Borlaug Higher Education for Agricultural Research and Development

TRAINING CENTRE IN COMMUNICATION (TCC) TRAINING REPORT ON BORLAUG HIGHER EDUCATION FOR AGRICULTURAL RESEARCH AND DEVELOPMENT (BHEARD) HELD FROM 2ND - 6TH JULY 2017, ELEMENTAITA COUNTRY LODGE, NAIVASHA

EXECUTIVE SUMMARY

Research is an enormous task which certainly requires certain competencies besides the usual classroom and research environment that the students get exposed to. One of those competencies is to write sound proposals that will attract competitive funds for research. The others are to be competent in scientific writing skills and oral presentation in order to be able to communicate research findings to a larger audience. These competencies will make university graduate students whole and complete. TCC and BHEARD, a higher Education for Capacity Building agricultural Research and Development recognized that students sponsored by this program in various universities in the region indeed lacked the much needed competence in the afore mentioned areas. Thus, through funding from USAID organized a four-day workshop on Scientific Communication and publishing course skills in Naivasha Kenya for 65 Masters and PhD students drawn from University of Pretoria in South Africa, University of Nairobi in Kenya, University of Ghana in Ghana, Egerton University in Kenya and Kwame Nkrumah University of Science & Technology in Ghana; The participants were from agricultural science background. The participants came from Kenya, Mali, Liberia, South Africa, Rwanda and Malawi.

The conference was conducted by five experienced consultants in areas of competencies mentioned above. The training approach was the in-built Participant Action Approach (PAA) which is the key ingredients of adult learning, PAA is an approach to learning and training that uses different methods to possibilities identified by the participants. It is ultimately about the improvement of practice and creation of knowledge during the training. It creates new ways of interacting and knowing. The four days were devoted to Proposal writing, scientific communication, Oral Presentation, Data analysis Policy Briefs and the participants were given a short lecture followed by group work then a presentation to the entire audience in the training hall for comments, feedback and improvement. The participants were divided into six (6) groups with each comprising six (6) participants.

Through the PAA, the participants were able to design the actions that they will implement in their Universities as a result of the competencies acquired from the training. There was active participation from the participants throughout the training, group work presentation as well as feedback sessions.

The venue was conducive for this kind of workshop except for the limited Internet connection. TCC gave excellent support on production of training material and the Soft copies (containing the entire activities and all soft copies of training materials for their use in training their colleagues) that the participants took home.

Acknowledgement

We acknowledge BHEARD-KENYA chapter for organizing the workshop and facilitating pre-workshop logistics, participants travel and accommodation. We also thank TCC for its role in providing the technical arrangements. Special thanks go to Dr. George B.Otieno and Ms Joy Owango of the two organizations respectively who made the workshop a reality. They gave the fellows the opportunity to train and share their experience with colleagues from the Southern, western region, in the areas of Proposal Writing, Scientific Writing and Communication Skills. Our thanks are extended to the USAID, funders of project for the financial support, without which, we would not have held the workshop.

We thank the management and the entire staff of Elementaita Country Lodge in Naivasha, Kenya for the excellent accommodation, meals and workshop room services that they offered.

We also thank all participants all from various universities in the region. They were very great people, who came, worked and delivered on a number of outputs. We thank them for the excellent cooperation that they gave us even during the very long hours that went beyond the workshop stipulated time and bearing with the many group and individual tasks and assignment.

Disclaimer

The highlights in this report capture the proceedings and selected outputs of the Scientific communication and publishing training workshop held at Elementaita Country Lodge, Naivasha, Kenya on 2nd – 6^{8h} July 2017.

The report is not an interpretation of the outcomes but a verbatim reflection of what transpired during the 4-day workshop. It is thus not a synthesized report. As a reference document for all participants, the report is intended to provide details of the training. Most

outputs of the group discussions, and feed sessions have been documented with minimal adjustment.

As a basis for follow-up and further capacity building in the region, the report will offer materials and reference sources for further skills development and future training sessions.

Abbreviation and Acronyms

CfP	-	Call for Proposal
USAID	-	United States Agency For International Development
ICART		Implementation and Coordination of Agricultural Research and Training
IFS	-	International Foundation of Sciences
PAA	-	Participatory Action Approach
R4D	-	Research for Development
RfP	-	Request for Proposal
TCC	-	Training Centre in communication
BHEARD	-	Borlaug Higher Education for Agricultural Research and Development
TIMRAD-C	-	Title, Introduction, Methodology, Results & Discussions – Conclusions
UoN	-	University of Nairobi

1. INTRODUCTION

1.1 Background information

Universities are a basic information and education institution in nations all over the world. They are generators of knowledge (through research, analysis, information integration, and discussion); they store knowledge in their libraries; and they pass on knowledge and information through formal instruction, forums, non-formal education, and publications and alternative media. They are also leading agencies for knowledge management initiatives. In Africa, it is a paradox that universities have played an inconspicuous role in the generation, packaging, access and distribution of knowledge. This is blamed on their poor visibility in proposal writing, scientific writing and communication skills. Deficiencies in proposal and scientific writing skills among students, academic staff and researchers in universities make it difficult for them to win competitive grants and conduct quality research and guide graduate students. Further, poor scientific and technical writing skills limit contribution of the regional scientists to advancement in science and knowledge, while poor communication skills impairs visibility of university Research for Development (R4D) in especially development and policy arena. Majority of the research is undertaken by postgraduate students but is rarely significantly funded and findings widely shared beyond university academic processes.

Postgraduate students, and researchers must have the required skills and competencies to conduct research to advance knowledge and also communicate research intent, research process and research findings. Nevertheless, the capacity for proposal development to seek Competitive Grants and scientific and technical writing is weak in several universities, especially in sub- Saharan Africa (SSA). It is even weaker among postgraduate students who are early career researchers, especially in grantsmanship and scientific communication. This deficiency has been recognized in several fora, and by The Training Centre in Communication (TCC, www.tcc-africa.org). Thus, TCC has initiated a process to strengthen proposal development and scientific and technical writing skills in the region

Orientation to Training and Expectation

The BHEARD Training organized by the Training Centre in Communication (TCC) kicked off on 2nd July 2017 at Elementaita Country Lodge, Naivasha. The key evening activity was the orientation to training and expectation. The participants drawn from different countries within the SSA participated in the Training workshop. During the orientation, participants were requested to introduce themselves and write out their expectation on a piece of paper. A majority of the trainees had expectations revolving around data analysis, scientific writing and communication, generating excellent posters for conferences, writing a grant proposal, learning how to avoid plagiarism, writing policy briefs, learning how to use e-resources, and writing a credible research proposal.

Scientific Writing and Publishing Module

The objectives of the day included a recap of the previous days, appraisal of the individual and group knowledge and skills in scientific writing; discussion of the scientists' responsibilities in reporting on research, identification and listing of the components of a scientific paper and constructing quality titles and abstracts for scientific papers. In order to achieve the above objectives, an interactive questionnaire that sought to establish the capacity and competencies of the participants was administered.

The aforementioned learning subject was broken down into sub-sections including: (i) Introduction to scientific writing and publishing; (ii) process of writing the TIMRAD-C structure; (iii) understanding how citation databases work;(iv)comprehending the process of publishing; (v) ethics in publishing. In his remarks, The trainer welcomed all participants to the training. He began by asking them to group themselves according to the number of journal articles they have published. It was noted that a majority of the trainees (48%) had never published a journal article.

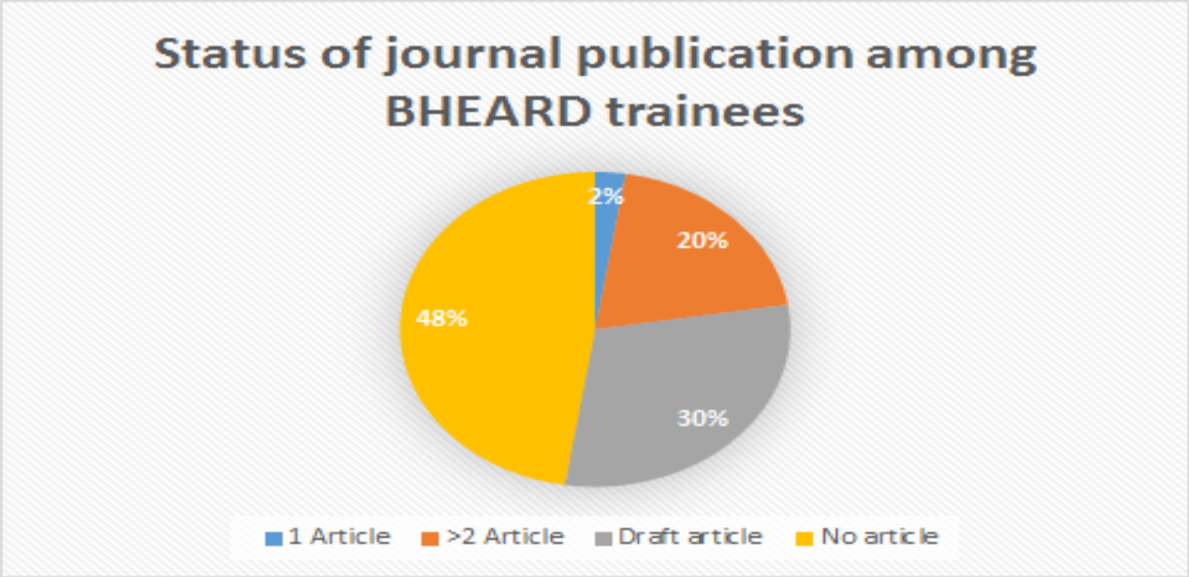

Figure 1: Status of journal publication among BHEARD trainees.

Participants were asked to list at least five (5) journals that deals with their area of study. Having listed the journals, they were shown how to use Research for life tools which includes OARE (UNEP), HINARI(WHO), AGORA(FAO) for searching the journals. It was noted that once the journals are opened, a green tag indicates that the articles published in the journal can be downloaded for free. The Trainer informed the participants that OARE, HINARI and AGORA are free and can be accessed in any country using the country specific username and password. For instance, Kenya's user name is KEN509 with 19177 as the password.

Moreover, the training focused on how students can identify journal. It was brought to the attention of the participants that there are two major databases namely citation database and bibliographic database. However, it was important to note that some may be commercial while others free. The facilitators also reiterated the fact that data presentation skills in terms of spending good time on the PowerPoint is key for a successful communication. Even though animations may be a good way of adding value to PowerPoint, there is need to balance animations and the presentation so as to keep the listeners to the subject of the matter. In citation database, a structured, electronic collection that may contain full text, articles, abstract, data and citations. However, many developing countries, Kenya included are still facing challenges with citation database. In regard to this, the participants were informed of the differences between a citations, cited reference as well as citing reference.

Having stated the above, the presenter gave an exercise to the participants focusing on exploring examples and use of citation indices at the Web of Science System (http://login.webofknowledge.com/). The participants were informed that currently, all the disciplines are covered. Further, it was noted that the citation database offers more resources such as looking for supervisors at Masters and PhD level as well as funding information. In addition, it can assist one identify funders for a given project.

Moreover, it was pointed out that while presenting data, one should use the best chart or graph that that fits the data. Participants were informed that it is meaningless to use text and chart for the same information. In the trainers remarks, participants were also taken through everything they need to understand pertaining their research so as to have easy time defending at the faculty level. In this regard, he noted that it was unethical to use a third party to carry out research on ones behalf as they will not be subjected to defending the work.

Morning session was summarized by talking about some important ethical considerations in research. Integrity in scientific writing is paramount and concerns, inter alia, authorship and co-authorship responsibilities. Plagiarism was noted as a major unethical issue in research and a majority of students continuously face the challenge. In addition, the Trainer informed the participants that social research may require permission that needs to be dealt with and that the participants should not underestimate the amount of time needed to write a paper. The trainer emphasized the need to follow publication guidelines.

During the afternoon session of the second day, participants were given some key exercises involving reviewing of one of their published paper. The exercise was to reaffirm the use of the annotated structure of a journal article commonly referred to as TIMRAD-C. They were expected was create an annotated article structure.

During day three, the participants were requested to complete the previous days exercise for the presentation. The representative of every group was given four minutes to present the output of the task. Each group came up with an annotated article structure and presented the following to the audience.

- *Evaluation of in Vitro Dry Matter Digestibility of Selected Indigenous Tree Browsers as Feed for Ruminant Livestock in Central Equatorial State of the Republic of South Sudan*

- *Effects of BHEARD bring together its scholars (Grant proposal).*
- *Effects of Soya Bean Genotypes, rhizobia inoculants and liming on N-fixation and efficiency for increased Soya bean yield on an acidic soil in Southern Province, Rwanda.*
- *Quality Characteristics of Fat Cakes Enriched with Soya Bean Protein.*

After the presentation, the trainer urged the trainees to continue improving their respective annotated structures as they continue to gather more knowledge on the various modules of the training. The trainer informed the participants that one of the participants had a journal template that she was willing to present. In her presentation, the presenter noted that the template offers one an opportunity to minimize the mistakes over preparing a journal article.

E-Resources Module

The training on day three focused on E-Resources for publishing. The trainer began by asking the participants their competencies in computer training. It was noted that a number of the trainees had some expertise in e-learning. Some of the expectations from this section of training included: (i) Describe the use of e-resources in the research cycle (ii) Identify and use selected online databases to access scientific work (iii) Plan to effectively use e-resources for scientific communication (iv) apply select ICT platform to develop scientific communication outputs.

The trainer brought to the attention of the participants the meaning of e-resources and gave some examples that are used in daily life. Some of the e-resources are as follows: (i) E-Journal (ii) E-books (iii) full text aggregated) databases; (iv) indexing and abstracting databases; (v) reference data bases; (vi) numerical and statistical databases; (vii)e-audio/visual resources; (viii) e-images. The participants were informed that all the e-resources come in the form of Web 2.0 i.e. the second stage of development of the World Wide Web, characterized especially by the change from static web pages to dynamic or user-generated content and the growth of social media.

The next step was on exploring Google together. This was a demonstration on how trainees can use google in their research. Specifically, the exercise entailed exploring Google functionality-Scholar, Translate, Dashboard, Google Docs for collaborative writing. Additionally, participants were shown how to respond to group exercise on the posted google account as well as creating survey forms.

One of the most important training in e-resources was the use of Google Docs. The participants were shown how to use this tool to work on the same documents irrespective of their location. In order to make it more pragmatic, this was done practically using two questions pertaining to e-resources and trainees were invited via e-mail to respond to the aforementioned questions. Another e-resource platform that was brought to the attention of the participants is the creation of surveys using google forms. The trainer noted that this was one of the easiest way to generate a surveys and can be shared and used by stakeholders. Other key e-resources presented were: (i) Wikimedia Commons; (ii) Wikipedia; (iii) Gap minder (iv) Terra viva

Data Analysis Module

During day four, the participants were taken through data analysis, presentation and management using Statistical Package for Social Scientists (SPSS). During this session, the trainees were taken through introduction to data analysis, old versus new ways of presenting data, as well introduction to SPSS. The training's expected output included (i) understanding the basics of data analysis in SPSS; (ii) perform parametric and nonparametric data analysis methods; (iii) perform statistical analysis. The participants were taken through SPSS interface as well as how to navigate through various SPSS layout and interface. Trainees learnt that reproducing a data has now become one of the major requirements not only at the University level but also at the Journal publication level. So this session was essential.

The research process is usually systematic and requires a procedural way of selecting the sample population. In this regard, the training focused on sampling concepts, randomization as well as replication concepts. It was noted that a majority of trainees understand the concepts of probability and nonprobability sampling. Since the trainees were heterogeneous in terms of the fields of study and the subject of their theses, they needed to understand different ways of data analysis. For instance, those in the field of agronomy basically use statistical software such as GenStat while those dealing with social sciences use SPSS, STATA among others.

Cognizance of the aforementioned need, the facilitator informed the participants that there is no need to worry about the statistical software to use in data analysis but rather focus on the research issue that the study endeavors to address. In this regard, how one specifies the dependent variable is likely to determine the statistical model to use.

For instance, if one is assessing the drivers of adoption of a given crop variety, Binary Logistic/ Probit model models would be the most appropriate as the dependent variable is binary in nature. However, such analysis can be done using STATA, SPSS, and NLOGIT among others.

Writing Research Proposal Module

The participants were asked to open their research proposal and see areas where they can improve. Participants were encouraged to improve their proposal even after the approval stage. They were encouraged to concentrate on the problem and the conceptual framework. It was noted that a research proposal has various sections including: (i) Preliminary section; (ii) research background & discussion; (iii) Methodology approach; (iv) programme management; (v) supplementary sections. Even though a majority of students have written research proposal, it was pointed out that page numbering as well as generating the table of contents has always been a challenge. In this regard, the presenter showed the participants how to generate page numbers.

In order to make the exercise more pragmatic, the facilitator requested the trainees to create a section on a new word and advised them to use it for inputting their project proposal. The proposed annotated structure would go along in assisting them have the right template to use throughout their proposal and thesis writing stage. In terms of coining either research questions or hypothesis of the study, the participants were informed that they can only use one of them in their research. However, it is vital to consult with respective universities to know the right recommended format.

The section on literature review was well elaborated. Having learned about various databases and e-resources, the trainees were advised to take advantage of their usage in terms of getting the most relevant and recent published articles for review. The facilitator indicated various benefits of literature review including justification of the methodology as well as how familiar ones study is as compared to the previous studies. Additionally, it offers an opportunity to flesh out background of the study as well as assessing the important research trends in the area.

One of the core areas of research is the methodology section which endeavors to answer the specific objectives. One is therefore expected to introduce the overall methodology of the approach as well as showing how the approach links with the research design. Additionally, issues revolving around data collection, analysis and interpretation and taking an opportunity to provide background and rationale for unfamiliar methodologies. Any limitation of a given methodology ought to be well illustrated.

Oral Communication & Introduction to Policy Briefs Module

The session on communication and introduction to policy brief took an interactive approach whereby the participants were asked to state what they meant by communication. The question drew a lot of interest among the participants. The facilitator informed the trainees that the dynamic nature of communication implies that one has to move with the changing technology.

Moreover, the facilitator informed the trainees that communication is a skill. This implies that if you fail to give the right communication, it results in frustration. As way of demonstrating some of the concerns in communication, the facilitator gave the participants a broken telephone exercise. The exercise made the participants understand how miscommunication happens. The presenter informed the participants that every presentation must have a take home message. Therefore, the facilitator suggested that the last slide should have a "take home message".

The trainees were informed that during presentation, one should not read the title, introduction, methods and results but be innovative enough to introduce them without making utterances such as "our title, our methods, our results" \among others

It was demonstrated using a video that audiences usually concerned with phrases which make them have a lasting impression. The video demonstrated that there is need to have priorities, compelling and close with a punchline. In summary, participants were urged to take note of the following: (i) powerful introduction; (ii) compelling messages; (iii) powerful closing remark.

The facilitator noted that anxiety is one of the challenges that face many presenters world over. In her remarks, she indicated that anxiety is biological and everyone must accept this fact. However, as a presenter, it is important to manage your anxiety and ensure that you relax and make yourself familiar with the environment and our audience. In order to further elaborate how to manage anxiety, the facilitator used a video focusing on what anxiety is and how to manage it.

Further the facilitator took the trainees on how to use the shortest time possible to network at local and international conferences. These included how to carry out official introduction and make enquiry on what you want within the limited time.

The facilitator introduced the participants to a poster design session. Each trainee was provided with a file chart and a marker pen. The objective was to come up with a format/ design of a poster. It was noted that the poster designs from the various participants had a different design. Cognizant of the differences, the facilitator presented the general format of a poster. In her presentation, she noted that the poster should have: (i) title; (ii) author; (iii) addresses; (iv) a logo; (v) a passport size photograph and your name; (vi)introduction; (vii)materials & methods (vii) results; (ix) conclusion and references. The facilitator informed the trainees that the minimum font for title (72), author's (58), address (48), sub-titles (58) and text (48). The recommended font type is san ***serif*** vs ***serif.***

The second phase of the exercise required the trainees to write up their posters in the right format. One of the takeaway messages is that participants should travel with their posters and do not laminate the poster. Printing of the paper should be done on matt paper. In addition, the facilitator informed the participants that various templates of posters are available. For instance, one can various poster templates at https://youtu.be/Ju3SJnJIl5o .

Finally, the presenters were requested to prepare a five slide presentation of their work group wise. Each group was requested to choose a session chair and a presenter. The presenter thereafter asked the groups to make presentations during a session moderated by the session chair. The following are the titles of various group presentations.

- *New Ways of Making Academic Easier to Read (GROUP I).*
- *BHEARD Conference 2017 (Group II).*
- *Applicability of Cassava Resistant Starch in Yoghurt Processing (Group III).*
- *Farmer Perceptions on Climate Change and Adaptation Strategies in rain fed maize farming in Southern Mali (Group IV).*
- *Impacts of Artisanal Gold Mining on Water Quality : A case study in Sikasso Region, Mali (Group V).*
- *Desertification in Africa (Group VI).*

- *Use of Acetic Acid as a New method to evaluate the chemical reactivity of Liming Materials. (VII)*

The group presentations offered the trainees an opportunity to benchmark themselves. It was noted that despite the fact that a majority of the presentations were in conformity to the standard format, trainees still needed some focus in terms of improving their PowerPoints as well as building confidence while delivering a presentation.

Moreover, the trainees were taken through the process of writing appealing policy briefs. The facilitator informed the trainees that a policy brief is particularly used in many Government Agencies, Department and Agencies (MDAs). The purpose is to convince the audience to understand the urgency of a given economic problem. Generally, the audience for policy briefs are decision-makers particularly the MDAs. The facilitator noted that a policy brief needs to be limited, understandable, accessible, promotional, practical and feasible.

Importantly, the facilitator informed the trainees that a policy brief should have the following important components: (i) title of the policy brief; (ii) executive summary; (iii) context and importance of the problem; (iv) critique of policy options; (v) policy recommendation.
Cognizance of the fact that a majority of the trainees are not proficient in writing policy briefs, the facilitator referred the participants to the Food and Agricultural Organization of the United Nations (FAO) website for published policy briefs. The information on policy briefs are available at:http://www.fao.org/home/en/ . The trainees were informed that once they have opened the website, they should use the search engine to look for policy briefs.

Proposal Writing for Funding Module

The facilitator asked the participants whether they have ever written a grant. It was interesting to note that only one participant had written a grant. Those who have never written a grant had the following reasons: (i) failure to secure a grant; (ii) lack of awareness on grants among others. The facilitator stated some of the expected output as: (i) explaining the process of grant proposal writing; (ii) identifying and planning how to respond to various calls for research or project proposals; (iii) use the problem tree approaches to design a grant proposal. Before generating/ writing a grant proposal, it is vital to identify an active call for proposal and as well as

familiarizing yourself with the request and identify the requirements. One needs to pay attention to the following (a) Activities; (b) output; (c) outcome and (iv) impact.

The training on this session took a pragmatic approach where participants were introduced to the art and science of grantmanship practiced some the skills and produced draft grant proposals that were used to show the weaknesses and strengths of various proposal. In order to learn from each other, trainees were given an opportunity to review the proposal that had already been produced by their colleagues.

The facilitator informed the participants that the rationale for funding is key in writing a successful grant proposal. In regard to identifying relevant funding agencies, participants were advised to observe the following while developing a grant proposal:-

- Find the sources of funding
- Determine priorities and selection process
- Get to Know the Donor Agency by being responsive, innovative and communicate well
- Developing Concept after having: (i) Understood literature and needs; (ii) Built from your strengths; (iii) Identified/developed partner; (iv) Write the proposal by adhering to the right format; clear statement of benefits and significance: in abstract, introduction, conclusions and (v) Complete review of relevant literature.

Furthermore, the participants also considered some classical myths about proposal writing. The myths of proposal writing were discussed in contrast to the reality that including the fact that: reviewers often do not read proposals carefully, and they frequently look for the “big idea”; reviewers also look for reasons to deny proposals -- there should be no holes; reviewers are not always experts; and managers make the final decision, and influence the process.

Some observed challenges

It was noted that the participants came from different fields of study and were at different stages of their research. In regard to this, some felt that what they already knew were being repeated. However, the facilitators turned challenge into opportunity by enhancing peer learning. Consequently, every trainee was able to fulfil their learning expectations by the end of the workshop.

Summary of the key outputs of the Training

It is well established that the BHEARD training took a pragmatic and demand driven approach to training. It was evident that the training materials prepared were informed by the wider stakeholder engagement through the needs assessment framework that was done ***ex-ante*** to the training workshop. Cognizance of the need to take a practical approach to the training, the facilitators did not disappoint in this aspect but instead became creative in their mode of delivery by making the training practical more enjoyable.

Group work and learning by doing was the premise of the training. In this regard, a number of interesting task were given to the participants who ended up doing their best with regards to working as a group and giving tangible and credible deliverables. Enlisted are some of the key outputs of the aforementioned training:-

- ❏ The trainees used the TIMRAD-C structure to come up with six annotated articles. Note that these were presented and critiqued for further improvement.
- ❏ The use of E-resources such as Mendeley, Endnote among others in their research and for use in identifying journals for publish.
- ❏ Installation of SPSS and its use descriptive and inferential statistics. Both SPSS software and data was provided to make the exercise realistic and hands-on.
- ❏ Designing of a Poster. The output was achieved at the group and individual level where exercise on how to design a credible poster for both domestic and international conference were undertaken.
- ❏ Grant writing, oral communication and presentation skills done under the watch of a plenary session chair gave positive insights on what to be done under such scenarios.

- ❑ Participants were able to produce problem trees for their proposal.

Way Forward

The BHEARD training workshop came ended on 6th July 2017. During the closing session a number discussions and exercises were conducted with the aim of setting stage for follow-up and application of the skills and knowledge gained. The participants were reminded of the objectives of the workshop, expected outputs especially their pending proposals, and extended abstracts for any other upcoming events, the articles and posters for both domestic and international conferences. The facilitators revisited the participants' expectations and fears going over each at a time and identifying the level of their achievement (for expectations) and redress (for the fears).

The Participant Action Approach was revisited. In this regard, the participants completed their action plan individually and as per their institutions respectively. They critiqued themselves and agreed to undertake the following going forward:-

- ❑ Write a report and present to their faculties.
- ❑ Organize to train their colleagues of which offered to support with the training of trainer programme.
- ❑ Complete the extended abstract for submission.
- ❑ Perfect their posters for presentation conferences.
- ❑ Complete the journal articles and submit to relevant journals for publication as per the guidelines given to the participants

Evaluation of the BHEARD Training

Daily (Formative) Evaluation

The BHEARD training workshop was evaluated daily by the trainees using various tools. At the end of day one, “How I feel” was used to the level of happiness or sadness among the trainees.

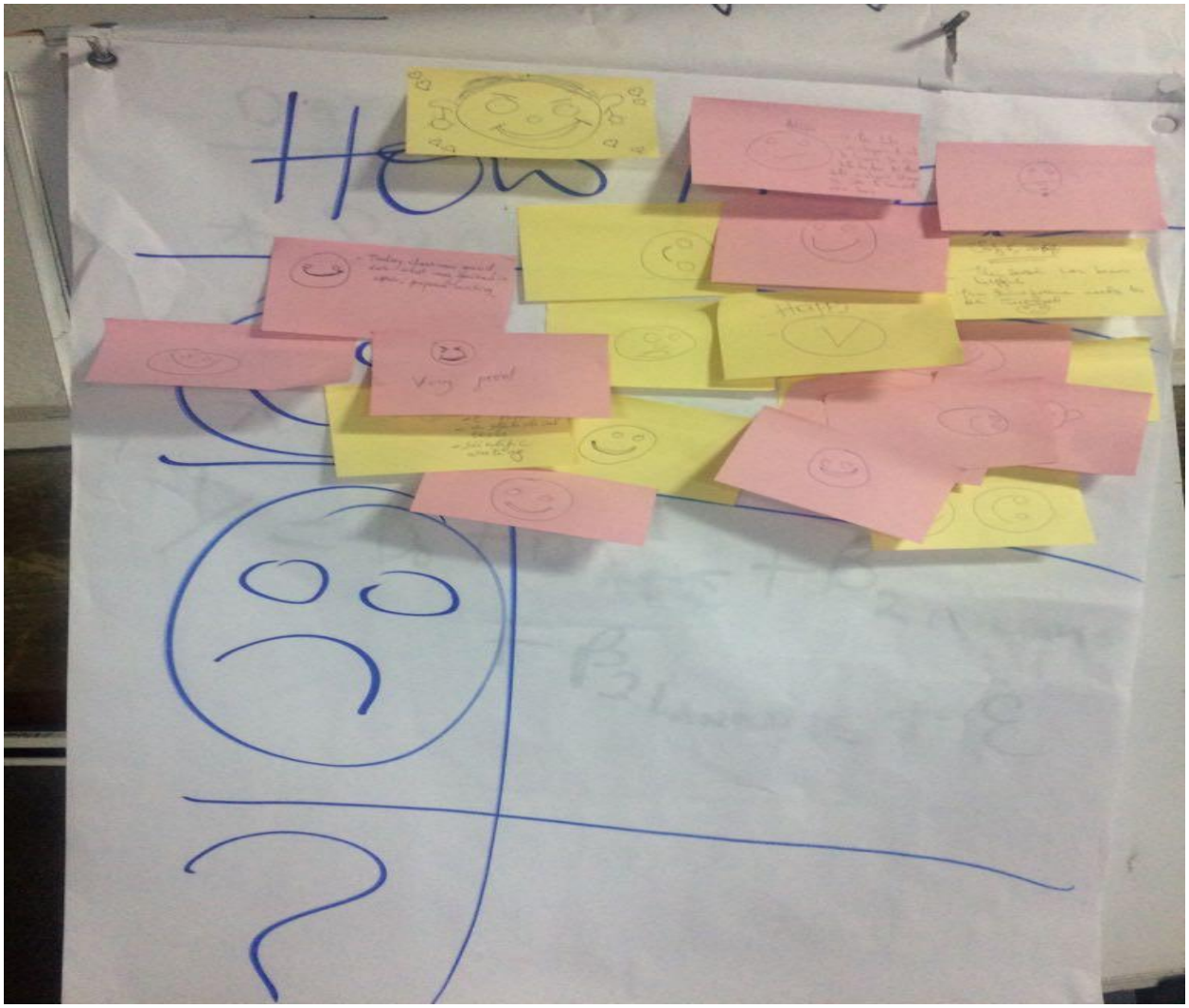

Figure 2: Evaluation result for day 1

Similar criteria of evaluation were used on the third and fourth day except the second day when a cobweb diagram was used. The tools included open focus A smile, a sad face and anonymous questionnaires. Figure 2 illustrates the results of evaluation on day three. Results show that 88 percent of the trainees were happy while 11 percent seemed to be

not happy. The participants who were not happy were identified and assisted to resolve any pending issue with regard to training.

During the second day, the facilitator applied a cobweb for evaluation. Using a Likert Scale of 1 - 10, participants were asked to give a score on the following variables: (i) Fun (ii) Group work (iii) hotel and accommodation (iv) Resources (v) participation (vi) Facilitation, (vii) time management. They were informed that a score of 10 would mean fully satisfied while values moving towards 1 means less satisfaction. The results are as presented in figure 3 (next page).

Figure 3: Cobweb diagram showing results of day 2 evaluation.

Summative Evaluation

At the end of the four day training, the trainees were given an opportunity to evaluate the overall training workshop. This kind of evaluation had the sole objective of getting feedback from the participants who were the main stakeholders in the training process. The evaluation results indicated that out of the 65 participants who successfully filled in the questionnaires, 91 percent felt that the workshop had met its objectives. However, 9 percent of the trainees indicated partial realization of the objectives. Figure 4 summarizes the rating by participants of the workshop based on some indicators.

Course evaluation form

Your background: Scientist Student Other

	Excellent	Very good	Good	Poor	Unsatisfactory
Overall opinion about the course	24	32	9		
Venue (lecture room)	11	26	28		
Projection equipment, visibility, notes	19	28	20		
Timing & breaks	17	24	23		
Quality of lectures	35	29	2		
Exercises	24	31	10		
Time for discussions	37	28	4		

Figure 4: A table showing results a verbatim response from participants.

Please indicate with an X your response to the following questions:

How useful was the course for understanding science communication and enhancing your ability to communicate in science

Extremely useful Very useful Useful Not so useful

Why?

Would you recommend the course to your colleagues as

Essential/ This course should be made an integral part of the curriculum

Highly recommended Recommended Not recommended

Would you be interested in attending follow-up courses, if provided?

Strongly interested Interested Not interested

We would appreciate some detailed feedback:

Which topic was your favorite (novelty, usefulness, clarity)? Which ones were most novel to you, or difficult to follow?

Did the course meet your expectations?

I got more than I expected from this course I got what I expected from this course

I got less than expected from this course

Are there other training needs other than the ones offered in this workshop you feel are relevant for your postgraduate studies and research?

The main **strengths** of the workshop mentioned by the participants included:

- Strong facilitation\
- Well-articulated facts and instructions
- A new understanding of logical framework and work planning
- The instructors were very practical
- Very interactive process and environment
- Orderly proposal writing and presentation
- Information acquired was diverse and very useful in our areas of study
- Meeting with fellow students from other disciplines, countries and universities
- Enough and varied learning materials
- Targeting postgraduate students with more publishing potential and longer career ahead of them

- Including different fields of agriculture (crops, animal science, soils, agricultural engineering/irrigation and dairy)
- Clear understanding of title development and objectives formulation
- All objectives were covered
- Helped us improve our writing skills

- Encouraged networking among students
- Good communication skills by the facilitators which were also imparted on participants
- Focused facilitation
- Group work helped me to know more things
- Quality of material provided
- Content was appropriate and detailed

The main **weaknesses** identified were:

- Some sessions required deeper coverage for fuller understanding and more practice
- Heavy workload with limited time
- Very poor Internet connection
- Congested time schedule
- Limited meal variety in the hotel and during tea breaks
- Being forced to present
- Group a bit too diverse in the level of the research, education….
- Assignments a bit too excessive
- Less communication before the meeting

ANNEXES

Annex I: Workshop programme

	Training Session 1	Training Session 2
Day 1 **3 July** **7:00- 8:00 am**	**Registration** **Orientation to training and expectations**	
Day 1 **3 July** **9:00am-6:00 pm**	**Scientific Writing and Publishing** **Units :** **Introduction to Scientific Writing** **Process of writing the TIMRAD-C structure** **Understanding How Citation Databases Work** **Understanding the process of publishing** **Ethics in Publishing**	
Trainers	**Dr W. Ochola**	**Dr B. Bebe**

Day 2 **4 July** **8:00am-6:00 pm**	**E Resources** **Introduction to E Resources** **Tools to use in literature search (HINARI,AORA,AGORA,Google Schoolar, Web of Science,Scopus)** **Plagiarism and tools available** **Tools to use in Reference Management (Zotero, Mendeley, EndnoteWeb)**	
Trainers	**Dr W Ochola**	**Dr C. Onyango**
Day 3 **5 July** **8:00am-12:00 pm**	**Data Analysis** **Introduction to Data Analysis** **Old Vs New Ways of Presenting Data** **Introduction to SPSS**	
Trainers	**Dr D Olila**	**Dr B Bebe**

Day 3 **5 July** **12:00pm-3:00 pm**	**Introduction to Research Proposals** **From Concept Note to Research Proposals** **Components in a Research Proposal**	
Day 3 **5 July** **4:00pm-6:00 pm**	**(Practical Sessions Data Analysis & Research Proposals)**	
Trainers	**Dr C Onyango**	**Dr W Ochola**
Day 4 **6 July** **8:00am-6:00 pm**	**Oral Communication & Introduction to Policy Briefs** **Introduction to Oral Communication** **Process of giving a talk** **Using various tools for webinar** **Designing posters for national and international conferences** **An overview on Policy Briefs**	

	Process of Writing Policy Briefs	
Trainers	**Ms J Owango**	**Dr C Onyango**
Day 5 **7 July** **8:00am-6:00 pm**	**Proposal Writing for Funding** **The Mindlife of Development Worker** **Identifying Donors** **How to Use a Problem Tree** **Components in writing a Proposal for Funding**	
Trainers	**Dr W Ochola/Ms J Owango/** **Dr. Olila, D.O.**	**Dr B Bebe/Ms J Owango/ Dr C Onyango**

	Evaluation

Annex 2: Training photos

Figure 4: Participants drawing the scientific poster. Figure 5: A participant evaluating day three training

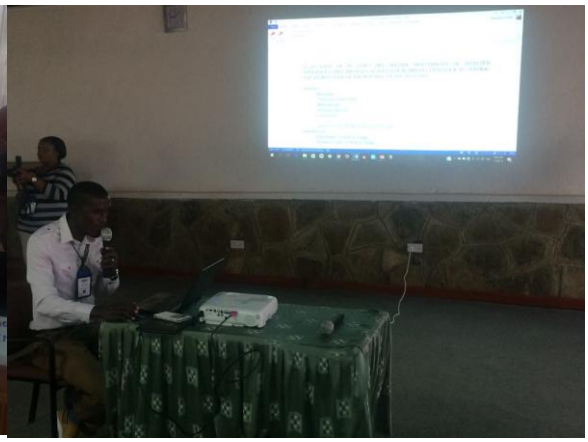

Figure 6: Group discussions. **Figure 7: A participant presenting his exercise**

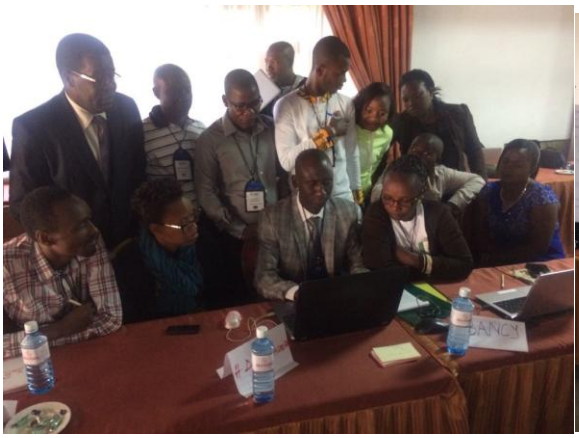

Figure 8:Dr Ochola guiding group discussions.

Figure 9: Participants showing the scientific Poster structure

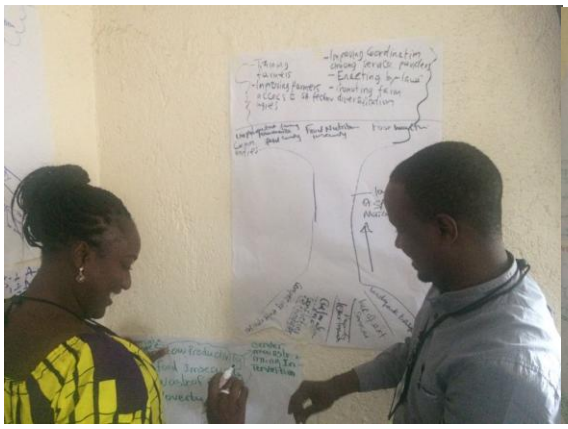

Figure 10: A participant explaining a point to her Colleague on a problem tree

Figure 11: Pictures of problem trees by participants

Figure 1: Dr. Olila explaining data analysis concepts, Right: Is Dr. Ochola on journal selection.