

# **WORLD METEOROLOGICAL ORGANIZATION**

## **COMMISSION FOR BASIC SYSTEMS OPAG ON INTEGRATED OBSERVING SYSTEMS**

### **RA I Sub-Regional Training Seminar on CLIMAT & CLIMAT TEMP Reporting**

**Casablanca, Morocco, 20 – 22 December 2005**



**FINAL REPORT**



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## Executive Summary

RA I Sub-Regional Training Seminar on CLIMAT and CLIMAT TEMP Reporting was held at the Headquarters of the Direction de la Météorologie Nationale of Morocco from 20 to 22 December 2005. Participants from 16 countries attended the seminar. The list of participants is reproduced in Annex I.

The meeting was opened at 09:30 a.m. on 20 December 2005 by Mr Mustafa Geanah, Director of the Météorologie Nationale du Maroc. In his opening remarks he stated that it was an honor and privilege for the NMHS of Morocco to host this meeting. He indicated that the systems which are being implemented at the national level to observe and monitor the weather, the climate and the chemical components of the atmosphere represent an element of paramount importance in weather forecasting and research. Today all countries are required to work hand in hand to secure a continuous and operational monitoring of the Earth's climate. These efforts will help to ensure to follow up the trends of the climate as well as the establishment of a climatological data bank that will be useful in the understanding, modelling and the prediction of the climate system. Mr Geanah also highlighted the efforts that have been undertaken by WMO to produce and exchange climatological and meteorological data. He also underscored WMO's support in training and sharing of technology. He thanked the meeting organisers from the WMO and GCOS Secretariat and wished all the participants a productive meeting.

Dr A. Karpov welcomed participants on behalf of the Secretary-General of WMO. He thanked Mr Mustapha Geanah of the Moroccan Meteorological Service for agreeing to host this important workshop and the local organizing committee for all their assistance in providing the local infrastructure for this training seminar. He recalled the recommendations of Cg-XIV and EC-LVII aimed to increase the climate data availability. Following these guidelines, the WMO Handbook on CLIMAT and CLIMAT TEMP Reporting specifically addressed to the personnel who are responsible for compiling and transmitting CLIMAT and CLIMAT TEMP messages at the national level had been prepared and published in 2004 in four official WMO languages as WMO/TD No. 1188. In addition, the specialized climatological software CLIREP has been developed to fully automate the process of encoding the observations for CLIMAT and CLIMAT TEMP messages. On the basis of this technical material it was also foreseen to organize a series of training seminars in the WMO Regions for countries, which have problems in generating and exchanging climate data. This training seminar is the second in that series, the first one was held in Moscow in November 2004. It was underlined that the major goal of this seminar is to address national observing network managers or coordinators with training and practical exercises that will improve the availability of climate data from RA I. The participants were urged to do their utmost in implementing the knowledge and experience gained during the seminar in the routine work in overseeing the operations and performance of national climate observing networks. Finally he thanked the higher management of the Moroccan Meteorological Service and their staff for the assistance with all organizational arrangements for this training seminar and wished all participants every success in the workshop and a pleasant stay in Casablanca.

The meeting agreed on its working hours and adopted a work programme of the seminar (see Annex II). The participants were briefed on the structure and status of WWW programme and operations. The overview of GCOS, including performance of stations in RA I was presented. The secretariat also presented a comprehensive summary of the status of meteorological observing programmes in the region. It was reported that there are a significant number of CLIMAT and CLIMAT TEMP bulletins that do not comply with the WMO standards. Following the AGM-04 and SMM-05 monitoring this amounted to deficiencies in 29% of CLIMAT

bulletins and 57% of CLIMAT TEMP bulletins. The seminar noted that the main reasons identified for these deficiencies include:

- Misspelling or omitting the code name CLIMAT or CLIMAT TEMP in the first line of the text;
- Repeating the code name CLIMAT or CLIMAT TEMP in the same bulletin
- Incorrect or omitted group MMJJJ
- Repeating MMJJJ in the same bulletin
- Station index Iliii is not in the beginning of the line or repeated or omitted.

The seminar was advised that these deficiencies could lead to different counting of the bulletins collected in the different monitoring centres depending on the tolerance of their software to the deficiencies. The centres with more sophisticated software could count more CLIMAT and CLIMAT TEMP reports because they can find the deficiencies and make the required corrections. Those centres with less sophisticated software could lose some bulletins with deficiencies and count fewer bulletins. The first four deficiencies in the list above are generated at the collecting centres and not at the observing stations. These deficiencies are generated manually or automatically during the compilation of the reports from several stations into one bulletin. The necessary assistance should be given to these centres to improve the situation. Some deficiencies in compiling CLIMAT and CLIMAT TEMP bulletins were generated by the observing stations. Two of these are:

- The data are not presented according to code forms FM 71-XII or FM 75-XII;
- The section groups in the CLIMAT reports are incorrect, omitted or incorrectly placed.

These deficiencies are not frequent and they could be eliminated if the necessary training is given to the staff of particular stations.

In the course of the seminar specific lectures and presentations together with practical exercises were given on the following topics: Rules and Procedures for the preparation of CLIMAT and CLIMAT TEMP reports; software for the preparation of CLIMAT and CLIMAT TEMP reports; CLIMAT and CLIMAT TEMP Bulletins; Data Quality Control; User's experience with the CLIREP software; Table-driven code forms; Basics for transmission of climatological data over the GTS. All lectures and presentations given to the seminar are available from the contents page of this report

Based upon subject discussions and the experience gained by individual countries, the seminar agreed on specific actions to be taken to improve the availability and quality of CLIMAT and CLIMAT TEMP reports. Several recommendations were made to help alleviate existing deficiencies, including regular training of operational staff on the compiling of CLIMAT and CLIMAT TEMP reports and bulletins, e.g. using the updated CLIREP software. Specifically, the seminar recommended:

- The content of the WMO Handbook on CLIMAT and CLIMAT TEMP Reporting (WMO/TD No. 1188) should be reviewed both technically and editorially and a second, revised edition should be published.
- The most recent version of CLIREP software, including installation instructions, should be published in all working languages of WMO and distributed among Members.

- GCOS centres and the Secretariat should carry out an additional quality control monitoring to identify deficiencies in climatological data coverage and invite RA I Members to particularly undertake follow-up actions to comply with standing WMO rules and procedures.
- Taking into account that CBS has already developed and distributed a plan for the migration to table-driven codes (CREX and BUFR), RA I Members are urged to follow up this process in generating and transmitting CLIMAT and CLIMAT TEMP reports. The seminar also felt that it would be highly desirable that WMO arrange the appropriate training for RA I Members on the migration issues on a systematic basis.
- Following an extended discussion of which specific 30 year normals should be used in the preparation of the CLIMAT messages, Mr R. Thigpen agreed to obtain a specific recommendation and rationale from the AOPC and to distribute the recommendation to attendees.
- Following the presentation of implementation matters by Mr G. Clarke, the seminar recommended that the development of CLIREP continue. The capability of one time entry of observational data and the ability to produce both SYNOP and CLIREP reports should be incorporated.
- It was agreed that by mid-January, Mr. Clarke will amend, and distribute to participants, revised setup instructions. Revisions are necessary to address the changes in Version 1.2, and the use of the latest version of Java.

It was reiterated that financial assistance might be required to implement these recommendations. The seminar felt that these recommendations should be submitted to the upcoming sessions of Atmosphere Observation Panel for Climate (AOPC) and CBS for consideration. The meeting also felt that such training seminars be continued in the future.

The Training Seminar was closed at 5:00 p.m. on Thursday, 22 December 2005.

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## RA I Sub-Regional Training Seminar on CLIMAT&amp;CLIMAT TEMP Reporting

CASABLANCA, MOROCCO, 20 – 22 DECEMBER 2005

## PROGRAMME

	TUESDAY, 20	WEDNESDAY, 21	THURSDAY, 22
09H30 – 10H30	REGISTRATION (9H00-9H30) OPENING (9H30-10H00)	RULES AND PROCEDURES FOR PREPARATION OF CLIMAT AND CLIMAT TEMP REPORTS – CODE FORMS FM 71-XII-CLIMAT AND FM 72-XII-CLIMAT SHIP, EXAMPLES OF APPLICATIONS (O.ALDUCHOV)	CLIMAT AND CLIMAT TEMP BULLETIN, DATA QUALITY CONTROL, EXAMPLES OF APPLICATIONS (CONT'D) (O.ALDUCHOV, A. BESPROZVANNYKH)
10H30 – 10H45	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10H45 – 12H30	<ul style="list-style-type: none"> <li>OVERVIEW OF WWW OPERATIONS (I. RÜEDI)</li> <li>OVERVIEW OF GCOS, INCLUDING PERFORMANCE OF STATIONS IN THE REGION (R. THIGPEN)</li> </ul>	RULES AND PROCEDURES FOR PREPARATION OF CLIMAT AND CLIMAT TEMP REPORTS – CODE FORMS FM 75-XII-CLIMAT TEMP AND FM 76-XII-CLIMAT TEMP SHIP, EXAMPLES OF APPLICATIONS (O.ALDUCHOV)	<ul style="list-style-type: none"> <li>GETTING STARTED WITH THE SOFTWARE (G. CLARKE, A. BESPROZVANNYKH)</li> <li>USER EXPERIENCES WITH THE SOFTWARE (G. CLARKE)</li> </ul>
12H30 – 13H30	LUNCH	LUNCH	LUNCH
13H30 – 15H30	<ul style="list-style-type: none"> <li>STATUS OF OBSERVING PROGRAMMES IN RA I (A. KARPOV)</li> <li>RULES AND PROCEDURES FOR PREPARATION OF CLIMAT AND CLIMAT TEMP REPORTS (O. ALDUCHOV)</li> </ul>	CLIMAT AND CLIMAT TEMP BULLETIN, DATA QUALITY CONTROL, EXAMPLES OF APPLICATIONS (O.ALDUCHOV, A. BESPROZVANNYKH)	<ul style="list-style-type: none"> <li>TABLE-DRIVEN CODE FORMS (O. ALDUCHOV)</li> <li>BASICS FOR TRANSMISSION OF CLIMATOLOGICAL DATA OVER THE GTS (MELLOUKI ABDELHAK)</li> <li>DISCUSSION</li> </ul>
15H30 – 15H45	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
15H45 – 16H30	<ul style="list-style-type: none"> <li>SOFTWARE FOR PREPARATION OF CLIMAT AND CLIMAT TEMP REPORTS (A. BESPROZVANNYKH)</li> </ul>	CLIMAT AND CLIMAT TEMP BULLETIN, DATA QUALITY CONTROL, EXAMPLES OF APPLICATIONS (CONT'D) (O.ALDUCHOV, A. BESPROZVANNYKH)	REVIEW OF THE SEMINAR  CLOSING