

International Livestock Research Institute

Antimicrobial use in livestock production systems

Report on training of enumerators on the use of Open Data Kit for data collection

6-7 August 2018



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Contents

Abbreviations and acronyms	iii
Background	1
Method	1
Results	2
Trainer	4
Workshop program.....	5
List of trainees	6

Abbreviations and acronyms

AMR	Antimicrobial resistance
AMUSE	Antimicrobial use in livestock production systems
ILRI	International Livestock Research Institute
ODK	Open Data Kit

Background

Antimicrobial resistance (AMR) has been recognised as a major threat to public health. As a consequence, more research is being conducted in this field, including research on use of antimicrobials in the agricultural sector, especially in livestock production. Data and knowledge of use of antimicrobials in low and middle-income countries is scarce and no centralized reporting and recording systems exist for monitoring purposes.

Given the recent increase in numbers of research and development projects focusing on antimicrobials in livestock production, there is a need for a common tool to be used in different projects. Use of the same questions for basic data collection in different projects will simplify collation of data across projects and production systems and potentially provide important information on trends of antimicrobial use and areas of concern.

The antimicrobial use in livestock production systems (AMUSE) questionnaire will be used to investigate key linkages in the AMR conceptual framework.

The digital data collection platform Open Data Kit (ODK) will be used to collect interview data in this project. ODK is a free and open source set of tools which help organizations author, field and manage mobile data collection solutions. ODK provides an out-of-box solution for users to; build, collect and aggregate (opendatakit.org).

Once you've collected data in the field with ODK Collect, you can upload and manage your data using ODK Aggregate. Aggregate is the intermediary server storage platform that accepts the data and can send it on external applications, if desired. ODK Aggregate also allows you to download datasets in aggregated formats such as CSV files (Managing your data with ODK Aggregate).

Method

A two-day training for the AMUSE research team in Vietnam was conducted on 6-7 August 2018 to develop the capacity of the research team to use ODK app on Android devices to collect interview data. The training used a hands-on approach to review the AMUSE questionnaire (English and Vietnamese version), show the research team how to conduct interview ODK collect app.

The training was facilitated via Skype by Louis Okello (Consultant, International Livestock Research Institute) based in Kampala, Uganda, East Africa. The training was conducted in English and interpreted by a local ILRI staff into Vietnamese.

Results

The training was attended by 11 participants (5 female, 6 male) participants. More than half of the participants 83% (n=10) had no prior training in using mobile devices (smart phones and tablets) for field based data collection. They come from Vietnam National Institute of Veterinary Research, Vietnam National Institute of Nutrition and ILRI.

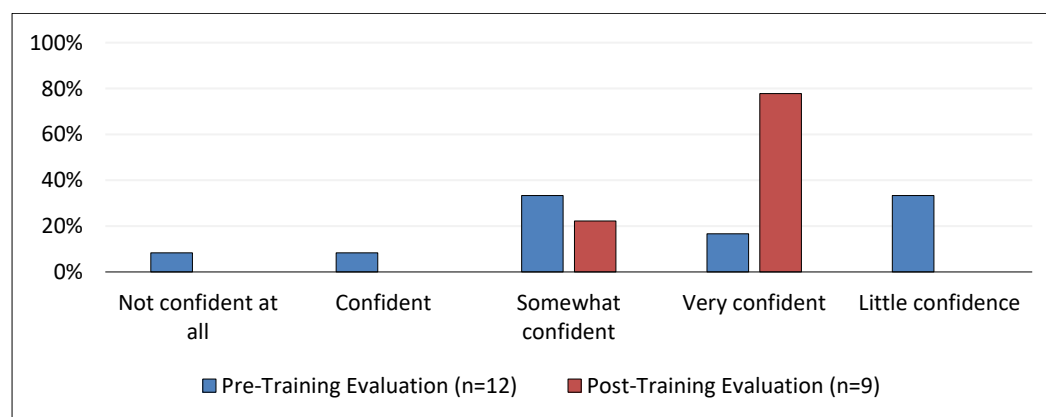
Mobile based data collection efficiency attitude

Prior to the training 75% (n=9) of the participants said data collection using mobile devices was cheaper and faster than paper based data collection, while all participants said data collection using mobile devices was cheaper and faster than paper based data collection after the training.

Participant self-reported confidence in using mobile based data collection app

Participant reported self-confidence improved considerably post training (Figure 1). Self-confidence 'very confident' improved by 61% after the training from just 17%.

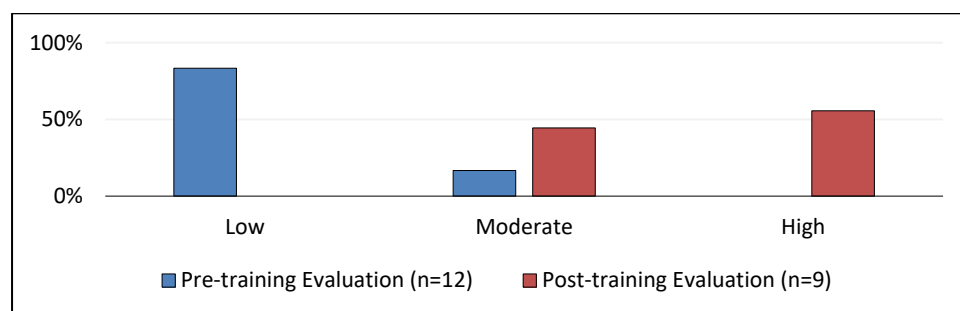
Figure 1: Rate your level of confidence in using mobile devices for data collection



Participant self-reported knowledge of Open Data Kit (ODK) app

There was significant improvement in participant knowledge of the ODK app. Half of the participant that had rated their knowledge as low before the training, rated their knowledge of the ODK app as High after the training (Figure 2). On the other hand, participants correctly answered 76% of the single choice knowledge questions about the ODK app.

Figure 2: Rank your level of knowledge of ODK app



Post training feed back

Appropriateness of training content to participant's learning need

Most of the participants 100% (n=9) agreed that the training content was appropriate to their learning needs. Participants gave reasons such as the ODK app being essential to their work *'The ODK is new and I need it for my job', 'It is necessary for my research. I can interview quickly and save time.'*

Satisfaction with training method used

All the participants reported being satisfied with the training method used. Participants said the method was simplified and easy to understand, *'easy apply in the field', 'Its show us how this app running and it's easy to collect the form with ODK'*

Challenge faced

Limited time for enumerators to practice sufficiently. There are too many topics that should be covered in such a training namely; reviewing the study questionnaire, covering research ethics and study protocol, and covering digital data collection as separate topics.

Consequently, some enumerators felt that more time should have been given to orient them about the study *'Talk more about problem'* and more practice of ODK app *'Give more practice with the real data'*.

Suggestions/recommendations to improve future trainings

1. Cover other aspects related to the study namely; research ethics, study protocol, and thoroughly reviewing paper questionnaire before introducing ODK app.
2. Conduct future trainings in Vietnamese. Participants highlighted the difficulty posed by having the training conducted in English and showed preference for future trainings to be in Vietnamese *'Local teacher (with Vietnamese)'*
3. Build the capacity of ILRI Vietnam research team to set up a digital data collection system and ODK programming, *'...train about create code and build ODK'*. Providing an advanced training in setting up the ODK system, programming tools will ensure future trainings are

appropriately conducted in Vietnamese on top as adding a vital/modern skill to the participants.

Trainer

Louis Okello was working as a consultant with ILRI from 2016 to 2018. In this role, he supported with developing ODK AMUSE tool, programming data collection for use in ODK application. He provided training enumerators in mobile based data collection, cleaning and preparing data for data analysis, data analysis and pre-testing data collection tools. Email: Louisomoya@gmail.com

Workshop program

Time	Activity	Person in charge
DAY 1		
10:15 – 10:30	Arrival, registration, Pre - training Evaluation	
10:30 – 10:35	Workshop opening and administrative details	Hu Suk Lee ILRI scientist
10:35 – 10:50	Introductions, setting ground rules, setting objectives	
10:50 – 12:15	Session One ODK Components ODK Architecture Conserving device battery ODK Collect User Interface (UI) Data types	Louis Okello, ILRI
12:15 – 14:00	Break - Lunch	
14:00 – 14:30	Session Two (Part 1) Data quality functions Groups Group repeat Saving and Finalizing interviews Supervisor content	Louis Okello, ILRI
14:30 – 15:00	Break - Coffee	
15:00 – 16:00	Session Two (Part 2)	Louis Okello, ILRI
16:00 – 16:30	Quiz	
16:30 – 16:45	Q&A	
DAY 2		
10:30 – 12:15	Review AMUSE paper questionnaire – Session One Enumerators take turn to read out questions aloud, as Supervisor/PI comment on question logic and response	Supervisor, PI
12:15 – 14:00	Break - Lunch	
14:00 – 14:30	Review AMUSE ODK Form Session Two (Part 1)	Louis Okello, ILRI
	Pairs of Enumerators interview each other in front of others by reading and responding to questions aloud. Supervisor/PI can take evaluate question phrasing, interview etiquette	Supervisor, PI
14:30 – 15:00	Break – Coffee	
15:00 – 16:30	Review AMUSE ODK Form - Session Two (Part 2)	
16:30 – 16:45	Q&A, Enumerator, Supervisor, PI, Trainer comments	Louis Okello, ILRI
16:45 – 17:00	Post Training Evaluation	Louis Okello, ILRI
17:00	Departure	

List of trainees

Name	Sex	Title/ Position	Organization
Pham Huong Giang	F	Researcher	National Institute of Veterinary Research
Bui Ngoc Anh	F	Researcher	National Institute of Veterinary Research
Nguyen Minh Thang	M	Admin	National Institute of Veterinary Research
Tran Ngoc Anh	F	Researcher	National Institute of Veterinary Research
Bui Nghia Vuong	M	Researcher	National Institute of Veterinary Research
Tran Viet Dung Kien	M	Researcher	National Institute of Veterinary Research
Than The Son	M	Researcher	National Institute of Veterinary Research
Ngo Van Hoa	M	Researcher	National Institute of Veterinary Research
Kieu Minh Duc	M	Researcher	National Institute of Nutrition
Mac Thi Cong Ly	F	Researcher	ILRI
Nguyen Thi Hong	F	Intern	ILRI