**Meeting Report**

**Meeting of Directors of WMO RTCs in RA-I and Collaborating Partners   
(WMO Global Campus Collaboration)**

**Introduction**

World Meteorological Organization (WMO) Education and Training Office (ETR) hosted a meeting of the Directors of all WMO Regional Training Centers (RTC) in Regional Association I (RA I) and Allied Training Partners working in the region, from 28 October to 1 November. This meeting was hosted by Egyptian Meteorological Authority (EMA), the WMO RTC in Cairo, Egypt. The purpose of this meeting was to explore opportunities for increased collaboration and support in serving WMO Members within the framework of the WMO Global Campus.

The meeting was attended by 21 international participants and 5 from Egypt. Supported RTC Directors came from RTC IHFR (Algeria), RTC UON (Nairobi), RTC ESPA (Madagascar), Morocco VLab Center of Excellence, RTC EAMAC (Niger), RTC AGRHYMET (Niger), RTC FUTA (Nigeria), RTC MRTI (Nigeria), and RTC SAWS (South Africa). Self-funded participants include those from NUIST (2), CMA, Meteo France, EUMETSAT, CNR/IBE (Italy), AEMET, and UCAR/COMET. WMO was represented by D/ETR, C/TRA, and RO Africa.

This meeting was conducted in a response to recommendations of the Thirteenth Symposium on Education and Training, which require implementation decisions, especially for RA I. The Meeting Agenda is included in Annex I.

One particularly important aspect of the SYMET outcomes relates to further development and implementation of the WMO Global Campus initiative in Africa, including increased university collaboration. In addition, the meeting also reviewed of outcomes of the 18th WMO Congress and 71st Executive Council and the implications for and opportunities they bring to RTCs.

Much of the meeting took the form of a workshop. The final outcomes of this work include concrete proposals, including follow up actions and working arrangements, for WMO Global Campus activities to be implemented in the region. The involvement of all key regional partners involved in human resources capacity development in the region helped to strengthen these outcomes.

The following report first summarizes each key agenda topic and discussion that resulted, then finally describes each of the Action Plans developed during the meeting. The [meeting website](https://etrp.wmo.int/course/view.php?id=178), a Moodle platform, can be accessed to examine all resources and fora used during the event, as well as the full Action Plans. The website also provides access to all participant presentations.

**WMO Congress-18 and EC-71 Decisions**

All decisions relevant to WMO RTCs were shared, including WMO Strategic Goals, Resolutions 6-8 on Regional Associations, Technical Commissions, and the Research Board, and Resolutions 71-73 on ETR matters. EC Resolution 7 on the Capacity Development Panel was also presented. This was prefaced by an analysis of the changes occurring in WMO through the reform process. Participants were asked to consider how might these recent decisions help or challenge them in conducting your work. Furthermore, they were asked how could you use the decisions to help their institutions raise their priority in your country.

**Outcomes:** Notable comments were recommendations to develop a database of international experts who could contribute to training events, to emphasize leadership development in NMHSs, to use the meeting to stimulate increased collaboration between the RTCs and their partners, and to increase the frequency of WMO RTC reviews.

**SYMET 13 Implementation**

SYMET 13, hosted in Barbados in 2017, led to many observations and recommendations by the participants, including many represented in the meeting in Cairo. Meeting participants were asked, How should RA-I RTCs and collaborating partners respond to these recommendations?

**Outcomes:** Notable comments were recommendations find better ways form collaborations between training institutions to meet the SYMET recommendations , to also collaborate better with the private sector and academia, as well as other national partner institutions, to take advantage of the increasing connections of research to training, and to create a database of opportunities of interest to RTCs.

**WMO Global Campus Resources and Discussion**

The WMO Global Campus initiative was approved by Cg-18 Resolution 73. Meeting participants were asked, How can we move this initiative forward, taking advantage of its activities and using its goals to drive new ones? A presentation on accomplishments and proposed activities was shared and discussed.

**Outcomes:** Notable comments and recommendations included a discussion on concerns about copyrights and how to overcome these, a general agreement to encourage more sharing through Global Campus mechanisms, an agreement to look for more opportunities for regional collaboration of training centers, and the benefits of participating in open educational practices to improve one’s own materials and practices. Participants from NUIST later shared an offer to host the resources of other institutions online and to share tools for delivering distance learning, in addition to sharing their own numerous resources.

**WMO Education and Training Programme and Roles of RTCs**

Firstly, the variety of responsibilities and current priorities of the WMO ETR Office and the wider WMO ETR Programme were presented. Notable comments included a strong welcome for the upcoming publication of the Compendium of WMO Competency Frameworks. However, it was noted that due to the many overlaps within some of the frameworks, including those for weather forecasters in various areas, but also skills related to observations, and also communications with customers, it was recommended that the cross-cutting elements and interrelationships need to be better represented.

Discussion on the role of RTCs in supporting donor-funded projects also led to comments on the growing role of training in capacity development projects and training needs for the private sector, and the opportunities for regional training centers in supporting these. Many RTCs represented in the meeting are already involved in WMO-led projects, as well as others. RTCs are willing to collaborate to meet the goals of individual projects. One comment noted a concern that such projects do not allow for support for long-term education leading to critical qualifications that might last 2 years or more. CMA noted that its Belt and Road Initiative will support many short-term training activities in the area of Disaster Risk Reduction. Participants noted that they would like to be involved earlier in project development phases to provide input, and to also have access to project evaluations. Finally, discussion also noted the roles that RTCs can play in supporting private sector actors, and might recover costs in doing so.

Finally, the roles and responsibilities of RTCs were discussed. It was noted RTCs and training partners need to keep costs as low as possible to allow WMO to meet the growing education and training needs, seeking support from their ministries, for example, to offset costs. Up to 80% of all support for ETR from WMO goes to RA-I. It was noted that, ideally, an increasing number of its own professionals should be trained in Africa, yet costs remain high.

CNR/IBE summarized its PACC/RCC project as an example of RTC collaboration (IBE and AGRHYMET) and with WMO. The project also explored the use of distance learning as a low cost way to reach more in need of learning, which led to the recommendation to explore more reliable and effective ways to conduct distance learning within a region with limited bandwidth and access to computers. The use of open badges as a way of documenting competency-based training was recommended for exploration.

Finally this discussion noted the still limited compliance with the new classification system for meteorologists and technicians introduced in 2012. It was recommended that more be done to communicate the need comply with this change from the previous 4-class system, and to monitor the current BIP-M and BIP-MT review for likely updates to the qualifications to keep pace with changing technologies and roles for NMHSs.

**Outcomes:** Recommendations included to represent the overlap of WMO Competency Frameworks, involve RTCs earlier and in support of donor-funded projects, seek further involvement with the private sector, explore the use of open badges for documenting competency achievement, and further communicate the 2012 shift to a two-class system of meteorological professions.

**Presentations and materials by RTCs and Training Partners**

Each participant in the meeting was invited to share briefly on their institutions, but to focus on four questions: What are your key strengths as an institution? What are your best examples of collaboration with other training institutions? What can you offer (other) RTCs in RA-I? How could you benefit from working with the (other) RTCs in RA-I?

The presenters shared their great number of activities and collaborations with various partners, and their strong support offered to foreign students from the region. Collaborations include sharing of resources as well as faculty, and cooperation between academic and operational entities. However, most participants felt more could be done in this area. Many noted the need for better access to library resources, including professional journals. Several noted that they are bridging the language gap by developing capabilities to teach in both English and French. The wide exploration of new education and training delivery modes, including distance learning, was evident. Many noted a shift to competency-based training, although it is not clear that all are addressing competency development in the same way. Most expressed goals to address or demonstrated that they already address many of the emerging priorities areas recognized by WMO.

Partners from outside RA-I identified many opportunities they are bringing to the region and ways they would like to collaborate more with the region. Some questions raised were how to better address the learning needs associated with the growing number of new products being made available, as well as other technological innovations, how to address marine meteorological services training needs, how to proceed with climate services training, how to address customer learning needs, how to offer more practical skills training, and how resources can be translated into more languages and localized for regional applications.

All presentations by participants are preserved on the [meeting website](https://etrp.wmo.int/course/view.php?id=178). The discussions that resulted generated many ideas for additional actions, which are summarized at the end of this report. One key suggestion from Egypt was a format for conducting a regional needs assessment, based on WMO priority areas. Another was a desire for a skills matrix of experts who are willing to share their expertise internationally.

**University and NMHS Collaboration under the Global Campus Initiative**

A presentation developed be the University of Reading on the benefits and potential of university collaboration within the WMO Global Campus was shared. Universities might benefit from the Global Campus by collaborating to offer MOOCs and other activities with partners for offsite credit and degree offerings, reaching more and new audiences of students. Universities bring significant experience in quality control of education and could offer course validation arrangements as external examiners, could contribute substantially through teacher exchanges, and also form student exchange programmes and joint degrees. Universities benefit through better connection to operational activities. It was noted that a credential tracking system that is open and cost-effective would is necessary.

The university presentation was followed by a short presentation focused on benefits for NMHS involvement. NMHSs face challenges of workforce changes, new requirements, and budget stress. They need to be more cost effective in meeting workforce development demands. Many see great benefits in distance learning developments and opportunities to share and borrow resources, as well as other forms of collaboration in training development and delivery. It was noted that quality assurance is important.

NUIST proposed a model for the global campus that included a central committee and advisory group, and offered to be a central node for Africa and Asia, with a significant monetary investment. Discussion followed on how this could be in contrast to the proposed model that avoids large central nodes and instead builds a cooperative. A parallel to how NWP data is produced and shared was noted. The role of the WMO Secretariat as an anchor of the WMO Global Campus activities and standard setting was noted as important.

**Action Plans and Continued Collaboration**

The final two days of the meeting were primarily dedicated to developing ideas and recommendations proposed during the first 3 days of the meeting. These proposals were collected and sorted on the evening of day 3, and then shared for prioritization for development on day 4.

The meeting participants broke into small groups based on interest and expertise, and developed Action Plans based on a provided template. The template included sections for the Title, Overview, Proposed Partners and Roles, Expected Outcomes, Proposed Steps, Resources Required, and Key Milestones and their Proposed Schedule. An example template can be found in Annex II, and all developed plans are shared in the [meeting website](https://etrp.wmo.int/course/view.php?id=178). Some templates are only partially completed due to limited time for the breakout meetings and complexity of planning. Where possible, leads and committed partners were identified.

The meeting website will be used to support continuing collaboration. It has been reorganized around the action plans, and includes fora for discussions and options to upload documents and resources related to the actions.

Developed action plans included the following:

**WMO Global Campus Actions originating in RA-I Meeting, Cairo**

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| 1 Action: Global Campus Inventory of International Training Experts | Goal: An up-to-date inventory providing access to a list of experts who are willing and may be available for training activities in RA-1 | ENM (Lead), RTCs Egypt, Kenya, Italy, WMO ROA |
| 2 Action: Sharing Experiences in Capacity Development for Developing Countries | Goal: Implement on WMOLearn website a simple and interactive system for collecting and publishing information on ongoing and past capacity development initiatives for NMHSs in developing countries. | Open ended and beyond RA-I. WMO Secretariat is also engaged on this issue already. |
| 3 Action: Enhancing Collaboration and Sharing between WMO RTCs | Goal: Increased collaboration and sharing of resources, trainers, and training offerings between WMO RA-I RTCs. | Nearly all RTCs developed a list of options for sharing |
| 4 Action: Marine Meteorological Forecaster Training | Goal: Marine meteorological forecasting services courses for RA-I in English, French, and Arabic. | DNM (Morocco) and SAWS (Leads), RTC Nigeria, EUMETSAT, WMO ETR, regional NMHSs |
| 5 Action: Distance Learning, Overcoming the Difficulties | Goal: Shared recommendations and good practices for addressing the difficulties of offering and planning distance learning. | CNR/IBE, EAMAC, AEMET, SAWS, COMET, EMA, MRTI, CMA, NUIST, FUTA, WMO ETR (initial Lead) |
| 6 Action: Tracking Completion of Competency-Based Training (Open Badges) | Goal: Research, conceive, test and document a recommended strategy for RTCs and other Global campus partners to track learning progress in competency-based training. | CNR/IBE, AGRHYMET, AEMET, COMET, SAWS, WMO ETR, (core testing partners)  EAMAC, VLab CoE Morocco, RTC Algeria, RTC Egypt |
| 7 Action: Implementing Training Impacts Assessment | Goal: Share experiences in conducting long-term impacts assessment and encourage good practices to all, including beyond the region. The guidance could serve the entire WMO Global Campus Community. | Morocco VLab CoE, SAWS, FUTA, AGRHYMET, EAMAC, UoN, CNR/IBE, WMO ETR (Lead) |
| 8 Action: RA-I Learning  Needs Assessment | Goal: Identify the training needs and priorities in the region as basis for developing training plans. | RTC Egypt (Lead), all RTCs and NMHSs in RA-I, WMO |
| 9 Action: BIP-M Training Collaboration | Goal: Collaboration between Francophone RTCs and partners to design and offer blended BIP-M training, including an online phase followed by a face-to-face training conclusion, eligible to those passing a qualifications exam. | RTCs Niger, Algeria, Madagascar, EHTP Casablanca, Meteo France |
| 10 Action: NWP Training Collaboration | Goal: Collaboratively develop training on NWP applications, including staff training and training of trainers, to enhance skills in using NWP. | RTC Egypt will lead |
| 11 Action: Collaboration with the Private Sector and Academia | Goal: Increase collaboration with the private sector and academia to expand audiences and increase resources, and to reflect the changing relationships between these institutions and NMHSs. | All RTCs interested, RTC FUTA (Ahem Balogun-Lead) |

**Summary**

The Action Plans created demonstrate the significant accomplishments of the meeting. These Actions are also sharable with other regions for consideration, and some suggest global involvement. Some actions have approaching milestones that will ensure follow up, and others are yet to be developed. But the motivation to accomplish effort in all areas was highly evident. The ETR Office will follow up with those partners in areas where leadership was not clearly established.

The engagement of all RTCs represented, as well as the WMO RO Africa are to be highly commended. The WMO ETR Office wishes to thank the meeting host, RTC Egypt, EMA, for the effective organization and kind hospitality.

**Annex I: Meeting Agenda**

Meeting of Directors of WMO RTCs in RA-I and Collaborating Partners

Outcomes of WMO 18th Congress and EC 71 in the context of implementation of WMO Global Campus Initiative, Concept of University Collaboration on Education and Training, SYMET 13 Recommendations in WMO RA I

(Cairo, Egypt 28 October - 1 November 2019)

**Agenda**

**Day 1 Setting the context**

1. Opening session: Meeting goals and agenda review
2. Presentation and discussion on outcomes of 18th WMO Congress and 71st Executive Council, including their impacts, challenges and opportunities for RTCs and partners
3. Review and discussion of the Thirteenth Symposium on Education and Training (SYMET-13) and its outcomes
4. Presentation and discussion on WMO Global campus concepts, goals and global and regional activities.

**Day 2 Examining the current situation**

1. Presentation on WMO education and training programme, include roles of RTCs
   1. structure and working methods of WMO ETR
   2. development of training capacity in the region
   3. RTC network
      1. Roles and operations of RTCs
      2. RTC assessment criteria
   4. modalities for getting RTCs more involved in WMO activities and other dultilateral projects on capacity development
   5. Discussion of the roles of RTCs and challenges to meeting responsibilities
   6. working with collaborating partners
   7. donor-funded projects
   8. Example 1: PACC/RRC and TOPACS
2. Presentations by each of the RA-I RTCs and external collaborating partners in attendance (maximum 15 minutes)
   1. What are your key strengths?
   2. What are your best examples of collaboration with other training institutions?
   3. What you can offer (other) RTCs in RA-I?
   4. How could you benefit from the (other) RTCs in RA-I?

(21 total presentations, by WMO Regional Office Africa, RTC Algeria IHFR, RTC Egypt EMA, RTC Kenya IMTR, RTC Kenya UON, RTC Madagascar ESPA, RTC Niger EAMAC, RTC Niger AGRHYMET, RTC Nigeria FUTA, RTC Nigeria MRTI, RTC South Africa SAWS. Followed by Maroc VLab CoE, CMA, NUIST, AEMET, ECMWF/Copernicus, EUMETSAT, IBIMET, Meteo France, University of Reading, UCAR/COMET) **Note:** University of Reading and University of Nairoba were unable to attend due to last minute conflicts.

**Day 3 Examining the current situation continues, and issues emerging**

1. Continued presentations from RTCs and collaborating partners (as necessary)
2. Summary of the strengths, offerings, and benefits of collaboration arising from the presentations (form to be provided to presenters)
3. Issues emerging

**Day 4 Action Strategies and Plans**

1. Presentation and discussion on WMO Global Campus university collaboration opportunities
2. Presentation and discussion on WMO Global Campus NMHS collaboration opportunities
3. Discussion on benefits of the WMO Global Campus for the region. Identification of collaboration opportunities for RA-I RTCs and collaborating partners and modalities for collaboration.
4. Breakout group discussions to develop proposals
5. Reports on proposal development
6. Selection of priorities for collaboration opportunities
7. Development of designs and implementation plans for collaborative opportunities. (Breakout Groups)

**Day 5 Formalizing Action Plans**

1. Continued development of designs and implementation plans for collaborative opportunities. (Breakout Groups)
2. Discussions on selected options for joint collaboration
3. Establishing working arrangements
4. Final conclusions and recommendations
5. Closure

**Annex II: Sample Action Plan**

(additional completed templates are shared on the [course website](https://etrp.wmo.int/course/view.php?id=178))

RA-I WMO Global Campus Meeting   
**Action Plan Template**

**Proposal Title**

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| Develop a model for implementing and tracking competency based training |

**Overview**

***A general description of the proposed action that summarizes the key goals and states why it is important to accomplish.***

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| The idea is to conceive, test and document a common strategy among RTCs and other Global campus partners to track learning progress in competency based training. The objective is NOT to assess competencies which can be assessed only on-site considering the behavior and the specific characteristics of the country and the institution, and also a training institution cannot say that a learner acquired all the skills necessary to be competent. The objectif IS to propose a simple option, that maximizes effect and minimizes costs, for tracking the achieved learning objects of a training course.  The proposed action is a test aiming at the end to propose “best” option and guidelines to implement it. |

**Proposed Partners and their Roles, including the WMO Secretariat**

***Primary partners, additional partners desired***

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| WMO, IBE-RTC Italy, AGRHYMET-RTC Niger, AEMET-RTC Spain, COMET, RTC South Africa as core testing partners with the participation of EAMAC, VLC Morocco, RTC Algeria, RTC Egypt.  Connect to others in other regions such as Kathy-Ann Caesar (Aviation) and Eduard Podgaiskii and David Babb (BIP-M). |

**Expected Outcomes**

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| Trainees are able to demonstrate their learning achievements related to WMO CFs.  Training centers are able to check the curricula of trainees and improve selection processes as well as better target training offer linking courses directly to WMO CFs,  WMO is able to track the progresses in capacity building in relation to CFs |

**Proposed Steps**

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| * The topics and framework of competencies to start with are Climate Services, Marine, Education and Training * Consider what courses we will use for testing * Develop and adopt a common Moodle Competency framework compliant with WMO CFs articulated in skills and knowledge to be implemented in each partners’ Moodle deployment:   + Explore overlaps between these three. (ie communication is in common to all the frameworks)   + Create a common competency framework in Moodle (early 2020) * Review of open badge systems in order to identify which can be trusted sufficiently to be adopted by all training partners as a shared method, in which each certificate and badge documents which competencies were addressed by training considering costs and bringing assurance of the authenticity of the badge/certificate to those wishing to determine qualifications and skills of owners)   + List all open badge systems (early December: Patrick, Elena, Eduard, Maja)   + Provide to others information about the lists, description of capabilities   + Research on the internet of evaluations of systems and/or prepare an evaluation matrix   + Share with the group the list and the evaluation matrix to have a participated evaluation by the group (half of December) * For the courses we will use for testing decide what skills and knowledge will be mapped to the system and the additional metadata required (prior to March) Share examples of the required metadata * Implement the common certification system based on Open Badges system that has been choosen documenting skills and knowledge acquired with each course/module and linked to WMO CFs * Implementation of the test in each institution on ongoing RTCs training activities (March and April, try to apply the badges the first time, and later for the other institutions by the end of the year) * Revise and document the experience and propose recommendation and manual to be shared with other RTCs (Early 2021) * Create a guide to how to implement, gather the stories and take-away knowledge |

**Resources Required (tools, skilled experts, financial, others)**

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| Moodle platforms, ongoing or planned training courses, either DL or physical, time and engagement of participants in the test |

**Key Milestones and Proposed Schedule**

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| IBE is testing the first prototype using Moodle competency framework functionality, WMO FC for Climate Services Providers and badgr.io as Open Badges provider. Feedbacks of this first test could be the starting point of the initiative.  Deliverables:  Moodle competency framework harmonized (January 2020)  Choice of the Open badge system (January 2020)  A detailed proposal on the best possible options for harmonizing RTCs approaches to track learning in knowledge based training with practical recommendations and a manual on how to apply it operationally (January 2021) |