

EXPECTED RESULT 6

AGENDA ITEM 4.6: CAPACITY DEVELOPMENT

EDUCATION AND TRAINING PROGRAMME

SUMMARY

DECISIONS/ACTIONS REQUIRED:

- (a) Request the Council to consider changes to EC Criteria for RTCs, EC Criteria for the award of Fellowships, Terms of Reference for the EC Panel of Experts on Education and Training, recommendations for a feasibility study of a WMO Global Campus, recommendations on Key Performance Indicators for the Education and Training Programme, recommendations related to competency standards and recommendations related to the status of two RTCs;
- (b) Adopt draft Resolution [4.6\(1\)/1](#);
- (c) Adopt draft Resolution [4.6\(1\)/2](#);
- (d) Adopt draft Resolution [4.6\(1\)/3](#);
- (e) Adopt draft Resolution [4.6\(1\)/4](#);
- (f) Adopt draft Resolution [4.6\(1\)/5](#);
- (g) Adopt draft Resolution [4.6\(1\)/6](#);
- (h) Adopt draft Resolution [4.6\(1\)/7](#);
- (i) Financial implication: CHF 30,000 for support for the Global Campus Steering Group. Funds to come from 2012-2013 carryover.

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APPENDIX A: DRAFT TEXT FOR INCLUSION IN THE GENERAL SUMMARY

4.6 Capacity Development (agenda item 4.6)

Education and Training Programme

Introduction

4.6(1).1 The Council noted that the EC Panel of Experts on Education and Training (ETR-Panel) had recently held its 26th session at the Korean Meteorological Administration headquarters in Seoul, Republic of Korea, from 24 to 28 March 2014 (<http://www.wmo.int/pages/prog/dra/etp/documents/final-report26thSession.pdf>). The Council appreciated that this session of the ETR Panel had taken a forward looking and end-to-end approach to identify possible future directions for the ETR Programme based upon the draft Strategic Plan for 2016-2019, information from sessions of regional associations, technical commissions and data regarding Members staffing profiles and capabilities collected by the ETR Office. The Council noted the ETR Panel recommendations regarding strategic issues such as the Future Roles and Operations of WMO Regional Training Centres and a proposal for a WMO Global Campus; tactical issues such as the Terms of Reference for the EC Panel of Experts on Education and Training and the Key Performance Indicators (KPIs) for the ETRP for the next financial period; and operational issues including recommendations regarding reconfirmation of two existing Regional Training Centres.

Current and future requirements for Education and Training

4.6(1).2 The Council welcomed the approach used by the ETR Panel to identify the broad training needs of WMO Members, particularly those Members with restricted or no national meteorological, hydrological or climatological education and training capabilities. The Council noted that the ETR Office had recently collected data on staffing numbers and capabilities showing that the total global NMHS workforce was at least 150,000 and could be as high as 250,000 when taking into account staff involved in operational hydrology which was significantly under represented in the survey returns to the ETR Office.

4.6(1).3 Assuming an annual staff turnover of around 5% the Council was informed that the ETR Panel estimated at least 7,500 new staff are annually hired into NMSs globally (across all staff categories and based on conservative numbers of 150,000). The Council noted that the data from the 2013 ETR Office survey indicated that more than 24 of the 80 Members who returned data for the survey, primarily those Members without sufficient national training capacity, reported that at least 30% of their Aeronautical Meteorological Forecasters would not be able to meet the 1 December 2016 qualification requirements. The Council noted that based upon the current survey returns the minimum number of unqualified aeronautical meteorological forecasters would be approximately 500 out of an indicated 7,000 strong global workforce. The Council requested it be updated on the situation at subsequent sessions.

4.6(1).4 The Council noted the growing demand for continuous professional development education and training associated with proposed competency standards in areas such as public weather services, marine forecasting, tropical cyclone / typhoon / hurricane forecasting, WIS and climate services. Further demand is also anticipated by Members in areas of professional and management training of NMS staff. The Council concurred with the ETR Panel's conclusion that due to the increased requirements for compliance with the current and emerging qualification and competency standards / recommended practises there would be a growing unmet demand for education and training in not only the traditional areas typical covered by the WMO Regional

Training Centres (RTCs) but also new areas associated with increased user liaison related to multi-hazard early warning services and provision of climate services. The Council noted that part of education and training on climate services were included in the RCC mandatory function, and that the number of RCCs had recently been increased. The Council noted with anticipation that education-related activities between RTCs and RCCs would be implemented in a mutually complementing manner.

4.6(1).5 The Council welcomed the approach used by the ETR Panel to identify the staff numbers and capabilities in a range of service areas and encouraged the Secretary-General to continue to gather data from Members who had not yet responded. The Council considered that this information will contribute to decisions on where to invest resources to ensure that all Members are able to contribute to and benefit from activities proposed under the High Priority areas for the 2016. 2019 financial period. The Council suggested that the EC Working Group on Strategic and Operational Planning take account of the analysis undertaken by the ETR Panel to assess whether the underlying questions and approach should be included into the survey on Impacts of Achieved Results on Members+or collected via mechanisms such as the Country Profile Data Base.

4.6(1).6 The Council adopted Resolution 4.6(1)/1 (EC-66) - Guidance for the ETRP for 2016. 2019 with outlook for 2020. 2023.

Review of the Future Roles and Operations of WMO Regional Training Centres

4.6(1).7 The Council was informed about the outcome of the ETR Panel's review of the Future Role and Operation of WMO Regional Training Centres and thanked the ETR Panel and its Task Team for their excellent work. The Council supported the proposal to increase the role of the regional associations in the monitoring, recognition and reconfirmation of RTCs, including the assessment of the performance targets proposed by each RTC for the coming four-year period. This increased role was consistent with the discussion of Terms of Reference for regional associations addressed elsewhere [see agenda item 7.3] in this session.

4.6(1).8 Whilst noting the range of issues associated with changing the status of an RTC from *confirmed* to *provisional* the Council agreed that it was important to address performance and communication issues in Regional Centres for the overall strength of the RTC network. The Council agreed with the ETR Panel's recommendation that this should be done based upon the targets proposed by the RTCs themselves and agreed by the appropriate regional association. This approach eliminates the need for absolute targets but would require the regional associations to be clear about their priorities and only recommend reconfirmation or approval of an institute proposed as an RTC if it was actively helping to address the high priority needs identified by the regional association. The Council welcomed and supported the suggestion that the ETR Panel prepare a Guide for RTCs that would further elaborate and clarify what was expected of RTCs and their partners.

4.6(1).9 The Council noted the potential for confusion about the number of RTCs and supported the ETR Panel's determination that where a country had multiple institutions contributing to meeting regional requirements these would be known as components of the RTC hosted by that country. Thus countries such as China, India, Kenya, Madagascar, Nigeria, the Philippines and the Russian Federation would have one RTC with multiple components, not multiple RTCs in the one host country. The Council further considered the situation of RTCs located in one Region who provided significant support to Members from outside of their Region. The Council noted that the existing and proposed criteria covered this situation. The Council noted that whilst the RTC may provide significant support to Members outside their home Region, it was the home Region that would be responsible for considering whether or not to recommend confirmation or reconfirmation

of an RTC to the Executive Council. The Council anticipated that the home Region would positively take into account the level of support provided by the RTC for Members outside of the Region.

4.6(1).10 Recalling its support for the introduction of quality management processes, the WMO Service Delivery Strategy and continuous improvement processes, the Council agreed with the ETR Panel's recommendations to change the EC Criteria for Recognition and Reconfirmation of Regional Training Centres to include outlining the roles and responsibilities of the key partners in the RTCs and most importantly ensure that reconfirmation of RTCs was based upon them having assisted Members with education and training opportunities or resources. The Council adopted Resolution 4.6(1)/2 (EC-66) - EC Criteria for the Recognition and Reconfirmation of WMO Regional Training Centres.

Feasibility Study of Establishing a WMO Global Campus

4.6(1).11 The Council noted that during the work of the ETR Panel's Task Team on the Future Roles and Operations of RTCs the WMO Global Campus was conceptualized and subsequently presented at the Twelfth WMO Education and Training Symposium in Toulouse, France in September 2013. The Council further noted that the ETR Panel's Task Team does not intend for the WMO Global Campus to replace RTCs. Rather, it is envisioned that the WMO Global Campus would act as a mechanism that would enhance the quality of services provided by the existing RTC network as well as the quality of training services provided by other stakeholders. The Council noted that the Task Team recommended to the ETR Panel that a feasibility study into the Global Campus, as an extension to and built solidly upon the RTC network, be undertaken.

4.6(1).12 The Council supported the vision of the WMO Global Campus as a systemic and coordinated approach to assist Members personnel, particularly those from developing and least developed NMSs, access a wide range of quality-assured training opportunities and resources designed to support them to produce and deliver the required meteorological, hydrological and climatological services at national level.

4.6(1).13 The Council recalled that whilst the RTC network had shown an improvement in performance in the last two years, and further improvements were anticipated inline with the recommendations of the ETR Panel's Task Team, the Council considered that the RTC network alone would not be able to meet the anticipated demands of a global NMS and NHS workforce estimated to be from 150,000 to 250,000 people. The Council noted the estimate included the initial education and training of several hundred new staff/year from countries with no national education and training facilities. Thus new approaches and partners would need to be developed to supplement the existing RTC network.

4.6(1).14 The Council recommended that the feasibility study would need to: (a) elaborate on the vision; (b) define how the Members would benefit from the WMO Global Campus; (c) define the mechanisms through which the RTCs would link with and derive benefits from the Global Campus; (d) provide further recommendations for dealing with issues such as governance, quality control mechanisms and resources required for successful implementation and ongoing sustainability; (e) provide a cost benefit for the Global Campus (f) prepare a roadmap for the establishment and implementation of the WMO Global Campus concept; and (g) augment RTCs and other training activities. The Council adopted Resolution 4.6(1)/3 (EC-66) . Feasibility Study of Establishing a WMO Global Campus.

Terms of Reference of the EC Panel of Experts on Education and Training

4.6(1).15 The Council appreciated the work undertaken by the ETR Panel to review and refresh its Terms of Reference for the next financial period. The Council recognized that a core membership of the ETR Panel had been stable for many years and this experience and corporate

memory had served the ETR Panel well. However, the Council also recognized the need to engage new members on the Panel and with limited funding, the number of ETR Panel members cannot grow. On balance the Council decided to limit the number of terms an individual could serve as an ETR Panel member to two terms of four years effective for new members from 1 January 2016. The Council agreed that the proposed nomination process should be used to select the next ETR Panel in June 2015. To ensure continuity from this ETR Panel to the next ETR Panel, the Council agreed that some of the current ETR Panel members could be invited to serve an additional four years as part of the transition arrangements, but that they would need to follow the proposed nomination process.

4.6(1).16 The Council adopted Resolution 4.6(1)/4 (EC-66) covering the Terms of Reference for the EC Panel of Experts on Education and Training.

Key Performance Indicators for the 2016 to 2019 Financial Period for the ETR Programme

4.6(1).17 The Council appreciated that the ETR Panel had reviewed the Key Performance Indicators for the ETRP for the 2012 to 2016 financial period using data from the monitoring and evaluation programme for the years 2012 and 2013. The Council recalled that the three KPIs had been recommended by the ETR Panel in 2010 reflecting two key components of the ETRP (RTCs and Fellowships) with the third indicator related to the ability of the ETRP to take on new opportunities related to the GFCS. The Council noted that the respondents to the monitoring survey had generally been very supportive of both RTCs and fellowships and that Members were able to access ETR activities related to the GFCS.

4.6(1).18 The Council appreciated the ETR Panel's recommendations to modify the KPIs for the next financial period to reflect the emerging stress points related to the provision and access of ETR opportunities addressing compliance requirements associated with qualification and competency standards. The Council requested that the EC Working Group on Strategic and Operational Planning be advised of the recommended KPI areas so that they could be incorporated into the monitoring programme for the next financial period.

Review of the Regional Training Centres in Israel and Italy

4.6(1).19 The Council noted that its ETR Panel had carried out reviews of two RTCs located in RA VI in 2013, Bet-Dagan in Israel and the Institute of Biometeorology (IBIMET) in Italy.

4.6(1).20 The Council acknowledged and thanked the Permanent Representative of Israel with WMO for the ongoing support offered to Members by the RTC over the eight years since the last review. Whilst the number of students was relatively small, the Council noted that the RTC had key strengths in areas around agriculture, climate services and climate change and water resource management which were of great interest to Members. The Council adopted Resolution 4.6(1)/5 reconfirming Bet-Dagan as an RTC for [four years / eight years . to be determined by EC decisions on the draft EC Criteria for recognition and reconfirmation of RTCs].

4.6(1).21 The Council debated the recommendation of the ETR Panel to defer consideration of reconfirmation of IBIMET as an RTC until EC-68. The Council noted that the ETR Panel had taken into account the strong support from the Permanent Representative of Italy with WMO for IBIMET to be reconfirmed as an RTC, as well as the support of RA VI for its reconfirmation, support from the president of CAgM and the planned course offerings from IBIMET in areas related to GFCS. The Council supported the ETR Panel's statement that the reputation of the RTCs as trusted and respected training providers relied upon each institution not only providing education and training opportunities but in actively coordinating with the wider ETR Programme to ensure that the training offered addressed key organization priorities and minimized duplication. In adopting Resolution 4.6(1)/6 (EC-66) deferring consideration of the reconfirmation of IBIMET as an RTC, the

Council acknowledged the potential for IBIMET to play an important role as an RTC in the future and encouraged it to actively contribute to and further collaborate with the WMO Education and Training Programme in the next two years.

4.6(1).22 The Council noted that by the end of 2015 the ETR Panel should have completed the second round of reviews of all RTC. The Annex to this paragraph lists the 25 RTCs comprising 35 institutions currently recognized as RTC components. The Council noted that the Korean Meteorological Administration will be requesting recognition of its courses and facilities as a WMO RTC at the seventeenth session of the World Meteorological Congress.

Fellowships

4.6(1).23 The Council noted the review by the ETR Panel of current status and approaches being utilized within the WMO Fellowship Programme. The Council welcomed the involvement of new partners in the programme, particularly those addressing areas not traditionally covered by RTCs, and encouraged the Secretary-General to continue engaging new partners and new funding streams for this important programme. The Council appreciated the ETR Panel's review of the 2006 EC Criteria for WMO Fellowships. The Council noted that whilst there were no major changes to the criteria, the revisions would bring them inline with current practises. The Council approved Resolution 4.6(1)/7 (EC-66) updating the EC Criteria for the Award of WMO Fellowships.

Competency Standards

4.6(1).24 The Council was informed that the ETR Panel discussed the work being undertaken in a number of the WMO Technical Commissions on the development of competency standards for personnel. The Council appreciated the work being undertaken by the various technical commissions on competency standards and recommended practises. The Council stated that in light of WMO Publication No. 1127 (Guidelines on the Preparation and Promulgation of the WMO Technical Regulations) the ETR Panel should have a role in the review of the draft competency standards to ensure consistency between the various competency standards. Noting that the competency standards would most likely be included in the WMO Technical Regulations as recommended practises, the Council requested that the ETR Panel take a lead role in developing a Guide to assist the technical commissions and Members in the development and assessment of competency standards in the various fields. The Council requested it be updated on the status of competency development and implementation on a regular basis.

Annex to paragraph 4.6(1).22 of the general summary**List of WMO Regional Training Centres and their status**

WMO Member	Parent Institution	Status and last year confirmed/reconfirmed by EC or Cg
Region I		
Algeria	Institut Hydrométéorologique de Formation et de Recherches (IHFR) Oran	Reconfirmed in 2006, to be reviewed in 2014.
Angola	Instituto Nacional de Meteorologia e Geofísica (INAMET) Luanda	Reconfirmed 2009
Egypt	The Egyptian Meteorological Authority (EMA) Cairo	Reconfirmed 2010
Kenya	1. Institute for Meteorological Training and Research (IMTR) Nairobi	Reconfirmed 2010
	2. University of Nairobi (UONBI) Nairobi	Reconfirmed 2010
Madagascar	1. Ecole Nationale d'Enseignement de l'Aéronautique et de la Météorologie (ENEAM) Antananarivo - RTC Madagascar	Reconfirmed 2011.
	2. Ecole Supérieure Polytechnique d'Antananarivo (ESPA) Antananarivo	Reconfirmed 2011
Niger	1. Ecole Africaine de la Météorologie et de l'Aviation Civile (EAMAC) Niamey	Reconfirmed 2002, to be reviewed in 2014
	2. Centre Régional Agrhymet (AGRHMET) Niamey	Reconfirmed in 2002, to be reviewed in 2014
Nigeria	1. Federal University of Technology (FUT) Akure	Reconfirmed in 2006, to be reviewed in 2015
	2. Meteorological Research and Training Institute (MRTI) Lagos*	Reconfirmed in 2006, to be reviewed in 2015
South Africa	South Africa Weather Service (SAWS) NMTC Pretoria	Confirmed in 2011
Region II		
China	1. Nanjing University of Information, Science and Technology (NUIST) Nanjing	Reconfirmed 2012
	2. China Meteorological Administration Training Center (CMATC) Beijing	Reconfirmed 2012
India	1. India Meteorological Department Training Centre (IMD) New Delhi and Pune*	Reconfirmed 2012
	2. National Water Academy (NWA)	Confirmed 2012
Iran, Islamic Republic of	Islamic Republic of Iran Meteorological Organization (IRIMO) Tehran	Reconfirmed 2009, to be reviewed in 2015
Iraq	Iraqi Meteorological Organization (IMO) Baghdad	Confirmed in 1976, no review scheduled
Qatar	Qatar Aeronautical College (QAC) Doha	Confirmed 2010
Uzbekistan	Tashkent Hydrometeorological Professional College (THMPC) Tashkent	Reconfirmed 2012

Region III		
Argentina	1. Universidad de Buenos Aires (UBA) Buenos Aires	Reconfirmed 2010
	2. Servicio Meteorológico Nacional (SMN) Buenos Aires	Reconfirmed 2010
Brazil	Universidade Federal do Pará (UFPA) Bélem	PR advised EC-65 of withdrawal of designation of Belem as single RTC whilst working with a number of universities to create a virtual RTC
Peru	Universidad Nacional Agraria La Molina (UNALM) Lima	Confirmed 2011
Venezuela	Universidad Central de Venezuela (UCV) Caracas	Reconfirmed 2006, to be reviewed in 2014
Region IV		
Barbados	Caribbean Institute for Meteorology and Hydrology (CIMH) Bridgetown	Reconfirmed 2010
Costa Rica	Universidad de Costa Rica (UCR) San José	Reconfirmed 2010
Region V		
Indonesia	1. The Agency for Meteorology, Climatology and Geophysics (BMKG)	Confirmed 2012
	2. Research Centre for Water Resources (RCWR) Bandung	Confirmed 2012
Philippines	1. Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) Quezon City	Reconfirmed 2011
	2. University of the Philippines (UP) Quezon City	Reconfirmed 2011
Region VI		
Israel	Postgraduate Training Centre for Applied Meteorology (PTCAM) Bet Dagan	Recommended for reconfirmation 2014
Italy	National Research Council Institute of Biometeorology (CNR-IBIMET) Florence	Recommendation for deferral of reconfirmation until June 2016
Russian Federation	1. Russian State Hydrometeorological University (RSHU) St. Petersburg	Reconfirmed 2012
	2. Advanced Training Institute of ROSHYDROMET (Moscow)	Reconfirmed 2012
	3. Moscow Hydrometeorological Technical School of Roshydromet (ATI)*	Reconfirmed 2012
Turkey	Turkish State Meteorological Service (TSMS)	Reconfirmed 2012

* This institution may operate more than one physical training facility

APPENDIX B: DRAFT RESOLUTIONS

Draft Resolution 4.6(1)/1 (EC-66)

GUIDANCE FOR THE EDUCATION AND TRAINING PROGRAMME FOR 2016 – 2019

THE EXECUTIVE COUNCIL,

Noting Resolution 31 (Cg-XVI) . WMO Education and Training Programme,

Noting the High Priority areas outlined in the draft Strategic and Operating Plan for 2016. 2019,

Noting further that the Education and Training Programme is an important component of the WMO Capacity Development activities,

Recognizing future expectations and challenges for Members, particularly their NMHSs, identified in the draft 2016. 2019 Strategic Plan,

Decides that the Education and Training Programme needs to remain dynamic, nimble, and adopt approaches that will allow Members to address continually evolving requirements:

- (1) For continuing professional development and re-skilling to ensure the competencies of personnel as job requirements change and services evolve in areas such as:
 - (a) Management;
 - (b) User liaison;
 - (c) Resource mobilization;
 - (d) Programme development and evaluation;
 - (e) Negotiation;
- (2) For personnel to undertake in-situ education and training minimising time away from the workplace;
- (3) For programmes to be accredited, and personnel certified against national and international regulations and standards;

Further decides that these approaches must:

- (1) Support the further development of education and training capabilities at a national level particularly in developing and least developed countries, small island developing states and landlocked countries;
- (2) Maximize access to education and training opportunities and resources for all Members, independent of geographic location, development status and language;
- (3) Learn from, and be guided by, best practises within the wider education and training community;

- (4) Be forward-looking and flexible;

Requests:

- (1) The EC Panel of Experts on Education and Training to use this guidance in updating the Education and Training Programme description for 2016. 2019;
 - (2) The technical commissions to support the development of skilled trainers and education and training resources to ensure the successful introduction of the new services associated with activities identified in the High Priority areas for 2016. 2019.
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Draft Resolution 4.6(1)/2 (EC-66)

EC CRITERIA FOR THE RECOGNITION AND RECONFIRMATION OF WMO REGIONAL TRAINING CENTRES (RTCs)

THE EXECUTIVE COUNCIL,

Noting the EC-LXII Abridged final report with resolutions (paragraph 6.16(c) and its annexes) regarding the EC Criteria for the Recognition and Reconfirmation of WMO Regional Training Centres (RTCs),

Noting further that:

- (1) The EC Criteria are included in Annex E to the *WMO Technical Regulations* (WMO-No. 49, Vol. 1),
- (2) RTCs play a key role in assisting Members with no, or limited, national capacity to address their need for quality education and training of personnel,
- (3) The existing network of RTCs would make a greater contribution to meeting the training needs of WMO Members if all RTCs were fully effective,
- (4) For an institution having no national accreditation as a provider of vocational training, ISO 29990:2010 provides an appropriate standard,
- (5) The need for clarification of roles and responsibilities of the various partners involved in the nomination, approval, monitoring and support of RTCs to ensure optimum performance,
- (6) The Secretary-General supports the RTCs in a variety of ways including: (a) seeking to hold WMO supported training events using RTC facilities and capabilities; (b) supporting the development of the professional and training expertise of RTC staff; (c) promoting education and training opportunities in RTCs to Members; (d) facilitating collaboration amongst RTCs and between RTCs and other training partners; and (e) promoting relationships between RTCs and regional associations,
- (7) A WMO Member can host only one RTC, but a RTC might consist of several components, with each component being required to satisfy all the criteria to be recognized or reconfirmed as a RTC,
- (8) The Executive Council decides on the recognition or reconfirmation of a RTC component, in the light of the recommendation of the regional association and where appropriate the advice of the relevant technical commission, and the EC Panel of Experts on Education and Training, and the comments of the Secretary-General,

Decides:

- (1) That every normal session of regional associations should make recommendations to the following Executive Council regarding the status of the RTCs located in their Region;
- (2) To incorporate the new material held as an Annex to this resolution as replacement to the existing EC Criteria in the WMO Technical Regulations effective 1 January 2015;

- (3) That these criteria will apply to all RTC components considered for recognition or reconfirmation at sessions of regional associations held after 1 January 2016;

Requests:

- (1) Presidents of regional associations to inform Members hosting RTCs of the new criteria and the effective dates of implementation;
- (2) Members hosting RTCs to inform the institution(s) comprising the RTC in their country of the revised criteria and effective dates of implementation;
- (3) The Secretary-General to update the Technical Regulations and authorize the Secretary-General to make editorial changes to the criteria to ensure consistency with the Technical Regulations formatting and style;
- (4) The Secretary-General to take account of the new criteria as well as the roles and responsibilities of the various parties involved in monitoring and supporting RTCs when drafting Memorandum of Understanding with the Members hosting RTCs;
- (5) The EC Panel of Experts on Education and Training to prepare the draft publication Guide for the recognition, reconfirmation and management of WMO Regional Training Centres in time to be discussed at the Seventeenth World Meteorological Congress in May 2015.

Annex to draft Resolution 4.6(1)/2 (EC-66)

Section 1

Addition to Abbreviations Regional Training Centre (RTC)

A national education and training institution, or group of institutions in that country, recognized by the relevant WMO Regional Association as:

- 1) Providing education and training opportunities for WMO Members, particularly NMHS staff;
- 2) Providing advice and assistance on education and training matters to other WMO Members; and
- 3) Promoting education and training opportunities in weather, water and climate for WMO Members.

These activities are undertaken in accordance with WMO regulations and guidelines. An institute supported by multiple countries to provide such services could also be recognised by the relevant regional association as an RTC.

Section 2 – Replacement text for WMO-No. 49 Vol. I

4.5.1 Members should endeavour to provide national facilities, or participate in regional facilities, for the education and training of their personnel.

4.5.2 As not all national training facilities are recognized as regional training facilities, the criteria given in Appendix E to WMO-No. 49 Vol. 1 apply to each institution designated as being part of a WMO Regional Training Centre (RTC). Each such institution is referred to as an RTC component.

4.5.3 In recognizing, reconfirming and managing an RTC component, the regional association, the Permanent Representative of the host country, the Director of an RTC component and Coordinator of an RTC with multiple components take on the following roles and responsibilities. The performance and ongoing status of the institution(s) as an RTC is dependent upon each of the parties carrying out their roles and addressing their responsibilities. Failure of one party to carry out its role could jeopardise any subsequent reconfirmation of RTC status.

Regional Association

- Prioritize education and training needs of the regional association, and provide them to the RTCs at least every four years.
- Keep abreast of the activities and plans of each RTC and its components via the annual report they provide.
- Provide feedback to the RTCs, Members and Secretary-General on whether the RTCs are meeting the needs of the regional association.
- Contribute to quadrennial reviews of the RTCs arranged by the Executive Council for addressing the extent to which the RTCs are meeting the identified education and training needs of the regional association.
- At each session of the regional association recommend RTCs to the WMO Executive Council for consideration for confirmation based on performance against the criteria.
- Promote the activities and use of the RTCs by members of the regional association.

- Seek funding and resource opportunities to support and expand the work of the RTCs in addressing the education and training needs of the regional association.

Permanent Representative of the host country

- Inform the Secretary-General and the regional association of the contact details of, and any changes to, the Coordinator of an RTC and the Director of an RTC component.
- Where the RTC is composed of multiple components, ensure ongoing communication and coordination between the components to maximise education and training opportunities for Members.
- Facilitate coordination between the RTC and the regional association regarding regional education and training needs, funding and resource opportunities.
- Promote the resourcing of the RTC through support from government and other national and international funding bodies.
- Provide annual reports about the RTC's activities in the previous 12 months and its plans for the next 12 months with an outlook for future years to the regional association and the Secretary-General.
- Collaborate with other Permanent Representatives hosting RTCs to promote collaboration between the RTCs.
- Oversee and act as an advocate for the RTC to (a) comply with national and WMO standards and guidelines and (b) keep pace with evolving technological and educational developments.

Director of an RTC component

- Monitor and plan the RTC component's activities in accordance with the expressed education and training needs of the regional association.
- For vocational training activities, use processes within the RTC component that are consistent with ISO 29990:2010 (*Learning services for non-formal education and training – Basic requirements for service providers*).
- Monitor and inform the appropriate authorities of the requirements to develop and maintain the professional and training expertise of RTC staff, and the availability and maintenance of adequate training and Information Communications Technology infrastructure.
- Submit annual reports about the RTC component's activities in the previous 12 months and plans for the next 12 months with an outlook for future years to the Permanent Representative.
- Promote the RTC component's services to Members through regular communication and provide Members with easy access to the RTC's education and training programme and contact information.
- Work with other RTC components to (a) coordinate activities and (b) share resources and experiences in addressing regional education and training needs.
- Seek additional funding and resource opportunities to expand the ability of the RTC component to address the regional education and training needs.

Coordinator of an RTC with multiple components

- Coordinate the overall activities of the RTC components in accordance with the expressed education and training needs of the regional association.
- Coordinate preparation of annual reports about the RTC's activities in the previous 12 months and plans for the next 12 months with an outlook for future years for submission to the Permanent Representative.
- Coordinate arrangements for (a) promoting and providing information about the RTC's services to Members through regular communication, and (b) the sharing of resources and

experience between the RTC components in addressing regional education and training needs.

- Ensure the RTC components collaborate and each is apprised of the other's education and training activities.
- Support the RTC components in seeking additional funding and resource opportunities to expand the ability of the RTC to address the regional education and training needs.

Section 3- Replacement for Appendix E to WMO-No. 49 Vol. 1, WMO Technical Regulations

A Regional Training Centre (RTC) is a national education and training institution, or group of institutions in that country, recognized by the relevant WMO Regional Association(s) as:

- 1) Providing education and training opportunities for WMO Members, particularly NMHS staff;
- 2) Supplying advice and assistance on education and training matters to WMO Members; and
- 3) Promoting education and training opportunities in weather, water and climate for WMO Members.

These activities are undertaken in accordance with WMO regulations and guidelines. An institute supported by multiple countries to provide such services could also be recognised by the relevant regional association as an RTC.

Each institution forming part of an RTC is considered to be an RTC component. To be designated as an RTC component, an institution that undertakes education and training related to weather, water and climate shall satisfy the following criteria:

- 1) An RTC component is established only to meet the expressed requirements of more than half of the Members of the regional association that cannot be met by existing resources;
- 2) An RTC component is designed to meet the requirements of the Region, as expressed in a decision of the regional association as recorded in a resolution or statement in the general summary of the Abridged Report, though it is recognized that some RTC components might also take on a broader international remit;
- 3) The RTC component is located within the particular Region concerned and its location decided by the Executive Council, in the light of the recommendation of the regional association, the advice of the technical commission concerned and the EC Panel of Experts on Education and Training, and the comments of the Secretary-General.

The following criteria shall apply to each RTC component:

Identifying learning needs

- The RTC component has processes in place to gain information about the education and training needs of the Region.

Designing the learning service

- The RTC component selects methods of learning that respond to the aims and requirements of the curriculum and learning outcomes, and are appropriate for the learners.
- The RTC component ensures that its courses of instruction and other activities (e.g. delivering/developing e-learning, running off-site activities and providing advice/support) are carried out in a way that is consistent with the standards and guidance material issued by WMO.
- The RTC component provides courses and other resources and activities that address the expressed education and training needs of the Region.

Delivering the learning service

- The RTC component demonstrates that, during the previous four years, it has made a contribution to meeting the education and training needs identified by the regional association.
- The RTC component delivers training: (a) with competent instructors in terms of their scientific/technical ability and training expertise; and (b) in an environment which is conducive to learning with adequate learning resources, buildings, ICT systems and training facilities.

Assessing learning and evaluating the learning service

- The RTC component assesses the knowledge and competency of students, documents this information in a fashion suitable for a recognized quality management system, and provides students with a record of the education and training that has been successfully completed.
- The RTC component has processes for measuring the effectiveness and quality of the learning service, including obtaining feedback from learners.

Administering and managing the learning service

- The RTC component has adequate arrangements for administration, governance, planning, staffing, continuous professional development, reporting and self-assessment.
 - If the RTC component has no national accreditation as a provider of vocational training, the RTC component can demonstrate that it carries out its training activities in accordance with the requirements of ISO 29990:2010.
 - The RTC component produces an annual report on activities in the previous twelve months, and its plan for the next 12 months with an outlook for future years.
 - The RTC component is: (a) open to students from all countries in the Region and, subject to availability of resources, to interested countries in other Regions; and (b) has appropriate services in place to support international/regional students.
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Draft Resolution 4.6(1)/3 (EC-66)

Feasibility Study of Establishing a WMO Global Campus THE EXECUTIVE COUNCIL,

Noting Resolution 19 (EC. LXII) - Terms of Reference of the EC Panel of Experts on Education and Training particularly decides (7) and (8),

Noting further:

- (1) The report of the 26th session of the EC Panel of Experts on Education and Training concerning the review of the Future Roles and Operations of WMO Regional Training Centres,
- (2) The growing needs for education and training opportunities by NMS personnel in the areas of meteorology, hydrology and climatology,
- (3) That whilst RTCs play a key role in assisting Members with no or limited national capacity address their need for quality education and training of personnel, it is very unlikely that the RTCs alone can address the expected demands in terms of breadth, level and number,

Decides:

- (1) That the EC Panel of Experts on Education and Training should proceed with a feasibility study on the WMO Global Campus including the items listed in the Annex to this resolution;
- (2) That a detailed proposal regarding the establishment and implementation plans for a WMO Global Campus should be prepared and presented to the Seventeenth Session of the World Meteorological Congress in May 2015;
- (3) That any proposal for a WMO Global Campus must not undermine the purpose and programmes of the network of WMO RTCs, which are operated by Member States for the benefit of the wider meteorological community;

Requests:

- (1) The Chair of the EC Panel of Experts on Education and Training, to create a small team to act as the steering committee for the feasibility study into the WMO Global Campus. The makeup of the team should ensure a balanced representation of the WMO ETR community including the EC Panel of Experts on Education and Training, users, RTCs and non-RTC providers;
- (2) The Secretary-General to provide support for the steering committee to meet and to support the feasibility study of the WMO Global Campus;
- (3) The Secretary-General to provide an update on the WMO Global Campus proposal to the next joint session of the Presidents of Technical Commissions and Regional Associations nominally planned for January 2015.

Annex to draft Resolution 4.6(1)/3 (EC-66)

ITEMS TO BE INCLUDED IN A FEASIBILITY STUDY OF A WMO GLOBAL CAMPUS

The feasibility study should include the following:

- Building clarity of the concept of the Global Campus and its potential benefits to WMO Members;
 - Investigating options to develop a trial Global Campus registry of resources and activities, and exploring possible modes of distribution, while considering infrastructure and IT capabilities of Members;
 - Establishing basic criteria for partners and providers to list resources and activities on the registry and developing ways to actively solicit and encourage organizations to offer their resources to WMO Members;
 - Testing new arrangements/processes that have the potential to provide more resources in multiple languages at modest cost;
 - Investigating ways to assure the quality of resources and activities available via the Global Campus;
 - Examining issues surrounding the acceptance of courses and academic credits from a dispersed set of providers by surveying representative users;
 - Engaging with at least one new global partner as a way of increasing the capacity for WMO education and training activities;
 - Seeking new resources for supporting education and training opportunities, especially in climate services and hydrology, that can be made available to WMO Members;
 - Examining and testing ideas for providing training and support to RTCs so that they could:
(a) make an increasing contribution to providing resources, particularly for e-learning, to the Global Campus; and (b) benefit from the resources available via the Global Campus;
 - Identifying and recognizing potential constraints/challenges in the implementation of the Global Campus and where possible, propose ways of overcoming them;
 - Identifying the human and financial resources required, along with possible resourcing arrangements, for implementation of the Global Campus in terms of both initiation and maintenance.
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Draft Resolution 4.6(1)/4 (EC-66)

**DRAFT TERMS OF REFERENCE
OF THE EXECUTIVE COUNCIL PANEL OF EXPERTS ON EDUCATION AND TRAINING**

THE EXECUTIVE COUNCIL,

Noting:

- (1) Resolution 19 (EC-LXII) . Terms of Reference of the EC Panel of Experts on Education and Training,
- (2) Resolution 31 (Cg-XVI) . Education and Training Programme,
- (3) *The Abridged Final Report with Resolutions of the Sixty-third Session of the Executive Council* (WMO-No. 1078, paragraph 3.9 (a)),

Considering that education and training in meteorology, hydrology and related disciplines is a major cross-cutting activity of WMO that has a large impact on enhancing the knowledge and expertise available to National Meteorological and Hydrological Services and improving the quality of products and services delivered to the users,

Further considering that the scope and demand for education and training is expanding with initiatives such as the Global Framework for Climate Services, Disaster Risk Reduction and increasing compliance requirements,

Decides to adopt the terms of reference for the Executive Council Panel of Experts on Education and Training as follows:

- (1) To provide Executive Council with inputs into the WMO Strategic Planning process through the provision of recommendations on the future direction and activities of the WMO Education and Training Programme;
- (2) To establish and maintain information sharing arrangements with the regional associations, technical commissions and other relevant bodies in order to determine Members' prioritized ETR needs;
- (3) To provide the Executive Council with advice on the standards for education and training of personnel of Members;
- (4) To provide the Executive Council with advice on the standards and recommended practices for the education and training of personnel of Members;
- (5) To provide the Executive Council with advice on actions for monitoring, strengthening and enhancing the WMO ETRP including the designation of suitable training institutions such as WMO Regional Training Centres;
- (6) To provide the Executive Council with advice on actions to improve the effectiveness of the Fellowship programme based on an ongoing review and evaluation of the programme;
- (7) To support other initiatives of the ETRP including the development and review of activities and guidance material as required;

- (8) Selection of Panel members and number of terms to be undertaken in accordance with the Annex to this resolution.

Annex: 1

Note: This resolution replaces Resolution 19 (EC-LXII), which is no longer in force.

Annex to draft Resolution 4.6(1)/4 (EC-66)

**DRAFT TERMS OF REFERENCE
OF THE EXECUTIVE COUNCIL PANEL OF EXPERTS ON EDUCATION AND TRAINING**

Membership:

- (i) The Panel will be chaired either by the President of the Organization or a designated member of the Executive Council. If the Chair cannot attend a session of the Panel, she/he will appoint a Panel member to chair the session in her/his absence;
- (ii) In addition to the Chair, the Panel shall consist of a maximum of twelve members, each of whom will sit in a personal capacity;
- (iii) The members shall be appointed by the Executive Council on the basis of their extensive professional expertise in education and training matters, particularly in the fields of meteorology, climatology or hydrology and take into account the need for the Panel to have an appropriate technical, geographical and gender balance in considering the most highly qualified candidates;
- (iv) In addition to acting in a personal capacity Panel members will be expected to maintain regular contact with regional association ETR Focal Points and technical commissions to promote cross-cutting coordination and information exchange;
- (v) Members shall serve for a period of four years and may be re-appointed for one further period of four years. No individual may serve for more than eight years in total.

Appointment of Members:

The Panel members shall be appointed by the Executive Council through a transparent process as follows:

- (i) The Secretary-General will write to all Members, with copy to the presidents of regional associations and technical commissions, advising them of the opportunity to nominate one person with appropriate skills for consideration by EC for the EC Panel of Experts on Education and Training. The letter will be sent at least six months prior to the EC immediately following Congress. Written nominations endorsed by the PR of the country concerned, or president of the appropriate regional association or technical commission, to reach the Secretary-General no later than 3 months before Congress;
- (ii) The Secretary-General will review the qualifications, determine whether they meet the minimum requirements needed to serve, and submit a prioritized list of candidates to the Executive Council immediately following Congress;
- (iii) The Council will appoint members of the Panel from the list of candidates compiled by the Secretary-General. The Council may choose to create a selection committee to review the list prepared by the Secretary-General. The Council will authorize the President to fill any positions that fall vacant during the intersessional period using the list approved by EC;
- (iv) In accordance with General Regulation 35 (2012 Edition) the Chair of the Panel can invite experts to assist the Panel in its deliberations.

Administrative matters:

Financial support for participation by Panel members in meetings shall be provided by the Organization in accordance with General Regulation 37 (2012 Edition).

Draft Resolution 4.6(1)/5 (EC-66)

STATUS OF BET-DAGAN (ISRAEL) AS A WMO REGIONAL TRAINING CENTRE

THE EXECUTIVE COUNCIL,

Noting the Abridged Final Report with Resolutions of EC-LXII (paragraph 6.16 (c) and annexes),

Noting further:

- (1) That the reputation of WMO Regional Training Centres as a respected and trusted network of training providers is dependent upon the individual institutions addressing regional training needs,
- (2) That the RTC of Bet-Dagan has continued to provide education and training opportunities for Members in partnership with the Education and Training Programme,
- (3) That the EC Panel of Experts on ETR undertook a review of Bet-Dagan that identified several areas that could be improved so that Bet-Dagan could better address the needs of RA VI and neighbouring Regions,
- (4) That Bet-Dagan has requested to be reconfirmed as a WMO Regional Training Centre and that the sixteenth session of Regional Association VI supported their reconfirmation,

Recognizing that Bet-Dagan has actions underway to provide several training workshops in the near future relevant to GFCS,

Decides to reconfirm Bet-Dagan as an RTC for four years.

Draft Resolution 4.6(1)/6 (EC-66)

**STATUS OF INSTITUTE OF BIOMETEOROLOGY (IBIMET), NATIONAL RESEARCH COUNCIL,
FLORENCE, ITALY AS A WMO REGIONAL TRAINING CENTRE**

THE EXECUTIVE COUNCIL,

Noting the Abridged Final Report with Resolutions of EC-LXII (paragraph 6.16 (c) and annexes),

Noting:

- (1) That the reputation of WMO Regional Training Centres as a respected and trusted network of training providers is dependent upon the individual institutions addressing regional training needs,
- (2) That IBIMET, located in Florence, Italy had not provided reports or had contact with WMO regarding their activities as RTCs for more than six years,
- (3) That the EC Panel of Experts on ETR undertook a review of IBIMET that identified a number of areas that need to be addressed for IBIMET to be fully functional as an RTC,
- (4) That IBIMET has requested to be reconfirmed as a WMO Regional Training Centre and that the sixteenth session of Regional Association VI supported their reconfirmation based upon their proposed activities,

Recognizing that whilst IBIMET has actions underway to provide several training workshops in the near future relevant to GFCS,

Decides to defer confirmation of the status of IBIMET as an RTC for two years when EC-68 will reassess their status, marking their progress in contributing to the WMO ETRP.

Draft Resolution 4.6(1)/7 (EC-66)

EXECUTIVE COUNCIL CRITERIA FOR THE AWARD OF WMO FELLOWSHIPS

THE EXECUTIVE COUNCIL,

Noting:

- (1) The EC-LVIII discussion and decision on EC Criteria for the award of WMO Fellowships (paragraph 3.6.20 and Annex),
- (2) The importance of the Fellowship Programme to WMO Members, particularly those from Least Developed and Developing Countries and from Small Island Developing States,

Decides to update the EC Criteria for the Award of WMO Fellowships as contained in the Annex to this resolution, with implementation date effective immediately.

Annex: 1

Annex to draft Resolution 4.6(1)/7 (EC-66)

EC Criteria for WMO Fellowships

Criteria for the award of WMO fellowships

1. The aim of the WMO Fellowship Programme is to support the education and training of qualified and suitable candidates, particularly from least developed and developing countries and Small Island Developing States. Applications from women are especially encouraged. Fellowships should benefit both the individual candidate and the candidate's institution, usually the National Meteorological and Hydrological Services (NMHSs).
2. WMO may award both short-term (less than six months) and long-term (6 months or longer) fellowships, based on recommendations of the Fellowships Committee aligned with the priorities of the ETRP.
3. Candidates applying for a WMO fellowship must complete a Fellowship Nomination Form, which must be certified by the Permanent Representative of the recipient WMO Member. The Permanent Representative will specify, amongst others, the expected benefit to the individual (for example to produce a qualified workforce), and the benefit to the nominating institution (for example to assist in the organizational development of the NMHSs in the light of the changing needs of the services required to meet the evolving needs of users).
4. To be considered by the Fellowships Committee for a fellowship, candidates must:
 - (a) Meet the entry requirements for the proposed course of study;
 - (b) Be proficient in, or capable of learning in, the language of study;
 - (c) Be of sound health as confirmed by their completed medical certificate;
 - (d) Only apply for courses of study directly applicable to WMO Programme areas.
5. Newly appointed directors of NMHSs are also eligible for very short-term training programmes in the management of NMHSs and for familiarization visits.
6. In awarding a fellowship, preference will be given to candidates who:
 - (a) Come from countries with least developed NMHSs as well as developing countries, countries with economies in transition and countries more vulnerable to natural disasters;
 - (b) Are supported by cost sharing;
 - (c) Apply for courses at RTCs or other training institutions in their Region;
 - (d) Apply for short-term fellowships or long-term fellowships not exceeding 18 months in duration;
 - (e) Are expected to work and make a long-term contribution in the NMHS of their country in a suitable post on completion of the fellowship;
 - (f) Have not been awarded a long-term WMO fellowship within the previous four years.

- (g) Comes from a country that has not recently benefited from a WMO fellowship;
7. In awarding a fellowship, account will be taken of:
- (a) The need for regional proportional balance;
 - (b) The need to practice equal opportunity policies (see Resolution 33 (Cg-XIV) . Equal opportunities for the participation of women in meteorology and hydrology);
 - (c) Whether the Permanent Representative from the candidatesqcountry has provided WMO with the required report from any previous fellowship.
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