Aspects of Capacity Development in WMO Through Education and Training Programme (ETRP)

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Outline of Presentation

1. Education and training focus areas
2. Job competencies
3. Resources
4. Human capacity needs
5. Responses through fellowships and training
6. Conclusions
WMO ETR Office Priorities

- Supporting learning opportunities for least developed countries
- Assisting Commissions in creating competency standards
- Setting education and training standards
- Enhancing capabilities of NMHS managers
- Supporting the network of Regional Training Centers
- Reinforcing focus on high priority areas for development
- Encouraging new approaches to meet growing training needs

Enhancing the capabilities of Members through initial education and continuing professional development
Programme Structure

Education and Training Office

Training Activities Division
- Short-Term, Continuous Professional Development

Fellowships Division
- Long-Term, Qualifications
Job Competencies

Promote high standards and consistency of service
Guide resource allocation for capacity development
Help education and training address critical job needs
Increase relevance, motivation, & learning retention

What the ETR Office does:

Assist in defining job competencies in all service areas
Support offerings of courses for the development competencies
Define and develop job competencies for training providers
Establish competency-based training
Guide competency assessment practices
Frameworks approved or in development

<table>
<thead>
<tr>
<th>Category</th>
<th>Competency Framework/Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeronautical Meteorological Forecaster</td>
<td>Competency Requirements for Persons Engaged in the Development and Delivery of Products and Services to Meet User Requirements (PWS)</td>
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<tr>
<td>Aeronautical Meteorological Observer</td>
<td>Meteorological Observations (OBS)</td>
</tr>
<tr>
<td>Competencies for Provision of Climate Services</td>
<td>Competency Framework for Instrumentation (OBS)</td>
</tr>
<tr>
<td>Marine Weather Forecasters</td>
<td>Competency Framework for Calibration (OBS)</td>
</tr>
<tr>
<td>WMO Information System Competencies</td>
<td>Competency Framework for Observing Programme and Network Management (OBS)</td>
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<tr>
<td>Education and Training Providers</td>
<td>Satellite Skills and Knowledge for Operational Meteorologists</td>
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<tr>
<td>Personnel Engaged in Operational Forecasting (PWS)</td>
<td>Radar Skills and Knowledge for Operational Meteorologists</td>
</tr>
<tr>
<td>Weather Broadcasters and Communicators (PWS)</td>
<td>NWP Skills and Knowledge for Operational Meteorologists</td>
</tr>
<tr>
<td>Advisors Supporting Disaster Prevention and Mitigation and other User Activities (PWS)</td>
<td></td>
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</table>
Encouraging new E&T approaches

WMO estimates a workforce of 200,000 globally in NMHSs. (This does not capture many other related institutions.)

Professional development needs are increasing. Roles are changing and expanding, requiring retraining.

We need to provide additional opportunities for ongoing learning to reach ALL those in need throughout their careers (Anytime, Anywhere Learning).
Current focus areas: Encouraging new approaches

Distance Learning
- Reaching learners where they live and work.
- Synchronous (live) and asynchronous
- Self-directed resources for primary study and/or review
- Blended approaches (Classroom + Online)

Communities of practice
- Keeping classroom colleagues together
- Forming extended learning networks of professionals
- Using social network systems (blogs, fora, community sites)

Trainer resources
- DL courses and self-study for trainers
- Presentations & other resources for local use
- Data, cases, exercises, course packages
- Templates for local cases and research
Online Courses for Trainers

2018 WMO Online Course for Trainers (Francophone), 9 Weeks

Offered by ETR Office, with support of Meteo-France

3 tracks: Trainers, Part-time Trainers, and Training Managers

46 Participants from 15 Members
Algeria, Angola, Burundi, Cameroon, Canada, Comoros, Côte d'Ivoire, DR Congo, Madagascar, Mali, Morocco, Niger, Spain, Tunisia, Ukraine

19 Facilitators/Coaches (all voluntary)

*10 Facilitators are former WMO Online Course participants from the previous years indicated.
Recent ETR Publications

• Guide to the Management and Operation of WMO Regional Training Centres and Other Training Institutions (WMO-No. 1169)
• Guide to Competency (WMO-No. 1205)
• A Career in Meteorology (WMO-No. 1126 – updated)
• An International Agenda for Education and Training in Meteorology and Hydrology (WMO-No. 1219)
• A Compendium of Topics to Support Management Development in NMHSs (expected to be published in December 2018)
• Compendium of WMO Competency Frameworks (expected in 2018)
• WMO Global Campus Innovations, 2019 Edition (to be initiated)
Staff situation by job categories
(Global)

- Meteorological Technician: 31.6%
- Meteorologist: 18.4%
- Management: 7.9%
- Climatologist/Climate Services: 6.1%
- Researcher/Scientist: 3.3%
- Hydrological Technician: 3.1%
- Hydrologist: 2.1%
- Support Staff & Other: 25.7%
Training Priority Areas
(Global)

- **Weather Forecasting and NWP**: 81 (1st), 22 (2nd), 16 (3rd), 10 (4th)
- **Instrumentation and Observation**: 12 (1st), 23 (2nd), 14 (3rd), 26 (4th)
- **Climate Services**: 11 (1st), 25 (2nd), 22 (3rd), 15 (4th)
- **Agrometeorology**: 3 (1st), 18 (2nd), 18 (3rd), 15 (4th)
- **Hydrology/Hydrometeorology**: 6 (1st), 13 (2nd), 10 (3rd), 10 (4th)
- **Management and Administration Skills**: 2 (1st), 3 (2nd), 3 (3rd), 15 (4th)
- **Atmospheric Sciences and Research**: 1 (1st), 6 (2nd), 7 (3rd), 6 (4th)
- **IT Skills, Computing, Data Processing**: 1 (1st), 5 (2nd), 5 (3rd), 8 (4th)
- **Aeronautical Meteorology**: 7 (1st), 4 (2nd), 4 (3rd), 3 (4th)
- **BIP for Meteorological Technicians (MT)**: 8 (1st), 2 (2nd), 5 (3rd)
- **BIP for Meteorologist (M)**: 9 (1st), 2 (2nd)
- **Communication and Customer Interaction**: 2 (1st), 5 (2nd), 2 (4th)
Supporting the RTC network

- Providing guidance and support to the RTC network
- Establishing best practices for regional needs assessment
- Training the trainers in RTCs and national services
- Increasing opportunities through distance learning and expanded learning approaches
- Establishing partnerships to support all of the above
- Clarifying roles and responsibilities of RTCs
### Short-term support given by ETR in 2017

<table>
<thead>
<tr>
<th>Region</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
<th>%</th>
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<td>I</td>
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<td>45</td>
<td>58</td>
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<tr>
<td>II</td>
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<td>V</td>
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<td>1%</td>
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<tr>
<td>VI</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>11%</td>
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<tr>
<td>Total</td>
<td>27</td>
<td>84</td>
<td>111</td>
<td>100%</td>
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**Note:** The data includes regions I to VI, with columns for female and male support, their respective percentages, total numbers, and the overall percentage.
International Participants Served by WMO RTCs in 2017

<table>
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<tr>
<th></th>
<th>Short-term</th>
<th>Long-term</th>
<th>DL Courses</th>
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<tbody>
<tr>
<td><strong>Female</strong></td>
<td>314</td>
<td>367</td>
<td>379</td>
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<tr>
<td><strong>Male</strong></td>
<td>790</td>
<td>453</td>
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- Female
- Male
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<tr>
<th></th>
<th>Awards</th>
<th>Female</th>
<th>Male</th>
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<tbody>
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<td>52%</td>
<td>52</td>
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<tr>
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<td>11</td>
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<tr>
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<td>7%</td>
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<tr>
<td>V</td>
<td>8</td>
<td>7%</td>
<td>6</td>
</tr>
<tr>
<td>VI</td>
<td>2</td>
<td>2%</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100%</td>
<td>90</td>
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</table>
Summary: Future directions

- Increased global collaboration
- Competency frameworks to focus training and assessment
- New criteria and responsibilities for RTCs and their sponsors
- Expanded learning opportunities through new approaches (Anytime, Anywhere learning)
- Quality management (and management quality)
Thank you
Merci