

# Update on ETRP implementation

ETR Office, WMO Secretariat

CONECT-3, Florence, 27 November 2025

# ETRP-Purpose, Scope and Objectives

## A Subprogramme under Capacity Development Programme

**Purpose:** to facilitate continuous training and education to equip NMHSs and of relevant national and regional institutions' personnel with the competencies necessary to adapt to rapid advances in scientific innovation, technological developments, and respond to fast-evolving user needs for weather, climate and water information service

### Long-term Objectives:

- Develop staff competencies
- Coordinate WMO education & training activities
- Support NMHSs in developing learning structures and self-sufficiency
- Keep NMHSs staff updated with latest science & technology

# ETRP-Structure, Governance and Implementation

## Relationship with WMO's scientific, technical and regional programmes: Mutually supportive

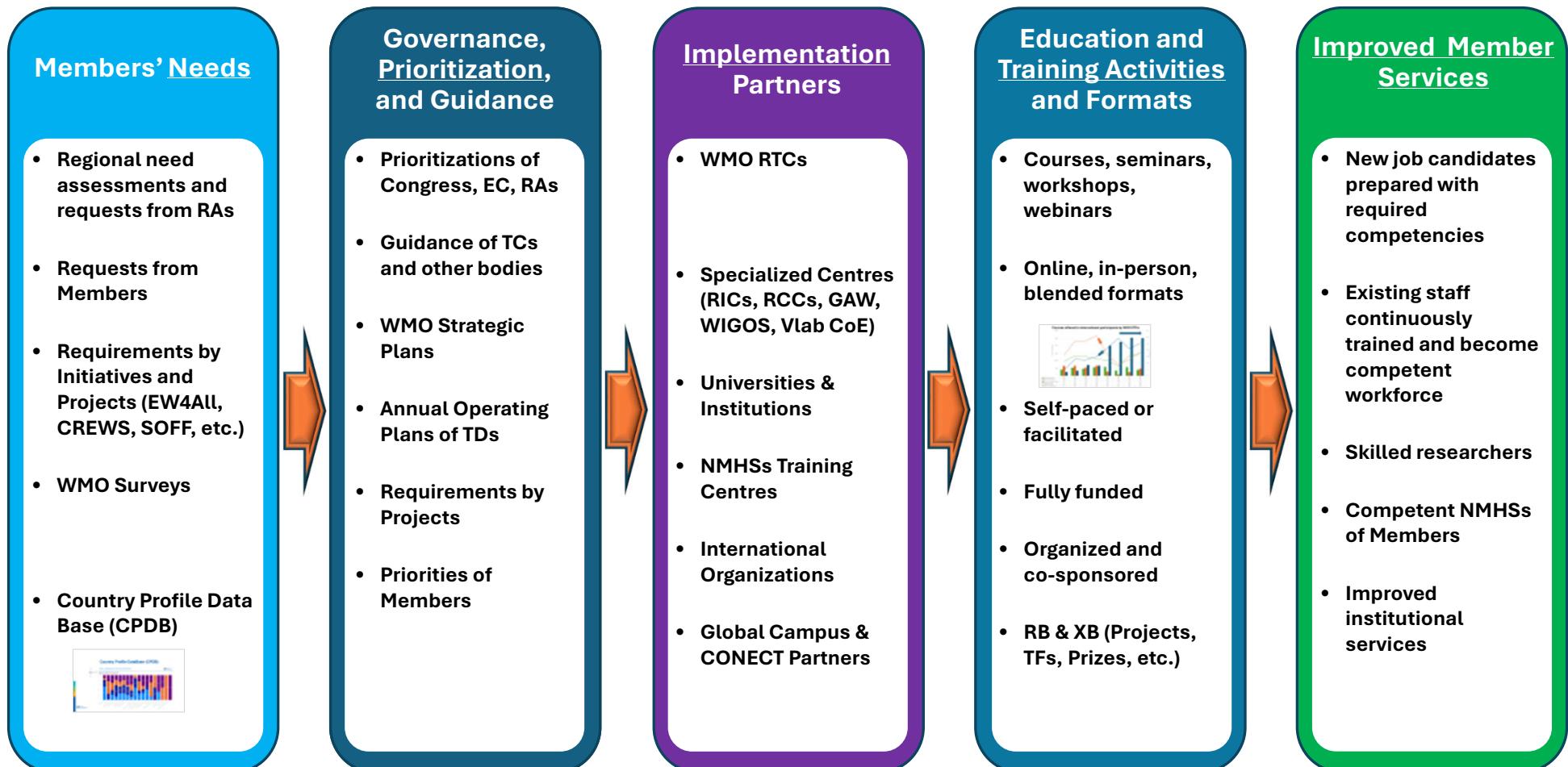
- closely interlinked with all other WMO Programmes, serving as a transversal enabler that underpins their effective implementation
- WMO's scientific, technical, and regional programmes contribute directly to the overall goals of the CD Programme
- fostering synergy and cost-efficiency, helping to align and optimize capacity development activities across programmes

## Governance:

- Oversight by EC via Capacity Development Panel (CDP)
- Coordination by the WMO ETR Office

## Implementation activities by WMO Technical Commissions and Research Board:

- Identify & address domain-specific education and training needs
- Engage in the development/update qualifications, competency frameworks & tools



# Country Profile DataBase (CPDB)

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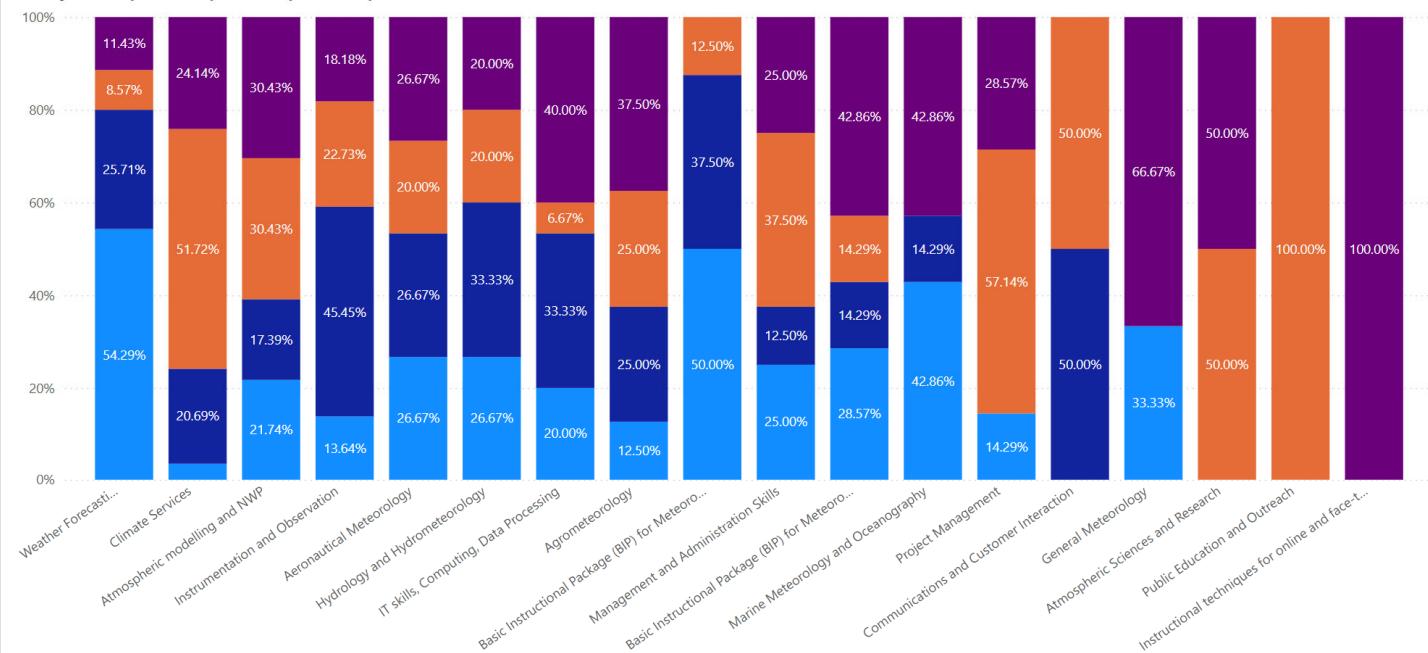
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## STAFF, COMPETENCIES AND QUALIFICATIONS



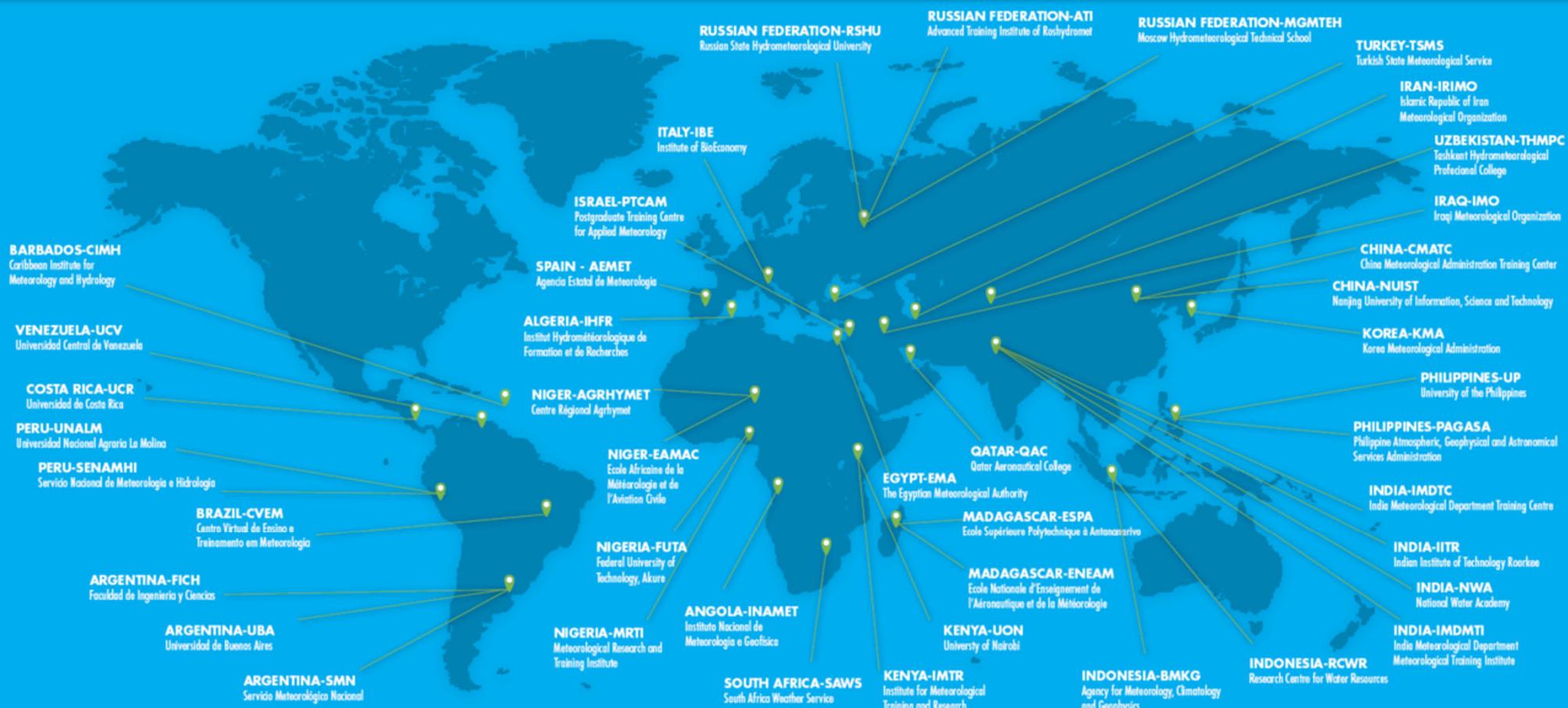
### Areas in which NMHS staff training is needed

Priority ● Priority 1 ● Priority 2 ● Priority 3 ● Priority 4

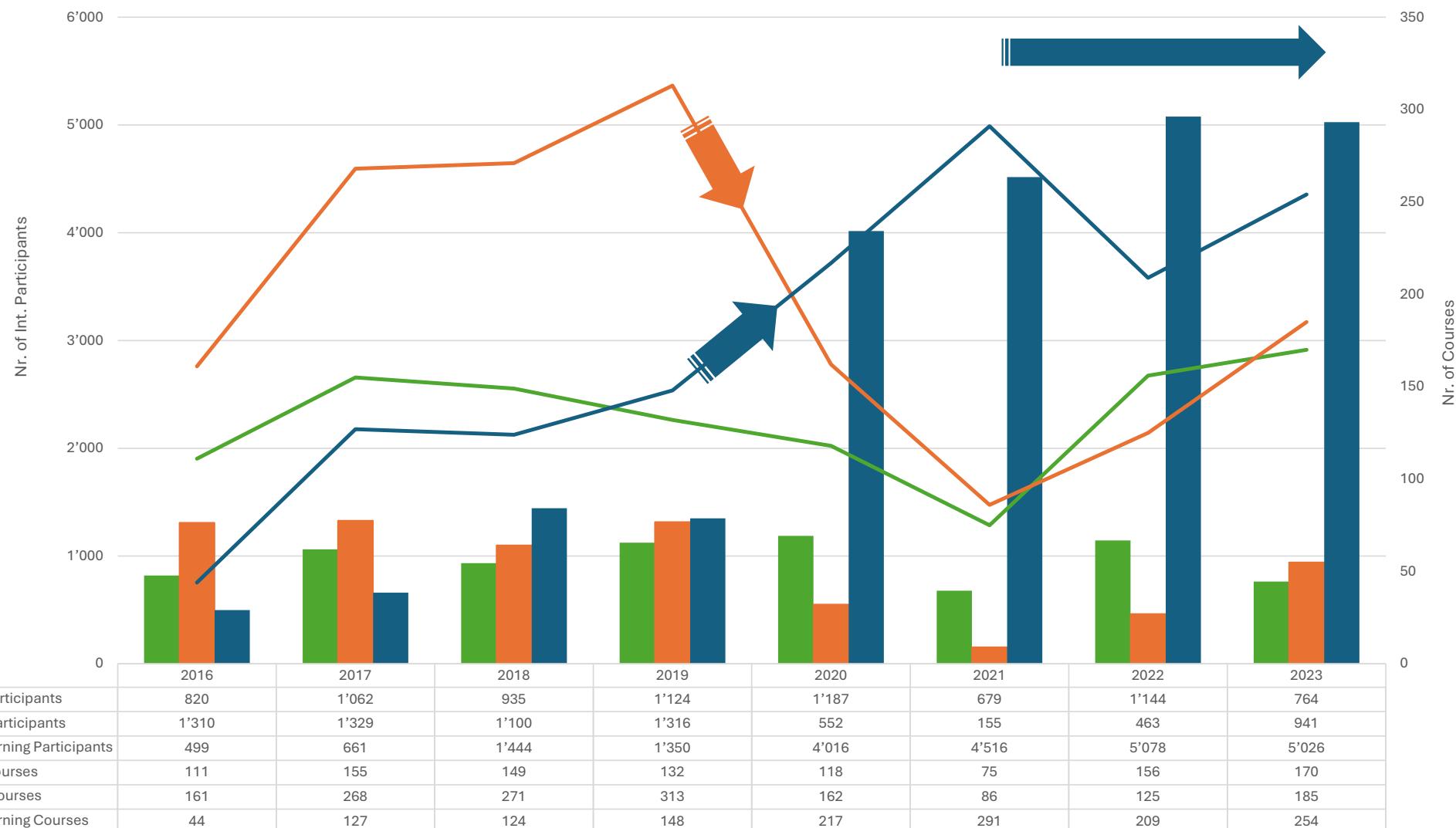




# WMO REGIONAL TRAINING CENTRES



# Courses offered to international participants by WMO RTCs



# Online learning resource development

## Weather, Water and Climate Services for Energy

**Instructions**

Read me first - How to enroll and how to get the badge?

### Energy Course

#### Weather, Water and Climate Services for Energy



Take the course and obtain your completion badge

Please click on the links below to launch the course. You can leave the training modules at any time and resume later.

Once you have completed the quizzes (The passing grade is 80%) and stepped through all the modules, you will be able to download the badge.

#### Course Modules

- Module 1**  
Overview of energy-climate linkages and the role of W&CS.  
[Start Module 1](#)
- Module 2**  
Best practices in weather, water and climate services for the energy sector.  
[Start Module 2](#)
- Module 3**  
Explore data sources, models, and tools used in energy sector.  
[Start Module 3](#)
- Module 4**  
Learn how W&CS support energy and electricity operations.  
[Start Module 4](#)
- Module 5**  
Real-world examples of W&CS applied in the energy sector.  
[Start Module 5](#)

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## Communicating agrometeorological information

**Instructions**

Read me first - How to enroll and how to get the badge? - Instructions



This course is designed to show you how you can enhance agrometeorological communications. Effective communication is key to ensuring that agrometeorological information is used appropriately in the agricultural sector. Communication is not an add-on or negligible element of agrometeorological services, but rather it stands as an indispensable core. The deficiency of a robust communication strategy can lead to late information receipt, misunderstanding of received information, misinformation, inadequate information and ultimately limited use of available information.

This course comes with a certification badge!

Once you have completed all 6 modules and passed the Final Assessment, you will be able to download the badge. You will receive an e-mail notifying you of your success with instructions on how to access the badge.

If you have any trouble opening the course modules or hearing the narration, please use the contact form at the bottom of this page.

#### Course Overview

- Objective
- Audience
- Course Structure
- Certification

- A final assessment test is included at the end of the course. A 70% score in the final assessment is needed to pass the course.
- A badge is available upon completion and passing of the final assessment. Kindly wait 5 minutes for synchronization after you have completed the final assessment for the badge to be available.

#### Lesson 1: Introduction to Climate Services for the Agriculture Sector

## Common Alerting Protocol e-Course

**Introduction**

### COMMON ALERTING PROTOCOL

**Course Syllabus**

Approximate time to complete: 4 hours. This comprehensive CAP course offers three self-paced modules for effective alert system administration. Participants gain in-depth knowledge of CAP principles, implementation, and issuance. Online resources and activities support learning, culminating in a WMO-certified badge. WMO encourages enrollment to enhance global resilience against weather hazards.

Please note, in order to receive a certificate of completion for this course, you must be enrolled and logged in to your account on this site. Please read the instructions in [How to take this course](#) before you get started. You may also consult this course as a guest, but in this case, no certificate of completion is provided.

**Module 1: Fundamentals of CAP**

**Start Module 1**

In this module, you will learn to the diverse and complex ecosystem of alerting systems and the challenges associated with public alert dissemination. It covers the variety of media used for public alerts. By understanding CAP, learners will gain insight into the necessity for a standardized alerting protocol like CAP to streamline and unify the dissemination of warnings.



Click to open Module 1. When you are finished with the module, return here to take the quiz.

**Module 2 Quiz**

A score of 70% is required to pass this quiz. You may make as many attempts as you wish. Only your highest score will be counted. Passing all of the quizzes is required to obtain credit for course completion.

Note that you must be enrolled and logged into this site to access the quizzes. Instructions on how to enrol are to be found under "course workbook" at the top of this page.

**Module 2: Issuing CAP Messages**

**Start Module 2**

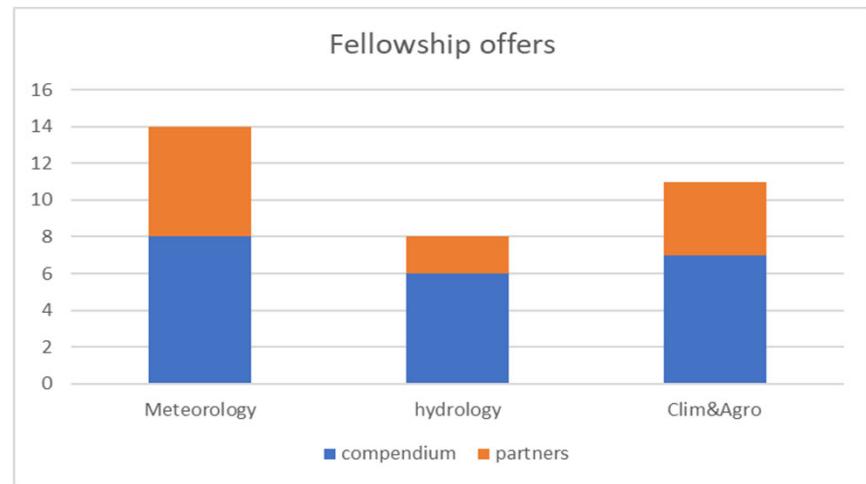
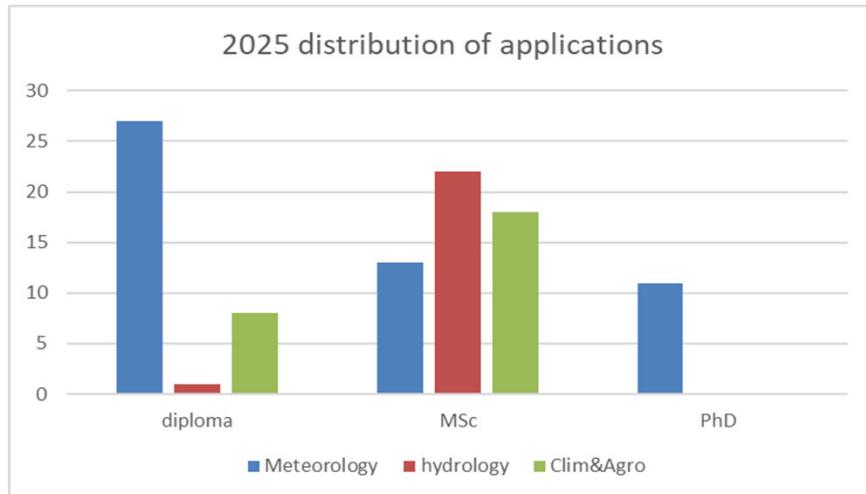
This module delves into the structure and characteristics of a CAP (Common Alerting Protocol) message. Students will learn how CAP messages are encoded in XML, making them highly portable and standard across various communication systems. The lesson focuses on the core elements of a CAP message, such as the prioritization tags and their corresponding values, which are used to standardize alert messages. Additionally, the lesson will explore how these elements facilitate filtering, routing, and automated translation to human languages, ensuring that alerts are timely and relevant to the recipients. Practical examples of CAP messages will be examined to illustrate these concepts.



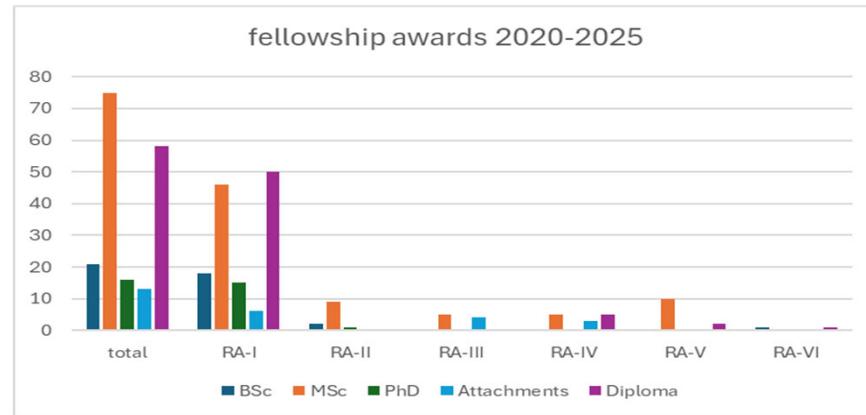
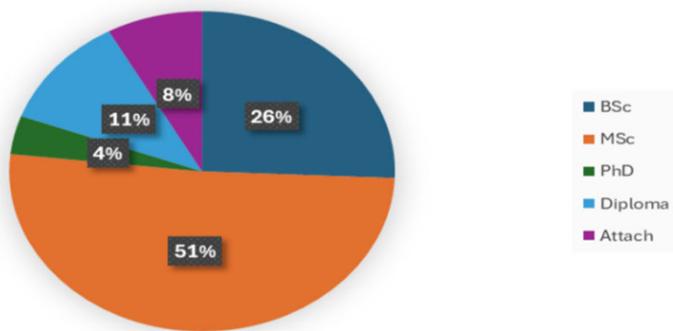
Click to open Module 2. When you are finished with the module, return here to take the quiz.

Number/per cent of staff	Region						Global
	I	II	III	IV	V	VI	
Total number of NMHS staff with a university degree according to the respondents	4 760	55 219	1 288	393	6 059	7 277	74 996
Total number of NMHS staff reported by the respondents that shared information about this topic	13 006	69 660	3 596	826	8 384	14 261	109 733
Per cent of NMHS staff with a university degree of the respondents that shared information about this topic	37%	79%	36%	48%	72%	51%	68%

# Fellowship program



Fellowship awards financial distribution 2022-2025



# Coordination on training

- Technical Departments (Competency based trainings)
- ETR Office (Train-the-Trainer, Leadership & Management, MEIG, SYMET, etc.)
- Initiatives (CREWS, SOFF, GCF, etc.)
- Special Projects
- WMO Regional Training Centres (RTC)
- WMO Specialized Centres (RIC, RCC, WIGOS, GAW, VLab CoE, etc.)
- International Organizations (EUMETSAT, ECMWF, etc.)
- Education and Training Partners (Institutions, Universities, Centres, etc.)

# Resource sharing

- **Regular Budgets**
  - Technical Departments' Regular Budgets
  - ETR Regular Budget
- **Trust Funds**
  - Technical Departments' Trust Funds
  - KMA Trust Fund to support RTCs KMA Trust Fund to support Climate Services
- **Initiatives and Projects (CREWS, SOFF, GCF, etc.)**
- **Co-sponsored and/or hosted by:**
  - WMO RTCs, WMO Specialized Centres (RIC, RCC, WIGOS, GAW, VLab CoE, etc.),
  - International Organizations (EUMETSAT, ECMWF, etc.)
  - Other Education and Training Partner Universities and Institutions

# WMO RTCs Course Offerings Dashboard

(Based on the annual reports of the RTCs, a PowerBI Dashboard has been developed and made available in the WMO Community Website)

**2025 WMO Regional Training Centres Course Offering Plans** (To be confirmed)

Member	RTC Component	Competency Framework	Language
<input type="checkbox"/> ANGOLA	<input type="checkbox"/> Advanced Training Institute of Roshydromet (ATI)	<input type="checkbox"/> Advisors Supporting Disaster Prevention and Mitigation and ...	<input type="checkbox"/> Arabic
<input type="checkbox"/> ARGENTINA	<input type="checkbox"/> Agencia Estatal de Meteorología (AEMET)	<input type="checkbox"/> Aeronautical Meteorological Forecaster	<input type="checkbox"/> Chinese
<input type="checkbox"/> BRAZIL	<input type="checkbox"/> Agency for Meteorology, Climatology and Geophysics (BMKG)	<input type="checkbox"/> Aeronautical Meteorological Observer	<input type="checkbox"/> English
<input type="checkbox"/> CHINA	<input type="checkbox"/> Centre Régional Agrhymet (AGRHYMET)	<input type="checkbox"/> Competencies for Provision of Climate Services	<input type="checkbox"/> French
<input type="checkbox"/> COSTA RICA		<input type="checkbox"/> Competency Framework for Calibration (OBS)	<input type="checkbox"/> Local
<input type="checkbox"/> EGYPT	<input type="checkbox"/> Long-term (more than one month)	<input type="checkbox"/> Competency Framework for Instrumentation (OBS)	<input type="checkbox"/> Portugese
<input type="checkbox"/> INDIA	<input type="checkbox"/> Very short-term (less than one month)	<input type="checkbox"/> Competency Framework for Observing Program and Network...	<input type="checkbox"/> Russian

**Duration**

Long-term (more than one month)

Very short-term (less than one month)

**Reset Selections**

Member	RTC Component	Title of the Course	Delivery Mode	Duration	Language	Start Date	Competency Framework
ANGOLA	Instituto Nacional de Meteorología e Geofísica (INAMET)	Aeronautical Meteorological Observer	Blended or Hybrid	Long-term (more than one month)	Portugese	18/08/2025	Aeronautical Meteorological Observer
ARGENTINA	Universidad de Buenos Aires (UBA)	Avances en el Estudio de la Capa Límite de la Atmósfera	Blended or Hybrid	Long-term (more than one month)	Spanish	17/03/2025	Other
ARGENTINA	Universidad de Buenos Aires (UBA)	Circulación y Masas de Agua del Atlántico Sudoccidental y su Impacto Ecológico	Blended or Hybrid	Long-term (more than one month)	Spanish	17/03/2025	Other
ARGENTINA	Servicio Meteorológico Nacional (SMN)	Climate models Verification	Fully Online	Very short-term (less than one month)	Spanish	Second Semester	Competencies for Provision of Climate Services
ARGENTINA	Universidad de Buenos Aires (UBA)	Climatología Sinóptica	Blended or Hybrid	Long-term (more than one month)	Spanish	13/10/2025	Other

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(Publicly Available)

# Training Events Planning and Reporting Tools:

(Secretariat wide training events tracking tool has been developed and for better coordination and collaboration (pilot in 2025 and mandatory in 2026)



WMO TOOLBOX

EDUCATION AND TRAINING

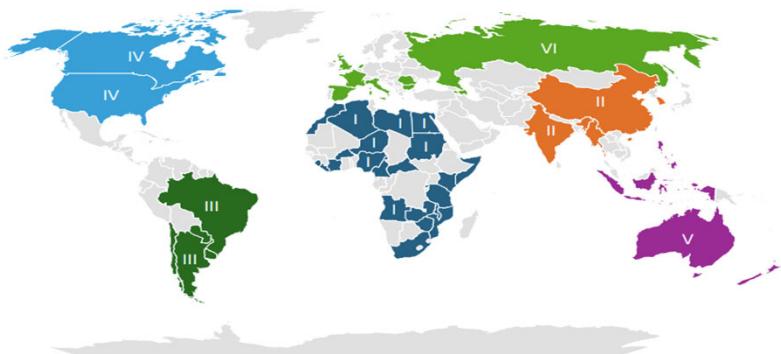
Training Event Tracking Tools

Training Events Database

Training Event Participant Database



# Plenary Members



Algeria, Angola, Burkina Faso, Cameron, Central African Republic, Comoros, Cote d'Ivoire, Egypt, Kenya, Liberia, Libya, Malawi, Morocco, Mozambique, Niger, Nigeria, Rwanda, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Zambia, Zimbabwe, China, India, Myanmar, Korea, Argentina, Brazil, Chile, Paraguay, Uruguay, Barbados, Canada, Jamaica, USA, Australia, Indonesia, New Zealand, The Philippines, Solomon Islands, Armenia, Azerbaijan, Bulgaria, France, Italy, Netherlands, Romania, Russia, Spain, UK, CIRA, COMET, ECMWF, Eotec-Devnet, EUMETSAT,



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Upcoming Current

Upcoming Events

**DATA ACCESS SERVICES: INTRODUCTION TO THE EUMETSAT DATA ACCESS CLIENT (EUMDAC) AND ITS NEW FEATURES (SESSION 2)**  
Dates: 28-Nov-2025 to 28-Nov-2025 | Event Format: Webinar | Country: ONLINE | Language: English | Host: EUMETSAT

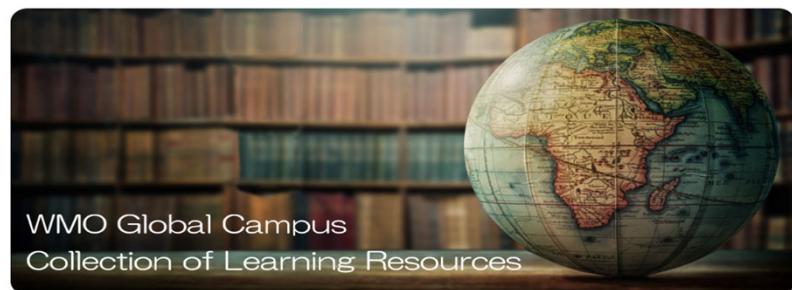
**MARINE WEATHER WORKSHOP**  
Dates: 01-Dec-2025 to 05-Dec-2025 | Event Format: Workshop | City: Casablanca | Country: MOROCCO | Language: French | Host: General Directorate of Meteorology of Morocco

**QUARTER 3 AFRICAN WEATHER BRIEFING**

## WMO Global Campus Collection of Learning Resources

Course Settings Participants Grades Reports More ▾

Collapse all



# Mandatory Publications to be updated

- **Guidelines for the education and training of personnel in meteorology and operational hydrology Volume II: Hydrology WMO 258,**

containing the Basic Instruction Package for hydrologists and hydrological technicians, to be published as WMO 1083 Vol II, with impact on update of WMO 49

- **Guide to competency – WMO 1205**

Updates based on the feedback from the Members in the process of competency implementation

To address the link between competency and job description

To address the “not yet competent” cases

- **Compendium of WMO Competency Frameworks – WMO 1209 – updated in 2025 for TC**

A knowledge framework on the use of NWP is requested as being overarching.

Lack of consistency in approach and needs more clarity on performance criteria

Ambiguous information in “Background knowledge and skills”

# Other Publications to be updated

- **Guide to the Management and Operation of WMO Regional Training Centres and Other Training Institutions – WMO 1169**
- **Guidelines for Designation or Reconfirmation of WMO Regional Training Centres (RTCs)**
- **Manual on policies and procedures for WMO Fellowships – ETR – 18**
- **Guidelines for Applying for a WMO Fellowship – WMO 1104**

# Planning ahead for 2026

## I. WMO SYMET-15

- Identify emerging trends, needs, opportunities, and challenges in meteorological and hydrological education and training.
- Define the international organizing committee, theme, sessions, expected outcomes, and financial resources.
- *If held in person or hybrid:* Explore the possibility of organizing SYMET back-to-back with a CDP session.

## II. WMO Quadrennial Survey on the status of human resources in NMHSs

- Conduct a comprehensive survey of staff, competencies, and qualifications.
- Design the survey to:
  - Capture evolving needs and priorities.
  - Ensure broad representation and relevance.
  - Provide data to guide ETR program updates and resource prioritization.

## II. Education and Training Strategy (as part of CD Strategy)

### Prioritization of training needs

- Establish a systematic approach combining bottom-up needs assessment with top-down planning.
- Strengthen coordination with all stakeholders
- Provide targeted guidance to Regional Training Centres (RTCs).

### Cost-efficiency and impact of fellowship program

- Update criteria, standards and rules for fellowship management.
- Improve award structure, ensuring fair regional distribution.
- Evolve the centralized fellowship database.

### Strengthen Partnership Building under Global Campus Initiative through CONECT

### Emerging Technology and its impact on WMO ETRP

# Thank you !