WORLD METEOROLOGICAL ORGANIZATION

FINAL REPORT ON THE MEETING OF THE CORE MEMBERS OF THE CBS WORKING GROUP ON PUBLIC WEATHER SERVICES

Montevideo, Uruguay
10-14 August 1998

Report on the Meeting of the core members of the CBS Working Group on Public Weather Services

1. Opening of the Session

   The Meeting of the Core Members of the CBS Working Group on Public Weather Services (WG) commenced on the morning of 10 August 1998 at the Hotel Embajador, Montevideo. The list of participants is given in Appendix A.

   In his opening remarks, Mr. Donald Wernly, the chairman of the CBS Working Group on Public Weather Services referred to the importance of the meeting in that it was the first of its kind since the formation of the Working Group and designation of all the Regional Rapporteurs. He thanked Mrs. Yvonne Dutra, Permanent Representative and Director of the Uruguay National Meteorological Service for hosting the meeting. Mrs. Dutra expressed pleasure at hosting the meeting in Montevideo and underlined the importance of Public Weather Services in Uruguay.

2. Organization

   The Agenda as shown in Appendix B was adopted. It was further agreed that the hours of work of the session would be from 8:30 – 12:00 and from 14:00 – 17:00 each day.

3. Review of the Activities since Establishment of the WG by CBS-XI (Cairo, 1996)

The meeting briefly reviewed the work of the WG since its establishment by CBS-XI (Cairo, 1996). The Expert Planning Meeting on PWS in Nassau (May 1997), the review and expansion of the Guide to PWS Practices, the evaluation of the questionnaire on PWS, and the work on the topics which were assigned to each of the Regional Rapporteurs formed the major activities of the working group.

The WG was briefed by C/PWOI on the outcome of the discussions on PWS Programme during EC-L (June 1998) and was informed of the specific requests of the Council as regards the programme as follows:

- Contribution to the guidance on effective activities as follow-up to the work of the IDNDR.

- Further support to public weather services in relation to the development and restructuring of NMHSs, in order to enhance public recognition of services provided by the NMHSs.
- Particular attention to the issue of dissemination and presentation of forecasts and warnings and assistance to Members to define their basic requirements and needs for suitable systems.
- Steps to help resolve the issue of international broadcasters vis-à-vis the NMHSs.

The WG further agreed on the following objectives of the meeting:

1. Revision of the strategic goals set during the 1997 Expert Meeting in Nassau and amendments where necessary.
2. Consideration of regional findings under each topic presented by Rapporteurs.
3. Review of the first six chapters of the Guide to PWS Practices and collection of further examples from Rapporteurs.
4. Agreement on the format of presentation of the results of the PWS questionnaire.
5. Discussion on various issues concerning CBS.
6. Agreement on the most important issues to be presented at Congress in May 1999.
7. Agreement on the future work of the WG and further goals to be achieved.

4. Presentation of Reports by Rapporteurs

1. TOPIC 1 - Coordination and exchange of severe weather warnings across the borders

Mrs. Dutra, RA III

Mrs. Dutra explained that in Uruguay issuance of severe weather warnings was in general confined to national borders. Nevertheless, hydrological warnings were exchanged with the neighbouring countries since most of the rivers flowing in the area have their origins in the highlands of Uruguay. In this connection she provided information on damage done by floods as a result of the recent El Nino episode which also highlighted the role of the media in informing the public. She stated that the public was becoming increasingly interested in long-range forecasts while also indicating the difficulties in producing such forecasts particularly as regards transition form El Nino to La Nina. The NMS also has to satisfy the requirements of the Government officials for exact and accurate forecasts, which at times are beyond the capability of the National Service. Mrs. Dutra further elaborated on the hydrological information exchange with Argentina based on pre-determined criteria, including that of precipitation and river stages.

Two very important areas of application of public weather products include forecasts of late frosts for vine growers and during sheep sheering season in late spring.

In addition to exchange of information on hazardous weather, other information for example on ozone levels get exchanged with Argentina.

In conclusion it was agreed that:

1. An example of cross-border exchange with Argentina will be included in

the Guide together with the criteria for such exchanges.

2. Examples of application of PWS to weather-sensitive economic sectors (vine growing, sheep shearing) will be added to the existing examples in the Guide.

Mr. Wolfgang Kusch, RA VI

The in-depth report of Mr. Kusch was based on the report of an expert meeting on PWS which had been held in 1994, the result of the informal Working Group on Cooperation between European Forecasters, and responses from members of the WG on PWS in RA VI. Exchanges between the countries shown in table 1 (Annex) are between the NMHSs only and not with the public. Whereas some formal arrangements such as Memoranda of Understanding or official letters on methods of exchange and thresholds are in place, in the majority of cases the arrangements for exchange are quite informal. Similarly, where exchanges take place, thresholds are agreed upon bilaterally and no universal thresholds exist for the whole Region. Although RA VI is a Region of great language diversity, this does not seem to pose a problem as most neighbouring countries can communicate through a common language. Given that RA VI has gained much experience in dealing with this topic, the meeting agreed to base its overall recommendations on the work done in that Region. The meeting debated the report in detail and made the following RECOMMENDATIONS:

- Members should be encouraged to practice multi-tiered exchange of information, i.e. watches and advisories in addition to warnings. This would alert the NMHS of a neighbouring country of the potential threat and provide sufficient time for necessary preparations.
- While the Guide to PWS Practices will contain information on common values for thresholds for international exchange of information within zones or groups of countries, the specification of thresholds should be done bi- or multilaterally by prior agreements. The wide range of thresholds in use for national purposes and the considerable differences in geomorphology and land use, which can occur between close neighbours present considerable difficulties in formulating uniform thresholds. Therefore Members should be encouraged to set up a bi- or multilateral coordination and exchange system where they can mutually agree on thresholds.
- Since the WAFOR code has had limited success due to its complex structure, the exchange of information in plain language or in graphics format is preferable to code forms.
- Where a mechanism for exchange has been established, Members should be encouraged to hold pre-briefings or consultations by telephone, fax or videoconferences prior to exchange of formal warnings issued by the NMHS.
- It would be desirable to have a formal agreement on exchange in place allowing the system to function independently of staff or policy changes of the Service.
- It would be desirable for each Regional Association to designate a centre for monitoring the coordination and exchange for the Region and publishing the results (Offenbach is the centre in RA VI designated by the WG on WWW for this purpose.)
- Arrangements for issuance of advisories of severe weather to be expected in an area should be discussed with RSMCs with geographical specialization. At the same time the NMHSs should be responsible for issuing warnings and additional information for their

own areas of responsibility.

- Exchange of emergency communication addresses and contact numbers between neighbouring NMHSs, should be done on bilateral basis only.
- No restrictions on lead-time should be placed on forecasts of hazardous weather to be exchanged internationally.
- Information on weather hazards, warning procedures, and thresholds in use by NMHSs should be collected and published in the Guide to PWS Practices.
- The WG on PWS should further study the question of including explicit statements of risk in the exchanged forecasts and warnings.

4.2 TOPIC 2 - Enhancing visibility of NMHSs by demonstrating benefits of an effective PWS Programme / benefits of improved co-ordination in relation with user community

Mr Francis Otieno, RA I

Mr Otieno identified the two major problems in Region I as being the lack of awareness by the public and decision makers of the role of the NMHSs, and the lack of a formal programme or clear focus for public weather services in most NMHSs. As a direct result user focus is either non-existent or under-developed leading to products of NMHSs that are too general and do not meet specific user needs. In order to address the issue of enhancing the visibility of NMHSs, a first priority should be to strengthen the national public weather services programmes of NMHSs and work towards educating all users of meteorological services on how to use those services and products.

Although dissemination of public forecasts through mass media takes place to some extent in all parts of the Region, the contents of those forecasts are not sufficiently informative and do not provide explanations for the observed phenomena. Similarly, while the use of the Internet is gradually growing in the Region, its potential value as a tool for user education and enhancing the visibility of the NMHS is not yet being realized.

In addition to the general public, other users of meteorological or climatological information such as government authorities can also benefit from additional information provided by the NMHS. The recent El Nino episode provides a good example whereby the Meteorological Services in the affected regions could use the opportunity to enhance their visibility by being pro-active and making special effort to provide on regular basis vital information to various user groups.

Building partnership and better coordination with disaster management authorities is another area that needs to be strengthened in RA I. An overall approach to increasing visibility should include using all possible opportunities such as visits, information brochures, national and international exhibitions to promote the work of the NMHS and to inform the public on ways in which meteorological information can help them with their daily activities.

Mr Mario Sanchez, RA IV

Mr Sanchez based his report on information obtained through a questionnaire sent to Members in the Region, the Iberoamerican climate

study, and the WMO Subregional Office for North America, Central America and the Caribbean. Ten Members provided responses to the questionnaire. An overall problem encountered in Region IV is that the role of NMHSs is often not well understood by the public because they do not see any relevance to their daily lives especially if they live in tropical zones outside tropical cyclone influence. More specific problems encountered, which contribute to the low visibility of NMHSs in the Region are summarized in three categories as listed below:

GOVERNMENT:

- Political and economic support to NMHS depends on the governing group (government, director, etc) and therefore is variable.
- Weak contact with decision-makers. (Meteorologists should become good negotiators as well as good scientists).
- Operational and human resources are usually never sufficient.
- Delays due to bureaucratic systems.
- Low budget percentage dedicated to NMHSs in general and to dissemination in particular.

PRIVATE SECTOR

- Weak contact with the private sector (due to low or non-qualified human resources).
- Low interest in meteorological services or products.
- No specialized services to individual user groups.
- User needs are partially satisfied.

NMHSs

- Obsolete internal structure.
- Inadequacy of specialized human resources.
- No legal support for commercial activities through provision of tailored products (few countries have such support).
- Non or delayed response to users' needs or requests.
- No marketing strategy.
- Unsuitable information distribution channels.

The WG agreed that the following suggestions provide comprehensive guidelines to NMHSs in dealing with the issue of visibility.

GOVERNMENT

- Establish a programme of regular visits by the relevant government agencies to the NMHS.
- Set up a plan to provide information to authorities and decision-makers on a regular basis.
- Strengthen partnership with other agencies within the Government.

PRIVATE

- Organize forums and meetings with the private and public user groups to exchange ideas, learn about needs and new requirements.
- Become more responsive to the evolving needs of the private sector.
- Provide easy contact channels: direct phone lines, qualified personnel.
- Provide specialized services to specific or individual user groups.

NMHSs

- Keep abreast of and use advances in meteorological science, and technology.
- Foster adaptability and responsiveness to change.
- Train staff continuously.
- Create a "Caribbean web page" on the Internet. (RA IV only).
- Provide access to new software.
- Hire specialized human resources.
- Develop new fields of work such as communication.

The overall conclusion on this topic strongly pointed to the need to create a user focus culture and change of mentality among staff of the NMHSs as regards their role and required skills as part of enhancing the visibility of the Service. The group also agreed that charging for services could have a potentially negative impact on most NMHSs.

The WG noted the actions taken by the WMO Secretariat in the printing of a brochure on Public Weather Services, and the establishment of a Public Weather Services home page on the WMO World Wide Web site. It agreed that these were valuable initiatives that will assist the objectives of the WMO PWS Programme as well as the NMHSs with their own public education and awareness activities.

RECOMMENDATIONS:

- Establish partnerships with key constituents such as the media, emergency managers, and government agencies involved in natural and technological hazards.
- Improve and increase educational outreach activities for media and emergency managers to assist them in using NMHS products more effectively.
- Increase the use of forums to educate users and to access their requirements.
- Increase the use of press conferences during significant weather events.
- Use the Internet as a resource to access information on important and current meteorological events.
- Encourage NMHSs to review their mission and to ensure everyone can articulate it.

4.3 TOPIC 3 – Improving public weather products and services

Mr Kevin O'Loughlin, RA V

In considering how public weather products and services can be improved, Mr O'Loughlin distinguished between products and services. Public weather services products could include:

- Current weather
- Short range forecasts
- Medium range forecasts
- Monthly and seasonal forecasts
- Climate information
- Environmental information

Services on the other hand include the product and its packaging and delivery via means such as:

- Media services through partnership
- Direct access in person or by telephone
- Recorded services
- Fax services
- Computer links
- Internet

This distinction is essential in order to appreciate that improving a product will not automatically lead to the improvement of services. On the other hand improving services may not be of much use to the public if they are not based on the most accurate and complete products possible.

RAV is a large region, whose particular features include:

- Mostly tropical and sub-tropical countries. Tropical regions outside the tropical cyclone areas it does not have marked variations in their weather pattern.
- Because there are fewer land borders, concern about exchange of warnings across borders is less of an issue in this Region, although it is still important.
- Tropical Cyclone warning systems are well developed.
- Many countries are Small Island Developing States (SIDS), which have their own unique features.
- Key links are to the media and the emergency management.
- Radio is a key medium for dissemination of warnings and forecasts. Television is non-existent in many remote areas.
- El Nino is a major issue on the pacific side.
- Smoke is major issue in the Region.

The three major issues related to provision of improved PWS in Region V are: improving telecommunication in the SIDS region, improvement in seasonal forecasting, and resolving existing situation as regards role of the international media.

Actions taken so far to improve the PWS of Members include several WMO training events held in the Region which have helped raise the awareness of NMHSs of their role as regards the public and other users. Organization of media workshops, conducting user surveys, and provision of services during special sporting events were seen to have great value in improving services and thus relations with the users and in enhancing the profile of the NMHSs.

As a special example of sporting events, the WG noted that, in keeping with the practices adopted by host countries of the Olympic Games, Australia would be mounting a special effort to provide weather support for the Year 2000 Olympics in Sydney and that there are major Public Weather Services aspects to such an effort. The meeting also welcomed the information that Australia and WMO would be exploring ways of involving the WMO Public Weather Services Programme in some way such as in the translation of daily weather bulletins into the WMO languages. The meeting felt that this kind of activity presented significant opportunities to explore methods of improved Public Weather Services that are more widely relevant to support for major events and for the daily delivery of general Public Weather Services.

Mr Mario Sanchez, RA IV

Mr Sanchez started his report by stating that in order for NMHSs to strengthen their role, they should broaden the range of their products and services. A major problem faced by most NMHSs is that often staff of the Service are not aware of their own role (or the worth of their services) vis-à-vis users. Measures needed to improve PWS within RA IV includ the following:

- Improvement of telephone answering services.
- Improvement of weather presentation on television and radio.
- Development of specialized services for individual user groups.
- Improvement of "Product Packaging"
- Expansion of marine and agrometeorological services
- Improvement of forecast accuracy by using advanced numerical models.
- Provision of a broader suite of environmental information (e.g. air quality, UV radiation) to help the health sector as well as the public.
- Innovative methods, according to the users' new requirements, in order to achieve adaptability and responsiveness.
- Establishment of permanent forums with users groups to exchange ideas and learn of needs.
- Projects to specifically improve Communication within the PWS programmes and activities.

The media can play an important role in the overall improvement of the PWS and the following guidelines are related to the activities of the media:

- Distribution of warnings to the public is through partnership with the media.
- It is necessary to develop guidelines for the conduct of international media disseminating weather information via satellites.
- It is essential to have a single official source of warnings.
- Provision of public weather products to the Media "free of charge", will ensure wide distribution of those products.
- Not all staff are comfortable in dealing with the media: training of staff in this area is essential.
- Improvement of communication strategies toward the media is necessary.
- Provision of training to journalists will help improve relations with the media.

RECOMMENDATIONS:

- Encourage development of integrated services, and if appropriate the concept of "one-stop-shopping" where access to meteorological, climatological, and hydrological products and services can be facilitated.
- Encourage creation of seamless service across all time zones.
- Provide more detailed information including environmental information in public products.
- Highlight forecast uncertainty.
- Keep abreast of new technologies and make better use of them.

4.4 TOPIC 4 – Improvement of national PWS programmes through education and training of staff

Mr Kevin O'Loughlin, RA V

Mr O'Loughlin presented a number of possibilities to improve national PWS programmes through the education and training of staff as they are carried out in RA V and especially in Australia. Major activities include WMO workshops and user surveys.

Within the last few years, a number of WMO workshops on PWS have been held in RA V. The WG was informed of another training workshop planned to be held in Melbourne in October 1998. The workshop will put special emphasis on the development of outlines for national PWS programmes in the countries of the participants, and dissemination issues.

An example of a user survey carried out by the Bureau of Meteorology, in 1998 illustrated the value of public surveys to:

- identify the problem areas in the approach of the NMHS to its users / the public,
- educate the staff (user focus),
- enhance the visibility of the NMHS in the discussion with governmental agencies, users and the media

A further point discussed was the importance for NMHSs to keep continuously up to date with the development of technologies (hard and software) as for example the satellite links provided by Emergency Managers Weather Information Network (EMWIN and the Internet.

Dr. Alexei Liakhov, RA II

Dr Liakhov pointed out that each NMHS has to increase the understanding of its own role to be able to meet the needs of its users. He agreed that surveys are the most important means to identify those needs. He also pointed out that distance-training techniques should be used more.

In the discussion on this topic, the WG agreed that courses on PWS should be added to the training programmes of RTMCs and that roving seminars should be considered in addition to the traditional training courses. It also agreed that training material for PWS is generally lacking. The programme of the WMO training workshop on PWS in Melbourne, October 1998 was seen as a template which could be used in other training events and by the NMHSs themselves. This course programme will be included in the Guide as an example. As a final point, the WG noted the importance of introducing training for emergency managers to provide them with guidelines on how to deal with international organizations and agencies. In this context the WG noted the availability and potential of emerging communication technologies such as virtual conferences and suggested that NMHSs assess its utility for their own use.

The WG agreed that user surveys provided a useful input for training of staff of NMHSs. Examples of existing surveys (questionnaire and results) will be sent by Rapporteurs and a survey template will be produced for inclusion in the Guide to PWS Practices.

Two major issues under this topic were the absolute need to increase the understanding of the NMHSs' staff of the their own role in provision of services to the public, and the lack of training material on PWS. The WG made the following RECOMMENDATIONS:

- Organization of roving seminars by Secretariat.
- Collection of samples of training courses from Members by Rapporteurs
- Development of a syllabus of an overview course on PWS based on the WMO training workshop in Melbourne, October 1998; for inclusion in the Guide

- Development of training courses on PWS and syllabus (to be adapted accordingly) for use in RMTCs.
- Development of a survey template; the template will be included in the Guide; full versions of the examples will be included in the electronic version of the Guide
- Encouragement of NMHSs' staff to attend seminars organized by other agencies on topics of mutual interest (e.g. emergency management).

4.5 TOPIC 5 – Dissemination and presentation of public weather and other meteorological information to the public/use of the media

Mr Wolfgang Kusch, RA VI

The report of the rapporteur was based on the responses of Members from RA VI, the draft Guide to PWS practices and the report of the 1994 Expert Meeting on PWS.

The overall conclusion of this topic was that demands and requests of customers are growing. There is a permanent need to improve the content and design of presentation, especially for graphical media such as TV and newspapers, with special attention being given to the needs of the developing countries.

The report on dissemination pointed to the following specific areas:

- Standards: Technical standards should be adapted to meet the customer needs.
- Demands of customers including newspapers, radio and TV should be taken into consideration in deciding dissemination methods.
- Explore all available and relevant technology in dissemination of information.
- Support of the technical department of NMHS is essential in helping with the maintenance of the new or sophisticated dissemination systems.

On the topic of presentation the following were considered some of the main points:

- Basic services: the primary and basic means of getting information to the public is through newspapers, radio, and TV.
- Warnings: radio is considered as the most effective means of distribution of warnings, with TV following in second place. Newspapers are not suitable for dissemination of warnings.
- Presentation rules: language should be kept as simple as possible. It is preferable to use experts in design of the graphics.
- Seminars or training events should be organized between staff of the Service and experts on presentation, and between staff and customers of the NMHS products, i.e. the media.
- Demands of users:

    1. Newspapers: Normally ready-to-print weather charts are required.
    2. Radio: live interviews are often requested.
    3. TV: animations, ready-to-broadcast video clips are often required.

- Operational rules:

    1. Data should be available in digital form.
    2. Keep the production costs low and minimize manual work.

3. Make use of all available information.
4. Fulfil demands for an individual layout (this applies mainly to key account customers).
5. Use standard software.
6. Advise the customer of what is possible to achieve if airtime is only 90 seconds as opposed to 3 minutes for example.

Challenges:

1. New models have higher resolution, more information, and more data; the challenge is to know ;

- How to use all this information when preparing presentations.
- How to present them, e.g. a squall line.

Conclusion of this specific topic was that presentation is one of the most important tasks to be handled under the PWS of NMHSs and its improvement poses a major challenge.

RECOMMENDATIONS:

- Define the interface for the technical aspects of dissemination, and to some extent presentation, to relevant CBS working groups, e.g. WG on GOS, GDPS and the WMO Satellite Activities, to make them aware of the requirements of the PWS activities. For example adaptation of satellite or radar imagery to the needs of NMHSs for easier access by TV.
- Develop guidance for graphical presentation (design, contents, etc.) and support the development of information graphics (e.g. how thunderstorm or fog develop.)

WORK PLAN

As a result of the discussions and based on the above recommendations, the WG agreed on the following work plan;

1. Enhancement of cross border exchange of warnings:

Establish regional monitoring function:

- Letter from Chairman to all members of working group outlining need to establish increased bi-lateral and multi-lateral warning exchange (if appropriate for that region). Letter identifies Regional Rapporteurs as performing monitoring function. (ACTION: CHAIRMAN WG/PWS)
- Rapporteurs advise Secretariat of status annually. (ACTION: ALL RAPPORTEURS)
- Secretariat to make information available to all. (ACTION: C/PWOI)

1. Presentation and Dissemination

- Include discussions on technical requirements for dissemination and presentation in the agenda for each CBS Working Group meeting.(ACTION: SECRETARIAT)
- Prepare specific detailed guidelines for improvement of dissemination and presentation techniques. (ACTION: Rapporteurs RA IV, RA V,RA VI)

1. PWS support to Emergency Management

- All members of WG/PWS will be informed that Regional Rapporteurs will monitor which NMHSs have formal relationships with emergency managers (letter of understanding) as

well as, which NMHSs conduct training for emergency management or participate in courses conducted by emergency management. (ACTION: C/PWOI, ALL RAPPORTEURS)
- Secretariat makes information available to all members of the WG/PWS. (ACTION:C/PWOI)
- Costa Rica example on formal arrangements with emergency management will be made available in the Guide and can be considered as a pilot project. (ACTION:C/PWOI)
- Separate write-up of Costa Rica situation sent to all members of WG/PWS. (ACTION:C/PWOI)

4. Improved relations with international media

- Letter from the Secretariat to members of the working group requesting information on the status of relations with the international media and identifying Regional Rapportueurs as responsible to collect information. (ACTION: C/PWOI)
- Rapporteurs provide information to Secretariat annually. (ACTION: ALL RAPPORTEURS)
- Secretariat will make information available to members of WG/PWS and include it in the future documents of constituent bodies. (ACTION: C/PWOI)
- Based on the actual information, the Secretariat will arrange for discussions with international broadcasters.(ACTION:C/PWOI)
- Based on the outcome of discussions a process for resolving issues with the international media will be developed. (ACTION: RAPPORTEUR RAV)

5. Enhanced NMHS visibility through more effective user outreach.

- Australian Bureau of Meteorology is considering the establishment of a national PWS Working Group. This could be considered as pilot project when the details become available. (ACTION: RAPPORTEUR RAV)
- Highlight the above pilot project in the Guide (ACTION: C/PWOI)
- Prepare templates for user surveys for inclusion in the Guide. (ACTION:C/PWOI)
- Include individual national user surveys in electronic version of the Guide. (ACTION: C/PWOI)
- Create a PWS Newsletter. First issue will have an IDNDR-related theme. (ACTION: C/PWOI, ALL RAPPORTEURS)
- Demonstrate PWS at 13th Congress. Display electronic version of the Guide on the Internet and CD Rom (if possible); have the first issue of the PWS Newsletter ready. (ACTION: C/PWOI)

6. Education and Training

- Secretariat to organize roving seminars/create syllabus for national PWS training programmes based on WMO training events/set up training programmes for RMTCs. (ACTION: C/PWOI and Education and Training Department in the Secretariat, Rapporteurs as required.)

5. Discussion of Other Topics of Interest to Regions

This item was covered under agenda item 4.

6. Discussion on the Draft of the Expanded Guide to PWS Practices

The WG spent a whole day reviewing chapters I to 6 of the revised version of the draft Guide. The results of the review by the WG will be used to amend the revised version of the draft. The results of the analysis of the questionnaire on PWS will be included in the Guide under relevant chapters.

1. Preparations for CBS-Ext. (98) (30 September 9 October 1998)

   Documents concerning the proposed restructuring of the CBS and the definition of programme areas under the proposed structure were distributed to the participants and the WG was briefed by C/PWOI on the implications of the restructuring for the PWS Programme. Under this item the WG re-assessed the strategic goals that had been adopted for the programme in the Expert Planning Meeting (May 1997) and the actions taken to date to implement them. This assessment resulted in amendments reflecting both the developments that have taken place in the PWS Programme since that meeting, and the outcome of the discussions of the WG meeting. The WG agreed that the Commission should be informed on certain PWS issues, which involve other CBS working groups, e.g. the recommendations concerning dissemination and presentation. The WG also agreed that the time had arrived for the PWS Programme to move from a phase of "encouraging Members" to a more action oriented and monitoring phase. The revised strategic goals are contained in Appendix C of this report.

2. Future Work of the WG

The WG agreed that the success of its future work depended to a large degree on the level of involvement of the Regional Rapporteurs in the implementation of the PWS Programme. They will be required to do a lot more outreach work in their respective Regions as part of their contributions to the programme.

In line with requests of EC-L, and as part of the preparation for WMO Congress in May 1999, which will set down the programme requirements, the WG agreed that the following issues would shape the PWS Programme in the foreseeable future:

- Although IDNDR is drawing to a close, disaster reduction activities have to continue. Due to the very definition of its long-term objectives as regards safety of life and property and as a result of most of its activities, the PWS Programme should assume a more prominent role in disaster reduction activities. PWS Programme at both international and national levels should strive towards improving the whole warning process. This will require even more intensive efforts towards establishing partnerships and collaboration with disaster management authorities and the media.
- New technologies afford more data, better analysis and forecasting techniques. A major challenge will be the integration of these new technologies in improving PWS, and making those improved services available to all users, even in remote areas.
- Another major challenge will be to adapt existing systems and infrastructures to the new requirements placed on NMHSs.
- The most solid and sure way to enhance the visibility of NMHSs is through providing the best possible services to the public. These services may acquire an increasingly integrated nature to include climate and environmental information.
- As a result of the growing demand to produce better warnings and forecasts, NMHSs will face stronger pressure for improving public weather services and continuous monitoring of the improvements.

1. Adoption of the Report of the Meeting

   The WG agreed for the report to be circulated to all participants for comment. The chairman would then approve it on behalf of the WG.

2. Other Matters

   The WG had a preliminary discussion of the results of the PWS questionnaire. It agreed that more work needed to be done on the analysis of the results. It was agreed that comments on the method of analysis and format of presentation should be sent to Mr E. Gross by mid September in order to prepare a first draft of the results for presentation to

CBS. The full results will be presented at Congress XIII.

3. Closure of the Meeting

Following a week of long sessions of intense discussions, the meeting was closed by the Chairman of the WG on Friday afternoon, (14 August) with expressions of satisfaction by the participants at achieving the objectives of the meeting and making substantial progress in addressing some of the major issues concerning PWS. The Permanent Representative of Uruguay and the staff of the Meteorological Service were thanked for hosting and assisting with the meeting.

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APPENDIX A

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APPENDIX B

Meeting of the core members of the CBS Working Group on Public Weather Services

Montevideo

10-14 August 1998

Provisional Agenda

Monday, 10. August 98

1. Opening
2. Organization (Adoption of Agenda, Working Arrangements)
3. Review of Activities since Establishment of the WG by CBS-XI (Cairo, 1996)
4. Presentation of Reports by Rapporteurs

Topic 1	Coordination and exchange of severe weather warnings across the borders	Ms. Ivonne Dutra Maisonnave Mr. Wolfgang Kusch	RAIII RA VI

Tuesday, 11. August 98

Topic 2	Enhancing visibility of NMHSs by demonstrating benefits of an effective PWS Programme/ benefits of improved coordination an relations with user community	Mr. Francis Otieno Mr. Mario Sanchez	RA I RA IV
Topic 3	Improving public weather products and services	Mr. Mario Sanchez Mr. Kevin O'Loughlin	RA IV RA V

Wednesday, 12. August 98

Topic 4	Improvement of national PWS programmes through education and training of staff	Mr. Kevin O'Loughlin Mr. Alexei Lyakhov	RA V RA II
Topic 5	Dissemination and presentation of public weather and other meteorological information to the public/use of the media	Ms. Ivonne Dutra Maisonnave Mr. Wolfgang Kusch	RA III RA VI

5. Discussion of other Topics of Interest to Regions

Thursday, 13. August 98

6. Discussion on the Draft of the Expanded *Guide To Public Weather Services Practice*s

Friday, 14. August 98

7. Preparations for CBS-Ext. (1998)

8. Future Work of the WG

9. Adoption of the Report of the Meeting

10. Other Matters

11. Closure of the Meeting

APPENDIX C

Strategic Goals for the Working Group on Public Weather Services

- Strengthen and increase NMHSs' capacities in providing weather services to meet users' requirements based on their lifestyle, culture, and economic activities, including guidance on methodologies for assessing user requirements and degree of customer satisfaction;
- Strengthen NMHSs' abilities in creating warnings and forecasts that meet user expectations including guidance on; what constitutes effective warnings and forecasts; how to quantify forecast uncertainty; and on best practices for verification of warnings and forecasts;
- Strengthen NMHSs' presentation and dissemination capabilities through; preparation of training materials and conducting courses in techniques for the presentation and dissemination of public weather products, provision of technical guidance material on dissemination; development of guidance material on improvement of presentation of weather information through various media; encouraging the understanding and utility of the Internet in addition to television, radio, and newspapers products, particularly in developing countries; assisting developing countries with access to the above means of mass dissemination;
- Strengthen NMHSs' capabilities to raise public awareness and educate technical users through inter-alia; developing guidance material aimed at raising the level of public response to warnings of severe weather; involving such users and PWS partners as disaster management agencies, the media, and technical users in training events;and arranging for the exchange of best practices on developing training programmes for technical users;
- Strengthen NMHSs' capabilities to coordinate information exchange on hazardous weather among neighbouring countries through working with the regional associations to develop arrangements, procedures, and agreements for sharing of warning information;
- Develop guidelines and examples of best practices in order to achieve better partnerships with the national and international media concerning the dissemination and use of NMHSs' official products and services; investigate the receipt of NMHSs' warnings by the international media in support of warning dissemination according to the principles of attribution and acknowledgement of the national NMHSs as the sole official voice for warning issuance;
- As a main objective of the PWS Programme, strive to contribute to improving the capabilities of NMHSs in disaster reduction activities and enhancing public awareness of the role of a comprehensive warning system in saving lives and property of the public; as follow-up to the work of the IDNDR through providing guidance to NMHSs in preparing materials aimed at raising the level of public response to severe weather warnings as part

of disaster preparedness and prevention;

- Strengthen the capacities of NMHSs to enhance their visibility through widening the range of information included in their public weather products, and using the dissemination channels at their disposal to ensure increased public access to environmental and climate information, in addition to the more traditional weather information;
- Develop plans for PWS training activities such as regional workshops, roving seminars, RMTC courses, and distance learning with contents to meet special requirements of each Region.