



## RAII PP QM-OBS Survey Results (N=22)

### Contents of Survey Results

#### **SESSION 3: SITING AND METADATA**

Status of surface observations

Status of observational stations

#### **SESSION 5: QA/QC**

QC for surface observational data

Maintenance and Calibration

#### **SESSION 6: TRAINING**

Training for observers

Training course

**The number of the answers of the questionnaire is 22. (N=22)**



# RAII PP QM-OBS Survey Results

## Outline of Questionnaire

### SECTION 1: SURFACE AND UPPER-AIR OBSERVERS

**Part I: Status of surface observations**

**Session 3**

**Part II: Quality control**

**Session 5**

Part III: Status of Upper-air observations

Part IV: Quality control

**Part V: Maintenance and calibration**

**Session 5**

Part VI: Observation by non-NMHS organization

**Part VII: Training for observers**

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**Part IX: Status of observational stations**

**Session 3**

**Part X: Further improvement**

**Part XI: Data availability**

**Session 5**

### SECTION 2: OBSERVATIONAL DATA

**Session 3**

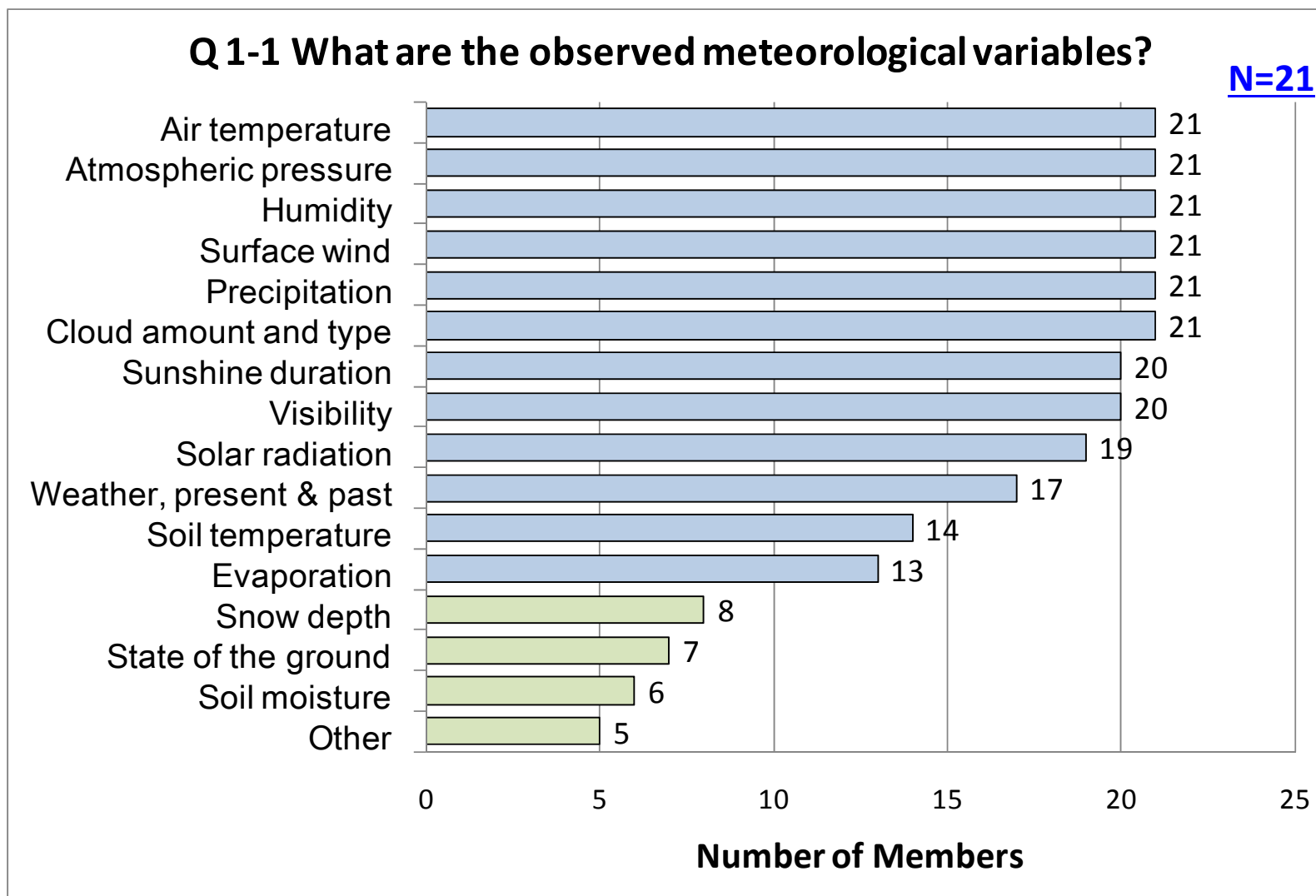
### SECTION 3: COMMENTS OR SUGGESTIONS TO THE PILOT PROJECT

**The number of the answers of the questionnaire is 22. (N=22)**



## RAII PP QM-OBS Survey Results (N=22)

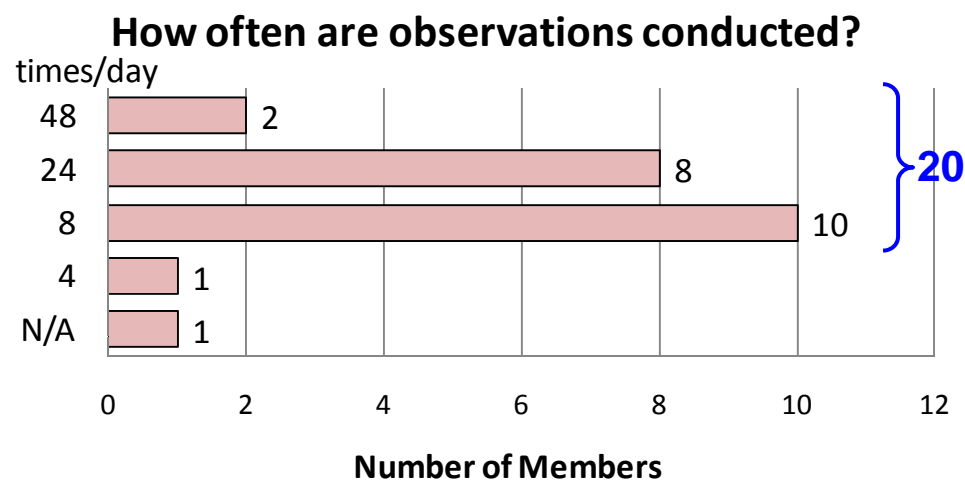
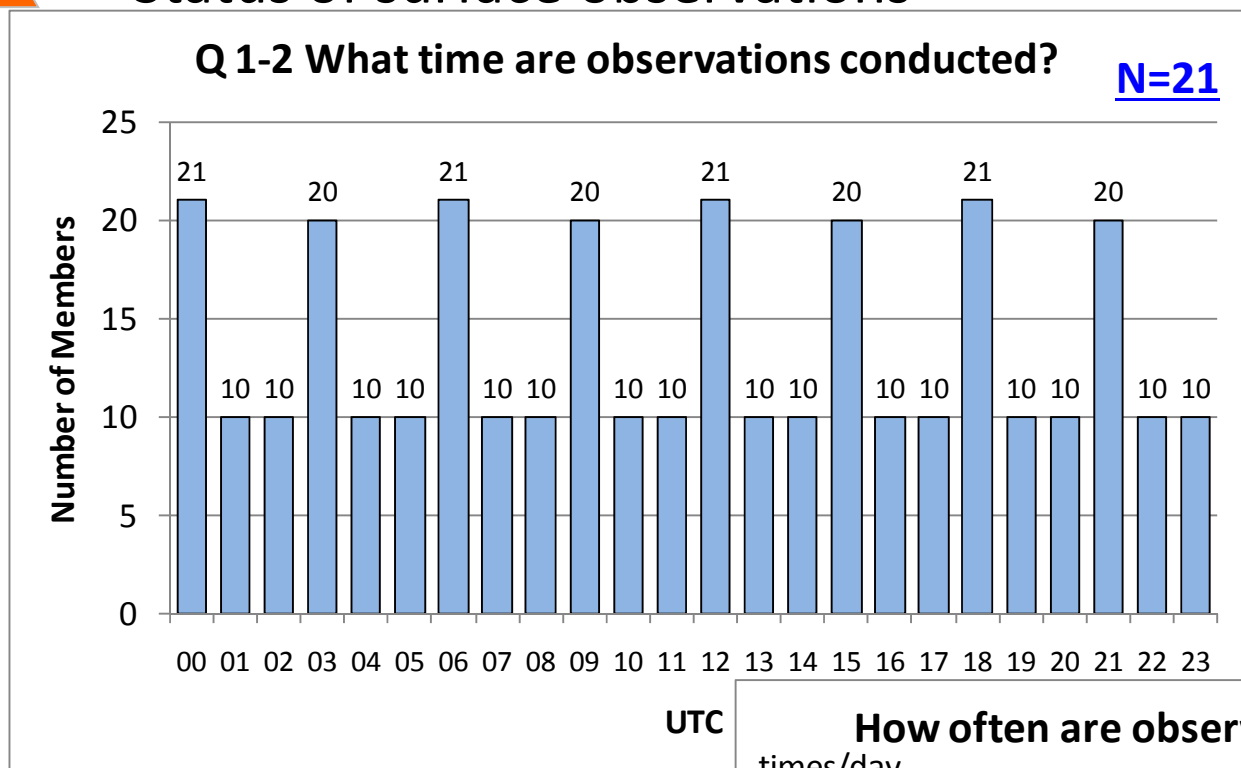
### Status of surface observations





# RAII PP QM-OBS Survey Results (N=22)

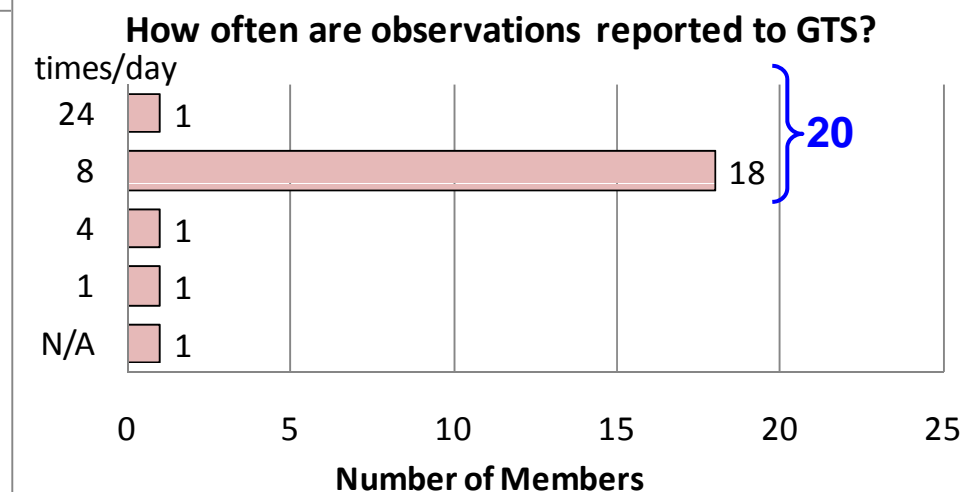
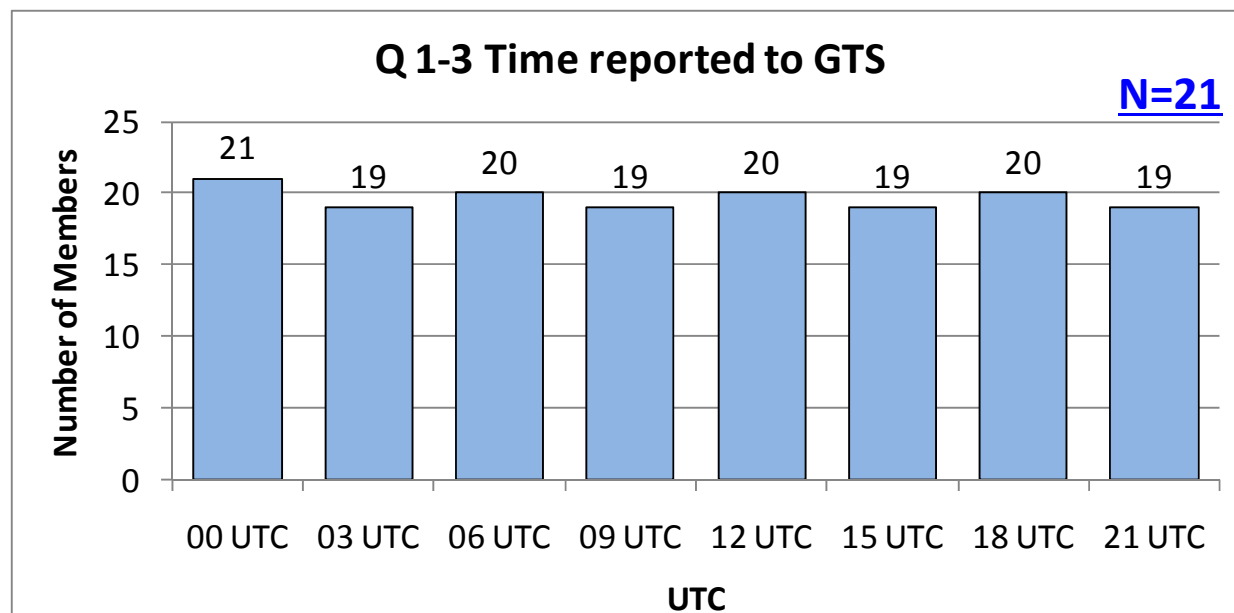
## Status of surface observations





## RAII PP QM-OBS Survey Results (N=22)

### Status of surface observations

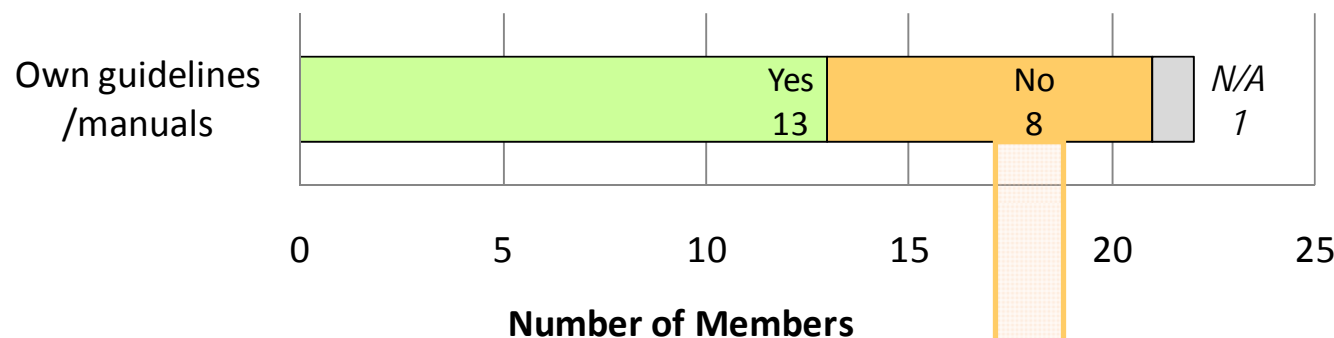




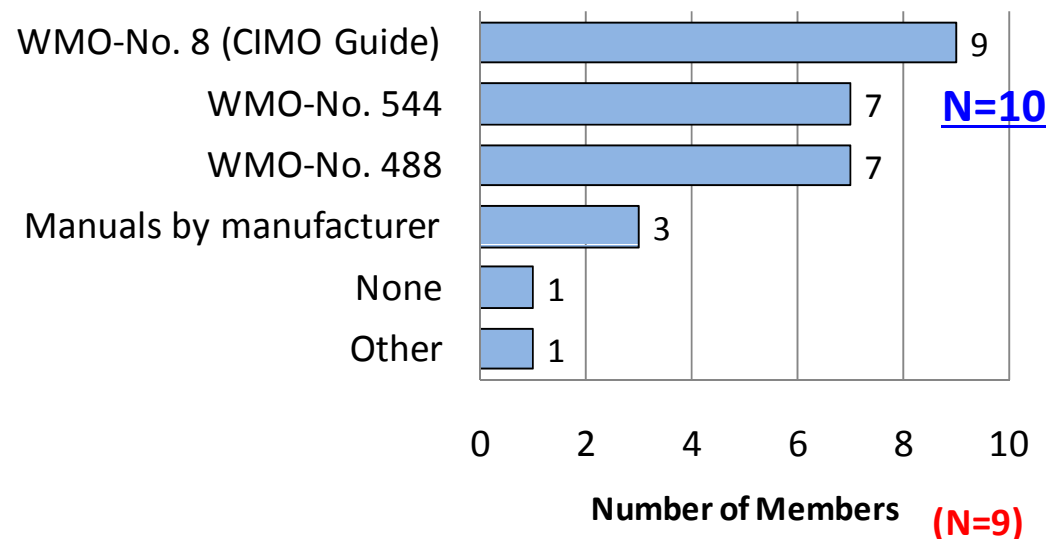
## RAII PP QM-OBS Survey Results (N=22)

### Status of surface observations

#### Q 1-4 Do you have your own guidelines/manuals?



#### Q1-4-1 other manuals used by NMHSs



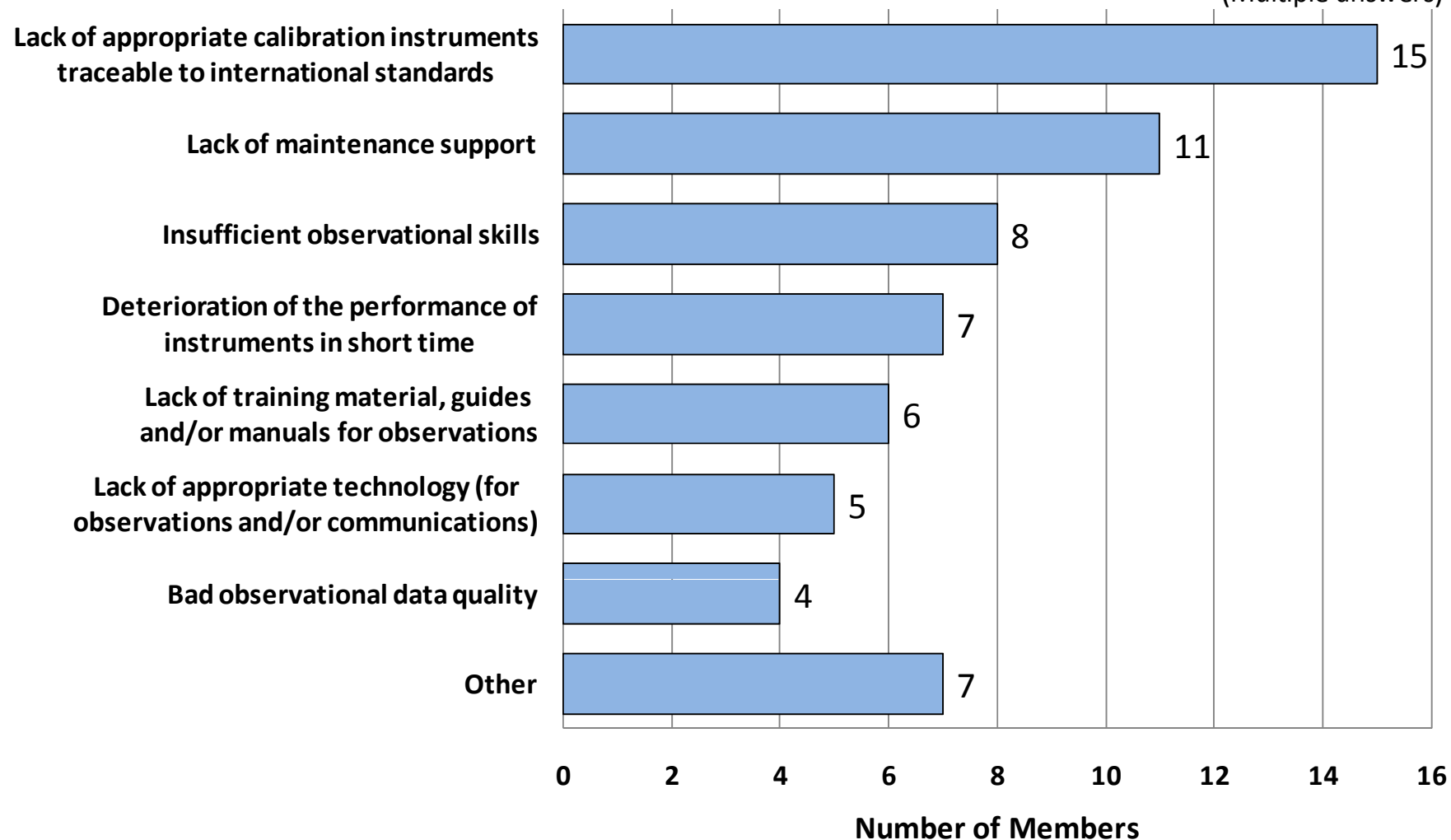


## RAII PP QM-OBS Survey Results (N=22)

### Status of surface observations

#### Q 1-5 problems in your NMHS to perform the required observations

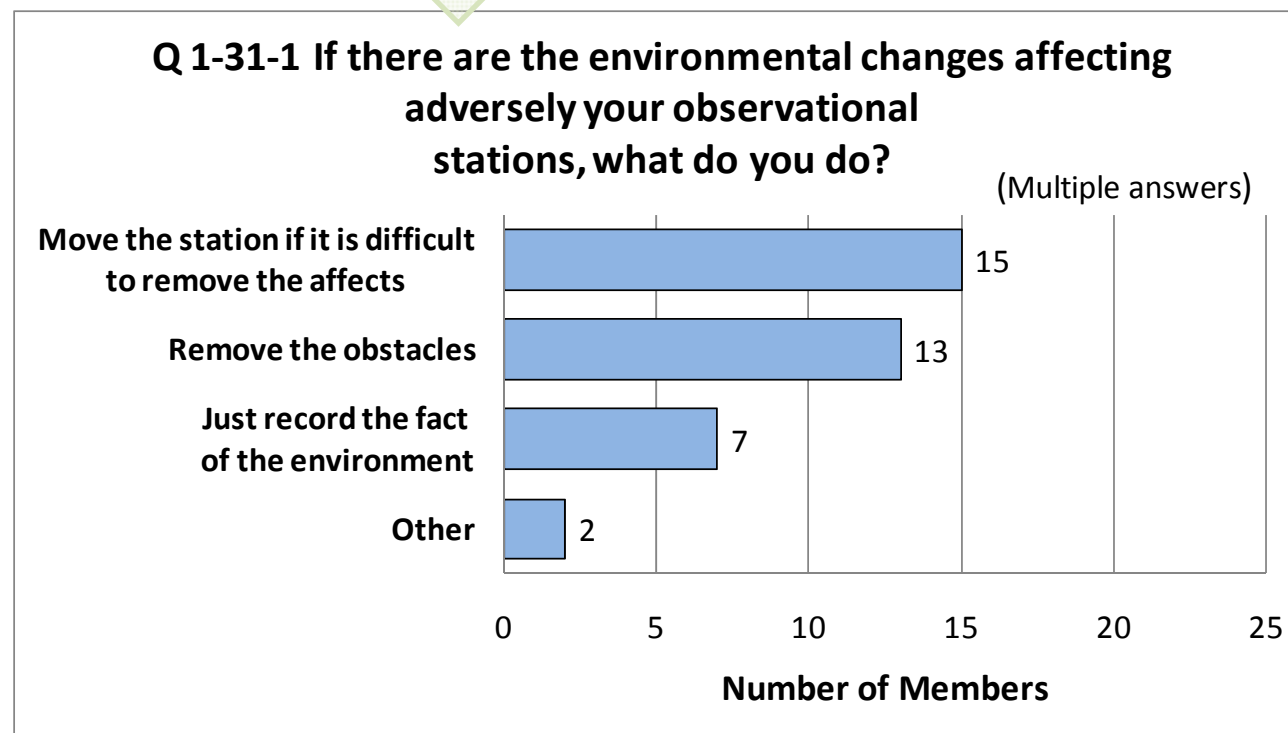
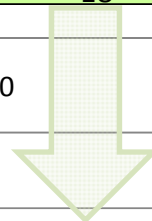
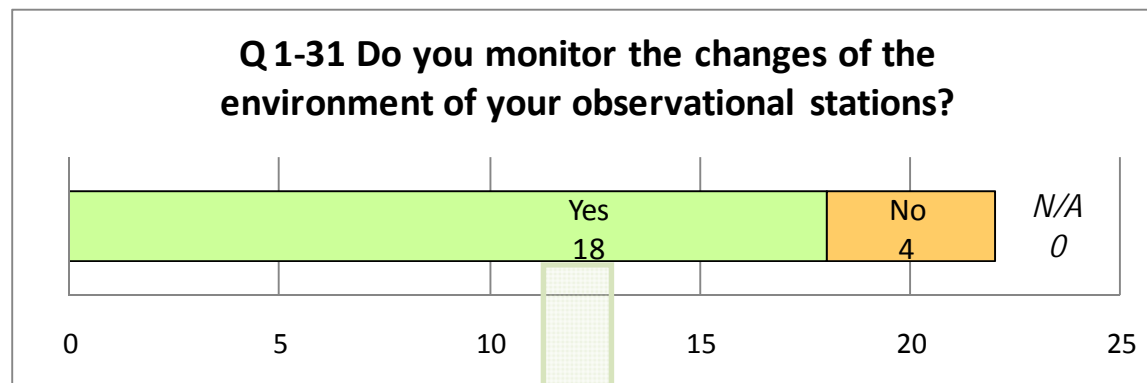
(Multiple answers)





## RAII PP QM-OBS Survey Results (N=22)

### Status of observational stations

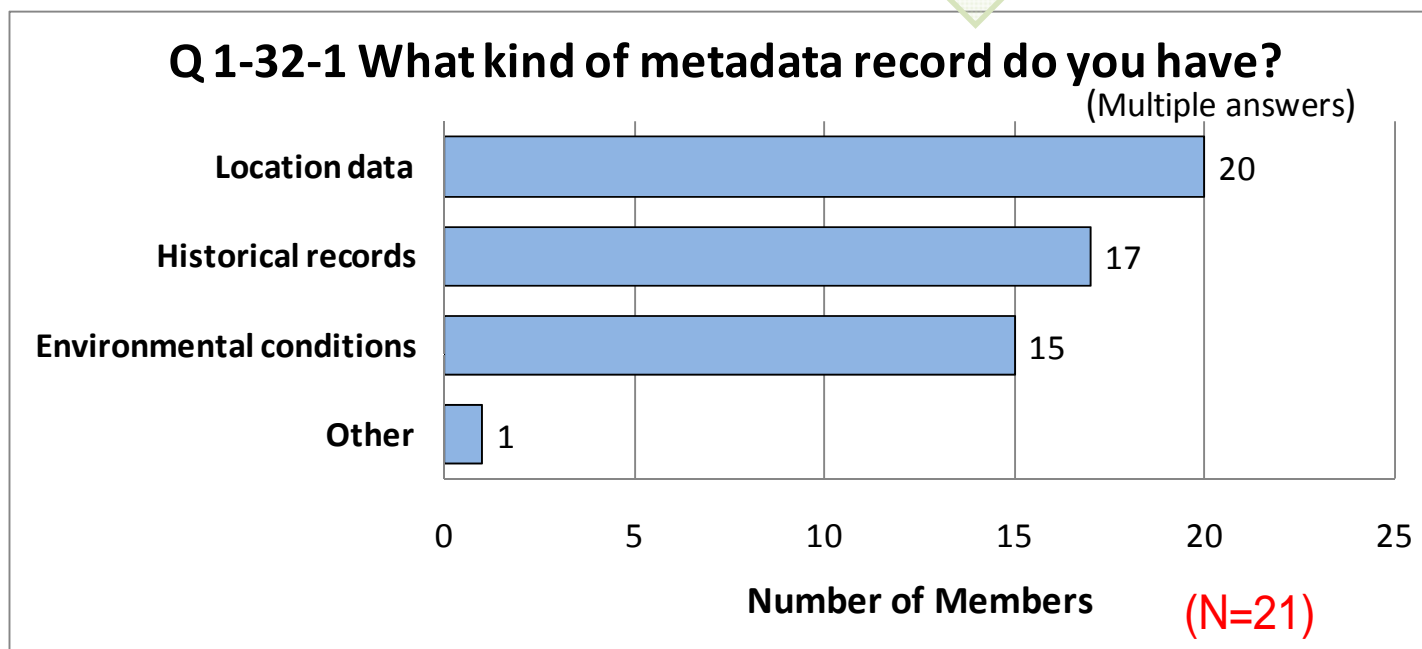
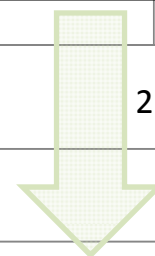
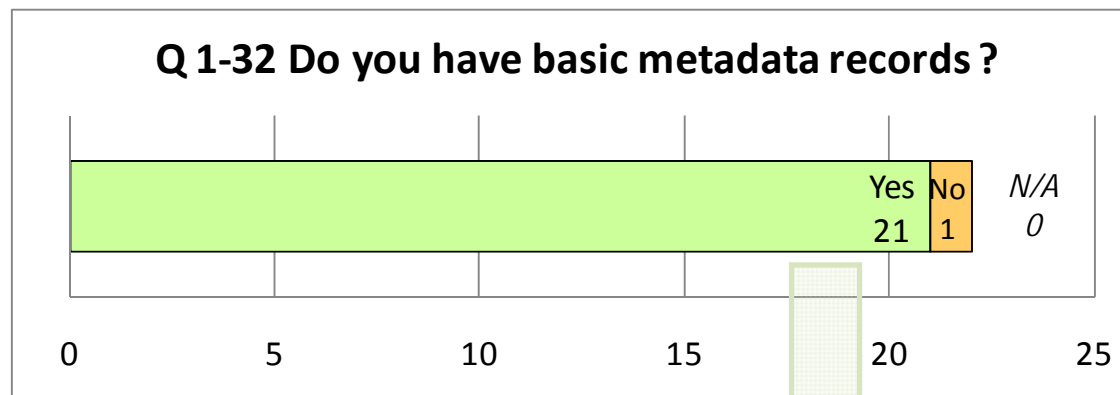






## RAII PP QM-OBS Survey Results (N=22)

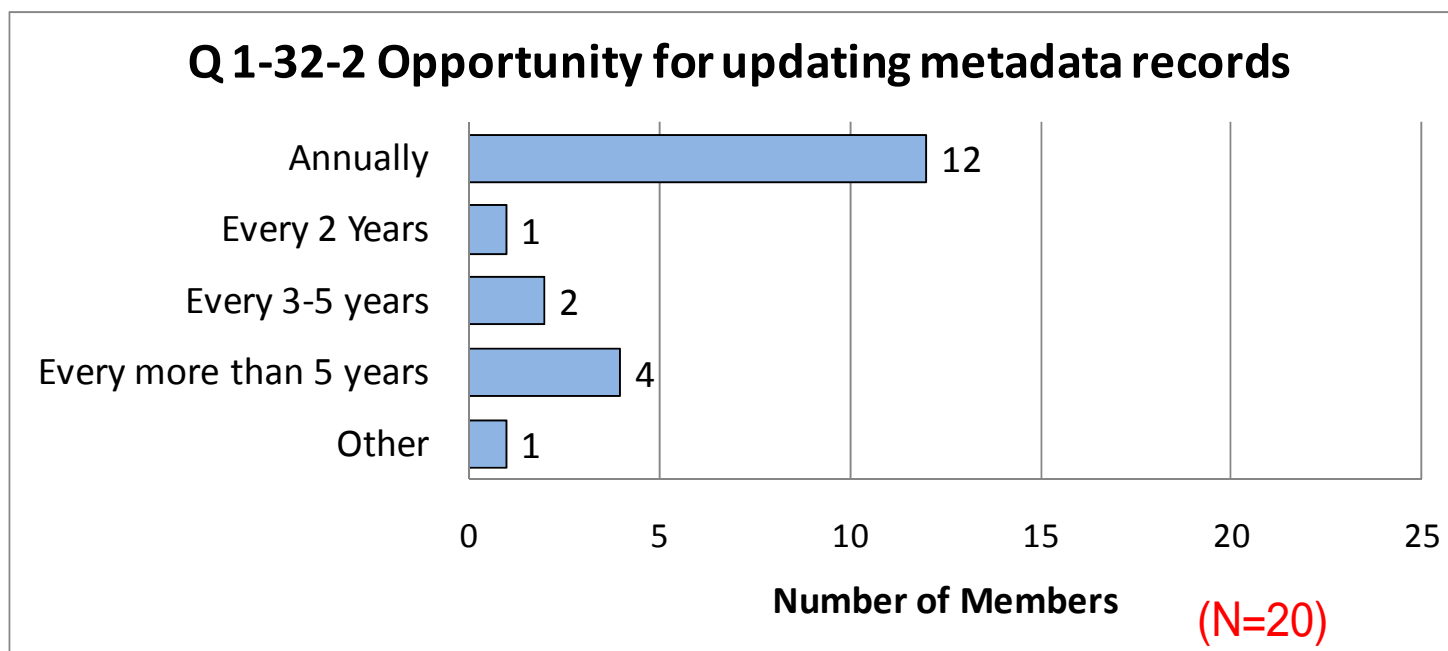
### Status of observational stations





## RAII PP QM-OBS Survey Results (N=22)

### Status of observational stations



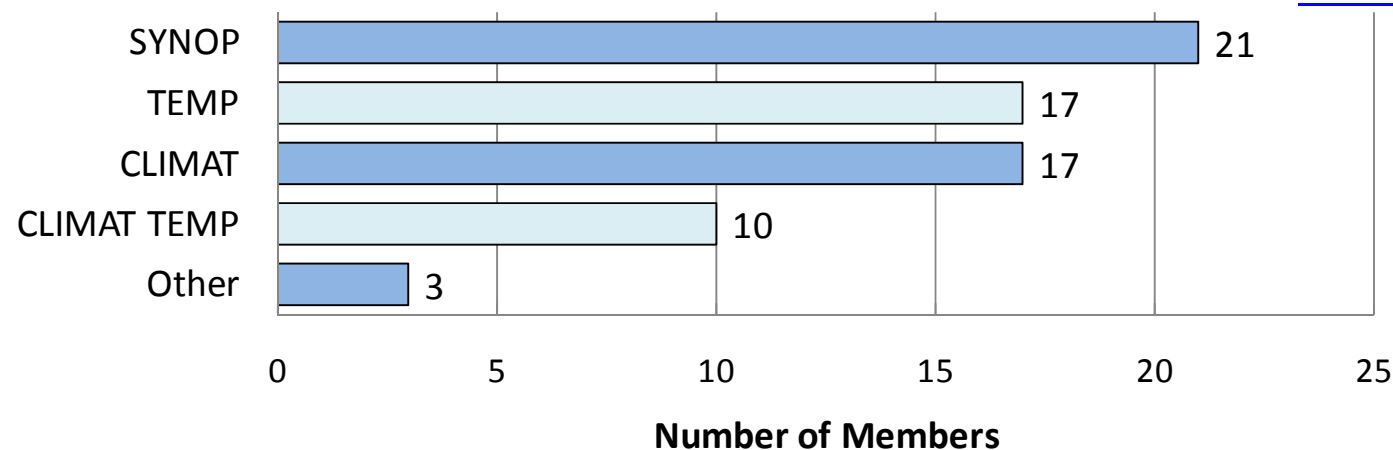


## RAII PP QM-OBS Survey Results (N=22)

### OBSERVATIONAL DATA

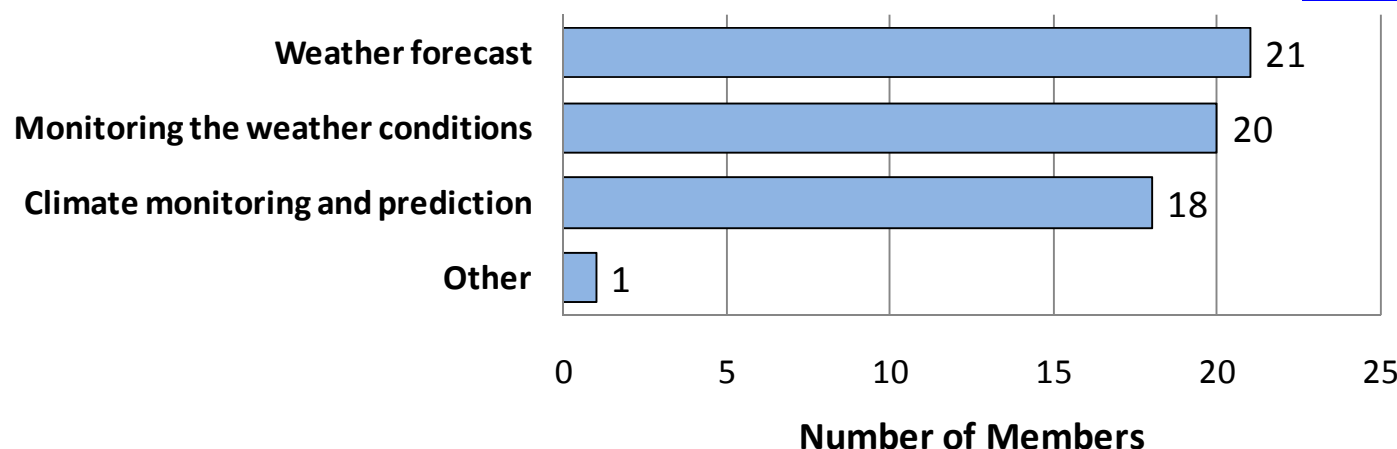
#### Q 2-1 What kind of observational reports do you use?

N=21



#### Q 2-2 What are the aims to use the reports?

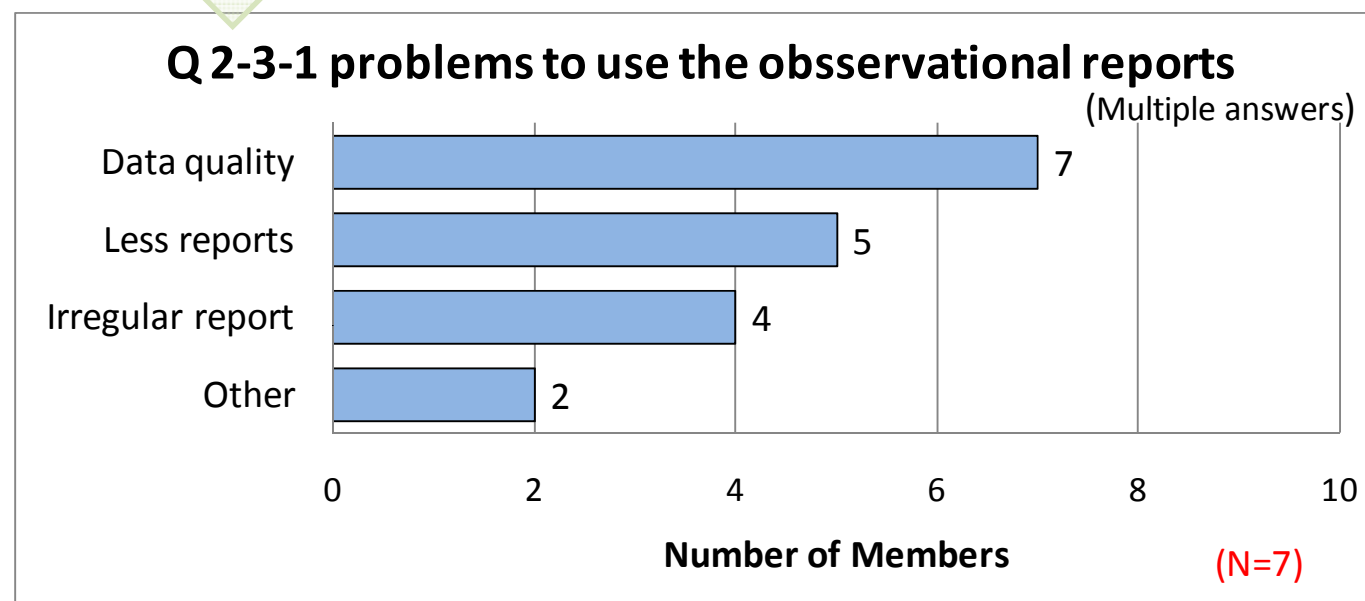
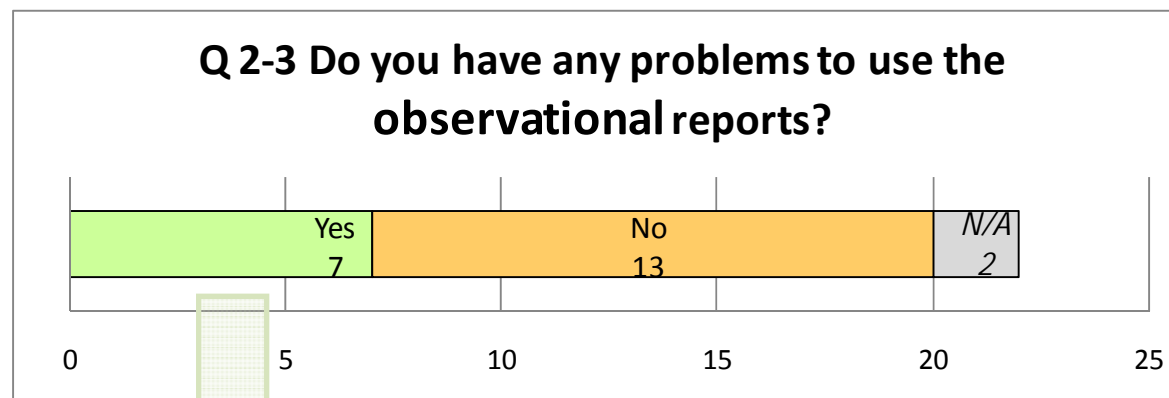
N=21





## RAII PP QM-OBS Survey Results (N=22)

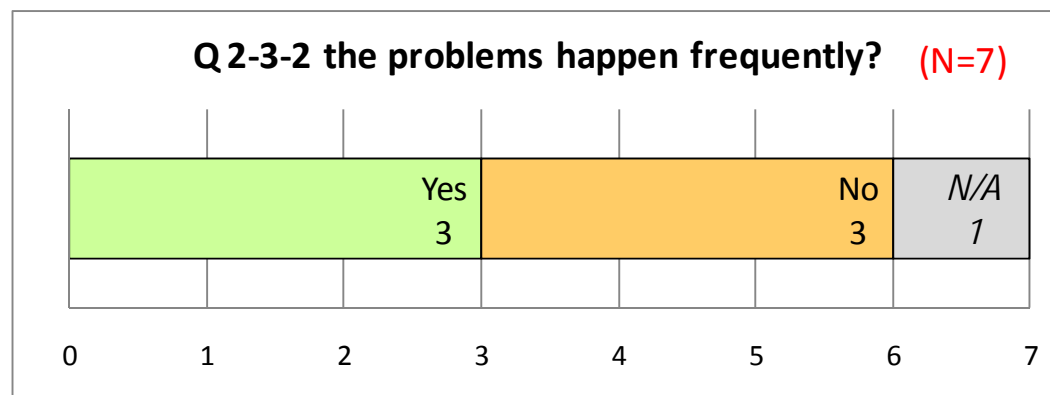
### OBSERVATIONAL DATA





## RAII PP QM-OBS Survey Results (N=22)

### OBSERVATIONAL DATA

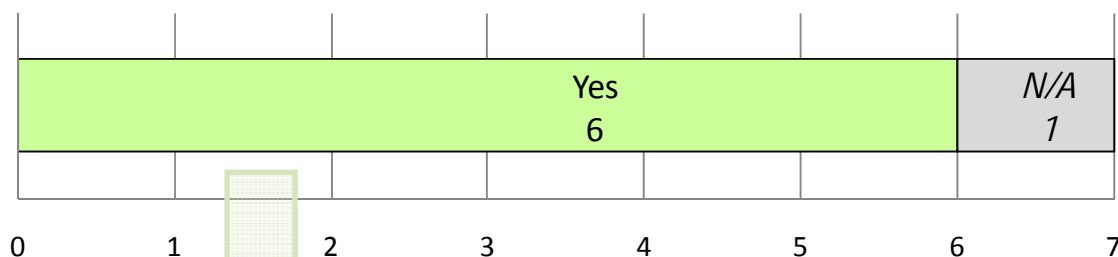




## RAII PP QM-OBS Survey Results (N=22)

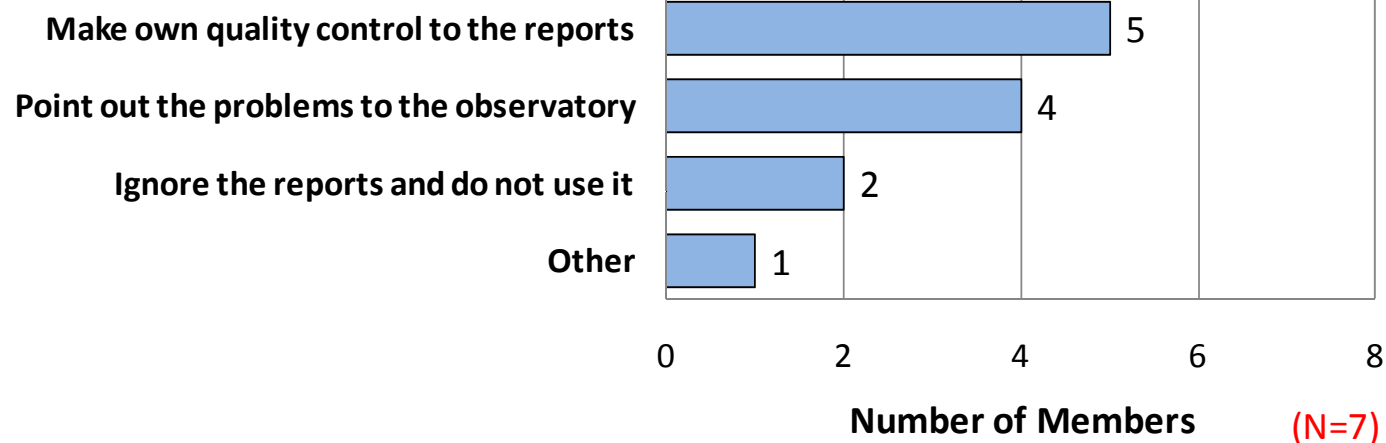
### OBSERVATIONAL DATA

#### Q 2-3-3 any efforts to solve the problems? (N=7)



#### Q 2-3-3-1 efforts to solve the problems

(Multiple answers)





## RAII PP QM-OBS Survey Results (N=22)

### SITING AND METADATA

Items	Current Status	Issues
<b>Surface Observations</b> <ul style="list-style-type: none"><li>➤ Variables</li><li>➤ Frequency of observations</li><li>➤ Frequency of reporting</li><li>➤ Guidelines / manuals</li></ul>	Good Good Good Good	<b>Problems to perform the required observations</b> <ul style="list-style-type: none"><li>•Lack of appropriate calibration instruments</li><li>•Lack of maintenance support</li></ul>
<b>Metadata</b> <ul style="list-style-type: none"><li>➤ Basic metadata records</li><li>➤ Updating metadata</li></ul>	Good Good	
<b>Observational Reports</b> <ul style="list-style-type: none"><li>➤ SYNOP</li><li>➤ CLIMAT</li></ul>	Good Good	<b>Problems to use observational reports</b> <ul style="list-style-type: none"><li>•Data quality</li><li>•Less reports</li><li>•Irregular report</li></ul>



RAII PP QM-OBS Survey Results (N=22)

OBSERVATIONAL DATA

**END OF REPORT OF SESSION 3**





# RAII PP QM-OBS Survey Results

## Outline of Questionnaire

### SECTION 1: SURFACE AND UPPER-AIR OBSERVERS

**Part I: Status of surface observations**

Session 3

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**Part VII: Training for observers**

**Part VIII: Training course**

Session 6

**Part IX: Status of observational stations**

Session 3

**Part X: Further improvement**

**Part XI: Data availability**

Session 5

### SECTION 2: OBSERVATIONAL DATA

Session 3

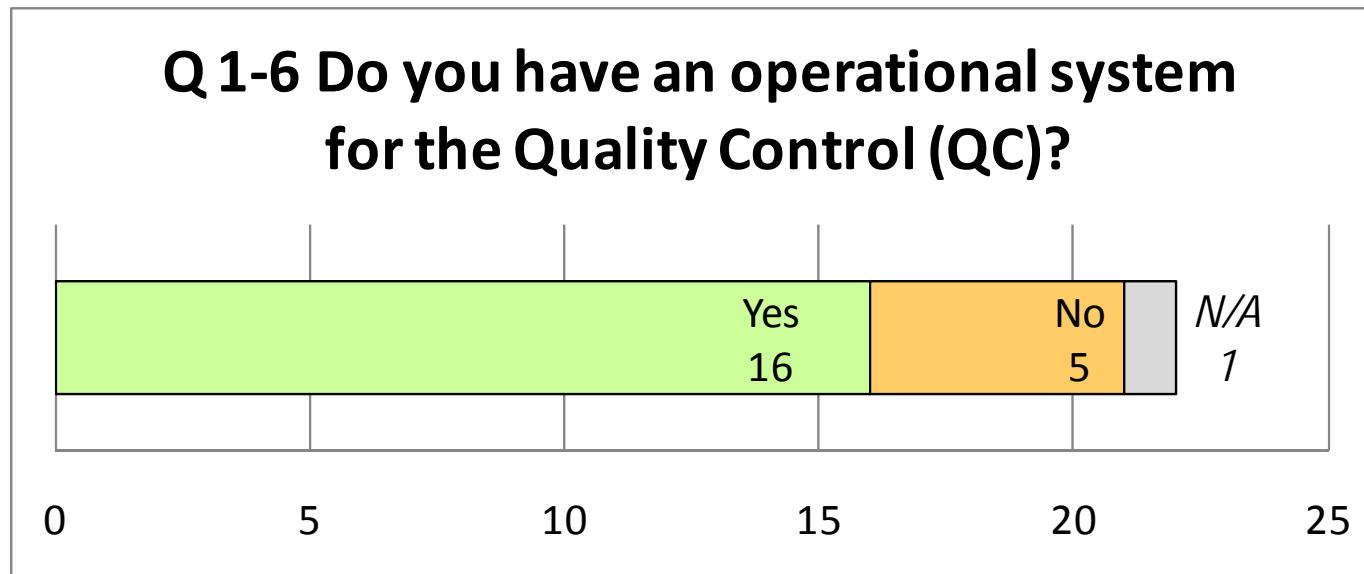
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**The number of the answers of the questionnaire is 22. (N=22)**



## RAII PP QM-OBS Survey Results (N=22)

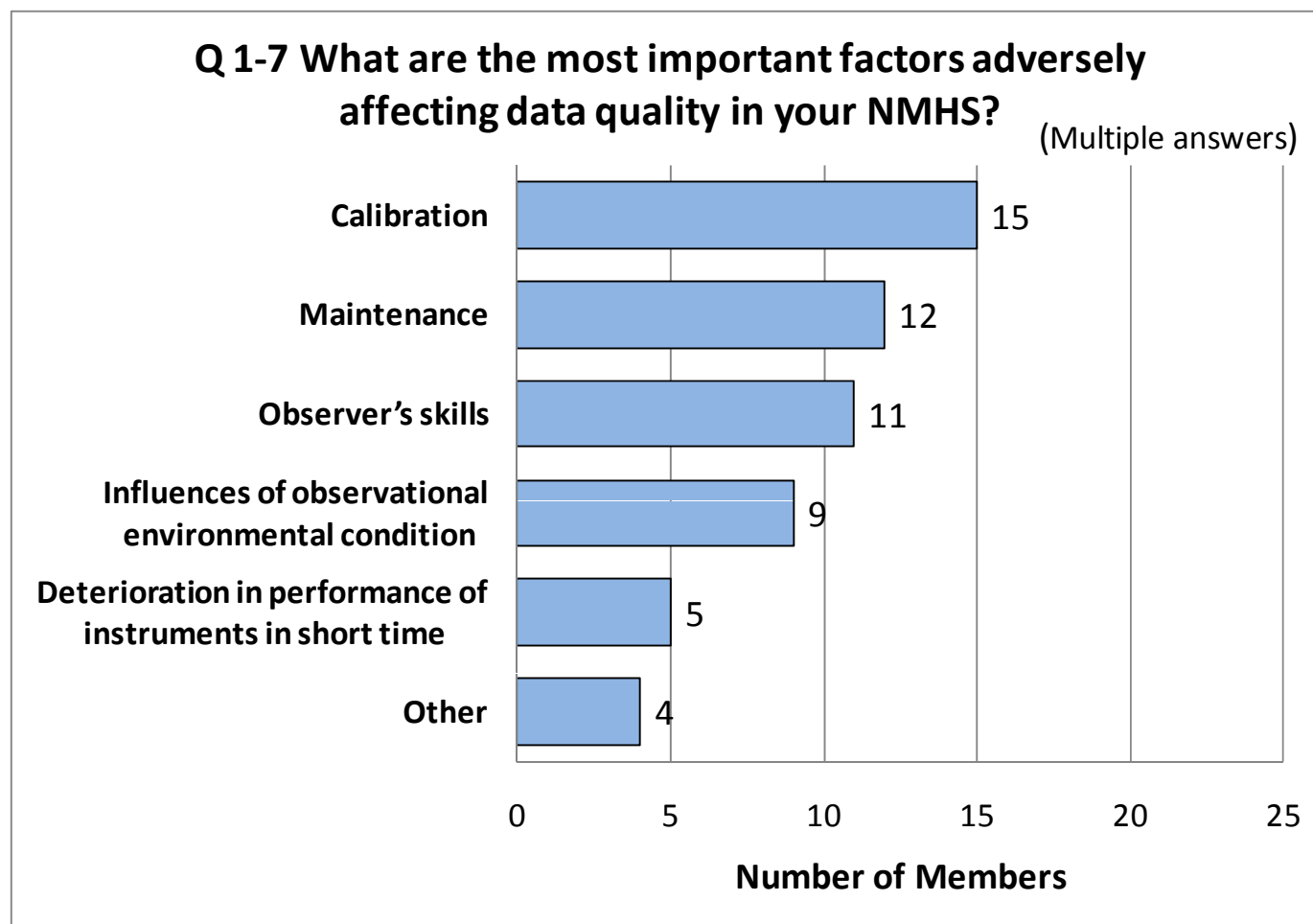
QC for surface observational data





## RAII PP QM-OBS Survey Results (N=22)

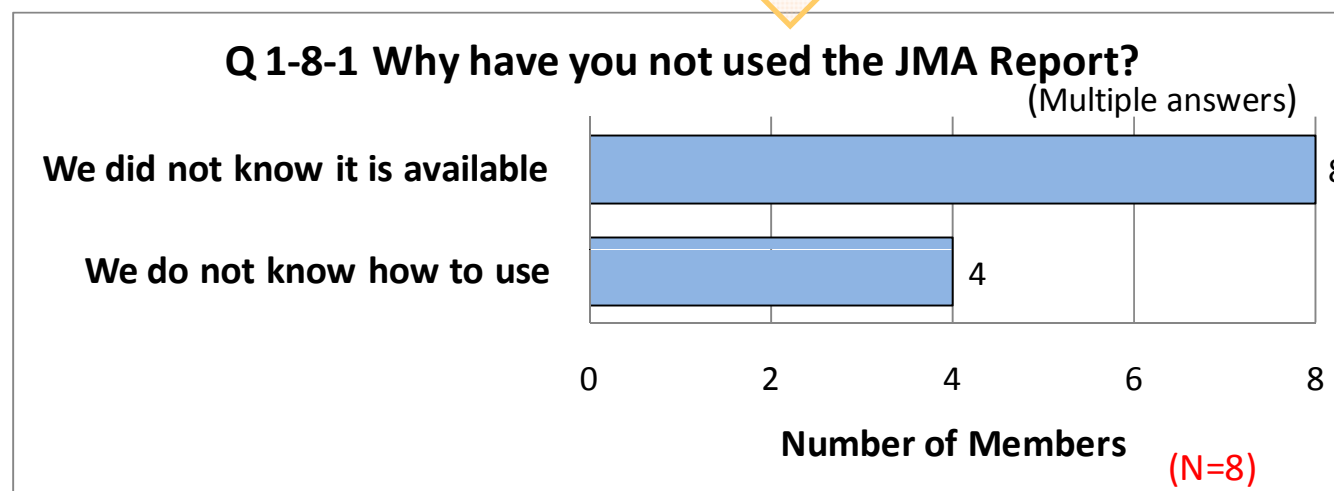
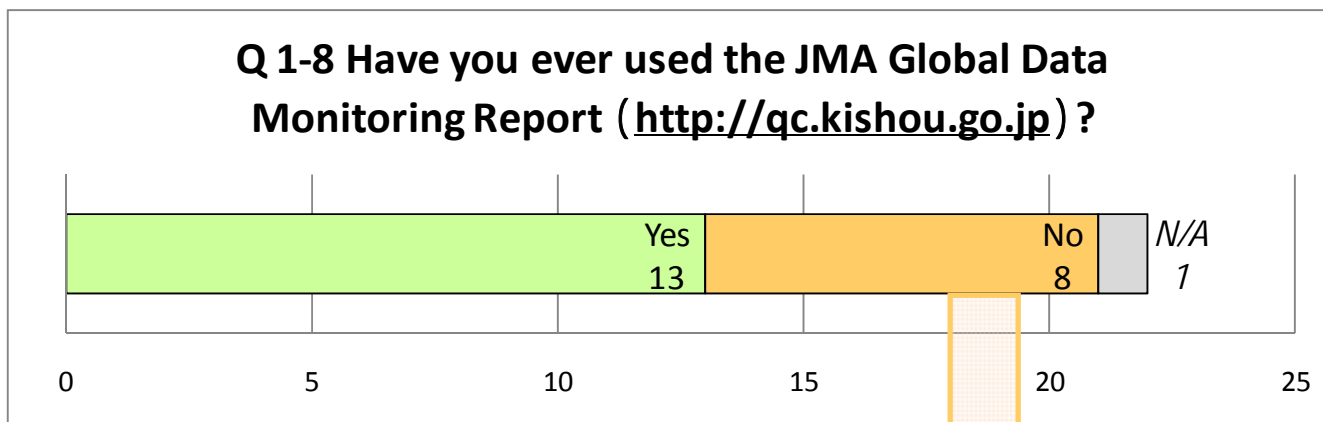
### QC for surface observational data





## RAII PP QM-OBS Survey Results (N=22)

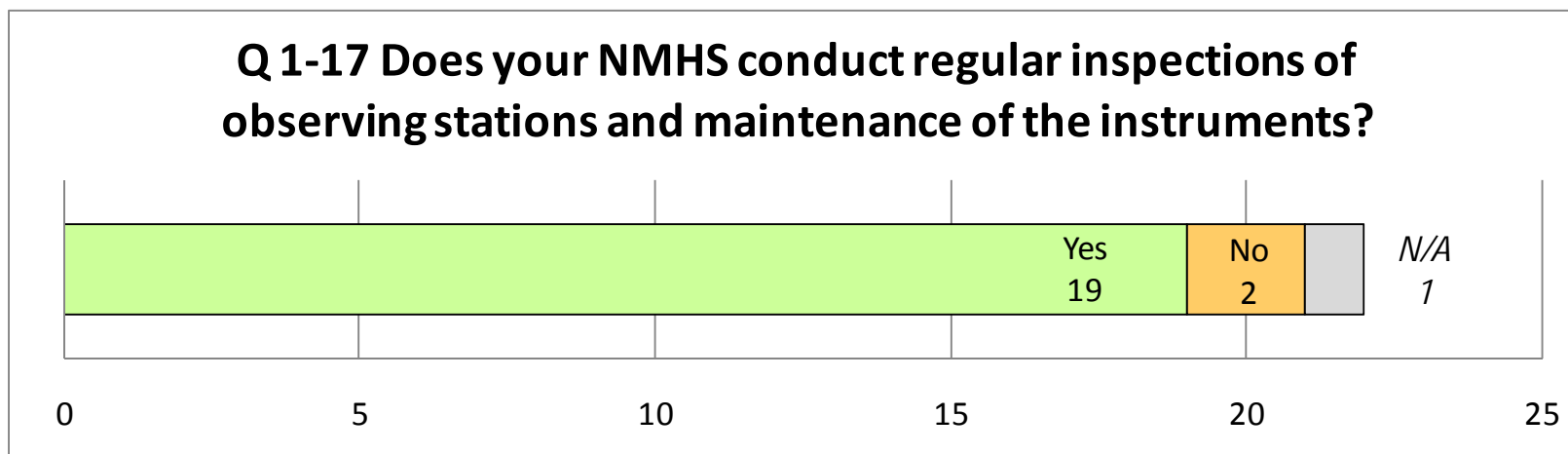
### QC for surface observational data





## RAII PP QM-OBS Survey Results (N=22)

### Maintenance and Calibration

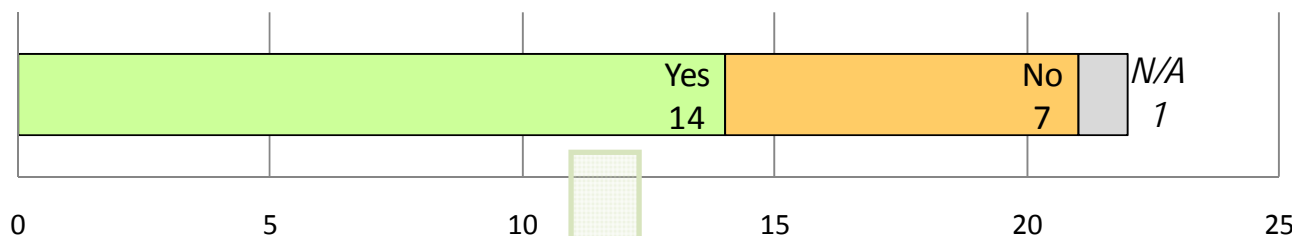




## RAII PP QM-OBS Survey Results (N=22)

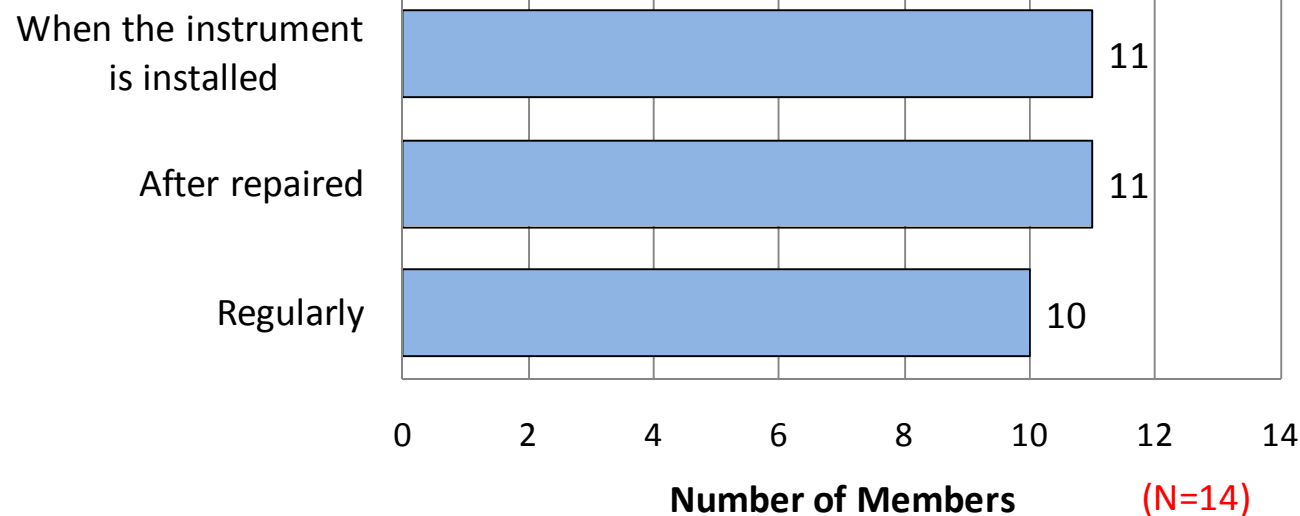
### Maintenance and Calibration

**Q 1-18 Does your NMHS calibrate the observational instruments at your calibration laboratory?**



**Q 1-18-1 When do you calibrate instruments?**

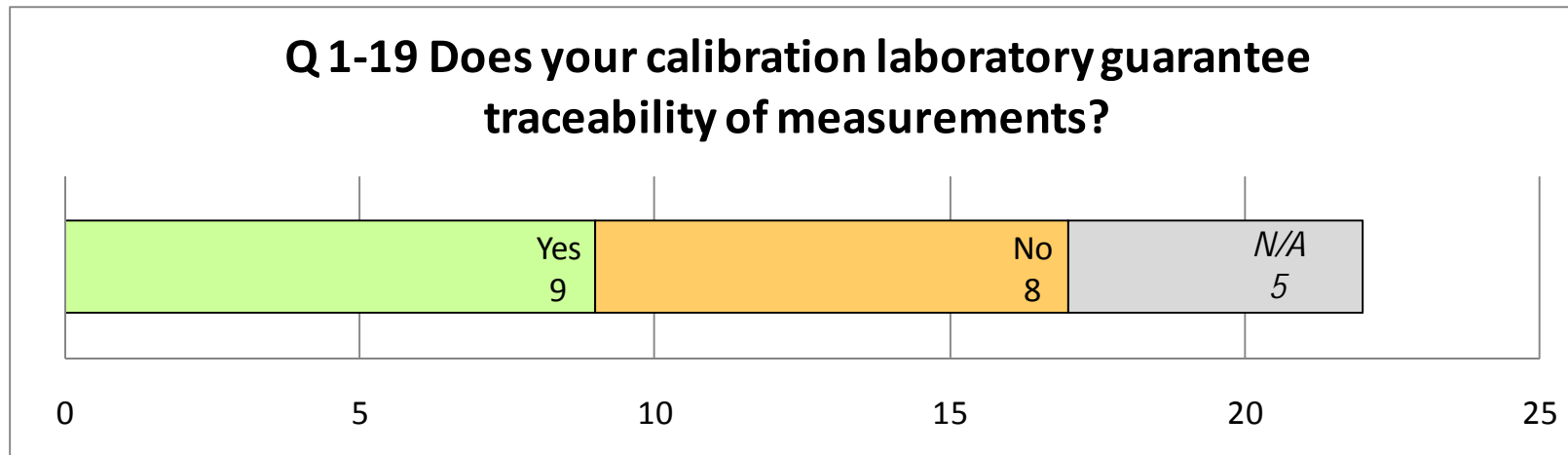
(Multiple answers)





## RAII PP QM-OBS Survey Results (N=22)

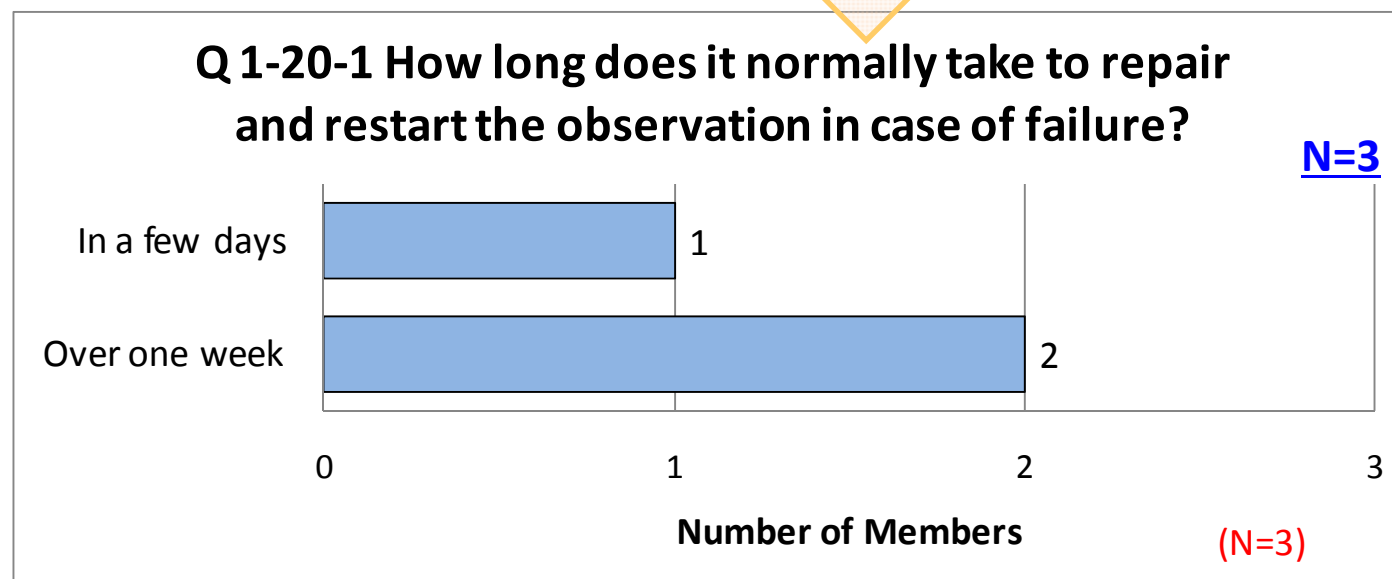
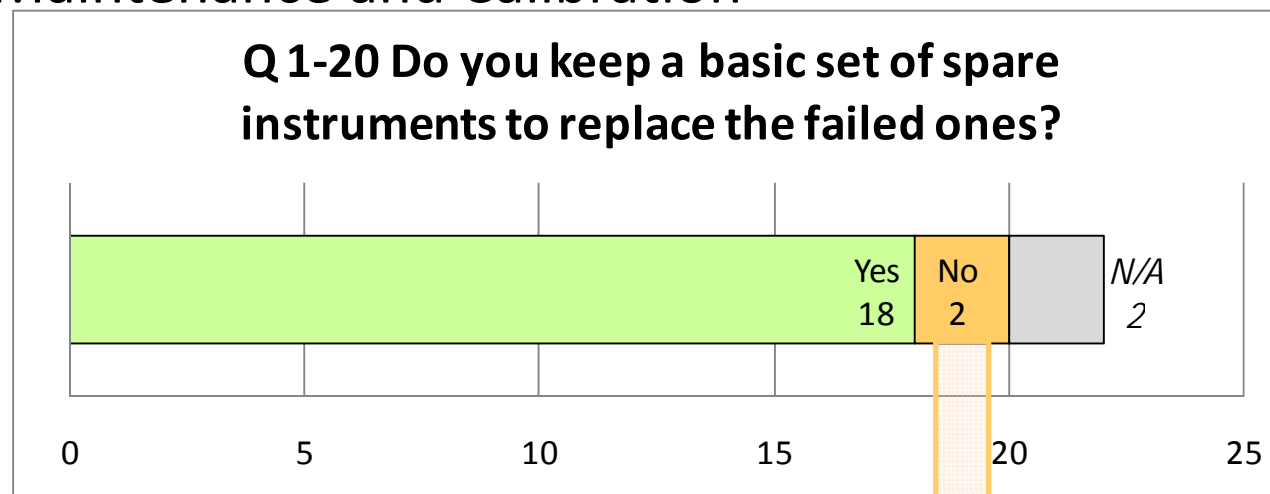
### Maintenance and Calibration





## RAII PP QM-OBS Survey Results (N=22)

### Maintenance and Calibration





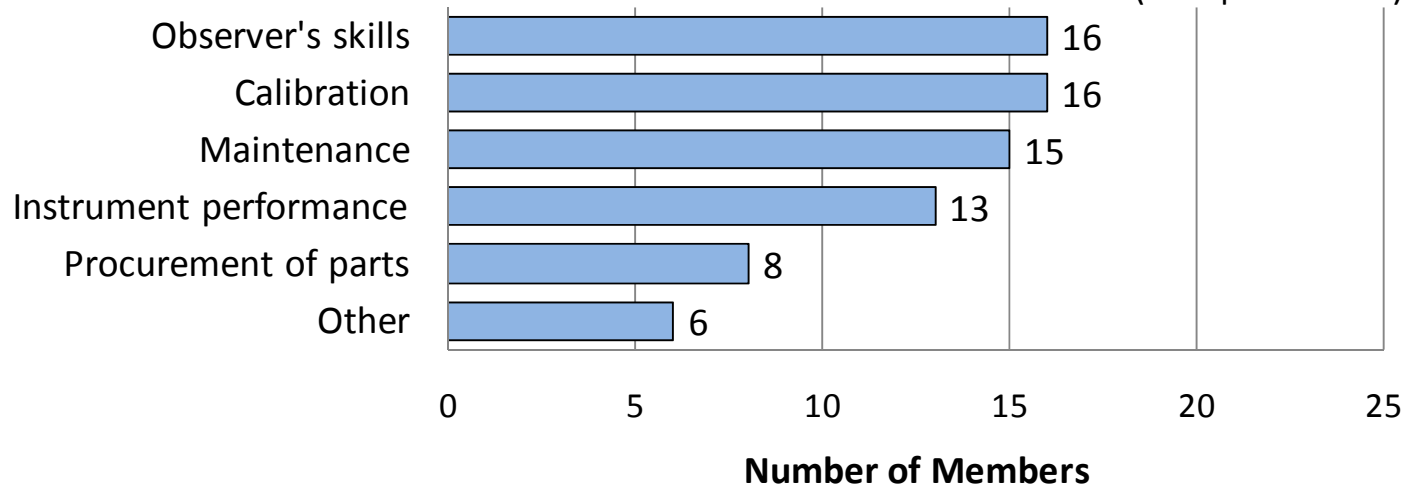


## RAII PP QM-OBS Survey Results (N=22)

### Further Improvement

#### Q 1-33 What are the challenges to improve further the quality of observational data in your NMHS?

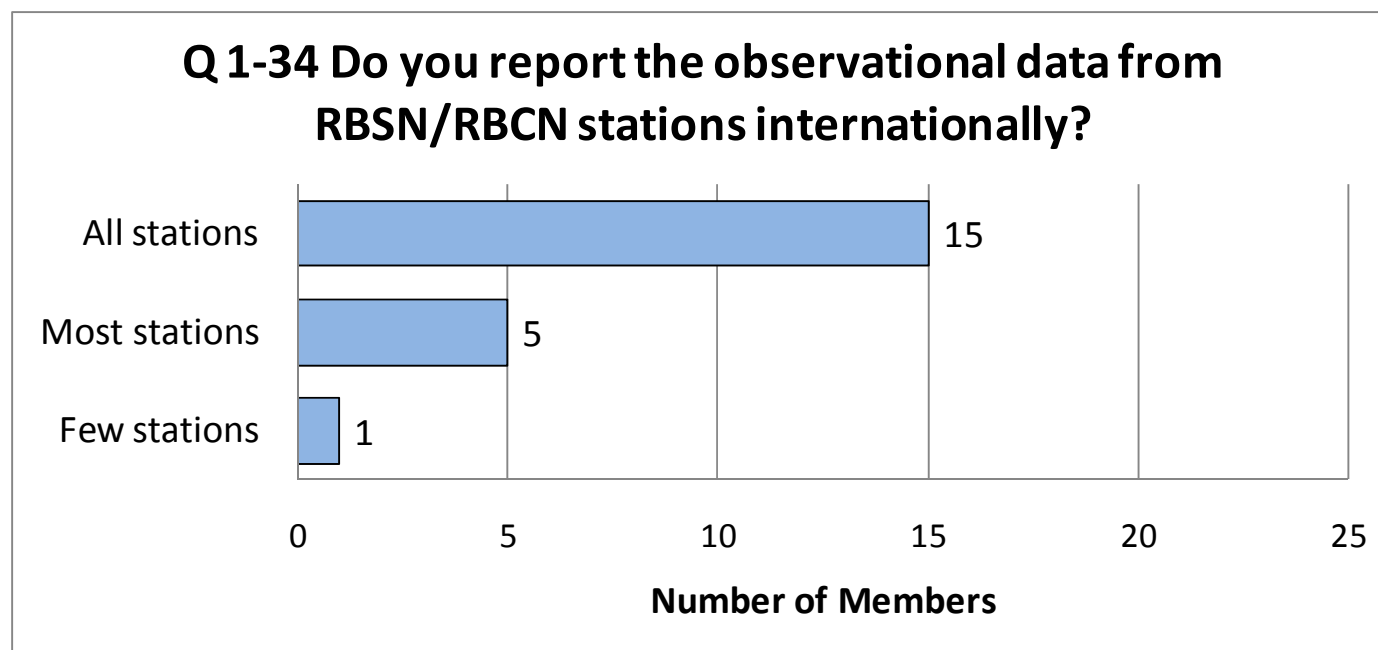
(Multiple answers)





## RAII PP QM-OBS Survey Results (N=22)

### Data availability





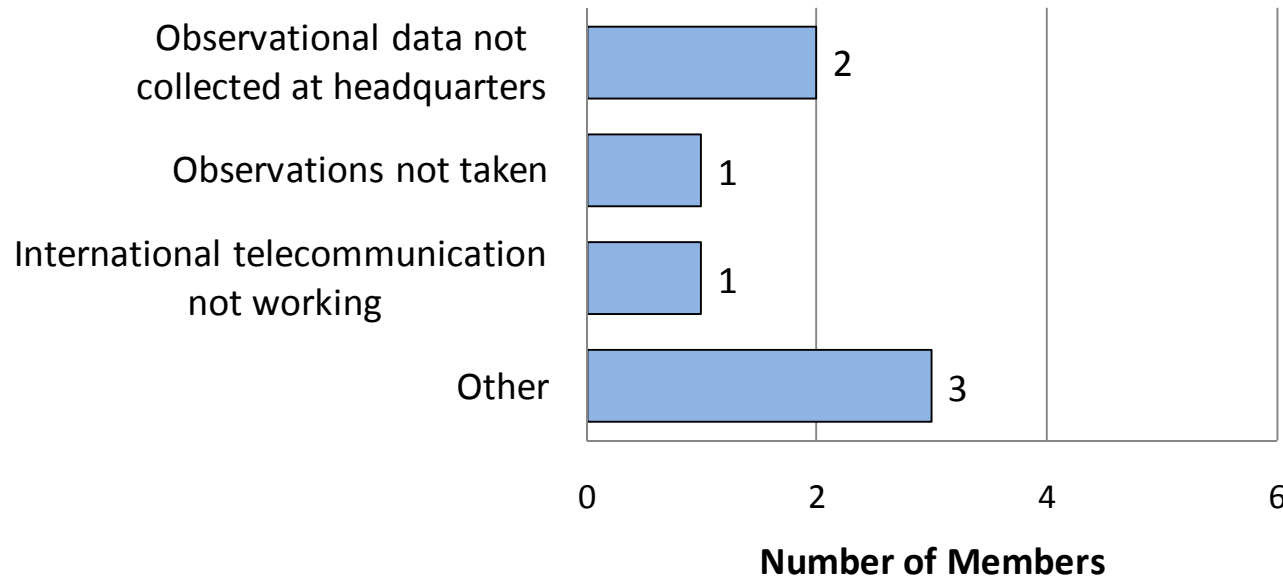
## RAII PP QM-OBS Survey Results (N=22)

### Data availability

#### Q 1-35 Why do not you report from all RBSN/RBCN stations ?

**N=5**

(Multiple answers)



Other reasons:

Ex 1). Only few meteorological variables are taken

Ex 2). Deterioration in performance of observational instruments



## RAII PP QM-OBS Survey Results (N=22)

### Quality Assurance / Quality Control

Items	Current Status	Issues
<p>Quality control of surface observational data</p> <ul style="list-style-type: none"><li>➤ QC at observing station</li><li>➤ QC in the data processing / dissemination centre</li><li>➤ Important factors affecting data quality</li><li>➤ JMA Global Data Monitoring Report</li></ul>		<ul style="list-style-type: none"><li>➤ Improvement of QC methods applied at different levels</li><li>➤ Important factors affecting data quality<ul style="list-style-type: none"><li>• Maintenance and calibration</li><li>• Observer's skills</li><li>• Observational environmental condition</li></ul></li></ul>
<p>Maintenance and calibration</p> <ul style="list-style-type: none"><li>➤ Regular inspections and maintenance</li><li>➤ Calibration, Calibration laboratory and International traceability</li></ul>	Good	<ul style="list-style-type: none"><li>➤ Traceability of measurements to international standards</li></ul>



## RAII PP QM-OBS Survey Results (N=22)

### Quality Assurance / Quality Control Cont.

Items	Current Status	Issues
Maintenance and calibration ➤ spare instruments		•Insufficient supply of spare instruments (two or more members)
Further Improvement ➤ challenges to improve the quality of observational data		•Observer's skills •Maintenance and calibration •Instrument performance
Data availability		One or more members have following issues. •Observations not taken •Observational data not collected •International telecommunication not working



## RAII PP QM-OBS Survey Results (N=22)

**END OF REPORT OF SESSION 5**



# RAII PP QM-OBS Survey Results

## Outline of Questionnaire

### SECTION 1: SURFACE AND UPPER-AIR OBSERVERS

**Part I: Status of surface observations**

Session 3

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Session 6

**Part IX: Status of observational stations**

Session 3

**Part X: Further improvement**

**Part XI: Data availability**

Session 5

### SECTION 2: OBSERVATIONAL DATA

Session 3

### SECTION 3: COMMENTS OR SUGGESTIONS TO THE PILOT PROJECT

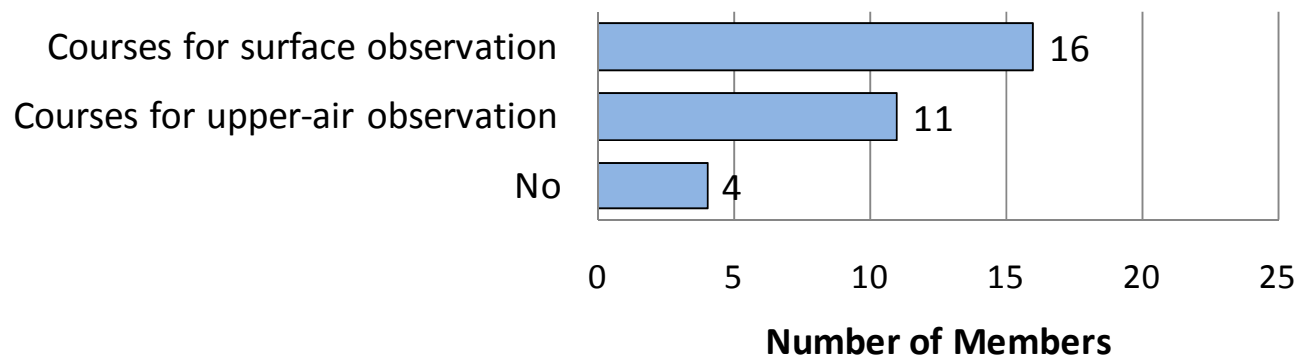
The number of the answers of the questionnaire is 22. (N=22)



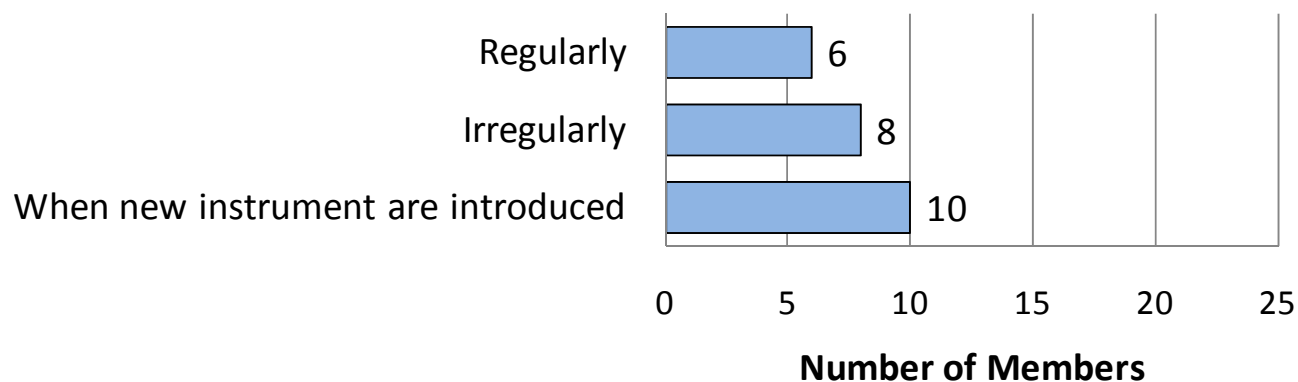
## RAII PP QM-OBS Survey Results (N=22)

### Training for observers

#### Q 1-26 any training courses for observers and maintenance personnel? (Multiple answers)



#### Q 1-26-1 How often does your NMHS conduct the training? (Multiple answers)

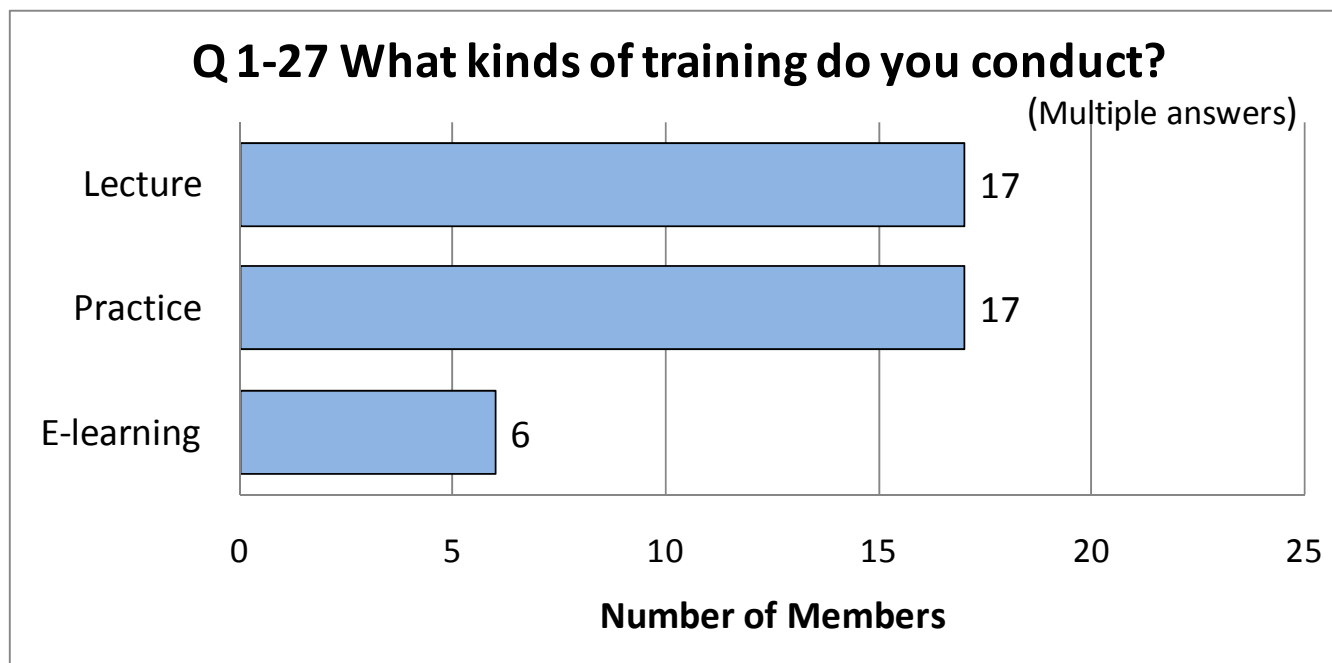






## RAII PP QM-OBS Survey Results (N=22)

### Training for observers

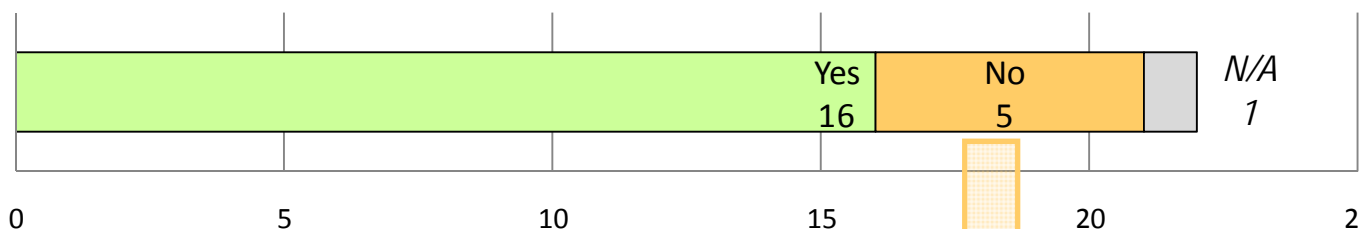




## RAII PP QM-OBS Survey Results (N=22)

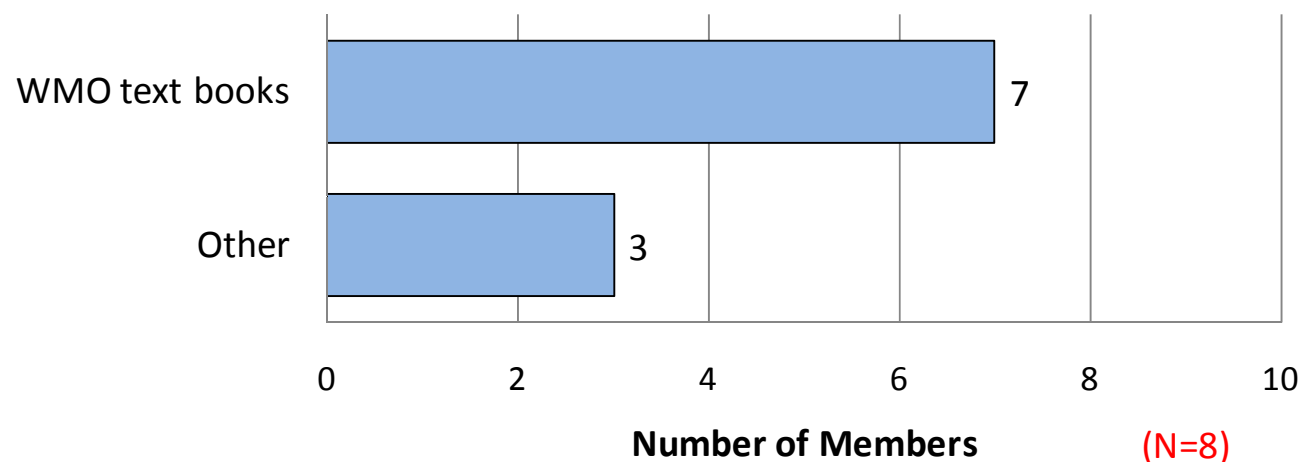
### Training for observers

#### Q 1-28 Do you prepare your own training text books?



#### Q 1-28 (supplementary) If your answer is "No", Which text book do you use?

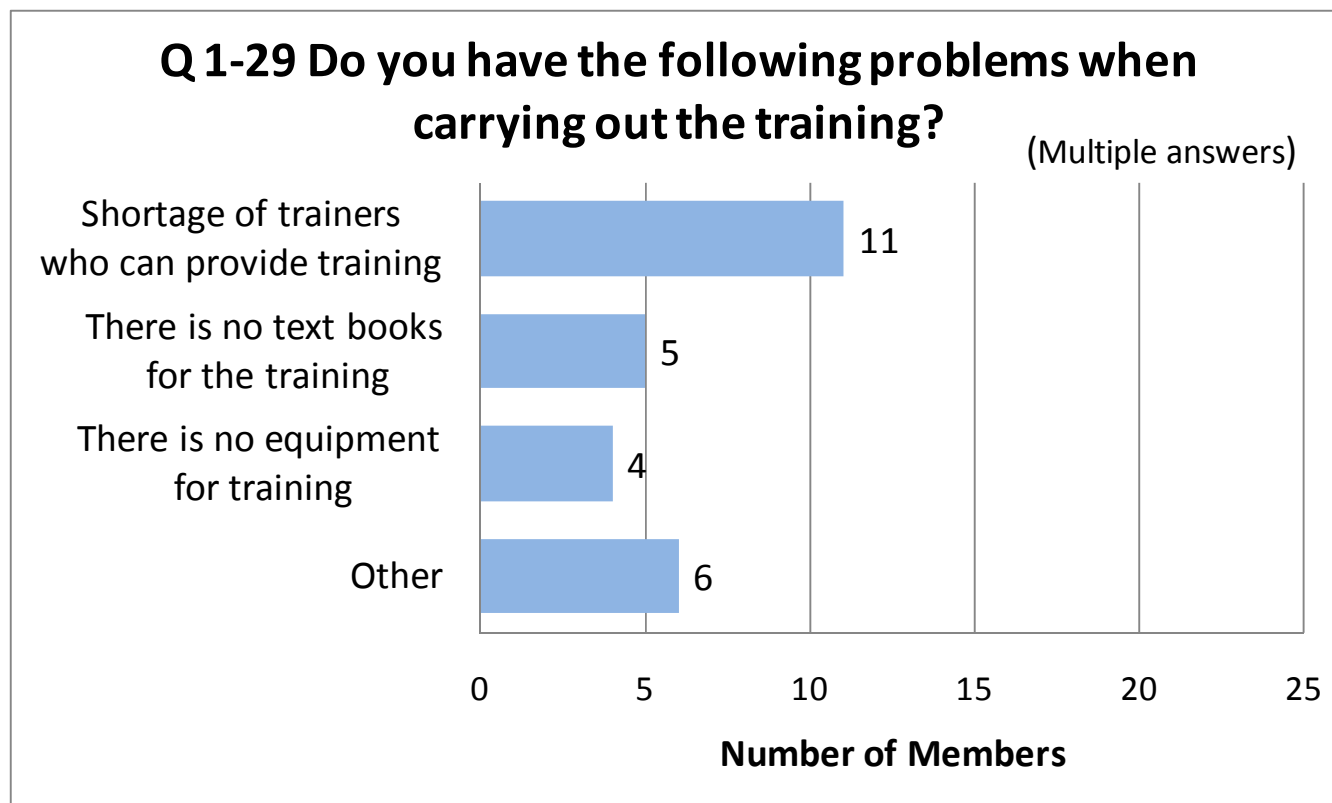
(Multiple answers)





## RAII PP QM-OBS Survey Results (N=22)

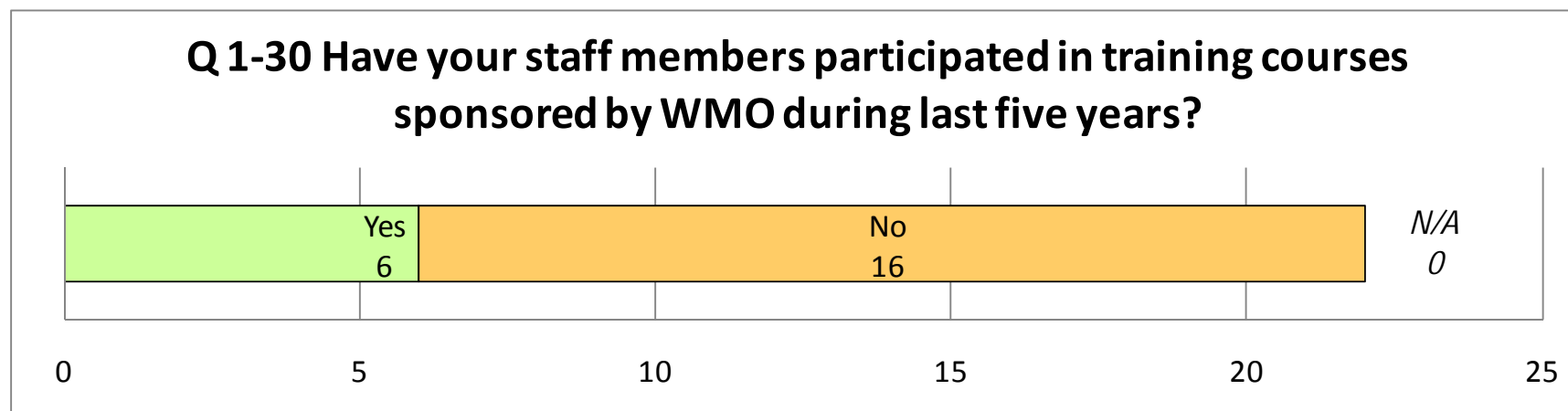
### Training for observers





## RAII PP QM-OBS Survey Results (N=22)

Training course sponsored by WMO

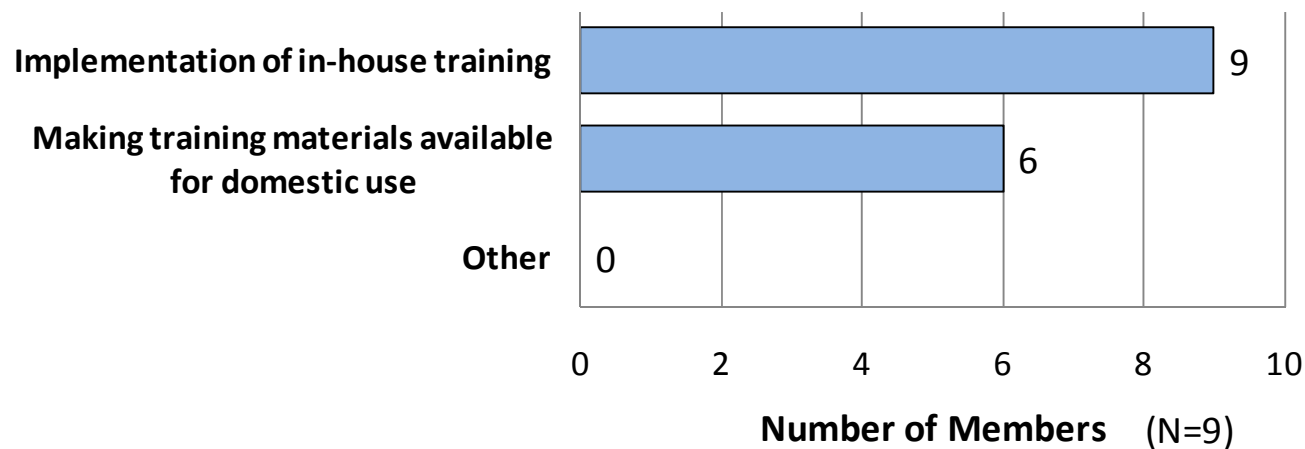




## RAII PP QM-OBS Survey Results (N=22)

Training course sponsored by WMO

### Q 1-30-2-1 How do they share training results with other staff members? (Multiple answers)





## RAII PP QM-OBS Survey Results (N=22)

### TRAINING

Items	Current Status	Issues
<b>Training for observers</b> ➤ What kinds of training do you do? ➤ Training textbook		➤ Development of training materials
<b>Training course</b> ➤ Participation in training courses on the meteorological instruments sponsored by WMO		➤ Six members have participated in training courses on the meteorological instruments sponsored by WMO during last five years.



## RAII PP QM-OBS Survey Results (N=22)

**END OF REPORT OF SESSION 6**



## RAII PP QM-OBS Survey Results (N=22)

