

WORLD METEOROLOGICAL ORGANIZATION

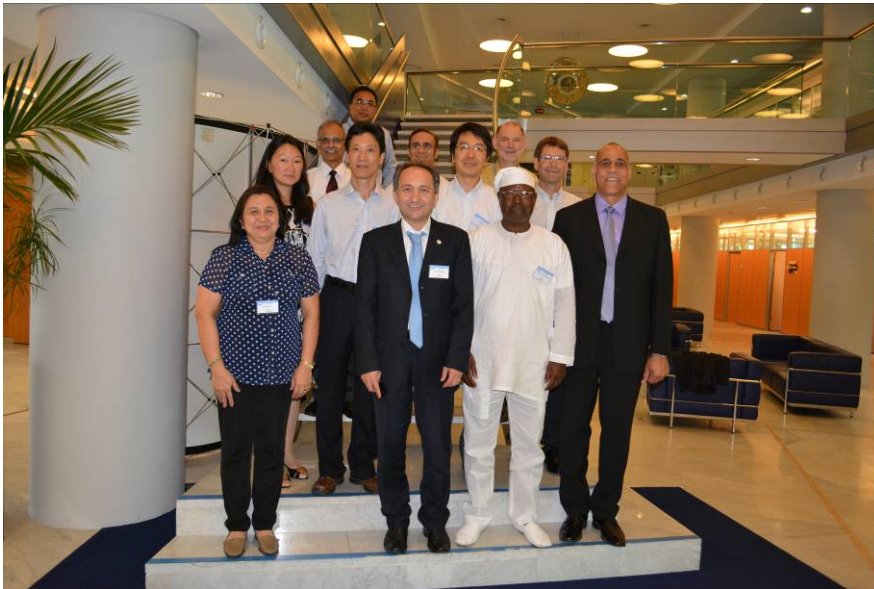


**CCI EXPERT TEAM
ON STRATEGY FOR CAPACITY BUILDING
FOR CLIMATE SERVICES
(CCI-ET-SCBCS)**

Geneva, Switzerland
5-7 August 2013

REPORT

REPORT AND RECOMMENDATIONS



GENEVA, Switzerland

5-7 August 2013

1. ORGANIZATION OF THE SESSION

1.1 Opening of the session

The first session of the CCI Expert Team on Strategy for Capacity Building for Climate Services (CCI-ET-SCBCS) was opened by Mr S. Sensoy, chairman of the Team and vice-President of the Commission for Climatology (CCI) in the WMO headquarters in Geneva on 5 August 2013. Mr Bruce Stewart, Director of Climate and Water Department, welcomed the Expert Team on behalf of the WMO's Secretary General and gave an opening speech. He noted that capacity development is a key pillar of the GFCS and this broadly crosscutting activity has always remained a priority area in the work of WMO and its Technical Commissions.

Mr Stewart hoped that while approaching the 16th session of the CCI in July 2014, the CCI-ET-SCBCS will be able to achieve its mandate on drafting a strategy for capacity development needs for climate services for implementation in the next inter-sessional period of the Commission.

1.2 Adoption of the agenda

The meeting adopted the agenda without introducing any changes.

1.3 Working arrangements

The Expert Team agreed on the working hours and work plan of the meeting.

2 BACKGROUND INFORMATION AND REVIEW OF THE CCI-ET-SCBCS SINCE ITS ESTABLISHMENT

The meeting received a briefing report on this item from the Secretariat (Mr A. Delju) followed by the report of the Chairman of the Team on capacity development related activities since CCI-XV and Cg-XVI. The meeting further reviewed its Terms of Reference, and identified the major tasks required to address them. Following the discussions on the background information, the meeting received clarification on the definitions of Capacity Building¹ as opposed to Capacity Development as well as qualification and certification, in the context of training and educational activities.

3 KEY ISSUES RELEVANT TO CAPACITY DEVELOPMENT FOR CLIMATE SERVICES

a) Basic requirements of functional capacities for end-to-end climate services

- i) Climate observation, standards for collection and exchange of data;*
- ii) Climate data management and quality control;*
- iii) Data rescue and digitization.*

Mr Peer Hechler from the WMO Secretariat briefed the meeting on the items i) through iii) based on a joint submission with Dr Manola Brunet.

¹ Capacity Building is defined as "a process that supports only the initial stages of building or creating capacities and assumes that there are no existing capacities to start from. Capacity Development "Refers to the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time." Source: UNDP, 2009, Capacity Development: A UNDP Primer, United Nations Development Programme, New York, NY, USA

He highlighted a number of basic principles of respective capacity development in the domains of data rescue, climate data management and climate monitoring, separated into 'infrastructure', 'best practices', 'personnel (training) and 'regional mechanisms' parts. The briefing was followed by a gap analysis and suggestions for the future. The discussion on this item particularly focused on the following issues:

- Need for sustainability: every capacity development activity should have the potential of being sustained in terms of operations;
- Need for packaging: every capacity development activity should be inclusive and should address infrastructure, best practices, personnel and –where feasible- regional collaboration opportunities;
- Workshop concepts should include pre-workshop activities, the workshop as such as well as follow-up activities;
- Regional mechanisms should be considered as an integral part of capacity development including role of respective WMO RCCs and their own relative capacities and strengthening requirements to undertake such additional responsibilities, networking, user communities etc. to help each other;
- The envisaged CSIS toolkit is considered as an important contribution to standardization of training as well as operations in terms of sustainability.

In continuation, the meeting considered presentations from Dr V. Khan, A. Xiong and R. Yamada on the following items:

- iv) *Product development (operational climate monitoring, assessment and prediction, climate change projections and downscaling);*
- v) *Develop interface with various application sectors: tailored products, packaging, communication and partnerships.*

The Team took note of classification of product development capabilities by climate services at the national level according to infrastructural and human capabilities and the four categories delineated in this regard, namely basic, essential, full and advanced climate services.

The following recommendations were made:

- There is a need to improve the mechanisms of interaction between components of 3-layered infrastructure of climate product delivery;
- Attention should be paid to ensure efficient interface to NMHSs of global climate products;
- The range of climate products produced by Global Producing Centers (GPCs) and Regional Climate Centers (RCCs) for NMHSs should be expanded to meet the national needs;
- Knowledge of local needs and priorities in climate products should be improved and better articulated;
- Capacity development in product design and operational generation/dissemination activities should address:
 - Toolkits to facilitate generation of high-quality climate information products (forecasts, climate change tailored products, monitoring products);
 - Enhanced use of Computer Cloud Storage technology for climate toolkits and data;
 - Enhanced training activities through RCOF and RCC in the generation and use of climate products;
 - RCC guidance on access and interpretation of climate products under relevant projects supported by WB and UNDP on CLIPS, etc.).

The Team highlighted the importance of developing of user interface mechanisms especially in prioritizing sectors such as agriculture, disaster risk reduction, water and health. Demonstration of best practices of climate information application in socio-economy sectors can be considered as an important contribution toward Capacity Development strategy.

The Team further considered a report from Mr R. Yamada on the activities and products of Tokyo Climate Center (TCC).

The meeting made the following recommendations:

- RCCs are expected to play an increasingly significant role in capacity development activities at the regional level;
- During training events organized by RCCs, it is strongly encouraged that sufficient time be allocated to practical exercises for operational use at the NMHSs.

**b) Components of capacity development strategy as considered by the GFCS
Capacity Development Pillar**

- i) Institutional;*
- ii) Infrastructural;*
- iii) Human resources;*
- iv) Competencies and certification.*

The meeting considered presentations from Dr P. Parrish and J. Wilson (WMO Secretariat), Prof. J.A. Omotosho and Dr E. Aguillar.

It further elaborated on the above-mentioned items and believed that the first step in meeting the human resource development needs for capacity development for climate services will be to develop the set of common or core competencies required of those working at climate services centres. Once these are in place, an even more challenging task must be faced—the process of identifying or developing education and training resources and opportunities that can bridge any gaps between existing knowledge and skills, and those required by the competencies.

One of the most expedient ways of providing the necessary learning opportunities is to examine the available Open Educational Resources (OERs) and to draw from these to begin filling the gaps.

The COMET Program develops and manages the MetEd website (<https://www.meted.ucar.edu/>), which offers over 300 substantial learning resources on weather, climate, and other geosciences topics, comprising over 500 hours of learning opportunities. Thirty three of these modules are on climate related topics, and many of these are designed directly to address the knowledge and skills required for providing and using climate information.

- Because professionals often learn as much as 70% of what they know from informal learning activities, a comprehensive education and training strategy should be developed that not only includes formal training events and quality learning resources, but does not ignore the informal dimension. A complete education and training strategy will include
 - Formal training events (classroom and online courses);
 - Online learning resources and assisted online courses;
 - Documentation and tutorials for tools;
 - Fellowships and secondments;
 - Create communities for practice activities (social networking opportunities) and sustained learning through sharing of knowledge and resources.
- It was suggested that a blended approach (conventional and distance learning) is needed to address learning needs. Online resources will be very useful for some but not all needs, and use of online resource modules and participation of their developers in conventional training events could be mutually beneficial.
- It has been proposed that the team could complete a review of the existing OERs on the web, possibly by CCI-16, to determine which are useful for training purposes for climate services, particularly in the context of GFCS.

- The team should examine the ongoing roving seminars of WMO Agricultural Meteorology Programme and their role in capacity development of end users of climate services, to determine how these resources can be chosen or tailored to complement the other approaches to training.
- The team should consider developing a comprehensive training strategy that includes multiple modes for meeting learning needs.
- Training packages consisting of pre-training preparations, assisted on-line sessions guided by classroom discussions, workshops with pre-designed modules that give hands-on experience of tool-kit based generation of information products, use of on-line climate analysis resources and post training engagements such as collaborative peer-reviewed paper publications to be designed
- Such training packages may be imparted using a road-show like sequencing (as implemented for analysis of extremes (RClimDex) serving an overall strategy for capacity development.
- Online resources should not be offered without some guidance as to their scope, strengths, weaknesses, and utility.
- To prepare trainers who are willing to train other staff and other trainers in RCCs and NMHSs, participants from “train the trainer” courses could act as training focal points.
- For any training event, we need to ensure that skills are developed and that they do not turn into just an information dump.
- Needs assessment for climate information and services, review of ongoing capacity development initiatives including on-line courses, proposed components for training packages and post training sustenance and other relevant issues may be taken up for an open discussion.

There are many uses to which OERs can be put to use: as is they can be assigned to address targeted learning needs, used as pre-course activities, or assign in groups to create self-paced courses; they can be used as part of a guided distance learning course; they can be taken apart to create new resources; or they can be assigned only in portions.

While MetEd is unique, it is not the only venue for finding useful OERs. UNESCO offers its Climate Change Education Clearing House:

<http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/climate-change-education/cce-clearinghouse/>

In addition to the existing collection of resources on climate topics, COMET is just beginning a 2-year development effort for a course package in Climatology and Climate, covering content as defined in WMO No. 1083, Sec. 2.3.4 Climatology, in areas such as, Global circulations and climate regimes, Climate variability and climate change, Climate models and climate observations, Climate products and services. This will be designed for potential adoption by universities, as well as regional training centers.

The University of Reading in the UK has run a very successful Statistics in Applied Climatology (SIAC) course for many years. The University is now working with a number of other universities to make this material available as OERs for the community to use. Adaptation, including translation, will be encouraged as long as the adapted materials also remain open and available for use by others.

- CCI should offer to be involved in reviewing and advising in some of these development efforts to ensure they meet global needs.

On infrastructural issues, the meeting framed the discussions under the following areas:

- Existing capabilities under the four categories (Basic, Essential, Full and Advanced) of climate services, and aspects relevant to their enhancement to the next higher categories;

- Over one third of countries are currently unable to provide much more than the most basic climate services;
- Most countries would benefit from initiatives to construct high resolution datasets by merging satellite and in situ measurements;
- Data rescue efforts need to be expedited;
- Data and product access through the Internet;
- Global and regional initiatives in support of climate information generation;
- Climate Services Toolkit.

c) Identification and addressing of gaps

Mr S. Sensoy, Chairman of the Team made a presentation on this item. The meeting noted that Capacity Development in GFCS is very comprehensive, and it is an overarching pillar. It recommended that it would be more practical for CCI to address the needs of CSIS, at this stage.

The Expert Team noted that in the education and training arena, and in the area of Standards and Recommended Practices, emphasis is being given to the competency of the personnel to carry out particular roles or tasks. That is, can the person do the job / task / role assigned to them? The Expert Team suggested that in many ways this is analogous to other parts of the WMO Technical Regulations where Standards and Recommended Practises have been developed for equipment, processes or procedures to ensure that they can also do the job / role / tasks required of them.

The Expert Team recognised that competencies can be thought of as an integrating framework where a person's knowledge (from academic and non academic learning), skills and behaviours are brought together in a holistic manner. The Expert Team agreed that the competency framework provides a minimum benchmark for the person, their employer and the beneficiary of their work as part of a wider overall quality management approach. By its nature, the competency approach incorporates the need for ongoing continuous professional development. The Expert Team recognised that a competency based approach to the education, training and assessment of climate services personnel provides organisations with flexibility in how they structure and staff their service, but at the same time set global minimum recommended practises. The Expert Team noted that nationally or regionally, WMO Members or groups of Members may wish to set higher standards based upon demands from users and the capabilities for their services.

The Expert Team considered that one way to think about competencies versus qualifications is to equate competencies with the question of "can the person do the job" and qualifications with "what classification or title should this person have". The concepts are not mutually exclusive and some organisations may decide that an academic qualification could be a good proxy for answering the question of whether a person possesses the necessary knowledge to undertake a particular set of tasks or fill a role.

The Expert Team recommended the work undertaken by Prof Omotosho and Dr Aguillar in drafting example undergraduate and post graduate climate courses that would prepare new staff to work in the climate services area. It was suggested that this work continue and the Commission could even consider holding a Symposium or similar arena to promote the up-take of such study courses by universities and other training institutes such as RTCs. In the future this work, rewritten in terms of learning outcomes, could form the basis for a BIP-C / BIP-CT but at this stage it was too early to formalise such statements. The Expert Team anticipated that the development of the knowledge components that would be required to support the competencies could also contribute to clarifying and supporting the work undertaken by these two Expert Team members.

Common job roles or tasks

The Expert Team identified that one framework for identifying common job roles or tasks for personnel involved in climate services could be:

- Working on data – this includes data rescue and recovery , archiving, quality control, data homogenization;

- Working with data – provision of time series, statistics, indices;
- Predictions – using climate models and other approaches to provide predictions for the future state of the climate system and its elements on different time scales;
- Communication - communicate climate data, products and information to users and general public;
- Quality management of the climate services products.

The Team recognised that this had parallels with how the Commission itself was structured.

The meeting noted that personnel with many different academic and professional backgrounds work across these common tasks with many of them not fitting the “standard” climatologist profile. Thus the competency approach assists Members by avoiding the question of what or who is a climatologist or climatological technician but focussing on the question of whether the person can do the job that they are being asked to carry out.

The Team noted that it was preferable to have a set of generic job roles or tasks that Members then adapt and expand to the range of services they offer and their organisational structure. Following lengthy discussion the Expert Team noted that the competencies are for the tasks, not the individuals thus it was not necessary from a CCI perspective to split the competencies into different job families. This was a decision for each employer to take. Thus the Expert Team recommended that in adapting the competencies to national or organisational circumstances the competencies only relate to those tasks that individuals personally undertake. Thus subject to organisational requirements or rules, individuals do not have to be competent in all tasks unless they regularly undertake those tasks.

The Expert Team examined an earlier draft of competencies for climate service personnel tabled by the Chair. It noted that the earlier draft split the tasks for climate services into those related to professionals and those related to technicians. The Expert Team also suggested that there were too many details (fourteen statements) for a top level competency. It set up a working group to further review and elaborate the tabled competencies with the view of retaining the detail for the second level (specialised) competencies as an expansion to the top level. The working group was requested to combine the professional and technician statements to provide one framework that would allow Members to determine for themselves what staff did which tasks.

4 REVIEW OF WMO MECHANISMS AND PROCEDURES FOR CAPACITY DEVELOPMENT GUIDELINES TO ADDRESS THE NEEDS OF CLIMATE SERVICES

The meeting was briefed by Dr R. Kolli of WMO Secretariat on the existing WMO mechanisms/procedures for capacity building and propose revisions/guidelines to address the relevant needs of climate services. The meeting took note of the work being done by (i) Executive Council Panel of Experts on Education and Training and (ii) Executive Council Working Group on Capacity Development, and agreed on the need for close alignment with the perspectives of these bodies to ensure consistency and complementarity. It further appraised itself of the priority projects identified under the GFCS Implementation Plan for the Capacity Development pillar, as agreed by the First Session of the Intergovernmental Board on Climate Services (IBCS-1, 1-5 July 2013, Geneva).

- The Team noted that the last meeting of EC Panel of Experts on Education and Training was held in India in 2012. The Panel, among other issues deliberated and agreed on the ‘Indicative Climate Service Competencies’, which is available in Annex IV, of the meeting report <http://www.wmo.int/pages/prog/dra/etp/documents/final-reportXXVthSession.pdf> .

The Panel rendered high priority of assisting GFCS Category I and Category II Climate Services. The Panel recommended that CCI initially focus on developing the competency framework for tasks related to these service categories and identifying options for developing and delivering the

underpinning knowledge, skills and behaviours to allow Members to develop and increase their staff competence in the areas summarized in the report of the Panel meeting. A lesser but still important priority will be to identify the common learning outcomes (knowledge and skills) to enable personnel to work across a number of the competency areas. This could be considered equivalent to the BIPs. The Panel further recommended that CCI focus on the competence of staff to undertake particular climate service related tasks and leave the question of qualifications and classifications up to each Member to decide based upon their national circumstances. At some stage, it may be necessary to define what a climatologist is in terms of the common learning outcomes identified during the development of the job competencies.

- ii. The Team noted that the second meeting of the Executive Council Working Group on Capacity Development (ECWG-CD) was held from 21 to 23 January 2013 (http://www.wmo.int/pages/prog/dra/documents/ECWG-CD_2013_Final_Report.doc). The ECWG—CD presented to EC-65 the draft Capacity Development Implementation Plan for 2012-2015 (CDSIP). This paper can be used by the CCI-ET-SCBCS as a reference document;
- iii. The meeting noted that the first session of Intergovernmental Board for Climate Services (IBCS-1) was held in Geneva from 1-5 July 2013. The IBCS-1 considered the Compendium of GFCS projects and noted that for the GFCS to contribute to enhanced outcomes in agriculture and food security, water resources management, health and disaster risk reduction, implementation of concrete activities and projects across the pillars or components of the GFCS bears initial priority. These activities and projects should promote the required integration, interaction and capacity development across the pillars and priority areas with a view to deliver, operationally, the products and services that will support effective decision-making.

The Board recognized the interconnected and complementary nature of the activities contained in the Compendium, which will require the coordination and involvement of various actors, stakeholders and partners. For additional information on the content of the Compendium, please refer to the following link:

http://www.wmo.int/pages/prog/wcp/ccl/opace/meetings/scbcs/documents/IBCS-1-d04-1-3-COMPENDIUM-ON-GFCS-PROJECTS-draft2_en.pdf

The Team further took note of Resolution 4.1.3/1 (IBCS-1) and its Annex, which identifies the following Criteria for Projects eligible for funding through the GFCS Trust Fund.

Projects eligible for funding from the GFCS Trust Fund should meet all of the following criteria:

1. Adhere to the eight Principles of the Framework (see above, and Section 1.4 of the Implementation Plan);
2. Be aligned with at least one of the priority areas. Currently the priority areas are disaster risk reduction, water management, agriculture and food security, and health;
3. Address at least one of the gaps in current scientific and technical capabilities as identified in Section 3.2.2 of the Implementation Plan, and cut across the Framework's five pillars;
4. Ensure the outcomes will address users' needs and not simply address scientific or technical research priorities. To do this successfully the project should ensure close engagement between users, developers and providers;
5. Contribute to at least one of the following (which were identified by the High-Level Taskforce):
 - Upgrade those National Meteorological and Hydrological Services with basic climate service capabilities;
 - Develop national capacities by building the User Interface Platform;

- Develop regional capacities to assist national capacities in providing climate services;
6. Successfully deliver over a two-year timeframe;
 7. Support, not contradict, relevant national and international goals and policies;
 8. Ensure the country or region in which the project is being implemented has (or, through capacity development activities, will rapidly have) sufficient institutional capacities for successful delivery, and will build connections across institutes and disciplines. Additionally, these institutes must take on a level of ownership of the project to ensure the outcomes and benefits are sustained, and the infrastructure and operations created will be maintained;
 9. Involve, or contribute to activities in, Least Developed Countries, Small Island Developing States, Land-locked Developing Countries or other regions or countries highly vulnerable and sensitive to climate-related risks. Priority should be given to countries which have had, and continue to have, significant input from many agencies.

Furthermore the Resolution on capacity development recognizes the following criteria:

- Articulates specifically capacity development needs based on urgency and envisioned outcome that will benefit Members, especially for most vulnerable regions and nations;
- A clear plan to transfer mature observations, research and analysis results into sustainable operational climate services, for example through demonstration in an operational environment;
- Includes a communication/publication plan that will ensure results and lessons learnt will be shared;
- Identifies training and other requirements for the application of the product or service;
- Demonstration of a quality assurance management scheme for the development and operations of the intended product(s) and service(s).

5 WORK PLAN

The meeting agreed on a number of actions, deliverables, including the coordinators and deadlines for the development of a full-fledged “CCI Capacity Development Strategy for Climate Services”, as decided by Resolution 7 (CCI-XV). These ‘Actions’ are listed under item 8 and reflected in a matrix in Annex III to this report.

6 MONITORING PROCESS OF THE VARIOUS CAPACITY DEVELOPMENT EFFORTS

The ET-SCBCS considered two briefings from the Secretariat on the external and internal examples of Monitoring and Evaluation for capacity development and climate activities. One the briefings from the Secretariat presented the WMO Monitoring & Evaluation System, the tools used for gathering data and examples of the information gathered that may be relevant for the monitoring of capacity building efforts on climate services. The Team agreed to develop an appropriate monitoring process of the various capacity development efforts for climate services at a later stage.

7 ANY OTHER BUSINESS

There was no other issue or topic proposed for discussion in the meeting.

8 CONCLUSIONS AND RECOMMENDATIONS

The meeting agreed on the following actions and recommendations. Also refer to matrix in Annex III of this report.

LIST OF ACTIONS

ACTION 1:

Refine the draft paper for top level Competencies based on the previous work. (Chair to prepare the refined draft for the ET to comment; Deadline- 31 August 2013).

ACTION 2:

Prepare a draft document on the Strategy for Capacity Development needs for the minimum set of climate products, as defined by CCI ET-CSIS. (Albert Martis to coordinate with ET-CSIS; Deadline- mid-September for initial draft for ET review and end-November for submission of final draft to the Secretariat).

ACTION 3:

Review the Annex to Res. 7 (CCI-XV) and provide inputs to the coordinator assigned for Action 2. (Enric Aguillar to coordinate the inputs; Deadline mid-September for initial draft, and mid-November for final draft).

ACTION 4:

Review the activities of Expert/Task Teams in the composition of CCI and other Technical Commissions and co-sponsored bodies such as GCOS including through their recent reports, and provide a synthesis of their roles and responsibilities in contributing to the different aspects of Capacity Development for climate services. (R. Yamada to coordinate; Deadline: mid-September).

ACTION 5:

CLW, OBS and ETR to consider organizing a curriculum development workshop in 2014, subject to the availability of resources, on climate related training and education. Details will be discussed during MG meeting in October 2013 and among the three departments of WMO Secretariat.

LIST OF RECOMMENDATIONS

RECOMMENDATION 1:

The Commission to pursue prioritization of the training activities using e-learning methods across all the OPACEs, mainly through Regional Training Centers (RTCs), and to advise on the necessary technical guidance. Based on the CCI prioritization and guidance, the Secretariat to assess the resource requirements and explore budgetary resources, including those available within the current financial period as well as extra-budgetary resources.

RECOMMENDATION 2:

Regional mechanisms to be considered as an integral part of capacity development including strengthened operations of WMO RCCs, networking, user communities etc. to help each other.

RECOMMENDATION 3:

The Climate Services Toolkit (CST), envisaged to be developed as part of the implementation of the CSIS, is considered as an important contribution to standardization of training as well as operations in terms of sustainability. The capacity development initiatives of the Commission should be anchored to the CST, to the extent possible.

RECOMMENDATION 4:

Informal learning activities provide a comprehensive opportunity which complements formal education and training strategy. A complete education and training strategy will include:

- Formal training events (classroom and online courses);

- Online learning resources;
- Documentation and tutorials for tools;
- Fellowships and secondments;
- Community of practice activities (social networking opportunities).

RECOMMENDATION 5:

A blended approach involving both conventional and distance-learning approaches is needed to address learning needs. Online resources will be very useful for some but not all needs.

RECOMMENDATION 6:

There is a need for assessment of climate information and services, review of ongoing capacity development initiatives including on-line courses, proposed components for training packages and post training sustenance and other relevant issues, which may be taken up for an open discussion during the proposed Technical Conference preceding the forthcoming CCI-16.

RECOMMENDATION 7:

Considering the emerging requirement of a large number of competent climate services personnel through the implementation of GFCS, Universities/Academic Institutions need to be encouraged, through appropriate mechanisms, to consider developing new departments/programmes/curricula in climate related areas to fill the gaps in skilled personnel.

9 CLOSURE OF THE MEETING

The meeting was closed at 16:15 on Wednesday, 7 August 2013.

ANNEX I

WORLD METEOROLOGICAL ORGANIZATION
COMMISSION FOR CLIMATOLOGY
EXPERT TEAM ON STRATEGY FOR CAPACITY BUILDING
FOR CLIMATE SERVICES
(CCI-ET-SCBCS)

Original: ENGLISH

GENEVA, Switzerland, 5-7 August 2013

AGENDA

1. ORGANIZATION OF THE SESSION

1.1 Opening of the session

The first session of the CCI Expert Team on Strategy for Capacity Building for Climate Services (CCI-ET-SCBCS) will be held in the WMO headquarters in Geneva from 5-7 August 2013. The meeting will be opened by a representative of the Secretary-General of WMO. The meeting will be chaired by Mr Serhat Sensoy, Vice-President of CCI and Chair, ET-SCBCS. The documents of the meeting will be available both by e-mail and on the following weblink, in due course, before the meeting.
http://www.wmo.int/pages/prog/wcp/ccl/opace/et_scbscs.php

1.2 Adoption of the agenda

The provisional agenda will be considered for adoption by the team.

1.3 Working arrangements

The Expert Team will agree on the working hours, time table for the agenda items and other arrangements of the meeting. The meeting will be conducted in English only without interpretation facility.

4 BACKGROUND INFORMATION AND REVIEW OF THE CCI-ET-SCBCS SINCE ITS ESTABLISHMENT

The meeting will receive a comprehensive report from the chairman of the Expert Team and a report from the Secretariat on capacity building issues and developments since CCI-XV and Cg-XVI. The meeting will review its Terms of Reference, and identify the major tasks required to address them.

5 KEY ISSUES RELEVANT TO CAPACITY BUILDING FOR CLIMATE SERVICES

a) Basic requirements of functional capacities for end-to-end climate services

- i) *Climate observation, standards for collection and exchange of data;*
- ii) *Climate data management and quality control;*
- iii) *Data rescue and digitization.*

b) Components of capacity building strategy as considered by the GFCS Capacity Development Pillar

- i) Institutional;*
- ii) Infrastructural;*
- iii) Human resources;*
- iv) Competencies and certification.*

c) Identification and addressing of gaps

4 REVIEW OF WMO MECHANISMS AND PROCEDURES FOR CAPACITY BUILDING GUIDELINES TO ADDRESS THE NEEDS OF CLIMATE SERVICES

The meeting will review the existing WMO mechanisms/procedures for capacity building and propose revisions/guidelines to address the relevant needs of climate services. It will also discuss development of an implementation plan for Capacity Building Strategy keeping in view the ongoing developments towards the implementation of the GFCS. The meeting will also appraise itself on the work being done by (i) Executive Council Panel of Experts on Education and Training and (ii) Executive Council Working Group on Capacity Development, and consider potential coordination aspects to ensure consistency and complementarity. The meeting will further consider the priority projects identified under the GFCS Implementation Plan for the Capacity Development pillar, as agreed by the First Session of the Intergovernmental Board on Climate Services (IBCS-1, 1-5 July 2013, Geneva).

5 WORK PLAN

The meeting will prioritize the key deliverables that can be completed by the beginning of 2014, in time for CCI-16, agree on the work plan, identify key contributors and assess the resource requirements. A major key deliverable is the development of a full-fledged "CCI Capacity Development Strategy for Climate Services", as decided by Resolution 7 (CCI-XV). In this context, the meeting may also consider the organization of a workshop involving experts from different parts of the world to develop education and training curricula in climatology. If such a workshop is considered to be worth pursuing, the meeting may develop a detailed concept note for the purpose.

6 MONITORING PROCESS OF THE VARIOUS CAPACITY BUILDING DEVELOPMENT EFFORTS

The ET-SCBCS will develop an appropriate monitoring process of the various capacity development efforts for climate services, and to identify successful approaches.

7 ANY OTHER BUSINESS

The meeting may consider other issues not included in the agenda items.

8 CONCLUSIONS AND RECOMMENDATIONS

The meeting will review its draft report, and finalize its conclusions and recommendations, highlighting specific action items and the associated timelines.

9 CLOSURE OF THE MEETING

The Chair will close the meeting no later than 4 PM on 7 August 2013.

ANNEX II

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ANNEX III

MATRIX OF ACTIONS AND DEADLINES

No.	ACTION	Coordinators	Contributors	Deadline
1	Refine the draft paper for top level Competencies to prepare 2 nd draft	S. Sensoy	All members	31 Aug. 2013
2	Prepare a draft document on the Strategy for Capacity Development needs for the minimum set of climate products	A. Martis with ET-CSIS	ET-CSIS	-Mid-Sept. 13 <i>(initial draft)</i> -End-Nov. 13 <i>(final draft)</i> to Secretariat
3	Review the Annex to Res. 7 (CCI-XV) and provide inputs to the coordinator assigned for Action 2	E. Aguillar	All members	Mid-Sept. 13 <i>(initial draft)</i> to MG doc.s & Mid-Nov. 13 to Secretariat <i>(final draft)</i>
4	Review the activities of Ets in CCI, other TCs and co-sponsored bodies, through their recent reports, and provide a synthesis of their roles and responsibilities in contributing to the different aspects of Capacity Development for climate services.	R. Yamada	All members	Mid-Sept. 13
5	CLW, OBS and ETR to consider organizing a curriculum development workshop in 2014, subject to the availability of resources, on climate related training and education. Details to be discussed during MG meeting in October 2013 and among the three departments of WMO Secretariat.	S. Sensoy	All members	Early October 2013