

Field report on the Participatory Training of smallholder pig farmers on biosecurity measures for the control of African swine fever (ASF) in Masaka and Lira districts of Uganda

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Background

African swine fever (ASF) is among the major production constraints for smallholder pig farmers in Uganda (Atuhaire *et al.*, 2013, Dione *et al.*, 2014). There is no vaccine or treatment for the disease. The only control measure is implementation of biosecurity along the pig value chain. However, adoption and implementation of biosecurity measures is challenging in the current context of pig production, because of the nature of the production systems which are characterized by poor housing, husbandry practices and hygiene during pig handling and slaughtering process. Low level of knowledge and awareness of value chain actors about the ways to control the disease is also a big constraint (Dione *et al.*, 2014). Following an ASF outbreak, farmers operate “panic sales” and slaughters in order to avoid financial losses attributed the death of the pigs. Such practices contribute to the spread of the diseases within and outside their community. However, farmers complain about lack of knowledge about pig management and biosecurity (Dione *et al.*, 2014); yet implementation of proper biosecurity measures requires farmers to be well equipped with a minimum package of knowledge on how to apply these measures. In order to address this knowledge gaps, ILRI and partners developed a [training of trainers](#) (ToT) manual on biosecurity for the control and prevention of ASF, which module is tailored to smallholder pig keepers in Uganda. To test the efficiency of this tool, a Randomised Control Trial (RCT) was designed in two districts namely Masaka and Lira. A second version of the training manual was established to meet the training requirements. The later version was in a form of Participatory Training (PT) module. It is in this context that the pig farmers in villages of Masaka and Lira were trained using a PT tool. This report highlights observations and discussions with farmers of the treatment groups during the training sessions.

Objective

The aim of this training was to discuss with pig farmers how ASF disease can be prevented and controlled using best practices referred to as biosecurity measures and to assess their perception on proposed biosecurity actions.

Site selection

These trainings were implemented in Masaka (20th -30th of July 2015) and Lira (and 31st August-10th September 2015 in Lira). These two districts, were purposively selected among 5 districts where activities of the Smallholder Pig Value chain Development (SPVCD) projects are being implemented. ASF is endemic in both districts with outbreaks occurring every year. Masaka has the highest pig population density in Uganda, whereas Lira has a lower pig population than Masaka but a higher poverty level. Both districts have been selected by the project to host a Randomised Control Trial (RCT) to test the effectiveness of training farmers on biosecurity protocols (reference).

Training outcomes

This module was designed to equip pig farmers with the knowledge and skills needed to control ASF effectively in order to increase their pig production. Participants in this training were expected to learn specific skills to reduce the risk of introducing and spreading the disease, such

as total confinement, improved hygiene, isolating sick pigs, restricting the entry of foreign pigs, proper management of leftover food and proper management of pig slaughtering. The training course was expected to help improve the income of the farmers, including women involved in smallholder pig rearing. This module emphasized good management especially proper hygiene to prevent the spread of disease.

Upon successful completion of the module, the participants were expected to be able to:

- Describe the clinical signs associated to African swine fever
- Understand how biosecurity measures can protect their pigs from disease.
- Understand the importance of controlling pig movement.
- Demonstrate willingness to report, and understand the value of early reporting and management of African swine fever

Training of Trainers (ToT)

Five extension staffs were selected in each district to be trained as trainers. The trainers qualifications ranged from Diploma to Bachelor degree. All trainers were experienced in participatory research because they are involved in extension work in their districts and most of them had already participated in various activities of the SPVCD project in previous years where they had facilitated at least one Focus Group Discussions (FGD) with smallholder pig farmers.

The ToT manual was developed with local and international experts. The team included ILRI scientists, communication and capacity development experts, head of Epidemiology at the Ministry of Agriculture and Livestock, local and international consultant in instructional design. The content was validated with staff from extension services and local governments in selected districts in Uganda (Nantima *et al.*, 2015). The delivery methods of the same tool was later modified to reflect a participatory training approach to ease the dissemination of the message among the farmers. The manual was tested in the field with 50 pig farmers. This exercise allowed a review of the tools and validation of the delivery methods.

Training of Farmers (ToF)

Selection of farmers

The participants were smallholder pig farmers from the selected villages as part of the study in the respective districts. All pig keepers from 16 treatment villages were invited to the training (a total of 2500 farmers). A letter of invitation was sent by the District Veterinary Office (DVO) at each pig-keeping household, targeting the farm manager. These could be women, men or youths.

Arrangement and group forming

In each village, farmers were clustered into five groups, according to their geographical locations. A trainer (facilitator) and note taker allocated to each group. The training venue was a farmer leader's home who had been identified in the community, and was expected to have basic structures that could enable the instructor to demonstrate some biosecurity activities such as cleaning the pen,

disinfecting and applying foot bath. A training coordinator was appointed to lead the whole process and write a training report. Their roles were to deal with logistics and report writing at the end of the day. Each group was constituted by an average of 25 farmers in Masaka and 15 farmers in Lira.

Summary of expectations expressed by farmer at the onset of the training

In all sites/villages, participants expressed their expectations for the training as summarized below.

- 1) To know whether infected pigs can be treated and get cured.
- 2) To know what causes ASF in pigs.
- 3) To know whether boiled/cooked or smoked pork of infected pigs can still transmit ASF
- 4) To know whether ASF can affect humans.
- 5) To know how ASF can be transmitted from one pig to another.
- 6) To know how the spread of ASF can be prevented and managed.
- 7) To know why there is high prevalence of ASF during certain months of the year especially in February –March & November.

Training schedule

The training was conducted according to villages/sites located in the three value chain domain areas categorized as Rural-Rural, Rural-Urban and Urban-Urban.



Woman farmer commenting of the poster on the transmission cycle of ASF in local language



Woman facilitating a group training session

On average a village was covered in a day and the trainings started at around 10 o'clock and normally ended at 3pm. There was always a practical lesson after the lunch session and these were normally held at the model farms. 669 farmers were trained in Masaka, while 356 farmers were trained in Lira. This was because during the training periods there were events that took place either in the village or nearby village for example; the ordination of priests (municipality), a wedding and in one area a neighboring village lost its local council leader. The trainings were mostly attended by women. Farmers were assessed on their knowledge of ASF before and after the training, and after the training they were asked what challenges they would face implementing the biosecurity protocols that they had been trained on.

The training was composed of five sessions covering specific issues listed below.

- Session 1: African swine fever: causes, symptoms and transmission
- Session 2A: Biosecurity measures (total confinement, food and farm access controls, cleaning, disinfection, use of footbath, reporting and record keeping)
- Session 2B: Proper control of pig movements and reporting

- Session 3: On-farm practical demonstration of biosecurity
- Session 4: Training evaluation

Throughout the training, participatory approach was employed using training aids and materials, posters, story-telling and sharing of experiences.

- Delivery method: group discussion, case study and demonstration.
- Technique: brainstorming, session story, practical/observations.
- Training aids: posters, pictures.
- Material: flip charts, markers, masking tape.

Evaluation of the training in Lira district

Farmers in Urban-Urban value chain domain areas were assessed on their knowledge of African swine fever which they refer to by many names such as Edeke, fever for pigs, Malaria for pigs but the most common name is ‘two punu’ meaning ‘Pig disease’. They expressed awareness about common symptoms and signs pigs present when infected by the disease. These include vomiting, reddening of the skin, loss of appetite, general body weakness, diarrhea and huddling together. During discussion they express their knowledge on common ways through which the virus is transmitted among infected and healthy pigs such as by traders, fellow farmers and pig that are kept under free range system. Farmers who practice semi intensive systems reduced the risk by totally confining their pigs in pig sties or selling some of the healthy and sick pigs when there was a disease outbreak. They were also aware of some of the practices that constitute biosecurity measures such as restricting visitors from accessing pig units, total confinement of pigs, burning or burying of pigs that have died of the disease, however some farmers are practicing few of the measures while other are not doing it at all.

Most of the training participants had expectation of learning the causes of African swine fever, signs and symptoms, ways of transmission and how the disease can be prevented and treated. After the training, majority of the trainees rated the training process as good and the level to which the training was relevant to their expectation was also good. Their training expectations were met since their knowledge about African swine fever had increased as compared to what they knew before the training. The statistics for the rating of the various aspect of the training are as shown in the table below. However, the participants requested to be trained on other aspects of pig keeping such as feeds formulation, design and construction of pig house and marketing so that pig keeping becomes a profitable and less risky enterprise.

Table 1: Evaluation of training in Apikongo, Tegweng-Apitpit and Orem-Alela villages

Training (Total participants =149)	Poor	Good	Excellent
Presentation skills of the facilitators	0	116	33
Knowledge before training	146	3	0
Knowledge after training	0	94	55
Relevance of the training to the expectation at the beginning of the training	0	82	67

Table 2. Evaluation of training in Ojungu-Teobwolo and Opwokere-Adagayela villages

Training (Total participants = 107)	Poor	Good	Excellent
Presentation skills of the facilitators	00	84	23
Knowledge before training	91	16	0
Knowledge after training	0	69	38
Relevance of the training to the expectation at the beginning of the training	0	77	30

Table 3. Evaluation of training in Ober-Kampala, Akitenino-Anyalonino and Anai Ober Villages

Training (Total participants =100)	Poor	Good	Excellent
Presentation skills of the facilitators	0	73	25
Knowledge before training	26	68	04
Knowledge after training	0	57	43
Relevance of the training to the expectation at the beginning of the training	6	55	39

Evaluation of the training in Masaka district

The farmers were asked to evaluate the training basing on four questions. They were to rate their knowledge before and after the training, the relevance of the training and lastly the facilitation skills of the trainer. They were to rank these as poor, good and excellent. A strip of paper was developed with smileys denoting the three ranks. The farmers were to tick on a smiley that represented what they felt about the question that was read out by the trainer. At the end of the exercise the trainer collected the strips of paper and tabulated them. Below are the results for the evaluation. Key to note from the results was that the facilitators did an excellent job (rating 77%). Almost half of the trainees (41%) had very little knowledge about biosecurity measures and 67% evaluated the training as relevant to them (table 4 and 5). In the rural areas few farmers had prior knowledge on biosecurity measures (44%) compared to those from urban areas (34%). In all the trainings more women attended than men (table 4).

Table 4: Evaluation in the rural area

Questions	Poor	Good	Excellent	Invalid	Total
Presentation skills	3	9	73	15	100
Knowledge before training	44	32	9	15	100
Knowledge after training	2	24	57	17	100
Relevance of the training	2	18	62	18	100

Table 5: Evaluation in the urban area

Questions	Poor	Good	Excellent	Invalid	Total
Presentation skills	2	10	84	4	100
Knowledge before training	34	48	13	5	100
Knowledge after training	4	20	71	5	100
Relevance of the training	4	15	76	5	100

Challenges faced during training

1. Late coming by farmer dragged the training to take longer than expected since some of the late comers had to be updated on what was already discussed.
2. In rural areas there were no pig sties to enhance demonstration of on-farm practices using disinfectants.

Annexes

Annex 1: Agenda for the training of trainers

Day 1	
Time	Activity
9:00 - 9:30	Registration
9:30 - 10:30	Objective of the training, Principles of Participatory Training, ASF disease
10:30- 11:00	Coffee Break
11:00 – 12:00	Facilitation skills
12:00– 13:00	Training session 1
13:00 – 14:00	Lunch
14:00 - 15:00	Training session 2A/2B
15:00 – 16:00	Training session 3
16:00 – 16:30	Training session 4
16:30 - 17:00	General discussion and logistics
Day 2	
9.00 – 16.00	Field testing
Day 3	
9.00 – 14.00	Review of field testing & plan for training of farmers

Annex 2: List of trainers

Surname	Name	Gender	District	Highest qualification	Role
Mayega	Lawrence	M	MAsaka	DVM, Veterinary Medicine	Coordinator
Nakatudde	Patricia	F	Masaka	MSc Veterinary	Facilitator
Mayanja	Lawrence	M	Masaka	BSc Veterinary	Facilitator
Sserwada	Joseph	M	Masaka	Diploma Animal Husbandry	Facilitator
Sserwanyiri	Henry	M	Masaka	Diploma, Animal Production and Mgt.	Facilitator
Namayanja	Sarah	F	Masaka	Diploma, Animal Husbandry	Facilitator
Cecil	Podpodo	M	Lira	DVM, Veterinary Medicine	Coordinator
Amuge	Felicity	F	Lira	BSc of Animal Production and Mgt,	Facilitator
Imako	Penina Evaline	F	Lira	Diploma in Crop Production and Mgt.	Facilitator
Okello	Bernard	M	Lira	Diploma, Animal Production and Mgt.	Facilitator
Oroma	Christine	F	Lira	Diploma, Animal Production and Mgt.	Facilitator
Omongo	Innocent	M	Lira	Diploma in General Agriculture	Facilitator
Ekora	James	M	Lira		Facilitator

Annex 3: List of training sites/villages and attendants in Lira.

Training site/Villages	VC Domain Area	Training date	Expected No. of participants expected	No. of people who attended
Apikongo	Rural-Rural	5/8/2015	65	59
Tegweng-Apitpit	Rural-Rural	6/8/2015	51	35
Orem-Alela	Rural-Rural	3/8/2015	66	55
Teobwolo-Ojungu	Rural-Urban	31/7/2015	65	59
Opwokere-Adagayela	Rural-Urban	7/8/2015	58	48
Ober-Kampala	Urban-Urban	10/8/2015	63	46
Akitenino-Anyalonino	Urban-Urban	7/8/2015	41	30
Anai Ober	Urban-Urban	6/8/2015	31	24

Annex 4: Number of trained farmers in Masaka

	Men	Women	total
Rural	151	279	430
Urban	87	152	239
Total	238	431	669

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