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# Introduction to Climatology Review

November 2016

Institute for Meteorological Training and Research (IMTR)


INSTITUTE FOR METEOROLOGICAL TRAINING AND RESEARCH
WMO REGIONAL TRAINING CENTRE
(IMTR/WMO-RTC), NAIROBI

# ITC November

- 31st October – 18th November 2016
- Brand new blended course for climatology
- Combined BIPM Aims with WMO competencies for climate services
- 4 Months Development
- 10 blended plans
- 40 + lesson plans
- 2 e-learning modules
- 11 Trainers from MOC, IMTR, UoN, CCD, ICPAC, KMD & WMO
- 19 Delegates from 8 countries

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# The Big Idea

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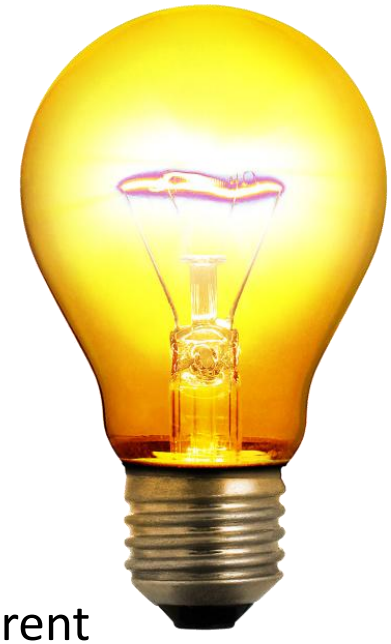

## The 3 L's

**Learners**

Adapt the training to reflect characteristics of different learners.

**Learning**

Immediate outcome of intervention, knowledge and information.

**Logistics**

The practical constraints in which all learning design takes place.

# The Blended Approach

What is in a successful blend?

"A blended training solution differs from a conventional intervention in that it contains highly contrasting methods and media."

*Clive Shepherd, More Than Blended Learning, 2015.*

# DFID WISER

UKaid from the British people

## MOC/IMTR Background.

**Phase 1**
- Content review and scoping

**Phase 2**
- Development (main phase)

**Phase 3**
- Delivery of a 'Pilot module' (3 week Introduction to Climatology Course, BIP-M Learning Objectives)

**Phase 4**
- Review and feedback

# The Trial Course

- Trial blended learning for East Africa
- Introduce climatology training  for forecasters
- Implement the BIP-M curriculum
- Apply climate services
- Collaboratively develop and deliver a 3 week course
- Integrate e-learning into learning

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# The Learning

# Course Aims & Objectives

Aim: To provide forecasters with CPD course in climatology to improve knowledge and skills in providing climate services.

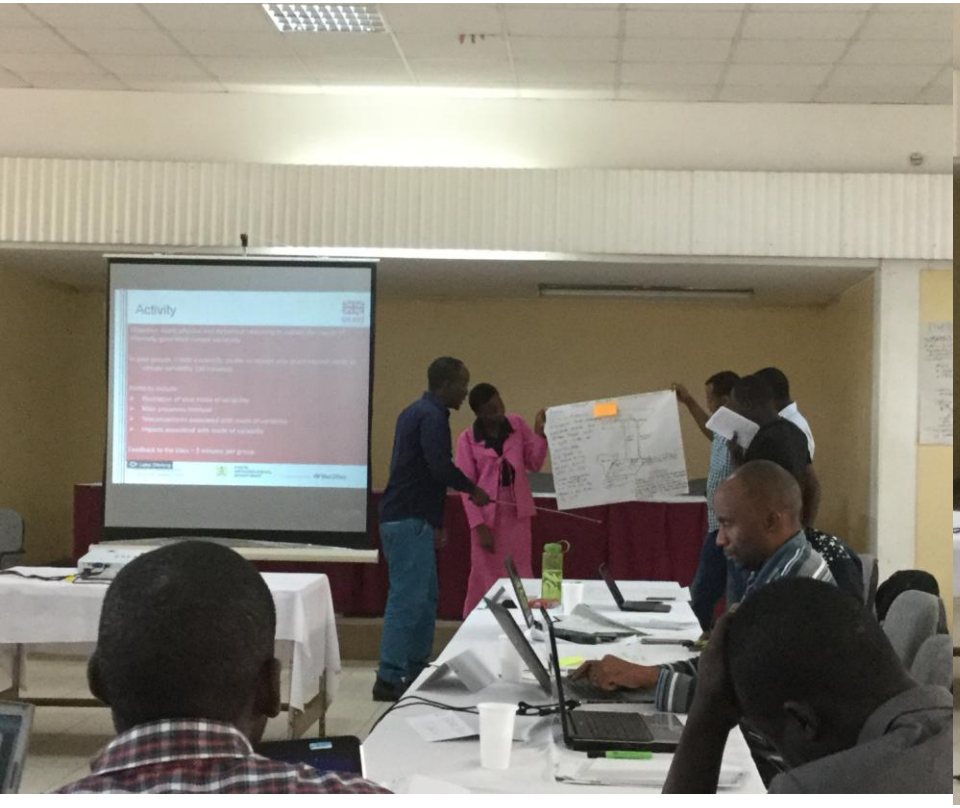
Objectives from the BIPM:

1.Describe and explain the Earth's general circulation and climate system in terms of the physical and dynamical processes that are involved
2. Apply physical and dynamical reasoning to explain the mechanisms responsible for climate variability and climate change (including the influence of human activity)
3. Describe the impacts in terms of possible changes to global circulation, primary weather elements and effects on society
4. Outline the adaptation and mitigation strategies that might be applied and describe the application of climate models
5. Describe key products and services based on climate information and their inherent uncertainty and us.

# Course Content

1. Earth System Processes
2. The climate system
3. Climate data
4. Regional and local climates
5. Classifying and describing climates
6. Climate products and services
7. Climate variability
8. Climate change
9. Impacts, Adaptation and Mitigation
10. Climate models
11. Climate risk communication

# Variety of methods…





Communicating Climate Risk
Production/
Productive
Flood
Defence


EXIT
Rain
Land surface
Clouds
Pollution on ground
Spring water
Clean water

# Uncertainty is...

is a ... which don't give from a planted

Uncertainty is unwanted product that made Errors

= Refers to the negative effects of Climate Change

Difficult to predict accurately due to of reason - eg. lack of data

Errors in Production of CC e.g. Proxy data or missing data — Martin —

Is the probability to occurred to the climate change.

Is the something that causes Errors.

What we don't understand

It refers to errors in data

unsertenity is things that produce an error

Things still not clear!

An outcome that is not predictable

Errors that occur when comparing or recording a date because the spacing is not constant.

Challenges faced

It is errors in data

It an Instrument which is not variety (Uniformal) statistically.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# Presentation skills


# Methods…

Posters

Quizzes

Student Presentations

Student Seminars

Videos

Videoed Presentations

Student research

E-learning modules

Games

Mindmaps

Group Work

Reading

Mini whiteboards

Class Discussions

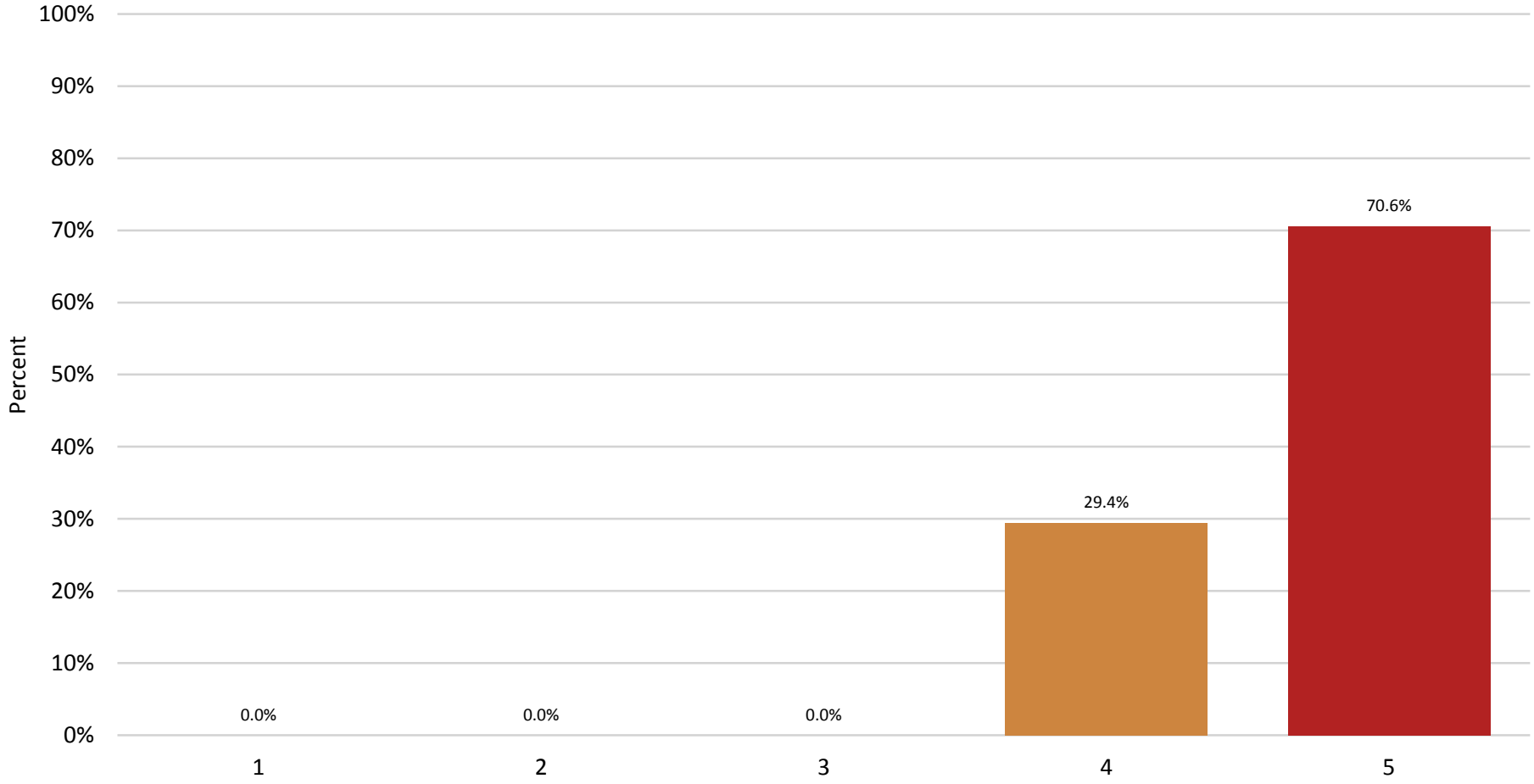
Definitions

Guest Lectures

Climate tools

Data analysis

# How enjoyable did you find the training? 1 not at all to 5 extremely

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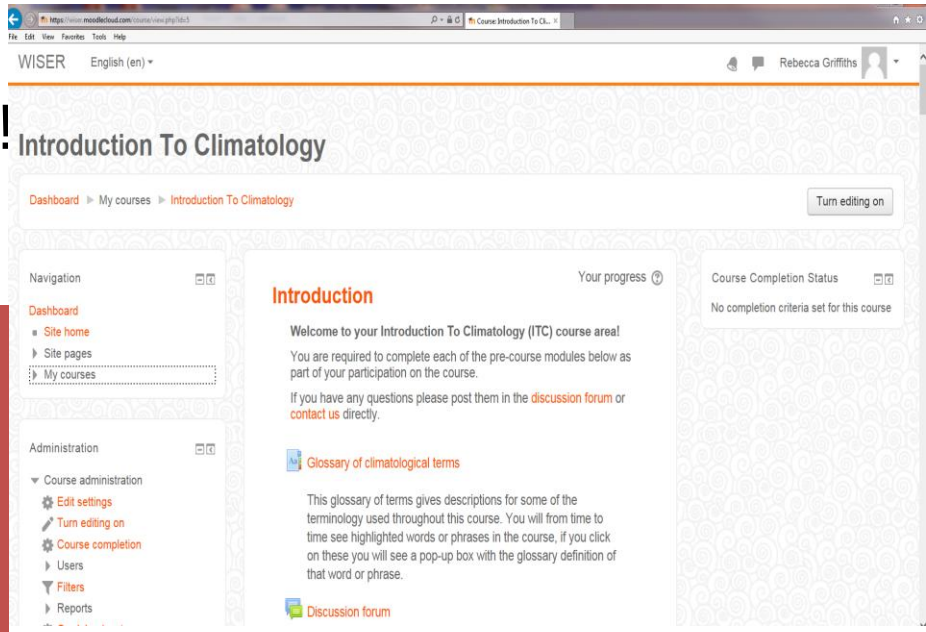
# Use of e-learning

- 2 Blended learning modules
- online quizzes after each topic
- Climate glossary
- Discussion forum
- Complementary to learning!
- Accounts logins




*"The Moodle application is flexible and portable; I even have on my mobile phone. I can revise wherever, whenever."*

# Assessments

Assessments consisted of Moodle consolidation quizzes at the end of each week, group presentations and a final seminar ran on the final day which required groups to research and prepare scientific presentations on a specific climate service sector.

*"The practical quiz. Presentation and climate games are very good."*

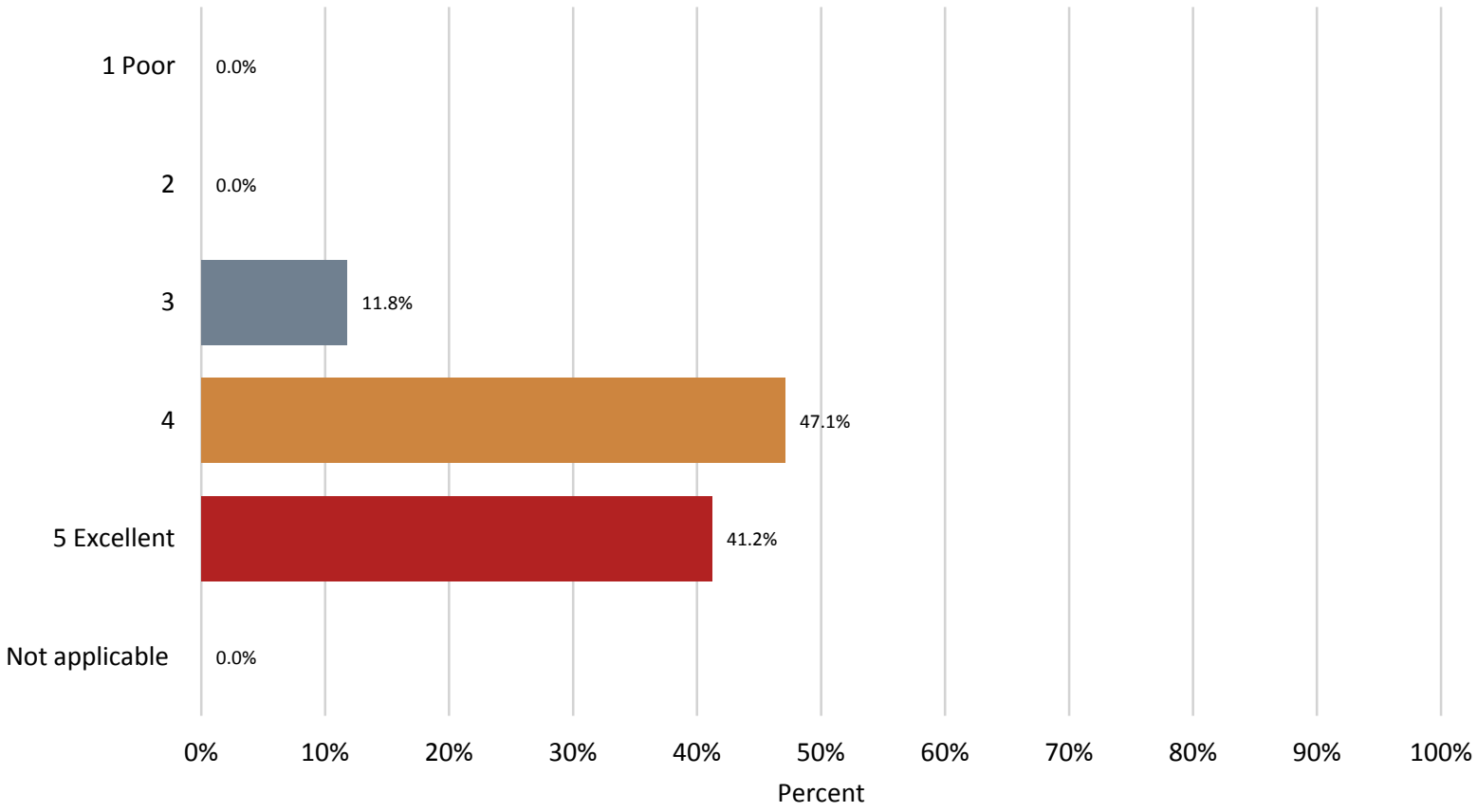
*"It was excellently relevant because we had practical experience application of skill."*


TOSHIBA
NIARIN MASABA
UGANDA

# Comments on the feedback regarding the blended approach:

- *"It wasn't all about the trainers, we were very involved."*
- *"Very engaging and practical (hands on)."*
- "*Interaction in the class with other participants."*
- *"The Moodle application is flexible and portable; I even have on my mobile phone. I can revise wherever, whenever."*
- *"The practical quiz. Presentation and climate games are very good."*

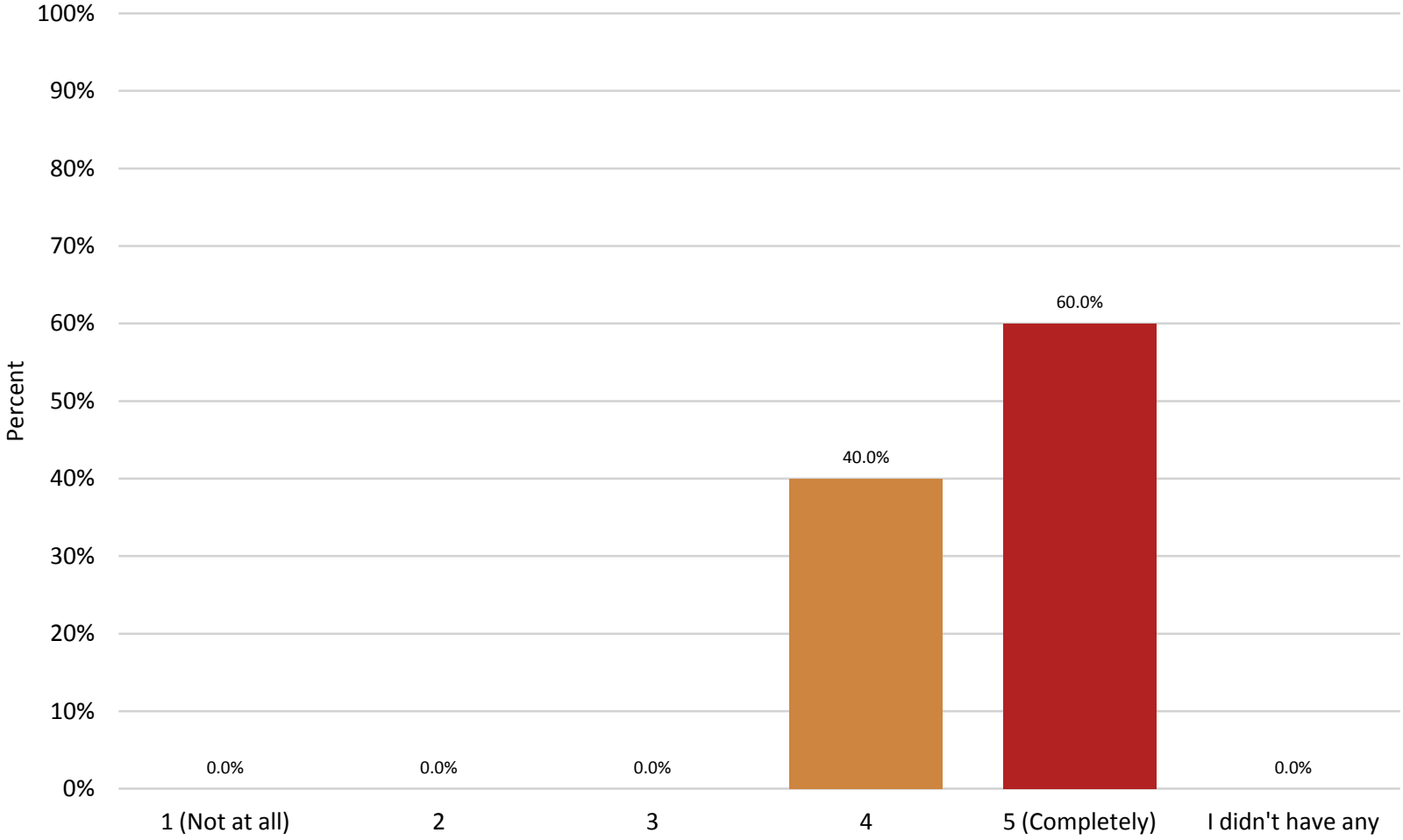
# Q. Please rate the following (Learning Resources). 1 Poor - 5 Excellent



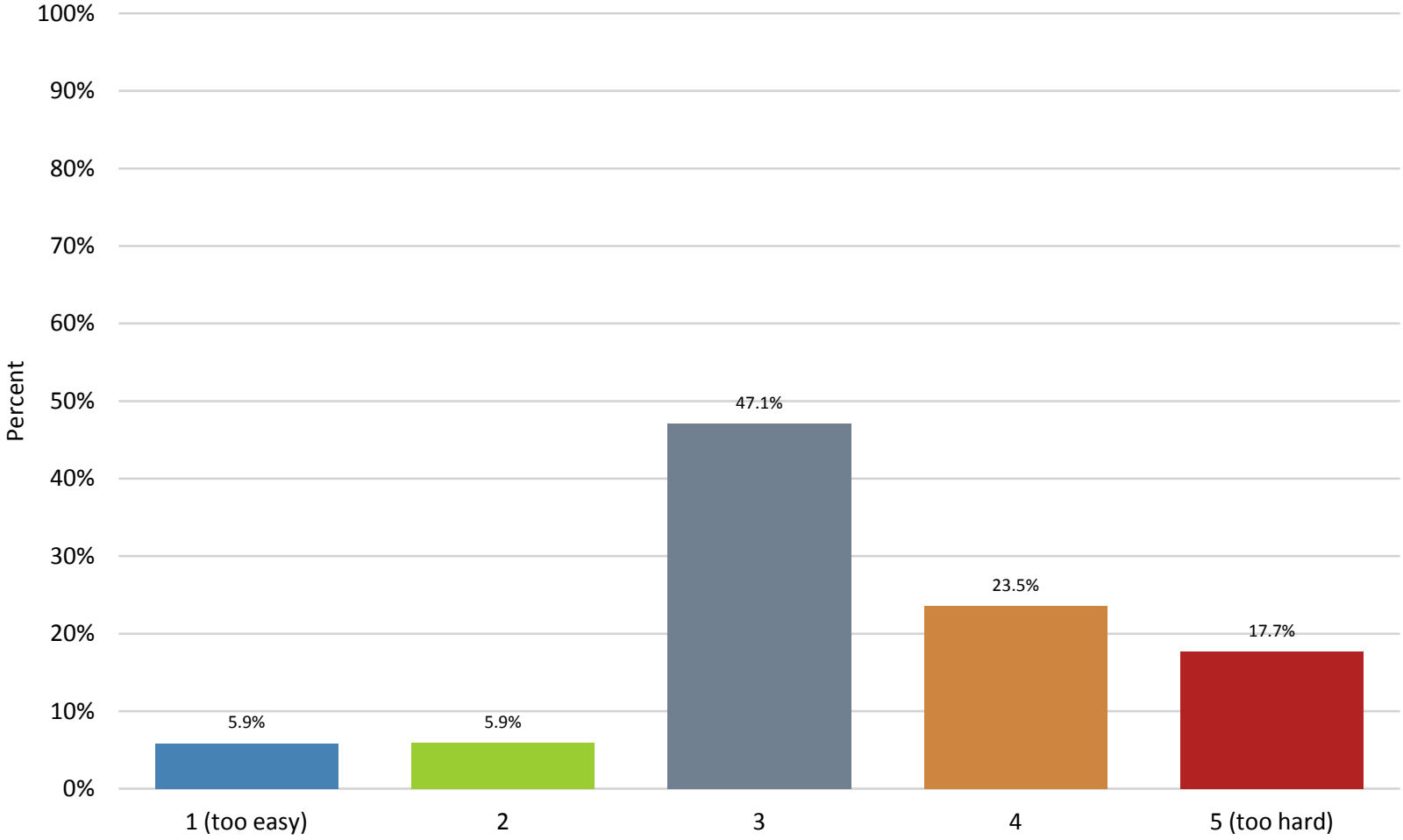
# Feedback on Learning

- More software training on climate prediction and models
- More time for practicals.
- Requests for similar course and re run it each year as a CPD module.
- More time with data handling
- More time for seasonal forecastings
- Participation of stakeholders for CIS
- More time for modelling and climate prediction

# Q: Overall, how well did this training meet your expectations of the course?



# Q: How challenging did you find this training overall?



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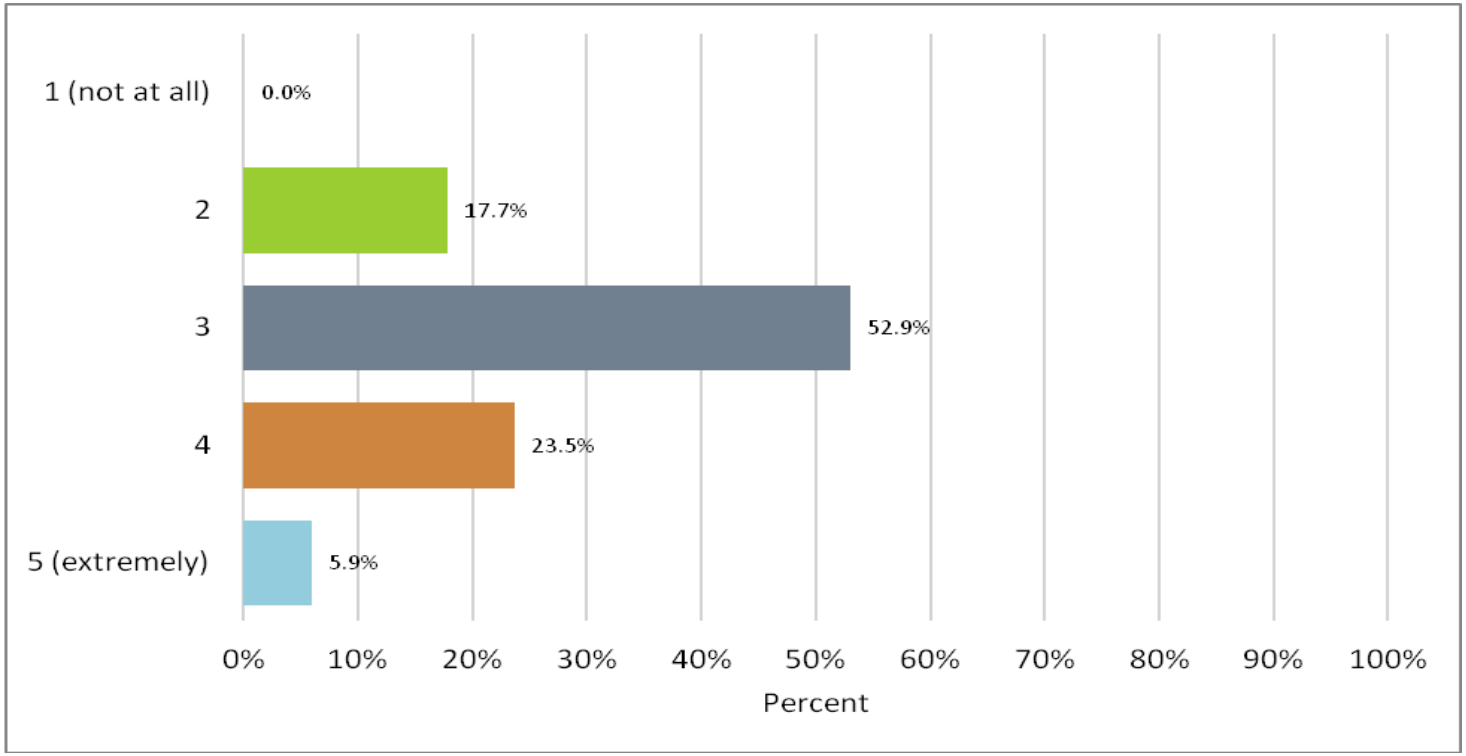
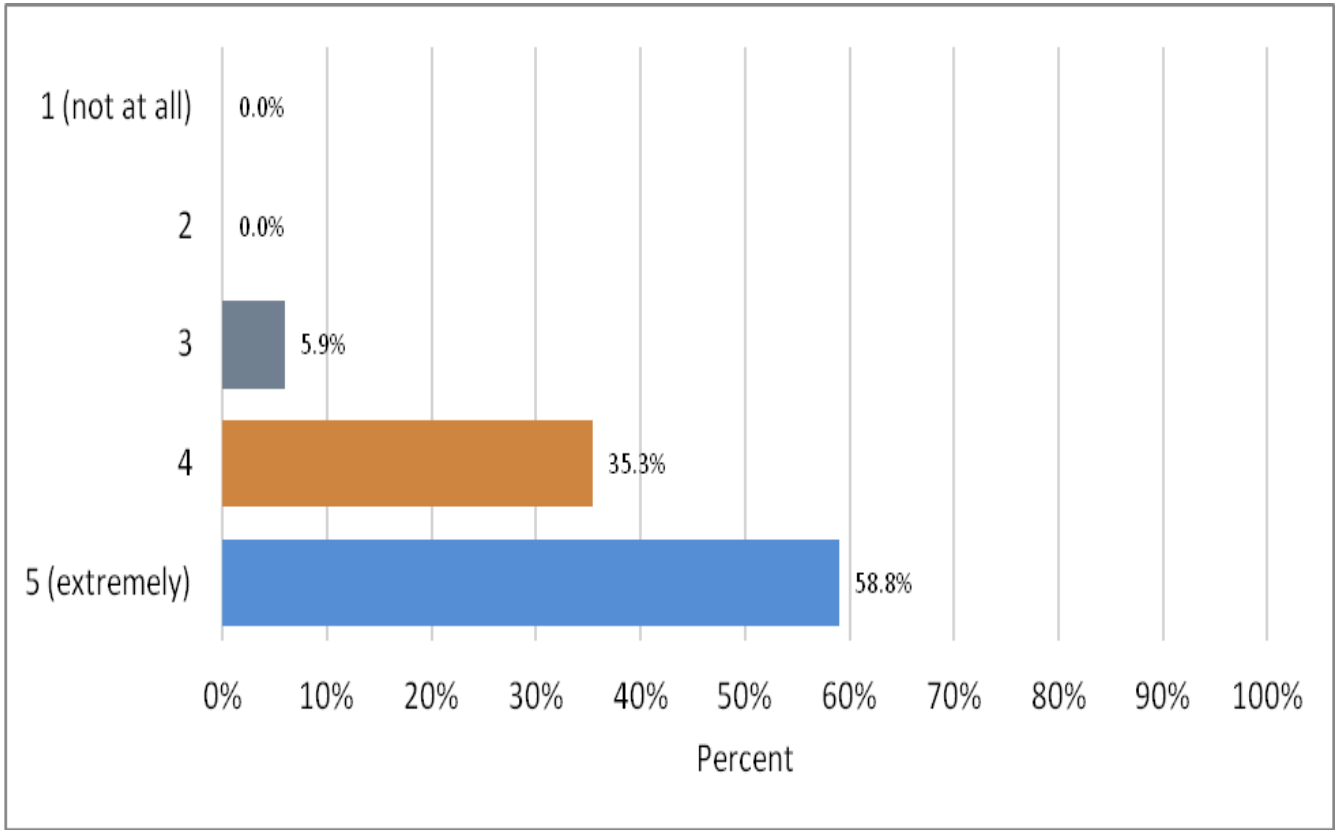
# The Learners

# Improvement in knowledge

Before training:
Q: In relation to the subjects covered on this course, how confident do you feel about applying this knowledge in your current role?



# After training…



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# The Logistics


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# Summary

- Successful trial course
- All learners completed each assessment passed!
- IT Infrastructure potential problem moving forward
- More continuity in timetabling and ring fencing required resource for course delivery necessary

**BLENDING WORKS!!!**

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HARAMBEE

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