World Meteorological Organization

EC PANEL OF EXPERTS ON
EDUCATION AND TRAINING

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Secretary-General
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English
DRAFT 1

AGENDA ITEM 4 : OVERALL SUPPORT TO CAPACITY DEVELOPMENT IN WMO

THE PANEL ARE INVITED TO:

(a) Make recommendations on how to enhance delivery of education and training in priority subject areas, taking into account the need to involve WMO Regional Training Centres and other training partners;
(b) Discuss the need for training resources to support priority areas and make recommendations on specific programme activities that the Panel Members may wish to get involved in.;
(c) Discuss the training needs in the overall context of education and training activities, and how to get the RTCs more involved;
(d) Make recommendations on how to strengthen the hydrology and water resources related training activities in NMHSs, taking into account the need to coordinate with respective national intuitions responsible for hydrology and water resources, ;
(e) Make recommendations on how to promote management training in NMHSs institutions through the WMO Regional Training Centres;
(f) Make recommendations on development of training materials;
(g) Make recommendation on how to promote WMO volunteers initiative from education and training perspective and how the Regional Training Centres and other related institutions could benefit from the WMO Volunteers initiative;
(h) Review options for cooperating with professional societies from education and training perspective;
(i) Make recommendations on how to promote cooperate with meteorological societies.

ITEMS FOR DISCUSSION:

4.1 Overview of Training Needs in WMO Priority Areas[1]

WMO is working more actively on optimum use of resources, by way of minimizing duplication, and also ensuring the best use of its training infrastructure. The Panel will review information gathered from the Technical Departments on their training priorities with a view of advising on the best possible approach to delivery of these training activities. Education and training priorities and strategies for climate services, marine meteorology, DRR and MHEWS, impacts-based forecasting and warnings, global data processing and forecasting system, WIGOS implementation, PWS, agrometeorological services, atmospheric composition and air quality, integrated urban weather and climate services. ETRP response is expected to include viable options for RTC involvement and development of training resources.

Discussion and recommendation will focus on how to integrate priorities of technical programmes into education and training activities of WMO RTCs and specialized centres (eg, RCC, RIC, WIGOS centres etc), involvement of other training providers, involvement of other training partners including universities, resource mobilization and how to ensure optimum coordination of these activities.

4.2 Training Needs for Hydrology and Water Resources

Hydrology and water resources do not feature strongly enough in many aspects of WMO activities. Yet issues relating to water resources are highly connected to socio-economic and development issues in many important ways. The training needs and the mechanisms of implementation in this area are clearly indicated in the WMO Strategy on Capacity Building in Hydrology and Water Resources Management for the Period 2017-2020, adopted by CHy-15 via Resolution 9(CHy-15).

In addition, CHy-15 agreed on the way forward of its three main initiatives to support the operations of NHMSs:

a) The Global Hydrometry Support facility (HydroHub)
b) The WMO Flood Forecating Initiative (FFI)
c) The Global Hydrological Status and Outlook System (HydroSos)

[1] **References:**

Inputs on Training Plans and Needs from WMO Technical Departments
WMO Priority Areas and Example Course Topic Priorities_2018 (this has been submitted to RTCs for their information and feedback)
2017 PRA Meeting Report
2017 PRA-PTC Conclusions and Recommendations
2017 PTC Meeting Report
SYMET Thematic Paper I: Service-specific education and training needs
WMO specialized regional centres (all centres by region)
2018-MISC-DRA-Willemstad-Declaration-Action Plan-2018-20_en.pdf

ETR support for HydroHub will consist mostly of training in traditional hydrometry and data management subjects, the main emerging field being web-services based hydrological data exchange.

As regards FFI, its main component and associated projects, such as the FFGS, CIFDP, APFM, IDMP, SWFDP, all have developed their own training curricula and efforts are being made to identify suitable RTCs to host and eventually take over the continuous training on behalf of the projects.

The ETR support needed by HydroSos is currently under discussion, as this initiative has started its planning and pilot implementation in the second half of 2017. However, some emerging education and training needs are already becoming clear , such as linking global hydrological models with climate projections, quantifying seasonal hydrological predictions for decision-making, assessing the interaction between the cryosphere and the hydrosphere, and its socioeconomic and environmental impacts.

4.3 Integrating Management Development into Education and Training Programme[2]

As we are all aware, National Meteorological and Hydrological Services (NMHSs) need to remain effective in a complex and rapidly changing environment. Indeed, NMHSs need to ensure that full use is made of the organization's scientific and technical capabilities. To be successful, NMHSs require managers who can direct the organization's activities and personnel, whilst providing leadership that inspires others to fulfil their potential and meet their personal goals and those of the organization. Considering the increasing attention of WMO to this issue, it is proposed that the Panel discuss issues such as how to integrate management development into the activities of RTCs and other training institutions to meet needs of developing NMHSs, development of management training curricula and integrate same into RTC offerings, promotion of management related activities and reflect on how to integrate management issue into a revised BIP and advise on how to promote the development of relevant training resources. An example of a management training resource developed by WMO is attached. The Panel may also wish to allow contribution to this issue by a representative of the US/NWS Leadership Academy and an experienced trainer in a developed meteorological service. This agenda item is aimed at seeking the guidance of the Panel on training aspects of management development.

4.4 WMO Volunteers Programme and Contributions to Capacity Development

Considerable amount of work is delivered by volunteers for WMO as experts in various fields. However not many of those volunteers are engaged full time for a reasonable

[2] **Reference:**
DRAFT_A Compendium of Topics on Management Development for NMHSs
Decision 55 (EC-69) on “Enhancing Bilateral and Multilateral Assistance from Members to Support WMO Education and Training Activities”
Decision 58 (EC-69) on “WMO Volunteers”
AMS Volunteering Committee: Early discussions on a national and international volunteering programme

length of time to assist either as mentors or in resolving specific technical issues. In addition to the existing regular faculty staffing RTCs, there is a need to seek cooperation across Members to augment the number of instructors, lecturers and researchers through international exchange of human resources. Such exchange will not only boost the existing capacity numerically, but it will also enhance cross-fertilization of expertise, competencies and international cooperation.

The Panel is invited to brainstorm on the WMO "volunteer programme", especially as regards how the programme could be used to assist in the delivery of education and training activities, with ETR playing a key role in a clearing house mechanism for the benefit of capacity development initiatives through RTCs and other training partners. Decision 55 (EC-69) on "Enhancing bilateral and multilateral assistance from Members to support WMO education and training initiatives" and Decision 58 (EC-69) on "WMO volunteers" which provide legislative basis for this initiative, could also provide a useful guide for as aspects of the discussion.

4.5 Cooperation with Meteorological Societies and Academies of Sciences

There are several academy of sciences worldwide dealing with wide ranging scientific, social and technological issues from various perspectives. Given the fact that the core of the issues and activities of these academies dwell on the cutting edge of science, technology and application, it is important to work more closely with them from the perspectives of education and training in meteorology, hydrology and related disciplines.

Examples of societies WMO works with in the area of education and training are the African Academy of Sciences (AAS), American Meteorological Society (AMS), Chinese Academy of Science (CAS), European Meteorological Society (EMS), Russian Geographical Society (RGS) and The World Academy of Sciences (TWAS). Even though some activities are ongoing with these entities, there is still some work to be done in order to establish a good basis for effective and mutually beneficial relationship with respect to WMO education and training activities. The Panel is invited to brainstorm on this issue with a view of making recommendations on the way forward.

(**weblinks** to official sites and AAS, AMS, CAS, EMS, RGS and TWAS)

http://aasciences.ac.ke/ https://www.ametsoc.org/ams/ http://english.cas.cn/

http://www.emetsoc.org/ https://www.rgo.ru/en https://twas.org/