



An Overview of Metrics to Identify Capacity Gaps for NMHS

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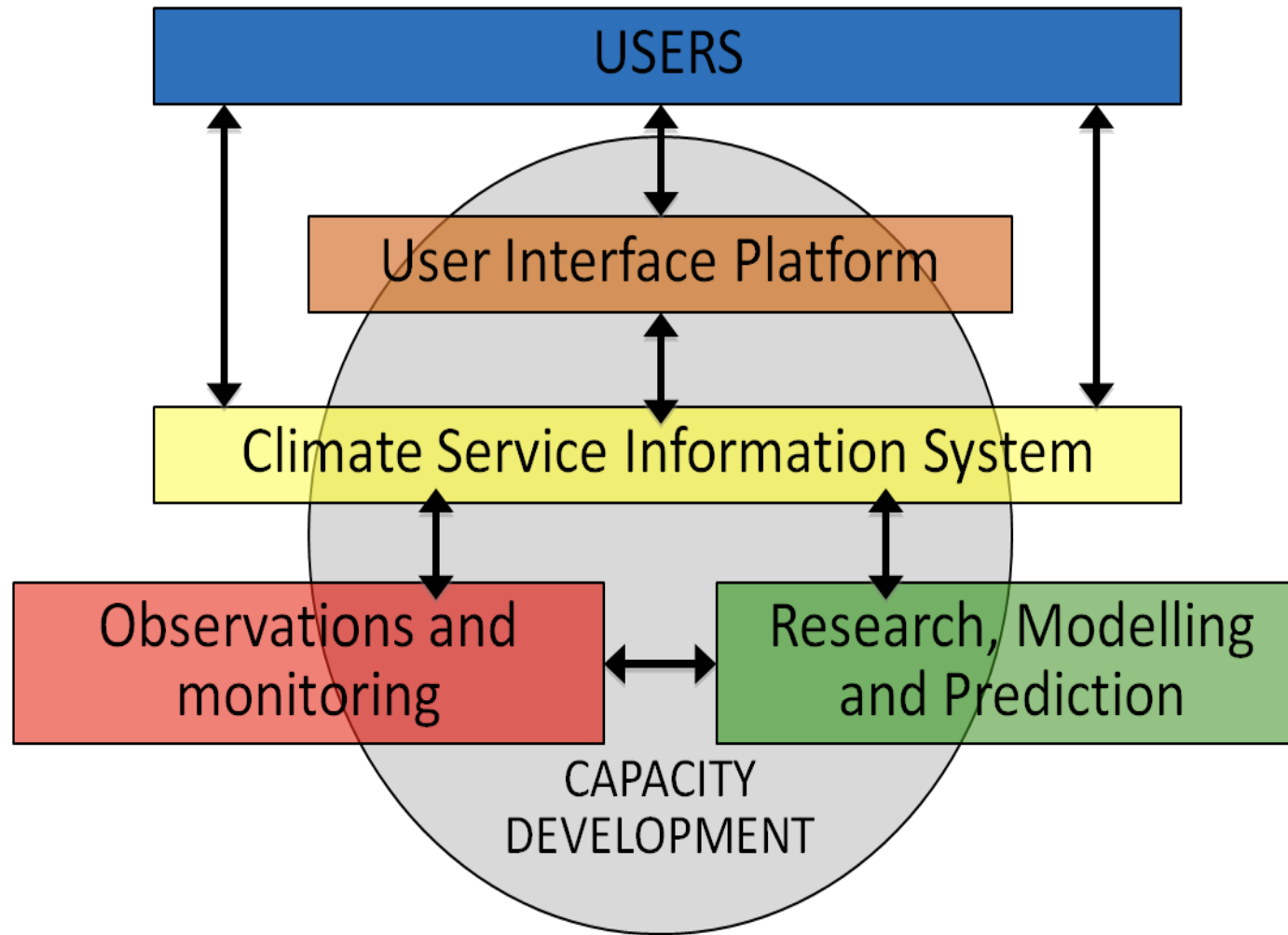


Outline

- 1. What do we assess?**
- 2. How is it assessed?**
- 3. How is our approach different?**

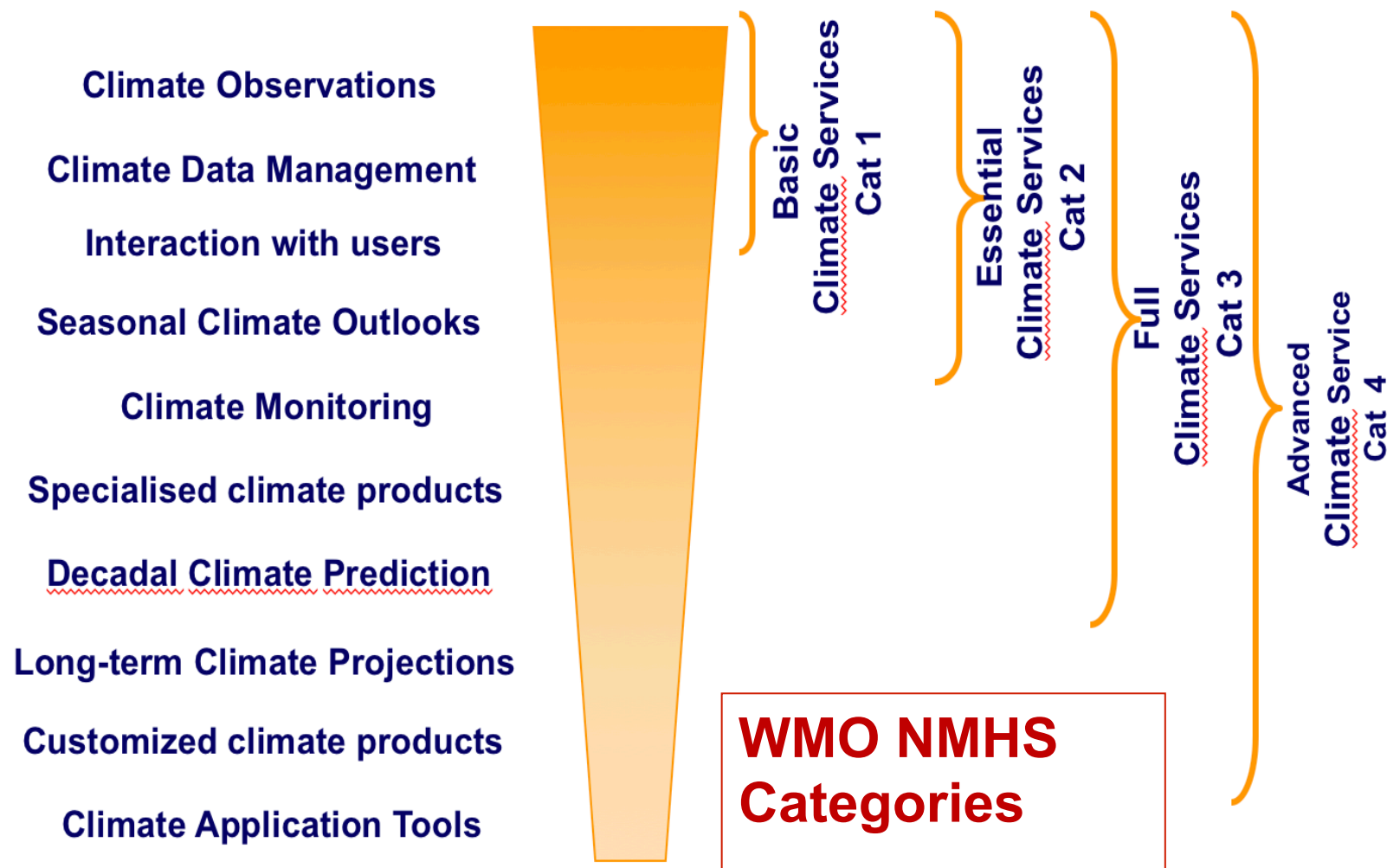
1. Wat do we assess?

What capacities need to be assessed?




What do we assess (cont.)?

How do we measure progress?



What do we assess (cont.)?

Pillars → Categories 	Observations & Monitoring	Research, Modeling & Predictions	Climate Service Information System	User Interface Platform	Capacity Dev't
Category 1 Basic	Operate and maintain adequate national observing systems,	Participate in funded research projects and field experiments	Conduct basic climate diagnostics and analysis	Interacts with users, to meet requests	Participate in training, as required, for data management,
Category 2 Essential	Operates expanded surface climate and weather observation network	Participate in national and international collaborative climate science and research initiatives.	Conduct advanced statistical analysis	Interact with users in one or more sectors	Participate in training for climate services specialties
Category 3 Full	Adopt long- term strategy for managing observing network and its change	Conduct or participate in research and field experiment	Develop and/or provide climate analysis, prediction and monitoring products,	Provide climate information relevant to policy development and National Action Plans	Conduct, or provide expertise to, training of climate services and prediction specialists

3. How is it assessed?

Step-1: Define metrics/indicators for each of the criteria for categories and under each GFCS pillar

1	Criteria	Indicators	Questions in the survey
Category 1 "Basic"	Operate and maintain adequate national observing systems, suitable for basic hydro-meteorological purposes	<p>X% of stations managed by NMHS are manned by trained NMHS observers (X will depend on the ratio of synoptic stations to all stations)</p> <p>Minimum density of manual stations ~ 2500km² (a station every 50 km)[WMO OSCAR min req RR Agr]</p> <p>Minimum density of upper air observation stations ~250,000km²(every 500 km)[Min Req WMO,488]</p> <p>Percentage of sites reporting regularly over the last year >=75% (check)</p> <p>X% of manual stations inspected every N year (X, N depends on the proportions of different types of stations)[WMO 544]</p> <p>Percentage of stations reporting to NMHS headquarters every day over the last year > X% (X depends on proportion of different type of stations)</p> <p>Percentage of class 3 and above stations >= 25%</p>	<p>C3, C5</p> <p>C3</p> <p>C3</p> <p>C3, C18</p> <p>C3, C14, C16</p> <p>C3, C9</p> <p>C3</p>
	Develop and maintain data archives and conduct data management including QA/QC, using QMF principles	Maintains electronic climate database	E3, E4

How is it assessed?

Step-2: Formulate questioners to collect data for each metrics

1	Criteria	Indicators	Questions in the survey
Category 1 "Basic"	Operate and maintain adequate national observing systems, suitable for basic hydro-meteorological purposes	<p>X% of stations managed by NMHS are manned by trained NMHS observers (X will depend on the ratio of synoptic stations to all stations)</p> <p>Minimum density of manual stations ~ 2500km² (a station every 50 km)[WMO OSCAR min req RR Agr]</p> <p>Minimum density of upper air observation stations ~250,000km²(every 500 km)[Min Req WMO,488]</p> <p>Percentage of sites reporting regularly over the last year >=75% (check)</p> <p>X% of manual stations inspected every N year (X, N depends on the proportions of different types of stations)[WMO 544]</p> <p>Percentage of stations reporting to NMHS headquarters every day over the last year > X% (X depends on proportion of different type of stations)</p> <p>Percentage of class 3 and above stations >= 25%</p>	<p>C3, C5</p> <p>C3</p> <p>C3</p> <p>C3, C18</p> <p>C3, C14, C16</p> <p>C3, C9</p> <p>C3</p>
	Develop and maintain data archives and conduct data management including QA/QC, using QMF principles	Maintains electronic climate database	E3, E4

How is it assessed?

Step-3: Assign values of between 0 and 1 for each of the metrics based on the responses to the questions

t 1: Observation and Monitoring										
1	Criteria	Indicators	Questions in the survey	Senegal	Cote d'Ivoire	Niger	Mali	Rwanda	Ethiopia	Malawi
Category 1 "Basic"		At least 75% of all stations manned by trained observers	C3, C5	1.00	0.00	0.00	1.00	1.00	1.00	1.00
	Operate and maintain adequate national observing systems, suitable for basic hydro-meteorological purposes	Coverage of surface stations: at least one station every 50 km [WMO OSCAR min req RR Agr]	C3	1.00	0.00	1.00	0.00	1.00	1.00	1.00
		Coverage of upper air observation stations: at least one station every 500 km [Min Req WMO,488]	C3	1.00	0.00	0.00	1.00	0.00	0.00	0.00
		At least 50% of stations that are Class 3 and above inspected over the past year [WMO 544]	C3, C14, C17	1.00	1.00	0.00	0.00	1.00	1.00	0.00
		Collects station metadata	E7	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		At least 50% of stations that are above Class 3 reported to NMHS headquarters every day over the last year	C3, C9	0.00	0.00	1.00	0.00	1.00	0.00	1.00
		Percentage of class 3 and above stations >= 25% (check)	C3	0.00	0.00	0.00	1.00	1.00	1.00	1.00
	Develop and maintain data archives and conduct data management including QA/QC, using QMF principles	Maintains electronic climate database	E3, E4	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		Maintains electronic backup of data and backed up data at least every month over the past year	E5, E6	1.00	0.50	1.00	1.00	0.50	1.00	0.00
		Uses basic quality control procedures and								

How is it assessed?

Step-4: Assign ranks to each metrics based on its contribution to the criteria and confidence in the data. The inverses of the ranks are used as a weights to average all the metrics under that category

Step 1: Observation and Monitoring

[illegible]

How is it assessed?

Step-5: Convert the waited averages of the metrics into % and use them to check if a given NMHS satisfies the criteria to be in a given category:

GFCS Pillar	NMHS Category	Senegal	Cote d'Ivoire	Niger	Mali	Rwanda	Ethiopia	Malawi		
1 O&M	1								Yes	
	2									
	3									
2 R&P	1								Partially	
	2									
	3									
3 CIS	1								No	
	2									
	3									
4 UIP	1									
	2									
	3									
5 CDV	1									
	2									
	3									



4. How is our approach different?

- **Combines GFCS pillars with WMO NMHS Categories to measures specific capacities and progress towards specific milestones**
- **Not a self-assessment: This is based on analysis of data collected through surveys**
- **Efforts made to make it as quantitative and as objective as possible**



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Thank You

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