



Leadership and Management Programme for Senior Management of National  
Meteorological and Hydrological Services  
Singapore, 4 – 8 September 2023



**WORLD  
METEOROLOGICAL  
ORGANIZATION**

# Competency Management in NMHSs

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05 September 2023

**The competence of an institution in  
delivering services is based on its  
leadership and the competence of its staff**

**Competency is the ensemble of the knowledge, skills, and behaviors required to perform specific tasks in the fulfillment of a job responsibility.**

**Acquiring competency in specific areas requires ongoing job-specific education and training throughout an individual's career.**

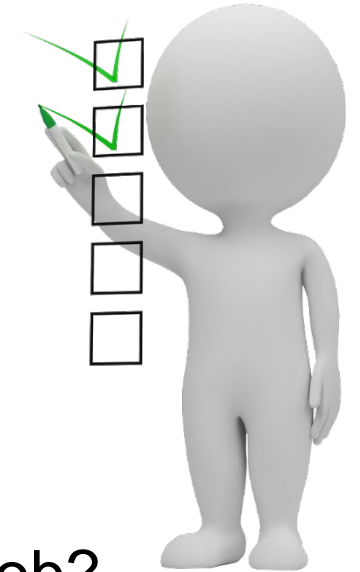
# When is a person considered as being **COMPETENT** in operational activities?

When he/she has the specific **qualification**?

When he/she has a **PhD** in his/her activity?

When he/she has the **ability** to do the job?

When he/she has a lot of **experience** in the job?



In simple words: When he/she has the required qualification and **DOES** the activities according to the job description and to the rules and regulations!



Compendium of WMO Competency Frameworks

2019 edition

Guide to Competency

2018 edition

Guidelines for the Assessment of Competencies for Provision of Climate Services

2022 edition

Guidelines for Trainers in Meteorological, Hydrological and Climate Services

Technical Regulations

Basic Documents No. 2

Volume I – General Meteorological Standards and Recommended Practices

2019 edition

Updated in 2021

Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology

Volume I – Meteorology

2015 edition





**Education  
(BIP)**



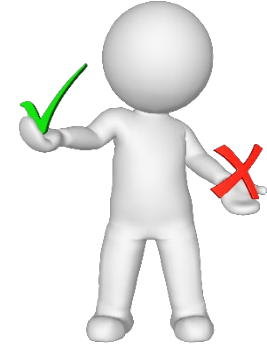
**Training**



**Specialist  
Training**



**On-the-Job  
Training**



**Competency  
Assessment**



**COMPETENT**

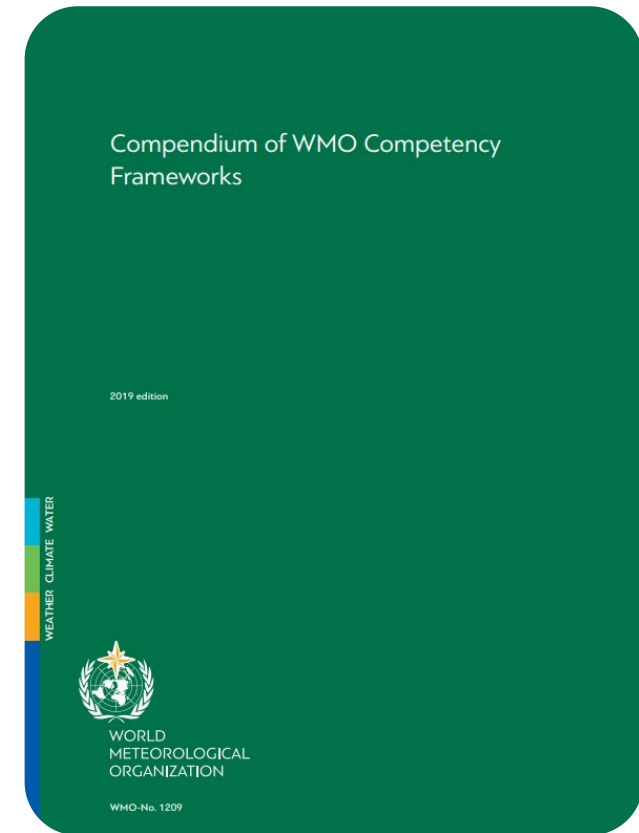


# Job description

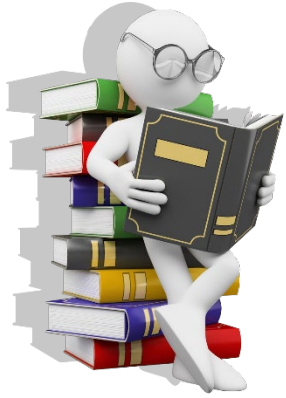
A job description summarizes the essential responsibilities, activities, qualifications, and skills for a role.

The Job description needs to be focused, describing activities and performance criteria in an unambiguous way

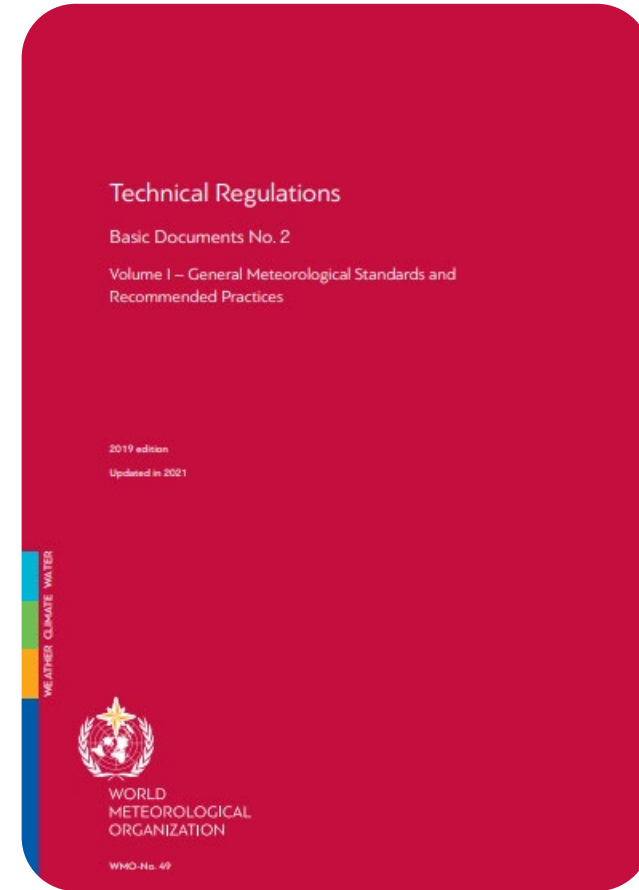
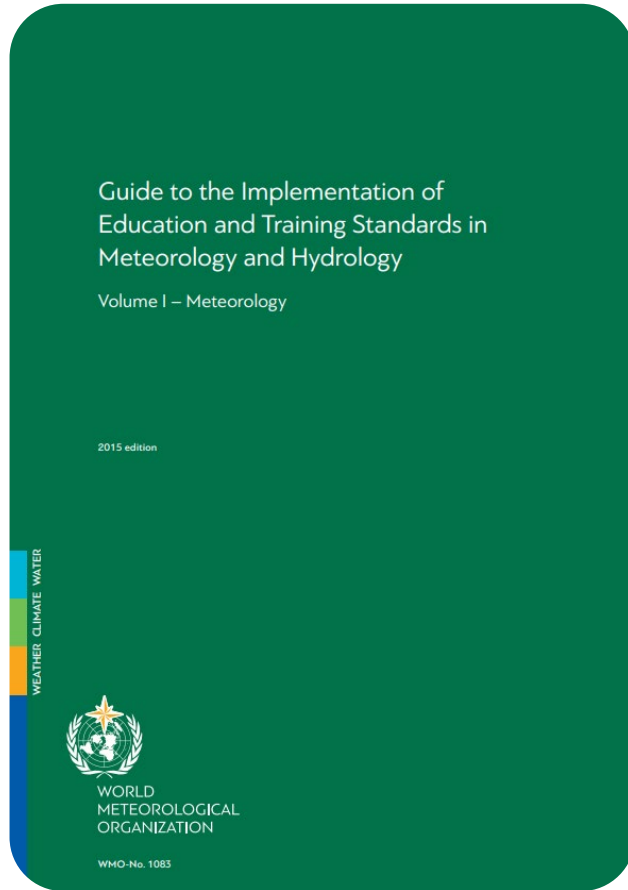
Is the reference point for service delivery, staff recruitment, and competency assessment





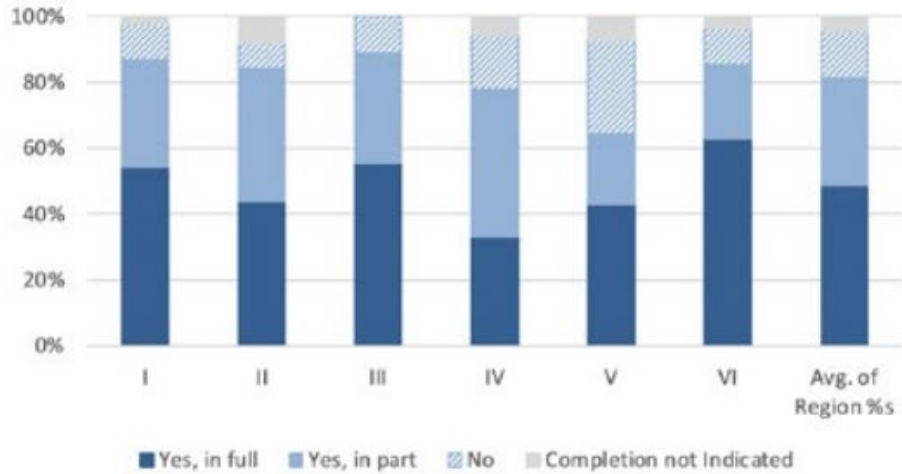


# The Basic Instruction Package

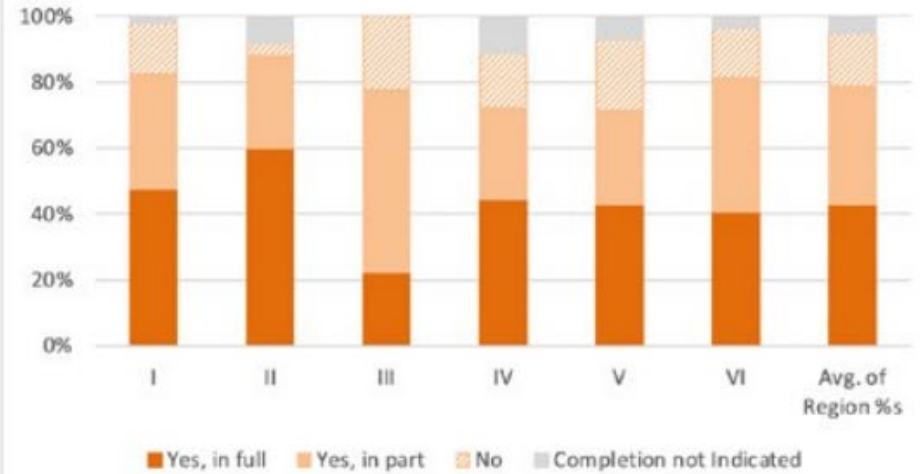




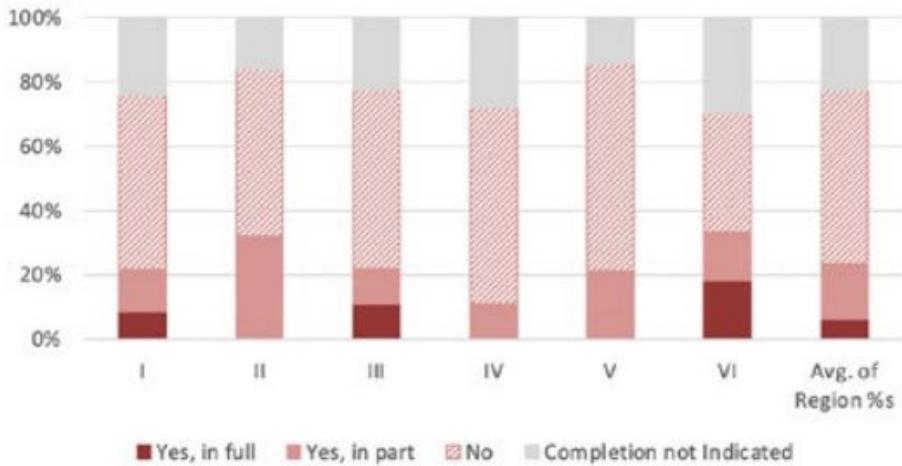
Completion Rates: BIP-M



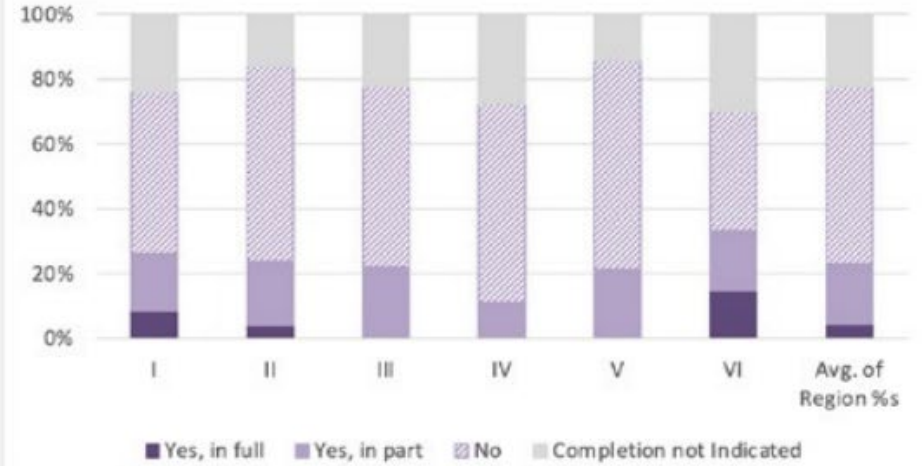
Completion Rates: BIP-MT



Completion Rates: BIP-H

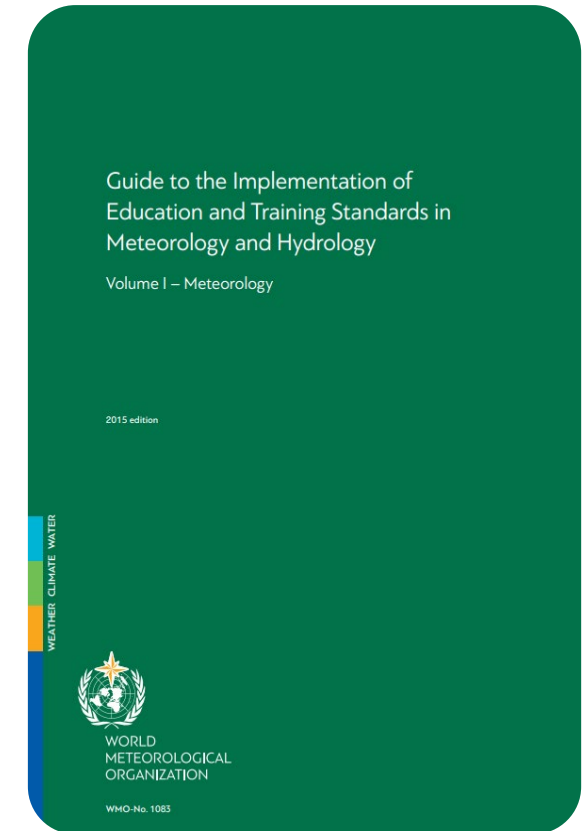
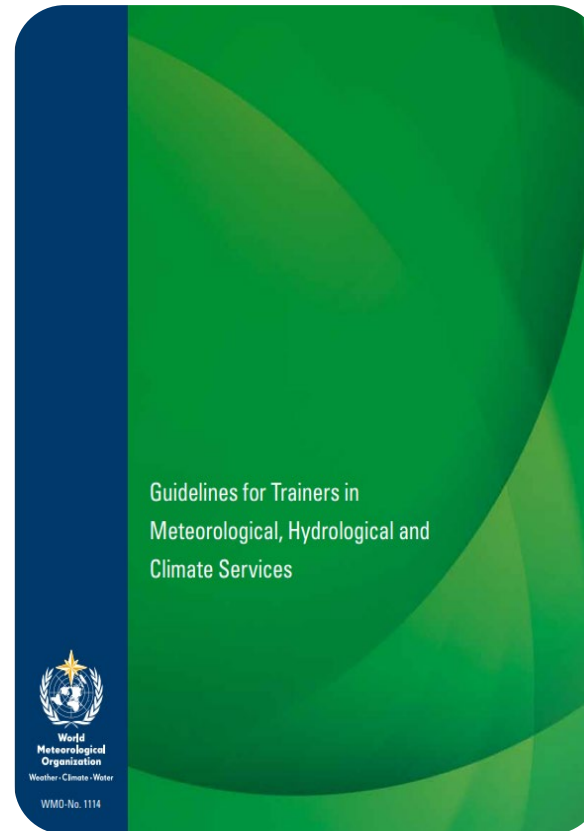
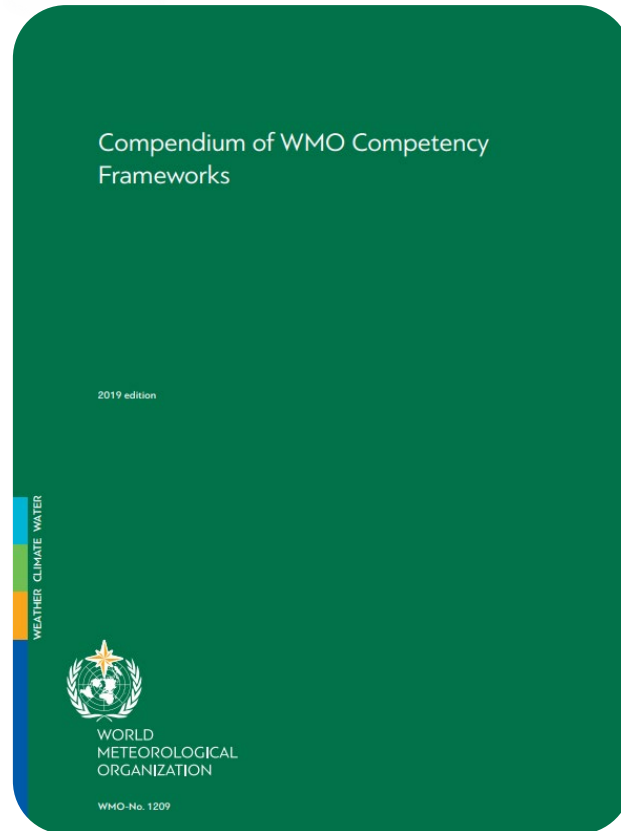


Completion Rates: BIP-HT





# Basic training and specialist training





According to the 2022 WMO Survey on the status of human resources in NMHSs\*, more than 90,000 staff members need training in various professional areas.

The most numerous group of staff needing training is Meteorological Technicians (36,085 people). The next largest group is **Managers** (20,769 people).

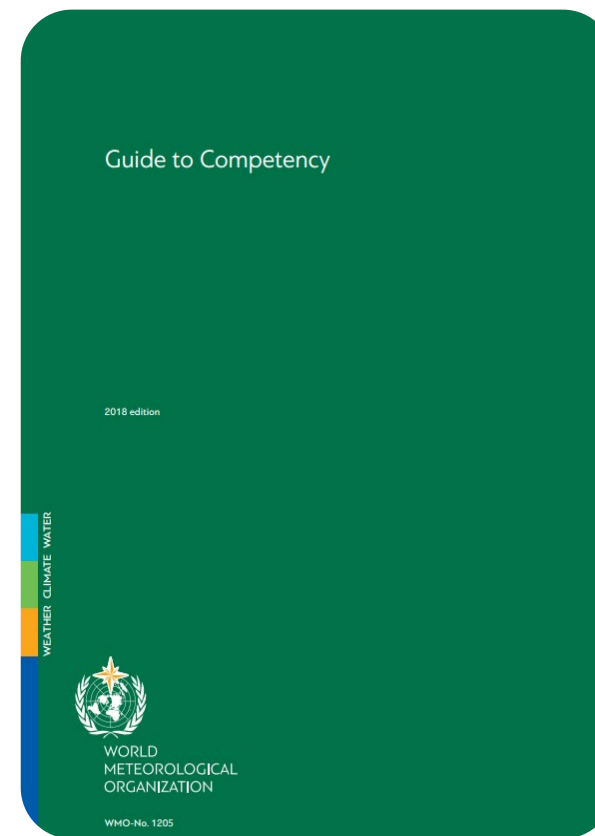
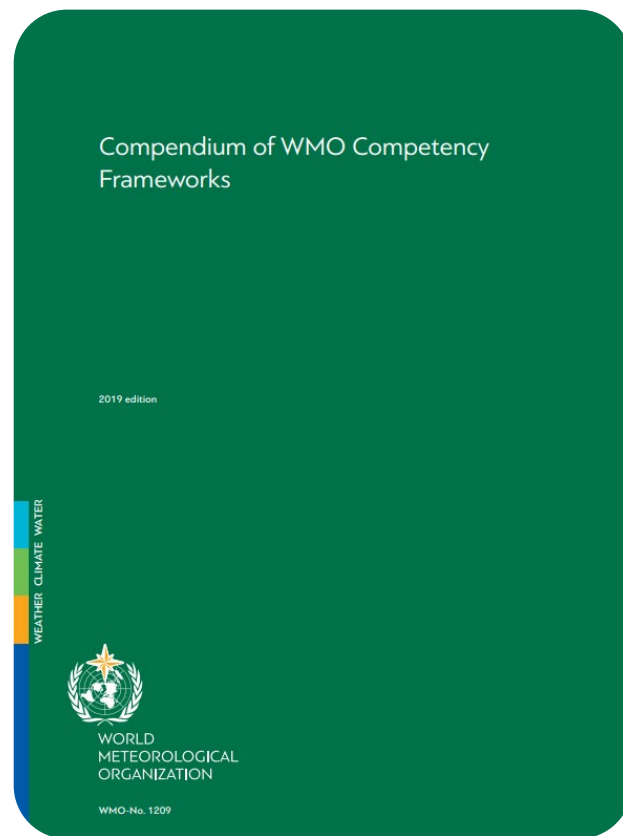
Number of staff in need of training *							
	Regions						
Professional Categories	I	II	III	IV	V	VI	Global
Met Tech	2505	<b>31584</b>	726	262	<b>195</b>	813	36085
Manager	444	<b>19248</b>	106	674	<b>132</b>	165	20769
Climatologist	297	<b>11112</b>	66	93	<b>141</b>	110	11819
Meteorologist	1295	<b>4706</b>	299	2363	<b>502</b>	746	9911
Researcher	240	<b>5186</b>	33	13	<b>46</b>	276	5794
Support Staff	1192	<b>963</b>	273	1259	<b>150</b>	528	4365
Hydrologist	170	<b>58</b>	94	292	<b>18</b>	90	722
Customer/Comms	198	<b>96</b>	46	81	<b>50</b>	97	568
Regional Totals	6341	<b>72953</b>	1643	5037	<b>1234</b>	2825	<b>90033</b>

**Total number of staff**

Region						
I	II	III	IV	V	VI	Global
8 536	44 661	2 121	5 319	5 244	10 494	76 252
3 306	24 999	1 475	2 174	3 140	6 659	41 876
11 842	69 660	3 596	7 493	8 384	17 153	118 128



# The On-the-job training

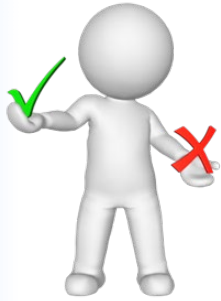




On-the-job training (OJT) is a practical approach to acquiring competencies and skills needed for a job in a real, or close to real, working environment.

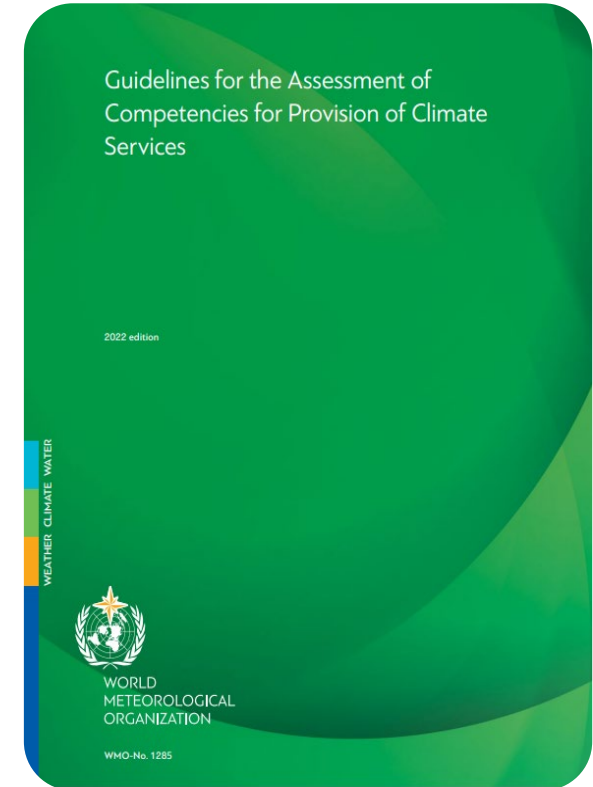
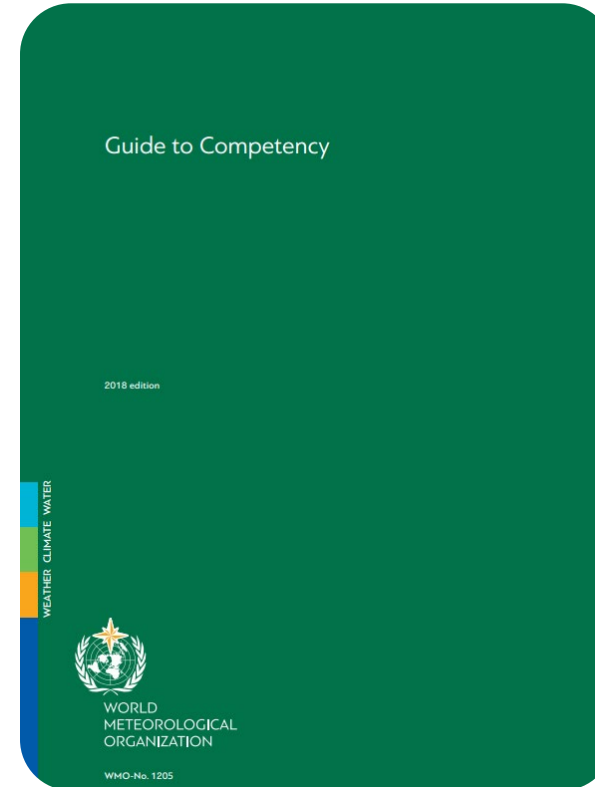
Rather than showing employees presentations or giving them worksheets, they learn about the job by doing it. This training happens at the workplace, with guidance from a supervisor, manager, or another knowledgeable employee.

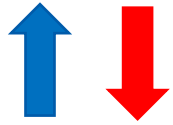
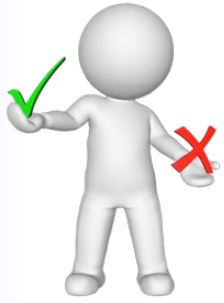
On-the-job training allows employees to gain experience working in situations very similar to those they'll encounter on a daily basis. Employees will use the same tools and equipment they need for their job while being guided by an experienced trainer.



# Competency assessment

Competency assessment focuses on how well an employee is performing the required job in relation to specified performance standards. This approach identifies existing competencies gaps of your current and potential employees.





The assessment is performed on those identified tasks and skills for which a rating is selected based on how they do that task, which defines their proficiency level. In other words, a competency assessment measures **how** (*behaviors*) someone does the **what** (*task, job*).

The individual's selected proficiency level is then compared with the target level, defining proficiency or skill gaps for each task and skill.

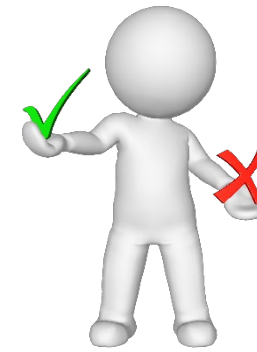
Typically, that is ensuring that people have the skills required to do their current and future jobs. Without competency assessment data, you have no ability to mitigate skill gaps effectively.



Qualification is for a lifetime

Competence... **is NOT!**

Competence needs to be **maintained...**  
and **continuously updated!**



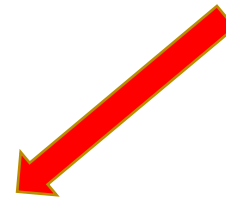
Competency  
Assessment



Training

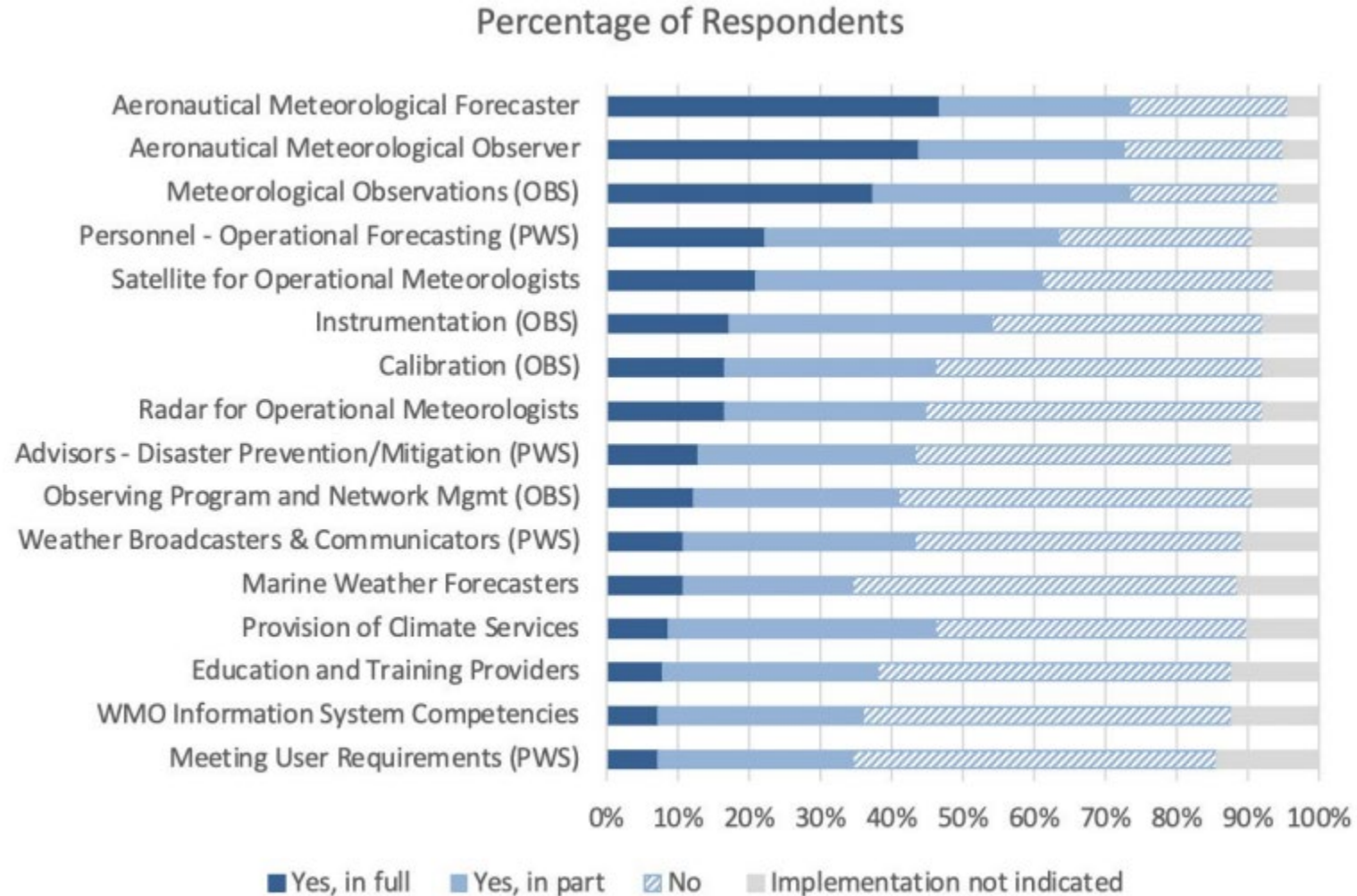


COMPETENT



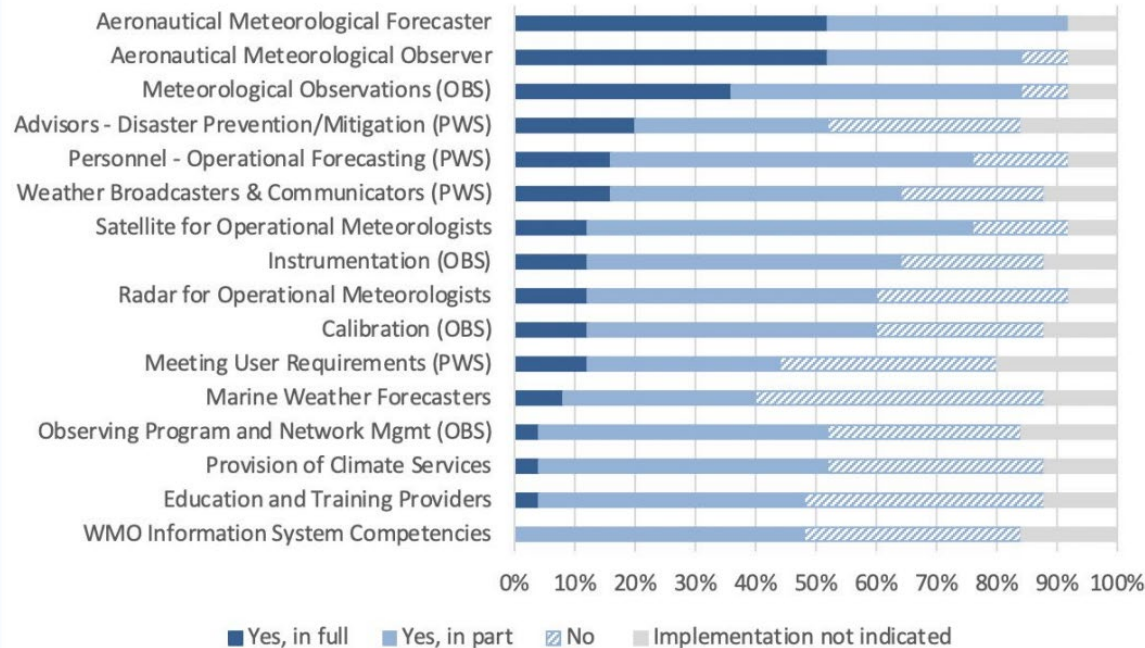
On-the-Job  
Training

# Global implementation rates for the WMO competency frameworks

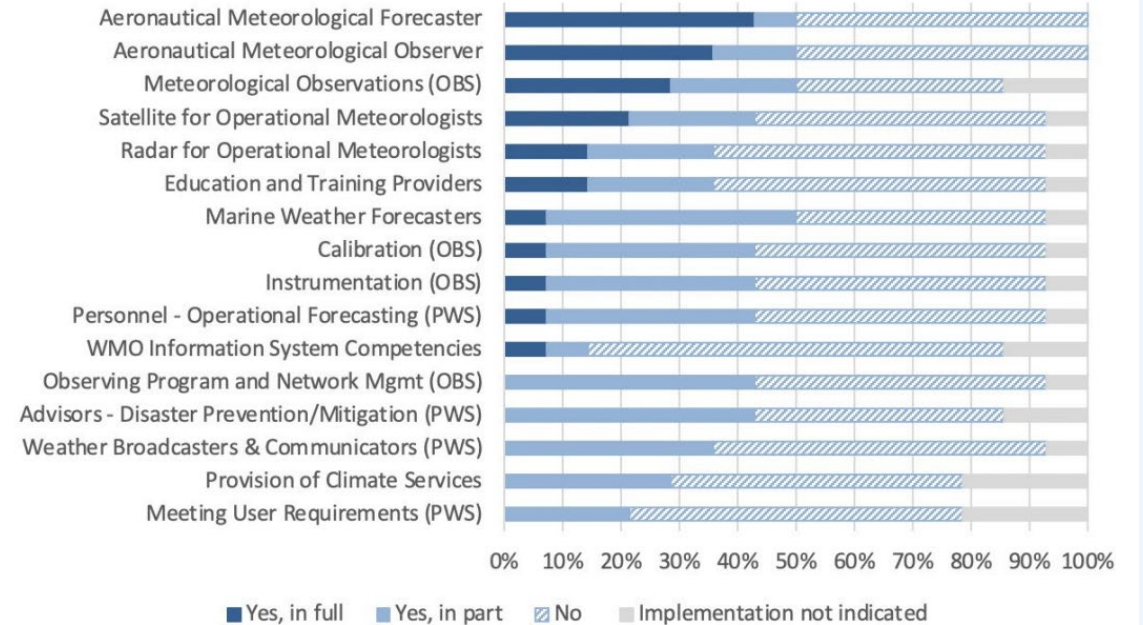


# Global implementation rates for the WMO competency frameworks

Region II - Implementation of WMO competency frameworks - percentage of respondents



Region V - Implementation of WMO competency frameworks - percentage of respondents



# Competency Management



To manage and control, in a logical and integrated manner, a cycle of activities that will assure competence and further develop the performance of personnel NMHSs will need to have a structured approach in Competency Management (CM). This should enable staff to fulfill responsibilities and perform activities at recognized standards of competence, on a regular basis, in order to:

- reduce risks;
- comply with regulatory requirements;
- meet the organization's business objectives;
- enable the organization to meet quality and safety commitments.

A transparent CM will ensure that individuals:

- are clear about the competency and performance expected from them,
- receive appropriate training, development, assessment and re-assessment,
- maintain and improve their competence over time.

# Competency Management



Phases in developing a CM approach:

- Preliminary actions
- Step I: Planning,
- Step II: Design,
- Step III: Implementation,
- Step IV: Assess/maintain CM System,
- Step V: Verification/audit of the CM System.

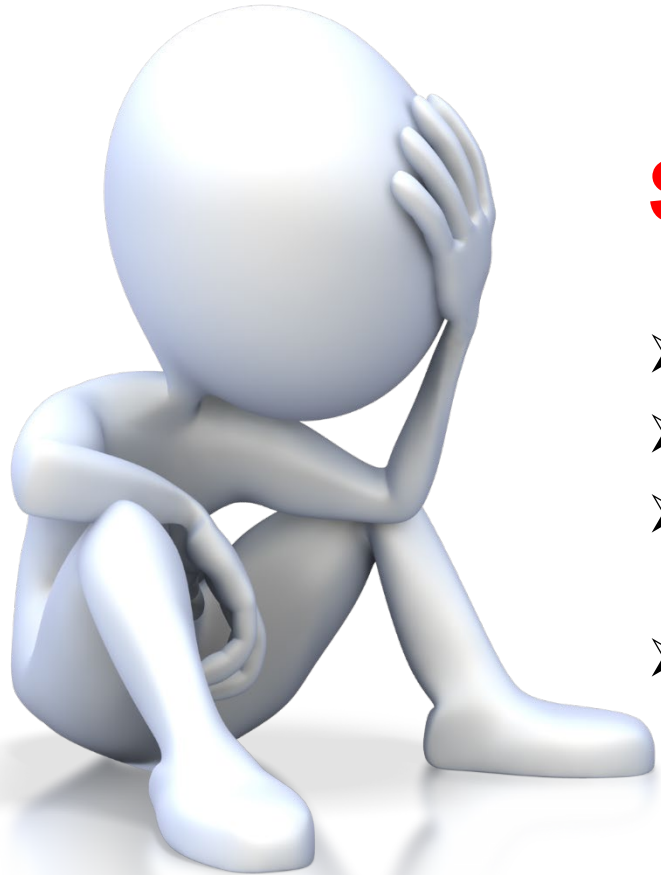
Each step contains one or more management principles.

For each principle, there is a set of recommendations for its successful attainment.

# Preliminary actions:

- Develop dedicated processes to enable them to do this efficiently and effectively (if personnel are not familiar with the concept of maintaining evidence of competence, as required for assessment).
- Adopt a process improvement approach, associated with the implemented QMS, to facilitate a gradual introduction of a CM System.
- Use existing management processes - the ones for personnel appraisal, assigning to particular tasks, training and development, or similar (if the organization has not already mapped the existing management system processes to the requirements of a CM System).
- Work from the beginning with the concept of continuous improvement





## Step I: **PLANNING**

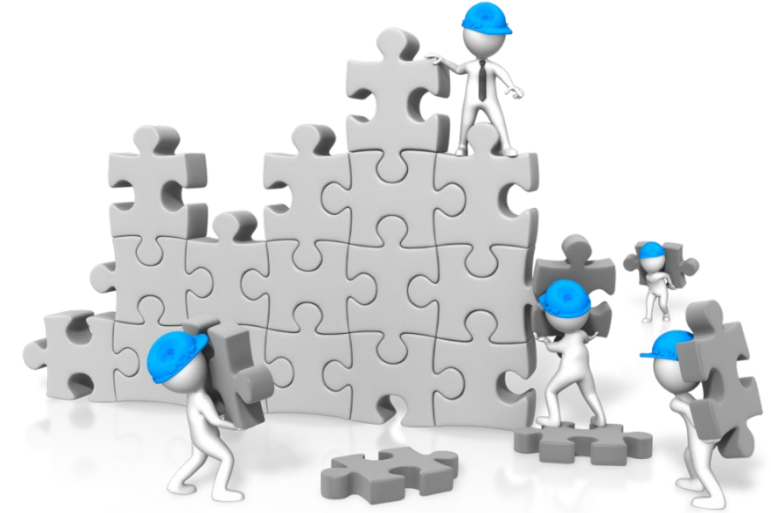
- Specify all work activities to be included in the CM;
- Define the purpose and scope of the CM;
- Define roles and responsibilities that are to be covered by the CM;
- Select applicable rules and regulations.

## Step II: DESIGN

- Define the activities that are covered by the CM;
- Establish efficient and consistently repeatable processes, procedures, and methods to implement the requirements of the guidance principles;
- Define procedures for all system elements;
- Establish competency criteria according to the job profile;
- Define how each competency criterion is met, assessed, and recorded;
- Establish the tools used for competency assessment and how often the assessment shall be conducted.
- Establish the training needs and the assessment requirements for each performance criteria;
- Management of changes in operational activities;
- Establish the tools and methods for CM System improvement.







## Step III: IMPLEMENTATION

- Apply CM procedures and methods to selection and recruitment activities;
- Train to the defined competencies associated with the job profile;
- Ensure that the personnel undertake only work for which they have been trained and assessed as competent;
- Assess competence;
- Monitor, develop and maintain competence;
- Evaluate the impact of any failures to perform competently and take appropriate actions.

## Step IV: ASSESSMENT/MAINTAIN

- Maintain the competence of CM managers and assessors;
- Document and maintain accurate information from the operation of the CM System;
- Monitor changes in the external environment and the internal operation of the organization;
- Ensure that CM follows the QMS requirements;
- Review the output and impact of the CM on KPIs.

## Step V: VERIFICATION/AUDIT

- Verify the CM;
- Audit or arrange for the audit of the CM;
- Identify the need for changes and implement identified changes;
- Continuously improve the CM.



# Challenges in the implementation of the competency approach

Difficulty in writing a new job description

To do the activities from the job description staff needs to be trained

Difficulty in finding the needed training programmes

Designation and training the On-the-Job Trainers

Designation and training the competency assessors

Legislative and procedural issues

**Financial support for implementation**

**Staff reluctance**

# Benefits of the implementation of a competency approach

Job description is correlated to the required individual performance criteria

The right staff in the right position

Gaps in competence and training needs are identified through assessment

Strategic planning impact:

- Human resources including recruitment

- Financial

- Operational

**Enhanced capability of NMHS to deliver and sustain quality services**

**Increased level of confidence in services provided**



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