



The training of smallholder pork producers and butchers to enhance hygiene, carcass handling and biosecurity practices: A pilot intervention



# The training of smallholder pork producers and butchers to enhance hygiene, carcass handling and biosecurity practices: A pilot intervention

Scott Kramer<sup>1</sup>, Michel M. Dione<sup>2</sup>, Amanda Craig<sup>1</sup>, Festus Sammah<sup>1</sup> and Winfred Christine Amia<sup>2</sup>

1. Veterinarians Without Borders (VWB)

2. International Livestock Research Institute (ILRI)

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*Patron: Professor Peter C Doherty AC, FAA, FRS*

*Animal scientist, Nobel Prize Laureate for Physiology or Medicine—1996*

Box 30709, Nairobi 00100 Kenya

Phone +254 20 422 3000

Fax +254 20 422 3001

Email [ilri-kenya@cgiar.org](mailto:ilri-kenya@cgiar.org)

[ilri.org](http://ilri.org)

*better lives through livestock*

ILRI is a CGIAR research centre

Box 5689, Addis Ababa, Ethiopia

Phone +251 11 617 2000

Fax +251 11 667 6923

Email [ilri-ethiopia@cgiar.org](mailto:ilri-ethiopia@cgiar.org)

*ILRI has offices in East Africa • South Asia • Southeast and East Asia • Southern Africa • West Africa*

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# Overview

## Course

The course is composed of a two-day program taught by veterinary and academic professionals which includes both interactive classroom and field learning experiences.

## Objectives

The objectives of this training session are meant not only to teach and review aspects of hygiene, carcass handling and biosecurity practices along the smallholder pork value chain but also to inspire dialogue between course moderators/instructors and participants supporting future improvement and growth in Uganda.

## Duration

The training takes place over two days, requiring approximately four–six hours a day.

## Location

The course takes place at easily accessible local venues. Attendees are given an appropriate travel allowance to cover their daily travel costs.

## Provisions

Breakfast/coffee/tea/water are provided, with a mid-morning snack, and lunch on day one. Name tags, pens and a small spiral bound notebook are provided for attendees. A round-trip transportation allowance is also provided for the attendees.

## Course follow up

Course moderators/instructors conduct a post-course follow-up visit and questionnaire to determine both the value and effectiveness of the training. The information obtained will be used to amend and strengthen future courses.

## Notes for course moderators/instructors

### Initial site visit and introduction to the district veterinary officer

It is imperative that course moderators/instructors contact and visit the respective district veterinary officer (DVO) in the region in which the course is to be taught. Course moderators/instructors should be expected to introduce

themselves, the project and the course formalities including topics, objectives, duration, the training module and the proposed location.

## Roles and responsibilities

Respective roles and responsibilities throughout the course should be presented and understood by all involved. Course moderators/instructors should engage the DVO to act and speak as a liaison between the course moderators/instructors (the organization) and the people of his district throughout the course. Course moderators/instructors are strongly encouraged to keep good meeting records, list of attendees and maintain appropriate contact with the DVO from this point on.

## Local formalities

Course moderators/instructors should clearly establish the fact that they will need to closely collaborate with the DVO to engage attendees including local producers, butchers and traders, as well as to determine the venues for the course activities on day one and two. Visiting the district with the DVO may help to support your integrity, as well as provide an estimate of the size of venue, cost of food, beverages and travel allowance which will be provided to course participants. While visiting the district, a short assessment should be made to assess the potential audience and more importantly any specific area which may need particular attention.

The DVO will also help determine the most appropriate slaughter slab for the practical exercise on day two. The day two exercise is intended to review the entire slaughter process. It would be best to find a slaughter slab with an associated pork joint to streamline the teaching/discussion as we follow the pork through the entire slaughter process. Be sure there is easy access and ample room for your group's size. A group which is too large may find it challenging to hear and participate in course content.

# Course content

Day one is in a classroom setting comprising three individual rotating sections each chaired by an individual and approximately 40 minutes in length at a predetermined venue.

The day one material is presented in three individual group sessions which include:

- Section 1: Hygiene and sanitation at the slaughter slab
- Section 2: Personal hygiene
- Section 3: Hygiene at the pork joint and carcass handling

## Section 1: Hygiene and sanitation at the slaughter slab

### I. Introduction to hygiene and sanitation at the slaughter slab

Course moderator/instructor tips and talking points:

- Introduce yourself and the project that you are working on
- Mention that you enjoyed visiting the district, meeting them and learning about their operations
- Mention that you would like to talk about your experiences and perhaps make suggestions in areas which you were aware that improvements could be made
- May need to work to really engage members of the group using names tags to involve attendees
- Course moderators/instructors should focus on a particular area such as:
  - How do you recognize a sick pig?
  - Discuss recognizing a sick or compromised pig without knowing why the animal is sick
  - Use an interactive teaching process supplying images of sick or injured pigs allowing the audience to determine if they can use the techniques in the BEST (body, eyes, skin and temperament) to recognize a sick animal
- Use a binder of images which includes healthy or sick/compromised animals
  - Do not slaughter sick pigs
  - Discuss the fact that slaughtering or selling sick animals may be detrimental to swine health in the area, the consumer and the butcher/trader
- Focus on local swine diseases and zoonoses
  - Understand 'clean' and 'dirty' areas of the slaughter slab



- Use a diagram to illustrate clean and dirty areas of the slaughter slab, their significance and importance in maintaining sanitation and hygiene
- Draw a diagram on the flip chart and walk attendees through the slaughter process
- Stress potential areas of contamination/cross-contamination
  - Burn or bury offal
  - This is a particular hot point considering the spread of African swine fever due to infected offal
  - Stress proper disposal of waste.
- Course moderators/instructors may need to dig a pit or create a pit with cover to demonstrate proper care
  - DO NOT FEED OFFAL TO OTHER ANIMALS!

## II. Importance of not purchasing, slaughtering or selling sick pigs

### A. Importance and significance

#### 1. For the butcher

- Discuss zoonotic potential of certain conditions
  - *Streptococcus suis*
  - Swine influenza
  - Bacterial contamination of the carcass in general

#### 2. For the customer

- The very same reasons as the butcher

#### 3. The smallholder pig value chain

- How to identify a sick/compromised pig (Omanyanya otya embizzi endwadde)

Read/review: <http://porkgateway.org/resource/identification-of-the-sick-or-compromised-pig/>

1. Using the Pork Gateway article as a guide, teach the group how to recognize a sick/compromised pig
2. Be sure to explain that there are some conditions which may be treated...and the value of working with their paraveterinarian in terms of treatment protocols. Be sure to explain the value of the welfare of the animal. Sick animals may be in pain and require medical treatment. Sick animals do not grow as well
3. BEST Method (diagram and paper)
  - Use the illustrations in the publication to help present this visually. You may want to print out individual 'conditions' depicting a sick or compromised pig to make your point with the audience
  - Can they identify a sick animal?
  - Can they understand why it is not in their best interest to slaughter and eat a sick animal?
  - a) Body (omubiri)-
    - Using the image to describe the clockwise motion you should use to look at an individual animal
  - b) Eyes, ears, nose (amaaso, amatu, enyindo)-

- Using the image and publication, describe healthy versus unhealthy eyes, ears, and nose
- Eyes should be bright, ears clean and nose free of debris
- c) Skin (olususu)-
  - Using the image and publication, describe healthy versus unhealthy skin.
  - You may want to mention African swine fever lesions and other differential diagnoses
- d) Temperament (embeera)-
  - Similarly, using the images, describe how walking the pens and looking at the temperament of the animals can help you determine which animals may be ill.

### III. The slaughter slab (Webasalira embizzi)

Read/review: <http://www.fao.org/docrep/010/ai410e/AI410E05.htm>  
<http://www.fao.org/docrep/003/x6552e/X6552E08.htm>  
<http://www.fao.org/docrep/003/x6557e/x6557e00.HTM>

#### A. Location, location, location!!!

- Depending on your location...you will have a unique set of variables...
- Suggest that the slaughter slab be:
  - a) Away from 'traffic'-no other animals (dogs, chickens, rodents) or pests (flies) should be accepted at the slaughter slab
  - b) Separation of live and processed animals
  - c) Proper drainage
  - d) Proper disposal area for waste

#### B. Cleanliness

- a) The slab area
  - Cleaning and disinfection
    - Hot water (between animals)
    - Hot water, soap, disinfectant (end)
- b) Tools (knives, hooks, tables etc.)
  - One purpose, functioning (sharp), and stored properly
- C. Separation of clean and dirty areas (diagram)-walk the attendees through a typical 'path'
- D. Disposal of butcher waste (offal)
  - a) Importance-be sure to explain how the spread of contaminated offal may increase the risk of disease...especially African swine fever
  - b) Methods
    - Burn-difficult due to 'wet' nature of offal

- Bury-dogs dig it up
- Compost- labour intensive

E. Transportation to 'pork joints'

- a) Use washable/disinfectable tubs or clean sacks for transportation of pork to pork joint
- b) Timing should be as quickly as possible
- c) Handling
  - Stress the importance of clean hands, utensils and apparatus used to transport pork.

#### IV. Stress these five points

- A. Do not purchase, slaughter or sell meat from diseased pigs
- B. Be attentive to a clean working area and equipment
- C. Properly dispose of offal or diseased carcasses
- D. The slaughter area should be free of other animals including dogs, chickens, rodents and pests
- E. Transportation of pork to 'pork joints' should be done with clean hands and in clean sacks and/or washable/disinfectable containers.

## Section 2: Personal hygiene

Read/Review: file:///C:/Users/Scott/Downloads/CXP\_058e.pdf

### I. Introduction to personal hygiene

- Explain why this is important to the individual as well as to the consumer
  - Discuss how bacteria may cause illness in other individuals
  - Discuss how bacteria may be transferred to meat by dirty hands
  - Discuss how bacteria may grow on meat as soon as it is exposed to the air
  - Course moderators/instructors may desire to create a visual presentation on the growth of bacteria on meat to stress the point here
- Moderator/instructor may want to incorporate a game or visual presentation to the impact of hygiene (at his or her discretion).

### II. Group discussion - what does personal hygiene mean to you?

- Make a point of connecting with individual attendees
  - What do they do?
  - How do they do it?
  - When do they do it?

- Have them show you...
- Do they understand?
- Do they practice appropriate hygiene when dealing with pork products?

### III. Group discussion - why are these practices important?

#### A. To keep YOU healthy

- a. Washing your hands often keeps away germs that have the potential to make individuals ill
- b. Wearing protective gear keeps your clothes clean so that you don't transfer any germs home at the end of the day that could infect your family
- c. Keeping cuts and wounds (such as blisters) covered helps keep germs out so that they do not become infected
- d. When ill, your immune system is compromised and it is best to stay home and rest and avoid picking up any other germs from work

#### B. To keep your MEAT healthy

- a. Unwashed hands can spread bacteria and viruses that can lead to bad meat and cause people and other animals to become sick
- b. Keeping your 'street clothes' covered with protective gear keeps dirt and debris from contaminating your meat
- c. Keeping cuts and wounds (such as blisters) covered keeps secretions from contaminating your meat
- d. Handling food when ill, or coughing and sneezing over food, can transfer bacteria and viruses and contribute to disease spread.

#### C. Take home message

**HEALTHY YOU → HEALTHY MEAT → HAPPIER CUSTOMERS → MORE SALES → MORE MONEY!**

### IV. Good hand-washing practices

- A. Thorough hand-washing before starting or resuming work
- B. Thorough hand-washing after using the toilet, smoking, handling trash, using a handkerchief or tissue, touching your hair, face, and money.
- C. Make sure to clean and disinfect hands and equipment before and after handling raw food, and before handling cooked food if you have recently handled raw meat
- D. Wash hands after any cleaning task.

#### V. Hand-washing how-to

**SOAP → SCRUB → RINSE → DRY**

- A. Wet hands with WARM water
- B. Add soap and rub hands together, front and back, between fingers and under nails for about 20 seconds

- C. Rinse and dry hands with a CLEAN towel
- VII. Five take home points (see fact sheet)
- A. Wash hands FREQUENTLY with soap and warm clean water
  - a. Before and after handling meat
  - b. After using the toilet
  - c. After sneezing or coughing
  - d. After handling money
- B. Wear appropriate clean clothing and personal protective equipment (PPE)
  - a. Gumboots
  - b. Long white coat or apron
  - c. Gloves - latex and cut resistant
  - d. Safety glasses
  - e. Hair net/cap
- C. Keep cuts and wounds covered
- D. Do not handle food when ill
- E. Do not cough or sneeze over the food

## Section 3: Hygiene at the pork joint and carcass handling

Read/Review:

<http://www.fao.org/docrep/010/ai410e/AI410E05.htm>

<http://www.fao.org/docrep/003/x6552e/X6552E08.htm>

<http://www.fao.org/docrep/003/x6557e/x6557e00.HTM>

- I. Introduction to carcass handling and pork joint facility management
  - You may want to provide a brief explanation as to how and why this is important
  - Tour the pork joint using small groups using constructive criticism and appropriate praise as you witness the procedures while you relate your comments to the material covered in the course the previous day
    - Note easily sanitized surfaces as well as not so easily sanitized surfaces
  - Visual demonstration: Use pro-clean swabs to demonstrate the effect of cleaning (tiled surface)
    - Swab dirty surface and then swab clean surface
- II. Importance of meat handling, processing and hygiene practices in pork joints
- A. Reiterate the connection between bacteria, handling and illness

- III. Top five best practices in carcass handling and pork joint facility management
  - A. Covering all working surfaces with non-absorbent materials like plastic tarpaulin etc. before placing meat there, especially if you don't have a tile counter. If you choose to use banana leaves, make sure they are properly disposed of either by burning or burying
  - B. Wash and clean all working surfaces with soapy water first, then clean regularly with water and rinse with bleach water before and after your work daily
  - C. Separate designated tool for raw and cook food. If same tools are being used make sure they are clean before inter-change during processing
  - D. Keep all crawling insects and other animals away from inside the pork joints and working surfaces as they transmit diseases from the dirty places they feed from
  - E. Always wash and clean your hands before leaving and after returning to the meat shop during working hours...) e.g. before and after using the toilet, eating, smoking, shaking hands with people from outside or touching money
- IV. Group discussion
  - A. What are the lessons learned?
  - B. If given the appropriate supplies, could they do this?
    - Mention the attendance gift
    - Be sure to have shown the attendees the proper use of these supplies

## Section 4: Wrap-up in the big tent

- A. Group discussion
- B. Lunch
- C. Transportation home

## Day two

Day two departs from the day one venue followed by a taxi ride to the slaughter slab. Following the slaughter demonstration, the group returns to the venue for lunch, final comments, distribution of gifts and travel allowances at around 2:30pm.

Day two is scheduled as a practical slaughter day at a local slaughter slab which is selected with the help of the DVO. The objective today is to have the attendees witness the slaughter process and carcass breakdown while relating the visual aspects of the presentation to the material covered during the course on day one.

Meet with butcher prior to day two to understand the process and enable more thorough explanation/discussion during the actual event. You will need to narrate the process while the proprietor of the slaughter slab demonstrates the procedure. You will need to use constructive criticism and appropriate praise as you witness the procedure while you relate your comments to the material covered in the course the previous day. Be sure to encourage questions as well as suggest good and/or better practices when simple solutions are not available.

## Section 1: Practical slaughter techniques to enhance hygiene, carcass handling and biosecurity practices

- A. Assemble at slaughter slab for step-by-step critique of slaughter process while incorporating KEY aspects of the classroom presentations
- B. Be sure to identify healthy key organs, their locations, colour and texture.
  - If possible speak about any pathology found in slaughtered animals
- C. Open discussion
  - Discussion may include images of unhealthy organs or animals in a binder presentation.

## Section 2: Wrap-up in the big tent

- A. Group discussion
- B. Survey
- C. Presentation of attendance certificates and incentives
- D. Lunch
- E. Presentation of attendance appreciation gift.

An attendance appreciation gift is also given to the attendees at the conclusion of day two and a sanitation/hygiene starter package including a basin, brush, bleach, hand soap, hand towel and scrub brush. The appropriate use of these items is to be thoroughly described within the individual break-out sessions on day one by in Sections 2 and 3. The value of each item will vary depending upon your available budget-our initial cost/gift was approximately X UGS .



## Notes for class moderators/instructors

### Budget:

Food:	\$ 0.00
Transportation:	\$ 0.00
Venue:	\$ 0.00
Attendance Gift:	\$ 0.00
Total:	\$ 0.00

# of people needed:	Three facilitators Three translators One DVO One ILRI representative Two assistants (sign-in/support)
Duration:	Two days (8:30 am–2:30 pm)
Location:	District of choice

### To purchase/order:

- Name tags (sticky)
- Three large flip charts
- Multi-coloured markers
- Flip charts for easel
- Pens
- Small spiral bound notebooks for each attendee

### Attendance appreciation hygiene sanitation gift

- Basin
- Hand towel
- Bar soap
- Small bottle of bleach
- Scrub brush
- Nylon cutting board (if funds allow)

## Training assessment/questionnaire

## Selected course images:



Image 1 The butchery before and after refurbishing (Photo credit: Veterinarians Without Borders/Chelsea Van Assche)



Image 2 Field visit of VWB, ILRI and DVO Mukono to select a slaughter slab for a demonstration of good slaughtering practices



Image 3 Attendees enjoying morning beverages and light snacks



Image 4 Group session on personal hygiene



Image 5 Group session on identifying sick or injured pigs





Image 6 Group session on hygiene at pork joint and carcass handling



Image 7 Group photo during training of butchers in Mukono municipality



Image 8 Group photo during day two of the training of butchers in Mukono municipality



Image 9 Photo taken during butcher training on day two at the slaughter slab



Image 10 Image of the sanitation and hygiene attendance gift given to all attendees at the conclusion of day two

# Annex I (sections 1, 2, 3 and 4): Sample course outlines

## Section I: Hygiene and sanitation at the slaughter slab

- I. Introduction to hygiene and sanitation at the slaughter slab.
- II. Importance of not purchasing, slaughtering or selling sick pigs
  - A. Importance and significance
    1. The butcher
    2. The customer
    3. The smallholder pig value chain.
  - B. How to identify a sick/compromised pig
    - i. BEST method (diagram)
      1. Body
      2. Eyes, ears, nose
      3. Skin
      4. Temperament.
- III. The slaughter slab
  - A. Location, location, location
    - a. Away from 'traffic'-no other animals (dogs, chickens, rodents) or pests (flies) should be accepted at the slaughter slab
    - b. Separation of live and processed animals
    - c. Proper drainage
    - d. Proper disposal area for waste.
  - B. Cleanliness
    - a. The slab area
      - i. Cleaning and disinfection
        - Hot water (between animals)
        - Hot water, soap, disinfectant (end).
    - b. Tools (knives, hooks, tables etc.)
      - i. One purpose, functioning (sharp), and stored properly.
  - C. Separation of clean and dirty areas (diagram).
  - D. Disposal of butcher waste (offal)

- a. Importance
- b. Methods
  - Burn
  - Bury
  - Compost.
- E. Transportation to 'pork joints'
  - a. Washable/disinfectable tubs or clean sacks
  - b. Timing
  - c. Handling.

#### IV. Five take home points

- A. Do not purchase, slaughter or sell meat from diseased pigs
- B. Be attentive to a clean working area and equipment
- C. Properly dispose of offal or diseased carcasses
- D. The slaughter area should be free of other animals including dogs, chickens, rodents and pests.

- E. Transportation of pork to 'pork joints' should be done in clean sacks or washable/disinfectable containers.

## Section 2: Personal hygiene

### I. Introduction to personal hygiene

### II. Group discussion - what does personal hygiene mean to you?

### III. Top five best practices

- A. Wash your hands FREQUENTLY with soap and warm, clean water
  - a. Before and after handling meat
  - b. After using the toilet
  - c. After sneezing or coughing.
- B. Wear clean clothes/appropriate personal protective equipment (PPE)
  - a. Gumboots
  - b. Long white coat or Apron
  - c. Gloves-latex and cut resistant
  - d. Safety glasses
  - e. Hair net/cap.
- C. Keep cuts and wounds covered
- D. Do not handle food when ill
- E. Do not cough or sneeze over the food.

### IV. Group discussion - why are these practices important?

- A. To keep YOU healthy
  - a. Washing your hands often keeps away germs that have the potential to make you sick
  - b. Wearing protective gear keeps your clothes clean so that you don't transfer any germs home at the end of the day that could infect your family
  - c. Keeping cuts and wounds (such as blisters) covered helps keep germs out so that they do not become infected



d. When ill, your immune system is compromised, and it is best to stay home and rest and avoid picking up any other germs from work.

B. To keep your MEAT healthy

- a. Un-washed hands can spread bacteria and viruses that can lead to bad meat and cause people and other animals to become sick
- b. Keeping your “street clothes” covered with protective gear keeps dirt and debris from contaminating your meat
- c. Keeping cuts and wounds (such as blisters) covered keeps secretions from contaminating your meat
- d. Handling food when ill, or coughing and sneezing over food, can transfer bacteria and viruses and contribute to disease spread.

C. HEALTHY YOU = HEALTHY MEAT = HAPPIER CUSTOMERS = MORE SALES = MORE MONEY!

V. Good hand-washing practices

- A. Thorough hand-washing before starting or resuming work.
- B. Thorough hand-washing after using the toilet, smoking, handling trash, using a handkerchief or tissue, or touching your hair or face.
- C. Make sure to clean and disinfect hands and equipment before and after handling raw food, and before handling cooked food if you have recently handled raw meat.
- D. Wash hands after any cleaning task.

VI. Hand-washing how-to: SOAP --> SCRUB --> RINSE --> DRY

- A. Wet hands with WARM water
- B. Add soap and rub hands together, front and back, between fingers and under nails for about 20 seconds.
- C. Rinse and dry hands with a CLEAN paper towel.

## Section 3: Hygiene at the pork joint and carcass handling

I. Introduction to carcass handling and pork joint facility management.

II. Importance of Meat handling, processing and hygiene practices in pork joints.

III. Top five best practices in carcass handling and pork joint facility management

- A. Covering all working surfaces with non absorbent materials like plastic tarpaulin etc before putting the meat especially if you don't have a tile counter. If banana leave is your option, make sure it is properly dispose either by burning or burying.
- B. Wash and clean all working surfaces with soapy water first, then regular clean water and now rinse with bleach water before and after work daily.
- C. Separate designated tool for raw and cook food.. if same tools are been used make sure they are clean before inter-change during processing
- D. Keep all crawling insect and other animals away from inside the pork joints and working surfaces as they transmit diseases from dirty places they feed from.
- E. Always wash and clean your hands before leaving and after returning to the meat shop during working hours... e.g. before and after using the toilet, eating, smoking, shaking hands with people from outside.

#### IV. Group discussion

- A. What are the lessons you have learned?

## Section 4: Practical slaughter techniques to enhance hygiene, carcass handling and biosecurity practices

- A. Assemble at slaughter slab for step-by-step critique of slaughter process.
- B. Open discussion.

## Annex 2: Sample training itinerary

Day one	Introductions and group sessions
	8:00–8:30 am      Registration
	8:30–9:00 am      Introduction and course expectations
David Kiryabwire, Senior Veterinary Officer	
	9:00–9:30 am      Opening remarks
Michel Dione, International Livestock Research Institute	
	9:30–10:30 am      Course overview, break into groups
Scott Kramer, Veterinarians Without Borders	
	10:30–11:00 am      Tea and coffee break
	11:00–12:30 pm      Group sessions (30 minutes each)
Group A	Hygiene and sanitation at the slaughter slab
Scott Kramer, Veterinarians Without Borders	
Group B	Personal hygiene
Amanda Craig, Veterinarians Without Borders	
Group C	Carcass handling
Festus, Veterinarians Without Borders	
	12:30–1:00 pm      Plenary session, instructions for tomorrow
	1:00–2:00 pm      Lunch
Day two	Practical slaughter and pork handling exercise
	8:00–9:00 am      Registration and opening remarks
	9:00–9:30 am      Tea and coffee break
	9:30–1:00 pm      Slaughter and pork handling exercise
	1:00–2:00 pm      Course evaluation and lunch

## Annex 3: Sample training certificate template

_____	
Has completed	
<i>A Training Course for Small Holder Pork Producers and Butchers to Enhance Hygiene, Carcass Handling and Bioscecurity Practices</i>	
Date _____	
District Veterinary Officer	_____
ILRI Representative	_____
Veterinarians Without Borders Leader	_____
 INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE	 Minister of Agriculture, Food and Fisheries, St. James's
 Irish Aid Rialtas na hÉireann Government of Ireland	 Veterinarians WITH OUT BORDERS

## Annex 4: Poster on pork hygiene and biosecurity

1. Only purchase, slaughter and sell pork from healthy pigs.



2. Burn or bury offal and diseased carcasses.



3. Wash hands thoroughly and frequently.



4. Tools and equipment should be cleaned often and in good working condition.



5. Clean and disinfect surfaces.



## Annex 5: List of trainers

Surname	Name	Gender	Affiliation
Dione	Michel	Male	ILRI
Amia	Winfred Christine	Female	ILRI
Kramer	Scott	Male	Veterinarians Without Borders
Craig	Amanda	Female	Veterinarians Without Borders
Sammah	Festus	Male	Veterinarians Without Borders
Kiryabwire	David	Male	Mukono district
Mawanga	Edward	Male	Mukono district
Kiwanuka	Noah	Male	Mukono district
Ssekitoleki	Bernard	Male	Mukono district

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