



World Meteorological Organization

Weather • Climate • Water

Future directions for WMO ETR

Contents

- Outcomes from the 2014 Executive Council
- Information on WMO Member staffing profiles and capabilities



Outcomes from EC for ETR Programme

- Supported a feasibility study into the proposal for a WMO Global Campus
- Agreed to new terms of reference and selection process for the EC Panel of Experts on Education and Training
- Agreed to delay reconfirmation of RTC in Florence, Italy
- Accepted recommendations regarding changes to EC criteria for RTCs
- Asked for the EC Panel to be more involved in the finalisation of competency statements



Staffing profiles and capabilities



Background

- There is no single source of data indicating Members collective and individual education and training needs
- Until recently there was no clear idea of the global NMHS workforce or how it was broken down into different service or support areas
- Without this and further supporting data it is very difficult to make any assessment on the likelihood of any approach being successful on a regional or global scale

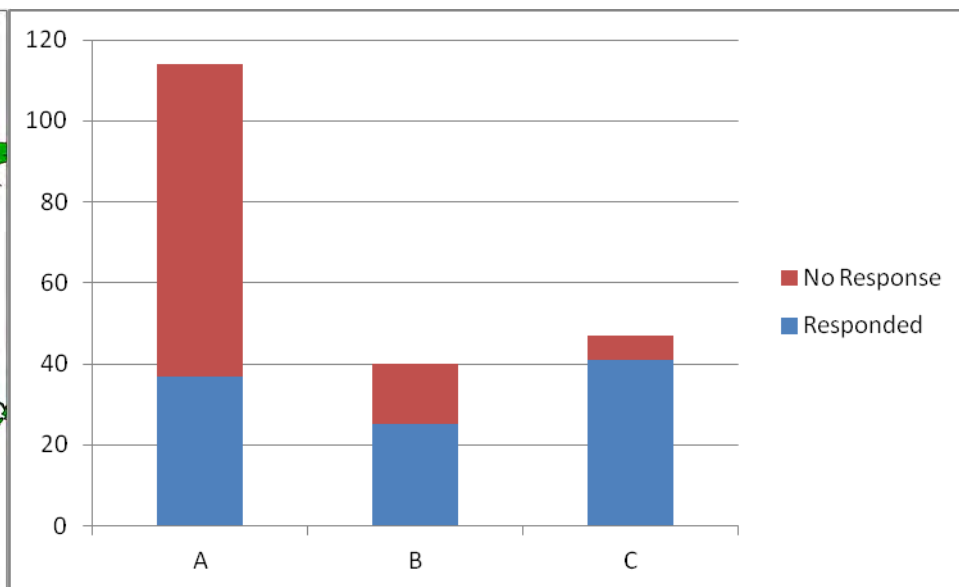
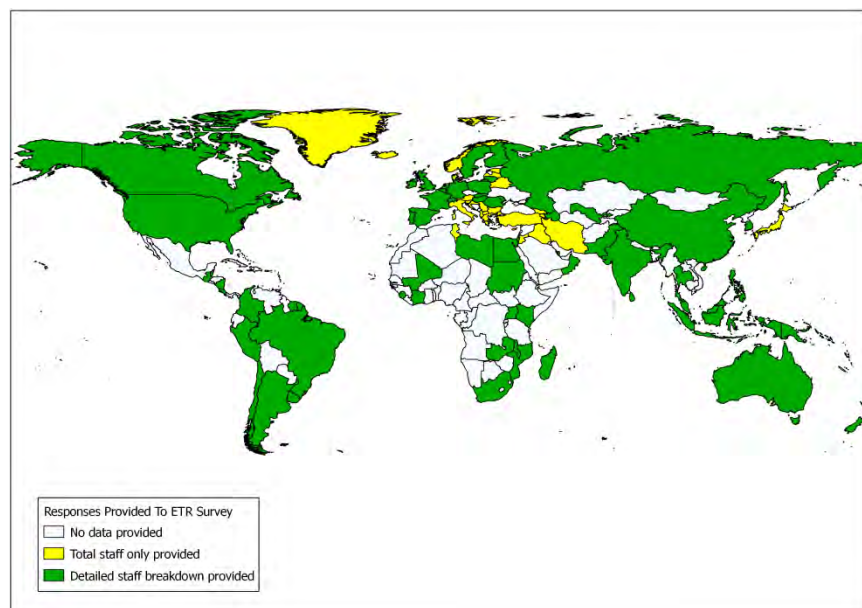


Data sources for this work

- WMO-No. 5 – formal contact information for Members
- Raw data from Strategic Planning Office survey
- Raw data from RA VI regional survey, RA V to be added
- User data from the COMET programme
- EC and Cg decision on WMO assessed contribution by country
- Ongoing informal survey carried out by ETR Office, commencing July 2013



Responses to ETR Office survey



Regional Response	Total Members in Region	Number of Responses	“Development Status” in Region (number of responses in brackets)		
			A	B	C
RA I	53	16	46 (12)	6 (3)	1 (1)
RA II	36	15	18 (3)	8 (5)	10 (7)
RA III	12	7	4 (1)	3 (2)	5 (4)
RA IV	23	12	13 (8)	7 (3)	3 (2)
RA V	21	13	14 (7)	2 (1)	5 (5)
RA VI	46	39	9 (6)	14 (11)	23 (5)
Non Member	2	2			
Totals	193	104			



Preferred WMO language

Preferred Language	No. Countries specifying WMO language
Arabic	2
English	127
French	32
Russian	12
Spanish	19

Nominated “Pub 5” language

Staff nos in preferred language

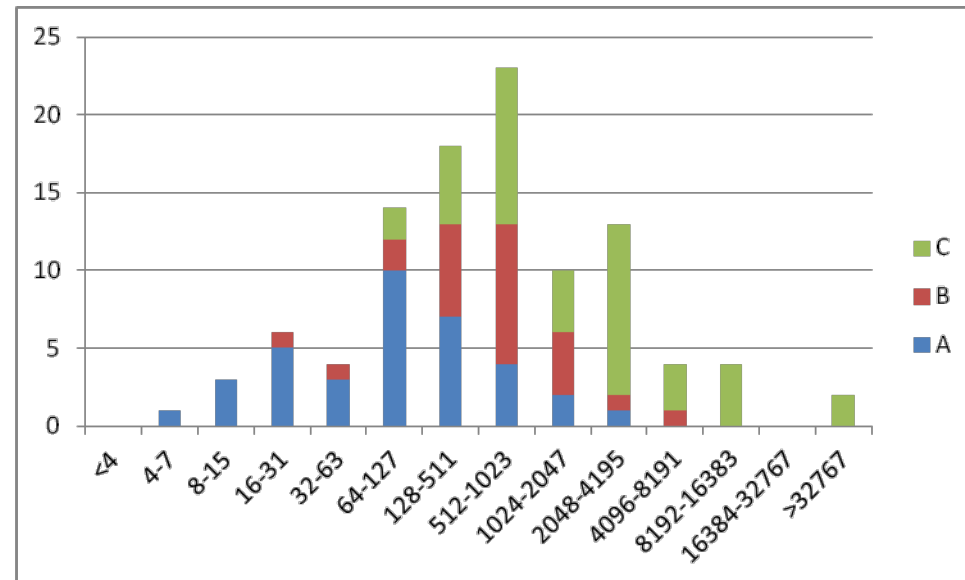
Preferred Language	Total personnel
Arabic	
English	111632
French	4251
Russian	47389
Spanish	4421

English is inflated as it includes China, Indonesia and Japan as “english” speakers. Russian Fed and China dominate the people speaking Russian and Chinese



Overall staff numbers

Estimate total global NMHS workforce to be of the order of 200,000 to 220,000



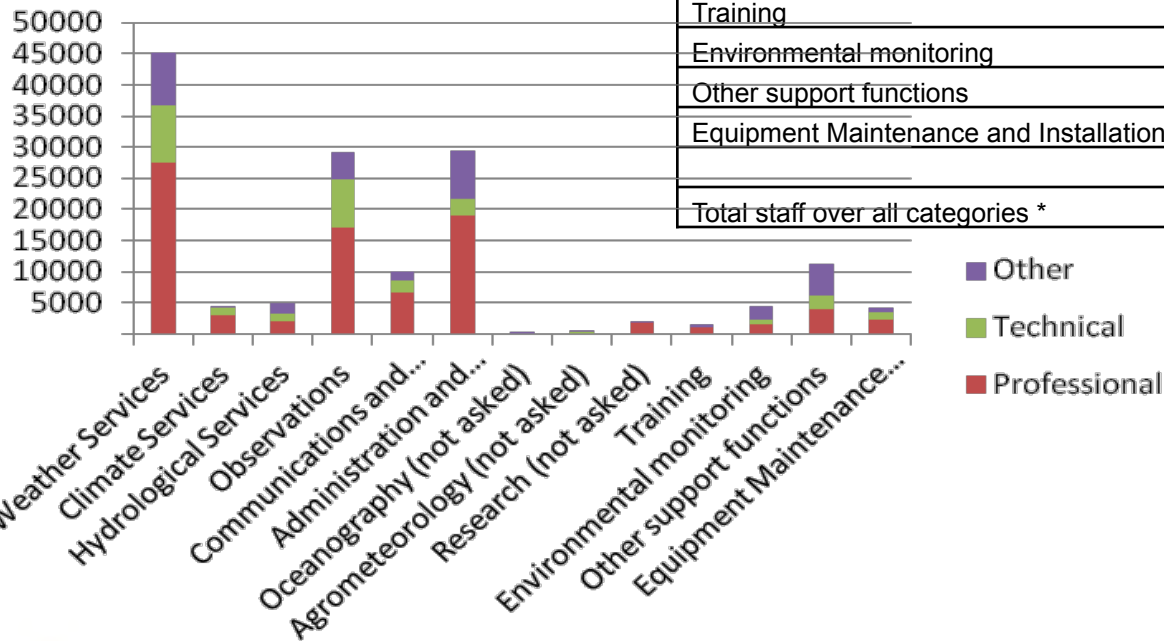
Numbers of Members with staffing of	Number	A	B	C
Less than 4	1	1		
Between 4 and 7	1	1		
Between 8 and 15	3	3		
Between 16 and 31	7	6	1	
Between 32 and 63	4	3	1	
Between 64 and 127	14	10	2	2
Between 128 and 255	18	7	6	5
Between 256 and 511	23	4	9	10
Between 512 and 1023	10	2	4	4
Between 1024 and 2047	13	1	1	11
Between 2048 and 4195	4		1	3
Between 4196 and 8391	4			4
More than 8392	2			2
Total number of Responses	104	38	25	41



Staffing Profiles

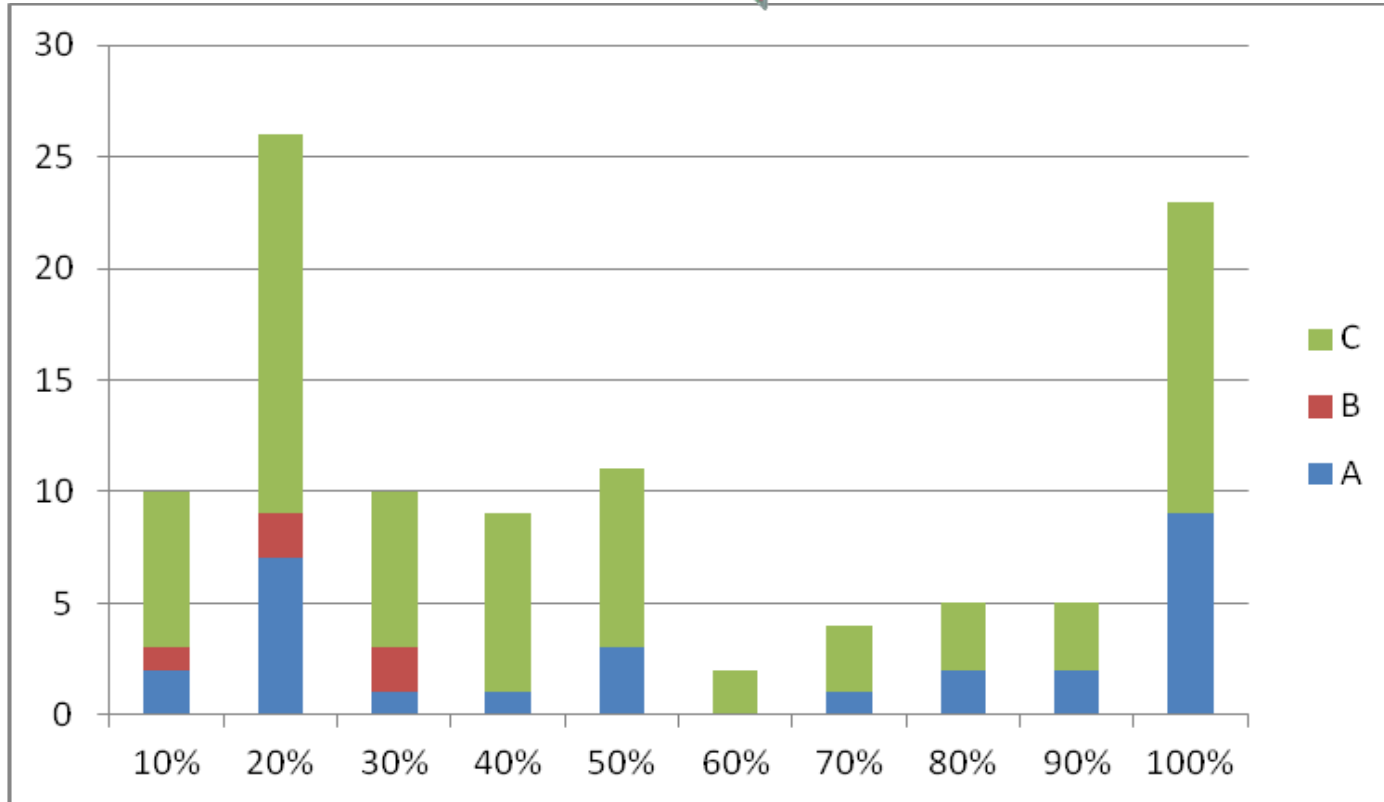
Reported staff numbers

Organisation entity	Professional	Technical	Other	Total
Weather Services	27574	9072	8645	45291
Climate Services	3106	1140	316	4562
Hydrological Services	1989	1351	1605	4945
Observations	17156	7684	4399	29239
Communications and Computing	6623	1880	1430	9933
Administration and Management	19025	2755	7556	29336
Oceanography (not asked)	99		110	209
Agrometeorology (not asked)	200	120	20	340
Research (not asked)	1756	89	157	2002
Training	1009	192	451	1652
Environmental monitoring	1531	871	1988	4390
Other support functions	3971	2121	5121	11213
Equipment Maintenance and Installation	2235	1336	666	4237
	86,274	28,611	32,464	147349
Total staff over all categories *	147,349			147349



Aeronautical Meteorology

Aeronautical Meteorology	Total AMF	Unqualified	AMO
Personnel	7037	497	8764
Members where unqualified > 30% of total AMF	24		



% of AMF
in weather
forecasting
as a function of
"development"
status



Expected Staffing Trends

Organisation entity	Staff trend to increase by 2020			Prof.	Tech.	Other	Prof.	Tech.	Other	Staff trend to decrease by 2020		
	Prof.	Tech.	Other							Prof.	Tech.	Other
Weather Services	47	39	19	11	5	5	2	6	3			
Climate Services	48	38	18	12	7	5			1			
Hydrological Services	34	28	14	6	6	5						
Observations	29	37	17	9	5	2	2	7	3			
Communications and Computing	39	33	18	11	9	7			1			
Administration and Management	38	30	21	16	7	8		1				
Oceanography (not asked)				1								
Agrometeorology (not asked)	1	1	1									
Research (not asked)	12	6	4			2						
Training	34	25	20	12	6	6		1				
Environmental monitoring	27	26	11	9	4	6		1				
Other support functions	21	19	16	9		4		1				
Equipment Maintenance and Installation	26	27	12	7	3	2	1	2	1			



Training capabilities

	Initial Training in NMHS			Initial training in Country			Initial outside country		
	A	B	C	A	B	C	A	B	C
Administration and Management	9	5	20	18	7	18	7	5	3
Agrometeorological Services			1	17	5	16	1		
Climate Services	13	6	22	19	9	22	22	8	8
Communications and Computing	9	4	21	10	4	12	12	5	4
Environmental monitoring	4	3	11	8	6	8	11	5	3
Equipment Maintenance and Installation	4	5	13	8	5	12	14	6	4
Hydrological Services	7	5	11	15	4	14	14	7	2
Observations	16	9	25			1	10	7	4
Other support functions	4	5	13	10	5	7	5	5	2
Research		3	5	2	2	8	2	2	3
Training	6	7	14	13	4	14	11	8	5
Weather Forecasting	10	9	29	15	7	20	25	12	12

No initial training available in country			
	A	B	C
Administration and Management	10	4	9
Agrometeorological Services	1		1
Climate Services	13	5	8
Communications and Computing	11	3	9
Environmental monitoring	19	8	20
Equipment Maintenance and Installation	19	5	14
Hydrological Services	22	5	19
Observations	9	3	8
Oceanography			1
Other support functions	20	7	22
Research	1	2	5
Training	17	5	14
Weather Forecasting	15	2	3

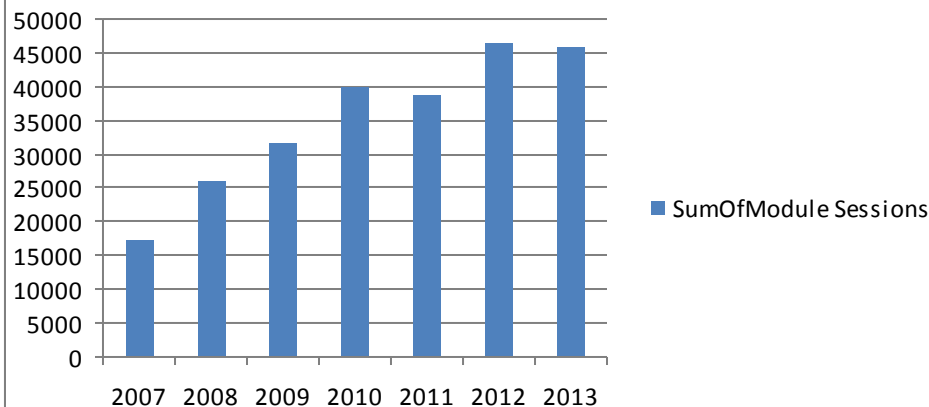


Use of Online learning

Department	A	B	C
Administration and Management	5	3	7
Climate Services	6	4	5
Communications and Computing	5	3	5
Environmental monitoring	3	3	1
Equipment Maintenance and Installation	3	2	
Hydrological Services	4	4	2
Observations	3	3	3
Other support functions	2	3	2
Training	6	4	6
Weather Forecasting	6	4	10

No. of NMHSs using online

Non US NMHS Module Sessions as function of year

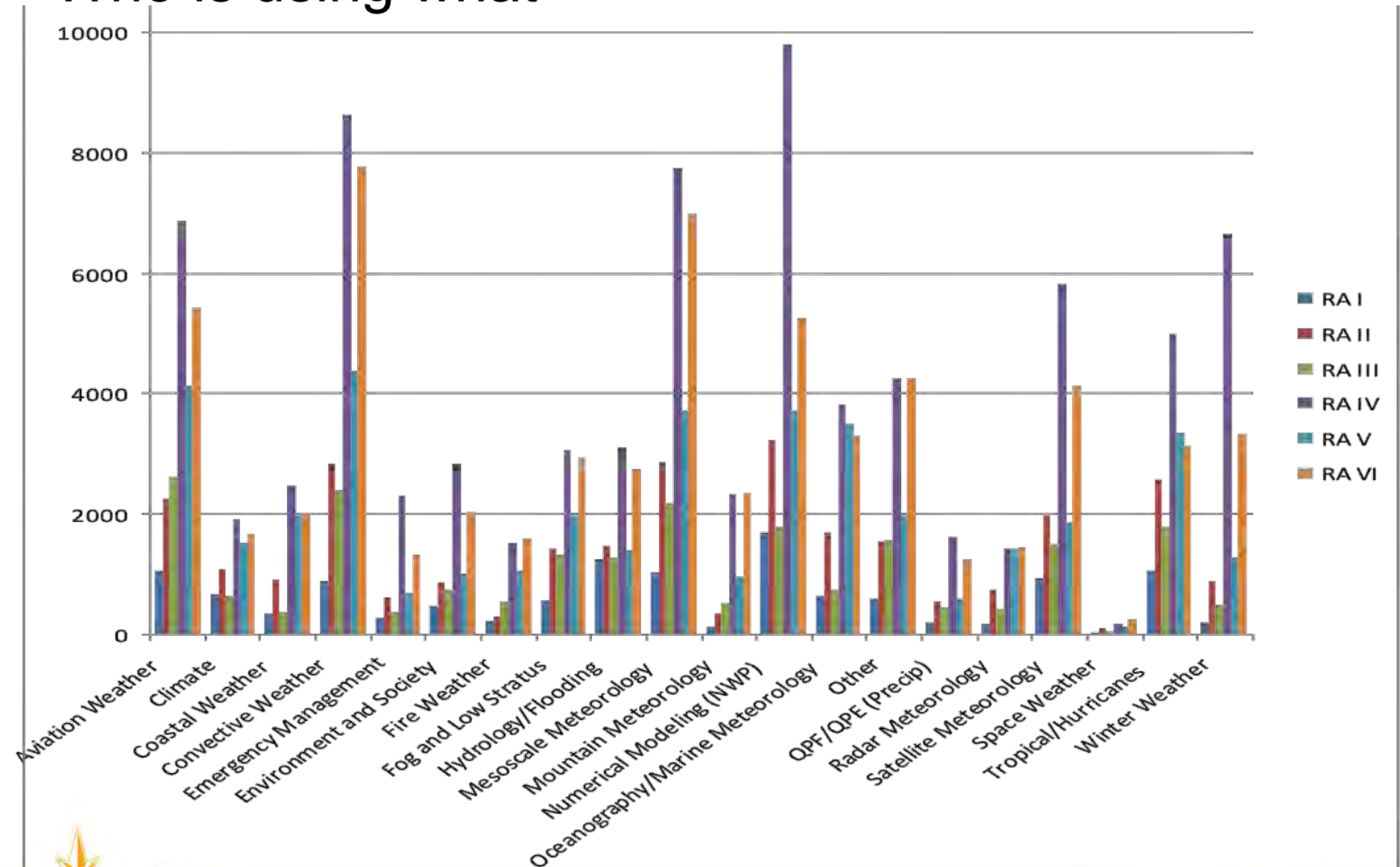


COMET Module	A	B	C
Aviation Weather	72	39	46
Climate	72	35	45
Coastal Weather	61	32	46
Convective Weather	73	38	46
Emergency Management	60	31	45
Environment and Society	73	36	46
Fire Weather	53	28	45
Fog and Low Stratus	59	38	46
Hydrology/Flooding	71	36	45
Mesoscale Meteorology	73	38	46
Mountain Meteorology	44	32	45
Numerical Modeling (NWP)	77	38	46
Oceanography/Marine Meteorology	68	35	46
Other	68	36	46
QPF/QPE (Precip)	56	34	45
Radar Meteorology	59	33	46
Satellite Meteorology	72	38	46
Space Weather	27	14	42
Tropical/Hurricanes	79	37	46
Winter Weather	47	33	46

No. of non US NMHS using COMET



Who is using what



Slide title

- Bullet points

