Progress Report: mid 2016
for the online statistical course for supporting capacity building under (SIMLESA-2) Bespoke eStyle Statistical Training- BeST for Africa

Dr Miranda Mortlock
School of Agriculture and Food Sciences
m.mortlock@uq.edu.au

September 13, 2016

Contents

List of Figures

Background

This project aims to support two international farming systems projects within the Sustainable Intensification of Maize-Legume cropping systems for food security in eastern and southern Africa Phase II (SIMLESA-2). It provides an online courses in statistics for applied agriculture research design, analysis and reporting of results. The units will be modular, visual and interactive to assist in the understanding of biometry and study design concepts. It will take a scientist-centric approach with inputs from a wide range of research and monitoring scientist in the African and Asian projects.

The online course has been given a short name - Bespoke eStyle Statistical Training (BeST), and is supported under a capacity building objective (5.12) the SIMLESA phase II project.

1   Vision

Our vision is to provide a practical and accessible on-line modular statistics and experimental design course for scientists in agricultural science and development in Africa and Asia. The course will be available on-line for a number of years as a sustainable resource.

2   Mission

The course will provide a relevant and useful approach to biometry concepts and how to put them into practice. It will emphasis the link between design and actual layout in the field and the subsequent analysis. The course should be accessible for rural scientists who nay wish to progress their skills and use of the open source software R, but may not have a reliable or high quality internet access. The items in the courses will be short screen casts, and some demonstrations. Participants can send feedback and have some self assessment to check their progress.

3   Alignment to objective 5.12 in SIMLESA II

This project is a capacity building aspect of a much larger farming systems project (Figure 1)

4   Ongoing development

The website has been migrated to its own domain.The modules are intended to be added to as content is produced. Within a module the various aspects are available as a linear progression.

5   Length of modules

The survey in scoping the project requested about 6 hour per modules.

Figure 1: The objective 5.12 of this part of SIMLESA Phase II

6 Development of course modules

The modules have several types of content, all focused around HOW TO

- HOW TO START the steps to go through as above

- HOW TO DO as Screen-cast, fact-sheet style document or an FAQ link

- HOW TO THINK is an interactive PowerPoint or a short reference page

- HOW TO TRY is a demonstration document- for you to work through

- HOW TO SAVE is to assist in code and output, R code and analysis

- HOW TO RELATE is to consider questions you, send some feedback

- A FAQ section

- A Technical section

7 Current developments for the website

- Use of Twitter

- Better incorporation of "RMarkdown', which is a powerful editor

- Adding syntax for easy download code, with colour coding

- Improving analytics of site

- More content being added within modules

- Interest and need for building scientists quantitative skills in statistics and design of experiments

- Enhanced use of software appropriate to these projects by using an open source package (R software)

- Enhancing the capacity of in-country scientist and widening their access to training

- Interest for the course to be used more widely for example in the National Agricultural Research (NAR) institutes

- Link to agricultural universities - develop links to universities

Survey results and scoping aims achieved

- Interest and need for building scientists quantitative skills in statistics and design of experiments

- Enhanced use of appropriate designs in these projects

- Assist engagement with an open source package (R software)

- Enhancing the capacity to statistical training with the coding

- Future expansion of scope and availability to NAR institutes, and local agricultural universities

8 Challenges and risks in the project

One challenge is the varying access to the internet. Also there will be varying interest and readiness to engage. The time factor will be important as field work is of priority in applied agricultural research experiments and studies. Modules should be produced to be responsive to these issues. The website was hacked and there was a slight set back as much of the site had to be re-written (November 2015). Security has been improved. Tutorial can be available from Australia and gradually develop into a local type of support or network. Production of a DVD for some areas may be an option to assist in areas with poor internet.

9 Project deliverables SIMLESA II as of July 2016

Completed since July

- Updated website with hosting

- Improved graphics by engaging a graphic designer

- Video training from eDX

- Better use of up to date RMarkdown for demonstrations

- Putting more text and R code into the webpages.

- Content is being adapted by branding to complete the site

- Expanding out the Technical sections

- Adding sections on data management

9.1 Ongoing

- Develop further screen casts to assist concepts and using R

- Materials developed using data-sets from the project

- Assessment of the technologies available and which to use in development

- Develop resources providing examples

- Investigate media- photo and video resources relating to SIMLESA projects

- Ongoing interaction to develop Part of the site as a MOOC at University

Roles in the team

Currently there are two main members working part time on various aspects of the course. Some critical reviewers are in an advisory and unpaid capacity at this stage. The roles consist of :-

Roles within the team
Technical scoping, Website management, Technical content
Assessment flexibility and functionality
Specific designs explained, Types of data, Analysi, Study design
Management, scoping, receiving data
Design materials for for graphic content
Making PowerPoints and coding, developing content
Web design , web functionality, training and consultant support
Reviewers of content for feedback
Developing video content
Developing screencasts
Developing programs to design and analysis
Reviewing data sets and analysis

Figure 2: Team roles

Figure 3: An example of a module graphic

Team meetings at St Lucia, UQ

- 12 Oct 2015 Online team MM, VM, ZP and MS

- 16 Oct 2015 Online team MM, VM, ZP and MS

- 9 Nov 2015 Online team MM, VM, MS, MC, and KC

- 30 Nov 2015 Online team MM, VM, MS, MC, and KC

- 20 Dec 2015 Online team MM, VM, MS, ZP, and KC

- Tues 8 March 2016 Online team MM, VM, MS, ZP, BM, KC and NF

- Tues 12 April 2016 Online team MM, VM, KC, NF

Current Team members, 2016
MM = Miranda Mortlock, VM = Vincent Mellor, BM = Ben MacIntosh, NF = Natalie Forder

Related activities November 2015 to July 2016

- Seminar in Canberra, at ACIAR

- Meeting with three African Professors who were at Trop AG 2015 November

- 11 Dec 2015 seminar in the School of Agriculture and Food Sciences

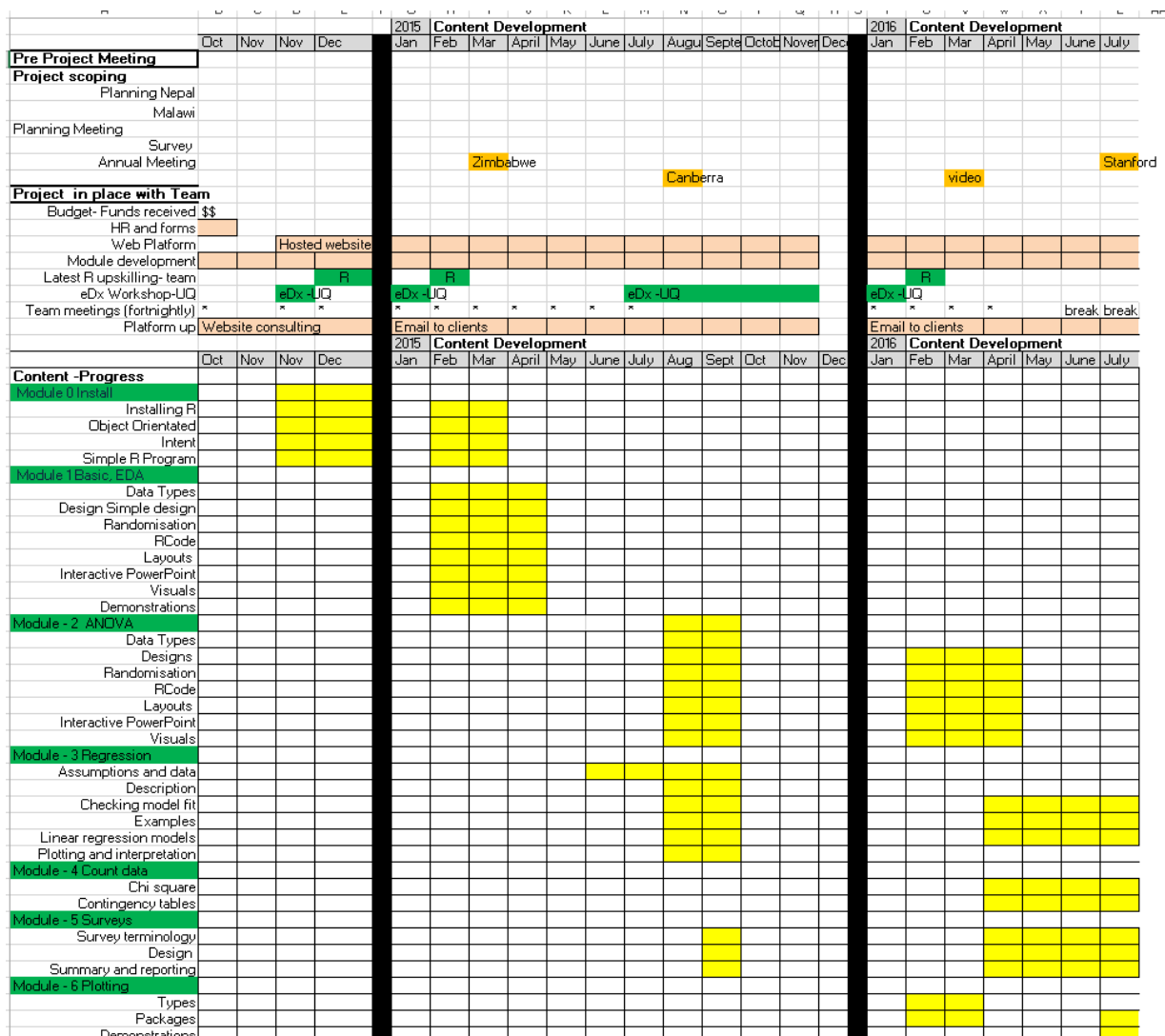- Made a video for April 2016 meeting.

Figure 4: Planning for site content

- 26 June 2016, Lightening talk for Use R Conference (Stanford University, USA)

- August 2016 made at Graduate Women International Conference, Cape Town

The conferences in Stanford University and in Cape Town were self funded by Dr Mortlock, but the opportunity was taken to give a lightening talk paper at Stanford, and to meet several statisticians across the world.
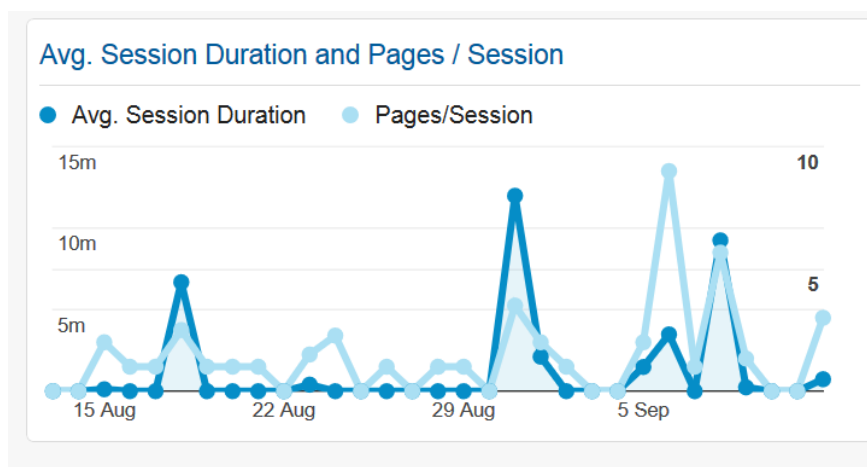
Figure 5: Length of sessions and Page view (Aug 2016)

Analytics and impact

A couple of outputs are shown here to demonstrate the site is being increasingly used and discovered.

The BeST website

Monthly analytic's collected on the site. There is an increase in visits every month, and recently there is also an increase in repeat visits.

Twitter account

Since December we have started a Twitter account that is used to promote new content as it appears.

Positive comments received on website

There currently 10 subscribers to the site. It is accessible without subscription, so many more are using the site without a subscription.

> Hi there! This is my 1st comment here so I just wanted to give a quick shout out and say I genuinely enjoy reading through your blog posts. Can you recommend any other blogs/websites/forums that cover the same subjects? Thank you!

> I have been absent for a while, but now I remember why I used to love this site. Thanks, Ill try and check back more frequently. How frequently you update your web site?

> Hey There. I found your blog using msn. This is a very smartly written article. Ill be sure to bookmark it and return to read more of your useful information. Thank you for the post. I will certainly return.

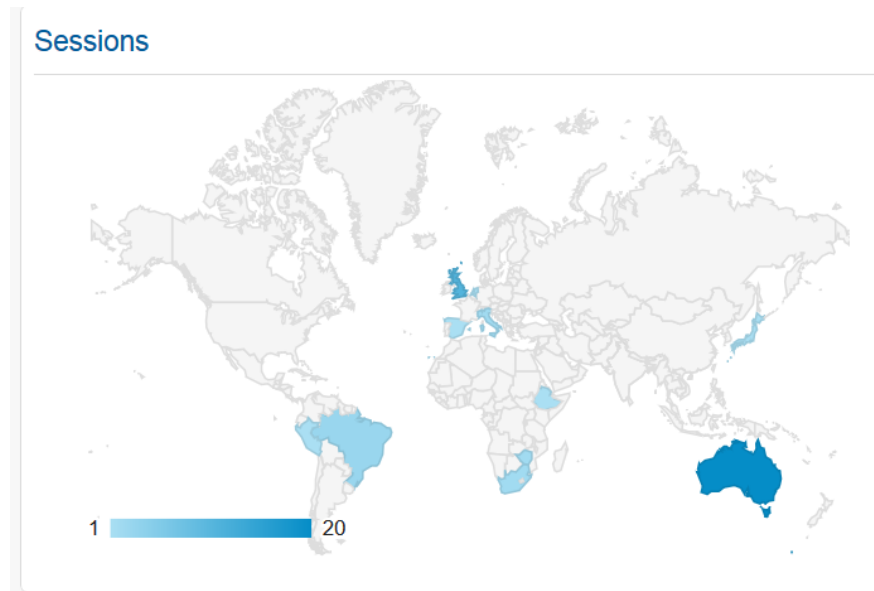> Great site. So many comments, I hope mine doesnt get lost!!
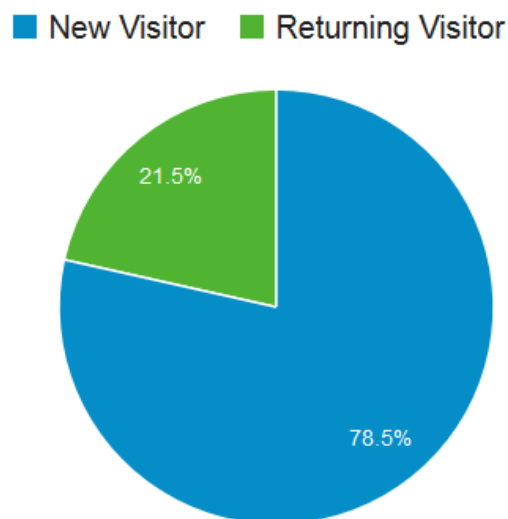
Figure 6: Location of users in August

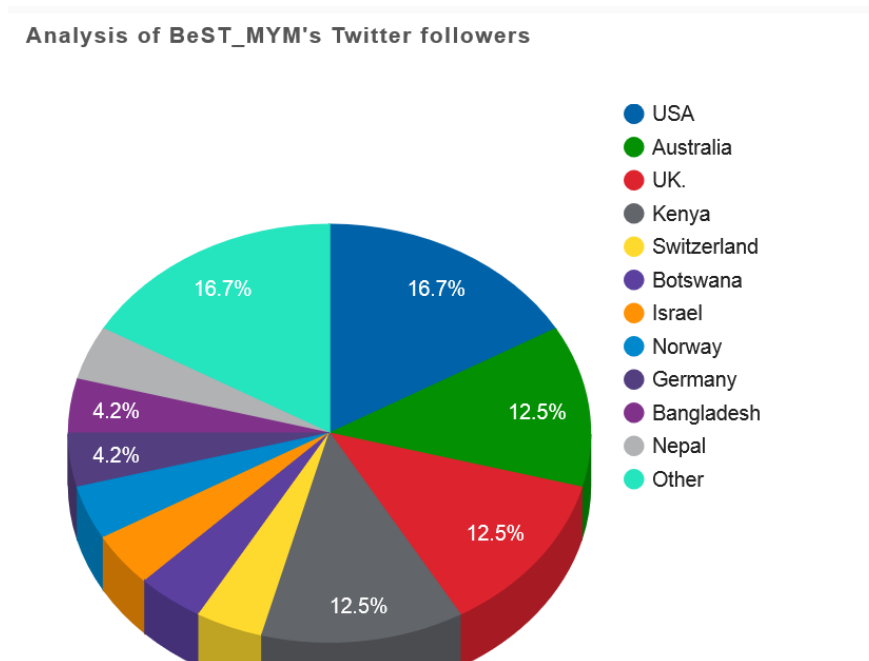Figure 7: Repeat visits to the site August 2016

Figure 8: Range of countries following the Tweets

It is really helpful for who agriculture development Scientist, specially for me , because I am learning R myself, so it will be very effective for me.
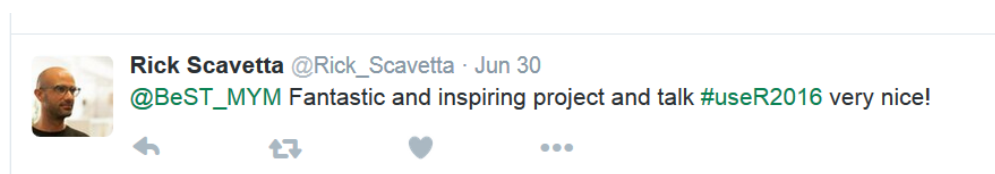
Positive comments received on Twitter

Figure 9: A positive Tweet after talk at Stanford in June 2016

Next Steps

- September 2016 Presentation planned for September, Univ Queensland

- Links of design to data sheets, collection of data, analysis and reporting

- Bring together the skills from some assistants, materials, testing materials, simple assessment and feedback options

- List and capture Module materials

- Planning and preparing final modules

- Engage UQ, give short description to the Global Change Committee to assess whether it could actually be a MOOC (partial content only).

- Awareness - vis email, Twitter, Facebook

- Tutor online as a service

- Expand and introduce to Asia -particularly India, Bangladesh, Myanmar

In summary we next need to focus on awareness and interaction with the clients. We would like to offer on line tutoring for particular statistical questions. Self study and the presence of a support site is important for field scientists. We need to consider a model for sustained support when the content is finished.

Project Coordinator

Dr Miranda Y Mortlock, 12 Sept 2016

10   Seminar

Dec 11 2015 UQ Rural Livleihoods

Innovations in statistical teaching and reaching out beyond the classroom:

Abstract: Miranda has had three significant projects supporting research and innovation in statistical learning namely: 1. The Bespoke estyle Statistical Training , BeST for Africa 2. Ploughing through Biometry, a Teaching and Learning project and 3. Recently the support for developing a phone app. This seminar will show case her contributions to innovation, and report on the progress and the challenges both in teaching statistics in general, and with online offerings in particular. Mirandas key focus is the support for young career scientists and making online resources relevant for researchers in the field. Two wonderful parts of the innovations have arisen from the accessibility to free open source statistical resources (R and RStudio), and the support from ACIAR.