

Pioneering Online Lesson Supplement for Carpentries Instructor Training

Increasing Instructor Participation and
Certification Numbers in Africa

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the idea of The Carpentries



THE
CARPENTRIES

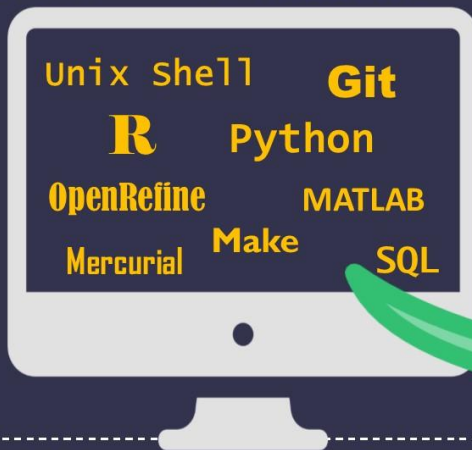
Teaching **researchers** the
computing & data science
skills they need to get
more done
in **less time** &
with **less pain**



26872 learners
at



1023
workshops
in
36
countries



1297
volunteer
instructors



3 workshops
89 learners
8 instructors

trained in **evidence-based**
best-practices of teaching

collaboratively developed



open-source curriculum

For more information, go to www.thecarpentries.org

Background

Instructor Training for The Carpentries

- Sample schedule
<https://carpentries.github.io/instructor-training/>
- Teaching practices
<https://carpentries.github.io/instructor-training/22-practices/>

Carpentries Teaching Practices

Preparation

Workshop Introduction

Teaching

Formative Assessment

Active Learning

Practical skills

Feedback to learners (deliberate practice)

Workshop End

Background (cont.)

After you have finished the two-day training class, you must go through these steps to complete your training and be fully certified as a Data and Software Carpentry instructor:

1. Make a contribution to a lesson's content, exercises, or instructor's guide.
2. Take part in an online discussion session.
3. Teach a short demonstration lesson online.

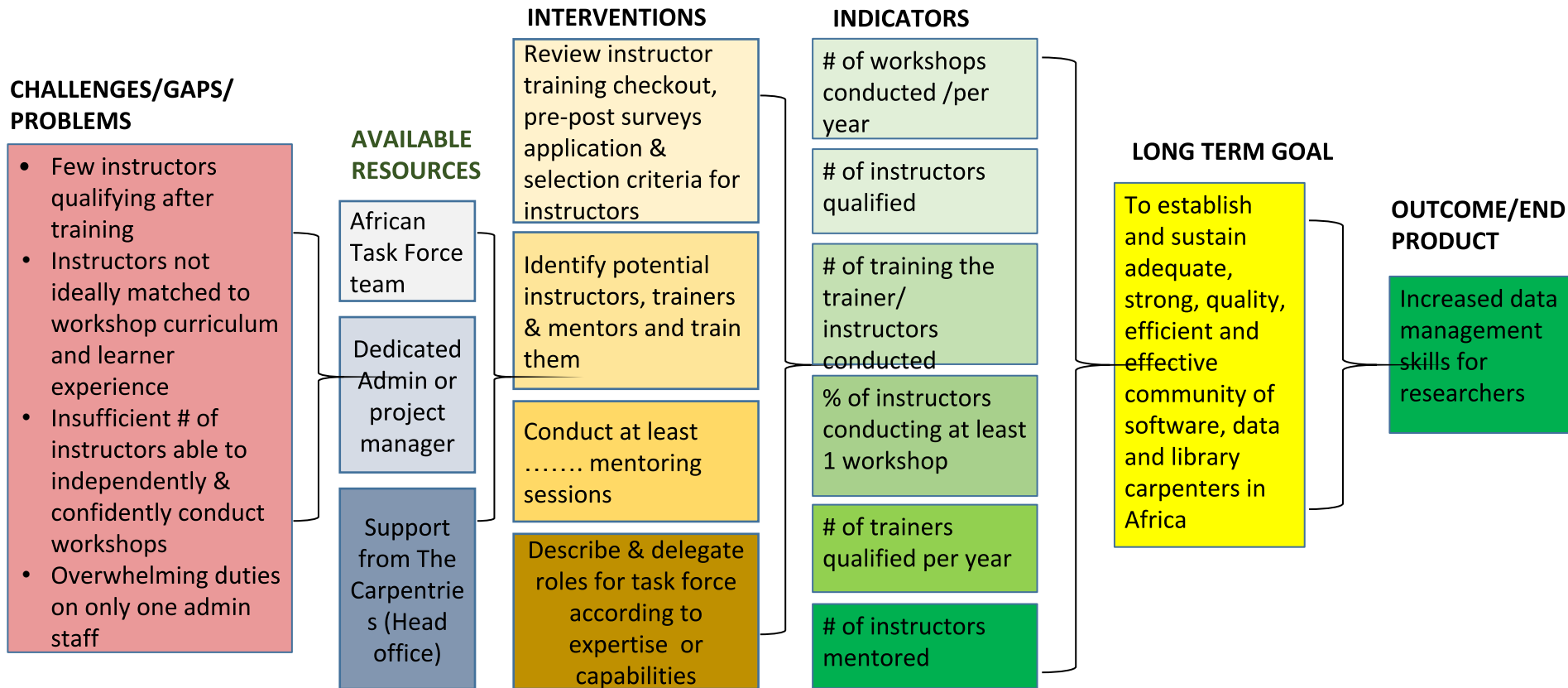


Instructor Checkout Procedure

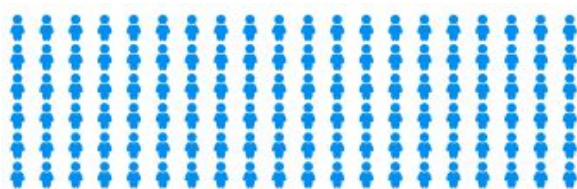
<https://carpentries.github.io/instructor-training/checkout/>

Theory of change for African Carpentry Task Force

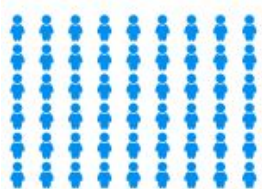
23 Feb 2018- 31 Mar 2019



Problem



~130
trained



~50
certified



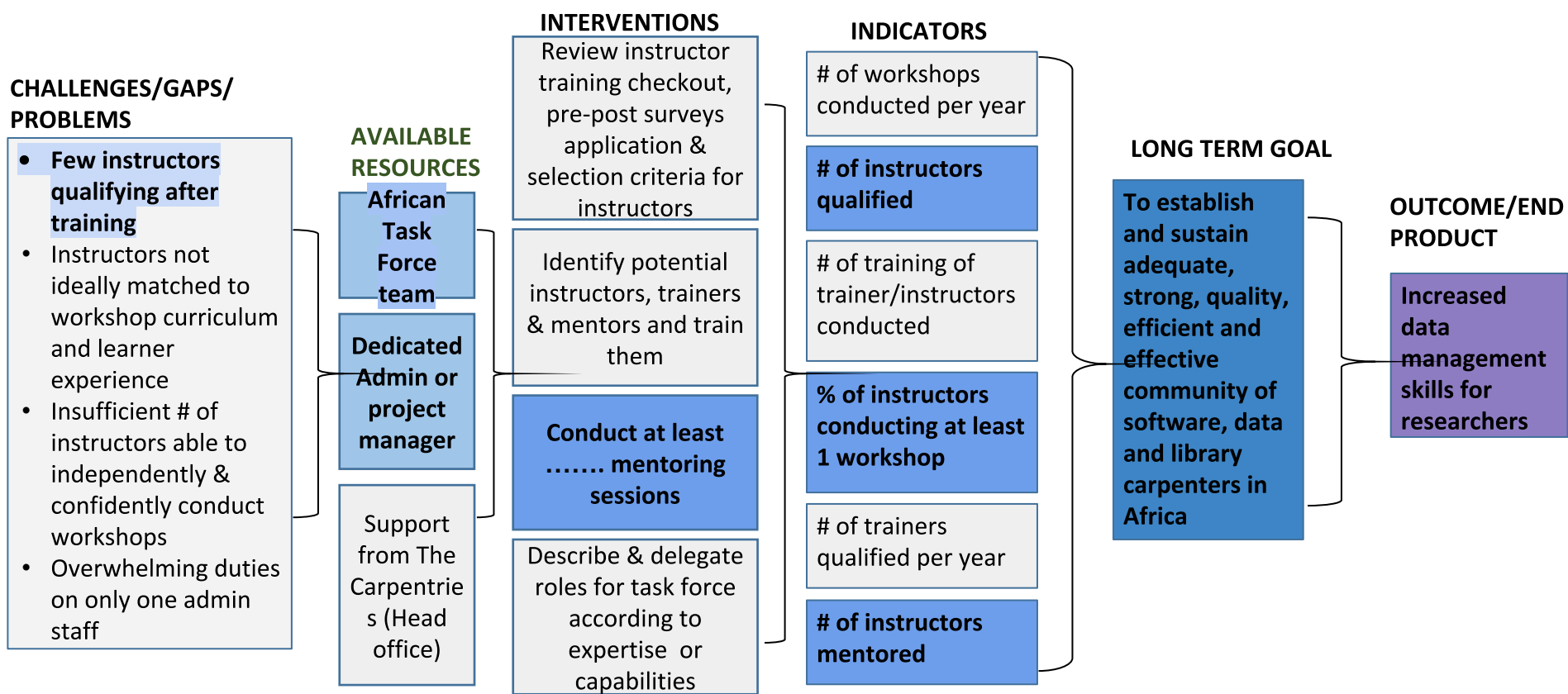
~ 25
active

- African based instructors are trained since 2014, but
- number of active instructors remains low



How can we increase number
of active instructors?

Identifying a change process for implementation



Action

- Online lesson supplement
- Mentoring through online demonstration of a Data Carpentry workshop
- Dual focus on lesson content and approach to lesson instruction
- 1st run: 4 participants logging in from South Africa, Ethiopia, Rwanda


R-Ecology Online Lesson

March/April 2018

	Date	Time (SAST)	Session Title	Instructor
1	20 March	11:30 - 13:00	Data organization in spreadsheets	Katrin
<i>Public Holiday (South Africa): Wednesday 21st March</i>				
2	27 March	11:30 - 13:00	OpenRefine	Kayleigh
<i>Easter Weekend: Friday 30th March - Monday 2nd April</i>				
3	03 April	11:30 - 13:00	R - Before we start	Anelda
4	10 April	11:30 - 13:00	R - Introduction to R and Starting with data	Anelda
5	17 April	11:30 - 13:00	R - Aggregating and analyzing data with dplyr	Caroline
6	24 April	11:30 - 13:00	R - Data visualization with ggplot2	Lactatia

Online lesson supplement

- Use of Vidyo system with support by TENET
- Screen sharing
- One instructor per session, supported by helper and admin
- Connection testing prior to lesson scheduled in calendars for all participants


**Welcome to the online
R-ecology lesson, session 4*:**

**Intro to R (30min) and Starting with
Data (60min)**

Instructor: Anelda van der Walt
Helpers: Carol Fadeke (R- installation), Erika Mias
(admin), Wesley Adriaanse (Vidyo)

10 April 2018

Please note:

- Use a headset to reduce feedback/noise.
- We will use the chatroom on the etherpad (not Vidyo) to communicate while the instructor is teaching. If you have a question raise hand with **/hand**
- Remember to mute & unmute yourself to avoid background noise.

Sessions: <https://goo.gl/NgsBgg>

Etherpad:
http://pad.software-carpentry.org/rccpii_online-r-ecology-lesson

*all sessions are recorded

Online lesson supplement

- Use of etherpad as in typical Carpentry workshops for notes, posting exercises, collecting answers from participants etc...
 - <http://pad.software-carpentry.org/rccpii/online-r-ecology-lesson>

The screenshot displays an Etherpad interface with a document on the left and a chat window on the right. The document content includes:

- Line 212: **Session 4 - Intro to R (30min) and Starting with Data (60min), 10 April 2018**
- Line 214: <http://www.datacarpentry.org/R-ecology-lesson/index.html>
- Line 216: **Who is present?**
- Line 217: Erika Mias
- Line 218: Caroline Ajilogba
- Line 219: Yoseph Abate
- Line 220: Mamsi Khantsi
- Line 221: Olubukola Babalola
- Line 222: Gabriel Salubi
- Line 224: **Comments**
- Line 225: Datacamp: <https://www.datacamp.com/>
- Line 226: run= control+enter
- Line 227: assignment operator = alt + -
- Line 229: **Functions and their arguments**
- Line 230: arguments are passed into functions
- Line 231: eg
- Line 232: you passed the argument x=4.54 and digits =2 in the function 'round'
- Line 234: **Vectors**
- Line 237: Vectors can only contain one type of elements either numeric, character, boolean etc not combination. where there are more than one type of elements, they are coerced into one type of element
- Line 239: **Subsetting of elements**
- Line 240: Use of square brackets
- Line 241: indexing start from 1 to any number in R
- Line 242: 2:3 means 2 to 3
- Line 244: **What happens to missing values**
- Line 245: NA are missing values in R
- Line 247: **len**

The chat window on the right shows a list of messages with timestamps:

- Katrin: maybe another time? 13:23
- Erika: Session 4 Starts on line 213 11:20
- Erika: Hi everyone, please register your attendance on the etherpad before we start 11:27
- Yoseph: excellent session 13:02
- Erika: thanks Yoseph :) 13:08
- Erika: Session 5 : line 285 11:59
- Erika: Hi Yoseph, are you able to connect to Vidyoo? 11:29
- Erika: challenge: line 298 12:06
- Yoseph: many thanks 12:59
- Anelda: Code handout - <http://www.datacarpentry.org/R-ecology-lesson/code-handout-R> 13:04
- Mamsi: This was great session - Thank you Caroline 13:05
- Yoseph: Erika, I am afraid I may not attend next Tuesday. Sorry! 13:05
- Mamsi: Olubukola: Thanks Caroline 13:05
- Erika: Session 6 : line 310 10:13
- Katrin: Hi everyone, I will keep an eye on the ether pad for questions 11:28

Impact

- Positive feedback:

“I always wanted to complete the course online with video interaction. My primary reason why I attend, is to learn from people how they manage such kind of trainings. The training has been very fruitful in general. The connectivity has been great, at least on my side. The instructors are well prepared for the task at hand. “

- After the online lesson series, one taught at two workshops, two helped in their first workshops



Outlook

Plans for next round ...

- Repeat R-ecology curriculum
- Increase spaces: teach more participants
- Signup in pairs (pairs programming)
- Invite those who attended previous session to teach or help

Welcome to 2nd online R ecology lesson!

Data organization in spreadsheet

Date & Time: xx August 2018 @11:30-13:00



**THE
CARPENTRIES**

Instructor :
Helper :
Vidyo support : Wesley Adriaanse

Please note:

- ✓ Use a headset to reduce feedback/noise.
- ✓ We will use the chatroom on the etherpad (not Vidyo) to communicate while the instructor is teaching.
- ✓ If you have a question raise hand with /hand
- ✓ Remember to mute & unmute yourself to avoid background noise.
- ✓ Sessions: <https://goo.gl/NgsBgg>
- ✓ Etherpad: http://pad.software-carpentry.org/rccpii_online-r-ecology-lesson

2nd R-Ecology Online Lesson Time-table

August/September 2018

Date	Time (SAST)	Lesson title	Instructor	Support
7 August 2018	11:30-13:00	Data organization in spreadsheets		
14 August 2018	11:30-13:00	OpenRefine		
21 August 2018	11:30-13:00	R - Before we start and Introduction to R		
28 August 2018	11:30-13:00	R - Starting with data		
4 September 2018	11:30-13:00	R - Aggregating and analyzing data with dplyr		
11 September 2018	11:30-13:00	R - Data visualization with ggplot2		

Thank you!

For more information about

The Carpentries visit:



<https://carpentries.org/>

