC plenary rather than the passive "acceptance" process originally envisaged. The Technical Support Unit for the Task Force on Inventories has been established and work is underway on defining the structure and terms of reference for this IPCC activity in the future. The IPCC still has serious funding problems both in terms of a shortfall in contributions for the current year and in the relatively small number of Governments contributing. There is a desire to have the Third Assessment Report published on CD-ROM and Internet as well in conventional form, but this requires further negotiation with commercial publishers.

Working Group I has proposed that a Scenario Evaluation Tool for Policymakers be considered that would complement and possibly replace use of Global Warming Potentials for comparing emissions of different greenhouse gases. In response to concerns expressed, the implications for policymaker use of such a tool will be approached cautiously. The IPCC was

congratulated on its presentation of the Special Report on Land-use, Land-use Change, and Forestry at a special side event in the recent meeting of the Subsidiary Body for Scientific and Technical Advice to the UN Framework Convention on Climate Change.

7.1 Working Group I

Lead authors of the IPCC Working Group I report met in Auckland in February 2000 to discuss the expert review comments, and produce the second draft for country review. There were a large number of comments on particular chapters, especially from the reviewers who take a more sceptical perspective. However, in most cases all the issues could be addressed, which only strengthens the science of the documents.

The WGI report title is "Climate Change 2001: The Science of Climate Change" with a publication date of early 2001. The report is similar in structure to that of the Second Assessment Report, but there is new material. These include a chapter on regional climate information (their evaluation and projections) and a chapter on climate scenario development. This latter chapter reflects the need to provide viable scenarios of future climate so as to be able to examine adaptive responses.

The TAR will build on the past assessments and specifically highlights how climate is changing in the present and how it changed in the past. It will have a detailed examination of the agents that cause climate to vary, such as solar variation and greenhouse gases, and our current ability to simulate responses of the climate system to these forcing agents. There will be a more complete discussion on the human influence on climate and future climate projections. Four emissions scenarios are being used from the Special Report on Emissions Scenarios to make future projections of climate and sea-level change.

The second draft was completed in early April and is currently out for the combined Government and Expert review. The next drafting meeting will be held in Victoria, British Columbia at the end of July.

7.2 Working Group II

Lead authors for the IPCC Working Group II report met in Canberra in December 1999 to discuss expert review comments on their first draft. The number of reviews was quite manageable at this stage and the nature of the comments did not suggest any need for major revisions or re-structuring. There were, however, a number of respects in which the report clearly needed to be improved substantially and matters of balance improved. In addition, there was considerable debate among the authors themselves on matters of balance and structure.

There is a divergence of views within the author teams on the value of aggregating benefits and costs associated with climate change. Some have a strong preference for considering threatened systems and issues of equity, placing little value on aggregation, while others consider that aggregate costings, both monetary and non-monetary, are important. This tension produced some strong debates inside the author community, within and across chapters, and led to a significant re-structuring of the final synthesis chapter.

Most authors appear to support the view that any changes in the frequency and intensity of extreme climatic events will be critical to the net outcome of beneficial and adverse effects of climate change. Unfortunately, at present, there is little quantitative information on the risk of such changes in extreme events statistics - except in the case of rainfall. In the case of rainfall, the tendency of extreme events is to increase damage and reduce benefits.

Following from this last point, there is a feeling on the part of some authors that existing estimates of net benefit or cost for large regions (e.g. the USA), which are generally based only on changes in mean climate, may underestimate costs and bias results towards benefits. As far as

possible, the assessed effects of climate change are being related to the recent scenarios for greenhouse gas emissions developed for the IPCC Special Report on Emission Scenarios. However, due to the lack of published material using such scenarios, much of the analysis of effects is based on assessments of sensitivity to climate change rather than detailed scenarios.

A major focus of the WG II report is adaptation to climate change and the residual vulnerability to change after adaptation is taken into account. It is becoming clear that there is a general paucity of studies of adaptation, and its costs, in the literature. This appears to be because the importance of adaptation has only recently been recognized. The second draft is to be completed by mid-April and will be available for combined Government and expert review for about 7 weeks starting on May 1st.

As you can see from the different items described above, the Commission has carried out a number of activities since we met in Accra at CAgM-XII. I look forward to your continued cooperation in maintaining our active involvement in various activities and in ensuring that agricultural meteorology continues to contribute to global food security.

Best Wishes,

Yours sincerely,

Raymond P Motha

President

Commission for Agricultural Meteorology