

# **WORLD METEOROLOGICAL ORGANIZATION**



## **COMMISSION FOR CLIMATOLOGY (CCI)**

### **OPEN PANEL OF CCI EXPERTS – 5 (OPACE 5)**

#### **EXPERT TEAM ON QUALITY MANAGEMENT (ET-QM)**

First session

Singapore

28-30 April 2015

### **DRAFT REPORT**



## **1 ORGANIZATION OF THE SESSION**

### **1.1 Opening of the Session**

1.1.1 The first session of the Expert Team on Quality Management (ET-QM) of the WMO Commission for Climatology (CCI) was opened by Mrs T. Cegnar, co-chair of Open Panel of CCI Experts- 5 (OPACE-5) on behalf of the Lead of the ET-QM who was on the way to Singapore. The list of participants is provided in **Annex II**.

1.1.2 Dr Chris Gordon, Director of the Centre for Climate Research Singapore (CCRS) welcomed the participants and briefly explained the activities of the Centre. He noted that the CCRS follows up relevant developments within the CCI and World Climate Research Programme (WCRP).

1.1.3 Mr A. Delju, Senior Scientific Coordinator, Climate Prediction and Adaptation Branch (CLPA) of WMO, also welcomed the ET-QM members and expressed WMO's gratitude to the CCRS. He also transferred WMO's appreciation to the PR of Singapore and through her to the host country which made available its facility and hospitality to this meeting.

### **1.2 Adoption of the agenda**

The meeting adopted the provisional agenda (see **Annex III**) with minor changes and noted that Dr J. Intsiful, co-chair of OPACE-5 would join the meeting on the second day to make a presentation on 'Quality Management in Climate Prediction'. The agenda was so amended.

### **1.3 Working arrangements**

The meeting decided on its working hours from 0900 to 1700 hrs on Tuesday, Wednesday and Thursday, 28-30 April 2015. The Expert Team further agreed on the coffee breaks and lunch breaks based on the progression of the agenda. The entire session was conducted in English. Recommendations made by the Team on all items are listed in this report. The ET-QM hereinafter is called the 'Team' in this report.

## **2. REVIEW OF THE TERMS OF REFERENCE OF THE TASK TEAM AND DISCUSSION ON A WORK PLAN FOR THE INTERSESSIONAL PERIOD - (DAY 1)**

The meeting considered its terms of reference adopted by CCI-16 and reviewed the actions, deliverable, priorities and draft work plan for the intersession period (2014-2018). The meeting also took note of the minutes of its teleconference dated 4 September 2014. It noted that good progress had been made in identifying new reference documents published by WMO. The Team decided to list new actions and deadlines at the end of the meeting and integrate all relevant inputs into the proposed Guidelines on Quality Management in Climate Practices and Services.

## **3. CONSIDERATION OF PRESENTATIONS ON QUALITY MANAGEMENT AND ONGOING ACTIVITIES BY ET-QM MEMBERS AND THE WMO SECRETARIAT- (DAY 1)**

The meeting considered the following presentations by its members, co-chairs of OPACE 5 and the WMO Secretariat. The presentations and discussions focused on the current status of activities relevant to quality management. The presentations were grouped according to agenda items 3.1 and 3.2 and are made available in the following link for further reference:

<http://www.wmo.int/pages/prog/wcp/ccl/opace/opace5/meetings/ET-QM-Singapore.php>

**a) Overall and thematic issues:**

**3.1 Overall Quality Management and Capacity Building issues in the context of OPACE 5 (OPACE 5 Co-chairs)**

3.1.1 Capacity Building activities in CCI - Mrs Tanja Cegnar

3.1.2 Overview of the Australian Bureau of Meteorology Mentorship/Partnership QM Initiative for South West Pacific Meteorological Services – Mrs Helen Tseros- (Connected by WebEx)

**3.2 Current Status of Quality Management in WMO**

3.2.1 (An overview of the work of CAeM WMO Task Team on Quality Management Systems (TT-QMS) by Mrs Helen Tseros-

3.2.2 Current status of Quality Management in CCI (by WMO Secretariat representatives)

3.2.3 Quality management in climate data and monitoring- (Peer Hechler, WMO)

3.2.4 Quality management in weather and climate prediction- (Dr Joseph Intsiful)

3.2.5 Quality management in climate service delivery (Amir Delju, WMO)

3.2.6 What does quality management mean in climatology? (Charlotte McBride)

The ET-QM discussed the findings and gaps to be addressed in the final output of the meeting.

**b) Presentations on Quality Management at National Level by members of ET-QM:**

The Team considered a series of presentations by members, who reported on their quality management activities. This segment was followed by discussion on the findings, lessons learned and best practices

- Fatima Bensaid, Morocco
- Huanping Wu, China
- Barbara Tapia, Chile
- Willis Mills, Trinidad and Tobago
- Helen Tseros, Australia (connected by WebEx)
- Yilmaz Açar, Turkey
- Charlotte McBride, South Africa

**4 IDENTIFICATION OF THE TITLES AND ELEMENTS OF CCI GUIDE ON QUALITY MANAGEMENT- (DAY 2)**

4.1 The ET-QM considered a presentation by Mrs Tseros (WebEx) on the content and details of the WMO Guide to the Implementation of a Quality Management System for National Meteorological and Hydrological Services, WMO No. 1100. She notified that the Guide is subject to an update to reflect the new ISO-9001:2015 standard. In addition, it is suggested to develop 'Annexes' relevant to key activities of WMO programmes and technical commissions after endorsement by Congress-17. The meeting noted the need for a climate-relevant Annex to WMO No. 1100, and that the scope and structure of the envisaged Guide on Quality Management in Climate Practices and Services will be further developed on the basis of this annex.

4.2 The Team discussed basic items of quality management in climate practices and services to be considered for the above Annex and Guide, and concluded on the following key elements: (A) Generic processes, (B) Reference material and (C) Best practices, taking into account institutional mandates and responsibilities, technical infrastructure requirements, service delivery aspects as well as capacity building and competency needs. The Team agreed to lead the

development of draft content for the above Annex and Guide in close liaison with the new WMO QM expert body as per Congress-17 outcome as well as relevant CCI OPACES 1-5 Teams and Rapporteurs. It further agreed on its relevant workplan elements as per Annex I.

4.3 The Team discussed the need for more detailed guidance and information for Members on climate practices and services, and noted that WMO Technical Regulations currently include only a very brief, general and partly outdated description of climate practices. Considering that WMO Technical Regulations including Manuals constitute prescriptive reference materials and that Guides are only descriptive information sources, the Team strongly recommended to review and improve WMO climate-relevant regulatory material as a reference for the implementation of a sustained QM strategy for climate practices and services. The Team felt that its planned activities as per Annex 3 to this report may reveal relevant input for such effort and decided to inform the CCI Management Group accordingly. The Team also noted relevant activities of Inter-programme Expert Team on the Climate Data Modernization Programme (IPET CDMP). <https://www.wmo.int/pages/prog/wcp/ccl/opace/opace1/IPET-CDMP-1-4.php>

## **5 DISTRIBUTION OF TASKS AMONG THE ET-QM MEMBERS AND SETTING THE DEADLINES - (DAY 2)**

5.1 The ET-QM agreed on the distribution of tasks among members as reflected in Annex I.

## **6 DISCUSSION ON THE STRUCTURE OF A CHAPTER ON QUALITY MANAGEMENT IN THE GUIDE TO CLIMATOLOGICAL PRACTICES (WMO No. 100) - (DAY 3)**

The ET-QM noted that Quality Management is an emerging issue which should be appropriately reflected in the Guide to Climatological Practices (WMO No. 100). It welcomed the relevant proposal made by the CCI Task Team on the Guide (CCI-TT-GCP). The Team felt, however, that Quality Management needs to be placed more prominently in the Guide and suggested to add (i) an introductory QM section in Chapter 1 and (ii) a new chapter 8 on Quality Management, the latter to form an extract of the envisaged Guide on Quality Management in Climate Practices and Services. The Team agreed to closely liaise with TT GCP on this aspect.

## **7 UPDATES ON THE WEBPAGE FOR CCI QUALITY MANAGEMENT - (DAY 3)**

The ET-QM reviewed the current status of the website Quality Management for Climatology (<http://qmc.mgm.gov.tr/>), kindly hosted by the Turkish State Meteorological Service (TSMS). It considered proposals to further update it as follows:

- 1- Merge and update the lists 'Publications' and 'Useful documents'.
- 2- Revise the title and content in 'QM Applications' to 'Quality Management Applications in Climatology' to match it with four areas, namely; climate data, climate monitoring, climate prediction and climate service delivery.
- 3- Make crosslink between the websites Quality Management for Climatology (<http://qmc.mgm.gov.tr/>) and Quality Management ([http://www.bom.gov.au/wmo/quality\\_management.shtml](http://www.bom.gov.au/wmo/quality_management.shtml)). Introduce on the Quality Management for Climatology website a short explanatory paragraph on the relation between the two websites.
- 4- Consider adding a News button or a link to Yammer.

Mr Yilmaz Acar volunteered to take action on this item, in cooperation with the WMO Secretariat.

**8 ANY OTHER BUSINESS - (DAY 3)**

The Expert Team did not identify any other issues for discussion.

**9 CLOSURE OF THE SESSION**

The meeting of the ET-QM closed at 12h00 on Thursday 30 April 2015.

## ANNEX I

## ET QM draft Workplan and actions

**(A) Workplan**

Activity	Responsible person(s)	Deadline
<b>1. Develop a structure and content of the envisaged climate-relevant Annex to WMO 1100</b>		
<b>1.1 Generic process identification and description</b>		
<i>Note: Generic processes for climate practices and services comprise the domains of operations, developments, capacity building and qualification of personnel. The processes are proposed to be described separately for the following categories: Climate data, Climate monitoring, Climate prediction, Climate services; cf. generic process matrix below*</i>		
Identify and describe generic processes for the climate data category	F. Bensaid and Ch. McBride following the approaches applied in Moroccan and South African NMHSs	First draft by 15 September 2015, to be circulated among ET QM members for comments; final draft by 31 October 2015
Identify and describe generic processes for the climate monitoring category	H. Wu and T. Cegnar	First draft by 31 October 2015
Identify and describe generic processes for the climate prediction category	J. Intsiful	First draft by 31 October 2015
Identify and describe generic processes for the climate services category	W. Mills and A. Delju	First draft by 31 October 2015
<b>1.2 Reference material</b>		
<i>Note: Establish a list of existing regulatory material and reference documents on climate practices for the above four categories and conduct a gap analysis regarding necessary updates, consistency between the different documents and missing guidance. Take into account and review climate practices and services relevant documents listed or referred to on the WMO Quality Management as well as on the Quality Management for Climatology websites, and consider relevant peer-reviewed publications as supporting references.</i>		
Establish a first informal draft list of regulatory material and reference documents	A. Delju, F. Bensaid and P. Hechler	31 July 2015
Develop an appropriate template based on the above informal draft list to be circulated among OPACE 1-5 Teams and Rapporteurs for completion	B. Tapia	Circulation of template among OPACE 1-5 Teams and Rapporteurs: 15 September 2015; draft final list including first analysis by 31 October 2015
Update of WMO Quality Management as well as Quality Management for Climatology websites	Y. Acar and H. Tseros based on input from B. Tapia	30 November 2015
<b>1.3 Best practices</b>		
<i>Note: Provide examples of QM best practices (product descriptions, established feedback processes, competencies, training requirements, user requirements, performance indicators for monitoring and evaluation, back-up processes, knowledge management, lessons learnt etc.) and technical best practices (e.g. for data sets, climate predictions ...); the latter needs strong input from OPACE 1-5 experts.</i>		
Draft QM best practices	P. Hechler	Draft to be circulated among ET QM members: 15 September 2015; final draft: 31 October 2015
Identify an approach for collecting technical best practices	Tbd	Tbc

\* *Generic process matrix*

	<i>Operations</i>	<i>Development</i>	<i>Capacity Building</i>	<i>Qualification</i>
<i>Climate Data</i>				
<i>Climate Monitoring</i>				
<i>Climate Prediction</i>				
<i>Service Delivery</i>				

**(B) Further actions**

**Action\_1** Liaise with CCI Task Team on the Guide to Climatological Practices (TT-GCP) on properly capturing quality management in the Guide to Climatological Practices (F. Bensaid, A. Delju; establish liaison by 31 October 2015)

**Action\_2** Inform CCI MG of ET QM's recommendation to review and improve WMO Technical Regulations as a basic prerequisite for the implementation of a sustained quality management for climate practices and services (A. Delju, F. Bensaid by October 2015)

**Action\_3** Draft existing institutional mandates and regulatory obligations in the domain of WMO climatological practices and services (A. Delju; first draft to be circulated among ET QM members by 15 September 2015; final draft by 31 October 2015) (follow up through CCI Expert Team on Institutional and Infrastructural Capabilities (ET-IIC)

**Action\_4** Identify technical infrastructure relevant to WMO climatological practices and services (J. Intsiful and A. Delju to liaise with ET IIC in September 2015)

**Action\_5** Organise a WebEx meeting of ET QM (A. Delju, mid-November 2015)

**ANNEX II**

**CCI Expert Team on Quality Management (ET-QM)  
Singapore, 28-30 April 2015**

**LIST OF PARTICIPANTS**

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## ANNEX III

### PROVISIONAL ANNOTATED AGENDA

#### FIRST MEETING OF CCI EXPERT TEAM ON QUALITY MANAGEMENT (ET-QM)

Singapore, 28-30 April 2015

#### 1 ORGANIZATION OF THE SESSION

##### 1.1 Opening of the session

The first meeting of the CCI Expert Team on Quality Management (ET-QM) will open in the Auditorium of Centre for Climate Research Singapore (CCRS), of Meteorological Service of Singapore at 09h30 on Tuesday, 28 April 2015. For information on logistics, please refer to INF. Note.

##### 1.2 Adoption of the agenda

The provisional agenda will be adopted by the (ET-QM) after opening of the meeting.

##### 1.3 Working arrangements

The Expert Team members will be requested to agree on working arrangements and meeting hours. Tentatively the morning and afternoon working hours will be 09h30-12h30 and 14h00-17h00, respectively. There will also be 20 minutes coffee break in each half-day segment. The meeting will be conducted in English.

#### 2 REVIEW OF THE TERMS OF REFERENCE OF THE TASK TEAM AND DISCUSSION ON A WORK PLAN FOR THE INTERSESSIONAL PERIOD - (DAY 1)

The Lead of the Team will invite the members and participants to a Tour de Table for brief introduction. The Team will then consider its terms of reference adopted by CCI-16 and review the actions, deliverable, priorities and draft work plan for the intersession period (2014-2018), which have been considered in the teleconference dated 4 September 2014. The Minutes of the teleconference is in Annex to Doc. 2.

#### 3 CONSIDERATION OF PRESENTATIONS ON QUALITY MANAGEMENT AND ONGOING ACTIVITIES BY ET-QM MEMBERS AND THE WMO SECRETARIAT- (DAY 1)

The ET-QM will consider a number of presentations by its members, representatives of the host country and the WMO Secretariat on the current status of quality management, quality assurance and quality control activities. The presentations will be grouped into the following areas:

##### **3-a) Overall and thematic issues:**

- 3.1 Overall Quality Management and Capacity Building issues in the context of OPACE 5 - OPACE 5 Co-chairs
  - 3.1.1 Capacity Building activities in CCI - Joseph Intsiful/Tanja Cegnar
  - 3.1.2 Overview of the Australian Bureau of Meteorology Mentorship/Partnership QM Initiative for South West Pacific Meteorological Services – Helen Tseros (video-Conference)
    - 3.2 Current Status of Quality Management in WMO
      - 3.2.1 An overview of the work of CAeM WMO Task Team on Quality Management Systems (TT-QMS) - Mrs Helen Tseros (video-Conference)
    - 3.3 Current status of Quality Management in CCI - by WMO Secretariat representatives

- 3.4 Quality management in climate data and monitoring – Peer Hechler, WMO
- 3.5 Quality management in climate service delivery – Amir Delju, WMO
- 3.6 What does quality management mean in climatology? – Charlotte McBride

The ET-QM will discuss the findings and gaps to be addressed in the final output of the Team.

**3-b) Presentations on Quality Management at National Level by members of ET-QM:**

- Helen Tseros, Australia (video-Conference)
- Fatima Bensaid, Morocco
- Huanping Wu, China
- Barbara Tapia, Chile
- Willis Mills, Trinidad and Tobago
- Yilmaz Açar, Turkey
- Charlotte McBride, South Africa

The ET-QM will discuss the findings, lessons learned and best practices to be included in the final output of the Team.

**4 IDENTIFICATION OF THE TITLES AND ELEMENTS OF CCI GUIDE ON QUALITY MANAGEMENT- (DAY 2)**

The ET-QM will elaborate on the scope and structure of CCI Guide on Quality Management (QM) and identify relevant titles as well as sections. This Guide will be produced as a deliverable of the Team for submission to CCI-17. This task will be completed by mid- 2017. The ET-QM will consider reference material such as Technical Regulations, WMO-No. 49, Vol. IV and Guide to the Implementation of a Quality Management System for National Meteorological and Hydrological Services, WMO No. 1100. The Expert Team will also consider a similar Guideline which is being prepared by the Commission for Hydrology (CHy).

4.1 Briefing on the Guide to the Implementation of a Quality Management System for NMHSs (WMO No. 1100) - Helen Tseros (video-conference)

**5 DISTRIBUTION OF TASKS AMONG THE ET-QM MEMBERS AND SETTING THE DEADLINES - (DAY 2)**

The ET-QM will distribute the identified tasks, titles and chapters among members, who will act as authors. It will also decide on deadlines and working mechanism for submission of the text to the Secretariat for editing and finalization.

**6 DISCUSSION ON THE STRUCTURE OF A CHAPTER ON QUALITY MANAGEMENT IN THE GUIDE TO CLIMATOLOGICAL PRACTICES (WMO No. 100) - (DAY 3)**

The ET-QM will discuss the details of a short chapter on Quality Management in climate services to be added to the Guide to Climatological Services (WMO No. 100). It will also identify potential authors in coordination with the CCI Task Team on the Guide to Climatological Practices.

**7 UPDATES ON THE WEBPAGE FOR CCI QUALITY MANAGEMENT - (DAY 3)**

The ET-QM will review the current status of the webpage for CCI ET-QM, kindly hosted by Turkish State Meteorological Service (TSMS) and will consider proposals to further update it and broaden outreach across the CCI. <http://gmc.mgm.gov.tr/>

**8 ANY OTHER BUSINESS - (DAY 3)**

The Expert Team may discuss any other issues relevant to its mandate which is not indicated in the agenda.

**9 CLOSURE OF THE SESSION**

The meeting of the ET-QM is scheduled to close before 16h00 p.m. on Thursday 30 April 2015.